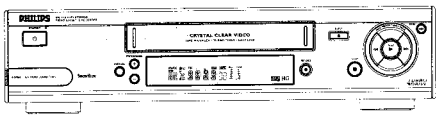
Service
Service
Service

VR710/02/07/16/39/58
VR765/02/07/16/39/58
VR810/02/07/16/39
VR910/02/07/16/39/58



VR710, VR765

VR810, VR910

Service Manual

Evolution: AA

For technical data reference is made to the Service Manual of APOLLO 20 **4822 726 15538.** The present Manual states only the differences.

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

Survey of types:

VR710/VR765: Longplay, FM Audio, Tape manager
VR810: Longplay, FM Audio, Tape manager, Jog/Shuttle
VR910: Longplay, FM Audio, Tape manager, Jog/Shuttle

Survey of versions:

/02 PAL B/G German Stereo
/07 PAL I, NICAM
/16 PAL B/G, NICAM & German Stereo
/39 PAL B/G & SECAM L, NICAM & German Stereo
/58 PAL B/G & SECAM BG/DK, NICAM & German Stereo

Survey of remote controls:

VR710/VR765:	english:	RT118/101	8622 661 18101
	french (/39):	RT118/104	8622 661 18104
VR810 :	english:	RT119/101	8622 661 19101
	french (/39):	RT119/104	8622 661 19104
VR910 :	english:	RT517/101	8622 665 17101
	french (/39):	RT517/104	8622 665 17104

Survey of tape decks:

VR710/VR765:	WDQT-S4/2	4 Video+ 2 FM-Audio Heads
VR810, VR910:	WDQT-S4/2S	4 Video+ 2 FM-Audio Heads Swing search

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PHILIPS

Table of contents

Features

Specification Items	VR710; VR765 /02	VR710; VR765 /07	VR710; VR765 /16	VR710; VR765 /39	VR710; VR765 /58	VR810/02	VR810/07	VR810/16	VR810/39	VR910/02	VR910/07	VR910/16	VR910/39	VR910/58
Backup Clock	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs
Tuning - presets	99	99	99	99	99	99	99	99	99	99	99	99	99	99
Reception														
PAL B/G	✓		✓	✓	✓	✓		✓	✓	✓		✓	✓	✓
PAL I		✓		✓			✓		✓		✓		✓	
PAL D/K					✓									✓
SECAM L/L'				✓					✓				✓	
SECAM BG				✓	✓				✓				✓	✓
SECAM DK					✓									✓
German Stereo	✓		✓	✓	✓	✓		✓	✓	✓		✓	✓	✓
NICAM		✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
Rec/Pb PAL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rec/Pb SECAM				✓					✓				✓	
Rec/Pb MESECAM				✓	✓				✓				✓	✓
NTSC Playback	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Modulator	Pal G	Pal I	Pal G	-	Pal G/K	Pal G	Pal I	Pal G	-	Pal G	Pal I	Pal G	-	Pal G/K
Auto Tuning	✓		✓	✓	✓	✓		✓	✓	✓		✓	✓	✓
Auto Install		✓					✓				✓			
Plug & Play	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sat mouse	no	no	no	no	no	no	no	no	no	no	no	no	no	no
Guide Channel Mapping	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Time/Date Download	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Synchro edit										✓	✓	✓	✓	✓
Auto Tape Length Recognition	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wind/Rew. Time (E180)	90s	90s	90s	90s	90s	90s	90s	90s	90s	90s	90s	90s	90s	90s
VISS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Studio Picture Control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Noise canceller	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Smart Picture	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VPS/PDC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ShowView	✓		✓	✓	✓	✓		✓	✓	✓		✓	✓	✓
VideoPLUS +		✓					✓				✓			
Rec.Prep. Mode Scart 1/2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Audio Dubbing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cinema Link (pin 10)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dolby virtual surround						✓	✓	✓	✓	✓	✓	✓	✓	✓
Smart sound						✓	✓	✓	✓	✓	✓	✓	✓	✓
Tape Manager	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

PCBs & Tape Decks

	POWER SUPPLY	MOTHER BOARD	DISPLAY CONTROL				TAPE DECK	
	ASM1	AMB	ADCP18	ADCP18.1	ACP18	ACP18.1	WDQT-S4/2	WDQT-S4/2S
VR710; VR765 /02	•	•	•		•		•	
VR710; VR765 /07	•	•	•		•		•	
VR710; VR765 /16	•	•	•		•		•	
VR710; VR765 /39	•	•	•		•		•	
VR710; VR765 /58	•	•	•		•		•	
VR810/02	•	•		•	•			•
VR810/07	•	•		•	•			•
VR810/16	•	•		•	•			•
VR810/39	•	•		•	•			•
VR910/02	•	•		•		•		•
VR910/07	•	•		•		•		•
VR910/16	•	•		•		•		•
VR910/39	•	•		•		•		•
VR910/58	•	•		•		•		•

(GB)

Technical Data

Mains voltage	
Mains frequency	
Power consumption: with Low Power Standby	
Ambient temperature	
Relative humidity	
Weight	
Fast forward/rewind time	
Position of use	
Video resolution	
Audio	

(D)

Technische Daten

Netzspannung	
Netzfrequenz	
Leistungsaufnahme: Standby mit geringem Verbrauch	
Raumtemperatur	
Relative Luftfeuchtigkeit	
Gewicht	
Vor-/Rückspulzeit	
Betriebslage	
Video-Auflösung	
Audio	

(F)

Caractéristiques

Tension secteur	220 – 240 V
Fréquence	47 – 63 Hz
Puissance absorbée: avec la fonction veille faible consommation	16 W during operation < 4 W
Température ambiante	+10°C to +35°C
Humidité relative	20 – 80 %
Poids	4.3 kg
Temps (re-)bobinage	typ. 95s (E180 cass.)
Position d'emploi	horizontally, max. 15°
Résolution vidéo	≥ 240 lines VHS
Audio SP:	80Hz – 10kHz (±8dB)
Audio LP:	80Hz – 5kHz (±8dB)
FM Audio:	20Hz – 20kHz (±3dB)

(NL)

Technische Gegevens

Netspanning	220 – 240 V
Netfrequentie	47 – 63 Hz
Opgenomen vermogen: met Low Power Standby	16 W during operation < 4 W
Omgevingstemperatuur	+10°C to +35°C
Relatieve vochtigheid	20 – 80 %
Gewicht	4.3 kg
Vooruit/terugspoeltijd	typ. 95s (E180 cass.)
Gebruikspositie	horizontally, max. 15°
Opplossend vermogen	≥ 240 lines VHS
Audio	
Audio SP:	80Hz – 10kHz (±8dB)
Audio LP:	80Hz – 5kHz (±8dB)
FM Audio:	20Hz – 20kHz (±3dB)

(E)

Datos Tecnicos

Tensión de red	
Frecuencia de red	
Consumo de potencia: con standby de bajo consumo	
Temperatura ambiente	
Humedad relativa	
Peso	
tiempo de (re-)bobinado	
Posición de uso	
Resolución video	
Audio	

(I)

Dati Tecnici

Tensione di alimentazione	220 – 240 V
Frequenza di rete	47 – 63 Hz
Potenza assorbita: in attesa a basso consumo	16 W during operation < 4 W
Temperatura ambiente	+10°C to +35°C
Umiditá relativa	20 – 80 %
Peso	4.3 kg
Tempo di (ri-)avvolgimento	typ. 95s (E180 cass.)
Posizione di funzionamento	horizontally, max. 15°
Risoluzione video	≥ 240 lines VHS
Audio SP:	80Hz – 10kHz (±8dB)
Audio LP:	80Hz – 5kHz (±8dB)
FM Audio:	20Hz – 20kHz (±3dB)

Safety instructions

- Safety regulations demand that the set be restored to its original condition and that components identical with the original types be used.

  Safety components are marked by the symbol ⚠

- All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair may reduce life drastically. When repairing, make sure that you are conneted with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools on the same potential.
- A set to be repaired should always be connected to the mains via a suitable isolating transformer.
- Never replace any modules or any other parts while the set is switched on.
- Use plastic instead of metal alignment tools. This in order to prelude short-circuit or to prevent a specific circuit from being rendered unstable.

Remarks

- The direct voltages and oscillograms ought to be measured relative to the set mass.
  EXCEPTION
  At the power supply, the DC voltages and the oscillograms at the primary side are measured to LIVE GND.
- The direct voltages and oscillograms mentioned in the diagrams ought to be measured with a colour bar signal and the picture carrier at 503.25 MHz (C25).
- The oscillograms and direct voltages have been measured in RECORD or PLAY mode.
- The semiconductors, which are mentioned in the circuit diagram and in the parts lists, are fully exchangeable per position with the semiconductors in the set, irrespective of the type designation of these semiconductors.

Sicherheitshinweise

- Die Sicherheitsvorschriften erfordern es, daß sich das Gerät nach der Reparatur in seinem originalen Zustand befindet und daß die zur Reparatur benutzten Ersatzteile mit den Originalersatzteilen identisch sind.

  Sicherheits-Bauteile sind mit der Markierung ⚠ versehen

- Alle IC's und Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD). Unvorschriftmässige Behandlung von Halbleitern im Reparaturfall kann zur Zerstörung dieser Bauteile oder zu einer drastischen Reduzierung der Lebensdauer führen. Sorgen Sie dafür, daß Sie sich im Reparaturfall über ein Armband mit Widerstand auf dem gleichen Potential, wie die Masse des Gerätes befinden. Alle Bauteile, Werkzeuge und Hilfsmittel sind auf das gleiche Potential zu legen.
- Ein zu reparierendes Gerät ist immer über einen Trenntransformator an die Netzspannung anzuschließen.
- Bei eingeschaltetem Gerät dürfen keine Module oder sonstige Einzelteile ausgetauscht werden.
- Zum Abgleich sind ausschließlich Kunststoffwerkzeuge zu benutzen (keine Metallwerkzeuge verwenden). Dadurch wird vermieden, daß ein Kurzschluß entstehen kann oder eine Schaltung instabil wird.

Anmerkungen

- Die Gleichspannung und Oszillogramme sind gegen Gerätemasse zu messen.
  AUSNAHME
  Beim Netzteil sind die Gleichspannungen und Oszillogramme auf der Primärseite gegen Live GND gemessen.
- Die Gleichspannungen und Oszillogramme angeführt in den Schaltbildern sollen unter folgenden Bedingungen gemessen werden: Farbbalkensignal, Bildträger auf 503.25 MHz (C25)
- Die Oszillogramme und Gleichspannungen sind in RECORD oder PLAY gemessen. Die in den Stücklisten aufgeführten Bauteile sind positionsweise voll auswechselbar gegen die Bauteile in dem Gerät, ungeachtet der etwaigen Typenbezeichungen.

Avertissements

- Les normes de sécurité exigent qu'aprés réparation l'appareil soit remis dans son état d'origine et que soient utilisées les piéces de rechange identiques à celles spécifiées.

  Les composants de sécurité sont marqués ⚠

- Tout les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharger statiques (ESD). Leur longévité pourrait étre considérablement écourté par le fait qu'aucune précaution n'est prise à leur manipulation. Lors de réparations s'assurer de bien étre relié au méme potential que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité. Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.
- Toujours alimenter un appareil à réparer à travers un transfo d'isolement.
- Ne jamais remplacer les modules ni d'autres composants quand l'appareil est sous tension.
- Pour l'ajustage, utiliser des outils en plastique au lieu d'instruments métalliques. Ceci afin d'éviter les court-circuits et exclure l'instabilité dans certains circuits.

Observations

- La mésure des tensions continues et des oscillogrammes doit se faire par rapport à la terre de l'appareil.
  EXCEPTION
  Sur l'unité d'alimentation la tension continue et l'oscillogramme sont mesurés sur le côte primaire en Live GND.
- La mésure des tensions continues et des oscillogrammes figurant sur le schéma doit se faire dans un signal de barre couleur porteuse image sur 503.25 MHz (C25).
- Les oscillogrammes et tension sont mésurées en mode RECORD ou PLAY.
- Les semi-conducteurs indiqués dans le schéma de principe et à la liste des compostants, sont interchangeables par repère sur ce chassis avec les semi-conducteurs de l'appareil quelle que soit la désignation de type donnée sur ces semi-conducteurs.

Veiligheidsinstructies

- Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, indentiek aan de oorspronkelijke, worden toegepast.

  De veiligheidsonderdelen zijn aangeduid met het symbool ⚠

- Alle IC's en vele andere halfgeleiders zijn gevoelig voor elektrostatische ontladingen (ESD). Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor, dat U tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat. Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.
- Sluit een apparaat dat gerepareerd wordt altijd via een scheidingstransformator aan op de netspanning.
- Verwissel nooit modules of andere onderdelen terwijl het apparaat is ingeschakeld.
- Gebruik voor het afregelen plastic i.p.v metalen gereedschap. Dit om mogelijke kortsluiting te voorkomen of een bepaalde schakeling instabiel te maken.

Opmerkingen

- De gelijksspanningen en oscillogrammen dienen gemeten te worden ten opzichte van de apparaat aarde.
- De gelijksspanningen en oscillogrammen vermeld in de schema's dienen gemeten te worden met een kleurbalkensignaal beelddraaggolf op 503.25 MHz (C25).
- De oscillogrammen en gelijksspanningen zijn in RECORD of PLAY mode gemeten.
- De halfgeleiders, die in het pricipeschema en in de stuklijsten, zijn vermeld, zijn per positie volledig uitwisselbaar met de halfgeleiders in het apparaat, ongeacht de typeaanduiding op deze halfgeleiders.

Avvertimenti

- Le prescrizioni di sicurezza richiedono che l'apparecchio sia ricondotto alle condizioni originali e che siano usati ricambi originali.

  Componenti di sicurezza sono marcati con ⚠

- Tutti gli IC e semiconduttori sono sensibili a scariche elettrostatiche (ESD). Noncuranze durante la riparazione di semiconduttori possono danneggiarli o condurre ad una riduzione drastica della durata. Durante la riparazione assicurarsi di essere collegati allo stesso potenziale attraverso un bracciale di protezione contro scariche elettrostatiche. Inoltre tenere anche tutti i componenti e gli attrezzi a questo potenziale.
- Apparecchi da riparare bisogna collegarli sempre via un trasformatore isolante (separatore) alla tensione normale.
- Non scambiare moduli o altri componenti quando l'apparecchio è in funzione.
- Per l'accordo usare soltanto attrezzi di plastica (non usare attrezzi metallici). Cosí si evitano cortocircuiti e collegamenti instabili.

Osservazioni

- Misurare le tensioni continue e gli oscillogrammi riferiendosi alla massa dell'apparecchio.
  ECCEZIONE
  Le tensioni continue e gli oscillogrammi dall'alimentatore sono misurati sulla parte primaria contro GND-Live.
- Le tensioni continue e gli oscillogrammi indicati negli schemi di collegamento devono essere misurati secondo le condizioni seguenti: segnale barre colore, portante dell'immagine su: 503.25 MHz (C25).
- Gli oscillogrammi e le tensioni continue sono misurati in RECORD o PLAYBACK.
- I componenti indicati nelle liste sono intercambiabili con quelli nell'apparecchio nonostante l'eventuale denominazione di modelli.

Avisos

- Las instrucciones de seguridad exigen que después de la reparación el aparato se encuentre en el estado original y que las piezas de repuesto, utilizadas para la reparación, sean idénticas a las originales.

  Los componentes de seguridad estan marcados con ⚠

- Todos los IC y semiconductores son sensibles a descargas electrostáticas (ESD). Un tratamiento no conforme a las instrucciones de semiconductores en caso de reparación, podría llevar a la destrucción de estos componentes, o a una reducción drástica de la duración. Tenga cuidado de que, en caso de reparación, estar al mismo potencial que la masa del aparato, por una pulsera con resistencia. Ponga todos los componentes, herramientas y recursos al mismo potencial.
- Para reparar un aparato hay que conectarlo siempre a la alimentación a traves de un transformador de aislamiento.
- Cuando un aparato está en marcha no pueden ser cambiados módulos u otras piezas de repuesto.
- Para los ajustes hay que utilizar exclusivamente herramientas de plástico (nunca herramientas metálicas). Así se evitaran cortocircuitos y circuitos inestables.

Notas

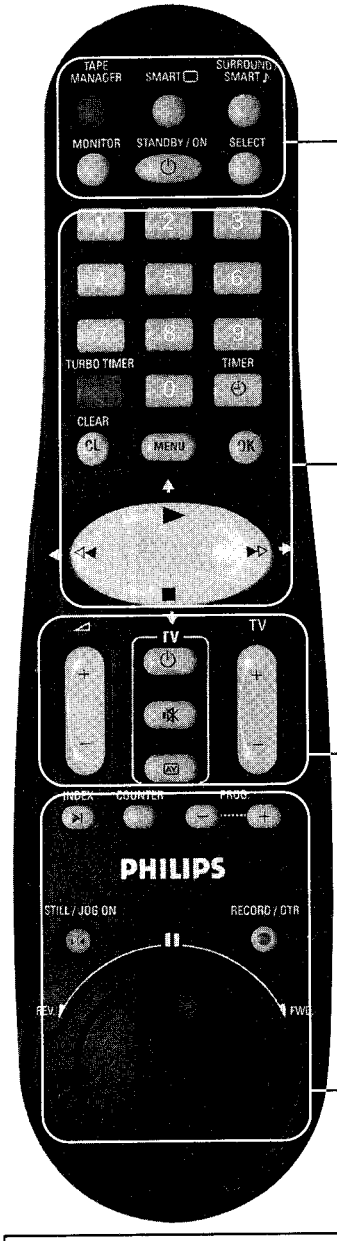
- Hay que medir las tensiones continuas y los oscilogramas contra la masa del aparato.
  UITZONDERING:
  Bij het netgedeelte zijn de gelijkspanningen en oscillogrammen aan de primaire kant tegen Live GND gemeten.
- Las tensiones continuas y los oscilogramas mencionados en los esquemas tienen que ser medidos de manera siguiente: señal barra de color portadora de imagen en 503.25MHz (C25)
- Los oscilogramas y las tensiones continuas son medidas en „RECORD" y „PLAYBACK"
- Los componentes mencionados en las listas se los puede cambiar por los componentes en el aparato, a pesar de eventuales designaciones de tipos.

Table of contents

Remote control

You will find explanations for the controls and the displays on your video recorder on the second to last page of these operating instructions.

TIP



TAPE MANAGER ➤ Activate / deactivate Tape Manager
SMART ➤ Select picture adjustment
SURROUND/SMART ➤ Select sound setting
MONITOR ➤ Change between TV reception and video recorder reception

STANDBY/ON ➤ Switch set on / off
➤ Interrupt function
➤ Interrupt programmed recording

SELECT ➤ Select function

0-9 ➤ Enter data
➤ Select programme number

TURBO TIMER ➤ Programme Turbo Timer recordings
TIMER ➤ Programme recordings
➤ Check / change recordings
➤ Delete recordings

CLEAR (CL) ➤ Delete TV channel / entry
MENU ➤ Switch main menu on / off
OK ➤ Store
➤ Confirm

↑ / ► ➤ Play back recorded cassette
➤ Select next menu point
➤ Select next programme number

↓ / ■ ➤ Stop tape
➤ Select previous menu point
➤ Select previous programme number

← / ◄◄ ➤ Select entry field
➤ In STOP or STANDBY mode: Rewind
➤ In playback mode: Fast reverse

→ / ►► ➤ Select entry field
➤ In STOP or STANDBY mode: Wind forward
➤ In playback mode: Fast forward

TV functions

+ TV - ➤ Increase / reduce TV volume
TV / ⏻ ➤ Switch TV on / off
TV / 🔇 ➤ Switch TV sound on / off
TV / AV ➤ Change programme number "E 1" to scart socket **AV1 EXT1**
➤ Select next / previous programme number

INDEX ▶| ➤ With ◄◄ or ►►: Searching for index marking

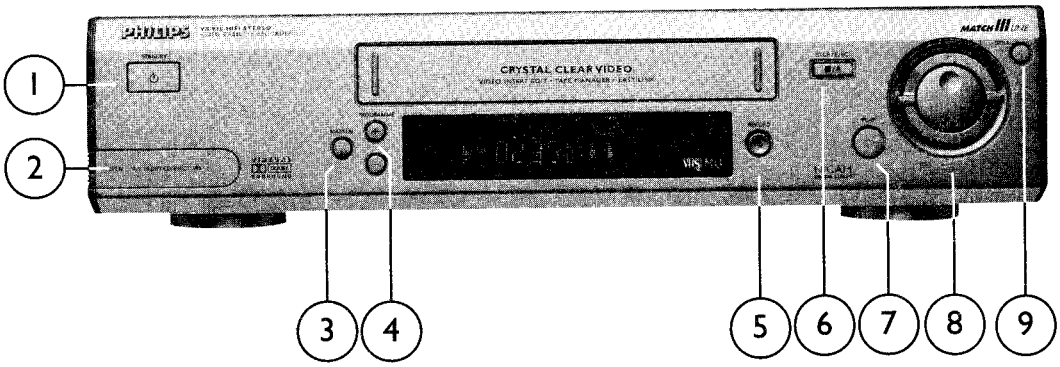
COUNTER ➤ Display picture position
STILL / JOG ON |◄◄ ➤ Activate / deactivate Jog and Shuttle on the remote control
➤ Stop tape and show still picture

RECORD/OTR ● ➤ Starting recording manually

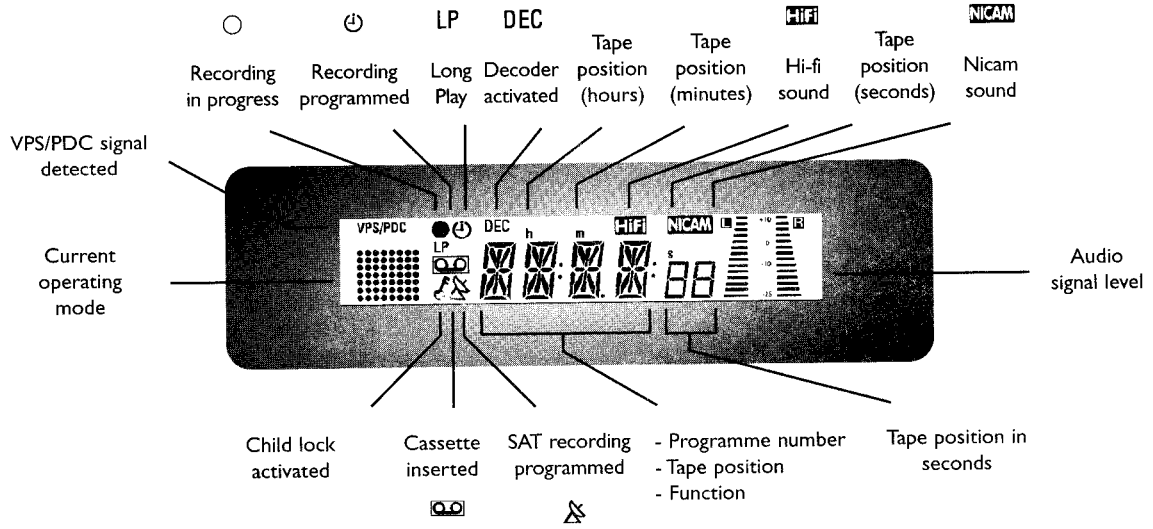
Accessories

- ✔ Operating instructions
- ✔ Quick Start Guide
- ✔ Remote control
- ✔ Batteries
- ✔ Aerial cable
- ✔ Mains cable
- ✔ Scart cable
- ✔ Coaxial cable (2x)

Video recorder / display



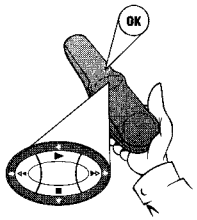
1 STANDBY/ON ⏻	➤ Switch set on/off
	➤ Interrupt function
	➤ Interrupt programmed recording
2 AUDIO/VIDEO IN	➤ Connecting the Camcorder, video recorder, sound source (Programme number "AUX" or "03")
3 MANUAL	➤ Manual mute
4 PROGRAMME - / +	➤ Select previous/next programme number/menu point
5 RECORD ●	➤ Record
6 STOP/EJECT ■/⏏	➤ During playback: Stop tape
	➤ In stop or standby mode: Eject tape
7 PLAY ▷	➤ Playback recorded cassette
8 ◁◀	➤ In stop or standby mode: Rewind tape
	➤ During playback: Reverse picture search
▶▷	➤ In stop or standby mode: Forward wind tape
	➤ During playback: Forward picture search
9 STILL ▶‖◀	➤ Still picture / slow motion



3 Initial installation

Setting channel, date and time for the first time

If your TV set supports the Easylink function and you have already corrected and/or confirmed the settings for year, month, date and time, you can skip this section. Your video recorder has already stored all the necessary details. Please continue by reading the sub-section "Searching for a TV channel manually".



1. Using the **OK** button activate the automatic initial installation

"Aim" correctly

Always point the remote control at the video recorder and not at the TV set.

TIP

2. The set seeks out and stores all available TV channels as well as time and date. This procedure may take several minutes.

```
AUTOINSTALL

YOUR VIDEO RECORDER IS NOW
SEARCHING FOR ALL AVAILABLE
TV CHANNELS

01 TV CHANNELS FOUND

■■■■_____

PLEASE WAIT
```

✘ **Despite a continued search the video recorder finds no TV channels ("00 TV CHANNELS FOUND")**

✔ Please be patient! The video recorder will search through the entire frequency range in order to identify the maximum possible number of available TV channels. TV channels transmitted in your country may use a higher frequency band. As soon as this range is reached, the video recorder will find all available channels.

PROBLEM

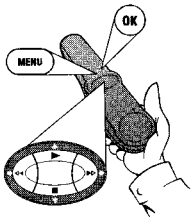
3. The initial setting of channel, date and time is completed

```
AUTOINSTALL


AUTOINSTALL COMPLETE
32 TV CHANNELS FOUND


TO EXIT
PRESS MENU
```

The Teletext clock resets automatically

If a TV channel which has Teletext is stored as programme number P01, the video recorder automatically takes in the date and time from the text function. The change from summer to winter time and vice versa should also occur automatically.

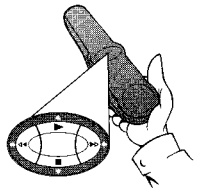
TIP




```
MAIN MENU

↔ PLAY FUNCTIONS          →
↓ RECORDING FUNCTIONS
  SPECIAL SETTINGS
  INSTALLATION


                TO EXIT
                PRESS MENU
```

```
MAIN MENU
 INSTALLATION

↔ AUTOINSTALL             →
↓ FOLLOW TV
  MANUAL SEARCH
  TV CHANNEL ALLOCATION
  OPTIMIZE MODULATOR
  TIME/DATE


                TO EXIT
                PRESS MENU
```

```
INSTALLATION
 MANUAL SEARCH

↔ CHANNEL/FREQ.  ← FREQ.  →
↓ ENTRY/SEARCH     543.3
  PROGRAMME NUMBER 01
  TV CHANNEL NAME  BBC1
  DECODER          OFF
  FINE TUNING      0


                TO EXIT
                PRESS MENU
```



Searching for a TV channel manually

In exceptional cases, it may happen that on initial installation the set does not find all the available TV channels. In this case, the missing TV channels must be searched for and stored manually. If your set supports the Easylink function, you can start the automatic transfer of channel data by means of the following steps.

1. Switch on the TV set and - if necessary - select the programme number set for video recorder operation

2. Press the **MENU** button on the remote control. The on-screen menu appears

What is an on-screen menu?

The on-screen menu takes the mystery out of using your new video recorder. All settings and recording steps can be done easily via the on-screen menu by following the corresponding instructions on the screen.

PARDON?

3. Use ↓ or ↑ to select the option "INSTALLATION" and confirm with →

4. Use ↓ or ↑ to select the option "MANUAL SEARCH" and confirm with →

5. Use ↓ or ↑ to select the option "CHANNEL/FREQ." and use → or ← (or **0-9**) to select the type of display desired.

What is hidden behind the settings?

"FREQ.":	The frequency display
"CH":	The channel display
"S-CH":	Entering a special channel

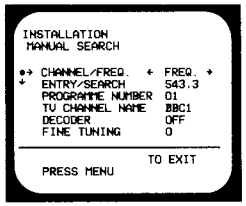
TIP

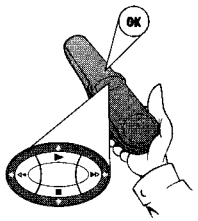
What is a channel, or a special channel?

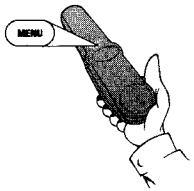
TV channels are transmitted on precisely-defined frequency ranges. These ranges are also referred to as "channels". Each channel has its own TV station allocated to it. Most cable and satellite TV providers supply tables of channel allocations. Special channels (hyperband channels) are transmitted on special frequencies.

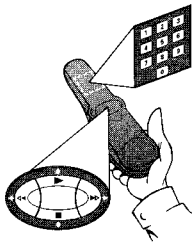
PARDON?

6. If you already know the frequency or the channel of the TV station you are searching for, use ↓ or ↑ to select the option "ENTRY/SEARCH" and enter the frequency or the channel with the number buttons **0-9**









✘ **I don't know the channels for my TV stations**

✔ No problem. Hold down the button → to start the automatic channel search. A changing channel number will appear on screen. Continue the automatic channel search until you have found the desired TV station

7. Use ↓ or ↑ to select the option "PROGRAMME NUMBER" and use → or ← (or **0-9**) to select the programme position where you wish to store the TV station you have found

✘ **I cannot find the TV channels from my satellite receiver**

✔ These do not have to be stored as actual TV channels. On your video recorder, select programme number "☐☐". Individual TV channels must be selected on the actual satellite receiver itself

8. Store the TV channel you have found with the button **OK**. The screen will show the message "STORED"

9. Finish manual searching of TV channels by pressing the **MENU** button or return to step 6 to allocate additional TV channels

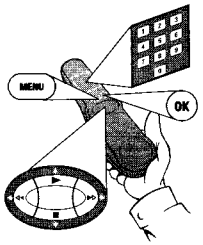
Allocating decoder

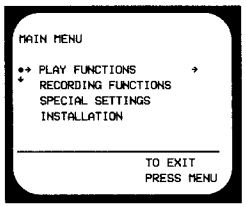
If your TV set supports the Easylink function you must allocate the decoder directly to the TV set. If necessary, you should refer to the instructions for your TV set for assistance. If your TV set does not support the Easylink function you must allocate the decoder to the TV set in the following manner.

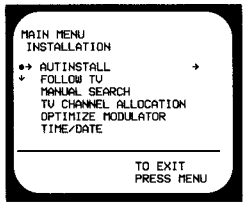
1. Use ↓ and ↑ or the number keys **0-9** to select the TV channel, which will in future be automatically decoded by your decoder

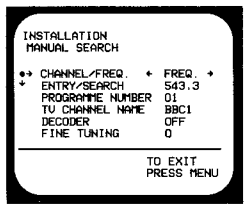
What is a decoder?

Like a deciphering machine, a decoder (available in TV and video stores) deciphers the TV channels for which additional charges must be paid. Without the appropriate decoder, you will receive these TV channels distorted.









2. Press the **MENU** button. The on-screen menu appears

What is an on-screen menu?

The on-screen menu takes the mystery out of using your new video recorder. All settings and recording steps can be done easily via the on-screen menu by following the corresponding instructions on the screen.

3. Use ↓ **or** ↑ to select the option "INSTALLATION" and confirm with button →

4. Use ↓ or ↑ to select the option "MANUAL SEARCH" and confirm with button →

5. Use ↓ or ↑ to select the option "DECODER" and use → or ← to select the setting "ON" (Decoder activated) or "OFF" (Decoder deactivated)

6. Confirm with **OK** and leave the on-screen menu with the **MENU** button. The screen will briefly show the message "STORED"

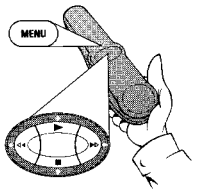
Check decoder allocation at a glance

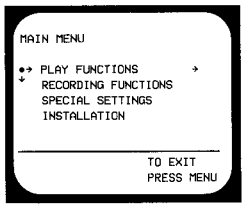
There is no need to call up the on-screen menu to check to which TV channel on the video recorder a decoder is allocated. Simply use ↓ and ↑ to select a TV channel. If "DEC" appears in the display, a decoder is allocated to this channel.

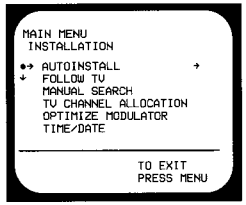
Using a satellite receiver

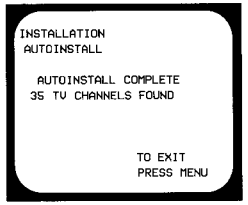
Those TV channels which are received via a satellite receiver connected (to the scart socket **AV2 EXT2**) can be viewed on the video recorder on programme number "☐☐". Press the number button **0** on the remote control and then the button ↓ to select this programme number. The TV channels of the satellite receiver are selected not on the video recorder itself, but directly on the satellite receiver.

4 Settings









Searching for TV channels automatically

On initial installation, the video recorder performs an automatic channel search. If the channel assignments of your cable or satellite TV provider change or if you are reinstalling the video recorder, e.g. after moving house, you can start this procedure again. The video recorder finds all the available TV channels and stores the new settings. If your set supports the Easylink function, you can start the automatic transfer of channel data by means of the following steps.

1. Switch on the TV set and - if necessary - select the programme number set for video recorder operation
2. Press the **MENU** button on the remote control. The on-screen menu appears
3. Use ↓ or ↑ to select the option "INSTALLATION" and confirm with →
4. Use ↓ or ↑ to select the option "AUTOINSTALL" (automatic channel search) and confirm with →
5. The set seeks out and stores all available TV channels. This procedure may take several minutes
6. End the automatic channel search with the **MENU** button

Sequence of TV channels

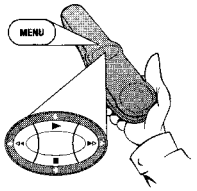
TV channels are stored in the following sequence: BBC1, BBC2, ITV, CH 4, CH 5, others.

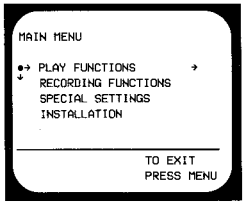
TIP

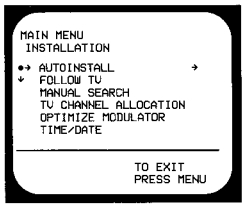
✘ **The video recorder is not finding all the TV channels**

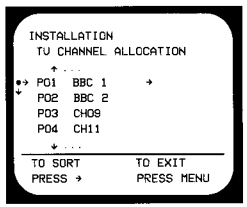
✔ In exceptional cases, it may happen that the set does not find all the available TV channels. In this case, the missing TV channels must be searched for and stored manually. You can look up how to do this in the chapter "Initial installation" ("Searching for a TV channel manually").

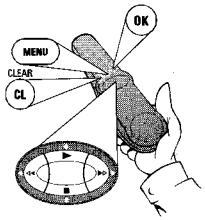
PROBLEM







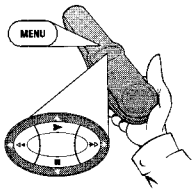


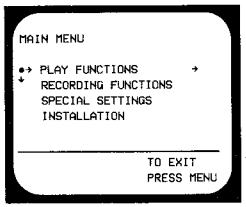


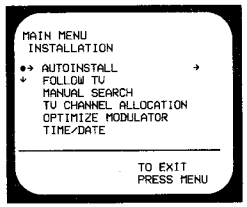
Sorting and clearing of TV channels manually

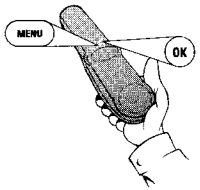
After you have performed the automatic channel search you may not agree with the sequence in which the individual TV channels have been allocated to the programme positions of the video recorder. You can use this function to individually sort the TV channels found or to delete unwanted TV channels or those with poor reception. If your TV set supports the Easylink function, you will not need to rearrange the TV channels later. The sequence corresponds to the channel allocation of your TV set.

1. Switch on the TV set and - if necessary - select the programme number set for video recorder operation
2. Press the **MENU** button on the remote control. The on-screen menu appears
3. Use ↓ or ↑ to select the option "INSTALLATION" and confirm with →
4. Use ↓ or ↑ to select the option "TV CHANNEL ALLOCATION" and confirm with →
5. Use the buttons ↓ or ↑ to select the TV channel which is to be allocated to a programme position and confirm with →
6. **Delete:** Delete the TV channel which has been set with **CLEAR (CL)**
   Sorting: Allocate the selected TV channels with the buttons ↓ or ↑ to the desired programme position and confirm with ←
7. Repeat the steps 5 and 6 to allocate additional TV channels or to delete additional unwanted TV channels
8. Use **OK** to store and finish the manual sorting/clearing of TV channels with the **MENU** button (the screen will show the message "STORED")









Sorting TV channels automatically (Follow TV)

After you have performed the automatic channel search you may not agree with the sequence in which the individual TV channels have been allocated to the programme positions of the video recorder. With this function, the video recorder arranges the stored TV channels in the same sequence as on the TV set. If your TV set supports the Easylink function, you will not need to rearrange the TV channels later. The sequence corresponds to the channel allocation of your TV set.

How does "Follow TV" function?

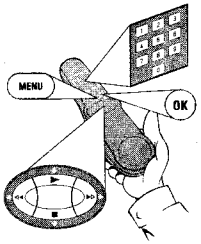
The video recorder compares the TV channels stored on the TV set at programme position 01 with its own programme position memory. If it finds a match, it also allocates the corresponding TV channel to programme position 01

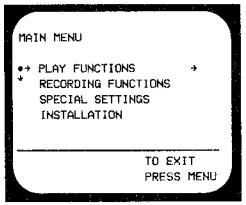
1. Switch on the TV set and - if necessary - select the programme number set for video recorder operation
2. Press the **MENU** button on the remote control. The on-screen menu appears
3. Use ↓ or ↑ to select the option "INSTALLATION" and confirm with →
4. Use ↓ or ↑ to select the option "FOLLOW TV" and confirm with →
5. Press **OK**. The display will show "TV 01".
6. On the TV set select the corresponding programme number ("01") and confirm with **OK** on the remote control of the video recorder
7. The video recorder stores the TV channel on the programme number "01". The display will show "TV 02". Repeat step 6 until all available TV channels are allocated

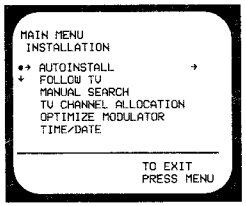
✘ **The screen will show "NOTV"**

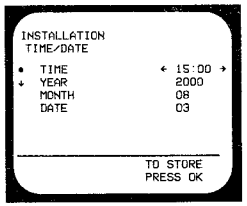
✔ Unfortunately your TV set does not support this function. Please read "Sorting / deleting channels manually ".

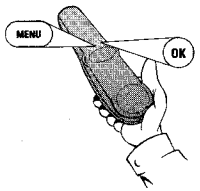
8. Finish with the **MENU** button











Changing the time and date

If the display shows an incorrect time or "--:--", the time and date must be set manually.

1. Press the **MENU** button on the remote control. The on-screen menu appears
2. Use ↓ or ↑ to select the option "INSTALLATION" and confirm with →
3. Use ↓ or ↑ to select the option "TIME/DATE" and confirm with →

Enter the values correctly

Numbers less than 10 must be entered with an additional "0". For "9" thus "09" should be entered.

4. Use ↓ or ↑ to select the option "TIME" and - if the displayed setting is incorrect - enter the current time with the number buttons **0-9** or with → or ←
5. Use ↓ or ↑ to select the option "YEAR" and - if the displayed setting is incorrect - enter the current year with the number buttons **0-9** or with → or ←
6. Use ↓ or ↑ to select the option "MONTH" and - if the displayed setting is incorrect - enter the current month with the number buttons **0-9** or with → or ←
7. Use ↓ or ↑ to select the option "DATE" and - if the displayed setting is incorrect - enter the current date with the number buttons **0-9** or with → or ←
8. Check the settings displayed for year, month, date and time and store them by pressing **OK**. The display will show "STORED"
9. Leave the on-screen menu with the **MENU** button

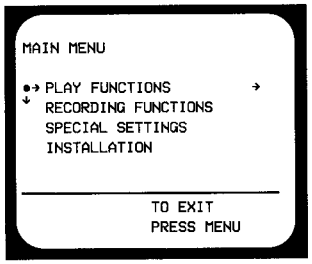
5 Operating instructions

General information

Switching on	If the video recorder is in standby mode, it can be switched on either by pressing the Standby button ⏻, by pressing one of the number buttons 0-9 or by inserting a cassette.
Automatic switch-off	If the video recorder is not used for several minutes, it switches itself off automatically. This function can be deactivated (e.g. if you want to use the video recorder as a TV receiver). You can find out more about this in the chapter "Other functions" ("Adjusting automatic switch off").
Energy consumption	The video recorder should always be connected to the mains so as not to affect programmed recordings and use of the TV set. Power consumption (in energy saving mode) is less than 4W.
Saving energy	In standby mode, the display of the video recorder shows the current time. This display can be deactivated manually, in order to reduce power consumption to a minimum in standby mode. You can find the necessary steps in the section "Other functions" ("Energy-saving mode").
Emergency exit	The video recorder and the remote control have the option of an "Emergency exit". You can use the Standby button ⏻ to interrupt any step during use. But even without an "emergency brake" your new video recorder is safe: there is no risk whatsoever of damaging the set by performing user steps incorrectly.
In the event of a power cut	Channel data are stored for around 1 year, time and timer data remain in the memory of the video recorder for around 7 hours.

Navigation in the main menu

You can check and / or change many functions and settings of your video recorder via the main menu. The individual functions are selected as follows via the on-screen menu of the video recorder



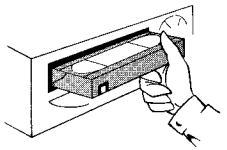
Call up:	**MENU**
Select:	↑ and ↓ or →
Confirm:	**OK**
Enter:	**0-9**, or → and ←
Interrupt:	**STANDBY/ON** ⏻
Abandon:	**MENU**

6 Tape Manager (TM)

Adding a cassette to the Tape Manager

What is a Tape Manager (TM)?

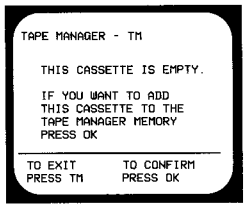
This databank, which is integrated in your video recorder, makes a note of all recordings performed with this set. This means that by simply pressing a button, you can not only access an overview of your entire video collection, you will also know which film is on which cassette or how many minutes of this cassette have not yet been recorded on. And: At the touch of a button, the video recorder automatically winds backward or forwards to the start of a recording or to a blank part of the tape.



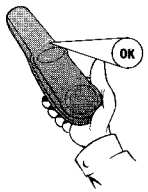
1. Switch on the TV set and - if necessary - select the programme number set for video recorder operation
2. Insert a blank cassette which is ready for recording

Never use cassettes which have already been recorded on.

Warning: Only blank cassettes or those already included in the Tape Manager can be managed by the Tape Manager. Recordings made by other video recorders (without the Tape Manager function) will not be recognised by the Tape Manager.



3. The inserted cassette will be searched for existing Tape Manager titles
4. The screen will show the message "THIS CASSETTE IS EMPTY."



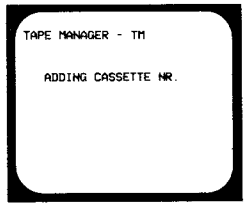
✘ **I can see a cassette number and an overview of the recordings on it.**

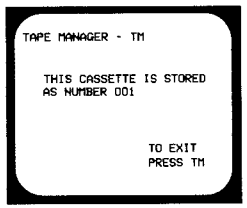
✔ You have inserted a cassette which has already been included in the Tape Manager and contains a recording. If there is still enough blank playing time on it, you can use this cassette for the current recording.

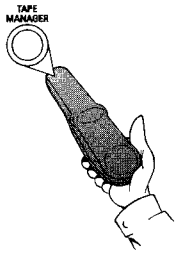
✘ **I cannot see any information about the content of the inserted cassette**

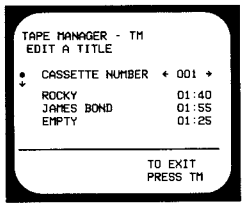
✔ Then it is a cassette which has been recorded by a different video recorder. This cassette cannot be included in the memory of the Tape Manager.

5. Press **OK** to allocate this cassette to the Tape Manager.









6. The cassette will be assigned a number. Please write this number on the cassette accordingly. The Tape Manager may ask you, when searching for blank parts of a tape or for existing recordings, to insert the cassette with this number
7. The cassette is ejected. The video recorder will immediately recognise that this cassette is included in the Tape Manager. In future, after insertion, the number and cassette content will automatically be displayed on the screen
8. Finish with the button **TAPE MANAGER**

Tape Manager can manage up to 150 cassettes

Up to 150 cassettes or up to 210 recording titles can be managed in the memory of the Tape Manager.

TIP

Edit recording title

What is a recording title?

Each cassette entered in the Tape Manager has a "List of contents" that displays all the recordings on it. It shows the recording title and the duration of the corresponding recording. Some TV stations transmit the title of a programme. In this case, the title will be included automatically (e.g. "ROCKY"). If the title is not transmitted, only the date and time of the recording will appear in the list of contents. The title of the recording can only be changed after the completed recording has been entered. To do this, it is not necessary to insert the corresponding cassette.

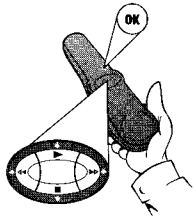
PARDON?

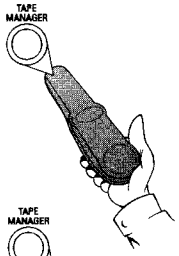
1. On the remote control, press the button **TAPE MANAGER**
2. Use ↓ or ↑ to select the option "EDIT A TITLE" and confirm with →
3. The list of contents of a cassette included in the Tape Manager will be shown on the screen

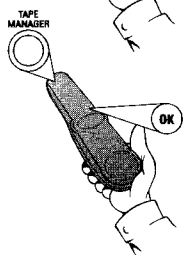
Display correct list of contents

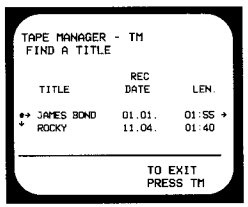
If there is a cassette in the video recorder which is included in the Tape Manager, the list of contents of this cassette will be displayed automatically.

TIP









4. Select - if necessary - using → **or** ← the number of the cassette whose list of contents is to be revised
5. Use ↓ or ↑ to select the recording title which you want to revise, and confirm with →
6. Use → **or** ← to select the letters / digits to be altered and change them with the buttons ↓ or ↑
7. Store, once all changes have been made, using the button **OK**
8. Go back to step 5, to revise additional recording titles, or finish with the button **TAPE MANAGER**

Searching for recording title

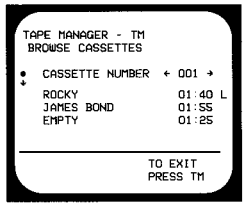
1. On the remote control, press the button **TAPE MANAGER**
2. Use ↓ or ↑ to select the option "FIND A TITLE" and confirm with →
3. A list of all recording titles included in the Tape Manager will be displayed
4. Use ↓ or ↑ to select the recording title which you want to play back, and confirm with **OK**
5. The video recorder winds to the start of the recording selected and starts playback automatically

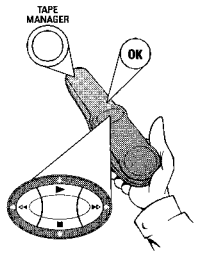
✘ **I can see the message "INSERT CASSETTE NUMBER XXXX"**

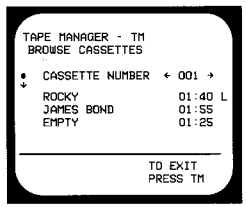
✔ The recording title selected is on the Tape Manager cassette with the number stated ("XXXX"). Please insert the corresponding cassette. The video recorder winds to the start of the selected recording and automatically starts playback.

PROBLEM

6. If you want to end a search after the beginning of the selected recording, press the button **TAPE MANAGER**







Displaying contents of cassette

1. On the remote control, press the button **TAPE MANAGER**
2. Use ↓ or ↑ to select the option "BROWSE CASSETTES" and confirm with →
3. The list of contents of a cassette included in the Tape Manager will be shown on the screen

✘ **I can see the text "THIS CASSETTE" and "TM-MEMORY"**

✔ You have inserted a cassette which is not included in the Tape Manager. Use ↓ or ↑ to select

"THIS CASSETTE"	Search the inserted cassette. Continue with step 5 and confirm with →.
"TM-MEMORY"	Search all cassettes included in Tape Manager. Continue with step 4 and confirm with →.

PROBLEM

4. If necessary, you can use → or ← to page through the catalogue of cassettes included in the Tape Manager
5. **Delete:** Use ↓ or ↑ to select the corresponding recording title "EMPTY" and confirm with **OK**

Finish: Press **TAPE MANAGER**

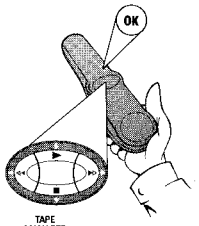
Searching for blank space on tape

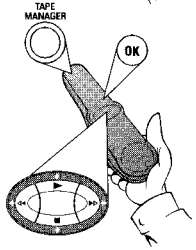
1. On the remote control, press the button **TAPE MANAGER**
2. Use ↓ or ↑ to select the option "BROWSE CASSETTES" and confirm with →
3. The list of contents of a cassette included in the Tape Manager will be shown on the screen

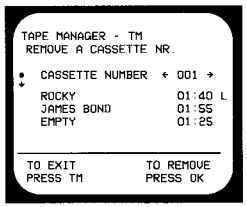
✘ **I can see the text "THIS CASSETTE" and "TM-MEMORY"**

✔ You have inserted a cassette which is not included in the Tape Manager. Use ↓ or ↑ to select "THIS CASSETTE" or "TM-MEMORY" and confirm with →

PROBLEM







4. If necessary, use → or ← to select the number of the cassette which has enough remaining playing time ("EMPTY")
5. Use ↓ or ↑ to select the option "EMPTY" and confirm with **OK**
6. The video recorder winds to the start of the blank space on the tape and stops the tape

✘ **I can see the message "INSERT CASSETTE NUMBER XXX"**

✔ The blank space selected on the tape is in the Tape Manager cassette with the number stated ("XXX"). Please insert the corresponding cassette. The video recorder winds to the start of the blank space on the tape and stops the tape.

PROBLEM

Removing cassette from Tape Manager

Cassettes included in the Tape Manager can be removed from the memory. To do this, the corresponding cassette does not have to be in the video recorder.

1. On the remote control, press the button **TAPE MANAGER**
2. Use ↓ or ↑ to select the option "REMOVE A CASSETTE NR." and confirm with →
3. The list of contents of a cassette included in the Tape Manager will be shown on the screen
4. If necessary, use → or ← to select the cassette number to be removed from the memory of the Tape Manager and confirm with **OK**
5. The screen will show "CASSETTE NUMBER XXX WILL BE REMOVED FROM THE MEMORY". Confirm with **OK** or interrupt with the button **TAPE MANAGER**

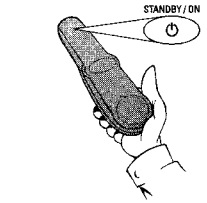
Cassette content will not be deleted!

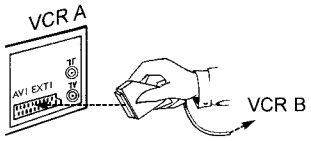
The cassette will only be removed from the memory of the Tape Manager. The content will remain unaltered!

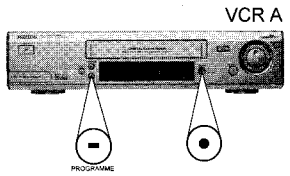
TIP

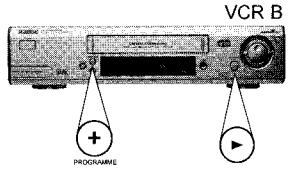
6. Finish with the button **TAPE MANAGER**

Copying Tape Manager memory









If you no longer wish to use a video recorder (henceforth referred to as VCR A), but would still like to use your Tape Manager archive, you can transfer the content of the memory to a second video recorder (henceforth referred to as VCR B). Requirements: 1. VCR B must also be equipped with a Tape Manager System, 2. The memory of the Tape Manager of VCR B must be empty.

1. Make sure there are no cassettes in either of the two video recorders and switch VCR A and VCR B off using the Standby button ⏻
2. Take a scart cable and connect the scart socket **AV1 EXT1** on the back of VCR A with the scart socket **AV1 EXT1** on the back of VCR B
3. On the front of VCR A, press simultaneously the Record button **RECORD** ● and the button **PROGRAMME -**
4. On the front of VCR B simultaneously press the Playback button **PLAY** ► and the button **PROGRAMME +**
5. The data in the Tape Manager will be copied from VCR A to VCR B. This may take several minutes. As soon as the copying procedure has been completed, the display will show "OK"

PROBLEM

✘ **"NO E" appears in the display of VCR B**

✔ Cassettes had already been included in the Tape Manager of VCR B. It is not possible to perform the copying procedure. Press the Standby button ⏻ to finish this function

✘ **"NO I" appears in the display of VCR B**

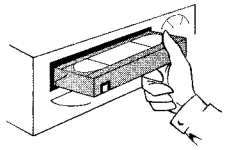
✔ There are no cassettes included in the Tape Manager of VCR A. Press the Standby button ⏻ to finish this function

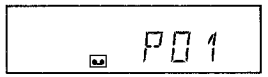
✘ **"ERR" appears in the display of VCR B**

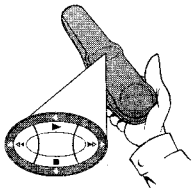
✔ The copying procedure cannot be performed. Perform steps 1 to 5 again

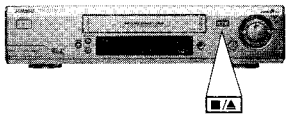
6. Both video recorders switch off automatically. The data in the Tape Manager have been successfully transferred.

7 Playback









Playing cassettes

1. Insert a VHS cassette in the cassette opening on the front of the video recorder. The tape will be caught and automatically placed in the correct position. The display will show " "

What does VHS mean?

The "Video Home System" (VHS) has become the world-wide standard for recording and playback of amateur video cassettes. The popular standard has since been refined. Super-VHS (S-VHS) offers greater sharpness and less noise, Digital-VHS (D-VHS) now only works with digital picture and sound signals. Your video recorder can only record and play standard VHS cassettes.

2. Press the Playback button ► to play the tape

PROBLEM

✘ **Picture / sound quality is poor**

✔ Please read the chapter "Removing picture interference".

✔ When playing many rental videos or older, poorer quality cassettes, it may not be possible to completely filter out picture and sound interference. There is nothing wrong with the video recorder.

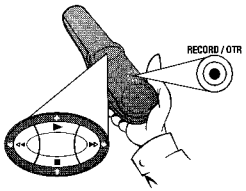
3. Press the Stop button ■ on the remote control (or the Stop/Eject button ■/⏏ on the front of the video recorder) to stop playback
4. Press the Stop/Eject button ■/⏏ on the front of the video recorder to remove the tape

Automatic switch-off

Many functions (pause, still picture, search, ...) switch themselves off automatically after a short time in order to protect the cassette and to save energy.

Playing back NTSC cassettes

If you are using a PAL TV set which is capable of showing a frame frequency of 60 Hz, you can play cassettes which have been recorded on the NTSC standard (USA, Japan, etc.). During an NTSC playback, some special functions (e.g. still picture) are not possible. The display will show "60HZ"

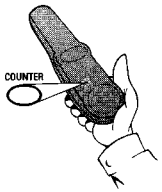


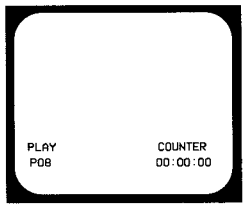
Displaying tape position

If the **COUNTER** button is pressed during playback and recording the current tape position will be briefly displayed on the screen. There are three different types of display available.

1. Start playback (Playback button ▶) or recording (Record button ●)

2. By pressing the button **COUNTER** the current tape position will be displayed on the screen. Each further press of the button **COUNTER** activates the next type of display





What types of display are available to me?

"COUNTER":	The display shows the number of minutes of tape already played after insertion of the cassette (hours/minutes/seconds)
"TIME LEFT":	The display shows the remaining playing time to the end of the cassette (hours/minutes)
"TIME USED":	The actual tape position (from the start of the tape to the present tape position) will be displayed.

3. As soon as the button **COUNTER** has not been pressed for a few seconds, the display of the tape position disappears again.

✘ **The counter stops running when unrecorded places are found ("COUNTER" display type)**

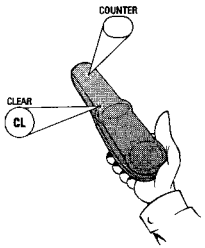
✔ This is normal, and is necessary for technical reasons.

✘ **The display shows a negative playing time**

✔ This may happen, for example, when you insert an incompletely-rewound cassette into the video recorder and rewind it to the start of the tape. Since the display is automatically reset to "00:00:00" when you insert a cassette, the actual start of the cassette for the set is less than zero - thus in the negative range. The tape position is displayed with a minus sign "-".

✘ **After inserting a cassette the video recorder shows no remaining playing time**

✔ The set needs a little time to calculate the remaining playing time. After a few seconds, the display should change from --:-- to the corresponding value



Display / reset tape position

Call up: **COUNTER**

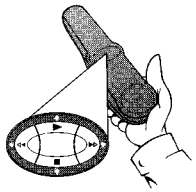
Reset: **CLEAR (CL)** (only in the "COUNTER" display mode)

Automatic reset

Whenever a cassette is inserted the display is automatically reset to "00:00:00".

TIP

Searching for tape position with picture (picture search)



1. During playback press ◁◀ (rewind) or ▶▷ (forward)

2. Interrupt the search wherever you like with the Playback button ▶

Reduced quality

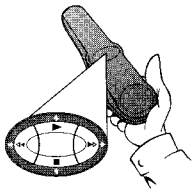
During picture search the picture quality is affected. The sound is switched off.

Different search speeds

If you press ◁◀ or Press ▶▷ twice, the tape speed will increase. Interrupt the search with the Playback button ▶.

TIP

Searching for tape position without picture (forward wind and rewind)



1. Stop the tape with the Stop button ■

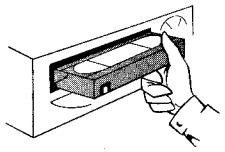
2. Press ◁◀ (rewind) or ▶▷ (forward)

3. Interrupt the search wherever you like with the Playback button ▶

Switching between rewind / forward wind and picture search (instant view)

When winding the tape backwards or forwards if you hold down ◁◀ (rewind) or ▶▷ (forward wind), the set will immediately switch without a break to picture search (with picture). When you release the rewind or forward wind button the rewind or forward wind process (without picture) will continue

Searching automatically for tape position (index search)

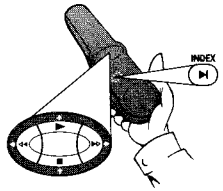


1. Insert a tape recorded on this video recorder or on another set with index marking

What is an index marking?

At the start of each new recording the video recorder automatically places a magnetic marking - similar to a bookmark - at the appropriate place on the tape. These positions can be found again quickly and easily later by pressing a button.

PARDON?



2. Press the Index button ▶| and then |▷▶ (next index marking) or |◀◁ (previous index marking)

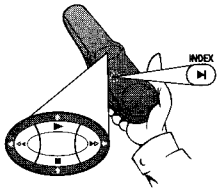
3. The video recorder searches for the desired index marking and automatically switches to playback

✘ **The tape has been stopped**

✔ The video recorder was unable to find an index marking on the tape inserted.

PROBLEM

Finding a blank position on tape automatically



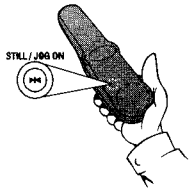
1. Press the Index button ▶| and then the Stop button ■

2. The video recorder searches for the next blank part - longer than one minute - of the tape and automatically switches to pause

✘ **The cassette is ejected**

✔ The video recorder was unable to find any blank space on the tape inserted

PROBLEM



Still picture / slow motion

1. To stop the picture, press the Still button |◀◀ during playback

2. Keep |◀◀ pressed down to play back the picture in slow motion or press |◀◀ several times in succession in order to move the picture forward frame by frame

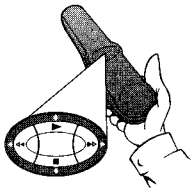
Continue playback

Press the Play button ▶, to continue playback. Press the Stop button ■, to finish playback

TIP

Skipping commercials

Do you get annoyed by the commercial breaks which are recorded along with your programmes? With the function "Commercial Skip" you can skip these quickly and easily.



1. During playback, press button ▶

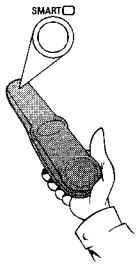
2. The video recorder winds the tape forward for about 2 minutes playing time and then switches to playback again. Repeat step 1 until the end of the commercial break has been reached

Interrupt "Commercial Skip"

During winding, press the button ▶ to switch back immediately to playback.

TIP

Selecting picture setting (Smart Picture)



Using the **SMART** button the picture settings can be displayed and altered. There are four different settings available.

1. Press once on the **SMART** button. The current picture setting will be displayed
2. Press several times on the **SMART** button to change the picture setting. Each time the button is pressed, the next picture setting will be displayed.

What types of picture setting are available to me?

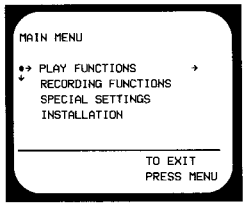
"NATURAL" :	Standard setting (for all types of films)
"DISTINCT" :	Emphasises details (e.g. for sports programmes)
"SOFT" :	Suppression of interference (when using rented cassettes)
"SHARP":	Increase in sharpness (e.g. for animated films)

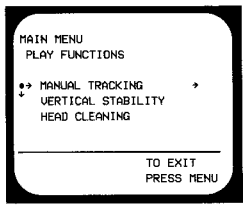
3. As soon as the **SMART** button has not been pressed for a few seconds, the last selected picture setting will be accepted.

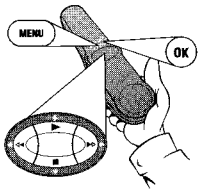
Play compact VHS cassettes

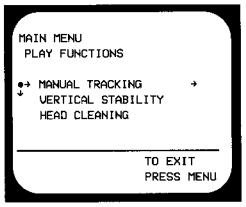
You can, of course, also use this video recorder to play back compact VHS cassettes. To do this, you will need the appropriate cassette adapter. Its dimensions match those of a normal VHS cassette. The adapter is recognised and treated by the set as a VHS cassette

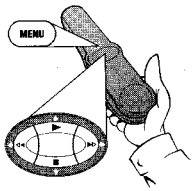
8 Removing picture interference











Optimizing tracking

1. During playback press the **MENU** button on the remote control. The on-screen menu appears
2. Use ↓ or ↑ to select the option "PLAY FUNCTIONS" and confirm with →
3. Use ↓ or ↑ to select the option "MANUAL TRACKING" and confirm with **OK**

What is tracking?

Tracking is the name given to the process of optimizing picture and sound playback. During this process the speed of the tape is adjusted in such a way that all kinds of interference are removed or (in the case of old VHS cassettes) minimised.

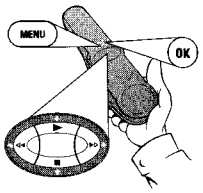
4. Hold down → or ← until optimal playback quality has been achieved and confirm with **OK**. The screen will show "STORED"
5. Leave the on-screen menu with the **MENU** button

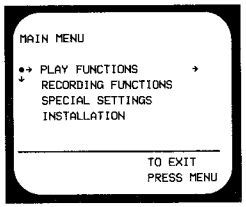
Tracking adjustment is retained

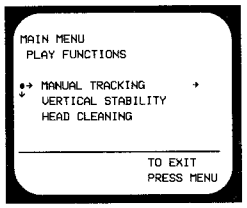
The adjustments made are stored until the cassette is removed. After that, the standard tracking adjustment is restored.

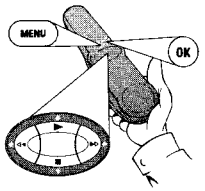
Optimizing still picture

1. When still picture is activated, press the **MENU** button on the remote control. The on-screen menu appears
2. Use ↓ or ↑ to select the option "PLAY FUNCTIONS" and confirm with →
3. Use ↓ or ↑ to select the option "VERTICAL STABILITY" and confirm with **OK**









CLEANING VIDEO HEADS

4. Hold down → or ← until optimal playback quality has been achieved and confirm with **OK**. The screen will show "STORED"

✘ I can't get optimal quality

✔ When using rental cassettes or older tapes, it may not be possible to get rid of all interference completely

PROBLEM

5. Leave the on-screen menu with the **MENU** button

The setting is retained

The adjustments made are stored until the cassette is removed. Then the still picture standard setting is restored.

TIP

Cleaning video heads

If horizontal lines of interference appear during playback, the video heads need cleaning.

1. During playback press the **MENU** button on the remote control. The on-screen menu appears
2. Use ↓ or ↑ to select the option "PLAY FUNCTIONS" and confirm with →
3. Use ↓ or ↑ to select the option "HEAD CLEANING"

Why is it necessary to clean the video heads?

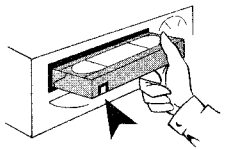
When playing back video tapes, microscopic particles of the tape material build up a layer on the video head. If too much tape material collects, this can affect playback quality. By using the function "Clean video heads", this tape material can be gently removed from the surface of the video heads.

PARDON?

4. Press **OK**, to start the cleaning process. The screen will show "HEAD CLEANING IN PROGRESS"
5. Wait until the message disappears and leave the on-screen menu with **MENU**

9 Manual recording

Starting and stopping of recording manually

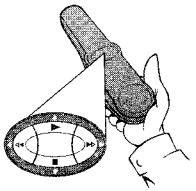


1. Switch on the TV set and - if necessary - select the programme number set for video recorder operation
2. Insert a cassette without erase protection

What is erase protection?

VHS cassettes can be protected from over-recording by breaking off a thin strip of plastic (arrow). This erase protection can be overridden by sticking one or more strips of adhesive tape tightly over the gap which has been created.

PARDON?



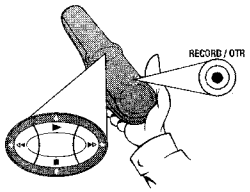
3. Use the buttons ↓ or ↑ to select the programme number, under which your video recorder has stored the desired TV channel

✘ I can't find the TV channels from my satellite receiver

✘ I want to record from an additional device

✔ Signals from additional devices - such as a camcorder, other video recorder, PCs, etc. - are received via the scart socket of the video recorder. The programme numbers "E1" and "E2" are allocated for these sources.

PROBLEM



Selecting the recording speed

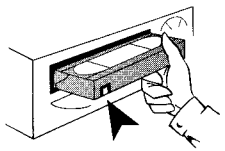
You have the option of two playback and recording speeds: Standard Play (SP) offers the usual first-class picture quality. By using Long Play (LP), you can (with somewhat reduced picture quality) for example record about 360 minutes of programmes on a 180 minute cassette. This chapter explains how to set the desired recording speed ("Selecting the recording speed").

FOR EXPERTS

4. Start recording by pressing the Record button ● (remote control or on front of set). The display will show " ● ".

5. End the recording by pressing the Stop button ■

Starting recording manually / stopping automatically



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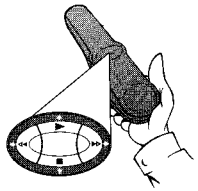

2. Use the buttons ↓ or ↑ to select the programme number, under which your video recorder has stored the desired TV channel

✘ **I can't find the TV channels from my satellite receiver**

✘ **I want to record from an additional device**

✔ Signals from additional devices - such as a camcorder, other video recorder, PCs, etc. - are received via the scart socket of the video recorder. The programme numbers "EE1" and "EE2" are allocated for these sources.

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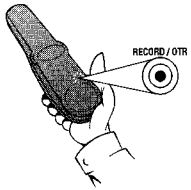
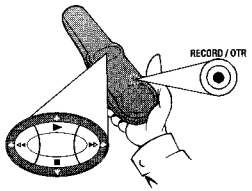
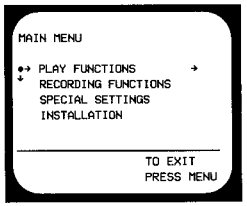


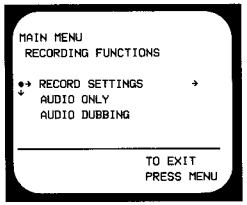
3. Press the Record button ● several times. The time faded in corresponds to the duration of recording to be selected. Each time the Record button is pressed again this is increased in regular steps (30 minutes). Stop the adjustment when you have reached the desired duration. Recording will start.

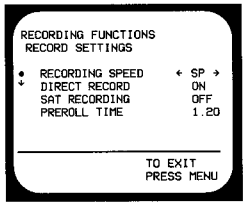
Delete entry

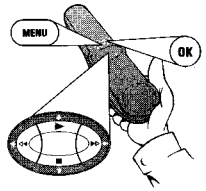
The recording period displayed can be reset to "00:00:00" with the CL button.











Lining up manual recordings

When you add a further recording to a cassette, which already has a recording on it, a short blank (flicker) usually appears between the old and the new recording. This is how to avoid such an effect.

1. Look at the last minute of the old recording (playback)
2. Press the Stop button ■ at the point where you want the new recording to start (the display will show ❚❚)
3. Press the Record button ● in the usual way, to start the new recording

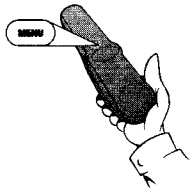
Selecting the recording speed

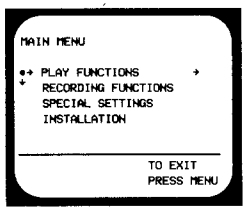
1. Press the **MENU** button on the remote control. The on-screen menu appears
2. Use ↓ or ↑ to select the option "RECORDING FUNCTIONS" and confirm with →
3. Use ↓ or ↑ to select the option "RECORD SETTINGS" and confirm with →
4. Use ↓ or ↑ to select the option "RECORDING SPEED" and use → or ← to select a recording speed

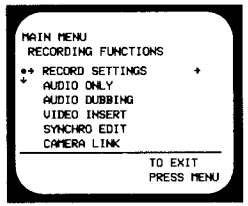
Standard Play / Long Play / Auto Long Play

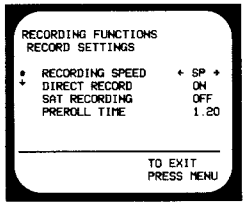
Standard Play (SP) offers the usual, first-class picture quality. By using Long Play (LP), you can (with somewhat reduced picture quality) for example record about 360 minutes of programmes on a 180 minute cassette. With the Auto Long Play (AUTO) setting, the video recorder calculates, before starting the programmed recording, how much playing time remains on the cassette inserted. Depending on the calculated remaining playing time and the duration of the programmed recording, the recording will be made in Standard Play or Long Play.

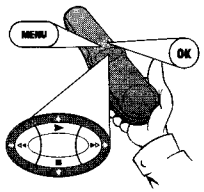
5. Confirm with **OK**. The screen will show "STORED"
6. Stop selection of recording speed with **MENU**











Activate / deactivate direct recording

1. Press the **MENU** button on the remote control. The on-screen menu appears
2. Use ↓ or ↑ to select the option "RECORDING FUNCTIONS" and confirm with →
3. Use ↓ or ↑ to select the option "RECORD SETTINGS" and confirm with →
4. Use ↓ or ↑ to select the option "DIRECT RECORD"

What is a "direct recording"?

The "Direct Record" function means you can record in seconds when the video recorder is switched off. When the Record button is pressed, the video recorder automatically recognises which TV channel has been selected on the TV set and starts to record the corresponding programme.

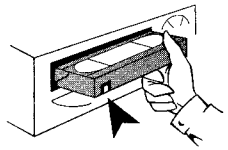
Requirements: 1. The TV set and video recorder are connected with a scart cable! 2. The TV set supports the "Easylink" function. 3. The "Direct Record" function has been activated in the on-screen menu. 4. There is a cassette ready for recording in the machine!

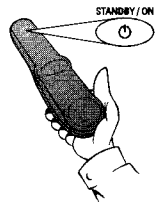
5. Use → or ← to select the setting "ON" to enable direct recordings, or "OFF" to deactivate this function.

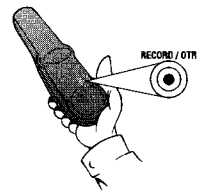
✘ **I cannot select "ON" or "OFF"**

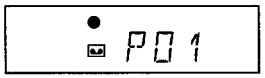
✔ If the comment "N.ACT." appears in the "DIRECT RECORD" option, unfortunately your TV set does not support the "Easylink" function. This means that direct recordings are not possible.

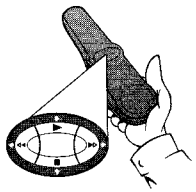
6. Confirm the setting with **OK**. The screen will show "STORED"
7. Leave the on-screen menu with the **MENU** button











Making a direct recording

1. The "Direct Record" function must be activated in the on-screen menu (see previous page). No direct recordings can be made unless this function has been activated

What is a "direct recording"?

The "Direct Record" function means you can record in seconds when the video recorder is switched off. When the Record button is pressed, the video recorder automatically recognises which TV channel has been selected on the TV set and starts to record the corresponding programme.

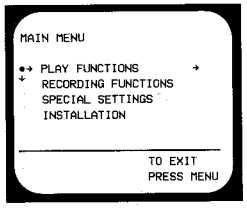
Requirements: 1. The TV set and video recorder are connected with a scart cable! 2. The TV set supports the "Easylink" function. 3. The "Direct Record" function has been activated in the on-screen menu. 4. There is a cassette ready for recording in the machine!

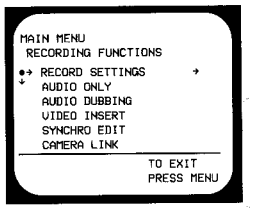
2. Insert a cassette without erase protection

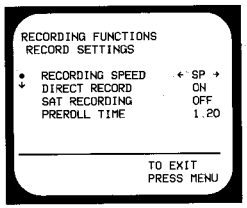
What is erase protection?

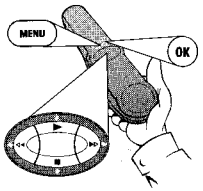
VHS cassettes can be protected from over-recording by breaking off a thin strip of plastic (arrow). This erase protection can be overridden by sticking one or more strips of adhesive tape tightly over the gap which has been created.

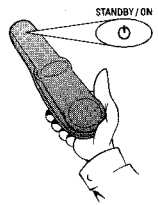
3. Switch off the video recorder with the Standby button ⏻
4. On the TV set, select the channel for the programme you wish to record
5. Press the Record button ● on the video recorder. The video recorder recognises the TV channel on the TV set and automatically records the correct programme
6. End the recording by pressing the Stop button ■











Recording automatically from a satellite receiver

You can only use this function if you have a satellite receiver which can control other devices via a scart cable

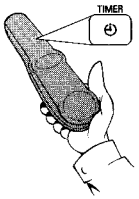
What is a scart cable?

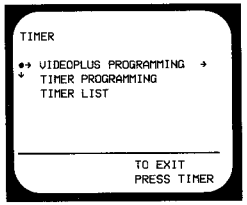
The scart or Euro-AV cable serves as the universal recording and playback connector for picture-, sound- and control signals. With this type of connection, there is practically no loss of quality during the signal transfer. We recommend that you use a scart cable when using this video recorder.

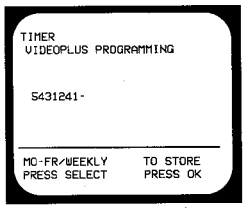
1. Insert a cassette without erase protection
2. Make sure that the satellite receiver is connected to the scart socket **AV1 EXT1** or **AV2 EXT2** at the back of the video recorder
3. Press the **MENU** button on the remote control. The on-screen menu appears
4. Use ↓ or ↑ to select the option "RECORDING FUNCTIONS" and confirm with →
5. Use ↓ or ↑ to select the option "RECORD SETTINGS" and confirm with →
6. Use ↓ or ↑ to select the option "SAT RECORDING" and use → or ← to select the scart socket ("E1" or "E2"), to which the satellite receiver has been connected (see step 2). Confirm with **OK**. The screen will show "STORED"
7. Leave the on-screen menu with **MENU**
8. Programme the data on the satellite receiver for the desired recording. If necessary, you should refer to the instructions for your satellite receiver for assistance.
9. **SWITCH OFF THE VIDEO RECORDER WITH THE STANDBY/ON BUTTON ⏻! IF YOU DON'T DO THIS, THE SET WILL NOT RECORD.**

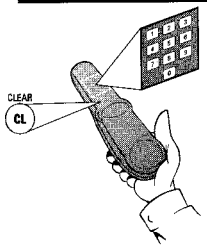
   When automatic recording has been activated by a satellite receiver, "⍙" will light up in the display

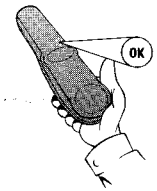
10 Programmed recordings











Programming timer with VIDEO Plus+

1. Press the **TIMER** button ⏲

What is a Timer?

The timer controls the programmed recordings of your video recorder. Requirements for a timer which works correctly: The clock in the video recorder must be correctly set or the reception of the TV signal must be as free from interference as possible (for example, if there is interference, the video recorder might not correctly recognise the VPS signal of a TV channel).

2. Use ↓ or ↑ to select the option "VIDEOPLUS RECORDING" and confirm with →. The VIDEO Plus+ screen will appear.

What is VIDEO Plus+?

A programming system which replaces the often tiresome entry of date, starting time, finish time and programme number by the simple entry of a number up to nine digits long (which can be found in any TV programme listing).

3. Use the **0-9** keys to enter the PlusCode programming number of the TV programme selected: Incorrect entries can be deleted with the button **CL**

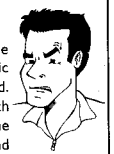
Daily / weekly recordings

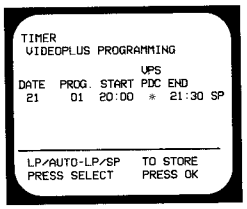
If you like, you can use **SELECT** "MO-FR" for recordings, which are repeated daily (Mon-Fri) or "WEEKLY" for recordings, which are repeated each week on the same day.

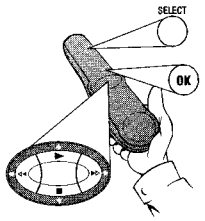
4. Confirm with **OK**

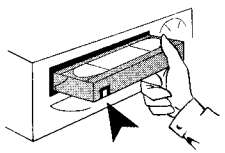
✘ **I get the error message "PROGRAMME NUMBER ← P-- →"**

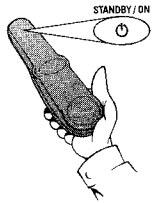
✔ You have entered a correct PlusCode programming number - but automatic recognition of the correct TV channel has failed. Please enter the programme number under which your video recorder has stored the desired TV channel using the buttons **0-9** and confirm with **OK**.











5 The data of previously entered VIDEO Plus recordings are displayed. If necessary select the entry fields with with → or ← and enter date, programme number, start time or end time with ↓, ↑ or **0-9**

Activate VPS/PDC

VPS (Video Programming Service) and PDC (Programme Delivery Control) signals are transmitted by TV channels at the start and end of transmissions and ensure that programmes will be completely recorded, even if they are rescheduled. In the entry field, "START" use **SELECT** to switch recognition of these signals on (*) or off ( ).

Selecting the recording speed

You have the option of two playback and recording speeds: Standard Play (SP) offers the usual first-class picture quality, and with Long Play (LP) you can for example (with somewhat reduced picture quality) record about 360 minutes on a 180-minute cassette. In Auto Long Play (AUTO), the video recorder recognizes how much remaining playing time is available and automatically selects SP or LP. In the entry field "END" use **SELECT** to enter the required setting.

6 Confirm with **OK**. The screen will show "STORED"

7 Insert a cassette without erase protection

What is erase protection?

VHS cassettes can be protected from over-recording by breaking off a thin strip of plastic (arrow). This erase protection can be overridden by sticking one or more strips of adhesive tape tightly over the gap which has been created.

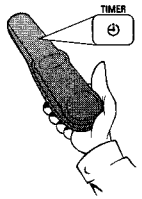
8 SWITCH OFF THE VIDEO RECORDER WITH THE **STANDBY/ON** BUTTON ⏻! IF YOU DON'T DO THIS, THE SET WILL NOT RECORD.

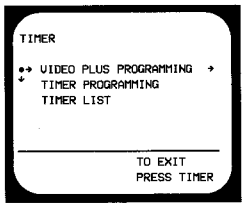
The display will show "⏻"

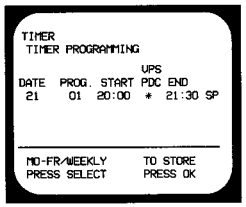
YOU WILL FIND TIPS FOR SOLVING PROBLEMS TO DO WITH **VIDEO PLUS** RECORDING ON THE FOLLOWING PAGE.

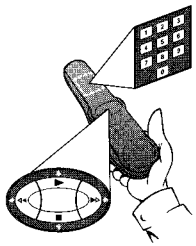
Problem solving (VIDEO Plus-Programming)

PROBLEM	SOLUTION
Error message: "PLUSCODE NUMBER ← P-- →"	A correct PlusCode programming number has been entered - but automatic recognition of the correct TV channel has failed. Please enter the programme number under which your video recorder has stored the desired TV channel using the buttons **0-9** and confirm with **OK**.
Error message: "PLUSCODE NUMBER WRONG"	The Pluscode programming number entered is incorrect. Please repeat the entry or finish with the button **STANDBY/ON** ⏻.
Error message: "WEEKEND PROGRAMMING NOT POSSIBLE"	The attribute "MO-FR" has been selected for a recording at the weekend. This is only possible for recordings from Monday to Friday. Please repeat the entry or finish with the button **STANDBY/ON** ⏻.
Error message: "SWITCH TO STANDBY - TIMER RECORDING"	A recording was programmed, but the video recorder was not switched into timer mode with the Standby button ⏻. Press **STANDBY/ON** ⏻, in order to make the programmed recording. Warning: if you do not do this, the video recorder will not record.
Error message: "NO CASSETTE"	A recording was programmed, but there is no cassette in the machine. Insert a cassette without erase protection ready for recording.
Error message: "MEMORY FULL"	All the available memory locations in your video recorder for timer and VIDEO Plus programming are full. Delete a programmed recording (see chapter "Deleting a programmed recording").
"⏻" and/or "📼" flash in the display of the video recorder	A recording was programmed, but there is no cassette in the machine. Insert a cassette without erase protection ready for recording. A recording was programmed, but the video recorder was not switched into timer mode with the Standby button ⏻. Press **STANDBY/ON** ⏻, in order to make the programmed recording. Warning: if you do not do this, the video recorder will not record.
Cassette is ejected after programming	A cassette with erase protection was inserted. Please deactivate the erase protection or insert another cassette which is ready for recording.
Cassette is ejected during recording	The end of the tape was reached during a programmed recording. The recording could not be completed satisfactorily.
The set cannot be used during recording.	Once started, a recording can only be interrupted by pressing the **STANDBY/ON** button ⏻. WARNING: This will not only stop the recording, but it will also delete the programmed recording from the memory of the video recorder.
Year/month/date/time screen appears	The time has not been set or not set correctly. After entering/confirming year, month, date and time you can continue programming.









Programming timer without VIDEO Plus+

1. Press the button **TIMER** ⏻
2. Use ↓ or ↑ to select the option "TIMER RECORDING" and confirm with →
3. The timer screen appears

Enter the values correctly
Numbers less than 10 must be entered with an additional "0". For "9" thus "09" should be entered.

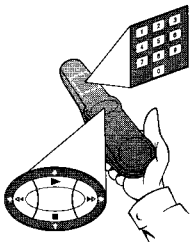
TIP

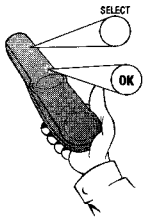
4. Use → or ← to select the entry field "DATE" and use ↓ or ↑ or the number buttons **0-9** to enter the date of the desired recording

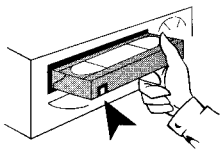
Daily / weekly recordings
If you like, you can use **SELECT** "MO-FR" for recordings, which are repeated daily (Monday-Friday) or "WEEKLY" for recordings, which are repeated each week on the same day.

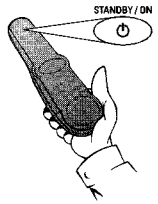
FOR EXPERTS

5. Use → or ← to select the entry field "PROG." and use ↓ or ↑ or the number buttons **0-9** to enter the programme number under which the video recorder has stored the desired TV channel
6. Use → or ← to select the entry field "START" and use ↓ or ↑ or the number buttons **0-9** to enter the start time of the desired recording









Activate VPS/PDC
VPS (Video Programming Service) and PDC signals (Programme Delivery Control) are transmitted by TV channels at the start and end of transmissions and ensure that programmes will be completely recorded, even if they are rescheduled. In the entry field, "START" use **SELECT** to switch recognition of these signals on (*) or off ( ).

FOR EXPERTS

7. Use → or ← to select the entry field "END." and use ↓ or ↑ or the number buttons **0-9** to enter the end time of the desired recording

Selecting the recording speed
You have the option of two playback and recording speeds: Standard Play (SP) offers the usual first-class picture quality, and with Long Play (LP) you can for example (with somewhat reduced picture quality) record about 360 minutes on a 180-minute cassette. In Auto Long Play (AUTO), the video recorder recognizes how much remaining playing time is available and automatically selects SP or LP. In the entry field "END" use **SELECT** to enter the required setting.

FOR EXPERTS

8. Check that the date, programme number, start and finish time are shown correctly on the screen. Confirm with **OK**. The display will show "STORED"
9. Insert a cassette without erase protection

What is erase protection?
VHS cassettes can be protected from over-recording by breaking off a thin strip of plastic (arrow). This erase protection can be overridden by sticking one or more strips of adhesive tape tightly over the gap which has been created.

PARDON?

10. **SWITCH OFF THE VIDEO RECORDER WITH THE STANDBY/ON BUTTON ⏻! IF YOU DON'T DO THIS, THE SET WILL NOT RECORD.**

The display will show "⏻"

YOU WILL FIND TIPS FOR SOLVING PROBLEMS TO DO WITH TIMER RECORDING ON THE FOLLOWING PAGE.

PROBLEM

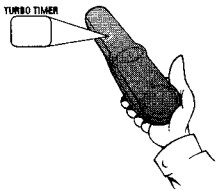
Problem solving (Timer programming)

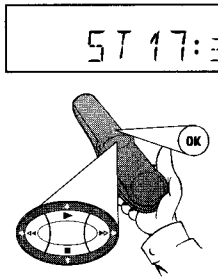
PROBLEM	SOLUTION
Error message: "NO CASSETTE"	A recording was programmed, but there is no cassette in the machine. Insert a cassette without erase protection ready for recording.
Error message: "SWITCH TO STANDBY - TIMER RECORDING"	A recording was programmed, but the video recorder was not switched into timer mode with the Standby button. Press **STANDBY/ON** ⏻, in order to make the programmed recording. Warning: if you do not do this, the video recorder will not record.
"⏻" and/or "⏺" flash in the display of the video recorder	A recording was programmed, but there is no cassette in the machine. Insert a cassette without erase protection ready for recording. A recording was programmed, but the video recorder was not switched into timer mode with the Standby button. Press **STANDBY/ON** ⏻, in order to make the programmed recording. Warning: if you do not do this, the video recorder will not record.
Error message: "MEMORY FULL"	All the available memory locations in your video recorder for timer and VIDEO Plus programming are full. Delete a programmed recording (see chapter "Delete / check / change programmed recordings").
Cassette is ejected during recording	The end of the tape was reached during a programmed recording. The recording could not be completed satisfactorily.
Cassette is ejected after programming	A cassette with erase protection was inserted. Please deactivate the erase protection or insert another cassette which is ready for recording.
The set cannot be used during recording	Once started, a recording can only be interrupted by pressing the **STANDBY/ON** button ⏻. WARNING: This will not only stop the recording, but it will also delete the programmed recording from the memory of the video recorder.
Year/month/date/time screen appears	The time has not been set or not set correctly. After entering/confirming year, month, date and time you can continue programming.

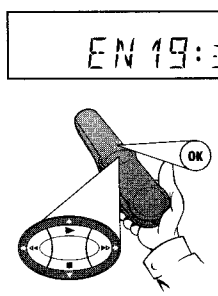
Recording via external sources

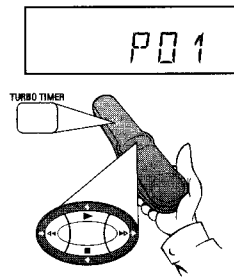
If you want to watch or record transmissions from a satellite receiver, films from a video camera (or from other external devices), connect the device to the scart socket **EXT1 AV1** or **EXT2 AV2** and select the programme number on your video recorder "E 1" or "E2".

FOR EXPERTS









"Turbo Timer"-Recording

Using the "Turbo Timer", you can make a programmed recording within the next 24 hours quickly and simply, without having to switch on the TV set. All you need to do now is enter or confirm the desired programme number and start and finish time in the video recorder.

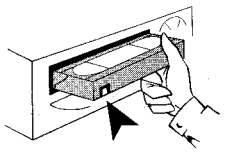
1. Press the **TURBO TIMER** button on the remote control.
2. The display shows the actual starting time, e.g.: "20:00". Change – if necessary – the displayed start time with ↓ or ↑ (or with **0-9**).

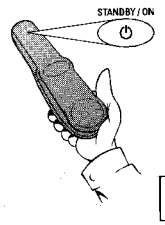
Activate VPS/PDC

VPS (Video Programming Service) and PDC (Programme Delivery Control) signals are transmitted by TV channels at the start and end of transmissions and ensure that programmes will be completely recorded, even if they are rescheduled. Use **SELECT** to switch recognition of these signals on (VPS/PDC appears in the display) or off.

FOR EXPERTS

3. Confirm with **OK**
4. The display shows a suggestion for the end of the recording e.g.: "22:00" (Start time + 2 hours). Change – if necessary – the displayed finish time with ↓ or ↑ (or with **0-9**). Confirm with the **TURBO TIMER** button.
5. The display shows the programme number to which the video recorder is currently set, e.g.: "P01". Change – if necessary – the displayed programme number with ↓ or ↑ (or with **0-9**). Confirm with the **TURBO TIMER** button. In the display there will briefly appear "OK"





6 Insert a cassette without erase protection

What is erase protection?

VHS cassettes can be protected from over-recording by breaking off a thin strip of plastic (arrow). This erase protection can be overridden by sticking one or more strips of adhesive tape tightly over the gap which has been created.

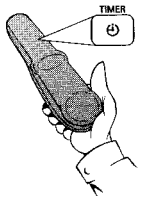
7 SWITCH OFF THE VIDEO RECORDER WITH THE STANDBY/ON BUTTON ⏻! IF YOU DON'T DO THIS, THE SET WILL NOT RECORD.

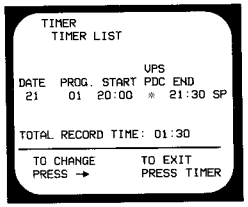
The display will show "⏻"

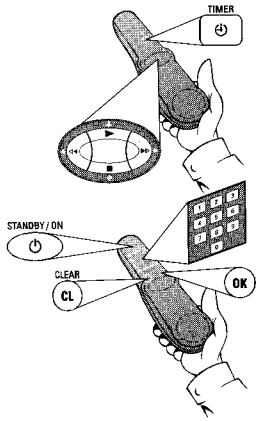
Problem solving (Turbo Timer programming)

PROBLEM	SOLUTION
Error message: "COLLISION"	It is impossible, to make another programmed recording at the same time as an earlier programmed recording. Please check the programmed recordings ("Delete / check / change programmed recordings")
"⏻" and "📼" will blink in the display	A recording was programmed, but there is no cassette in the machine. Insert a cassette without erase protection ready for recording.
Error message: "FULL"	All the available memory locations in your video recorder for timer and VIDEO Plus programming are full. Delete a programmed recording (see chapter "Delete/ check / change programmed recordings").
Cassette is ejected during recording	The end of the tape was reached during a programmed recording. The recording could not be completed satisfactorily.
Cassette is ejected after programming	A cassette with erase protection was inserted. Please deactivate the erase protection or insert another cassette which is ready for recording.
The set cannot be used during recording	Once started, a recording can only be interrupted by pressing the STANDBY/ON button ⏻. WARNING: This will not only stop the recording, but it will also delete the programmed recording from the memory of the video recorder.
Error message: "CLK"	The time has not been set or not set correctly. A Turbo Timer recording is not possible. Please enter the correct time (Section "Changing the time and date")

Delete / check / change programmed recordings







1 Press **TIMER** ⏻ on the remote control **twice**

2 Use ↓ or ↑ to select the option "TIMER LIST" and confirm with →

3 In the display, use the button ↓ or ↑ to select the storage position you wish to check/ change/delete

What is a memory location?

For technical reasons, your video recorder has access to a limited number of "drawers" in which you can store your programming requirements. "Drawers" occupied by programme recording details are only available for use again after the video recorder has successfully completed a programmed recording or if it has been manually deleted. Your video recorder can store up to six programmed recordings.

4 **Delete:** Press **CLEAR (CL)**, confirm with the button **OK** (the screen will show "TIMER CLEARED") and finish with **TIMER** ⏻

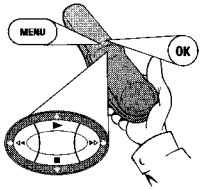
Check: Press →, check the stored details and (once you have checked) end with **TIMER** ⏻

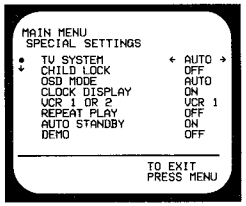
Change: Press →, use ↓ or ↑ to select the entry fields to be altered and use **0-9** to enter the new value(s). Confirm with **OK** and switch **off** the video recorder with the Standby button ⏻.

Using the "NexTView Link"

If your TV set supports the "NexTView Link" function, there is another option for you to quickly and simply programme recordings: With these TV sets, you can call up the listings for the TV channels, mark the programmes you want to record and automatically transfer their details into the memory of the video recorder. Please look in the instructions for your TV set to find out whether and how you can benefit from this function.

11 Other functions





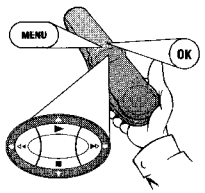
Adjusting automatic switch-off

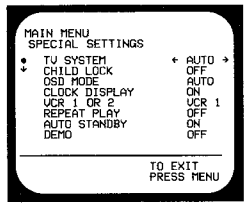
If the video recorder is not used for several minutes, it switches itself off automatically. If you want to use the video recorder as a TV receiver, you can deactivate the automatic switch-off as follows:

1. Press the **MENU** button on the remote control. The on-screen menu appears
2. Use ↓ or ↑ to select the option "SPECIAL SETTINGS" and confirm with →
3. Use ↓ or ↑ to select the option "AUTO STANDBY" and use → or ← to select the setting "ON" (automatic switch-off) or "OFF" (no automatic switch-off). Confirm with **OK**
4. Complete the adjustment of automatic switch-off with the **MENU** button

Adjusting the child lock

You can prevent unauthorised use of your video recorder with this function. Once it is activated, the buttons on the front of the set are locked. Previously entered programmes will of course be recorded



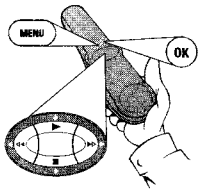


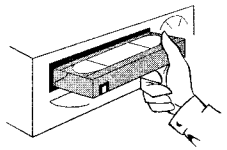
1. Press the **MENU** button on the remote control. The on-screen menu appears
2. Use ↓ or ↑ to select the option "SPECIAL SETTINGS" and confirm with →
3. Use ↓ or ↑ to select the "CHILD LOCK" and use → or ← to select the setting "ON" (Child lock on) or "OFF" (Child lock off). Confirm with **OK**

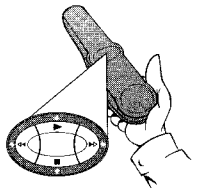
Put the remote control away in a safe place.

Once the child lock has been activated, ("🔑" lights up in the display) the video recorder can now only be used with the remote control. The buttons on the front of the set will not function. Put away the remote control somewhere out of the reach of children.

4. Finish with the **MENU** button







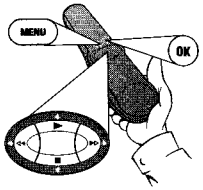
Replaying cassette continuously

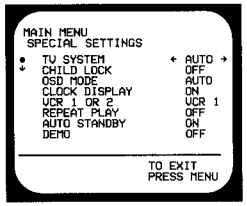
This function can be used to play a tape over and over again. If the end of the cassette or of the recording has been reached, the video recorder automatically rewinds to the start of the tape and starts to play back again. This function is activated or deactivated as follows:

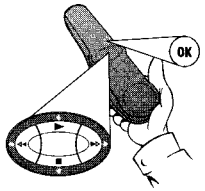
1. Press the **MENU** button on the remote control. The on-screen menu appears
2. Use ↓ or ↑ to select the option "SPECIAL SETTINGS" and confirm with →
3. Use ↓ or ↑ to select the option "REPEAT PLAY" and use → or ← to select the setting "ON" (continuous playback on) or "OFF" (continuous playback off). Confirm with **OK**
4. Complete the adjustment of continuous playback with the **MENU** button
5. Insert a cassette
6. Press the Playback button ▶ to start the playback or continuous playback (depending on the setting)

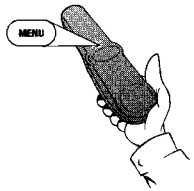
Changing the TV system

When playing back cassettes which have been recorded with signals from a different TV system there may be interference with the colour. To deactivate the automatic change to a different TV system, you must follow these steps.









TV systems

Other countries, other TV systems: In central Europe transmissions are broadcast in the PAL-System (Phase Alternation Line) Standard, while in France SECAM (Séquentiel à mémoire) is used. In some countries (USA and Japan), TV viewers receive their programmes as an NTSC signal (National Television System Committee). Many TV and video sets can process and show several transmission systems.

1. Press the **MENU** button on the remote control. The on-screen menu appears

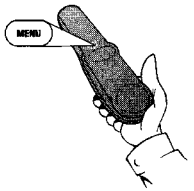
2. Use ↓ or ↑ to select the option "SPECIAL SETTINGS" and confirm with →

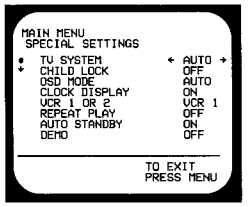
3. Use ↓ or ↑ to select the option "TV SYSTEM", use → or ← to select the desired TV system or "B/W" for black/white playback and confirm with **OK**

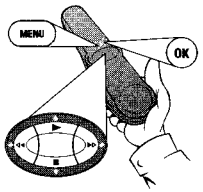
Reactivating automatic change-over

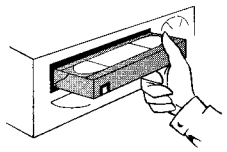
As soon as the cassette is ejected with the Stop/Eject button ■/⏏ the set switches automatically back to the "AUTO" setting (automatic switching). To change the setting during playback, perform the steps 1-3 again and select "AUTO".

4. End the change-over to automatic TV system changing with the **MENU** button









Adjusting the OSD information

If this function is activated, the current operating details of the video recorder will be briefly displayed on the screen

What is an OSD?

The on-screen menu or OSD ("On Screen Display") takes the mystery out of using your new video recorder. Using the main menu (MENU button on your remote control), all settings and recording steps can be done easily via the on-screen menu by following the corresponding instructions on the screen.

1. During playback press the **MENU** button on the remote control. The on-screen menu appears

2. Use ↓ or ↑ to select the option "SPECIAL SETTINGS" and confirm with →

3. Use ↓ or ↑ to select the option "OSD MODE", use → or ← to select the desired setting and confirm with **OK**

What goes on behind the settings?

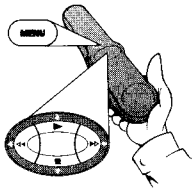
AUTO:	For each type of operation selected (playback, recording, etc.) the corresponding symbol appears briefly on the screen
ON:	The OSD details will be shown
OFF:	OSD information is not shown

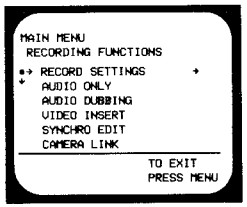
5. Complete the adjustment of the OSD information with the **MENU** button

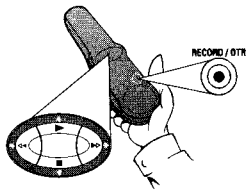
Audio recording

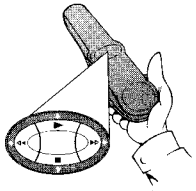
You can record audio signals (without picture) on VHS cassettes, if you connect the sound source with the scart or audio sockets of the video recorder. Only use cassettes, that are not included in the Tape Manager. The chapter "Tape Manager (TM)" explains how to remove cassettes from the Tape Manager memory.

1. Connect the desired sound source to the video recorder and insert a cassette ready for recording









2. Use ↓ or ↑ to select the corresponding programme number

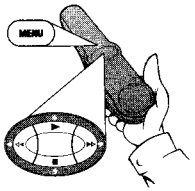
Which is the correct programme number?		
Socket		*Programme number*
AV1 EXT1	(Rear)	E1
AV2 EXT2	(Rear)	E2
AUDIO	(Front)	E3
AUDIO IN	(Rear)	AUX

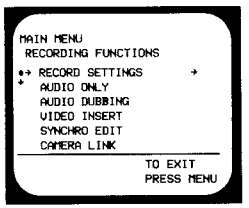
3. Press the **MENU** button. The on-screen menu appears
4. Use ↓ or ↑ to select the option "RECORDING FUNCTIONS" and confirm with the button →
5. Use ↓ or ↑ to select the option "AUDIO ONLY" and confirm with →
6. Press the Record button ● in the usual way to start the recording
7. Press the Stop button ■ to end the recording
8. Leave on-screen menu with the **MENU** button

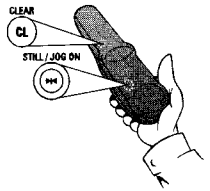
Dubbing (Audio Dubbing)

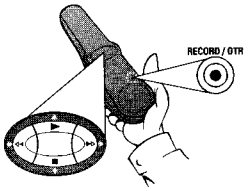
Of course, you can also dub existing video recordings with this video recorder. The mono track is recorded with a new sound signal. The original stereo signal is retained. To make dubbing audible during playback, you must select the "MIX" or "MONO" sound channel setting. Only use cassettes, that are not included in the Tape Manager. The chapter "Tape Manager (TM)" explains how to remove cassettes from the Tape Manager memory.

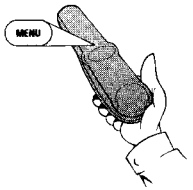
1. Connect the desired sound source to the video recorder and insert a cassette ready for recording
2. Use ↓ or ↑ to select the corresponding programme number











3. Press the **MENU** button. The on-screen menu appears
4. Use ↓ or ↑ to select the option "RECORDING FUNCTIONS" and confirm with →
5. Use ↓ or ↑ to select the option "AUDIO DUBBING" and confirm with →
6. The video recorder switches to still picture
7. Wind to the space on the tape, where the dubbing should end, and with the button **CLEAR (CL)** set the counter to "00:00:00"

✘ **The tape stops automatically and the "RECORD FUNCTIONS" screen appears**

✔ The end of the tape was reached during winding or playback. Go back to step 5, to start this procedure again.

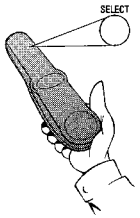
8. Wind to the space on the tape, where the dubbing should begin, and press ▶◀. The video recorder switches to still picture
9. Press ▶◀ (still picture) several times until the desired point is reached and confirm with the Stop button ■
10. On the connected sound source start the playback of the sound signal and press **simultaneously** the Record button ● on the remote control of the video recorder to start the recording.
11. The new sound signal is being recorded. As soon as the tape position previously marked with "00:00:00" is reached, the dubbing will stop automatically
12. Finish with the **MENU** button

Make dubbing audible

To make dubbing audible, you must select the "MIX" or "MONO" sound channel setting (see "Selecting the sound channel").

Selecting the sound channel

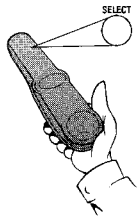
During playback or while receiving a TV channel via the video recorder, one or more sound channels can be selected. This means, for example, if there are multilingual transmissions, you can select the language you want.



1. Press the **SELECT** button on the remote control. The current sound channel setting is displayed

What goes on behind the settings?

STEREO:	Both left and right stereo sound tracks can be heard
LEFT:	The left stereo sound track can be heard
RIGHT:	The right stereo sound track can be heard
MONO:	The mono sound track can be heard
MIXED:	The mono sound track as well as the left and right stereo sound tracks can be heard



2. Press the **SELECT** button several times until the desired setting can be seen on the screen

Automatic switch-over to mono

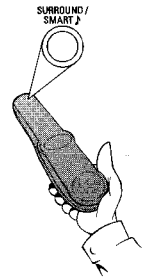
If no stereo signal is recorded on a video cassette, the video recorder automatically switches over to the "MONO" sound channel setting

Make dubbing audible

When dubbing video recordings, the mono track is recorded with a new sound signal. The original stereo signal is retained. To make dubbing audible, you must select the "MIX" or "MONO" sound channel setting.

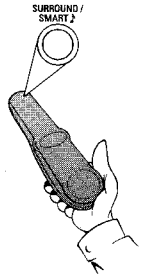
Selecting sound setting (Smart Sound)

Using the button **SURROUND/SMART** ♪ the picture settings can be displayed and altered. There are four different settings available.



1. Press once on the **SURROUND/SMART** ♪ button. The current sound setting will be displayed

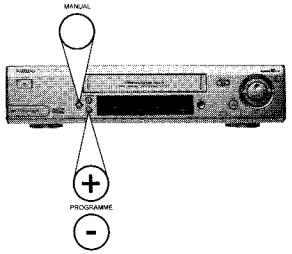
2. Press several times on the **SURROUND/SMART** ♪ button to change the sound setting. Each time the button is pressed, the next sound setting will be displayed.

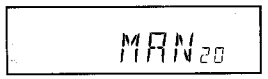


What types of sound settings are available to me?

"STANDARD":	Neutral sound impression
"SURROUND":	Wider sound impression
"MUSIC":	Optimal setting for music playback
"SPEECH":	Optimal setting for speech playback

3. As soon as the **SURROUND/SMART** ♪ button is released for a few seconds, the last selected picture setting will be accepted.





Manual mute

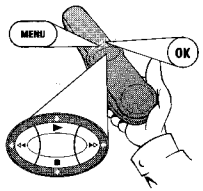
With the **MANUAL** button on the front of the video recorder you can regulate the signal level of the audio signals (scart sockets, audio sockets) received by the video recorder.

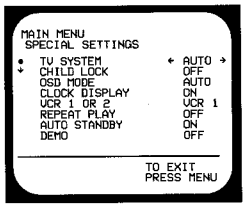
1. Press the **MANUAL** button on the front of the video recorder until the current setting (e.g. "MAN20") appears in the display

2. On the front of the video recorder use **PROGRAMME -** or **PROGRAMME +** to select the desired setting or press **MANUAL** again, to switch back to automatic mute ("AUTO")

Energy-saving mode

To reduce the power consumption of the video recorder you can switch the clock in the display of the video recorder on or off.





1. Press the **MENU** button on the remote control. The on-screen menu appears

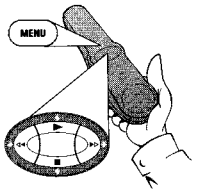
2. Use ↓ or ↑ to select the option "SPECIAL SETTINGS" and confirm with →

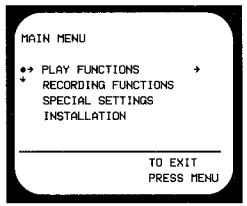
3. Use ↓ or ↑ to select the option "CLOCK DISPLAY", use → or ← "ON" (time display on in standby mode) or "OFF" (time display off in standby mode) and confirm with **OK**. The screen will show "STORED"

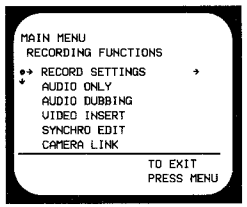
4. Finish with the **MENU** button

Preparing synchronised re-recording (Synchro Edit)

The "Synchro Edit" function allows you to re-record picture and sound signals from special Camcorders directly onto VHS cassettes.







How does "Synchro Edit" function?

With the help of a synchronizing impulse and a (variable) switch-on time (Preroll time) the beginning of playback and recording can be so precisely tuned that not a single second of the audio/video signal required for the re-recording is lost. Warning: To make proper use of this function, the linked Camcorder must have a compatible "Synchro Edit"!

1. Plug the Camcorder into the front socket on the video recorder

Which connections are necessary?

VR 910	*Cable*	*Camcorder*
Socket EDIT	Synchro Edit Cable	corresponding socket**
Socket L AUDIO R	Coaxial cable*	corresponding socket**
Socket VIDEO	Coaxial cable	corresponding socket**

*...attached to the video recorder

**...If necessary, you should refer to the instructions for your Camcorder for assistance.

2. Press the **MENU** button on the remote control. The on-screen menu appears

3. Use ↓ or ↑ to select the option "RECORDING FUNCTIONS" and confirm with →

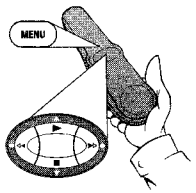
4. Use ↓ or ↑ to select the option "CAMERA LINK". Switch the Camcorder to still picture and confirm with → on the remote control of the video recorder

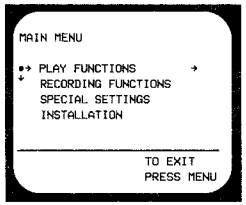
5. The video recorder checks the connected Camcorder type. The screen will show "LINK DETECTED - CAMERA TO CONTROL VIDEO RECORDER" or "LINK DETECTED - VIDEO RECORDER TO CONTROL CAMERA"

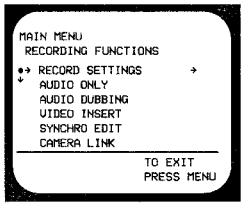
What goes on behind this message?

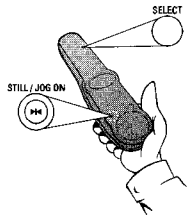
VIDEO RECORDER TO CONTROL CAMERA:
The video recorder controls the synchronized re-recording. Start and end is controlled by pressing the video recorder buttons.

CAMERA TO CONTROL VIDEO RECORDER:
The Camcorder controls the synchronized re-recording. Start and end is controlled by pressing the Camcorder buttons.









Making a synchronised re-recording (Synchro Edit)

1. Press the **MENU** button on the remote control. The on-screen menu appears

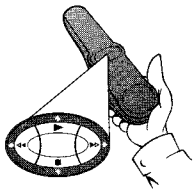
2. Use ↓ or ↑ to select the option "RECORDING FUNCTIONS" and confirm with →

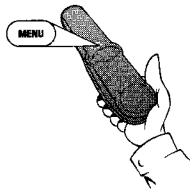
3. Use ↓ or ↑ to select the option "SYNCHRO EDIT" and confirm with →

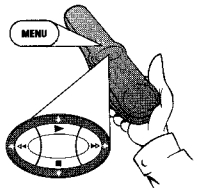
4. A still picture of the precise point on the tape in the video recorder will appear. If necessary find the point on the tape at which the synchronized re-recording is to begin and switch again to still picture with the **STILL / JOG ON** ▶|◀ button

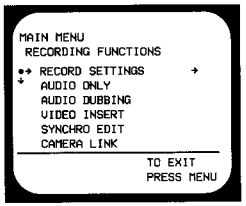
5. Press **SELECT**. The current picture from the linked Camcorder appears

6. Find the point on the tape where the synchronized re-recording is to begin and switch again to still picture









7 Start or interrupt the synchronised re-recording in the following manner:

VIDEO RECORDER TO CONTROL CAMERA:

Start: RECORD/OTR ● button
Interrupt: ■ button

CAMERA TO CONTROL VIDEO RECORDER:

Start: Corresponding (Play) button on the Camcorder
Interrupt: Corresponding (Pause) button on the Camcorder

8 Press the **MENU** button on the remote control of the video recorder, to leave the Synchro Edit mode

✘ **The first few seconds of a synchronized re-recording are not recorded**

✘ **Before a synchronized re-recording a still picture appears for a few seconds**

✔ The Preroll time is not correctly adjusted. Read the section "Adjusting Preroll time".

PROBLEM

Adjusting Preroll time

What is Preroll time?

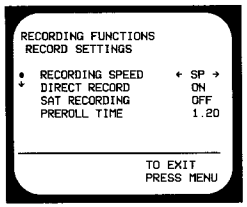
For a synchronized re-recording the playback and recording appliances must be started at the same time. However, different appliances react at different speeds. In such cases the Preroll function will allow a fixed space of time to be inserted, to ensure that one appliance starts earlier or later than the other. This avoids recordings starting too soon or too late.

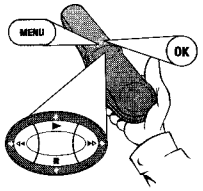
PARDON?

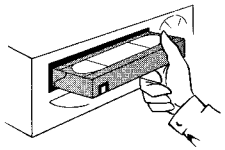
1 Press the **MENU** button on the remote control. The on-screen menu appears

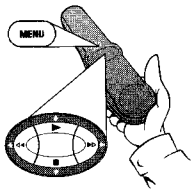
2 Use ↓ or ↑ to select the option "RECORDING FUNCTIONS" and confirm with →

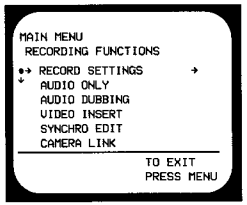
3 Use ↓ or ↑ to select the option "RECORD SETTINGS" and confirm with →











4 Use ↓ or ↑ to select the option "PREROLL TIME" and change the settings with ← and → or with **0-9**

How do I discover the correct preroll time?

Since you can make a synchronized re-recording with any "Synchro Edit" compatible appliance, there is no fixed preroll time that will operate for every combination of appliances. Experiment to find the correct setting. Preroll times can be adjusted between 1 and 5 seconds.

PARDON?

5 Confirm the amended Preroll time with **OK**

6 Complete the adjustment of the Preroll time with the **MENU** button

Inserting recordings (Video Insert)

What do I need this function for?

With "Video Insert" you can insert a new recording directly into an existing recording. The signal source for this may be an existing Camcorder or a second video recorder (connect to the audio/video socket on the front of the video recorder or the Scart socket at the back of the video recorder).

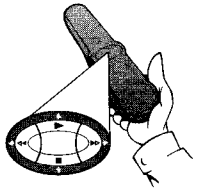
PARDON?

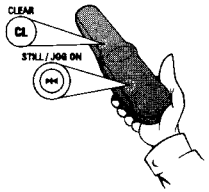
1 Insert a cassette for each recording, into which a new recording is to be inserted

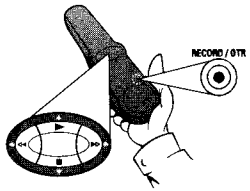
2 Press the **MENU** button on the remote control. The on-screen menu appears

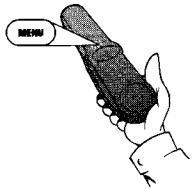
3 Use ↓ or ↑ to select the option "RECORDING FUNCTIONS" and confirm with →

4 Use ↓ or ↑ to select the option "VIDEO INSERT" and confirm with →









5. Use ↓ or ↑ to select the programme number, that is to be inserted for the new programme

Which programme numbers are available for selection?

Theoretically all, that have been allocated a TV channel by your video recorder are available. Most recordings are derived from external signal sources (Camcorder, video recorder etc....) To connect these there are three options:

E1	Scart socket AV1 EXT1 (Rear)
E2	Scart socket AV2 EXT2 (Rear)
E3	Audio/Video socket (Front)

6. Find the point <u>on the inserted cassette</u>, where the synchronized re-recording is to end, and press **STILL/JOG ON** ▶◀

7. Press **CLEAR (CL)**. The tape position will be reset to "00:00:00"

8. Find the point <u>on the inserted cassette</u>, where the synchronized re-recording is to begin, and press **STILL/JOG ON** ▶◀

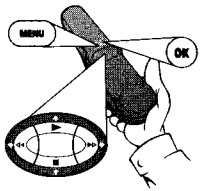
9. Press the Stop button ■. The video recorder switches to Pause

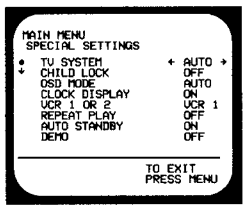
10. Start playback <u>on the connected playback set</u>

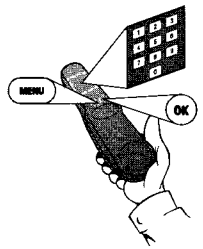
11. As soon as the point on the tape is reached where the recording is to be inserted press the **RECORD/OTR** ● button on the video recorder

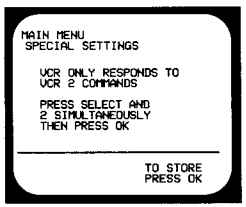
12. The video recorder starts recording and stops **automatically** at the tape position previously marked with "00:00:00"

13. Finish the "Video Insert" function with the **MENU** button









Adapting remote control

If you are using two video recorders which both react to the same remote control commands, you can use this function to change remote control and video recorder to other commands.

What are remote control codes?

Each time the button on your remote control is pressed, an invisible infra-red signal is sent to the video recorder. Each button has been allocated a specific code, which ensures, that the video recorder will carry out the corresponding function. If two video recorders respond to the same codes, the remote control signal emitted will be recognised and performed by both. Therefore the possibility exists, to allocate different remote control commands (with other codes) to this video recorder. This means that the uninterrupted use of both video recorders is possible once more.

1. During playback press the **MENU** button on the remote control. The on-screen menu appears

2. Use ↓ or ↑ to select the option "SPECIAL SETTINGS" and confirm with →

3. Use ↓ or ↑ to select the option "VCR 1 OR 2", use → or ← to select "VCR 1" or "VCR 2" and confirm with **OK**. The video recorder has now been reset to the desired mode

What must I set?

If two video recorders respond to the same codes, they are either both set to "VCR 1" or "VCR 2". Please change the setting of only one video recorder! The factory setting of the video recorder is "VCR 1".

4. Now press, on the remote control, **simultaneously** on the buttons **SELECT** and the number button corresponding to the previously selected setting (thus "1" for "VCR 1" or "2" for "VCR 2")

5. Confirm with **OK**. The remote control has now been reset to the new commands

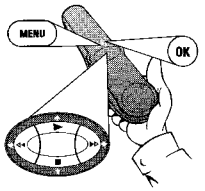
6. Finish with the **MENU** button

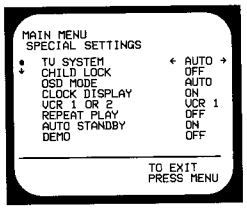
✘ **After the buttons are pressed** "VCR 1" or "VCR 2" appears **in the display of the video recorder**

✔ Repeat step 2 to reset the remote control to the displayed settings

Demonstration mode

In this operating mode, the video recorder automatically gives a demonstration of its functions after switching off. Programmed recordings are obviously performed.

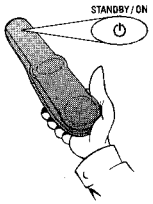


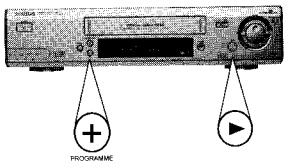


1. Press **MENU**. The on-screen menu appears
2. Use ↓ or ↑ to select the option "SPECIAL SETTINGS" and confirm with →
3. Use ↓ or ↑ to select the option "DEMO", use → or ← to select "ON" or "OFF" and confirm with **OK**
4. Finish with the **MENU** button

Adjusting the key illumination

The front of the video recorder is fitted with illuminated keys that react to pressure. This function can be activated or deactivated as follows:

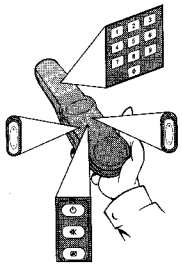




1. Make sure there is no cassette in the video recorder
2. Switch off the video recorder with the Standby button ⏻
3. Press simultaneously on the front of the video recorder the buttons **PLAY** ► and **PROGRAMME +** until the display shows "OFF" (key illumination deactivated) or "ON" (key illumination activated)
4. The adjustment of the key illumination is complete

Using the TV remote control

With the enclosed multicode remote control you can control the main functions of your TV set. To do this, you must first enter the make of your TV set.



1. Find the make of your TV set from the list below and take note of the corresponding remote control code(s)
2. Hold down the button ◢ - and enter one of the listed codes with the number buttons **0-9**.
3. Now you can control your TV set remotely with the following buttons:
   - **+ ◢ -** (Increase / decrease TV volume)
   - **TV / ⏻** Switch TV on / off
   - **TV / 🔇** Switch TV volume on / off
   - **TV / AV** (Switch TV to programme number AV)
   - **+ TV -** (Next / previous TV programme number)

REMOTE CONTROL CODES

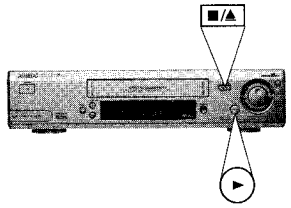
Brandt	21	Philips	01
Emerson	14	RCA	10
Ferguson	31	Saba	21
Finlux	33	Salora	30
Funai	35	Samsung	01, 18, 37, 38, 39
GoldStar	04	Sanyo	11
Graetz	30	Seleco	30
Grundig	24, 25	Sharp	16
Hitachi	12	Sony	09
ITT	30	Telefunken	21
JVC	05, 27, 28, 29	Thomson	21, 22, 23
Luxor	30	Toshiba	08
Magnavox	01, 02, 03	Zenit	06, 15
Mitsubishi	13, 26		
Mivar	32		
NEC	36		
Nokia	34		
Nordmende	21		
Panasonic	07, 17, 19, 20		

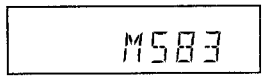
If the codes corresponding to your set do not succeed, please try entering one of the other remote control codes listed.

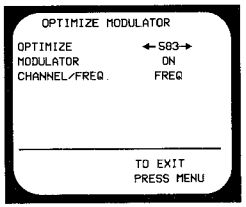
12 Suppressing interference

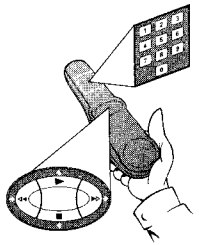
Optimizing the modulator

If the TV set and the video recorder are only connected with an aerial cable - rather than with an additional scart cable - it may happen that in certain reception locations the modulator frequency of the video recorder is occupied by a TV channel. As soon as the video recorder is switched on, the reception quality of the TV picture deteriorates. The following steps will show you how to overcome this problem.









What is a modulator?

The purpose of this electronic assembly inside your video recorder is to pass on the picture and sound information read in from the video tape via an aerial cable like a TV signal to the TV set. The modulator frequency determines the frequency range in which these signals are transmitted.

TIP

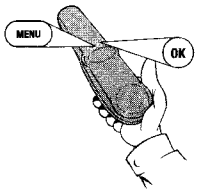
1. Switch the video recorder on and make sure there is no cassette in the video recorder
2. Press simultaneously on the front of the video recorder the button **STOP/EJECT ■/▲** and the button **PLAY ►** until the display shows the modulator frequency (e.g. "M583" or "CH36")
3. The video recorder will now transmit a test image on this frequency
4. Use ↓ or ↑ to select the option "OPTIMIZE" and enter a new frequency with the number buttons **0-9**

Which modulator frequency should I enter?

You can also make the video recorder search automatically for an appropriate frequency. To do so, simply hold down the button →. As soon as a free frequency has been found, it will be shown in the display.

PROBLEM

5. Tune the programme number of your TV set allocated for video use to the new modulator frequency until you see the test image sharply and in colour



6. Confirm the new modulator frequency with **OK**. The screen will show "STORED"
7. Leave the on-screen menu with the **MENU** button

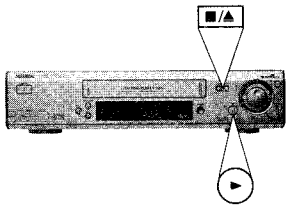
Switching off the modulator

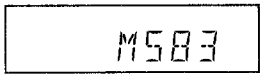
If you have connected the video recorder to the TV set with a scart cable, you can switch off the modulator when there is interference with the picture or sound (see below).

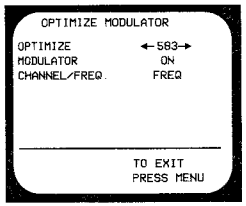
FOR EXPERTS

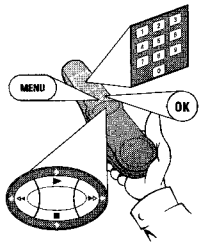
Switching the modulator on / off

If picture and sound interference cannot be removed by optimising the modulator, the integral modulator can be switched off. Warning: this is only possible if you have connected the video recorder to the TV set with a scart cable. It is not possible to operate with the modulator switched off without a scart cable.









1. Switch the video recorder on and make sure there is no cassette in the video recorder
2. Press simultaneously on the front of the video recorder the button **STOP/EJECT ■/▲** and the button **PROGRAMME-** until the display shows the modulator frequency (e.g. "M583" for 583 MHz)
3. The video recorder will now transmit a test image on this frequency
4. Use ↓ or ↑ to select the option "MODULATOR"
5. Use → or ← to select the setting "ON" (Modulator on) or "OFF" (Modulator off)
6. Confirm with **OK**. In the display there will briefly appear "OK". The screen will show "STORED"
7. Leave the on-screen menu with the **MENU** button

ADJUSTMENT INSTRUCTIONS

1.Tape Manager

Set the tape manager number

This setting has to be done after replacement of the EEPROM.

- call up the service test program, select step 43
- the display shows T-:--:43
- using the remote control, type in the last tree digits of the serial number, located on the type plate of the set
- press the ok button
- exit the service test program.

2. Video signal processing (VS-SEC)

Service tasks after replacement of ICs 7004, 7072:

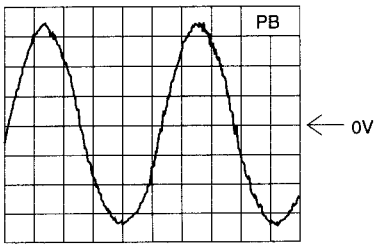
Before commencing adjustment:
Call the service test program and enter Step 10 (Dummy mode). Remove the drive from the motherboard.

2.1 3.3 MHz adjustment [3089] (for SECAM)

Purpose: To adjust the mixing oscillator

Consequences of incorrect settings:
Cross patterns in coloured areas, coloured noise.

TP	ADJ.	MODE	INPUT
IC7072 pin 17	R3089	Dummy mode step 10 playback	1.2 MHz sinus 100mVpp, R3065 +5V on IC 7072 pin16; R3064
TAPE		MEAS. EQ.	SPEC.
		Oscilloscope Video pattern generator Sinus generator	adjust to optimum sinus



A: AC, 50mV/Div, 50ns/Div
IC 7072 Pin 17

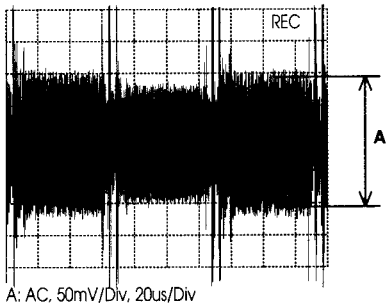
2.2 SECAM chrominance record current adjustment [3088]:

Purpose: To set the optimum record SECAM chroma level.

Symptom, if incorrectly set:
If the record level is too high, beats may appear on the picture. If the level is too low, the colour may be de-graded.

TP	ADJ.	MODE	INPUT
CSRV pos.9068	R3088	Dummy mode Record Preset E2	(VIDEO IN E2) Red Picture SECAM 75% Saturation
TAPE		MEAS. EQ.	SPEC.
		Oscilloscope Video Pattern Generator	**A**=240 ± 15 mV_{pp},

Notes: With varying frame amplitudes, the setting is made for the greatest amplitude.

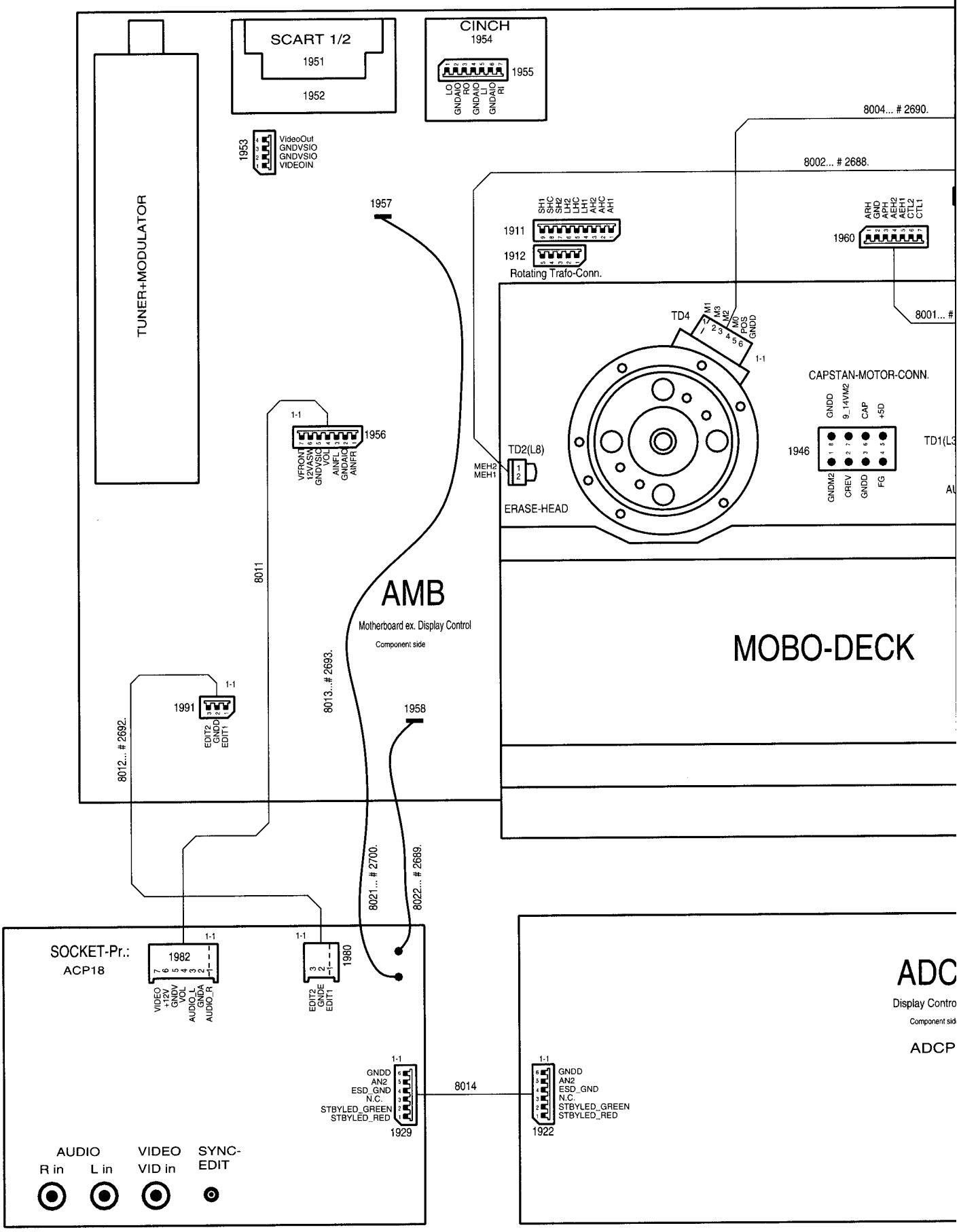


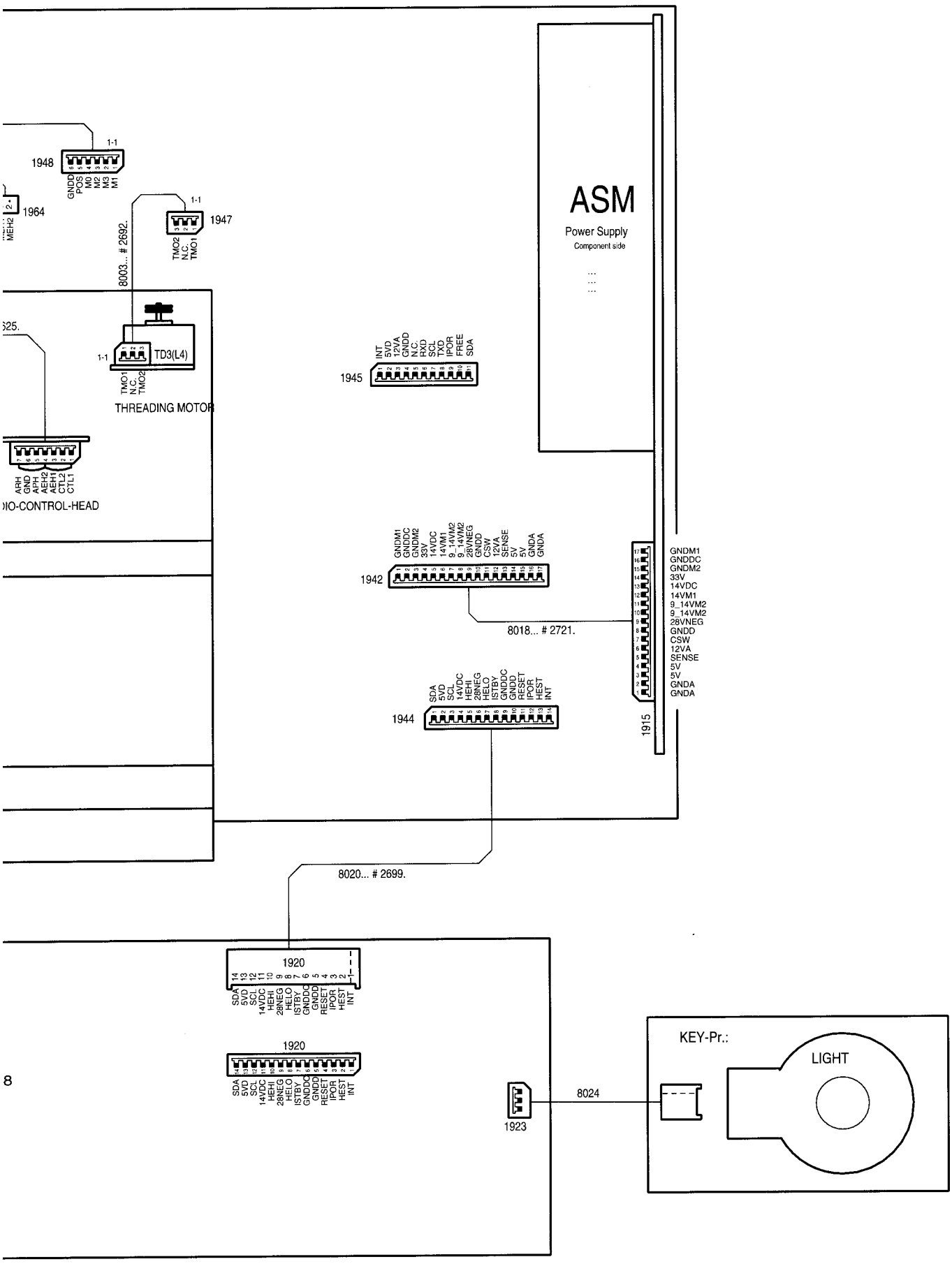
A: AC, 50mV/Div, 20us/Div

List of Signal Abbreviations

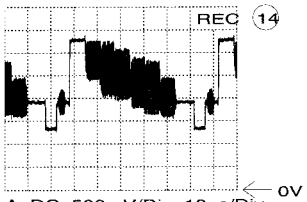
2FSC ..... 2x Colour subcarrier
10SC12 ..... Scart 1/2 Pin 10
8SC1 ..... Scart 1 pin 8 input
8SC1H ..... Scart 1 pin 8 high level
8SC1M ..... Scart 1 pin 8 medium level
8SC2 ..... Scart 2 pin 8 input
9_14VM2 ..... Capstan motor supply, switched
A0-19 ..... Adress lines
AEH1/2 ..... Audio erase head
AF1 ..... Audio from frontend, left
AF2 ..... Audio from frontend, right
AFC ..... Automatic frequency control
AFE ..... Audio from frontend
AGC ..... Automatic gain control
AH1/2/C ..... Audio heads
AIN1L ..... Audio input scart 1, left
AIN1R ..... Audio input scart 1, right
AIN2L ..... Audio input scart 2, left
AIN2R ..... Audio input scart 2, right
AINBL ..... Audio left from cinch connector
AINBR ..... Audio right from cinch connector
AINFL ..... Audio left from Front connector
AINFR ..... Audio right from front connector
AMCO ..... Audio mono to the modulator
AMLP ..... Audio mono playback
AMLR ..... Audio mono record
AN1/2 ..... Analog voltage from keyboard matrix
ANIL ..... NICAM Audio, left
ANIR ..... NICAM Audio, right
AOUT1L ..... Audio output from scart 1, left
AOUT1R ..... Audio output from scart 1, right
AOUT2L ..... Audio output from scart 2, left
AOUT2R ..... Audio output from scart 2, right
APH ..... Audio playback head
ARH ..... Audio record head
CAGC ..... Chroma Automatic gain control
CAP ..... Capstan regulation voltage
CKDET ..... Colour killer detection
CNR ..... Chroma Noise Reduction
CPRV ..... Chrominance PAL record
CREV ..... Capstan reverse
CROT ..... Colour rotation
CS0 ..... Chip Select 0
CS1 ..... Chip Select 1
CSCP ..... Colour phase switching for LP feature mode
CSI ..... Colour system information
CSP ..... Chrominance secam playback
CSPO ..... Chroma to Noise Reduction
CSRV ..... Chrominance secam record
CSW ..... 9V/17V switching for capstan motor
CSYNC/1/2 ..... Composite sync pulse
CTL1/2 ..... Control track signal
D0-7 ..... Data lines
DC_RESET ..... Reset Display Control
DRUM ..... Head wheel control
EDIT1/2 ..... Synchro-Edit control signal
ENVC ..... Envelope comparator signal
FFP ..... Feature frame pulse
FGD ..... Capstan tacho pulse digital
FM1 ..... L+R
FM2 ..... 2R
FMAP ..... FM audio playback
FMAR ..... FM audio record
FMPV ..... FM video playback
FMRV ..... FM video record
FOME ..... Follow Me (video signals equal)
FSC ..... Colour subcarrier
FTA ..... Threading tacho
FTAD ..... Threading tacho digital
HEHI ..... Heater for displaytube high
HELO ..... Heater for displaytube low
HEST ..... Heater voltage control signal
HP1 ..... Head pulse video
HP2 ..... Head pulse audio
HSC ..... Head Select Control (SP/LP)
IMEO ..... Main erase oscillator on/off
INIT ..... Deck switch
INT ..... Interrupt
IPOR ..... Inverse power on reset
IRAF ..... Inverse record FM-audio
IRAL ..... Inverse Record Audio Linear
IREV ..... Inverse Record Video
ISTBY ..... Inverse stand by
ISWS ..... Crosstalk Reduction
IWIND ..... Control pulse amplification low
LH1/2/C ..... Long play heads
MEH1/2 ..... Main erase head
MON ..... Loop through pin 16 scart 2/1
MTA ..... Audio mute
NC ..... Not connected
ODAT ..... Shift register bus data
OFP ..... OSD Frame pulse
PBV ..... Playback Video
PG_FG ..... Head wheel position/-speed
PIN10_IN ..... Pin 10 scart 1/2 output
PIN10_OUT .... Pin 10 scart 1/2 input
POR ..... Power on reset
PSS ..... PAL/SECAM Switch
RD ..... Output Enable RAM/ROM
RECP ..... Record protection
RxD ..... Receive Data
SB1 ..... Secam band 1
SCL ..... IIC bus clock
SDA ..... IIC bus data
SCL2 ..... YCA IIC bus clock
SDA2 ..... YCA IIC bus data
SCL3 ..... High Speed IIC bus clock
SDA3 ..... High Speed IIC bus data
SFS ..... Sound filter switch
SH1/2/C ..... Standard play heads
SRCLK ..... Shift Register Clock
SSIF ..... Second sound intermediate frequency
STROBE ..... Strobe pulse for shiftregister
SWIN ..... Head switching pulse
SYNC ..... Control track pulse
TAE ..... Tape end detection
TAS ..... Tape start detection
THIO ..... Threading motor in/out
TMO ..... Loading motor on/off
TRIA_ALM ..... Tracking information audio / Audio level indication
TRIV ..... Tracking information video
TxD ..... Transmit Data
VBS ..... Video to signal electronics
VCCD1 ..... Signal before Y-CCD
VCCD2 ..... Signal after Y-CCD
VFRONT ..... Video from front connector
VFV ..... Video from front end
VIDOUT1 ..... Video output scart 1
VIDOUT2 ..... Video output scart 2
VIDEOIN1 ..... Video input scart 1
VIDEOIN2 ..... Video input scart 2
VISS ..... Control sync pulse inversion
VOL ..... headphone volume
VOUT ..... Video from OSD part
VSB ..... Video from signal electronics
W_R ..... Control track write/read
WR ..... Write enable for RAM
WTL ..... Wind tacho left
WTLD ..... Wind tacho left digital
WTR ..... Wind tacho right
WTRD ..... Wind tacho right digital

Wiring Diagram

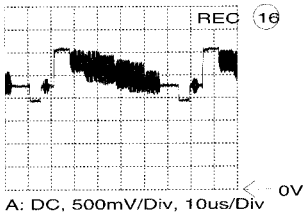



ASM
Power Supply
Component side
1948
1-1
GNDD
POS
M0
M2
M3
M1
1964
1947
TMO2
N.C.
TMO1
8003... # 2692.
TD3(L4)
THREADING MOTOR
ARH
GND
APH
AEH2
AEH1
CTL2
CTL1
IO-CONTROL-HEAD
1945
INT
5VD
12VA
GNDD
N.C.
RXD
SCL
TXD
IPOR
FREE
SDA
1942
GNDM1
GNDDC
GNDM2
33V
14VDC
14VM1
9_14VM2
9_14VM2
28VNEG
GNDD
CSW
12VA
SENSE
5V
5V
GNDA
GNDA
8018... # 2721.
1915
1944
SDA
5VD
SCL
14VDC
HEHI
28NEG
HELO
ISTBY
GNDDC
GNDD
RESET
IPOR
HEST
INT
8020... # 2699.
1920
1920
1923
8024
KEY-Pr.:
LIGHT

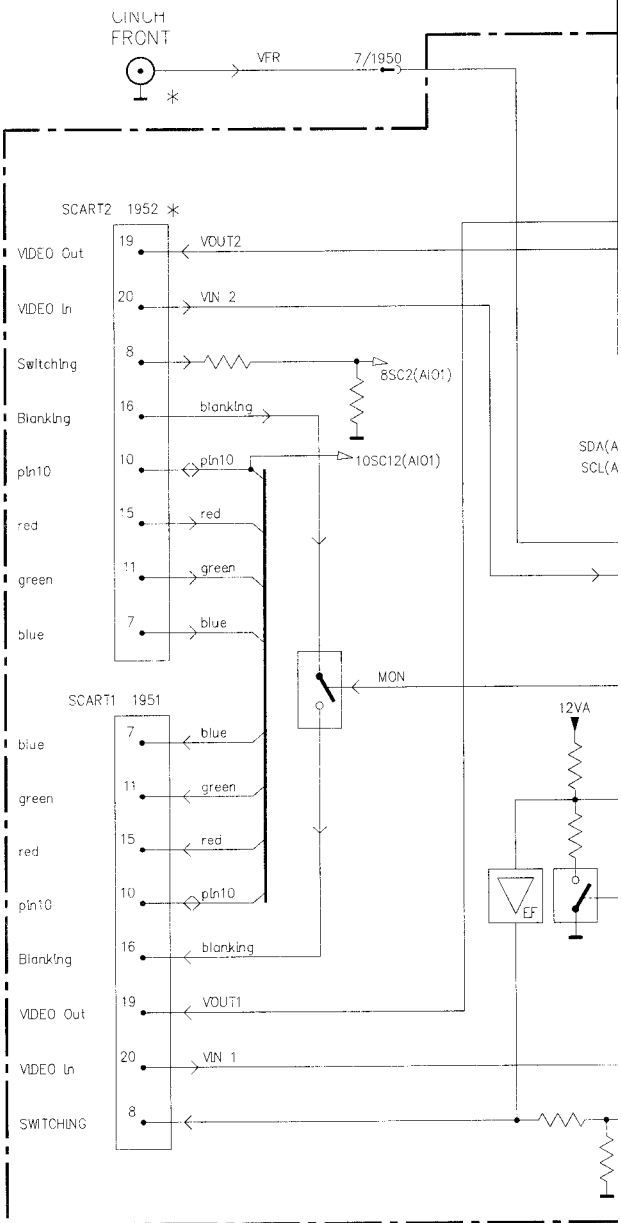
Block Diagram Video

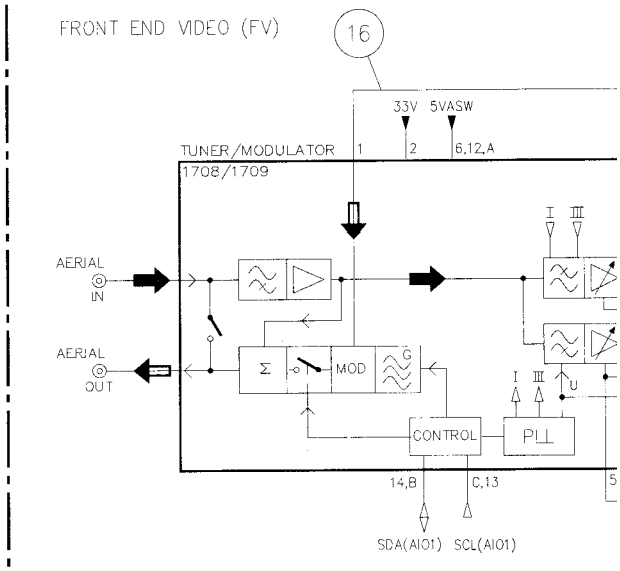


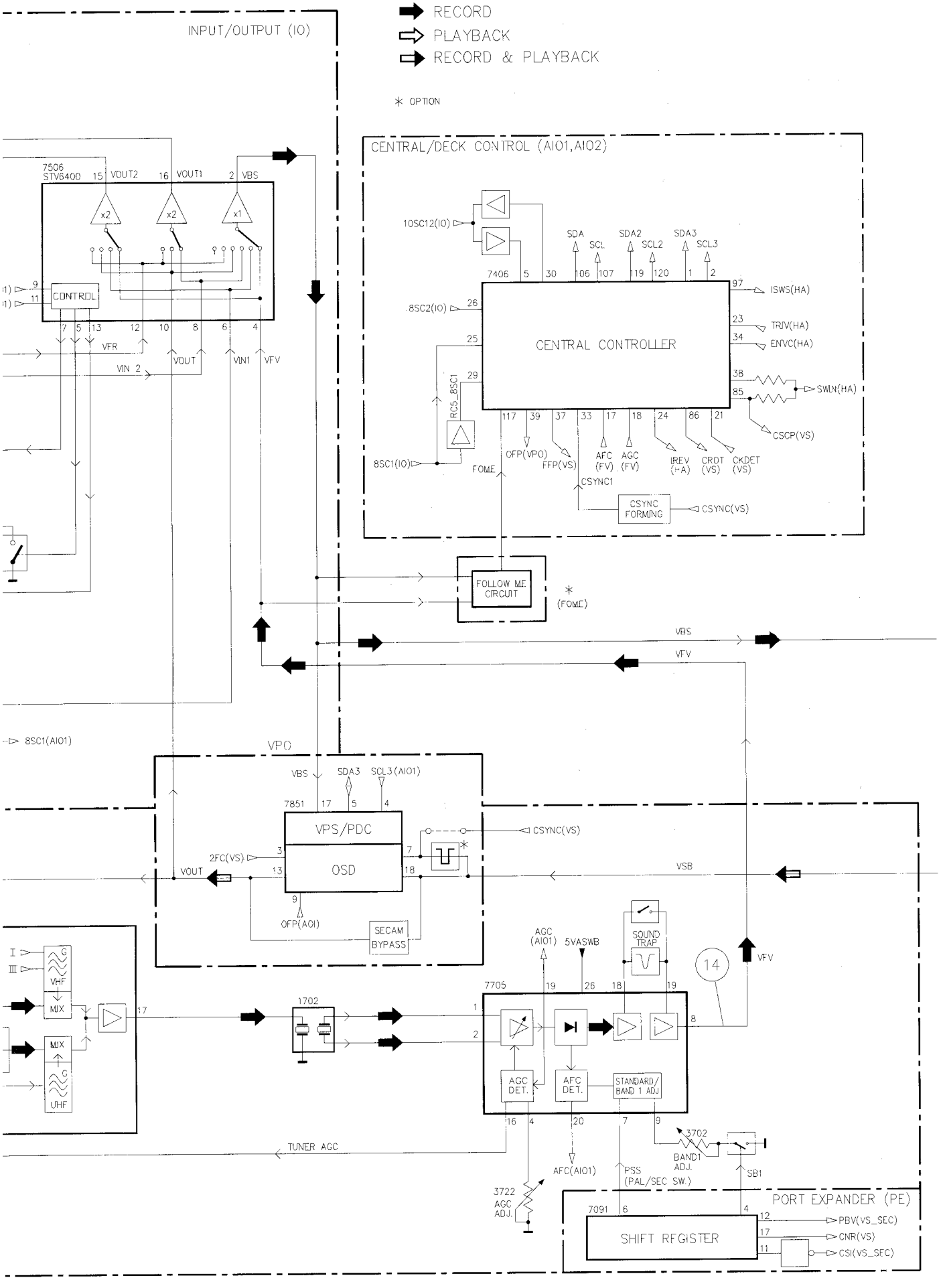
A: DC, 500mV/Div, 10us/Div
IC 7705 Pin 8



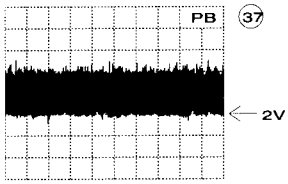
A: DC, 500mV/Div, 10us/Div
Tumod Pin 1



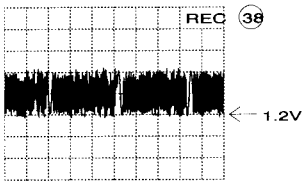



RECORD
PLAYBACK
RECORD & PLAYBACK
* OPTION
INPUT/OUTPUT (IO)
7506
STV6400
VOUT2
VOUT1
VBS
x2
x2
x1
CONTROL
VFR
VOUT
VIN1
VFV
VIN 2
CENTRAL/DECK CONTROL (AI01,AI02)
10SC12(IO)
SDA
SCL
SDA2
SCL2
SDA3
SCL3
7406
8SC2(IO)
CENTRAL CONTROLLER
ISWS(HA)
TRIV(HA)
ENVC(HA)
SWLN(HA)
CSCP(VS)
RCS_8SC1
8SC1(IO)
FOME
OFP(VPO)
FFP(VS)
AFC (FV)
AGC (FV)
IREV (-A)
CROT (VS)
CKDET (VS)
CSYNC1
CSYNC FORMING
CSYNC(VS)
FOLLOW ME CIRCUIT
* (FOME)
VBS
VFV
8SC1(AI01)
VPO
VBS
SDA3
SCL3(AI01)
7851
VPS/PDC
OSD
CSYNC(VS)
2FC(VS)
VOUT
VSB
OFP(AOI)
SECAM BYPASS
AGC (AI01)
5VASWB
SOUND TRAP
14
VFV
7705
I
III
G
VHF
MIX
UHF
1702
TUNER AGC
AGC DET.
AFC DET.
STANDARD/ BAND 1 ADJ
3702
BAND1 ADJ.
SB1
AFC(AI01)
PSS (PAL/SEC SW.)
3722
AGC ADJ.
PORT EXPANDER (PE)
7091
SHIFT REGISTER
PBV(VS_SEC)
CNR(VS)
CSI(VS_SEC)

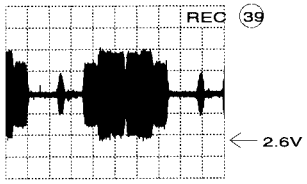
Block Diagram Video



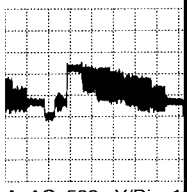
A: AC, 200mV/Div, 20us/Di
IC 7103 Pin 15



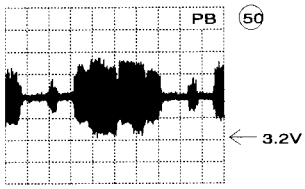
A: AC, 200mV/Div, 20us/Di
FMRV



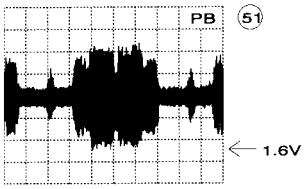
A: AC, 100mV/Div, 10us/Di
CPRV



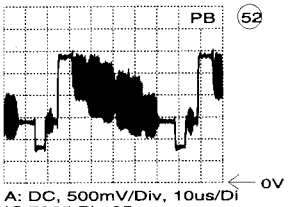
A: AC, 500mV/Div, 1
IC 7005 Pin 35



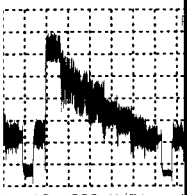
A: AC, 100mV/Div, 10us/Di
IC 7005 Pin 52



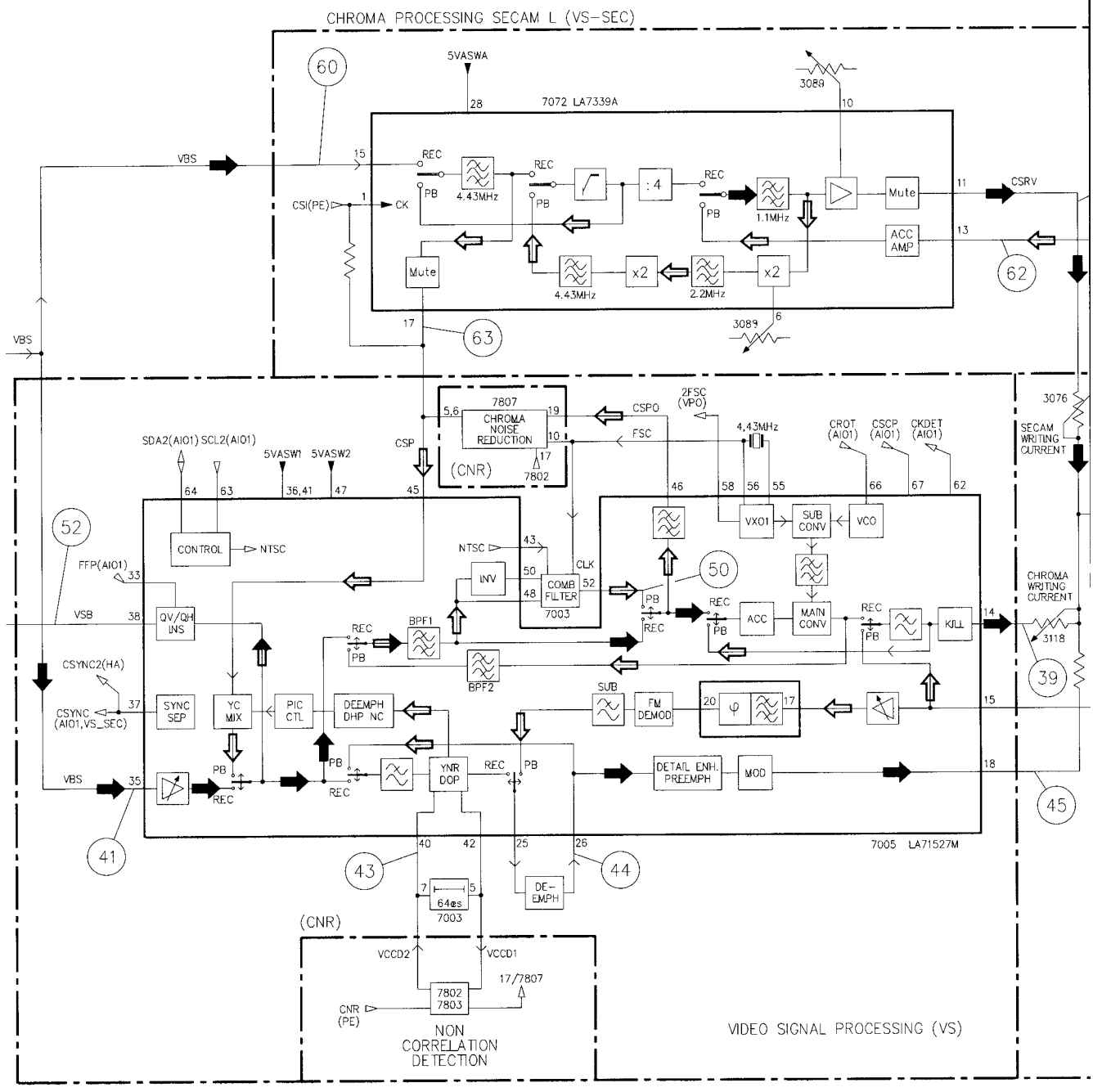
A: AC, 100mV/Div, 10us/Div
IC 7005 Pin 45

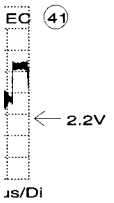


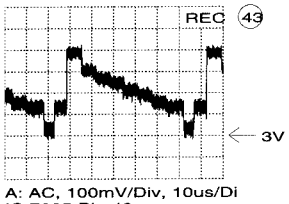
A: DC, 500mV/Div, 10us/Di
IC 7005 Pin 35



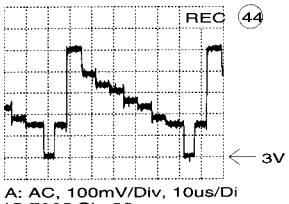
A: AC, 200mV/Div, 1
IC7072 Pin 15



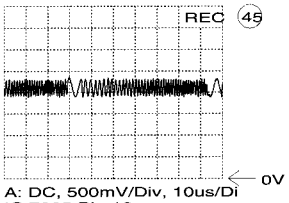




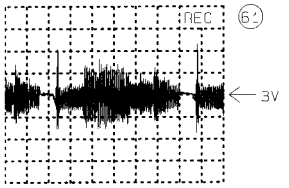
A: AC, 100mV/Div, 10us/Di
IC 7005 Pin 40



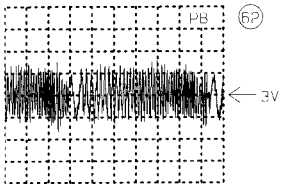
A: AC, 100mV/Div, 10us/Di
IC 7005 Pin 26



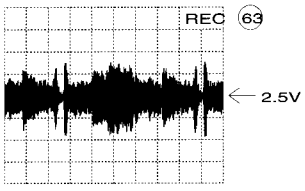
A: DC, 500mV/Div, 10us/Di
IC 7005 Pin 18



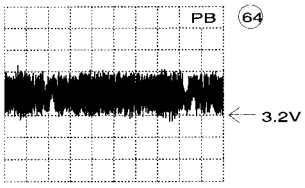
A: AC, 200mV/Div, 10us/Div
IC 7072 Pin 11



A: AC, 50mV/Div, 10us/Div
IC 7072 Pin 43



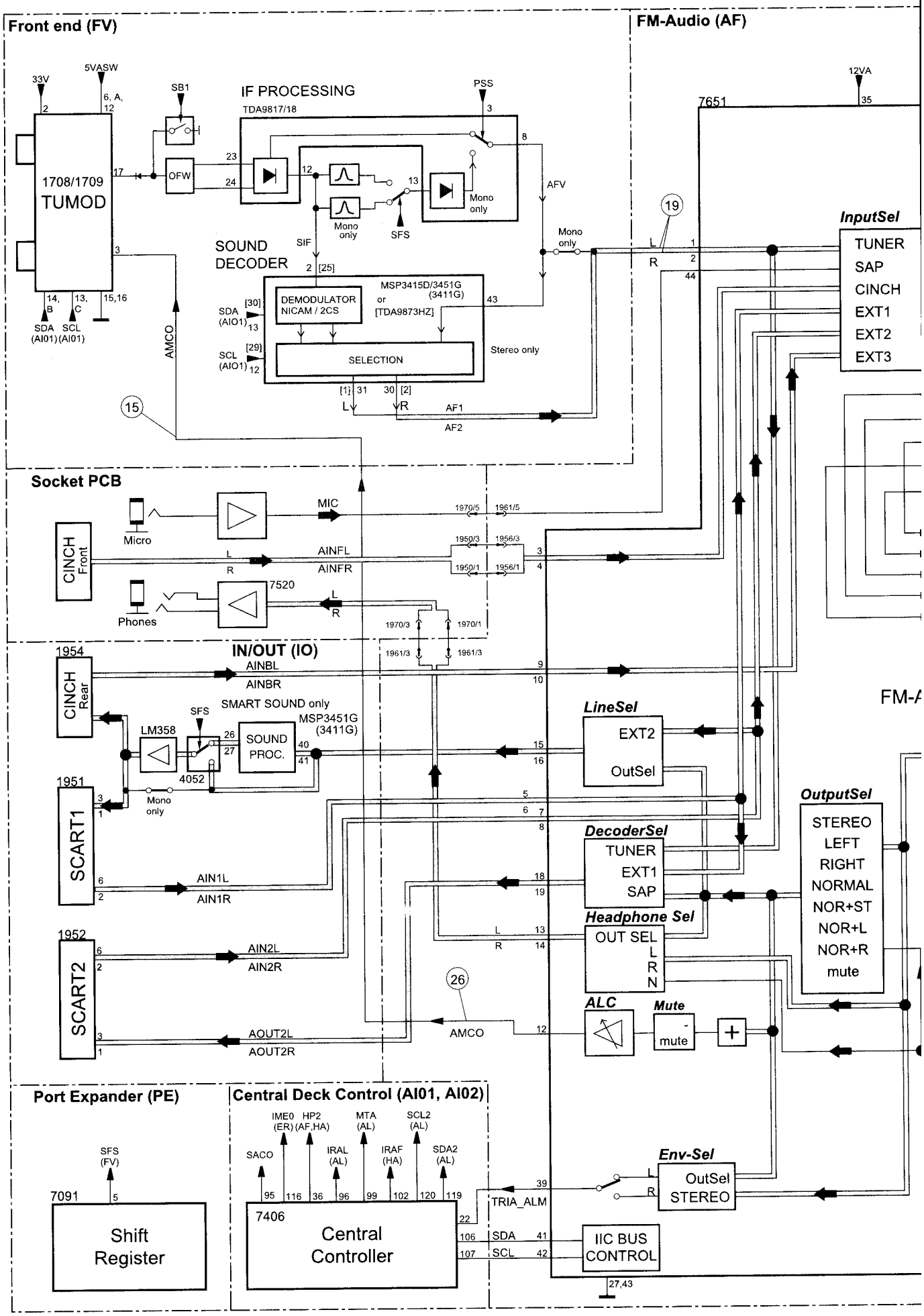
A: AC, 200mV/Div, 10us/Di
IC 7066 Pin 17

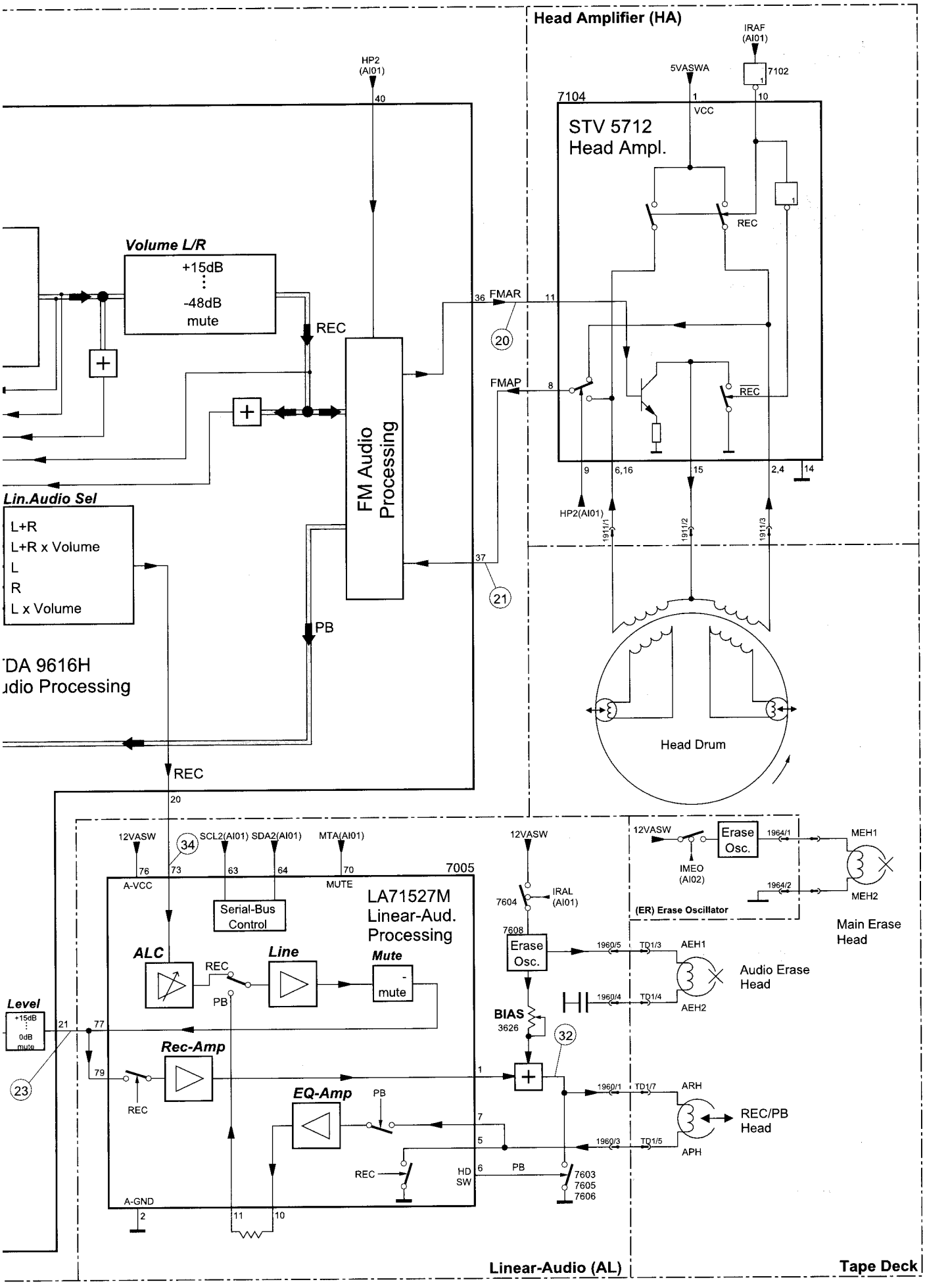


A: AC, 200mV/Div, 10us/Di
IC 7066 Pin 23

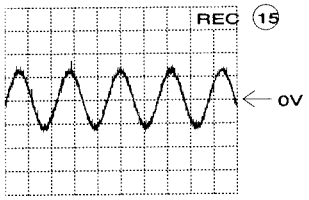
A20_BV.dw
HG_0398

Block Diagram Audio

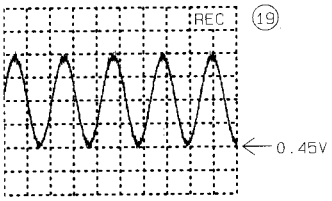



Head Amplifier (HA)
IRAF (AI01)
5VASWA
7102
7104
STV 5712
Head Ampl.
VCC
REC
HP2 (AI01)
40
Volume L/R
+15dB
-48dB
mute
REC
36 FMAR
11
20
FMAP
8
REC
FM Audio Processing
Lin.Audio Sel
L+R
L+R x Volume
L
R
L x Volume
37
21
PB
9
6,16
15
2,4
14
HP2(AI01)
1911/1
1911/2
1911/3
DA 9616H
udio Processing
Head Drum
REC
20
12VASW
34
SCL2(AI01) SDA2(AI01)
MTA(AI01)
76
73
63
64
70
7005
A-VCC
MUTE
LA71527M
Linear-Aud.
Processing
Serial-Bus
Control
ALC
REC
Line
Mute
mute
PB
Level
+15dB
0dB
mute
21
77
23
79
Rec-Amp
REC
EQ-Amp
PB
REC
HD
SW
6
PB
7603
7605
7606
A-GND
2
11
10
12VASW
7604
IRAL
(AI01)
7608
Erase
Osc.
BIAS
3626
32
1
7
5
12VASW
Erase
Osc.
IMEO
(AI02)
1964/1
1964/2
MEH1
MEH2
(ER) Erase Oscillator
Main Erase
Head
1960/5
TD1/3
AEH1
1960/4
TD1/4
AEH2
Audio Erase
Head
1960/1
TD1/7
ARH
1960/3
TD1/5
APH
REC/PB
Head
Linear-Audio (AL)
Tape Deck

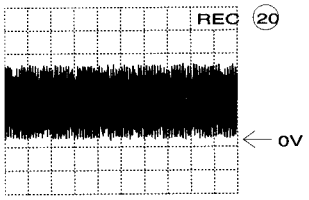
Oscillograms Block Diagram Audio



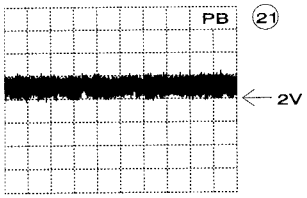
A: DC, 500mV/Div, 500us/Div
Tumod Pin 3



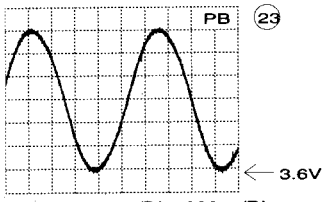
A: AC, 100mV/Div, 500us/Div
IC 7761 Pin 37/38



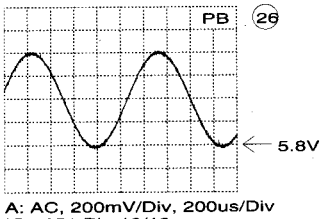
A: DC, 200mV/Div, 5ms/Div
FMAR



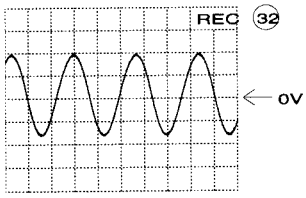
A: AC, 200mV/Div, 500us/Div
FMAP



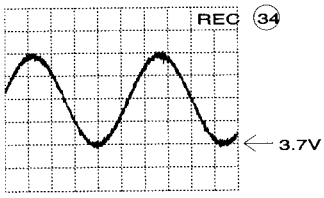
A: AC, 100mV/Div, 200us/Div
IC 7651 Pin 21



A: AC, 200mV/Div, 200us/Div
IC 7651 Pin 18/19

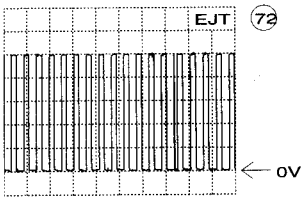


A: DC, 20 V/Div, 5us/Div
Connector 1960 Pin 1

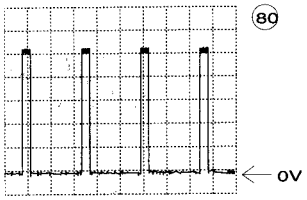


A: AC, 50mV/Div, 200us/Div
IC 7005 Pin 73

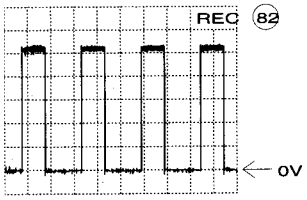
Oscillograms Block Diagram Digital



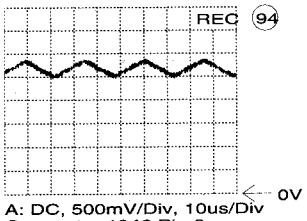
A: DC, 1 V/Div, 20ms/Div
IC 7406 Pin 3



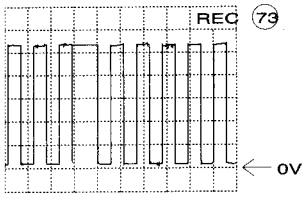
A: DC, 1 V/Div, 10us/Div
IC 7406 Pin 89



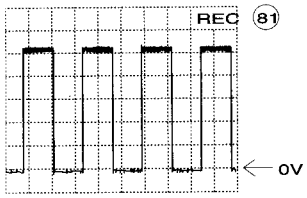
A: DC, 1 V/Div, 10us/Div
IC 7406 Pin 87



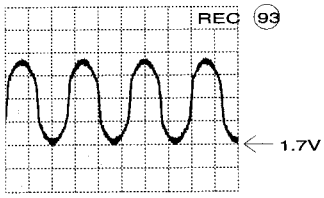
A: DC, 500mV/Div, 10us/Div
Connector 1946 Pin 6



A: DC, 1 V/Div, 2ms/Div
IC 7406 Pin 28

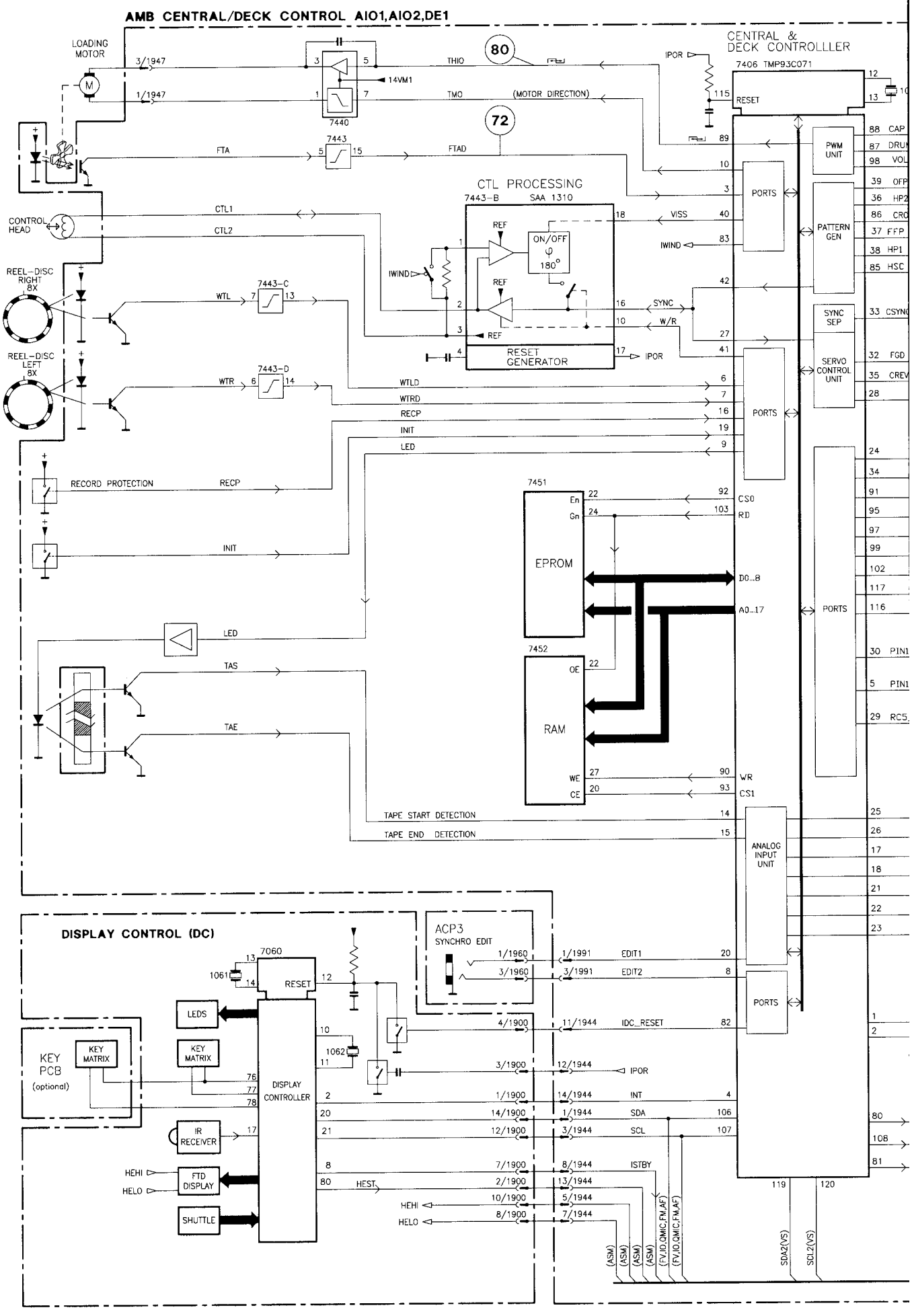


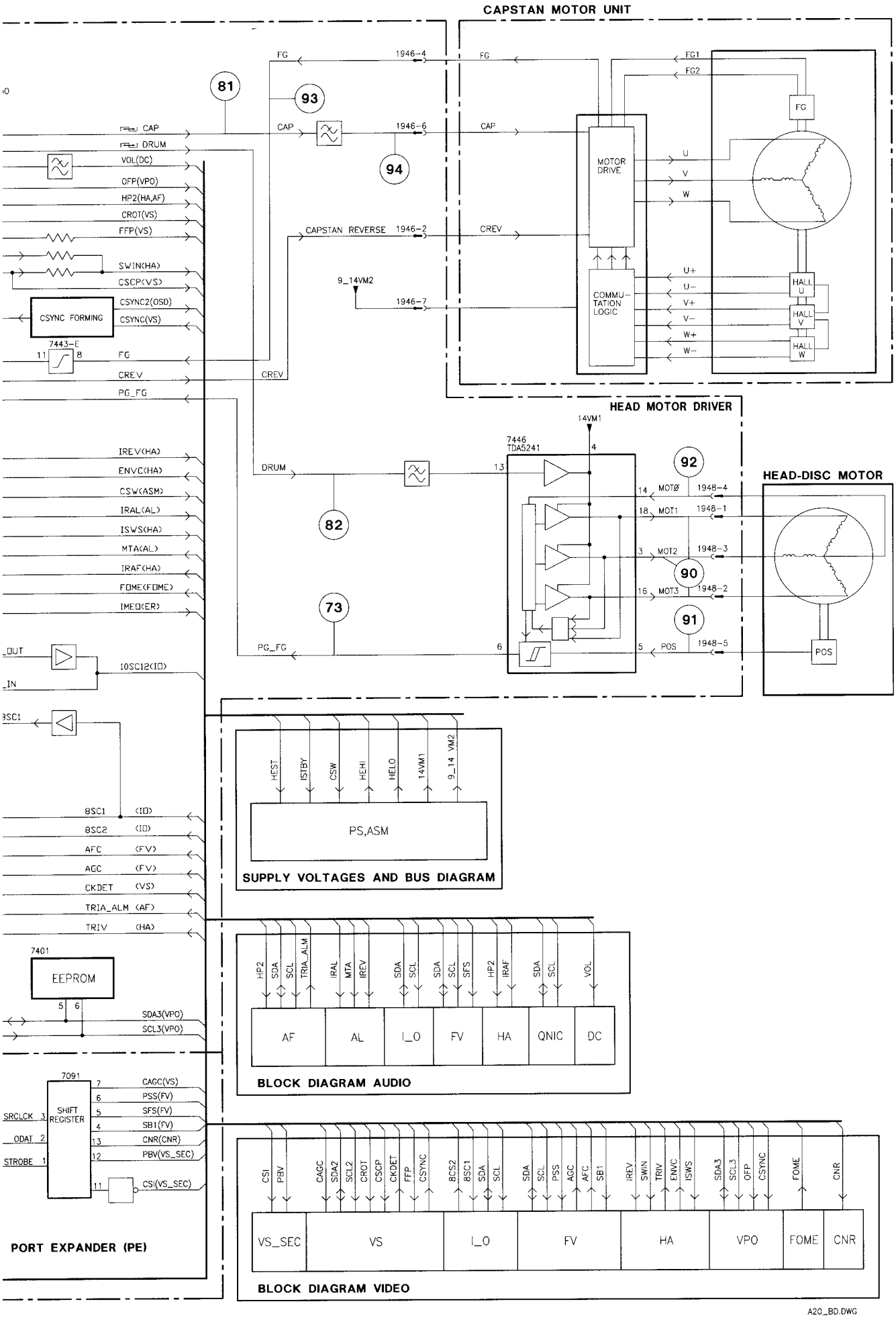
A: DC, 1 V/Div, 10us/Div
IC 7406 Pin 88



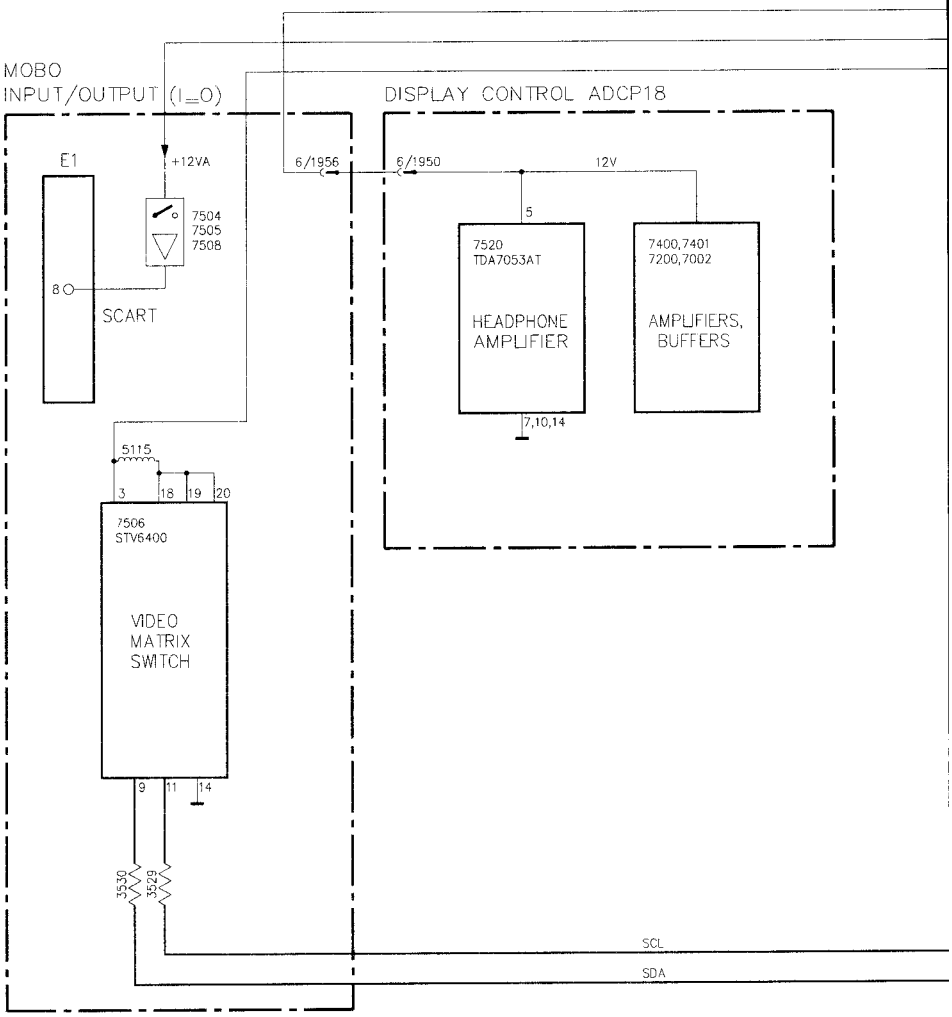
A: DC, 500mV/Div, 500us/Div
Connector 1946 Pin 4

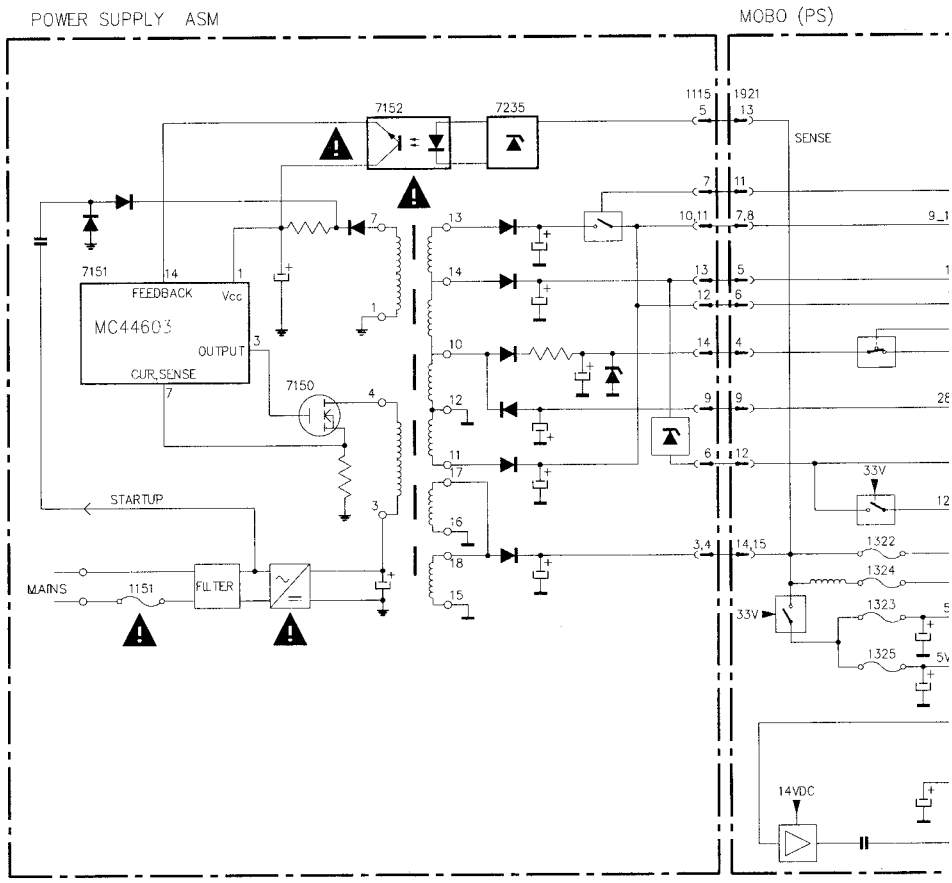
Block Diagram Digital

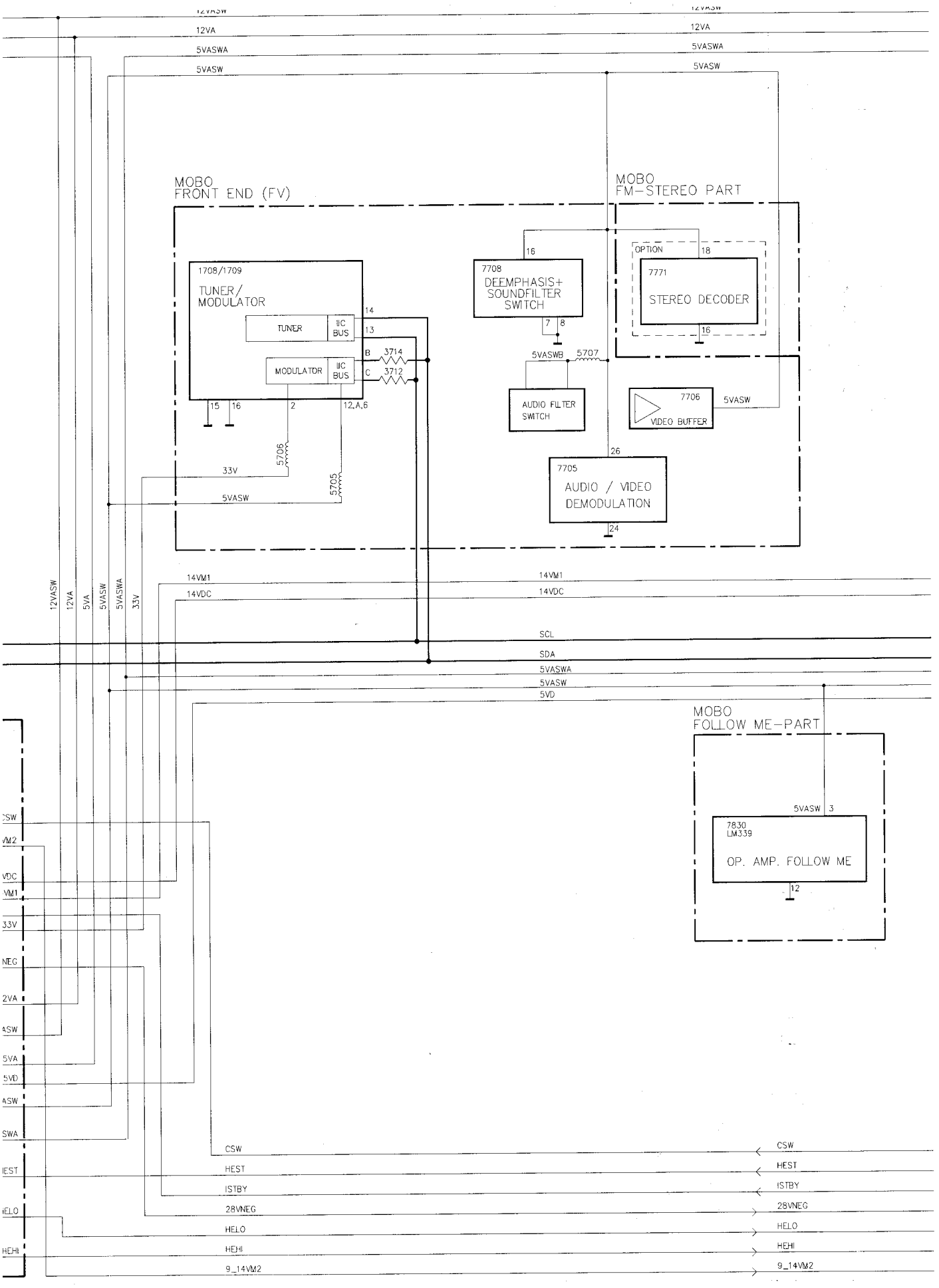



CAPSTAN MOTOR UNIT
HEAD MOTOR DRIVE
HEAD-DISC MOTOR
SUPPLY VOLTAGES AND BUS DIAGRAM
PS,ASM
BLOCK DIAGRAM AUDIO
AF
AL
I_O
FV
HA
QNIC
DC
BLOCK DIAGRAM VIDEO
VS_SEC
VS
I_O
FV
HA
VPO
FOME
CNR
PORT EXPANDER (PE)
MOTOR DRIVE
COMMU-TATION LOGIC
CSYNC FORMING
EEPROM
SHIFT REGISTER
A20_BD.DWG
HG_0398

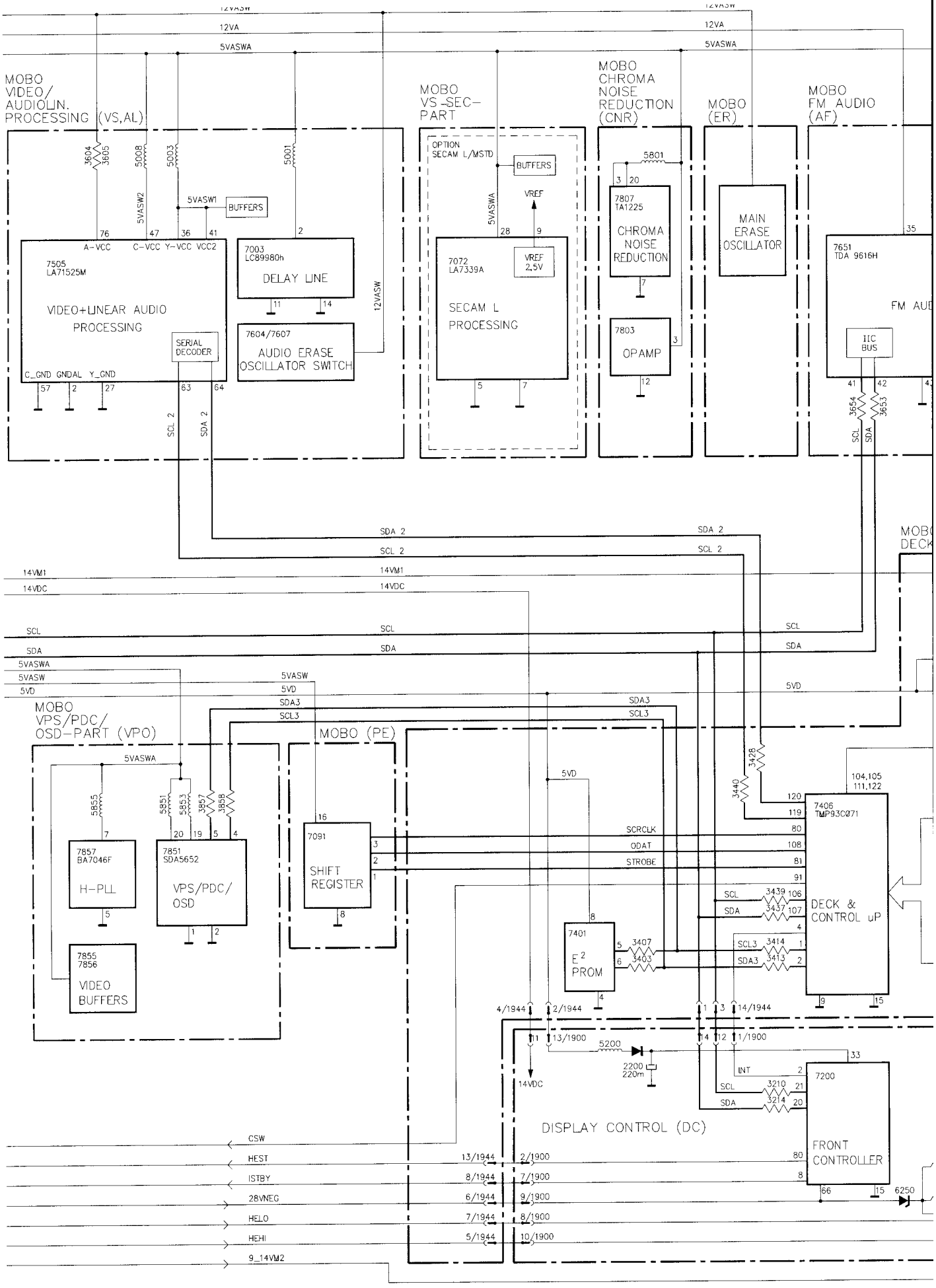
Block Diagram Supply & I²C

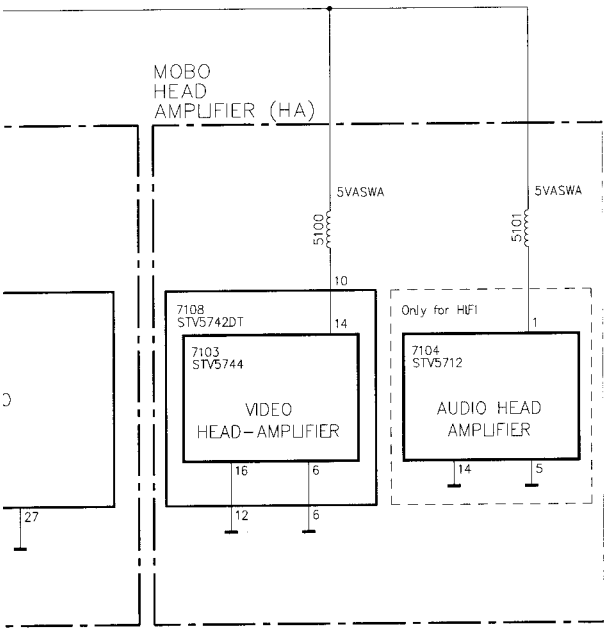


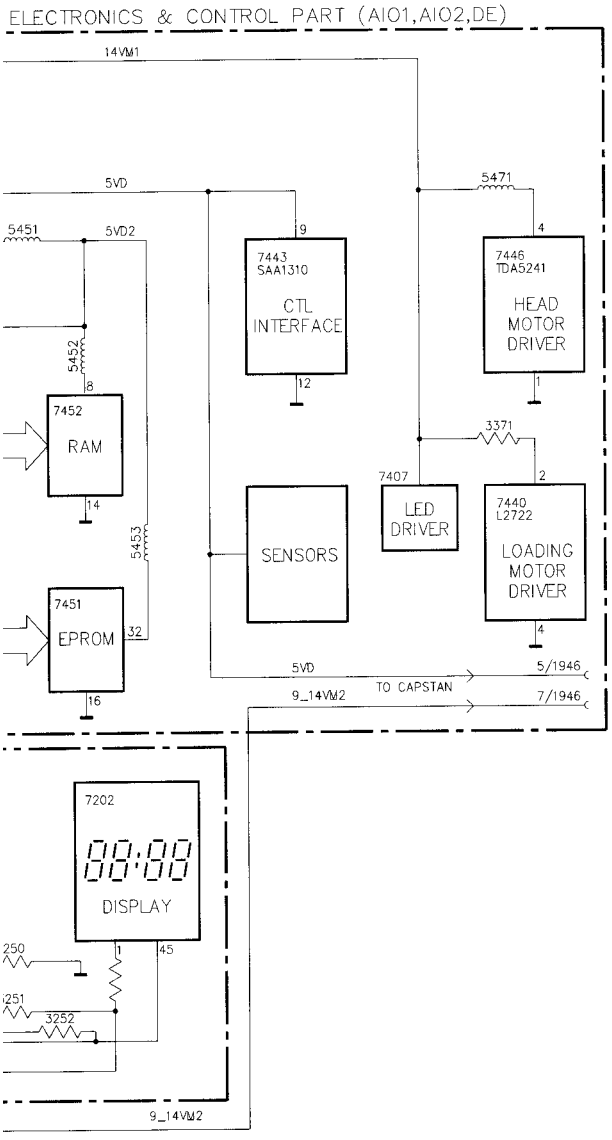



12VASW
12VA
5VASWA
5VASW
MOBO
FRONT END (FV)
MOBO
FM-STEREO PART
1708/1709
TUNER/
MODULATOR
TUNER
IIC BUS
MODULATOR
IIC BUS
14
13
B 3714
C 3712
15
16
2
12,A,6
5706
5705
33V
5VASW
7708
DEEMPHASIS+
SOUNDFILTER
SWITCH
16
7
8
OPTION
18
7771
STEREO DECODER
16
5VASWB
5707
AUDIO FILTER
SWITCH
7706
VIDEO BUFFER
5VASW
26
7705
AUDIO / VIDEO
DEMODULATION
24
14VM1
14VDC
SCL
SDA
5VASWA
5VASW
5VD
MOBO
FOLLOW ME-PART
5VASW
3
7830
LM339
OP. AMP. FOLLOW ME
12
CSW
HEST
ISTBY
28VNEG
HELO
HEHI
9_14VM2

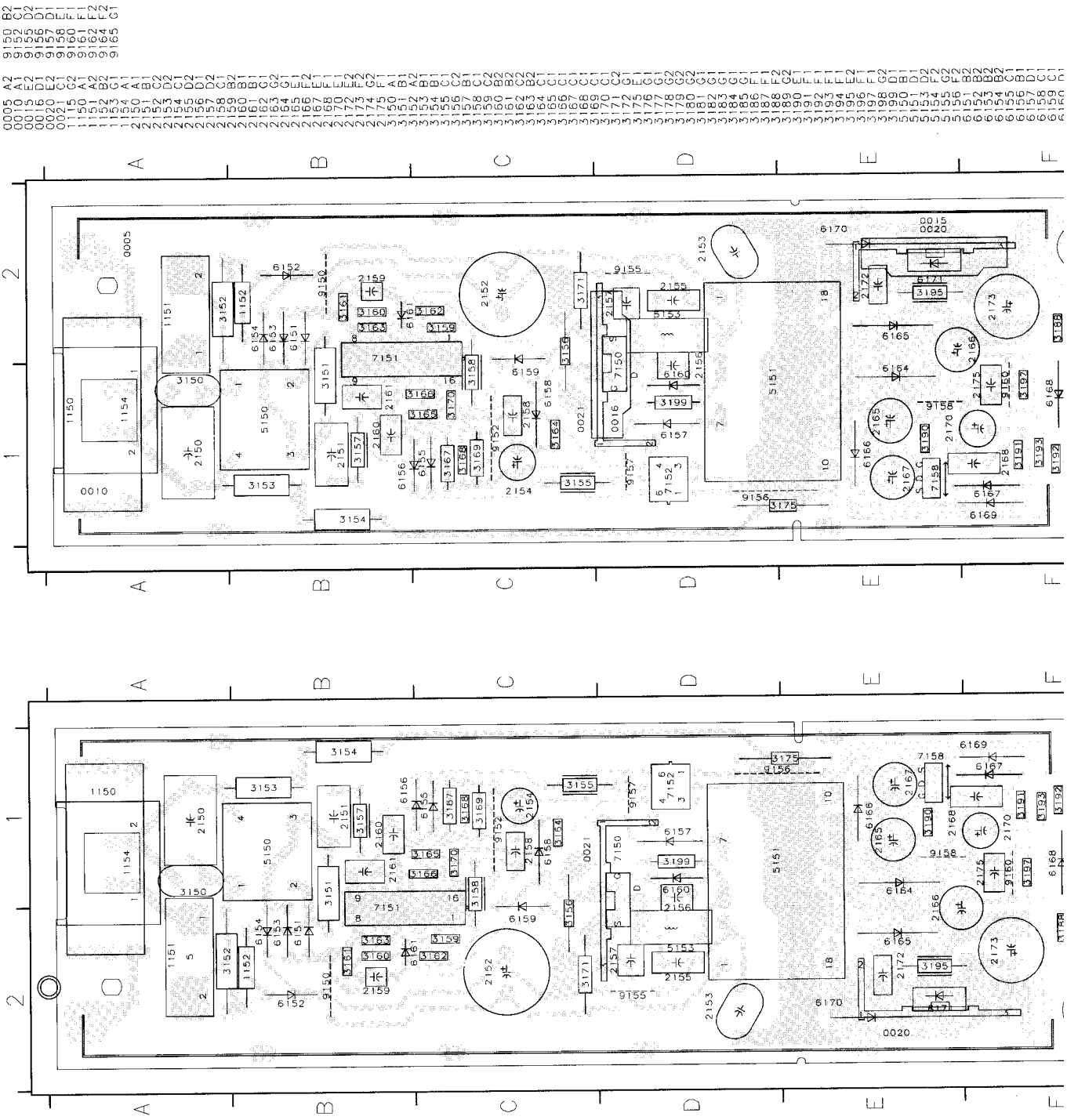
Block Diagram Supply & I²C

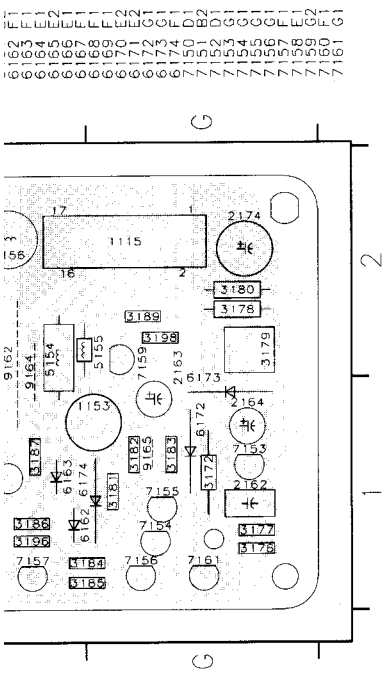


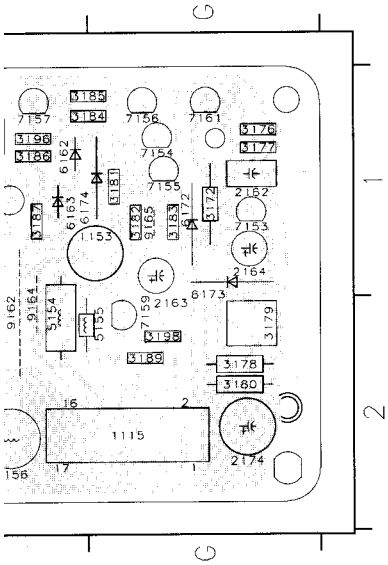

MOBO
HEAD
AMPLIFIER (HA)
5VASWA
5100
5VASWA
5101
10
7108
STV5742DT
14
7103
STV5744
VIDEO
HEAD-AMPLIFIER
16
6
12
6
Only for HIFI
1
7104
STV5712
AUDIO HEAD
AMPLIFIER
14
5
27

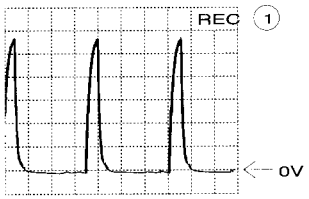

ELECTRONICS & CONTROL PART (AIO1,AIO2,DE)
14VM1
5VD
5451
5VD2
9
7443
SAA1310
CTL
INTERFACE
12
5471
4
7446
TDA5241
HEAD
MOTOR
DRIVER
1
5452
8
7452
RAM
14
3371
2
7407
LED
DRIVER
7440
L2722
LOADING
MOTOR
DRIVER
4
5453
SENSORS
7451
EPROM
32
16
5VD
5/1946
TO CAPSTAN
9_14VM2
7/1946
7202
00:00
DISPLAY
45
250
251
3252
9_14VM2

Power Supply (ASM)

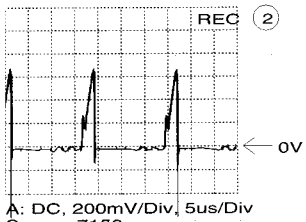




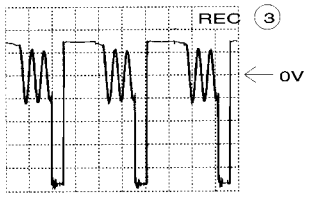




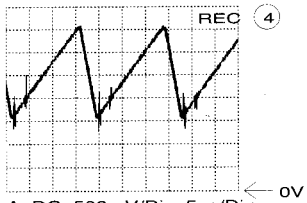
A: DC, 2 V/Div, 5us/Div
Gate 7150



A: DC, 200mV/Div, 5us/Div
Source 7150



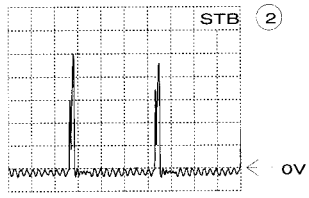
A: DC, 10 V/Div, 5us/Div
5151 Pin 7



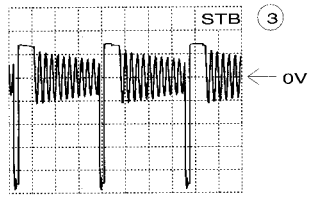
A: DC, 500mV/Div, 5us/Div
IC 7151 Pin 10

Low Power Standby

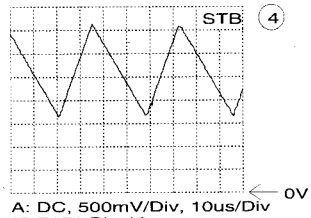
A: DC, 2 V/Div, 10us/Div
Gate 7150



A: DC, 100mV/Div, 10us/Div
Source 7150



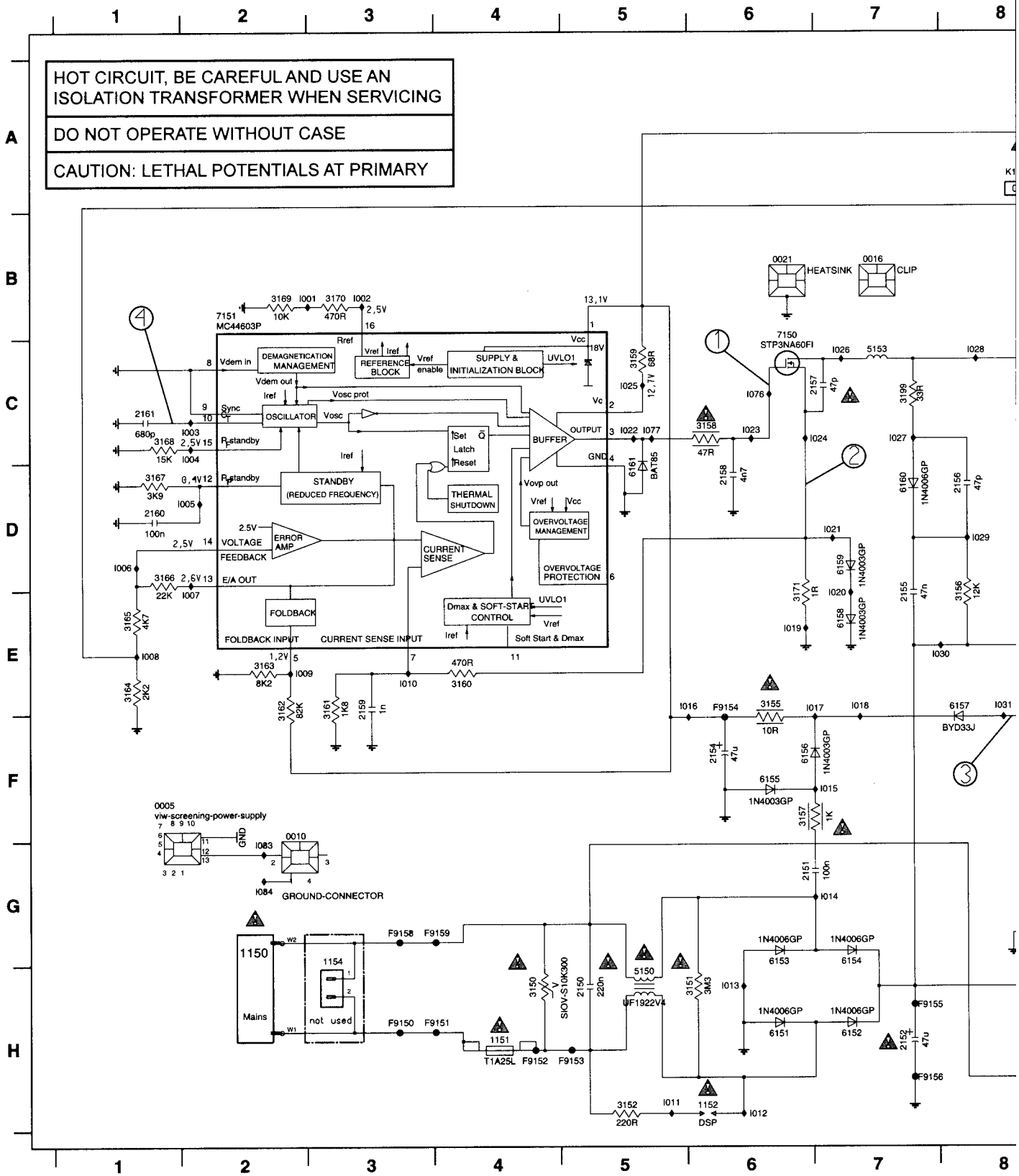
A: DC, 10 V/Div, 10us/Div
5151 Pin 7



A: DC, 500mV/Div, 10us/Div
IC 7151 Pin 10

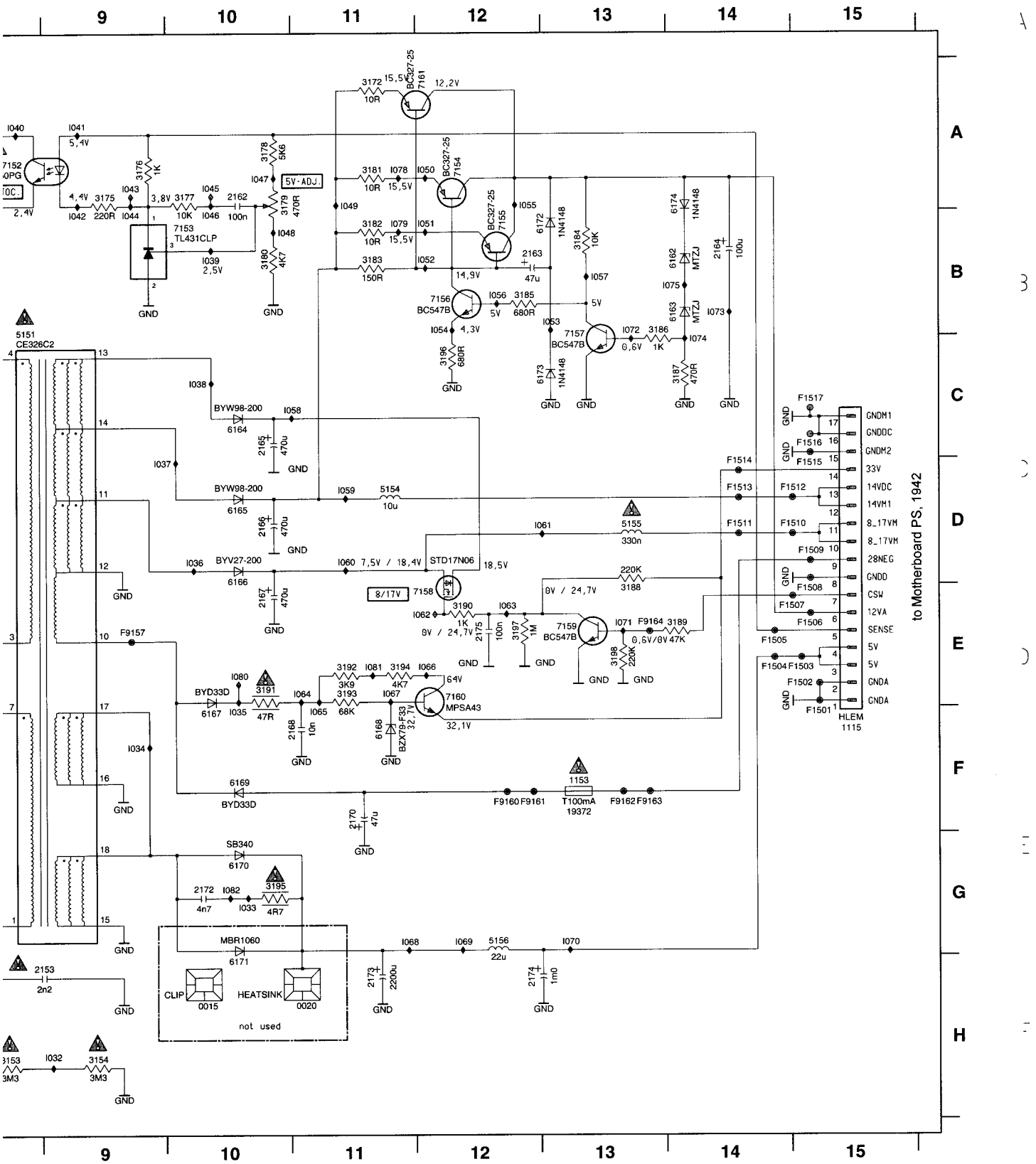
Power Supply (ASM)

0005 F1	1151 H4	2154 F6	2162 A10	2172 G10	3154 H9	3162 E2	3170 B3	3180 B10	3188 E13	3196 C12	5155 D13	6157 E8	6165 D10	6173 C13	7156 B12
0010 F2	1152 H6	2155 E7	2163 B12	2173 H11	3155 E6	3163 E2	3171 E6	3181 A11	3189 E14	3197 E12	5156 G12	6158 E7	6166 D10	6174 A14	7157 C13
0015 H10	1153 F13	2156 D8	2164 B14	2174 H12	3156 E8	3164 E1	3172 A11	3182 B11	3190 E12	3198 E13	6151 H6	6159 D7	6167 F10	7150 C6	7158 E12
0016 B7	1154 G3	2157 C7	2165 C10	2175 E12	3157 F6	3165 E1	3175 A9	3183 B11	3191 E10	3199 C7	6152 H7	6160 D7	6168 F11	7151 B2	7159 E13
0020 H11	2150 H5	2158 D6	2166 D10	3150 H4	3158 C6	3166 D1	3176 A9	3184 B13	3192 E11	5150 H5	6153 G6	6161 D5	6169 F10	7152 A8	7160 E12
0021 B6	2151 G6	2159 E3	2167 E10	3151 H6	3159 C5	3167 D1	3177 A10	3185 B12	3193 E11	5151 B8	6154 G7	6162 B14	6170 G10	7153 B10	7161 A12
1115 F15	2152 H7	2160 D1	2168 F11	3152 H5	3160 E4	3168 C1	3178 A10	3186 B13	3194 E11	5153 C7	6155 F6	6163 B14	6171 H10	7154 A12	F1501 F15
1150 G2	2153 H9	2161 C1	2170 F11	3153 H8	3161 E3	3169 B2	3179 A10	3187 C14	3195 G10	5154 D11	6156 F6	6164 C10	6172 B13	7155 B12	F1502 E15

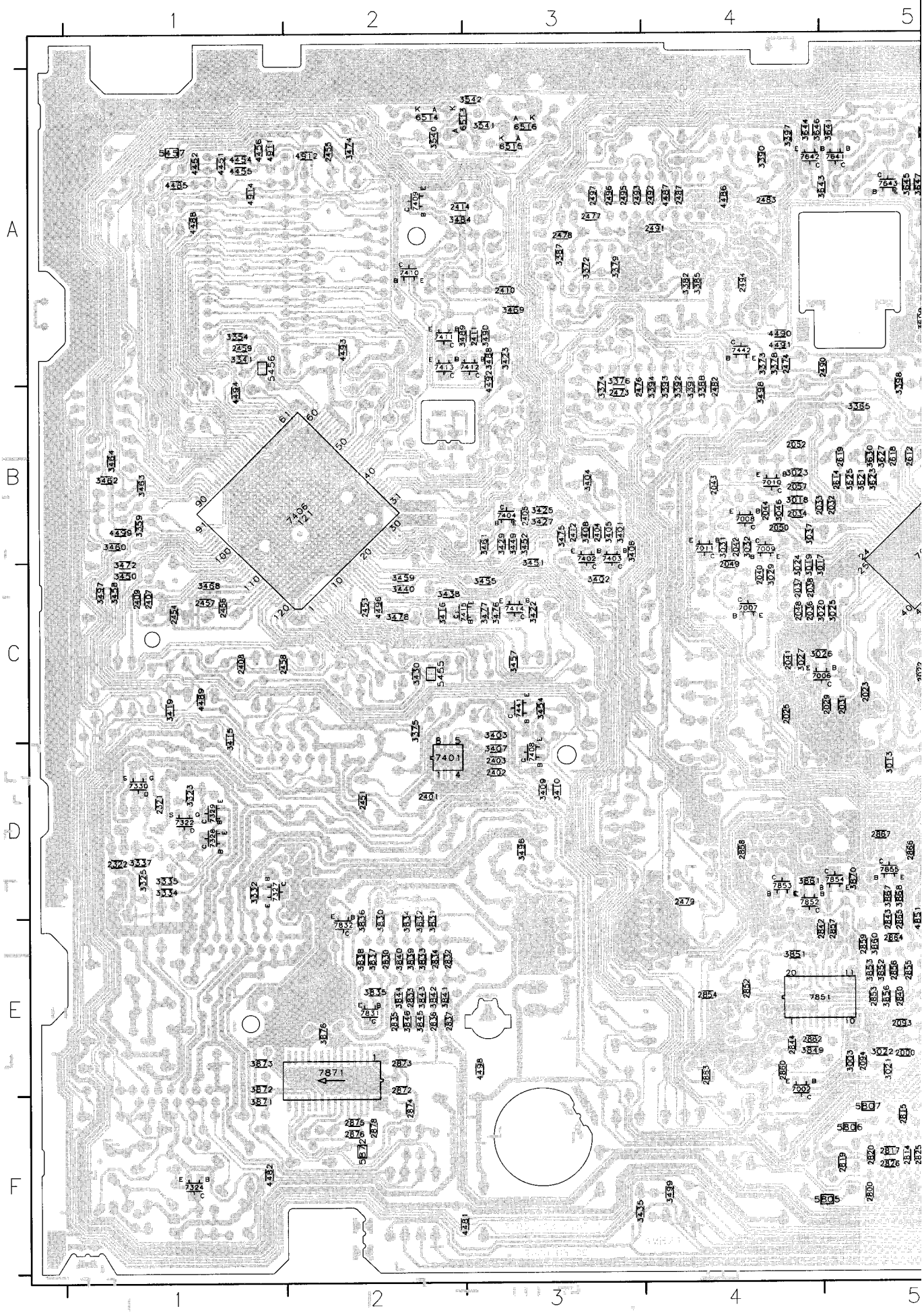


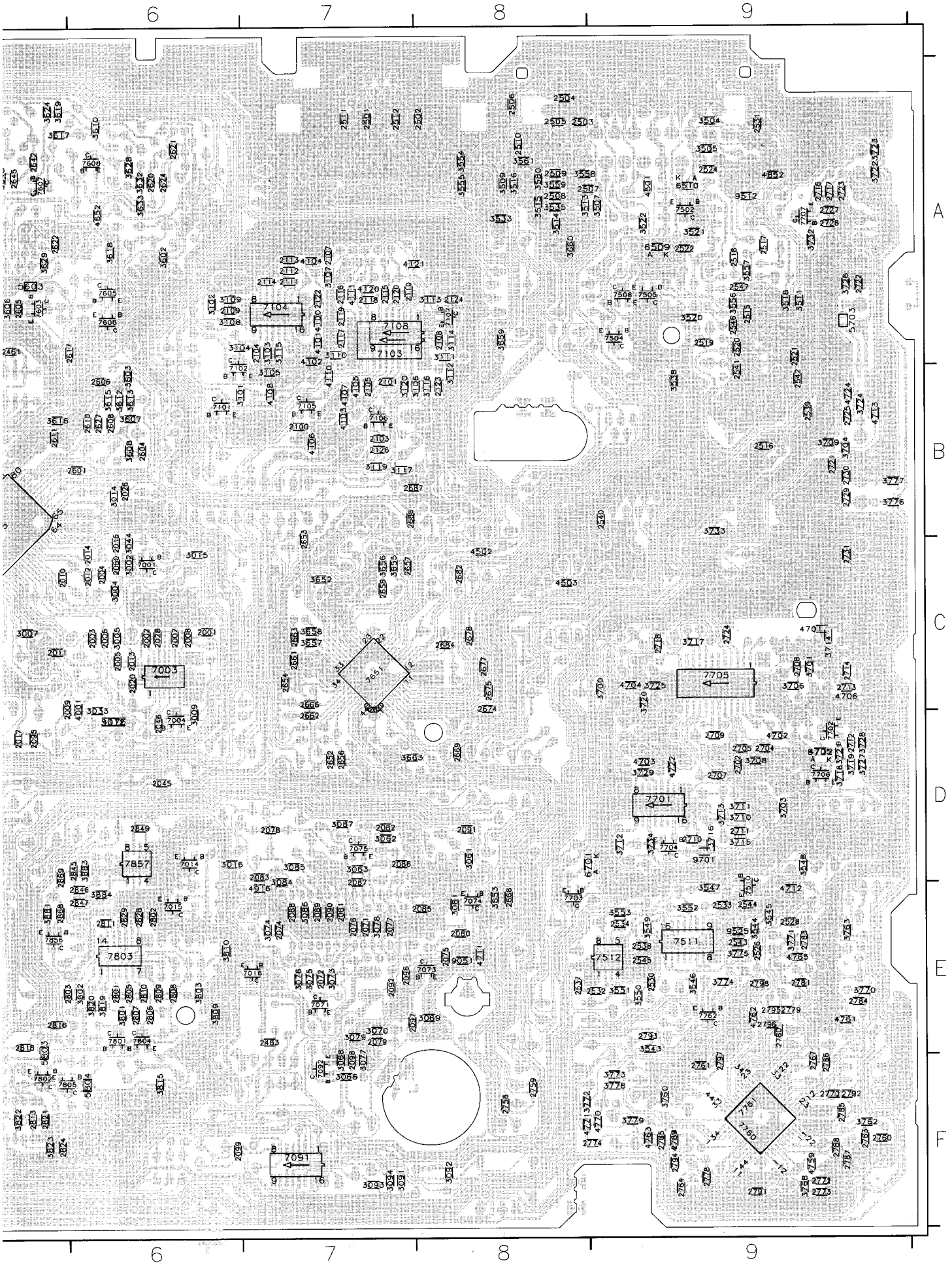
Interconnections Manual Page

I503 E15	F1511 D14	F9151 H4	F9159 G4	I003 C2	I011 H5	I019 E6	I027 C7	I035 F10	I043 A9	I051 B12	I059 D11	I067 E11	I075 B14	I083 G2
I504 E14	F1512 D15	F9152 H4	F9160 F12	I004 C2	I012 H6	I020 E7	I028 C8	I036 D10	I044 B9	I052 B12	I060 D11	I068 G11	I076 C6	I084 G2
I505 E14	F1513 D14	F9153 H5	F9161 F12	I005 D2	I013 H6	I021 D7	I029 D8	I037 D9	I045 A10	I053 B13	I061 D13	I069 G12	I077 C5	
I506 E15	F1514 D14	F9154 E6	F9162 F13	I006 D1	I014 G7	I022 C5	I030 E8	I038 C10	I046 B10	I054 B12	I062 E12	I070 G13	I078 A11	
I507 E15	F1515 D15	F9155 H7	F9163 F13	I007 E2	I015 F7	I023 C6	I031 E8	I039 B10	I047 A10	I055 A12	I063 E12	I071 E13	I079 B11	
I508 E15	F1516 C15	F9156 H7	F9164 E13	I008 E1	I016 E6	I024 C7	I032 H9	I040 A8	I048 B10	I056 B12	I064 E11	I072 B13	I080 E10	
I509 D15	F1517 C15	F9157 E9	I001 B3	I009 E2	I017 E7	I025 C5	I033 G10	I041 A9	I049 A11	I057 B13	I065 F11	I073 B14	I081 E11	
I510 D15	F9150 H3	F9158 G3	I002 B3	I010 E3	I018 E7	I026 C7	I034 F9	I042 B9	I050 A12	I058 C11	I066 E12	I074 C14	I082 G10	



Motherboard (MOBO)




6
7
8
9
A
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F
7104
7108
7103
7003
7651
7705
7701
7857
7803
7511
7512
7091
7760
7761

Component Mapping Motherboard

2000	E5	2491	A4	2784	E9	3101	B7	3553	E9	3868	D5	7401	D2		
2001	C6	2492	A4	2785	F9	3102	A6	3554	A8	5870	D5	7402	B3		
2002	C6	2493	A3	2786	F9	3103	A7	3555	A8	3871	F1	7403	B3		
2003	C6	2494	A4	2787	F9	3104	A6	3556	A9	3872	E1	7404	B3		
2004	C6	2495	A3	2788	F9	3105	B7	3557	A9	3873	E1	7406	B2		
2005	C6	2496	A3	2789	F9	3106	B8	3558	A8	3876	E2	7408	D3		
2006	C6	2497	A3	2791	F9	3107	A7	3559	A8	3881	E5	7409	A2		
2007	C6	2501	A7	2792	F9	3108	A6	3560	A8	3883	D6	7410	A2		
2008	C6	2502	A8	2793	E9	3109	A6	3561	A8	3884	E6	7411	A2		
2009	C5	2503	A8	2794	F9	3110	A7	3602	A6	4001	C6	7412	A3		
2010	C5	2504	A8	2795	E9	3111	A8	3603	B6	4100	A7	7413	A2		
2011	C5	2505	A8	2796	F9	3112	B8	3606	A5	4101	A7	7414	C3		
2012	C6	2506	A8	2797	F9	3113	A8	3607	B6	4102	A7	7415	C2		
2013	C6	2507	A9	2798	F9	3114	A8	3608	B6	4103	B7	7441	C3		
2014	C6	2508	A8	2800	F5	3115	A7	3609	A5	4104	A7	7442	A4		
2016	C6	2509	A8	2801	E6	3116	B8	3610	A6	4105	B7	7502	A9		
2017	D5	2510	A8	2802	E6	3117	B7	3612	B6	4106	B7	7504	A9		
2020	C6	2511	A7	2803	E5	3119	B7	3613	B6	4107	B7	7505	A9		
2022	C5	2512	A7	2805	E6	3120	B7	3615	B6	4108	B7	7508	A9		
2023	C5	2515	A9	2806	E6	3323	D1	3616	B5	4110	B7	7510	E9		
2025	C4	2516	B9	2807	E6	3325	D1	3617	A5	4111	A7	7511	E9		
2026	B6	2517	A9	2808	E6	3332	D1	3618	A6	4112	D6	7512	E9		
2028	C6	2518	A9	2809	E6	3334	D1	3619	A5	4120	A7	7603	A5		
2029	C5	2519	A9	2810	E6	3335	D1	3621	B5	4121	A8	7605	A6		
2031	C5	2520	A9	2811	E6	3337	D1	3623	B5	4451	A1	7606	A6		
2032	B5	2521	A9	2813	F5	3341	A1	3624	A5	4452	A1	7607	A5		
2033	B4	2522	A9	2814	F5	3354	A1	3625	B5	4454	A1	7608	A6		
2034	B4	2524	A9	2815	F5	3359	B1	3627	B5	4455	A1	7641	A5		
2036	C4	2526	E9	2816	F5	3365	B5	3628	A6	4456	A1	7642	A4		
2037	C4	2528	E9	2817	F5	3372	A3	3629	A5	4481	F2	7643	A5		
2038	C4	2530	E9	2818	F5	3373	A4	3630	B5	4482	F1	7651	C7		
2040	C4	2531	A9	2819	F5	3374	B3	3632	A6	4485	A1	7701	D9		
2041	C4	2532	E9	2820	F5	3375	C2	3633	A6	4486	A4	7702	D9		
2042	B4	2533	E9	2821	F5	3376	A3	3641	A5	4487	A4	7703	E8		
2043	B4	2534	E9	2824	F5	3378	A4	3643	A5	4488	A1	7704	D9		
2044	B4	2537	E8	2825	F5	3379	A3	3644	A4	4489	C1	7705	C9		
2045	D6	2538	E9	2826	F5	3382	A4	3645	A5	4490	A4	7706	D9		
2046	D6	2539	B9	2828	E6	3385	A4	3646	A4	4491	A4	7707	A9		
2048	C4	2540	B9	2829	E6	3387	A3	3647	A5	4492	A3	7760	F9		
2049	C4	2541	B9	2830	E2	3388	B4	3648	A5	4493	A2	7761	F9		
2050	B4	2542	B9	2832	E2	3390	A4	3652	C7	4494	B1	7762	E9		
2052	B4	2543	E9	2833	E2	3391	B4	3653	E8	4496	C2	7801	E6		
2057	B4	2544	E9	2834	E2	3392	B4	3655	C7	4498	E3	7802	F5		
2060	C6	2545	E9	2835	E2	3393	B4	3656	C7	4499	B1	7803	E6		
2071	E7	2546	A9	2836	E2	3394	B4	3657	C7	4501	A9	7804	E6		
2072	E7	2547	A9	2837	E2	3397	A4	3658	C7	4502	C8	7805	F5		
2074	E7	2601	B6	2840	E5	3398	B5	3659	A8	4503	C8	7831	E2		
2075	E8	2604	B6	2842	E4	3401	B3	3660	A8	4651	A5	7832	E2		
2076	E7	2605	A5	2843	E5	3402	C3	3663	D7	4652	A6	7851	E4		
2077	E7	2606	B6	2844	E4	3403	C3	3700	C9	4701	C9	7852	D4		
2078	D7	2608	B6	2845	D6	3404	B3	3701	C9	4702	D9	7853	D4		
2079	E7	2610	B6	2846	E6	3405	B3	3703	D9	4703	D9	7854	D5		
2080	E8	2611	B5	2847	E6	3406	B3	3704	B9	4704	C9	7855	D5		
2081	E7	2612	B5	2849	D6	3407	D3	3706	C9	4705	D9	7856	E5		
2082	D7	2614	B5	2852	E4	3408	B3	3708	D9	4706	C9	7857	D6		
2083	D7	2617	A6	2853	E5	3409	D3	3709	B9	4711	E8	7871	E2		
2085	E8	2618	B5	2854	E4	3410	D3	3710	D9	4712	E9	9051	E8		
2086	D7	2619	B5	2855	E5	3415	C1	3711	D9	4713	B9	9512	A9		
2087	D7	2620	A6	2856	E5	3416	C2	3712	D9	4722	D9	9525	E9		
2088	E7	2621	A6	2857	E5	3419	C1	3713	D9	4724	B9	9701	D9		
2089	E7	2622	A5	2858	D4	3422	C3	3714	C9	4759	F9				
2090	E7	2624	A6	2859	E5	3423	A3	3715	D9	4761	E9				
2091	D8	2627	B6	2860	E4	3425	B3	3716	D9	4762	E9				
2092	E7	2642	A5	2862	E4	3427	B3	3717	C9	4763	F9				
2093	E5	2645	A5	2863	E4	3429	B3	3718	D9	4764	F9				
2094	E5	2652	D7	2864	E5	3430	C2	3719	D9	4765	E9				
2095	D5	2653	B7	2865	E5	3435	F3	3720	C9	4770	F9				
2096	E7	2654	C7	2866	D5	3438	C2	3721	D9	4771	F8				
2097	E7	2656	D7	2867	D5	3440	C2	3722	A9	4851	E5				
2098	F7	2657	C7	2868	E5	3449	B3	3723	A9	4852	A9				
2099	F6	2658	C7	2869	D5	3450	C1	3724	B9	4911	A1				
2100	B7	2661	C7	2872	E2	3451	C3	3725	C9	4912	A2				
2101	B7	2662	D7	2873	E2	3452	B3	3726	A9	4914	A1				
2103	B7	2663	C7	2874	F2	3454	C3	3727	D9	4916	E7				
2104	A7	2666	C7	2875	F2	3455	C3	3728	D9	5076	D6				
2105	B7	2668	E8	2876	F2	3457	C3	3729	D9	5455	C2				
2107	A7	2669	D8	2878	F2	3458	C1	3732	A9	5456	A1				
2108	A8	2674	C8	3002	C6	3459	C2	3733	B9	5457	A1				
2109	A6	2675	C8	3003	E5	3460	B1	3734	D9	5603	A5				
2110	A7	2677	C8	3004	C6	3461	B3	3760	F9	5703	A9				
2111	A7	2678	C8	3005	C6	3462	B1	3762	F9	5803	E5				
2112	A7	2682	C8	3007	C5	3463	B1	3763	E9	5804	F6				
2113	A7	2684	C8	3009	D6	3464	B1	3768	F9	5805	F5				
2114	A7	2686	B7	3013	D5	3468	C1	3770	E9	5806	F5				
2115	A7	2687	B7	3014	B6	3469	A3	3771	E9	5807	F5				
2116	A7	2702	D9	3015	C6	3472	C1	3772	F8	5872	F2				
2117	A7	2704	D9	3016	D6	3474	A2	3773	F9	6509	A9				
2118	A7	2705	D9	3017	C4	3475	B3	3774	E9	6510	A9				
2119	A7	2707	D9	3018	B4	3476	C3	3775	E9	6513	A3				
2120	A7	2708	C9	3019	C4	3477	C3	3776	B9	6514	A2				
2122	A7	2709	D9	3020	C5	3478	C2	3777	B9	6515	A3				
2123	B8	2710	D9	3021	E5	3484	A2	3778	F9	6516	A3				
2124	A8	2711	D9	3022	E5	3488	A3	3779	F9	6701	D8				
2126	B7	2712	D9	3023	B4	3489	A2	3801	E6	6702	D9				
2321	D1	2713	C9	3024	C4	3490	A3	3802	E6	7001	C6				
2322	D1	2714	C9	3025	C5	3496	D3	3803	E6	7002	E4				
2401	D2	2716	A9	3026	C5	3497	C1	3809	E6	7003	C6				
2402	D3	2717	A9	3027	C4	3498	B4	3810	E6	7004	D6				
2403	D3	2718	C9	3029	C4	3499	F4	3815	F6	7005	B5				
2404	B3	2721	B9	3031	B4	3504	A9	3819	E6	7006	C5				
2405	B3	2722	A9	3032	B4	3505	A9	3820	E6	7007	C4				
2407	C1	2723	A9	3033	C6	3507	A9	3822	F5	7008	B4				
2408	C1	2724	C9	3037	B4	3509	A8	3823	F5	7009	B4				
2409	C1	2725	B9	3044	C6	3511	A9	3830	E2	7010	B4				
2410	A3	2727	A9	3046	B4	3513	A8	3831	E2	7011	B4				
2411	A3	2728	A9	3061	D8	3514	A8	3832	E2	7014	D6				
2412	B3	2729	B9	3062	D7	3515	A8	3833	E2	7015	E6				
2414	A2	2730	B9	3063	D7	3516	A8	3834	E2	7016	E7				
2451	D2	2731	C9	3066	F7	3518	A9	3835	E2	7071	E7				
2453	C2	2758	F8	3068	F7	3520	A9	3836	E2	7073	E8				
2454	C1	2759	F8	3069	E8	3521	A9	3837	E2	7074	E8				
2455	A2	2760	F9	3070	E7	3522	A9	3838	E2	7075	D7				
2456	C1	2761	F9	3073	E7	3533	A8	3839	E2	7091	F7				
2457	C1	2763	F9	3074	E7	3535	A8	3840	E2	7092	F7				
2458	C1	2764	F9	3075	E7	3538	B9	3841	E2	7101	B6				
2459	A1	2765	F9	3076	E7	3540	A2	3842	E2	7102	B6				
2461	A5	2767	F9	3077	F7	3541	A3	3843	E2	7103	A7				
2463	E7	2770	F9	3078	E7	3542	A3	3844	E2	7104	A7				
2473	B3	2771	F9	3079	E7	3543	E9	3845	E2	7105	B7				
2474	A4	2772	F9	3081	E8	3544	E9	3846	E2	7106	B7				
2476	B3	2773	F9	3084	D7	3545	E9	3849	E4	7107	A8				
2477	A3	2774	F9	3085	D7	3546	E9	3851	E4	7108	A7				
2478	A3	2775	F9	3086	E7	3547	E9	3852	E5	7322	D1				
2479	D4	2778	F9	3087	D7	3548	D9	3853	E5	7324	F1				
2482	B4	2779	E9	3091	F7	3549	E9	3856	E5	7327	D1				
2483	A4	2780	E9	3092	F8	3550	E9	3860	E5	7328	D1				
2487	A4	2781	E9	3093	F7	3551	E9	3861	D4	7329	D1				
2490	A5	2783	E9	3094	F7	3552	E9	3867	D5	7330	D1				

Component Mapping Motherboard

0001	F1	2776	F2	3510	A3	6507	A2	9462	A8	9758	E2				
0007	E4	2782	E2	3512	A4	6508	A2	9463	A8	9759	F4				
0008	D7	2790	E1	3517	A3	6601	A5	9464	A7	9760	E3				
0020	D3	2799	F2	3519	A2	6761	E1	9465	A7	9761	F1				
0021	D6	2804	E5	3523	A2	7072	E4	9466	B8	9762	E1				
0022	D9	2812	F5	3524	A2	7321	D10	9467	A7	9763	F2				
0031	E8	2822	F5	3525	A2	7323	D10	9468	A7	9764	D2				
0050	A4	2823	F5	3526	A2	7325	F10	9469	A7	9813	F5				
1001	C5	2827	F6	3527	A2	7326	F10	9470	A7	9814	F4				
1322	D10	2831	E8	3528	A2	7407	D8	9471	A7	9815	F4				
1323	D10	2839	E7	3529	A1	7440	A8	9472	A6	9816	F5				
1324	E10	2841	D5	3530	A1	7443	B7	9473	A8	9817	F6				
1325	E10	2850	E7	3531	A2	7446	A7	9474	A8	9818	F4				
1451	C10	2851	E7	3532	A2	7451	A10	9475	A8	9820	B2				
1460	E8	2861	E7	3534	A2	7452	A9	9476	A8	9822	E8				
1461	E4	2877	E9	3536	A4	7461	D3	9477	A7	9823	F7				
1701	A1	3001	C5	3537	A4	7462	D9	9478	A8	9824	F8				
1703	D1	3006	B5	3539	A8	7464	E7	9479	A8	9825	F7				
1704	C1	3008	C5	3562	B2	7465	E4	9480	A8	9826	F7				
1705	D2	3010	B5	3601	B5	7466	D7	9481	A8	9829	F7				
1706	D2	3011	D5	3604	A5	7506	A1	9483	A7	9830	D6				
1707	D2	3012	D4	3605	A5	7509	A9	9484	A8	9831	F7				
1708	A1	3030	B7	3611	A5	7604	A5	9485	A8	9832	D6				
1760	F1	3034	E6	3614	A5	7807	F6	9486	B7	9833	F6				
1761	F1	3035	F7	3620	A5	7830	E9	9487	C7	9835	F7				
1851	E6	3036	D6	3622	A5	9011	E1	9488	C7	9836	F7				
1871	F9	3038	B7	3626	A5	9012	B3	9489	C7	9837	E6				
1911	A4	3040	B7	3631	A5	9013	B4	9490	C7	9838	E7				
1912	A4	3041	B7	3640	A6	9014	B4	9495	D7	9839	E6				
1941	A8	3042	B7	3642	A6	9015	B4	9496	E10	9840	F5				
1942	E10	3047	D4	3651	D4	9016	B4	9497	F10	9902	F9				
1944	F10	3048	E4	3654	E3	9017	B4	9498	A8	9903	F9				
1945	D9	3064	E3	3664	D4	9018	B5	9500	D1	9904	F9				
1946	B6	3065	D4	3702	D2	9019	A5	9511	A1	9905	D7				
1947	A8	3067	F4	3705	C2	9021	B5	9513	A1	9907	D10				
1948	A7	3071	E4	3707	D1	9022	A4	9514	A3	9908	E10				
1951	A2	3072	D4	3730	C1	9023	C4	9515	A3	9909	E10				
1952	A2	3080	E3	3731	E2	9024	C4	9516	A3	9922	D8				
1953	A1	3082	D4	3764	F1	9025	C4	9517	A2	9923	D7				
1954	A4	3083	D3	3765	F1	9061	E3	9518	A2	9924	D7				
1955	A4	3088	D4	3766	F1	9062	E3	9519	A2	9925	E6				
1956	B2	3089	D3	3767	F1	9063	B4	9521	B2	9926	D7				
1957	B2	3090	F4	3769	F1	9064	D3	9523	B1	9927	D7				
1960	A6	3095	F5	3804	E5	9065	D3	9524	B2	9929	D7				
1961	B2	3096	F5	3805	E5	9066	D3	9601	A5	9932	D9				
1964	A6	3097	F5	3806	E5	9067	D4	9604	A6	9933	D9				
1991	E2	3118	B3	3807	E5	9068	D4	9611	A4	9934	F10				
2015	C5	3321	D10	3808	E5	9069	B4	9612	A5	9935	F9				
2018	D6	3322	D10	3811	E5	9070	D4	9613	B5	9936	F8				
2019	C5	3326	F10	3812	E5	9072	C5	9614	A5	9937	E8				
2021	D6	3327	F10	3813	F6	9073	C5	9621	C3	9938	D8				
2024	C6	3328	F10	3814	E5	9074	D5	9622	A3	9939	D8				
2027	C6	3329	F10	3816	E5	9075	D5	9623	A3	9940	F7				
2030	B6	3330	E10	3817	F5	9076	E6	9624	F1	9941	D9				
2035	C7	3331	D10	3818	F6	9077	C6	9625	B2	9942	F9				
2039	C6	3336	D10	3821	F6	9078	C6	9626	C3	9943	D10				
2047	C5	3340	C9	3854	E6	9079	D6	9627	C3	9944	D10				
2053	C5	3342	A10	3855	D5	9080	C6	9631	B3	9945	F10				
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2125	A4	3356	B10	3865	E7	9087	D5	9639	A5	9952	D9				
2323	D9	3357	A9	3866	D7	9088	E4	9640	B5	9953	D9				
2324	F9	3358	C10	3869	D6	9089	D6	9641	B5	9956	E8				
2325	F10	3363	F4	3874	F9	9090	D6	9642	C4	9958	D8				
2326	F10	3364	F4	3875	F9	9091	E4	9643	B4	9960	E8				
2328	E10	3370	A8	3880	E6	9092	D5	9644	D3	9962	A7				
2400	E8	3371	A7	3882	E6	9094	D6	9645	D3	9963	D6				
2406	D8	3377	A8	3885	D5	9095	C7	9646	D3	9965	F7				
2452	D9	3380	D7	3886	D5	9097	D6	9647	D3						
2462	B6	3381	A8	4760	F2	9098	E6	9648	D4						
2471	A8	3383	A7	5001	C4	9099	D4	9649	D4						
2472	A7	3384	B7	5002	C7	9100	B4	9650	C3						
2475	A7	3386	A7	5003	C6	9152	C7	9651	B3						
2480	A6	3389	B7	5004	C7	9153	C7	9652	C3						
2484	A7	3395	A7	5005	B7	9154	C5	9653	C2						
2485	A7	3396	A7	5006	C7	9155	D7	9654	C3						
2486	A7	3399	A7	5008	D5	9158	D7	9655	C3						
2489	A7	3413	C8	5009	B7	9160	C6	9656	C3						
2513	B1	3414	C8	5010	E6	9301	B9	9657	C3						
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2525	A9	3420	C8	5073	E3	9411	A8	9712	C1						
2527	E1	3421	B10	5074	E3	9414	A8	9713	C3						
2529	D1	3424	B8	5075	D4	9415	B9	9714	C2						
2535	A3	3426	D8	5100	B4	9416	A10	9715	C2						
2536	A3	3428	C9	5101	B4	9417	A10	9716	D1						
2602	A5	3431	D8	5322	E10	9418	A10	9717	F2						
2603	B5	3432	C8	5323	F10	9419	A9	9718	D1						
2607	A5	3433	C10	5451	C8	9421	E8	9719	C1						
2609	A5	3434	C9	5452	A9	9422	A9	9720	E1						
2613	A5	3436	C10	5453	C10	9423	A9	9721	D2						
2615	A5	3437	C10	5454	C9	9424	A9	9722	D2						
2616	B5	3439	C10	5471	A7	9425	B9	9723	F2						
2623	B6	3441	C10	5501	B1	9426	B9	9724	D1						
2625	A5	3442	D8	5601	B5	9427	B9	9725	E2						
2626	A6	3443	E8	5602	A5	9428	B9	9726	E1						
2641	A6	3444	E8	5641	A6	9429	B8	9727	D1						
2643	A6	3445	E8	5701	D2	9430	B10	9728	B2						
2644	A6	3446	C9	5702	D2	9431	B10	9729	F3						
2646	A6	3447	C9	5704	C1	9432	B10	9730	A1						
2651	D4	3448	C9	5705	C1	9433	A10	9731	F3						
2655	B4	3453	B10	5706	D1	9435	C9	9732	F3						
2659	C4	3456	F4	5707	C1	9436	C10	9733	F3						
2660	C4	3465	B10	5708	C1	9437	C10	9734	F3						
2664	B4	3466	B8	5760	D1	9438	C9	9735	F3						
2665	B4	3467	B10	5761	D1	9439	C10	9736	F4						
2671	C2	3470	D8	5762	F1	9440	D9	9737	F4						
2672	C2	3471	B8	5801	E5	9441	D9	9739	F3						
2679	A4	3473	C10	5802	F6	9442	D9	9741	F2						
2680	A2	3479	B8	5851	E7	9445	C8	9742	C2						
2681	A4	3480	B8	5852	E6	9446	C8	9743	D1						
2683	B3	3481	B8	5853	E7	9447	C8	9744	E2						
2685	D4	3482	B8	5854	D6	9448	C8	9745	F3						
2701	C2	3483	B8	5856	D6	9449	C7	9746	E2						
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2715	C2	3487	A9	6404	A9	9453	D8	9749	E3						
2719	C2	3491	A9	6405	A8	9454	B8	9750	E3						
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2726	C2	3493	C8	6502	A2	9456	B7	9753	D3						
2762	E2	3495	C9	6503	A2	9457	B8	9754	E3						
2766	F2	3503	A4	6504	A2	9458	B7	9755	E2						
2768	E1	3506	A3	6505	A2	9459	A8	9756	D1						
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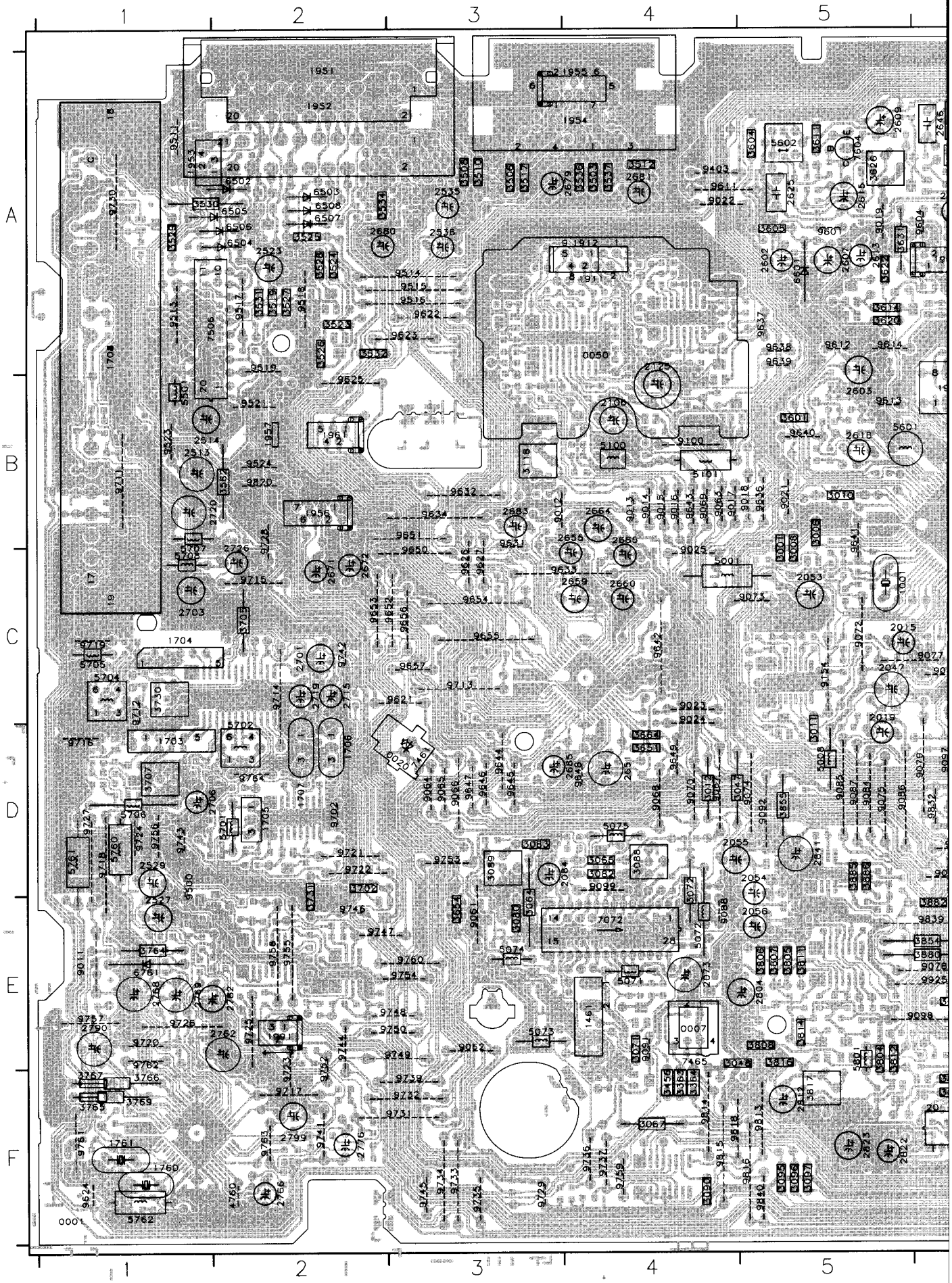
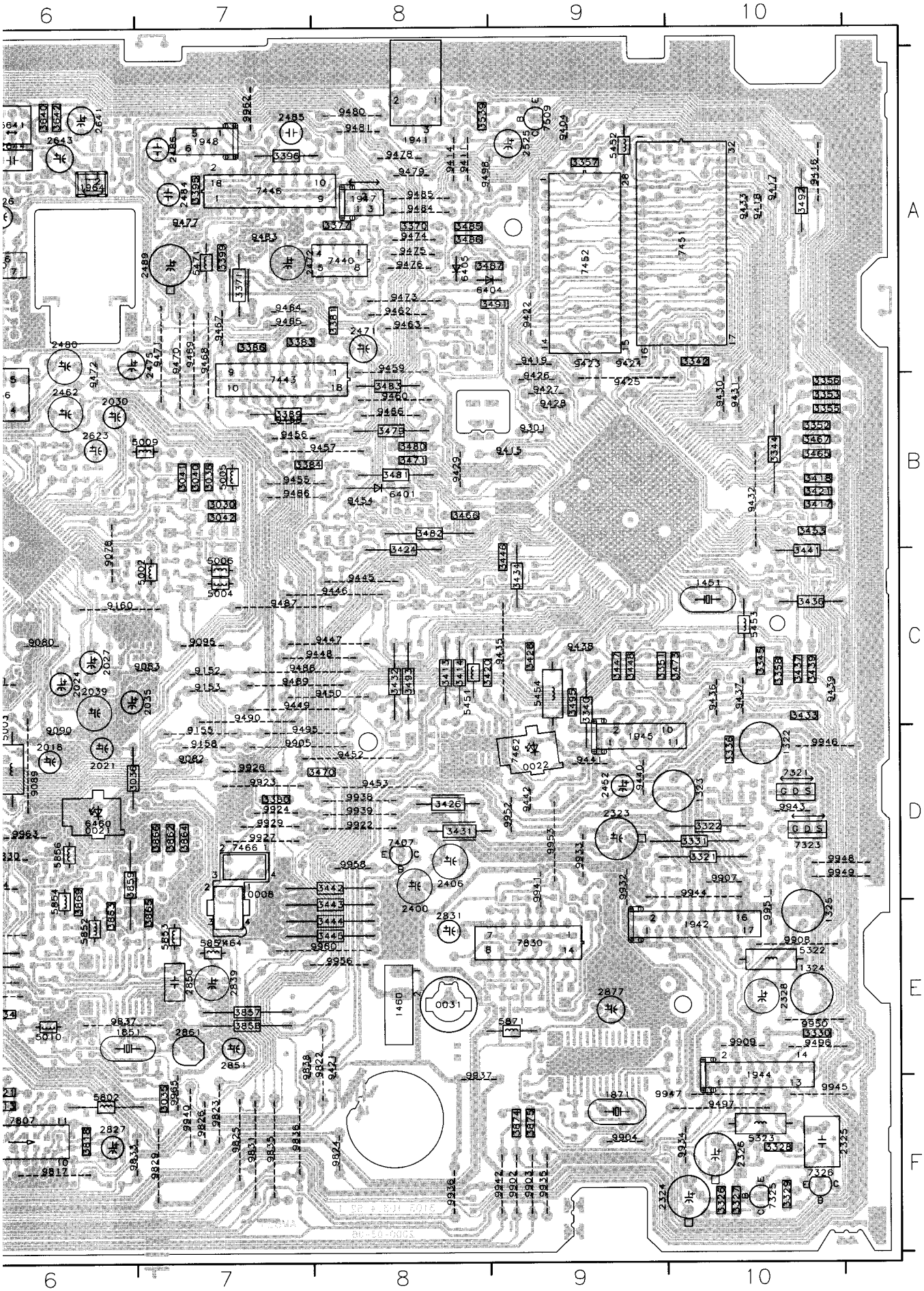
Motherboard (MOBO)




6
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A
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C
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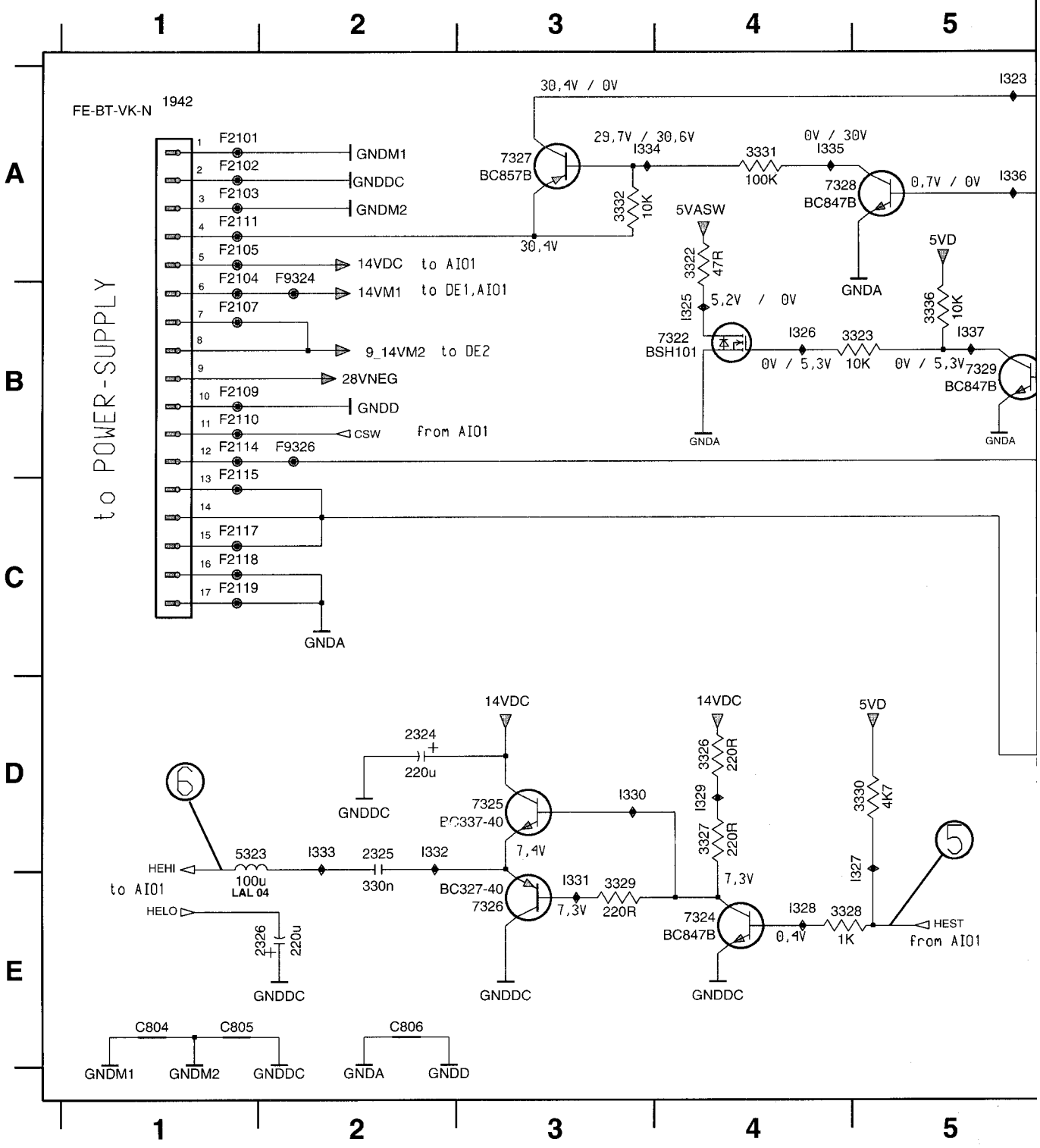
10

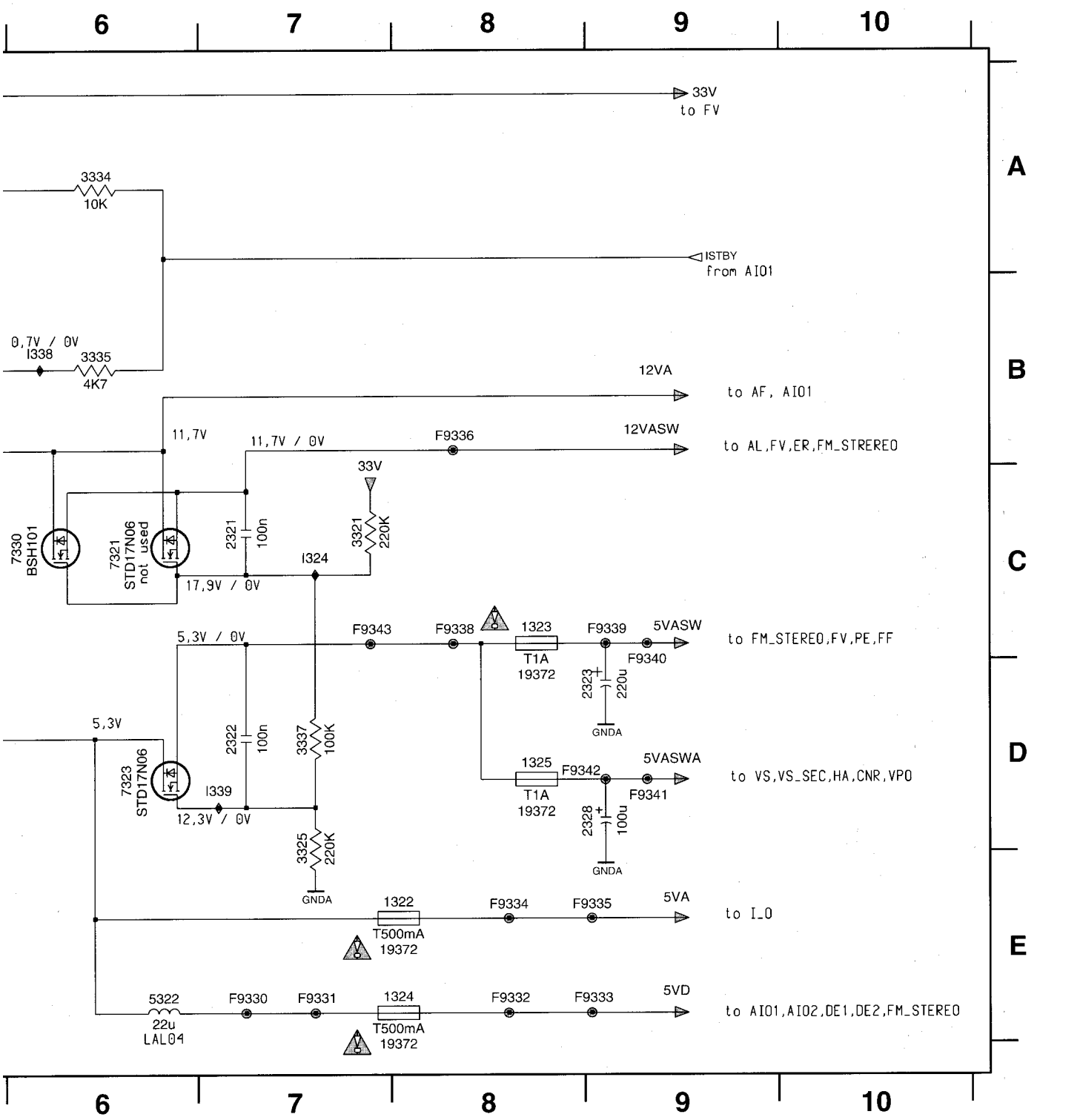
Supply Part (PS)

1323 C8	2321 C7	2325 D2	3322 A4	3327 D4	3331 A4	3336 B5	7321 C6	7325 D3	7329 B5	C806 E2	F2104 E
1324 E8	2322 D7	2326 E2	3323 B5	3328 E4	3332 A3	3337 D7	7322 B4	7326 E3	7330 C6	F2101 A1	F2105 A
1325 D8	2323 D9	2328 D9	3325 D7	3329 E3	3334 A6	5322 E6	7323 D6	7327 A3	C804 E1	F2102 A1	F2107 E

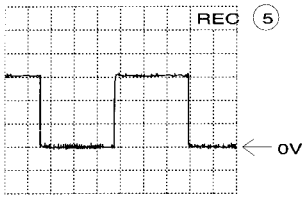


Interconnections		Manual Page						
PS 3-18	FM-STEREO-TDA 3-22	AF 3-24	AL 3-26	HA 3-30	CNR 3-34	AIO1 3-36	DE 3-39	VPS; FOME; PE 3-42
FV 3-20	FM-STEREO-MSP 3-23	ER 3-25	VS 3-29	VS-SEC 3-33	IO 3-35	AIO2 3-40	VPO 3-41	

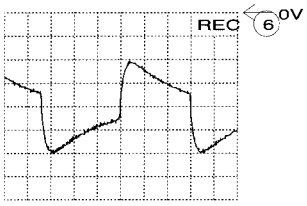
F2110 B1	**F2117 C1**	**F9326 B2**	**F9333 E9**	**F9338 C8**	**F9342 D8**	**I325 B4**	**I329 D4**	**I333 D2**	**I337 B5**
F2111 A1	**F2118 C1**	**F9330 E7**	**F9334 E8**	**F9339 C9**	**F9343 C7**	**I326 B4**	**I330 D3**	**I334 A3**	**I338 B6**
F2114 B1	**F2119 C1**	**F9331 E7**	**F9335 E9**	**F9340 D9**	**I323 A5**	**I327 D5**	**I331 E3**	**I335 A4**	**I339 D7**



Oscillograms Supply Part



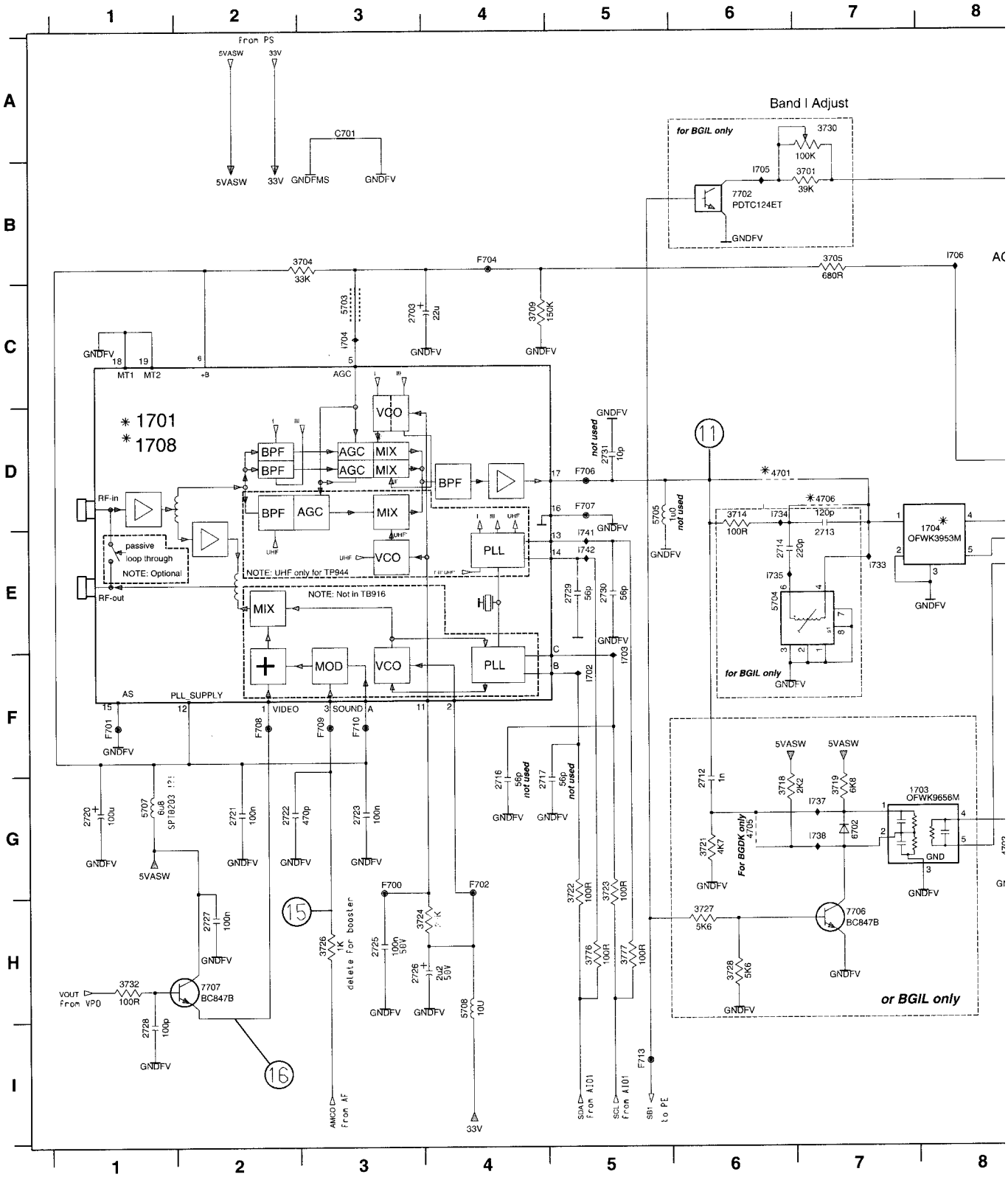
A: DC, 500mV/Div, 5us/Div
Connector 1944 Pin 13

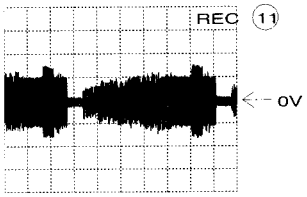


A: DC, 5 V/Div, 5us/Div
Connector 1944 Pin 5

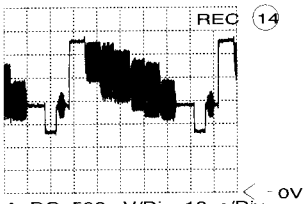
Frontend (FV)

1701 E1	2701 B10	2707 C9	2713 E7	2719 G12	2725 H3	3700 H9	3706 B9	3712 C15	3718 G6	3724 H3	3730 A7	3777 H5	5701 D13	5707 G1
1703 G7	2702 C11	2708 C9	2714 E6	2720 G1	2726 H3	3701 B7	3707 C9	3713 D13	3719 G7	3725 H9	3731 H11	4701 D6	5702 B10	5708 H4
1704 E8	2703 C3	2709 C10	2715 F9	2721 G2	2727 H2	3702 B11	3708 C11	3714 D6	3720 G9	3726 H3	3732 H1	4702 G8	5703 C3	6701 A10
1705 D13	2704 C8	2710 C14	2716 G4	2722 G2	2728 I1	3703 B11	3709 C4	3715 D13	3721 G6	3727 H6	3733 D15	4703 F10	5704 E6	6702 G7
1706 F10	2705 C12	2711 D13	2717 G4	2723 G3	2729 E5	3704 B3	3710 C12	3716 E14	3722 G5	3728 H6	3734 D15	4704 H9	5705 D5	7701-A F13
1707 G10	2706 C12	2712 G6	2718 G11	2724 G9	2730 E5	3705 B7	3711 C13	3717 F11	3723 G5	3729 F11	3776 H5	4705 G6	5706 B12	7701-B C13

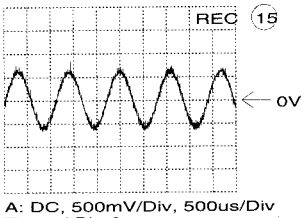




A: DC, 200mV/Div, 10us/Div
Tuner Pin 17

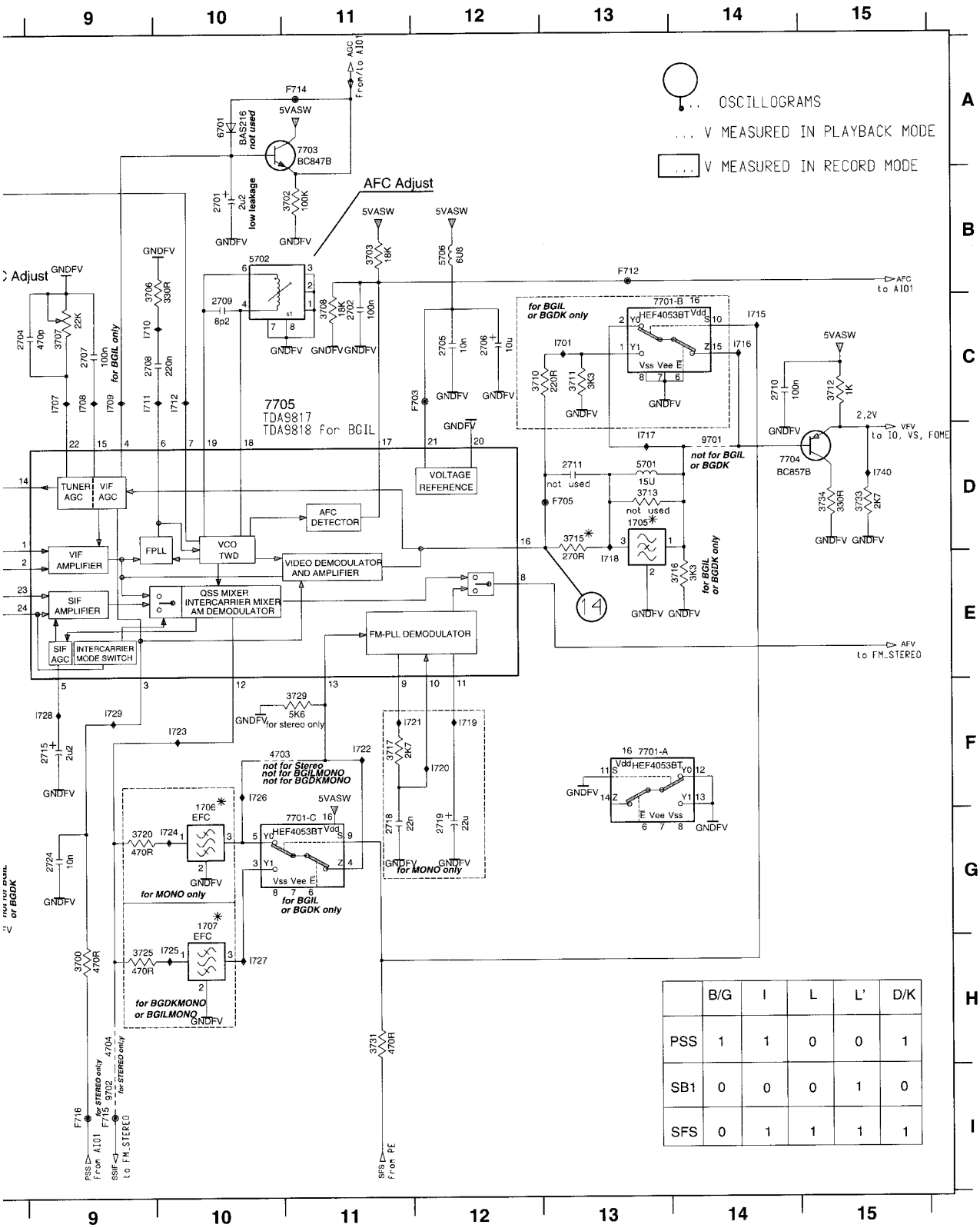


A: DC, 500mV/Div, 10us/Div
IC 7705 Pin 8

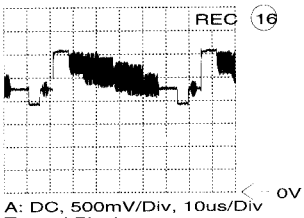


A: DC, 500mV/Div, 500us/Div
Tumod Pin 3

7701-C G11	7707 H2	F702 G4	F708 F2	F715 I9	I705 B6	I711 C9	I719 F12	I725 H10	I734 D6	I742 E5
7702 B6	9701 D14	F703 C12	F709 F3	F716 I9	I706 B8	I712 C10	I720 F12	I726 F10	I735 E6	
7703 A11	9702 I9	F704 B4	F710 F3	I701 C13	I707 C9	I715 C14	I721 F11	I727 H10	I737 G7	
7704 D14	C701 A3	F705 D13	F712 B13	I702 F5	I708 C9	I716 C14	I722 F11	I728 F9	I738 G7	
7705 C10	F700 G3	F706 D5	F713 I5	I703 F5	I709 C9	I717 D13	I723 F10	I729 F9	I740 D15	
7706 H7	F701 F1	F707 D5	F714 A11	I704 C3	I710 C9	I718 E13	I724 G10	I733 E7	I741 E5	



	B/G	I	L	L'	D/K
PSS	1	1	0	0	1
SB1	0	0	0	1	0
SFS	0	1	1	1	1



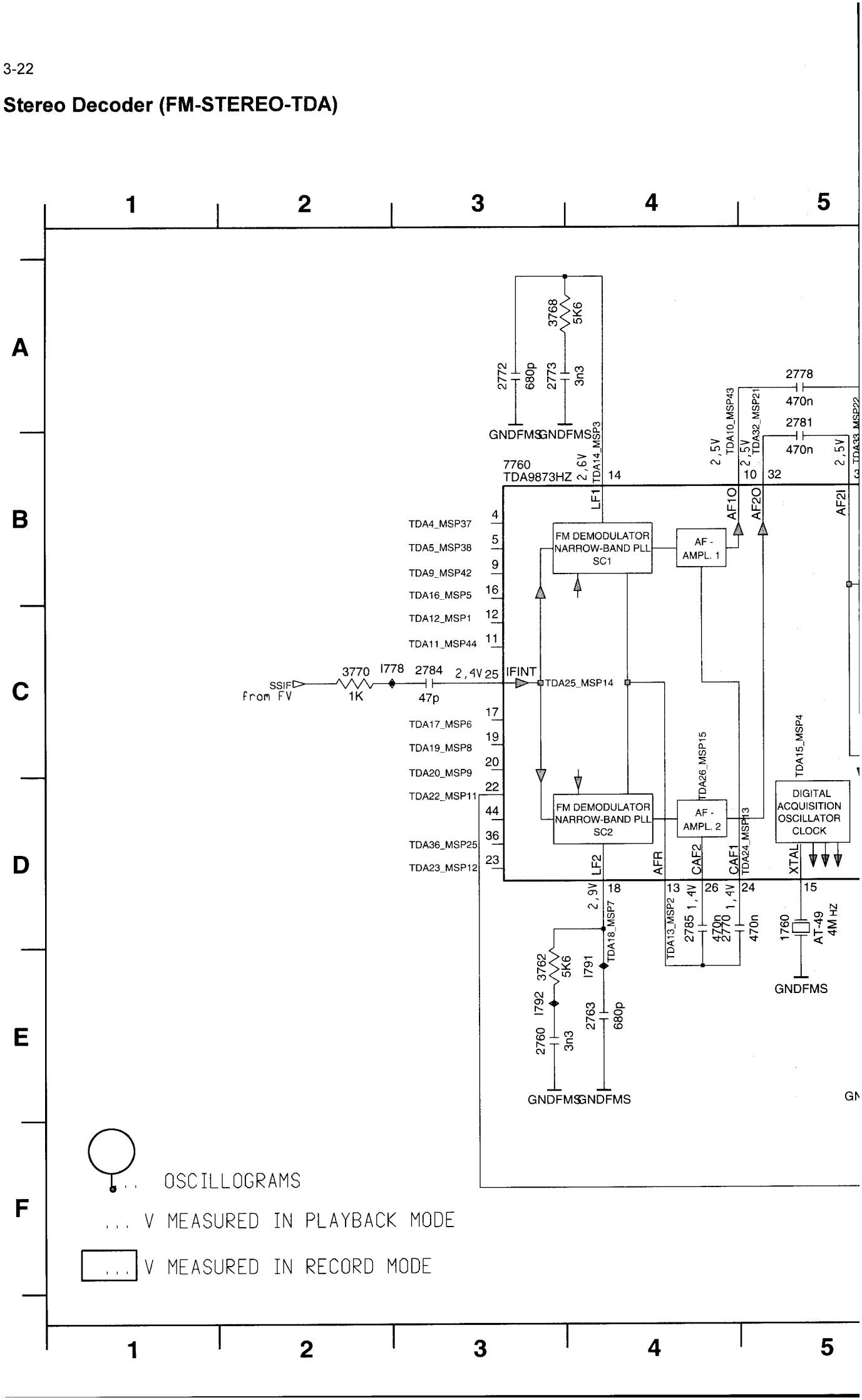
A: DC, 500mV/Div, 10us/Div
Tumod Pin 1

Variant List Frontend

	PAL BG	PAL BG	PAL I Fullband	PAL,SEC BG/DK	PAL, SEC BG/I/DK, L/L'
	/02	/13, /16	/07	/58	/39
Pos.	FM QSS	FM, NICAM QSS	FM, NICAM QSS	NICAM QSS	FM, AM, NICAM QSS
1708	TP916L MKII	TP916L MKII	-	-	TP926L MKII
1701	TCBZ4-001A/B	TCBZ4-001A/B	TCBZ4-001A/B	TCBZ4-001A/B	TCBZ4-003A/B
1703	K9656M	K9656M	K9656M	K9656M	K9656M
1704	G3956M	G3956M	K3953M	G3956M	K3953M
1705	TPS 5,5	TPS 5,5	TPS 6,0	TPS 5,5	TPS 5,5
1706	-	-	-	-	-
1707	-	-	-	-	-
2707	-	-	-	-	100n
2712	1n	1n	1n	1n	1n
2713	-	-	-	-	120p
2714	-	-	-	-	220p
2718	-	-	-	-	-
2719	-	-	-	-	-
2722	470p	470p	470p	470p	-
3701	-	-	-	-	39K
3710	-	-	-	220E	220E
3711	-	-	-	3k3	3k3
3714	-	-	-	-	100E
3715	330E	330E	330E	330E	270E
3716	-	-	-	2k2	2k2
3717	-	-	-	-	-
3718	-	-	-	-	2k2
3719	-	-	-	-	6k8
3720	-	-	-	-	-
3721	-	-	-	-	4k7
3725	-	-	-	-	-
3726	1k	1k	1k	1k	-
3727	-	-	-	-	5k6
3728	-	-	-	-	5k6
3729	5k6	5k6	5k6	5k6	5k6
3730	-	-	-	-	100K
4701	0E	0E	0E	0E	-
4702	-	-	-	-	-
4703	-	-	-	-	-
4704	0E	0E	0E	0E	0E
4705	0E	0E	0E	0E	-
4706	0E	0E	0E	0E	-
5701	15uH	15uH	15uH	15uH	15uH
5704	-	-	-	-	41645
6702	-	-	-	-	BA792
7701	-	-	-	HEF4053	HEF4053
7702	-	-	-	-	PDTC124EU
7705	TDA 9817 T	TDA 9817 T	TDA 9817 T	TDA 9817 T	TDA 9818 T
7706	-	-	-	-	BC847BW
9701	0E	0E	0E	-	-
9702	0E	0E	0E	0E	0E

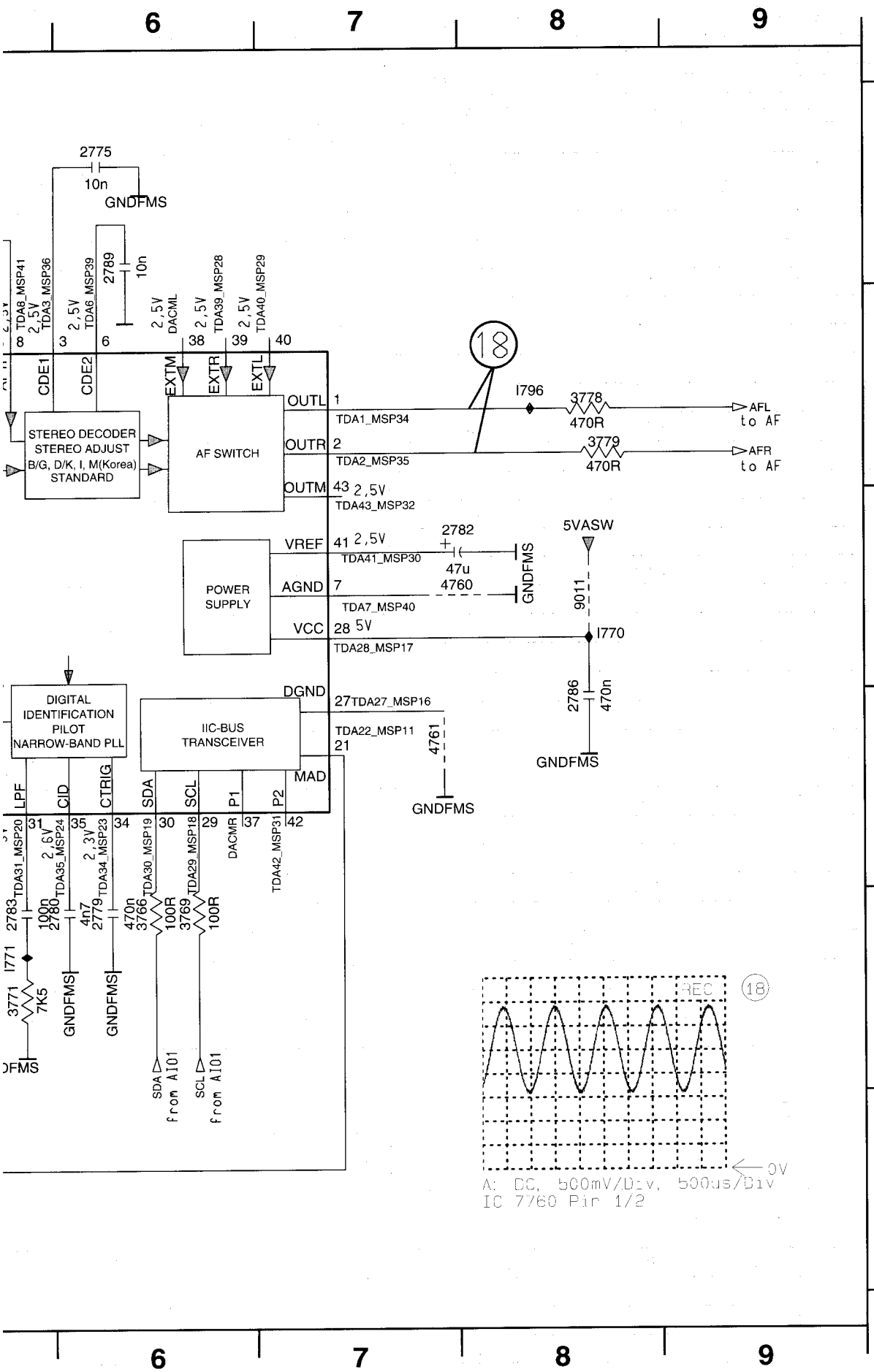
FUNKTION
TUMOD PHILIPS
TUMOD ALPS MK3
QSS Sound OFW
QSS Video OFW
Video-TRAP
1. Sound-Filter
2. Sound-Filter
VIF AGC TDA 9818T only
SS Sound OFW Kopplung
40,4 Falle
40,4 Falle
Deemphasis MONO
FM PLL Demodulator
Siebung Audio Modul. IN
SEC Band 1 Adj.
Video Trap Bypass
Video-Amplitude Multistdt.
40,4 Falle
Video Trap Vorwiderstand
Video Trap Abschluß
Deemphasis MONO
Sound OFW Umsch.
Sound OFW Umsch.
EFC Vorwiderstand
Sound OFW Umsch.
2. EFC Vorwiderstand
Audio IN Modulator
Sound OFW Umsch.
Sound OFW Umsch.
Mute FM Demodulator
SEC Band 1 Adj.
40,4 Falle Bypass
Intercarier switch
4053 Bypass
SIF zu MSP/TDA
QSS OFW BG/DK/I Select.
Meßpunktverbindung
Video Trap Spule
40,4 Falle
Sound OFW Umsch.
EFC / TRAP switch
AFC L'
AV Demodulator
Sound OFW Umsch.
4053 Bypass
SIF zu MSP/TDA

Stereo Decoder (FM-STEREO-TDA)



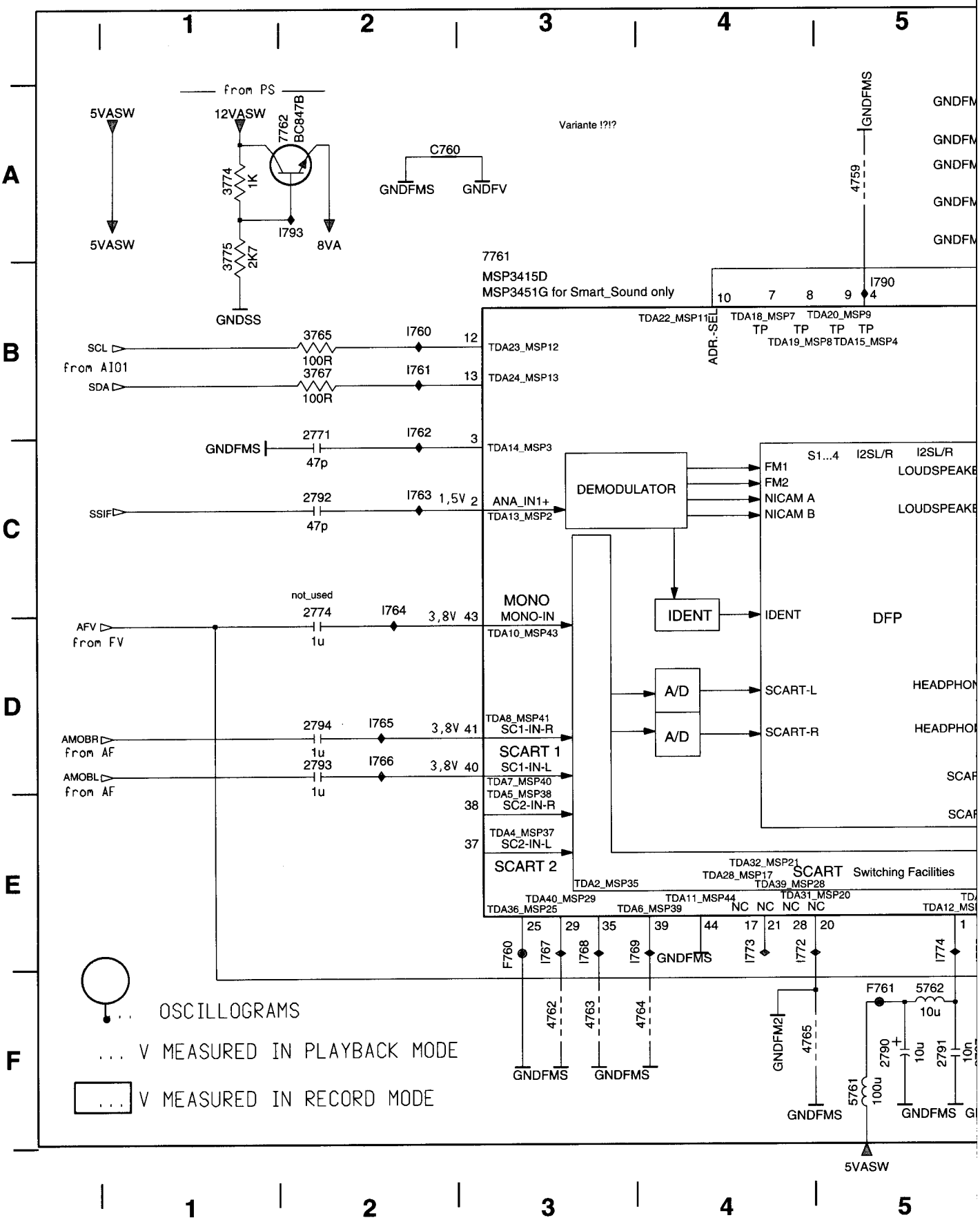
Interconnections Manual Page

PS 3-18	FM-STEREO-TDA 3-22	AF 3-24	AL 3-26	HA 3-30	CNR 3-34	AIO1 3-36	DE 3-39	VPS; FOME; PE 3-42
FV 3-20	FM-STEREO-MSP 3-23	ER 3-25	VS 3-29	VS-SEC 3-33	IO 3-35	AIO2 3-40	VPO 3-41	



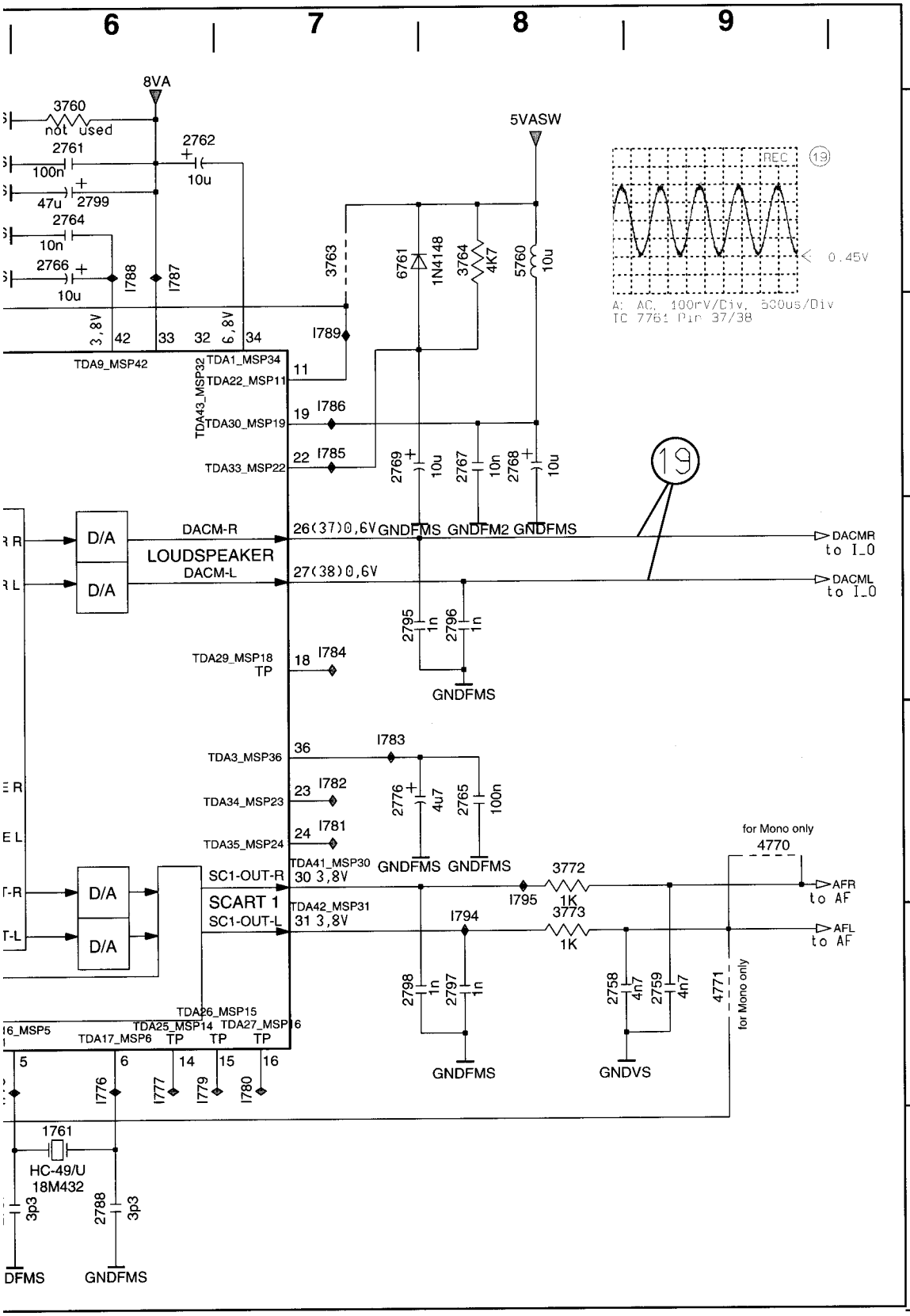
1760 D5
2760 E3
2763 E4
2770 D4
2772 A3
2773 A3
2775 A6
2778 A5
2779 E6
2780 E6
2781 A5
2782 C7
2783 E5
2784 C3
2785 D4
2786 D8
2789 A6
3762 E3
3766 E6
3768 A3
3769 E6
3770 C2
3771 E5
3778 B8
3779 B8
4760 C7
4761 D7
7760 B3
9011 C8
I770 C8
I771 E5
I778 C2
I791 E4
I792 E3
I796 B8

Stereo Decoder (FM-STEREO-MSP)



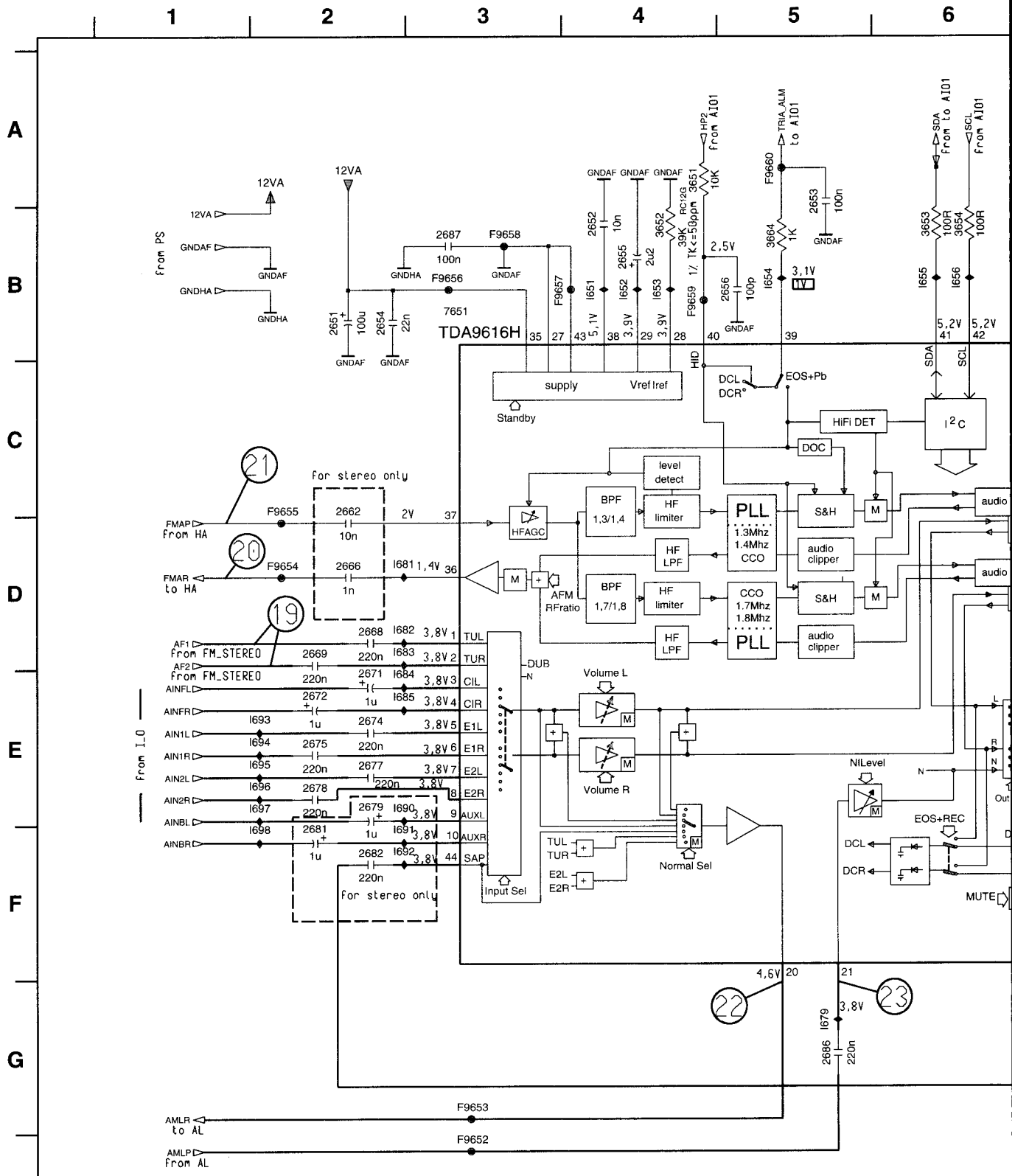
Interconnections Manual Page

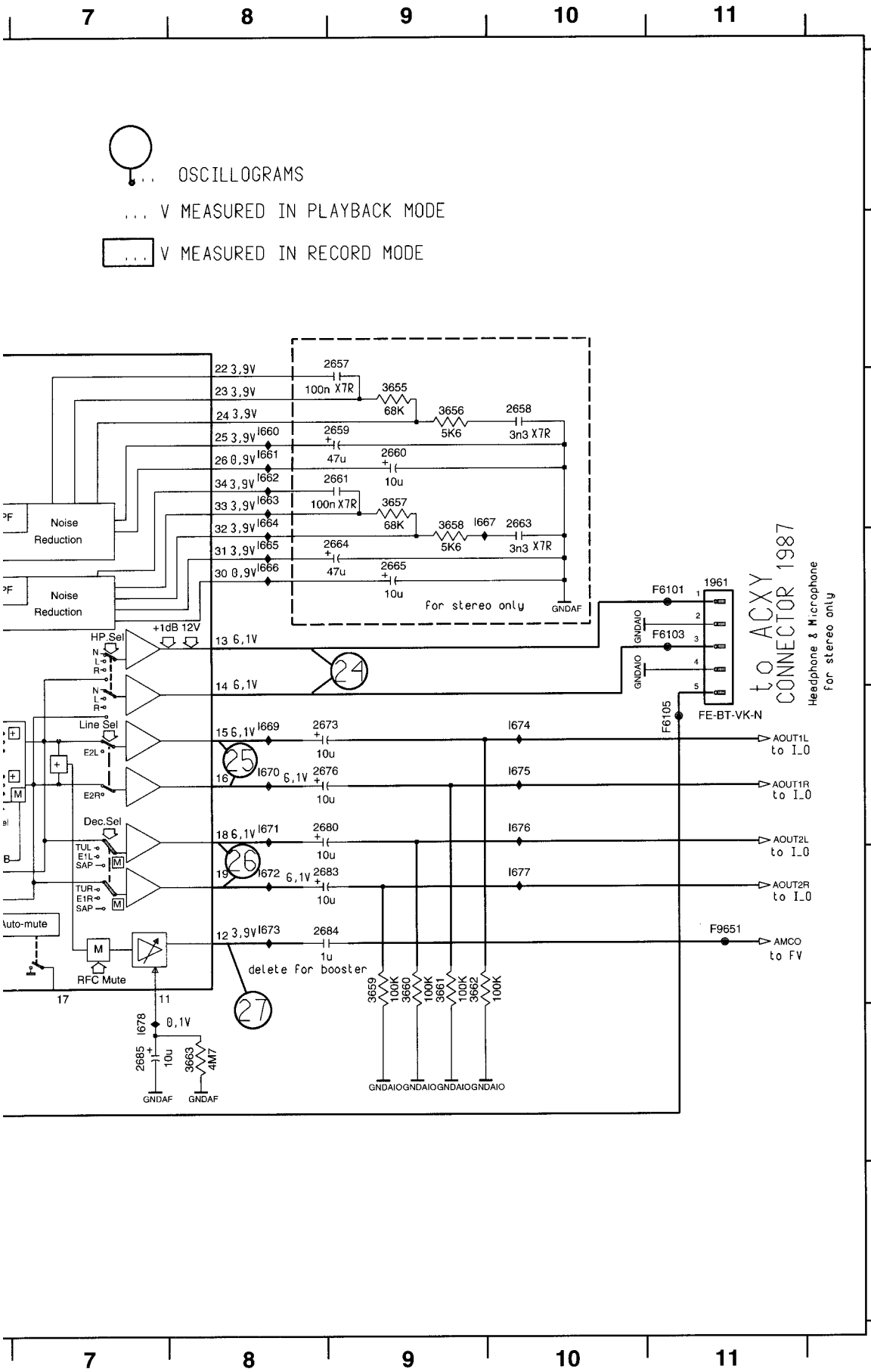
PS 3-18	FM-STEREO-TDA 3-22	AF 3-24	AL 3-26	HA 3-30	CNR 3-34	AIO1 3-36	DE 3-39	VPS; FOME; PE 3-42	
FV 3-20	FM-STEREO-MSP 3-23	ER 3-25	VS 3-29	VS-SEC 3-33	IO 3-35	AIO2 3-40	VPO 3-41		



1761 F6
2758 E8
2759 E9
2761 A6
2762 A6
2764 A6
2765 D8
2766 A6
2767 B8
2768 B8
2769 B7
2771 B2
2774 C2
2776 D7
2787 F5
2788 F6
2790 F5
2791 F5
2792 C2
2793 D2
2794 D2
2795 C7
2796 C8
2797 E8
2798 E7
2799 A6
3760 A6
3763 A7
3764 A8
3765 B2
3767 B2
3772 D8
3773 E8
3774 A1
3775 A1
4759 A5
4762 F3
4763 F3
4764 F4
4765 F4
4770 D9
4771 E9
5760 A8
5761 F5
5762 F5
6761 A7
7761 B3
7762 A2
C760 A2
F760 E3
F761 F5
I760 B2
I761 B2
I762 B2
I763 C2
I764 C2
I765 D2
I766 D2
I767 E3
I768 E3
I769 E3
I772 E4
I773 E4
I774 E5
I775 E5
I776 E6
I777 E6
I779 E6
I780 E7
I781 D7
I782 D7
I783 D7
I784 C7
I785 B7
I786 B7
I787 A6
I788 A6
I789 B7
I790 B5
I793 A2
I794 E8
I795 D8

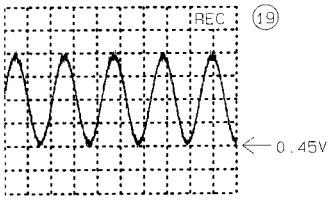
FM Audio (AF)


1
2
3
4
5
6
A
B
C
D
E
F
G
H
12VA
from PS
GNDAF
GNDHA
2687
100n
F9658
F9656
7651
TDA9616H
2651
100u
2654
22n
2652
10n
2655
2u2
3652
39K RC12g
3651
10K
HP2
from AI01
F9660
3664
1K
TRIA_ALM
to AI01
2653
100n
2656
100p
2,5V
3,1V
3653
100R
3654
100R
SDA
from to AI01
SCL
from AI01
F9657
F9659
I651
I652
I653
I654
I655
I656
5,1V
3,9V
5,2V
35
27
43
38
29
28
40
39
41
42
HID
supply
Vref1ref
Standby
DCL
DCR°
EOS+Pb
HiFi DET
I²C
DOC
level detect
BPF 1,3/1,4
HF limiter
HF LPF
PLL
1.3Mhz
1.4Mhz
CCO
S&H
audio clipper
audio
BPF 1,7/1,8
CCO
1.7Mhz
1.8Mhz
HFAGC
AFM
RFratio
for stereo only
FMAP
from HA
FMAR
to HA
F9655
F9654
2662
10n
2666
1n
I681
1,4V
36
37
2V
AF1
from FM_STEREO
AF2
from FM_STEREO
AINFL
AINFR
AIN1L
AIN1R
AIN2L
AIN2R
AINBL
AINBR
from I_O
2668
2669
2671
2672
2674
2675
2677
2678
2679
2681
2682
I682
I683
I684
I685
I690
I691
I692
3,8V
1 TUL
2 TUR
3 CIL
4 CIR
5 E1L
6 E1R
7 E2L
8 E2R
9 AUXL
10 AUXR
44 SAP
DUB
N
Input Sel
Volume L
Volume R
Normal Sel
TUL
TUR
E2L
E2R
NILevel
EOS+REC
DCL
DCR
MUTE
Out
4,6V
20
21
22
23
I679
2686
220n
F9653
AMLR
to AL
F9652
AMLP
from AL

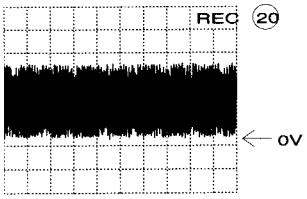


1961 D11
2651 B2
2652 B4
2653 A5
2654 B2
2655 B4
2656 B5
2657 B9
2658 C10
2659 C9
2660 C9
2661 C9
2662 C2
2663 C10
2664 D9
2665 D9
2666 D2
2668 D2
2669 D2
2671 E2
2672 E2
2673 E8
2674 E2
2675 E2
2676 E8
2677 E2
2678 E2
2679 E2
2680 E8
2681 F2
2682 F2
2683 F8
2684 F8
2685 G7
2686 G5
2687 B3
3651 A4
3652 B4
3653 B6
3654 B6
3655 C9
3656 C9
3657 C9
3658 C9
3659 F9
3660 F9
3661 F9
3662 F9
3663 G8
3664 B5
7651 B3
F6101 D11
F6103 D11
F6105 E11
F9651 F11
F9652 H3
F9653 G3
F9654 D2
F9655 C2
F9656 B3
F9657 B4
F9658 B3
F9659 B4
F9660 A5
I651 B4
I652 B4
I653 B4
I654 B5
I655 B6
I656 B6
I660 C8
I661 C8
I662 C8
I663 C8
I664 C8
I665 D8
I666 D8
I667 C9
I669 E8
I670 E8
I671 E8
I672 F8
I673 F8
I674 E10
I675 E10
I676 E10
I677 F10
I678 G7
I679 G5
I681 D2
I682 D2
I683 D2
I684 E2
I685 E2
I690 E2
I691 F2
I692 F2
I693 E2
I694 E2
I695 E2
I696 E2
I697 E2
I698 F2

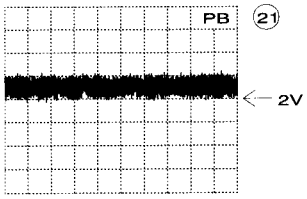
Oscillograms FM Audio, Erase Oscillator



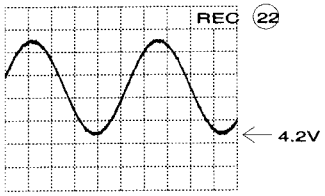
A: AC, 100mV/Div, 500us/Div
IC 7761 Pin 37/38



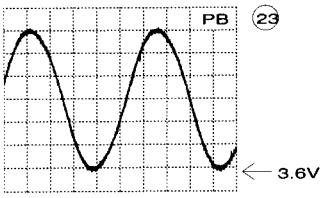
A: DC, 200mV/Div, 5ms/Div
FMAR



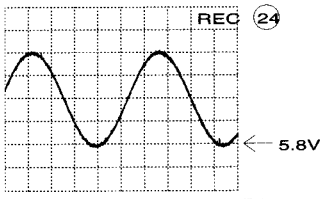
A: AC, 200mV/Div, 500us/Div
FMAP



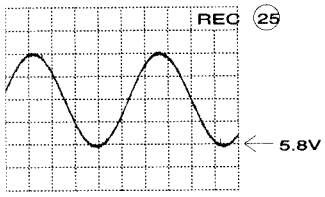
A: AC, 200mV/Div, 200us/Div
IC 7651 Pin 20



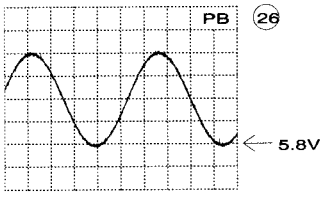
A: AC, 100mV/Div, 200us/Div
IC 7651 Pin 21



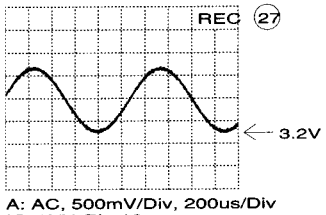
A: AC, 200mV/Div, 200us/Div
IC 7651 Pin 13/14



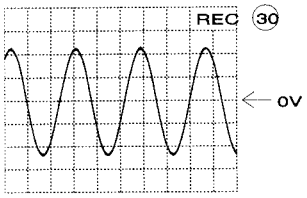
A: AC, 200mV/Div, 200us/Div
IC 7651 Pin 15/16



A: AC, 200mV/Div, 200us/Div
IC 7651 Pin 18/19



A: AC, 500mV/Div, 200us/Div
IC 7651 Pin 12



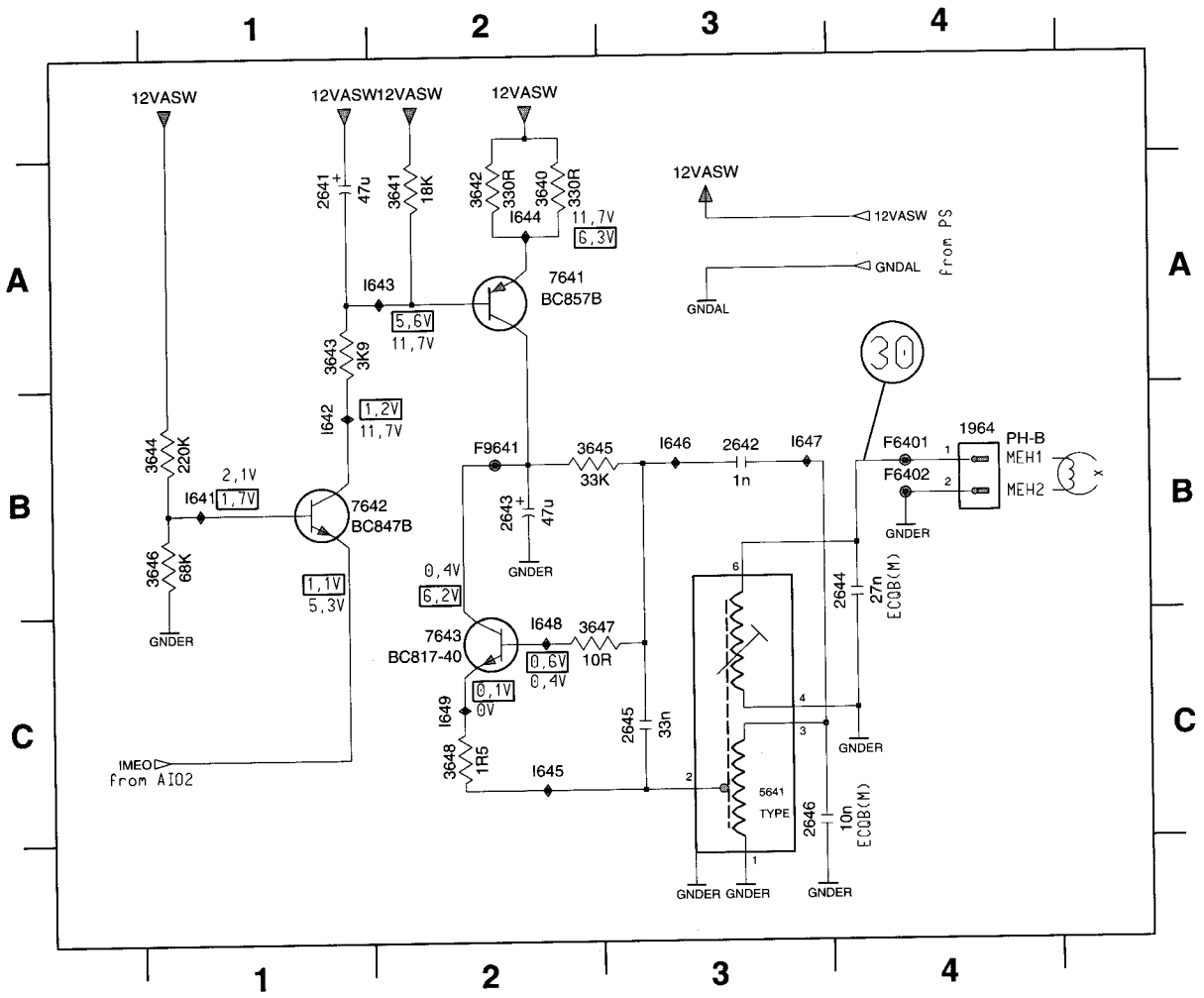
A: DC, 10 V/Div, 5us/Div
Connector 1964 Pin 1

Interconnections Manual Page

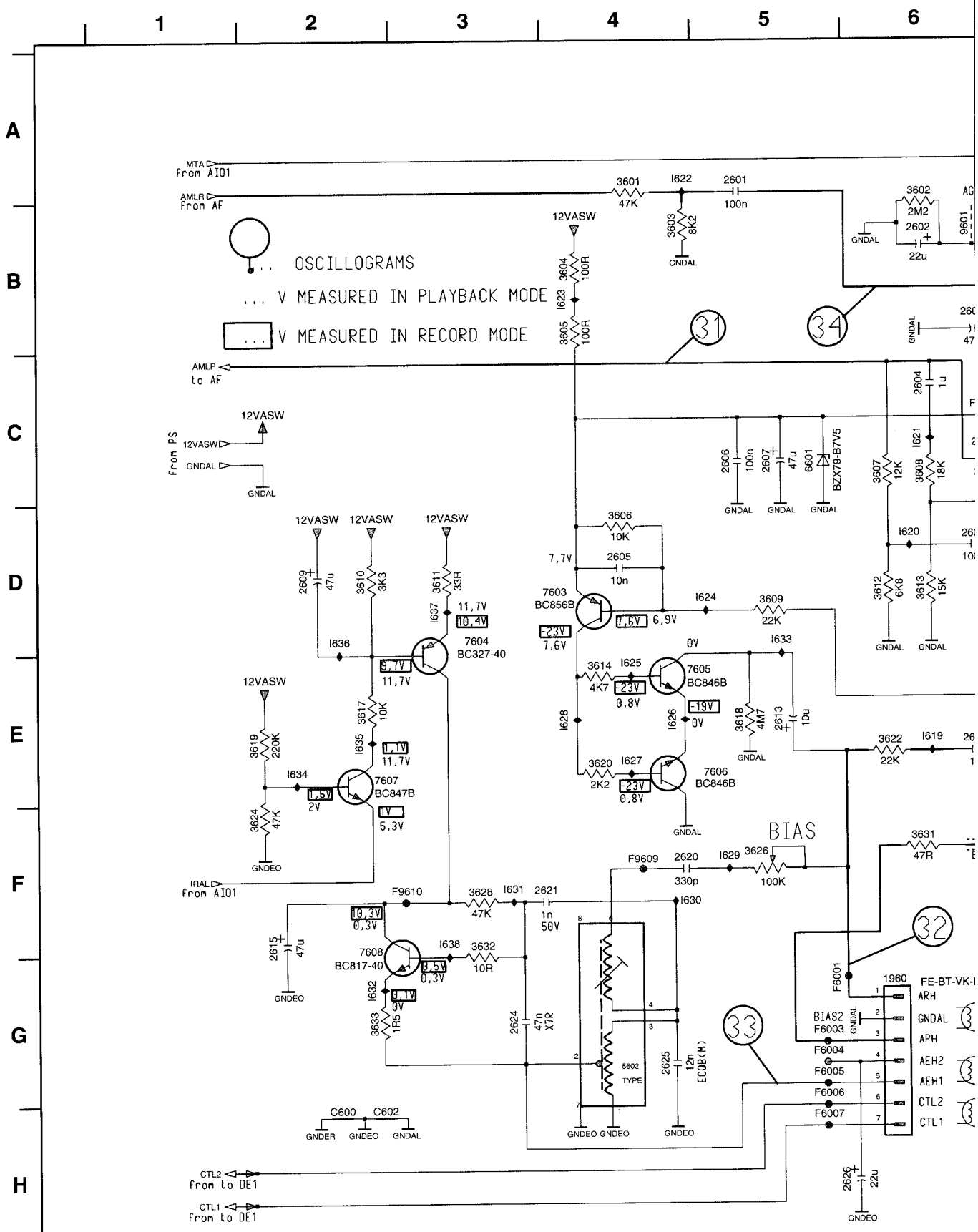
PS 3-18	FM-STEREO-TDA 3-22	AF 3-24	AL 3-26	HA 3-30	CNR 3-34	AIO1 3-36	DE 3-39	VPS; FOME; PE 3-42
FV 3-20	FM-STEREO-MSP 3-23	ER 3-25	VS 3-29	VS-SEC 3-33	IO 3-35	AIO2 3-40	VPO 3-41	

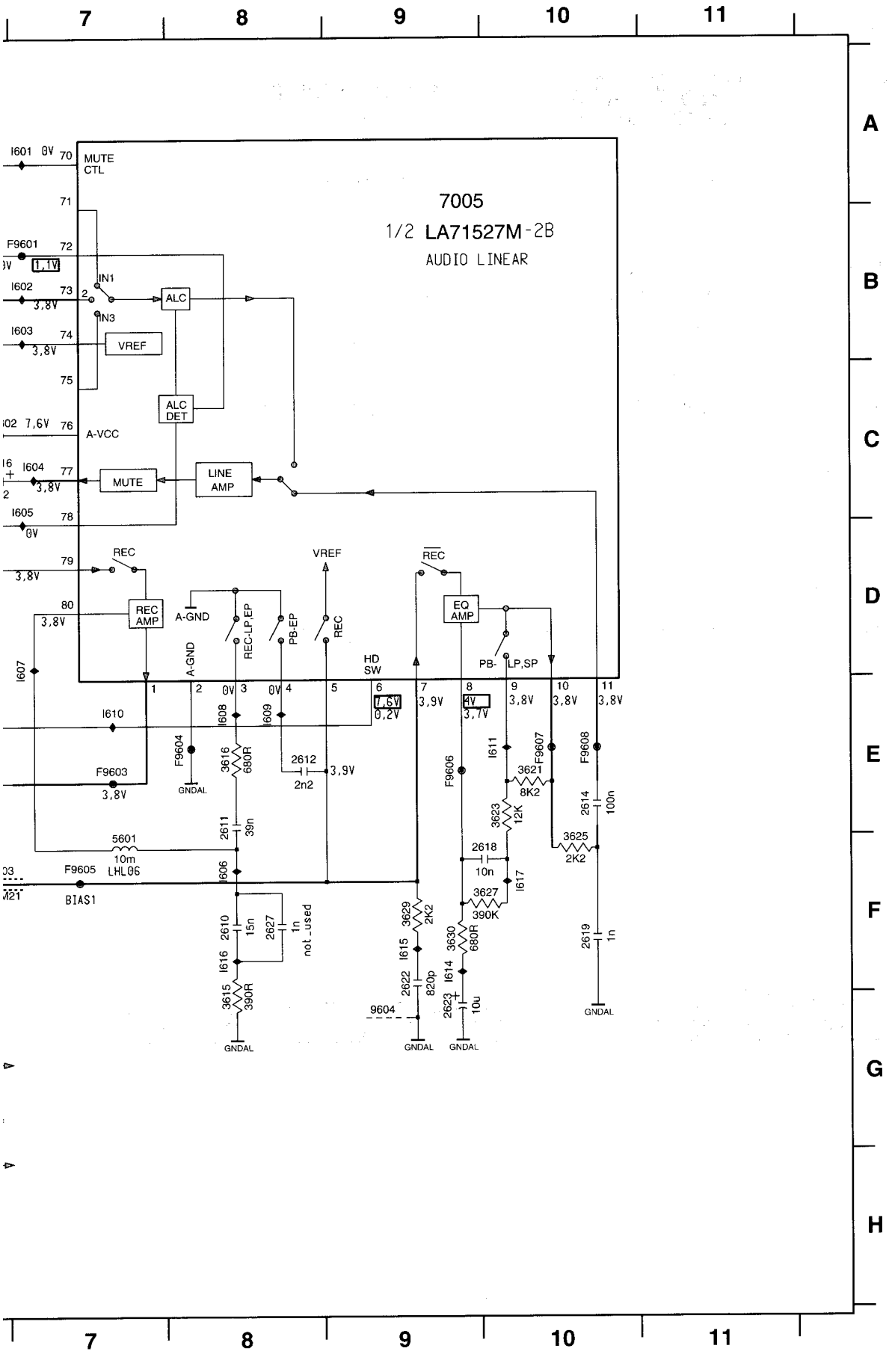
Main Erase Oscillator (ER)

1964 B4	2643 B2	2646 C3	3642 A2	3645 B2	3648 C2	7642 B1	F6402 B4	I642 B1	I645 C2	I648 C2
2641 A1	2644 B4	3640 A2	3643 A1	3646 B1	5641 C3	7643 C2	F9641 B2	I643 A2	I646 B3	I649 C2
2642 B3	2645 C3	3641 A2	3644 B1	3647 C2	7641 A2	F6401 B4	I641 B1	I644 A2	I647 B3	



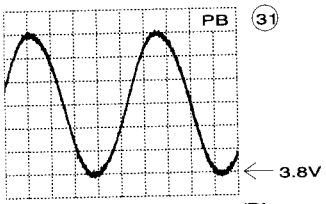
Audio Linear (AL)



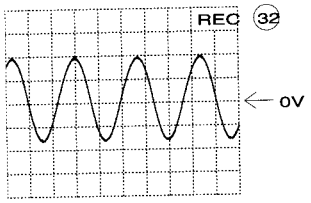


1960 G6
2601 A5
2602 B6
2603 B6
2604 C6
2605 D4
2606 C5
2607 C5
2608 D6
2609 D2
2610 F8
2611 E8
2612 E8
2613 E5
2614 E10
2615 F2
2616 C6
2617 E6
2618 F10
2619 F10
2620 F4
2621 F4
2622 F9
2623 G9
2624 G3
2625 G4
2626 H6
2627 F8
3601 A4
3602 A6
3603 B4
3604 B4
3605 B4
3606 D4
3607 C6
3608 C6
3609 D5
3610 D2
3611 D3
3612 D6
3613 D6
3614 E4
3615 G8
3616 E8
3617 E2
3618 E5
3619 E2
3620 E4
3621 E10
3622 E6
3623 E10
3624 F2
3625 F10
3626 F5
3627 F10
3628 F3
3629 F9
3630 F9
3631 F6
3632 F3
3633 G2
5601 F7
5602 G4
5603 F6
6601 C5
7005 B9
7603 D4
7604 D3
7605 E4
7606 E5
7607 E2
7608 F2
9601 B6
9604 G9
C600 H2
C602 H2
F6001 G5
F6003 G5
F6004 G5
F6005 G5
F6006 G5
F6007 H5
F9601 B7
F9602 C6
F9603 E7
F9604 E8
F9605 F7
F9606 E9
F9607 E10
F9608 E10
F9609 F4
F9610 F3
I601 A7
I602 B7
I603 B7
I604 C7
I605 C7
I606 F8
I607 D7
I608 E8
I609 E8
I610 E7
I611 E10
I614 F9
I615 F9
I616 F8
I617 F10
I619 E6
I620 D6
I621 C6
I622 A4
I623 B4
I624 D5
I625 E4
I626 E4
I627 E4
I628 E4
I629 F5
I630 F4
I631 F3
I632 G2
I633 D5
I634 E2
I635 E2
I636 D2
I637 D3
I638 F3

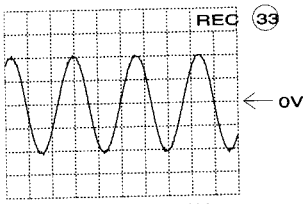
Oscillograms Audio Linear



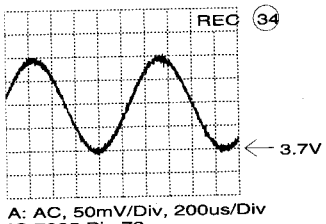
A: AC, 100mV/Div, 200us/Div
IC 7005 Pin 77



A: DC, 20 V/Div, 5us/Div
Connector 1960 Pin 1



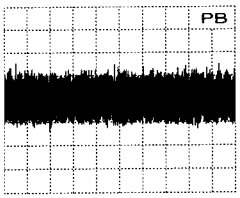
A: DC, 5 V/Div, 5us/Div
Connector 1960 Pin 5



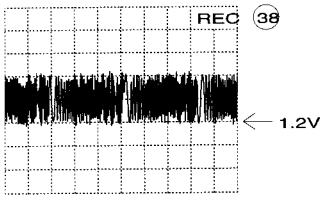
A: AC, 50mV/Div, 200us/Div
IC 7005 Pin 73

Interconnections		Manual Page							
PS 3-18	FM-STEREO-TDA 3-22	AF 3-24	AL 3-26	HA 3-30	CNR 3-34	AIO1 3-36	DE 3-39	VPS; FOME; PE 3-42	
FV 3-20	FM-STEREO-MSP 3-23	ER 3-25	VS 3-29	VS-SEC 3-33	IO 3-35	AIO2 3-40	VPO 3-41		

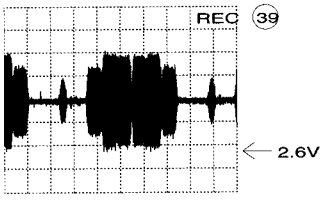
Oscillograms Video Signal Processing



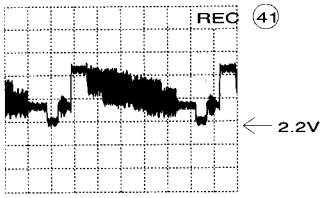
A: AC, 200mV/Div, 20us/Div
IC 7103 Pin 15



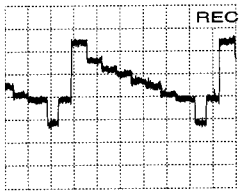
A: AC, 200mV/Div, 20us/Div
FMRV



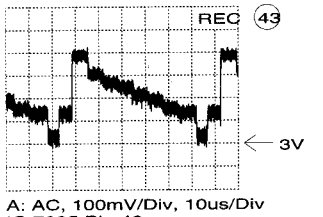
A: AC, 100mV/Div, 10us/Div
CPRV



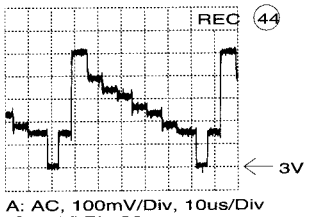
A: AC, 500mV/Div, 10us/Div
IC 7005 Pin 35



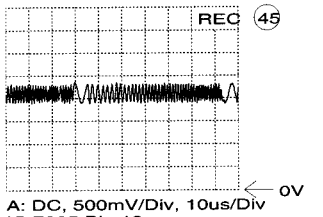
A: AC, 100mV/Div, 10us/Div
IC 7005 Pin 42



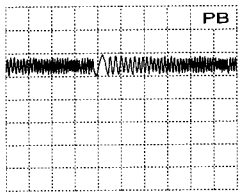
A: AC, 100mV/Div, 10us/Div
IC 7005 Pin 40



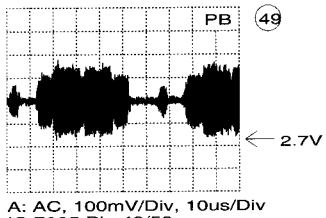
A: AC, 100mV/Div, 10us/Div
IC 7005 Pin 26



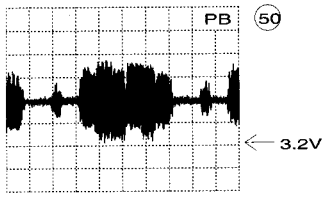
A: DC, 500mV/Div, 10us/Div
IC 7005 Pin 18



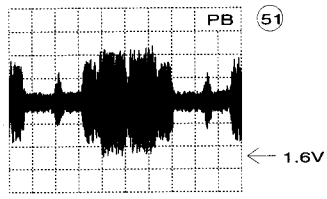
A: DC, 500mV/Div, 10us/Div
IC 7005 Pin 20



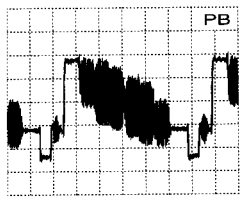
A: AC, 100mV/Div, 10us/Div
IC 7005 Pin 48/50



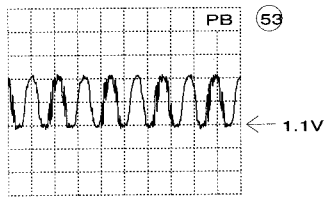
A: AC, 100mV/Div, 10us/Div
IC 7005 Pin 52



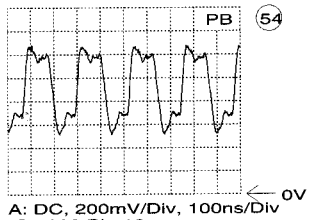
A: AC, 100mV/Div, 10us/Div
IC 7005 Pin 45



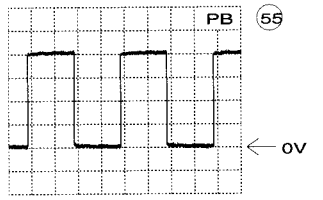
A: DC, 500mV/Div, 10us/Div
IC 7005 Pin 35



A: AC, 200mV/Div, 100ns/Div
IC 7005 Pin 58



A: DC, 200mV/Div, 100ns/Div
IC 7003 Pin 10

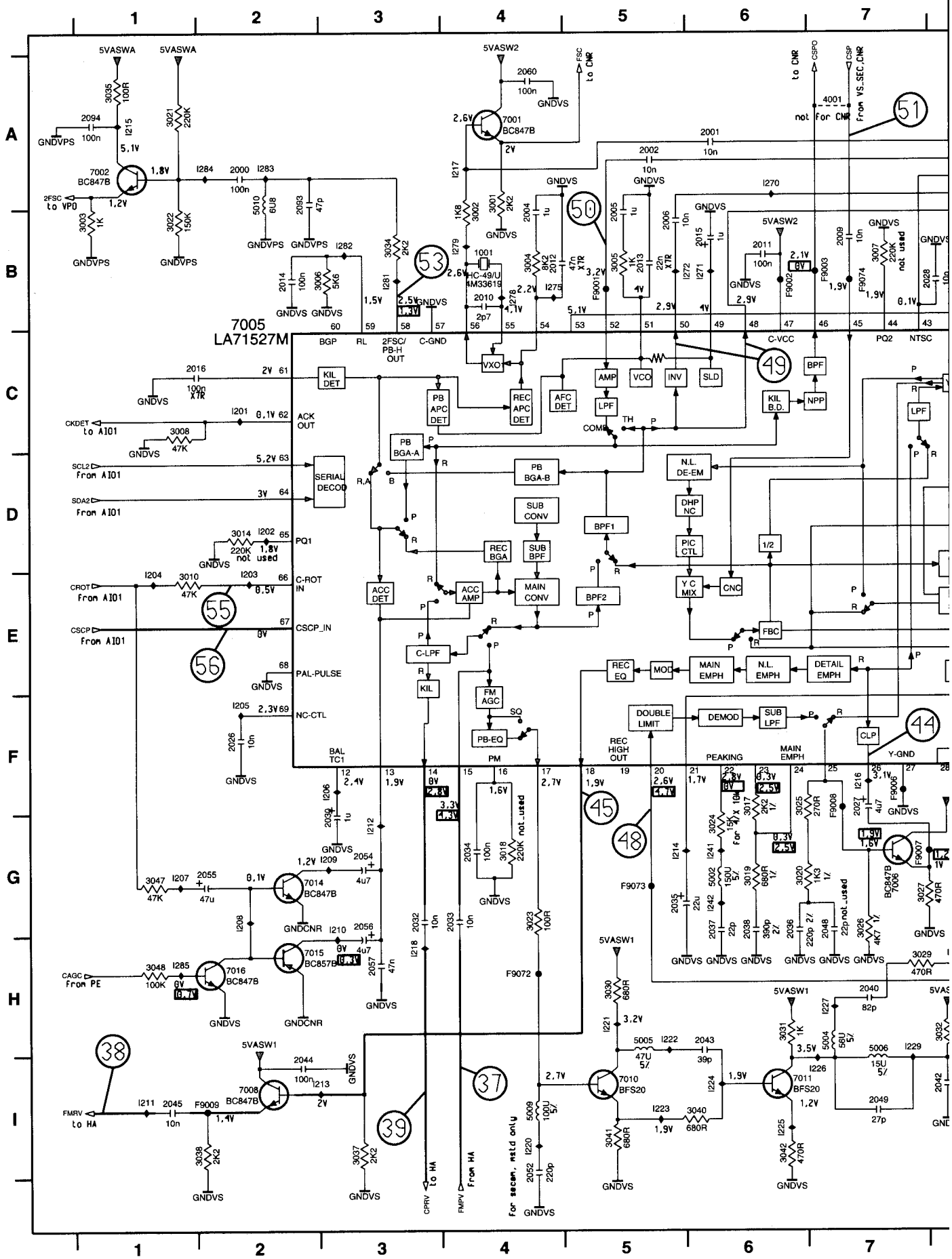


A: DC, 200mV/Div, 10ms/Div
IC 7005 Pin 66

A: DC, 500mV/Div, 10ms/Div
IC 7005 Pin 67

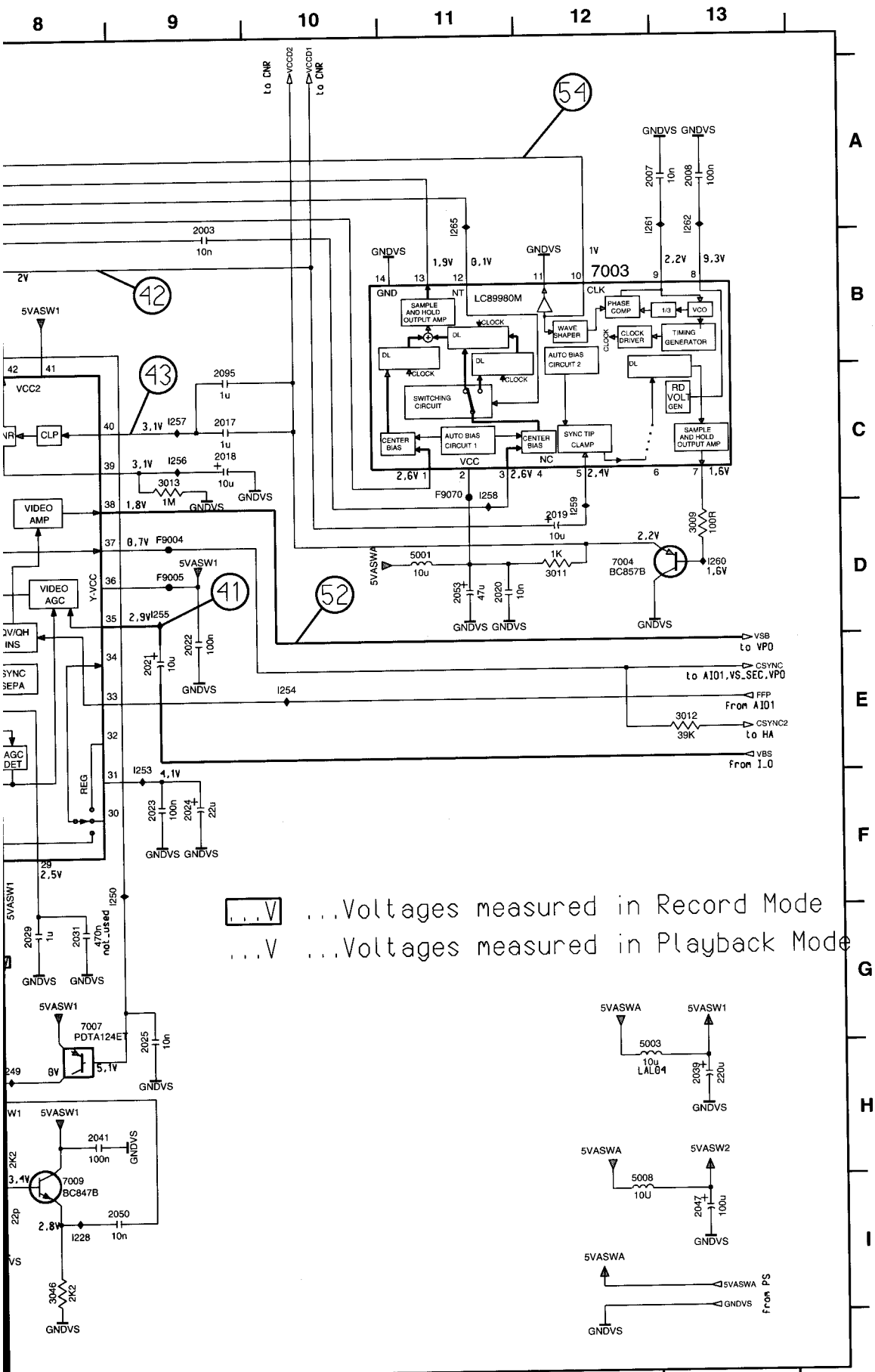
Interconnections		Manual Page							
PS 3-18	FM-STEREO-TDA 3-22	AF 3-24	AL 3-26	HA 3-30	CNR 3-34	AIO1 3-36	DE 3-39	VPS; FOME; PE 3-42	
FV 3-20	FM-STEREO-MSP 3-23	ER 3-25	VS 3-29	VS-SEC 3-33	IO 3-35	AIO2 3-40	VPO 3-41		

Video Signal Processing (VS)



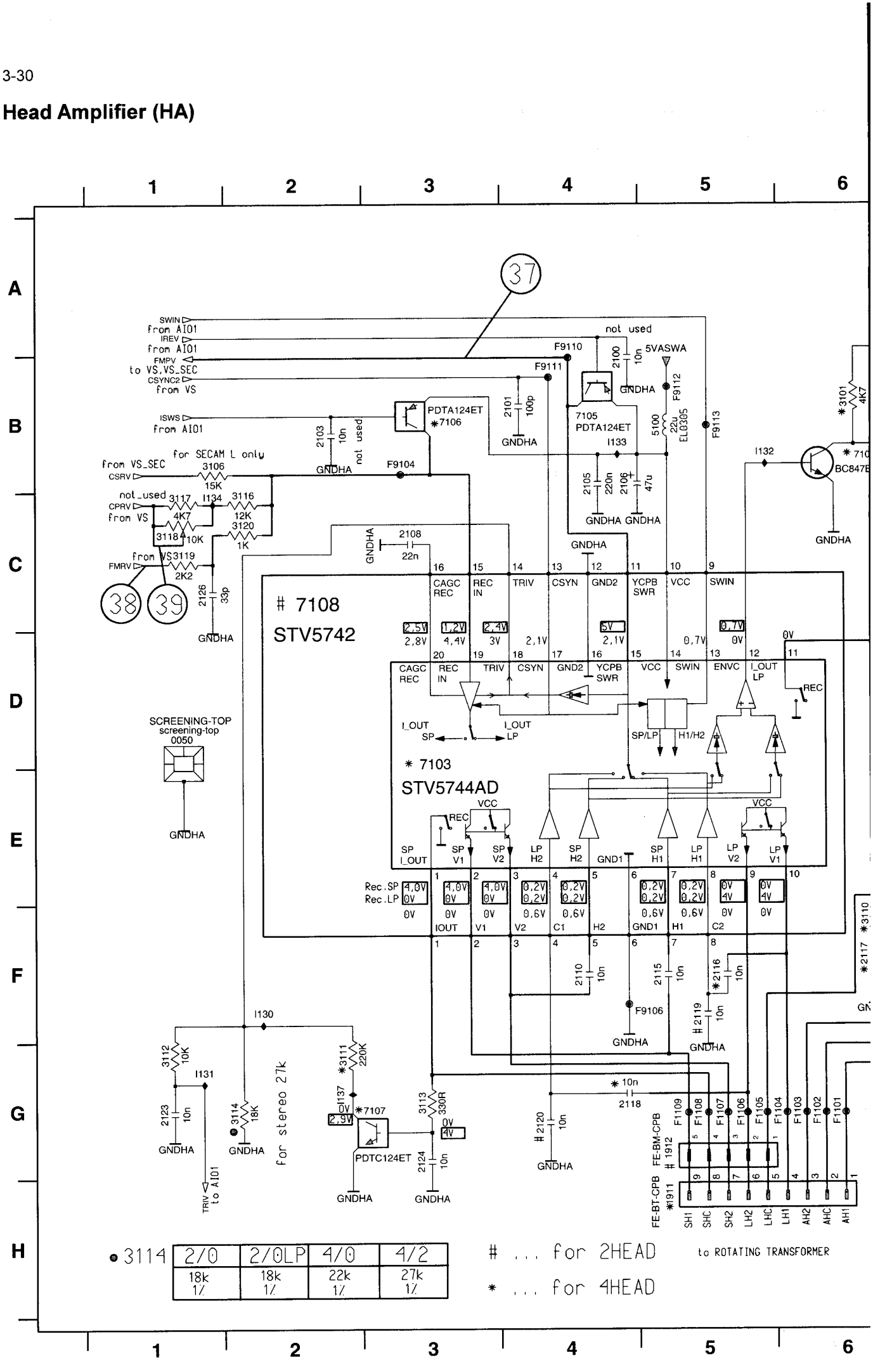
Interconnections — Manual Page

PS 3-18	FM-STEREO-TDA 3-22	AF 3-24	AL 3-26	HA 3-30	CNR 3-34	AIO1 3-36	DE 3-39	VPS; FOME; PE 3-42
FV 3-20	FM-STEREO-MSP 3-23	ER 3-25	VS 3-29	VS-SEC 3-33	IO 3-35	AIO2 3-40	VPO 3-41	



1001 B4
2000 A2
2001 A6
2002 A5
2003 A9
2004 B4
2005 B5
2006 B5
2007 A13
2008 A13
2009 B7
2010 B4
2011 B6
2012 B4
2013 B5
2014 B2
2015 B6
2016 C1
2017 C9
2018 C9
2019 D12
2020 D11
2021 E9
2022 E9
2023 F9
2024 F9
2025 G9
2026 F2
2027 F7
2028 B8
2029 G8
2030 G3
2031 G8
2032 G3
2033 G4
2034 G4
2035 G5
2036 G6
2037 G6
2038 G6
2039 H13
2040 H7
2041 H8
2042 I8
2043 H6
2044 I2
2045 I1
2047 I13
2048 G7
2049 I7
2050 I8
2052 I4
2053 D11
2054 G3
2055 G2
2056 G3
2057 H3
2060 A4
2093 A2
2094 A1
2095 C9
3001 A4
3002 B4
3003 B1
3004 B4
3005 B5
3006 B3
3007 B7
3008 C1
3009 D13
3010 E1
3011 D12
3012 E13
3013 C9
3014 D2
3017 F6
3018 G4
3019 G6
3020 G6
3021 A1
3022 B1
3023 G4
3024 G6
3025 F6
3026 G7
3027 G7
3029 H7
3030 H5
3031 H6
3032 H8
3034 B3
3035 A1
3037 I3
3038 I2
3040 I6
3041 I5
3042 I6
3046 I8
3047 G1
3048 H1
4001 A7
5001 D11
5002 G6
5003 H12
5004 H7
5005 H5
5006 H7
5008 I12
5009 I4
5010 A2
7001 A4
7002 A1
7003 B12
7004 D12
7005 B2
7006 G7
7007 G8
7008 I2
7009 I8
7010 I5
7011 I6
7014 G2
7015 H2
7016 H2
F9001 B5
F9002 B6
F9003 B7
F9004 D9
F9005 D9
F9006 F7
F9007 G7
F9008 F7
F9009 I2
F9070 C11
F9072 H4
F9073 G5
F9074 B7
I201 C2
I202 D2
I203 E2
I204 E1
I205 F2
I206 F3
I207 G1
I208 G2
I209 G3
I210 G3
I211 I1
I212 G3
I213 I2
I214 G5
I215 A1
I216 F7
I217 A4
I218 H3
I220 I4
I221 H5
I222 H5
I223 I5
I224 I6
I225 I6
I226 I7
I227 H7
I228 I8
I229 H7
I241 G6
I242 G6
I249 H8
I250 F8
I253 E9
I254 E10
I255 D9
I256 C9
I257 C9
I258 C11
I259 D12
I260 D13
I261 A12
I262 A13
I265 A11
I270 A6
I271 B6
I272 B6
I275 B4
I278 B4
I279 B4
I281 B3
I282 B3
I283 A2
I284 A2
I285 H1

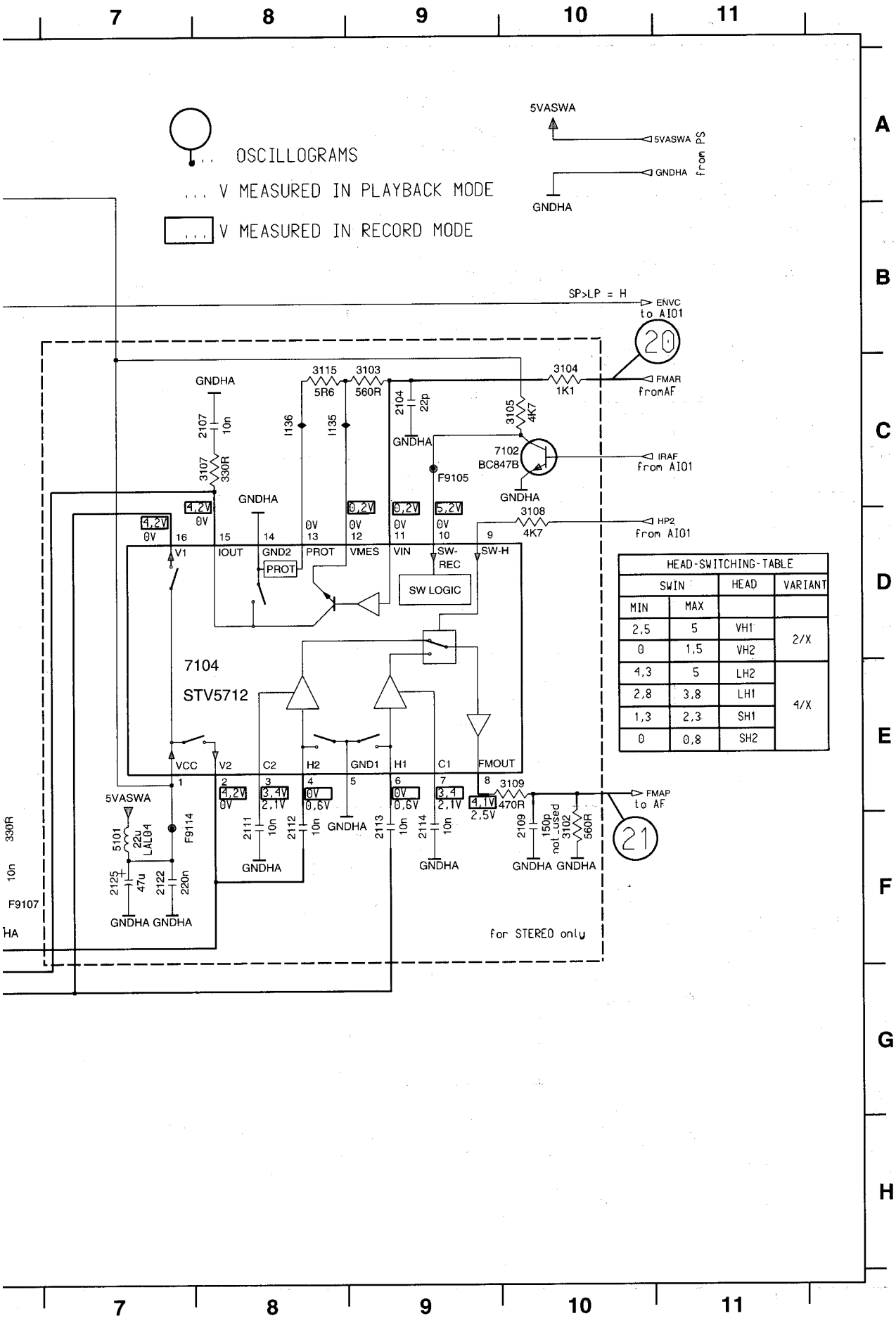
Head Amplifier (HA)



● 3114	2/0	2/0LP	4/0	4/2
	18k 1/	18k 1/	22k 1/	27k 1/

Interconnections Manual Page

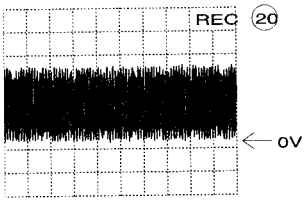
PS 3-18	FM-STEREO-TDA 3-22	AF 3-24	AL 3-26	HA 3-30	CNR 3-34	AIO1 3-36	DE 3-39	VPS; FOME; PE 3-42
FV 3-20	FM-STEREO-MSP 3-23	ER 3-25	VS 3-29	VS-SEC 3-33	IO 3-35	AIO2 3-40	VPO 3-41	



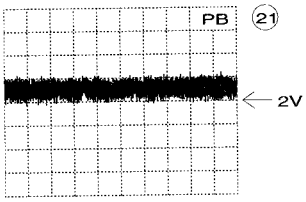
HEAD-SWITCHING-TABLE			
SWIN		HEAD	VARIANT
MIN	MAX		
2,5	5	VH1	2/X
0	1,5	VH2	
4,3	5	LH2	4/X
2,8	3,8	LH1	
1,3	2,3	SH1	
0	0,8	SH2	

0050 D1
1911 H5
1912 G5
2100 B4
2101 B4
2103 B2
2104 C9
2105 B4
2106 B4
2107 C8
2108 C3
2109 F10
2110 F4
2111 F8
2112 F8
2113 F9
2114 F9
2115 F5
2116 F5
2117 F6
2118 G4
2119 F5
2120 G4
2122 F7
2123 G1
2124 G3
2125 F7
2126 C1
3101 B6
3102 F10
3103 C9
3104 C10
3105 C10
3106 B1
3107 C8
3108 D10
3109 E10
3110 F6
3111 G2
3112 G1
3113 G3
3114 G2
3115 C8
3116 C2
3117 C1
3118 C1
3119 C1
3120 C2
5100 B5
5101 F7
7101 B6
7102 C10
7103 E3
7104 E7
7105 B4
7106 B3
7107 G3
7108 C2
F1101 G6
F1102 G6
F1103 G6
F1104 G6
F1105 G5
F1106 G5
F1107 G5
F1108 G5
F1109 G5
F9104 B3
F9105 C9
F9106 F5
F9107 F6
F9110 A4
F9111 B4
F9112 B5
F9113 B5
F9114 F7
I130 F2
I131 G1
I132 B5
I133 B4
I134 C1
I135 C8
I136 C8
I137 G2

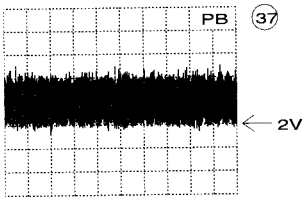
Oscillograms Head Amplifier



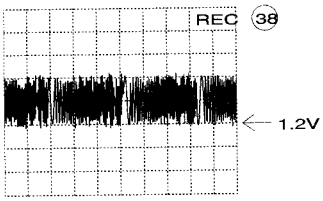
A: DC, 200mV/Div, 5ms/Div
FMAR



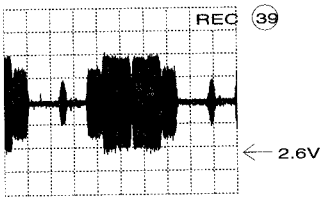
A: AC, 200mV/Div, 500us/Div
FMAP



A: AC, 200mV/Div, 20us/Div
IC 7103 Pin 15



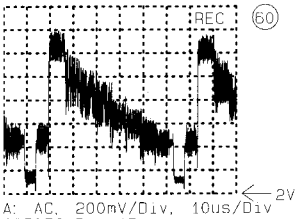
A: AC, 200mV/Div, 20us/Div
FMRV



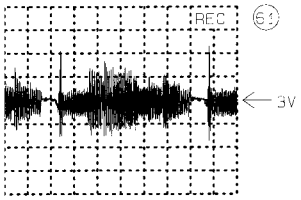
A: AC, 100mV/Div, 10us/Div
CPRV

Interconnections		Manual Page						
PS 3-18	FM-STEREO-TDA 3-22	AF 3-24	AL 3-26	HA 3-30	CNR 3-34	AIO1 3-36	DE 3-39	VPS; FOME; PE 3-42
FV 3-20	FM-STEREO-MSP 3-23	ER 3-25	VS 3-29	VS-SEC 3-33	IO 3-35	AIO2 3-40	VPO 3-41	

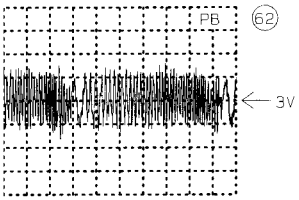
Oscillograms SECAM L Chroma Processing



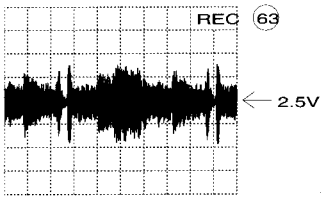
A: AC, 200mV/Div, 10us/Div
IC7672 Pin 15



A: AC, 200mV/Div, 10us/Div
IC 7072 Pin 11



A: AC, 50mV/Div, 10us/Div
IC 7072 Pin 13

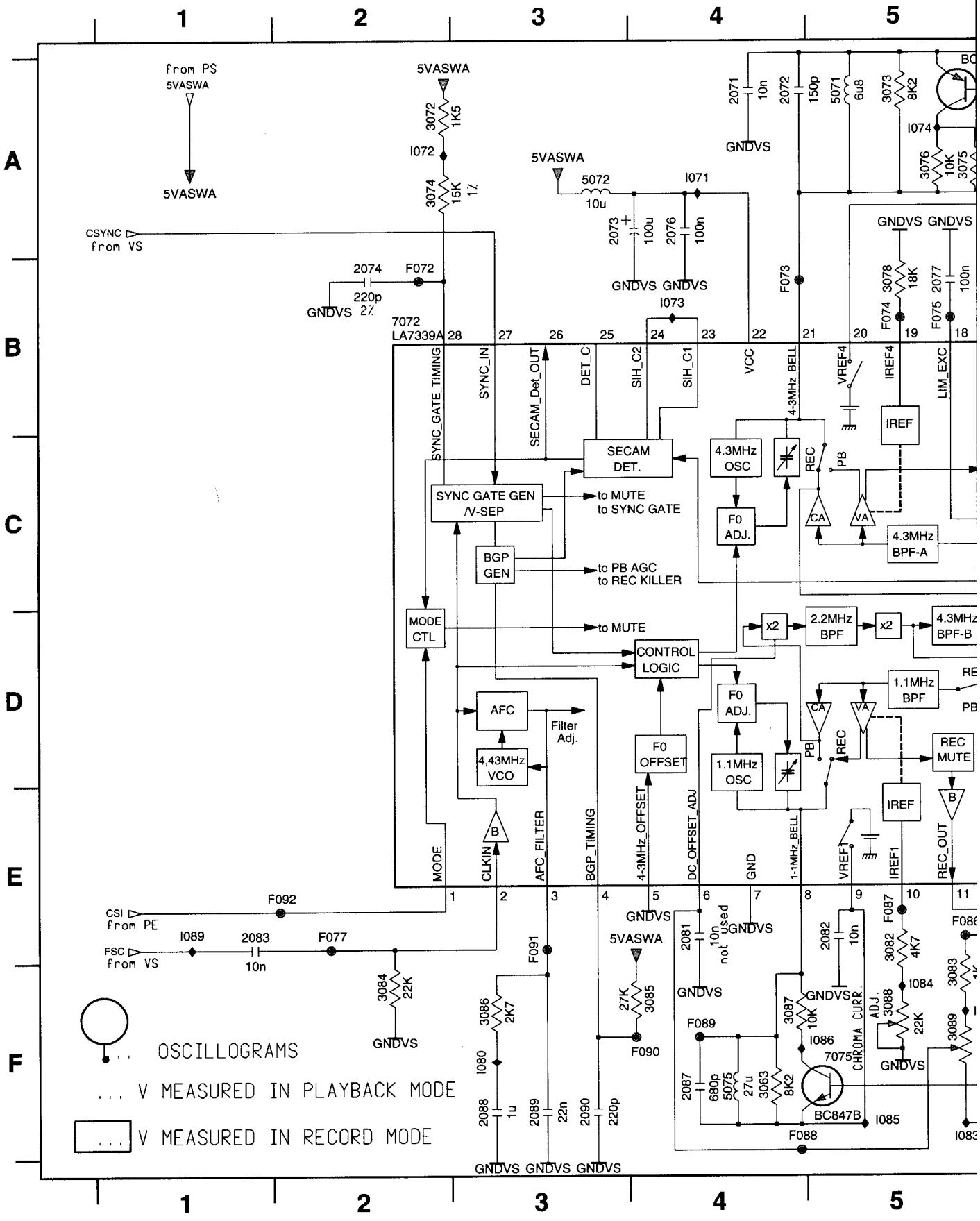


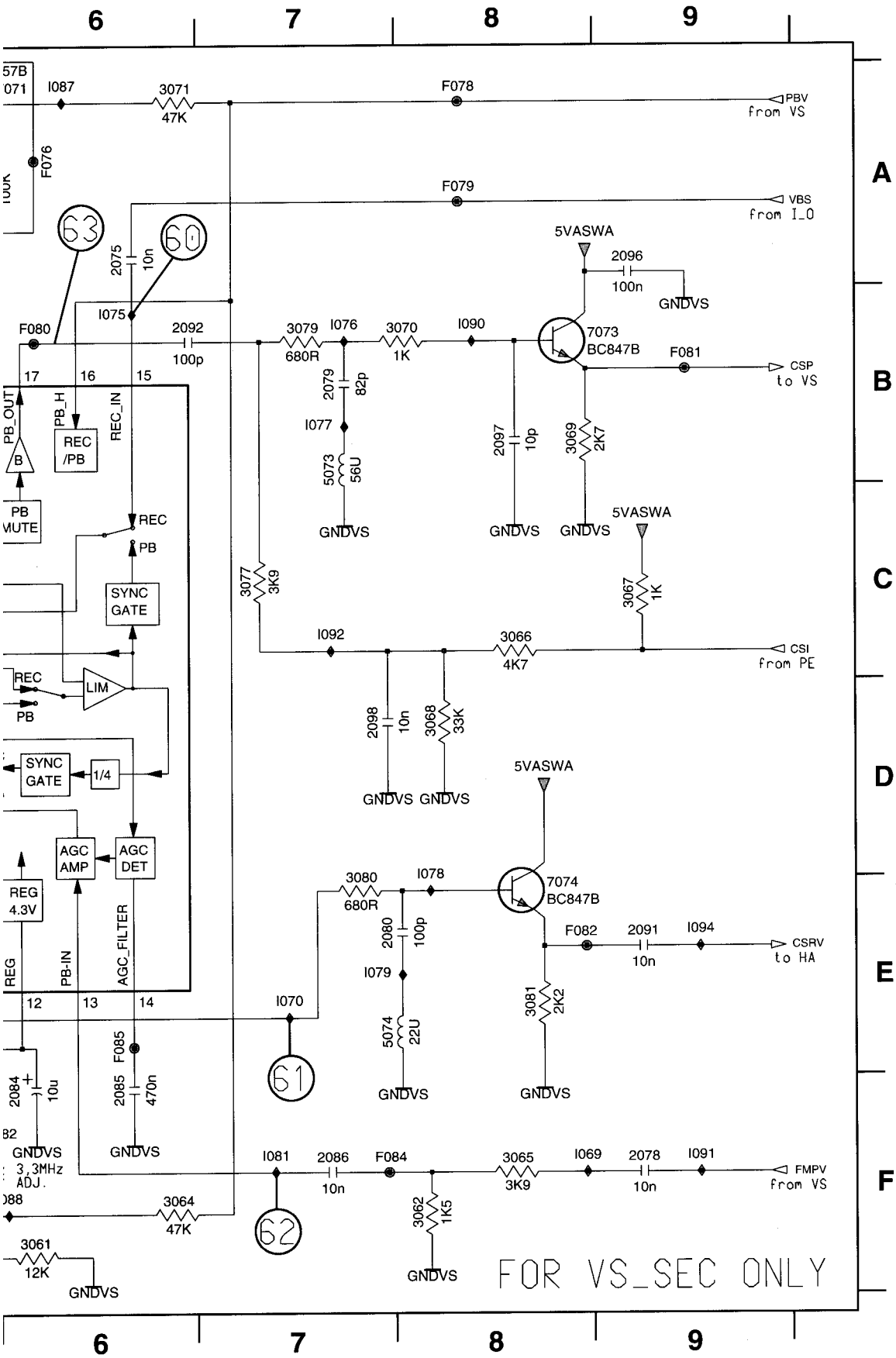
A: AC, 200mV/Div, 10us/Div
IC 7066 Pin 17

Interconnections Manual Page

PS 3-18	FM-STEREO-TDA 3-22	AF 3-24	AL 3-26	HA 3-30	CNR 3-34	AIO1 3-36	DE 3-39	VPS; FOME; PE
FV 3-20	FM-STEREO-MSP 3-23	ER 3-25	VS 3-29	VS-SEC 3-33	IO 3-35	AIO2 3-40	VPO 3-41	3-42

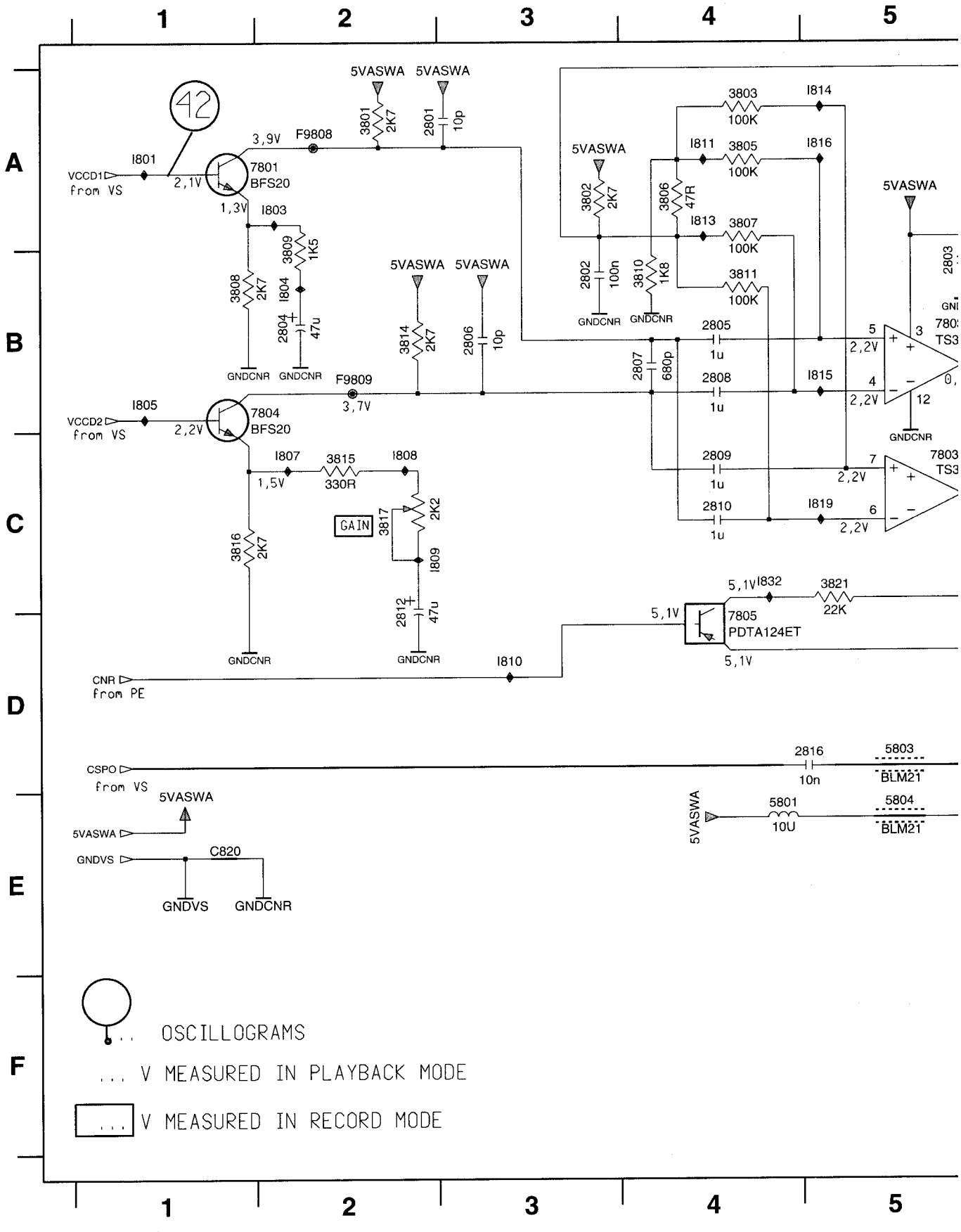
Chroma Processing SECAM L (VS_SECAM)





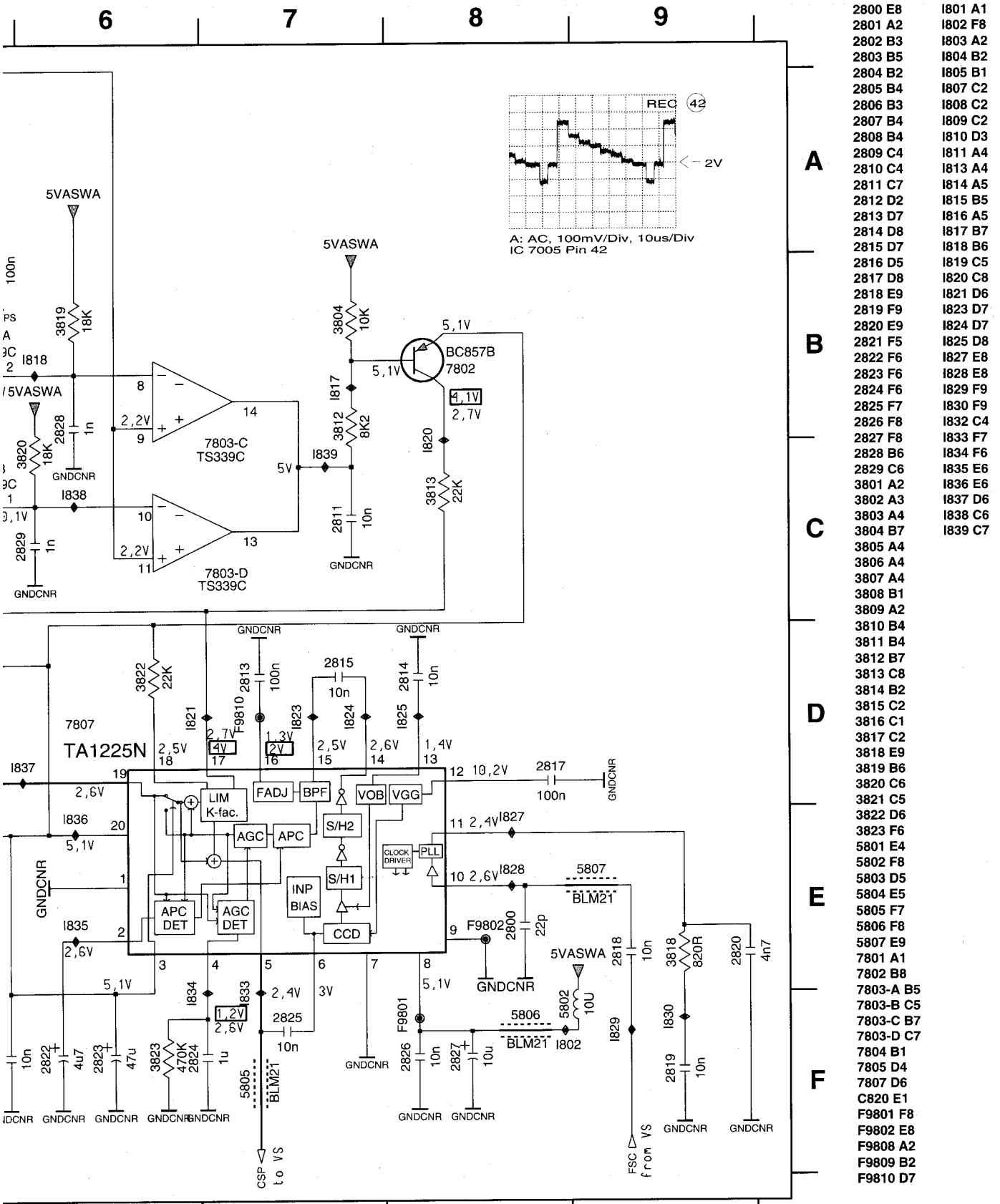
2071 A4 F086 E5
2072 A4 F087 E5
2073 A3 F088 F4
2074 B2 F089 F4
2075 A6 F090 F4
2076 A4 F091 E3
2077 B5 F092 E2
2078 F9 I069 F8
2079 B7 I070 E7
2080 E7 I071 A4
2081 E4 I072 A2
2082 E5 I073 B4
2083 E1 I074 A5
2084 F6 I075 B6
2085 F6 I076 B7
2086 F7 I077 B7
2087 F4 I078 D8
2088 F3 I079 E7
2089 F3 I080 F3
2090 F3 I081 F7
2091 E9 I082 F6
2092 B6 I083 F5
2096 A9 I084 F5
2097 B8 I085 F5
2098 D7 I086 F5
3061 F6 I087 A6
3062 F8 I088 F6
3063 F4 I089 E1
3064 F6 I090 B8
3065 F8 I091 F9
3066 C8 I092 C7
3067 C9 I094 E9
3068 D8
3069 B8
3070 B8
3071 A6
3072 A2
3073 A5
3074 A2
3075 A5
3076 A5
3077 C7
3078 B5
3079 B7
3080 E7
3081 E8
3082 E5
3083 F5
3084 F2
3085 F4
3086 F3
3087 F4
3088 F5
3089 F5
5071 A5
5072 A3
5073 B7
5074 E7
5075 F4
7071 A6
7072 B2
7073 B8
7074 E8
7075 F5
F072 B2
F073 B4
F074 B5
F075 B5
F076 A6
F077 E2
F078 A8
F079 A8
F080 B6
F081 B9
F082 E8
F084 F7
F085 E6

Chroma Noise Reduction (CNR)



Interconnections Manual Page

PS 3-18	FM-STEREO-TDA 3-22	AF 3-24	AL 3-26	HA 3-30	CNR 3-34	AIO1 3-36	DE 3-39	VPS; FOME; PE 3-42
FV 3-20	FM-STEREO-MSP 3-23	ER 3-25	VS 3-29	VS-SEC 3-33	IO 3-35	AIO2 3-40	VPO 3-41	

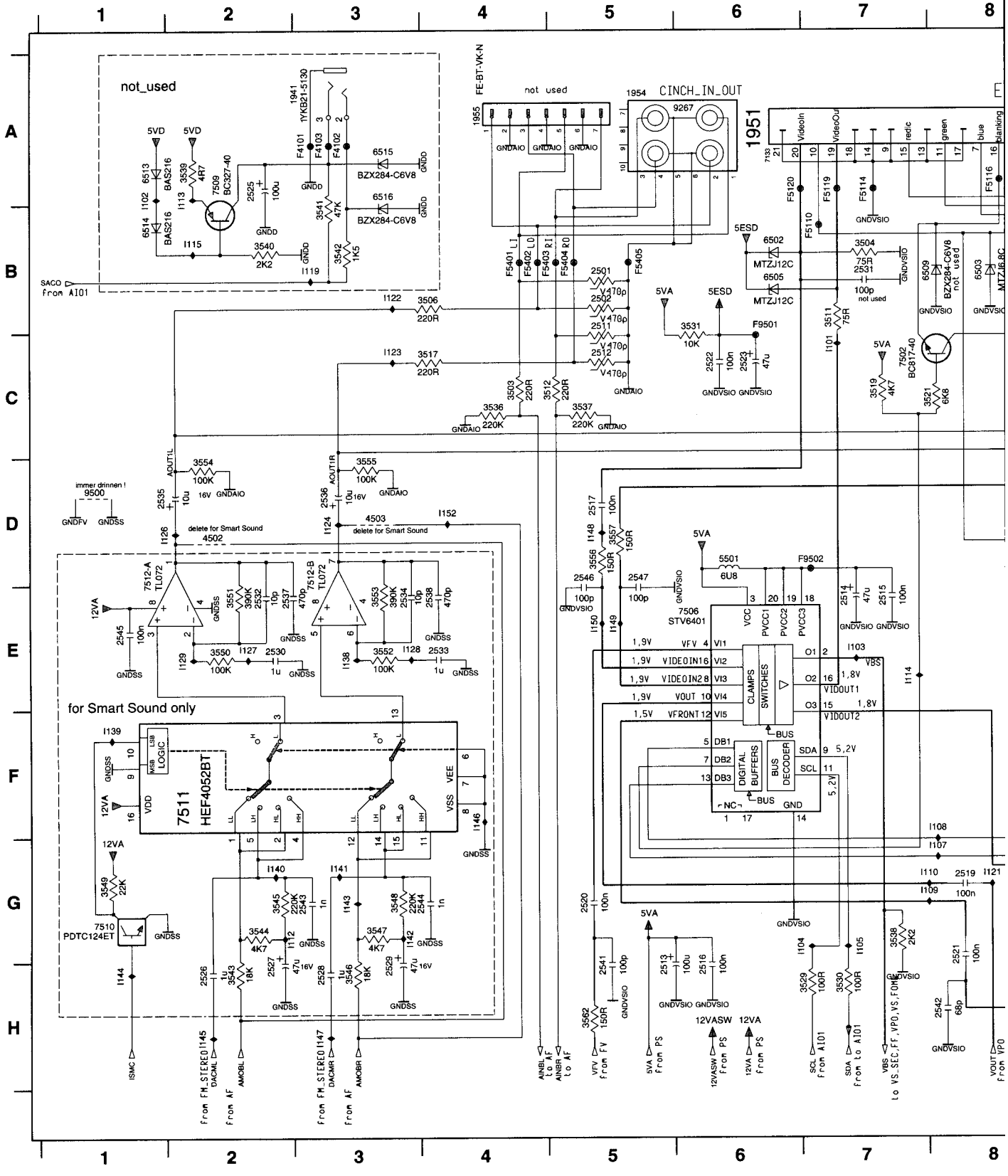


2800 E8
2801 A2
2802 B3
2803 B5
2804 B2
2805 B4
2806 B3
2807 B4
2808 B4
2809 C4
2810 C4
2811 C7
2812 D2
2813 D7
2814 D8
2815 D7
2816 D5
2817 D8
2818 E9
2819 F9
2820 E9
2821 F5
2822 F6
2823 F6
2824 F6
2825 F7
2826 F8
2827 F8
2828 B6
2829 C6
3801 A2
3802 A3
3803 A4
3804 B7
3805 A4
3806 A4
3807 A4
3808 B1
3809 A2
3810 B4
3811 B4
3812 B7
3813 C8
3814 B2
3815 C2
3816 C1
3817 C2
3818 E9
3819 B6
3820 C6
3821 C5
3822 D6
3823 F6
5801 E4
5802 F8
5803 D5
5804 E5
5805 F7
5806 F8
5807 E9
7801 A1
7802 B8
7803-A B5
7803-B C5
7803-C B7
7803-D C7
7804 B1
7805 D4
7807 D6
C820 E1
F9801 F8
F9802 E8
F9808 A2
F9809 B2
F9810 D7

I801 A1
I802 F8
I803 A2
I804 B2
I805 B1
I807 C2
I808 C2
I809 C2
I810 D3
I811 A4
I813 A4
I814 A5
I815 B5
I816 A5
I817 B7
I818 B6
I819 C5
I820 C8
I821 D6
I823 D7
I824 D7
I825 D8
I827 E8
I828 E8
I829 F9
I830 F9
I832 C4
I833 F7
I834 F6
I835 E6
I836 E6
I837 D6
I838 C6
I839 C7

Input/Output (I_O)

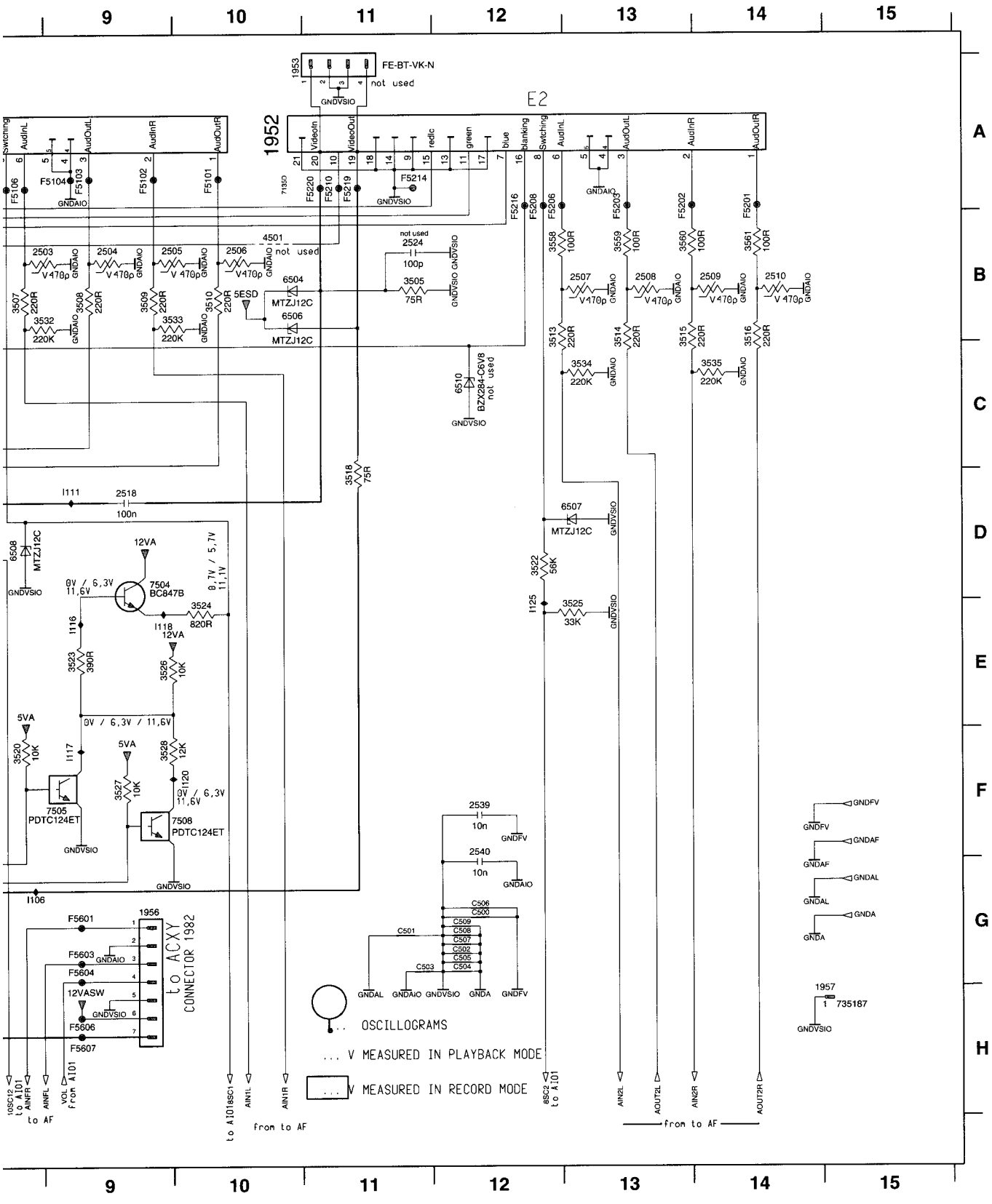
1941 A3	2501 B5	2509 B14	2517 D5	2525 A2	2533 E4	2541 H5	3504 B7	3512 C5	3520 F8	3528 F9	3536 C4	3544 G2	3552 E3	3560 B1
1951 A6	2502 B5	2510 B14	2518 D9	2526 H2	2534 E3	2542 H8	3505 B11	3513 B12	3521 C8	3529 H7	3537 C5	3545 G2	3553 E3	3561 B1
1952 A10	2503 B8	2511 B5	2519 G8	2527 H2	2535 D1	2543 G3	3506 B4	3514 B13	3522 D12	3530 H7	3538 G7	3546 H3	3554 D2	3562 H5
1953 A10	2504 B9	2512 C5	2520 G5	2528 H3	2536 D3	2544 G4	3507 B8	3515 B13	3523 E9	3531 B6	3539 A2	3547 G3	3555 D3	4501 B1
1954 A5	2505 B9	2513 H5	2521 G8	2529 H3	2537 E2	2545 E1	3508 B9	3516 B14	3524 E10	3532 B9	3540 B2	3548 G3	3556 D5	4502 D2
1955 A4	2506 B10	2514 E7	2522 C6	2530 E2	2538 E4	2546 D5	3509 B9	3517 C4	3525 E13	3533 B10	3541 B3	3549 G1	3557 D5	4503 D3
1956 G9	2507 B13	2515 E7	2523 C6	2531 B7	2539 F12	2547 D5	3510 B10	3518 D11	3526 E9	3534 C13	3542 B3	3550 E2	3558 B12	5501 D6
1957 H15	2508 B13	2516 H6	2524 B11	2532 E2	2540 F12	3503 C4	3511 B7	3519 C7	3527 F9	3535 C14	3543 H2	3551 E2	3559 B13	6502 B6



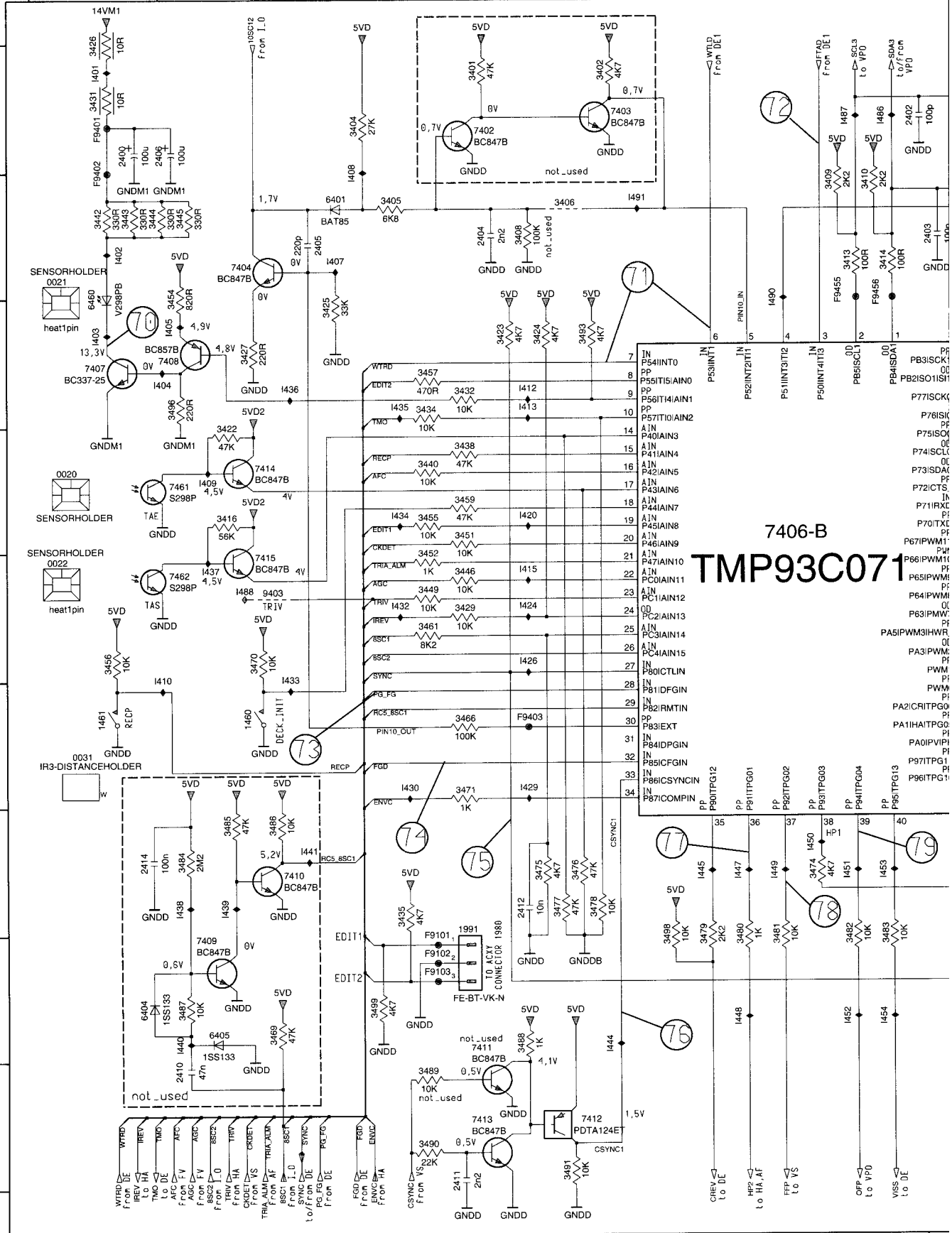
Interconnections

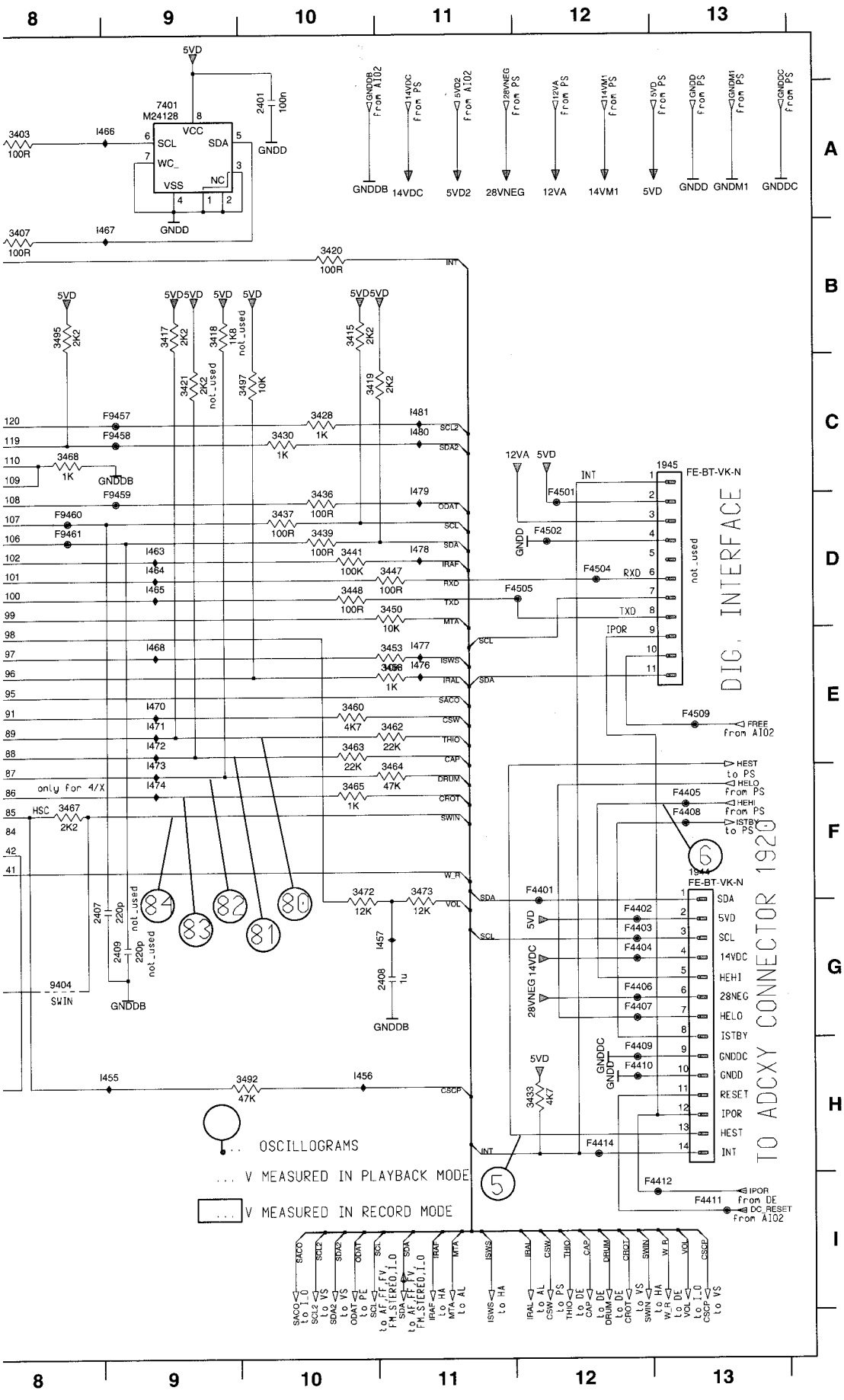
Manual Page

6503 B8	6513 A1	7508 F9	C501 G11	C509 G12	F5106 A8	F5202 A13	F5220 A11	F5604 G9	I104 G6	I112 G2	I120 F10	I128 E3	I144 H1
6504 B10	6514 B1	7509 A2	C502 G12	F4101 A3	F5108 A8	F5203 A13	F5401 B4	F5606 H9	I105 G7	I113 A2	I121 G8	I129 E2	I145 H2
6505 B6	6515 A3	7510 G1	C503 G11	F4102 A3	F5110 B7	F5206 A12	F5402 B4	F5607 H9	I106 G8	I114 E7	I122 B3	I138 E3	I146 F4
6506 B10	6516 A3	7511 F2	C504 G12	F4103 A3	F5114 A7	F5208 A12	F5403 B5	F9501 B6	I107 G8	I115 B2	I123 C3	I139 F1	I147 H3
6507 D13	7502 C7	7512-A E1	C505 G12	F5101 A10	F5116 A8	F5210 A11	F5404 B5	F9502 D7	I108 F8	I116 E9	I124 D3	I140 G2	I148 D5
6508 D8	7504 D9	7512-B E3	C506 G12	F5102 A9	F5119 A7	F5214 A11	F5405 B5	I101 C7	I109 G7	I117 F9	I125 E12	I141 G3	I149 E5
6509 B8	7505 F9	9500 D1	C507 G12	F5103 A9	F5120 A6	F5216 A12	F5601 G9	I102 A1	I110 G7	I118 E9	I126 D1	I142 G3	I150 E5
6510 C12	7506 E6	C500 G12	C508 G12	F5104 A9	F5201 A14	F5219 A11	F5603 G9	I103 E7	I111 D9	I119 B3	I127 E2	I143 G3	I152 D4



Central / Deck Control 1 (AIO1)





0020 D1	3496 C2	I487 A7
0021 B1	3497 C10	I488 E2
0022 E1	3498 G5	I490 B6
0031 F1	3499 H3	I491 B5
1460 F2	6401 B3	
1461 F1	6404 H1	
1944 F13	6405 H2	
1945 C13	6460 B1	
1991 G4	7401 A9	
2400 A1	7402 A4	
2401 A10	7403 A5	
2402 A7	7404 B2	
2403 B8	7406-B D6	
2404 B4	7407 C1	
2405 B3	7408 C2	
2406 A2	7409 H2	
2407 G8	7410 G2	
2408 G11	7411 H4	
2409 G9	7412 I5	
2410 I2	7413 I4	
2411 I4	7414 D2	
2412 G4	7415 E2	
2414 G1	7461 D2	
3401 A4	7462 E2	
3402 A5	9403 E2	
3403 A8	9404 G8	
3404 A3	F4401 F12	
3405 B3	F4402 G12	
3406 B5	F4403 G12	
3407 B8	F4404 G12	
3408 B4	F4405 F13	
3409 B7	F4406 G12	
3410 B7	F4407 G12	
3413 B7	F4408 F13	
3414 B7	F4409 H12	
3415 B10	F4410 H12	
3416 D2	F4411 I13	
3417 B9	F4412 I13	
3418 B9	F4414 H12	
3419 C10	F4501 D12	
3420 B10	F4502 D12	
3421 C9	F4504 D12	
3422 D2	F4505 D12	
3423 C4	F4509 E13	
3424 C4	F9101 H4	
3425 C3	F9102 H4	
3426 A1	F9103 H4	
3427 C2	F9401 A1	
3428 C10	F9402 A1	
3429 E4	F9403 F4	
3430 C10	F9455 B7	
3431 A1	F9456 B7	
3432 C4	F9457 C9	
3433 H12	F9458 C9	
3434 C4	F9459 D9	
3435 G3	F9460 D8	
3436 D10	F9461 D8	
3437 D10	I401 A1	
3438 D4	I402 B1	
3439 D10	I403 C1	
3440 D4	I404 C2	
3441 D10	I405 C2	
3442 B1	I407 B3	
3443 B1	I408 A3	
3444 B1	I409 D2	
3445 B2	I410 E2	
3446 E4	I412 C4	
3447 D11	I413 C4	
3448 D10	I415 E4	
3449 E4	I420 D4	
3450 D11	I424 E4	
3451 D4	I426 E4	
3452 E4	I429 F4	
3453 E11	I430 F3	
3454 B2	I432 E3	
3455 D4	I433 E3	
3456 E1	I434 D3	
3457 C4	I435 C3	
3458 E11	I436 C3	
3459 D4	I437 E2	
3460 E10	I438 G2	
3461 E4	I439 G2	
3462 E11	I440 H2	
3463 E10	I441 G3	
3464 F11	I444 H5	
3465 F10	I445 G6	
3466 F4	I447 G6	
3467 F8	I448 H6	
3468 C8	I449 G6	
3469 H2	I450 G7	
3470 E2	I451 G7	
3471 F4	I452 H7	
3472 F10	I453 G7	
3473 F11	I454 H7	
3474 G7	I455 H9	
3475 G4	I456 H10	
3476 G5	I457 G11	
3477 G5	I463 D9	
3478 G5	I464 D9	
3479 G6	I465 D9	
3480 G6	I466 A9	
3481 G6	I467 B9	
3482 G7	I468 E9	
3483 G7	I470 E9	
3484 G2	I471 E9	
3485 G2	I472 E9	
3486 G2	I473 E9	
3487 H2	I474 F9	
3488 H4	I476 E11	
3489 I4	I477 E11	
3490 I4	I478 D11	
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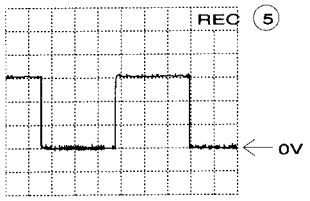
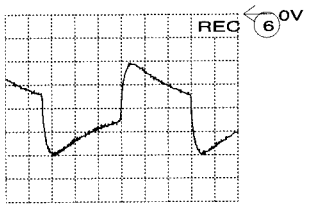
3493 C5	I481 C11	
3495 B8	I486 A7	

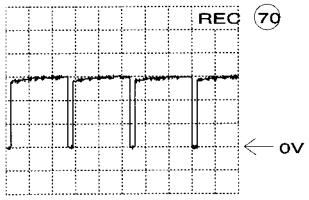
Oscillograms Central / Deck Control



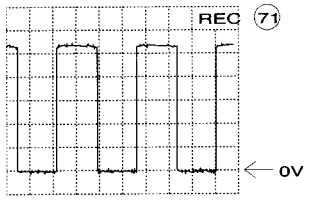
A: DC, 500mV/Div, 5us/Div
Connector 1944 Pin 13



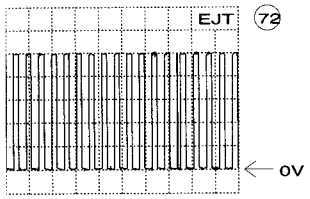
A: DC, 5 V/Div, 5us/Div
Connector 1944 Pin 5



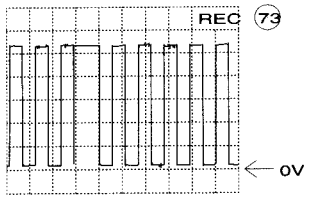
A: DC, 5 V/Div, 5ms/Div
Collector 7407



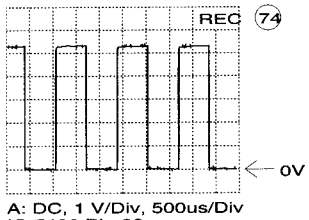
A: DC, 1 V/Div, 200ms/Div
IC 7406 Pin 6/7



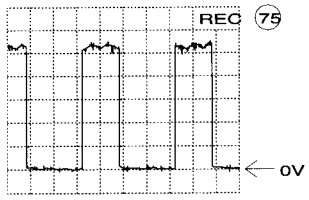
A: DC, 1 V/Div, 20ms/Div
IC 7406 Pin 3



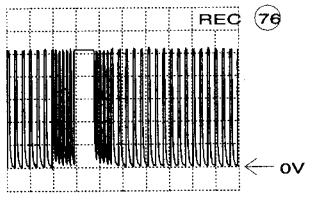
A: DC, 1 V/Div, 2ms/Div
IC 7406 Pin 28



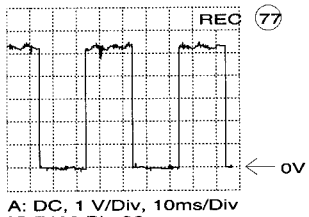
A: DC, 1 V/Div, 500us/Div
IC 7406 Pin 32



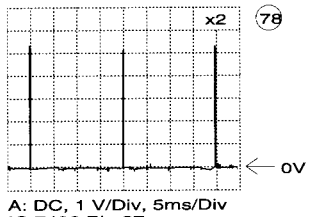
A: DC, 1 V/Div, 10ms/Div
IC 7406 Pin 27/42



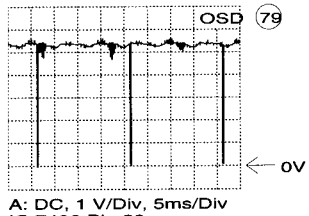
A: DC, 1 V/Div, 200us/Div
IC 7406 Pin 33



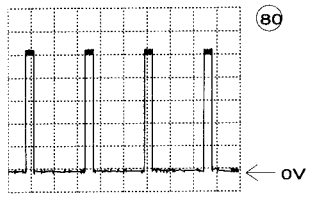
A: DC, 1 V/Div, 10ms/Div
IC 7406 Pin 36



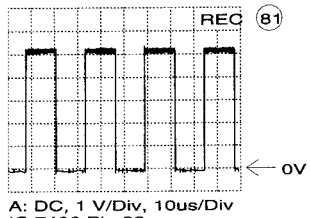
A: DC, 1 V/Div, 5ms/Div
IC 7406 Pin 37



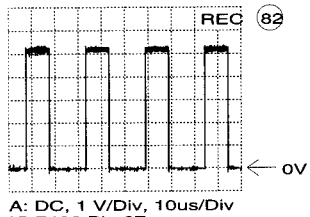
A: DC, 1 V/Div, 5ms/Div
IC 7406 Pin 39



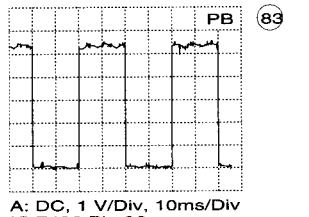
A: DC, 1 V/Div, 10us/Div
IC 7406 Pin 89



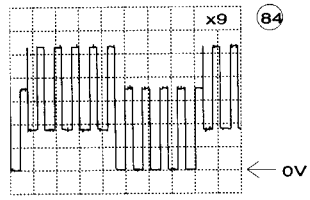
A: DC, 1 V/Div, 10us/Div
IC 7406 Pin 88



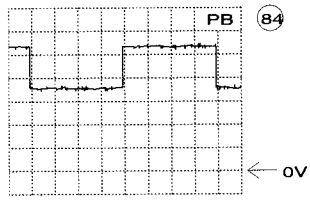
A: DC, 1 V/Div, 10us/Div
IC 7406 Pin 87



A: DC, 1 V/Div, 10ms/Div
IC 7406 Pin 86

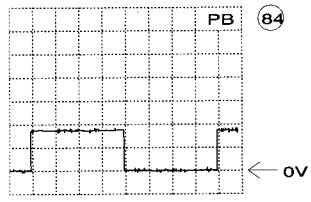


A: DC, 1 V/Div, 5ms/Div
SWIN



A: DC, 1 V/Div, 5ms/Div
SWIN

Longplay



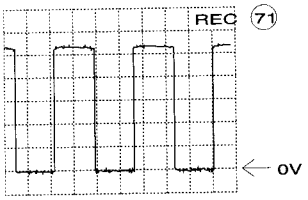
A: DC, 1 V/Div, 5ms/Div
SWIN

Standard Play

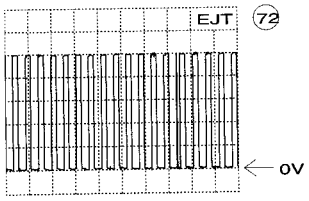
Interconnections Manual Page

PS 3-18	FM-STEREO-TDA 3-22	AF 3-24	AL 3-26	HA 3-30	CNR 3-34	AIO1 3-36	DE 3-39	VPS; FOME; PE
FV 3-20	FM-STEREO-MSP 3-23	ER 3-25	VS 3-29	VS-SEC 3-33	IO 3-35	AIO2 3-40	VPO 3-41	3-42

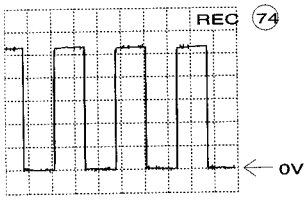
Oscillograms Deck Electronics



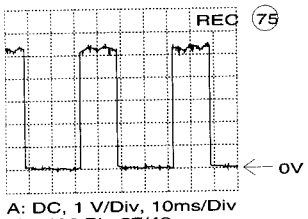
A: DC, 1 V/Div, 200ms/Div
IC 7406 Pin 6/7



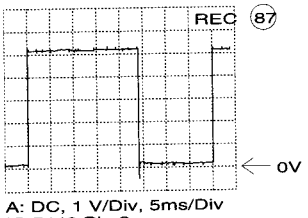
A: DC, 1 V/Div, 20ms/Div
IC 7406 Pin 3



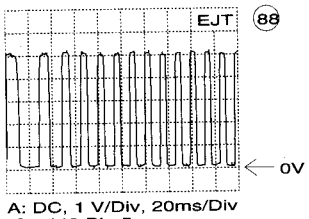
A: DC, 1 V/Div, 500us/Div
IC 7406 Pin 32



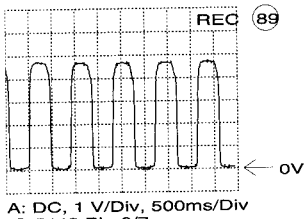
A: DC, 1 V/Div, 10ms/Div
IC 7406 Pin 27/42



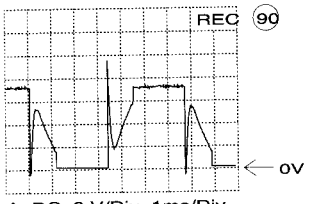
A: DC, 1 V/Div, 5ms/Div
IC 7443 Pin 2



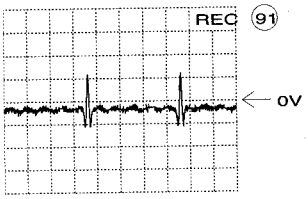
A: DC, 1 V/Div, 20ms/Div
IC 7443 Pin 5



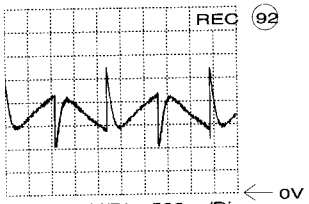
A: DC, 1 V/Div, 500ms/Div
IC 7443 Pin 6/7



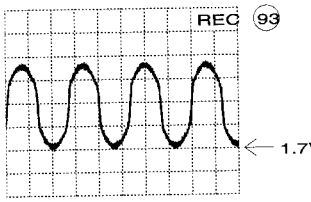
A: DC, 2 V/Div, 1ms/Div
Connector 1948 Pin 1/2/3



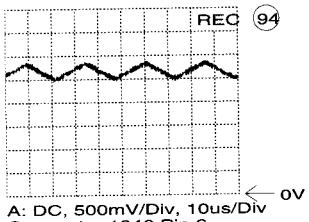
A: DC, 200mV/Div, 10ms/Div
Connector 1948 Pin 5



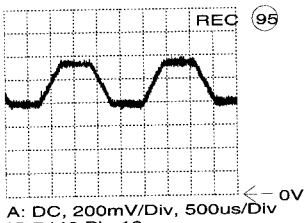
A: DC, 1 V/Div, 500us/Div
Connector 1948 Pin 4



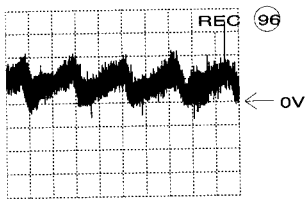
A: DC, 500mV/Div, 500us/Div
Connector 1946 Pin 4



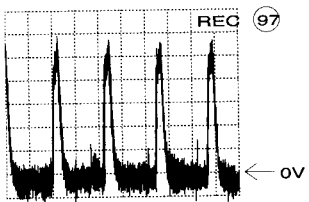
A: DC, 500mV/Div, 10us/Div
Connector 1946 Pin 6



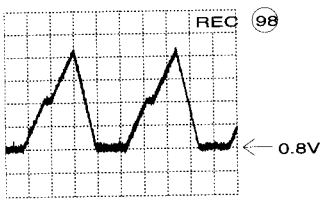
A: DC, 200mV/Div, 500us/Div
IC 7446 Pin 10



A: DC, 50mV/Div, 500us/Div
IC 7446 Pin 11



A: DC, 50mV/Div, 500us/Div
IC 7446 Pin 12

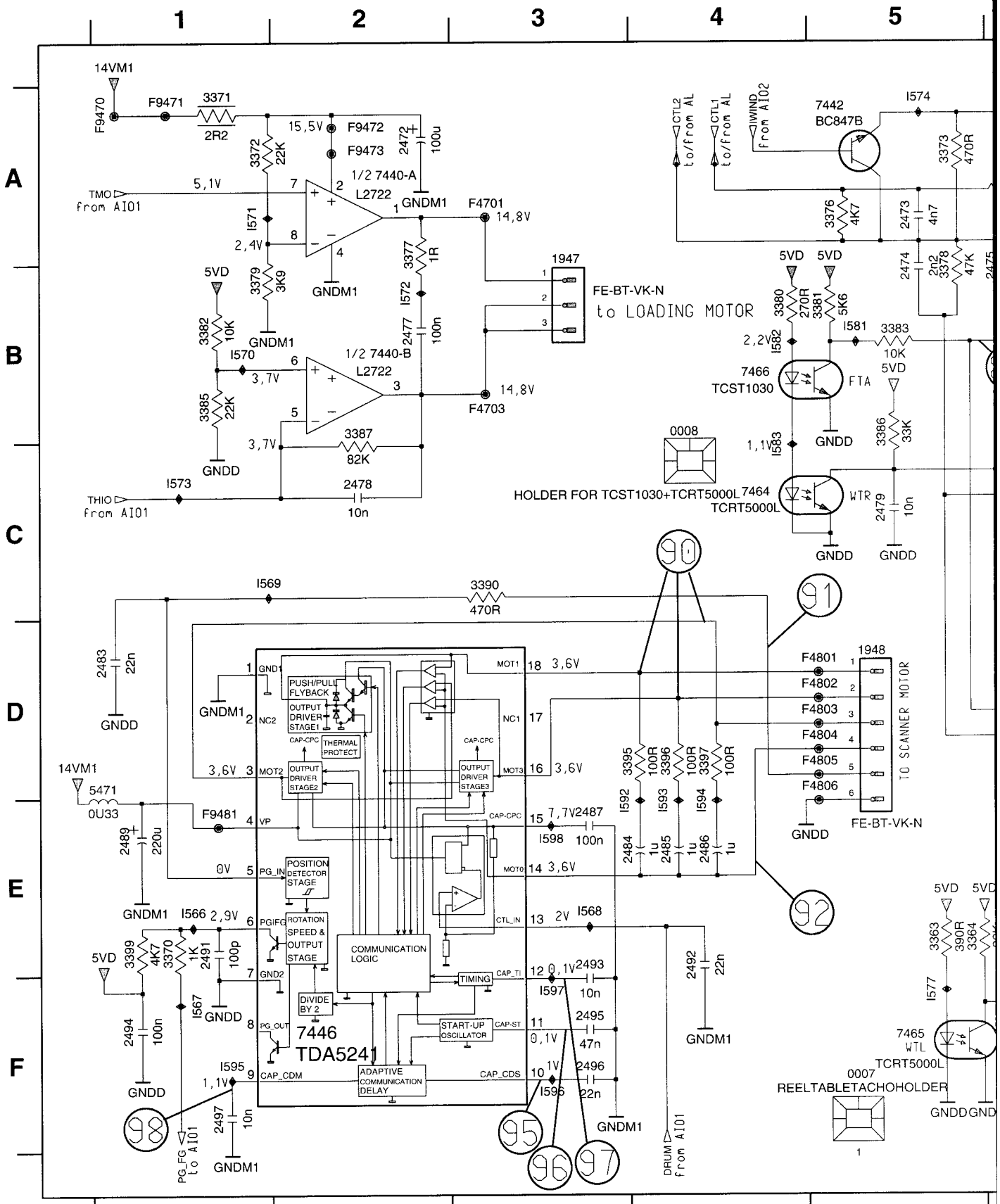


A: AC, 200mV/Div, 500us/Div
IC 7446 Pin 9

Interconnections — Manual Page

PS 3-18	FM-STEREO-TDA 3-22	AF 3-24	AL 3-26	HA 3-30	CNR 3-34	AIO1 3-36	DE 3-39	VPS; FOME; PE 3-42
FV 3-20	FM-STEREO-MSP 3-23	ER 3-25	VS 3-29	VS-SEC 3-33	IO 3-35	AIO2 3-40	VPO 3-41	

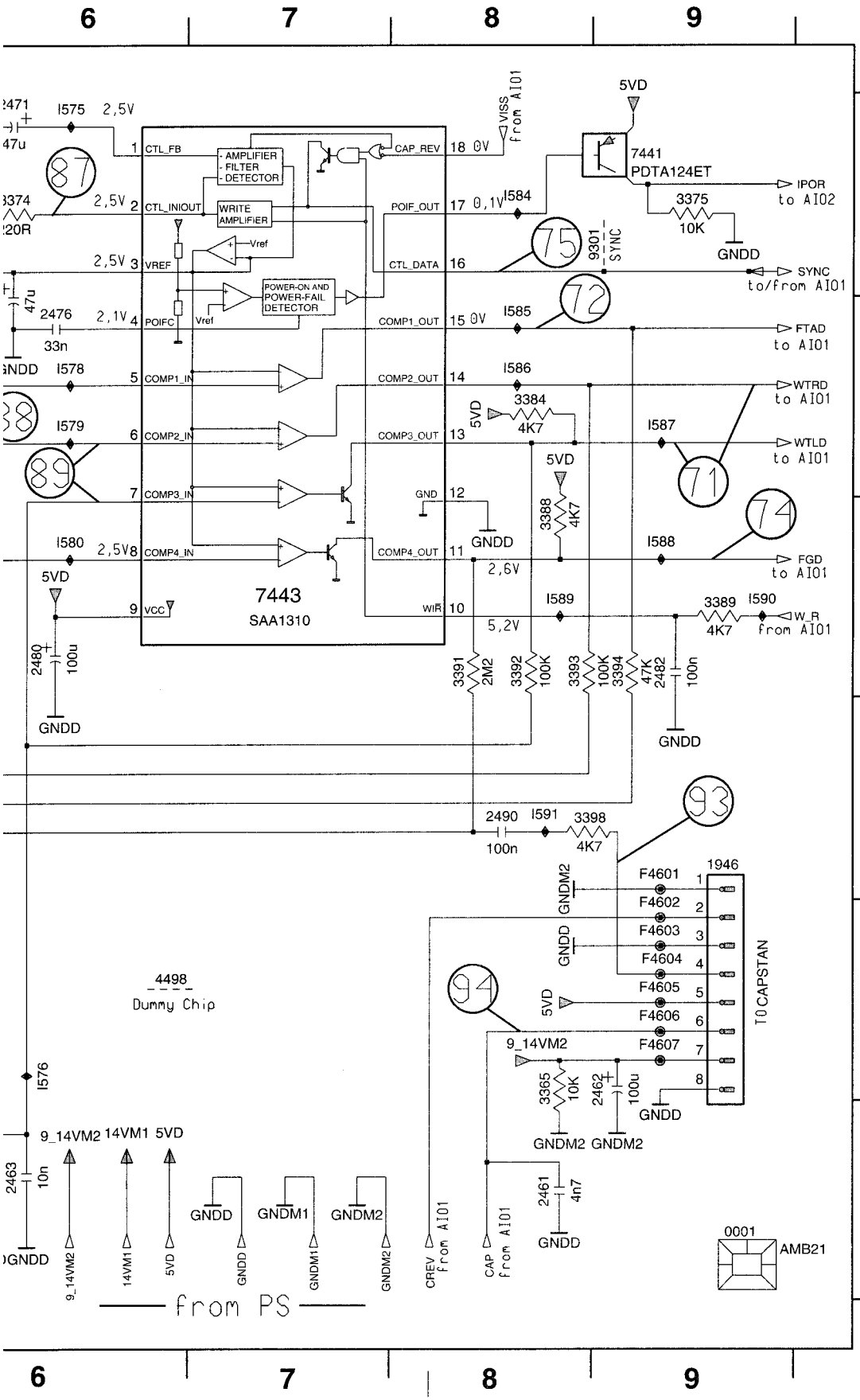
Deck Electronics (DE)



... OSCILLOGRAMS

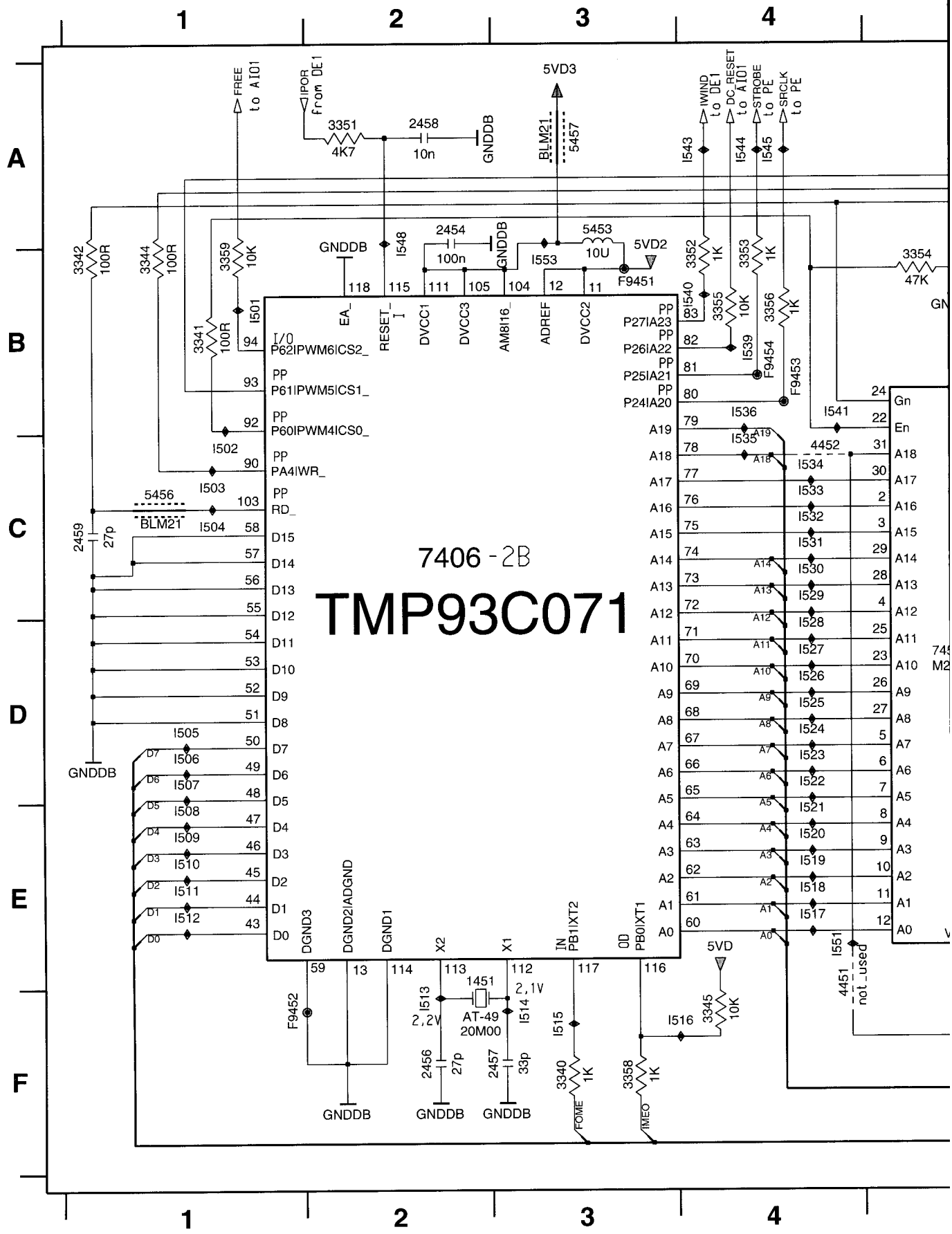
... V MEASURED IN PLAYBACK MODE

... V MEASURED IN RECORD MODE



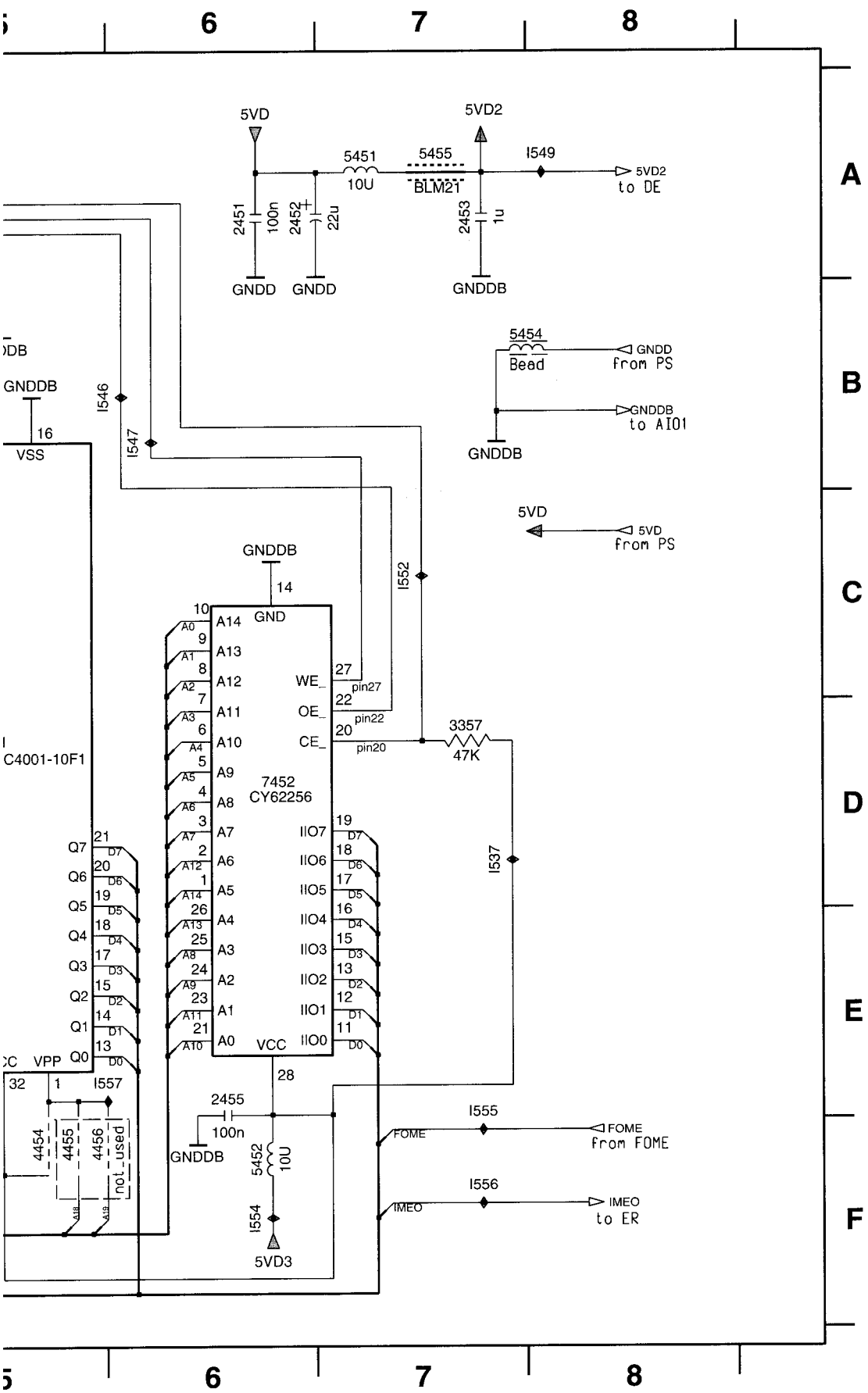
0001 F9	9301 A8
0007 F5	F4601 D9
0008 B4	F4602 E9
1946 D9	F4603 E9
1947 A3	F4604 E9
1948 D5	F4605 E9
2461 F8	F4606 E9
2462 E9	F4607 E9
2463 F6	F4701 A3
2471 A6	F4703 B3
2472 A2	F4801 D5
2473 A5	F4802 D5
2474 B5	F4803 D5
2475 B6	F4804 D5
2476 B6	F4805 D5
2477 B2	F4806 D5
2478 C2	F9470 A1
2479 C5	F9471 A1
2480 C6	F9472 A2
2482 C9	F9473 A2
2483 D1	F9481 E1
2484 E4	I566 E1
2485 E4	I567 F1
2486 E4	I568 E3
2487 E3	I569 C1
2489 E1	I570 B1
2490 D8	I571 A1
2491 E1	I572 B2
2492 E4	I573 C1
2493 E3	I574 A5
2494 F1	I575 A6
2495 F3	I576 E6
2496 F3	I577 F5
2497 F1	I578 B6
3363 E5	I579 B6
3364 E5	I580 C6
3365 E8	I581 B5
3370 E1	I582 B4
3371 A1	I583 C4
3372 A1	I584 A8
3373 A5	I585 B8
3374 A6	I586 B8
3375 A9	I587 B9
3376 A5	I588 C9
3377 A2	I589 C8
3378 B5	I590 C9
3379 B1	I591 D8
3380 B4	I592 E3
3381 B5	I593 E4
3382 B1	I594 E4
3383 B5	I595 F1
3384 B8	I596 F3
3385 B1	I597 F3
3386 B5	I598 E3
3387 B2	
3388 C8	
3389 C9	
3390 C3	
3391 C8	
3392 C8	
3393 C8	
3394 C9	
3395 D4	
3396 D4	
3397 D4	
3398 D8	
3399 E1	
4498 E6	
5471 D1	
7440-A A2	
7440-B B2	
7441 A9	
7442 A5	
7443 C7	
7446 F2	
7464 C4	
7465 F5	
7466 B4	

Central / Deck Control 2 (AIO2)



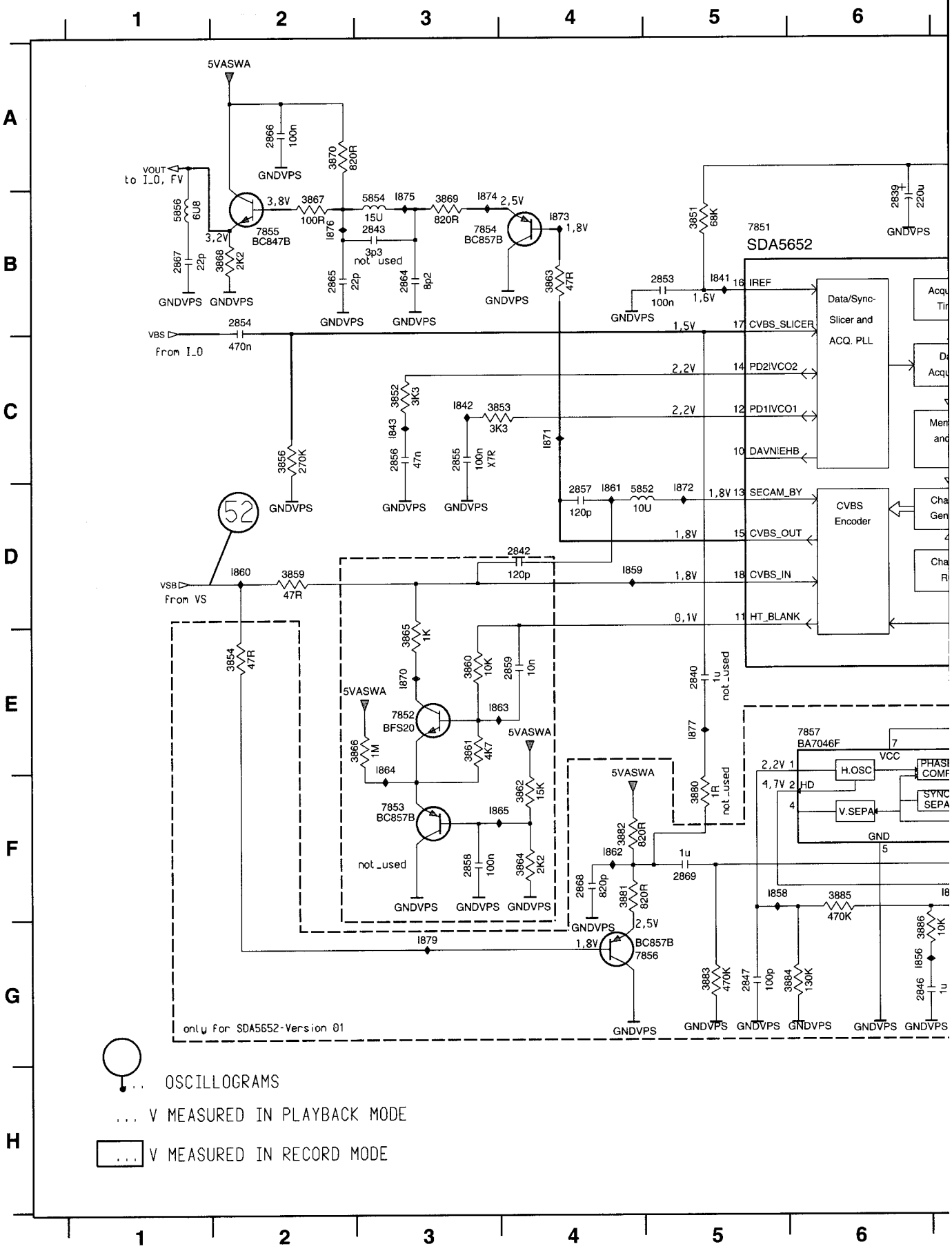
Interconnections Manual Page

PS 3-18	FM-STEREO-TDA 3-22	AF 3-24	AL 3-26	HA 3-30	CNR 3-34	AIO1 3-36	DE 3-39	VPS; FOME; PE 3-42
FV 3-20	FM-STEREO-MSP 3-23	ER 3-25	VS 3-29	VS-SEC 3-33	IO 3-35	AIO2 3-40	VPO 3-41	



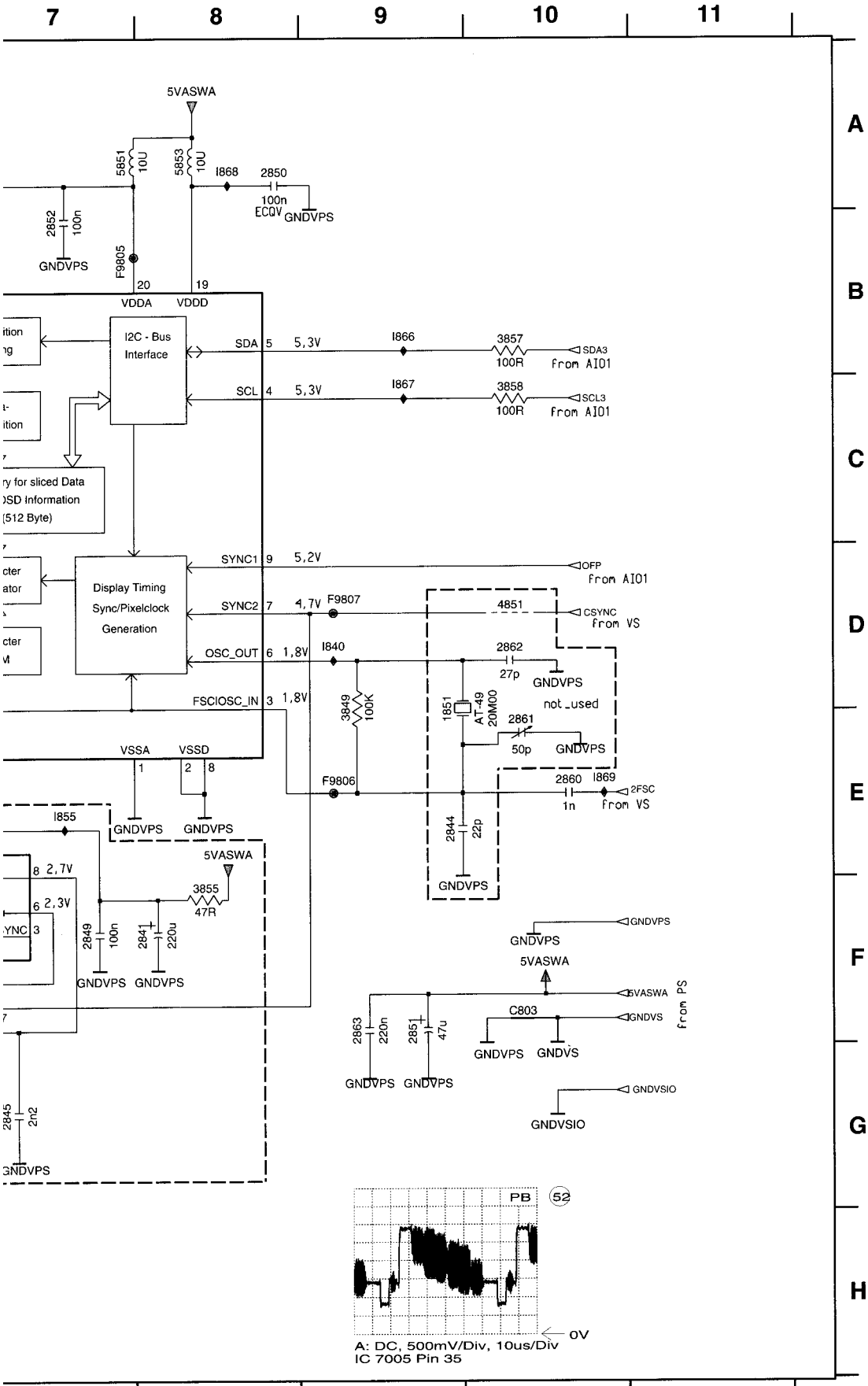
1451 E2
2451 A6
2452 A6
2453 A7
2454 A2
2455 E6
2456 F2
2457 F3
2458 A2
2459 C1
3340 F3
3341 B1
3342 B1
3344 B1
3345 F4
3351 A2
3352 B4
3353 B4
3354 B5
3355 B4
3356 B4
3357 D7
3358 F3
3359 B1
4451 E4
4452 C4
4454 F5
4455 F5
4456 F5
5451 A7
5452 F6
5453 A3
5454 B8
5455 A7
5456 C1
5457 A3
7406 C2
7451 D5
7452 D6
F9451 B3
F9452 F1
F9453 B4
F9454 B4
I501 B1
I502 C1
I503 C1
I504 C1
I505 D1
I506 D1
I507 D1
I508 E1
I509 E1
I510 E1
I511 E1
I512 E1
I513 F2
I514 F3
I515 F3
I516 F4
I517 E4
I518 E4
I519 E4
I520 E4
I521 E4
I522 D4
I523 D4
I524 D4
I525 D4
I526 D4
I527 D4
I528 D4
I529 C4
I530 C4
I531 C4
I532 C4
I533 C4
I534 C4
I535 C4
I536 B4
I537 D7
I539 B4
I540 B4
I541 B4
I543 A4
I544 A4
I545 A4
I546 B5
I547 B6
I548 A2
I549 A8
I551 E4
I552 C7
I553 B3
I554 F6
I555 E7
I556 F7
I557 E6

OSD Part (VPO)


5VASWA
VOUT to I_O, FV
VBS from I_O
VSB from VS
7855 BC847B
7854 BC857B
7851 SDA5652
Data/Sync-Slicer and ACQ. PLL
CVBS Encoder
IREF
CVBS_SLICER
PD2IVCO2
PD1IVCO1
DAVNIEHB
SECAM_BY
CVBS_OUT
CVBS_IN
HT_BLANK
7852 BFS20
7853 BC857B
7856 BC857B
7857 BA7046F
H.OSC
V.SEPA
VCC
GND
not_used
only for SDA5652-Version 01
GNDVPS
... OSCILLOGRAMS
... V MEASURED IN PLAYBACK MODE
... V MEASURED IN RECORD MODE

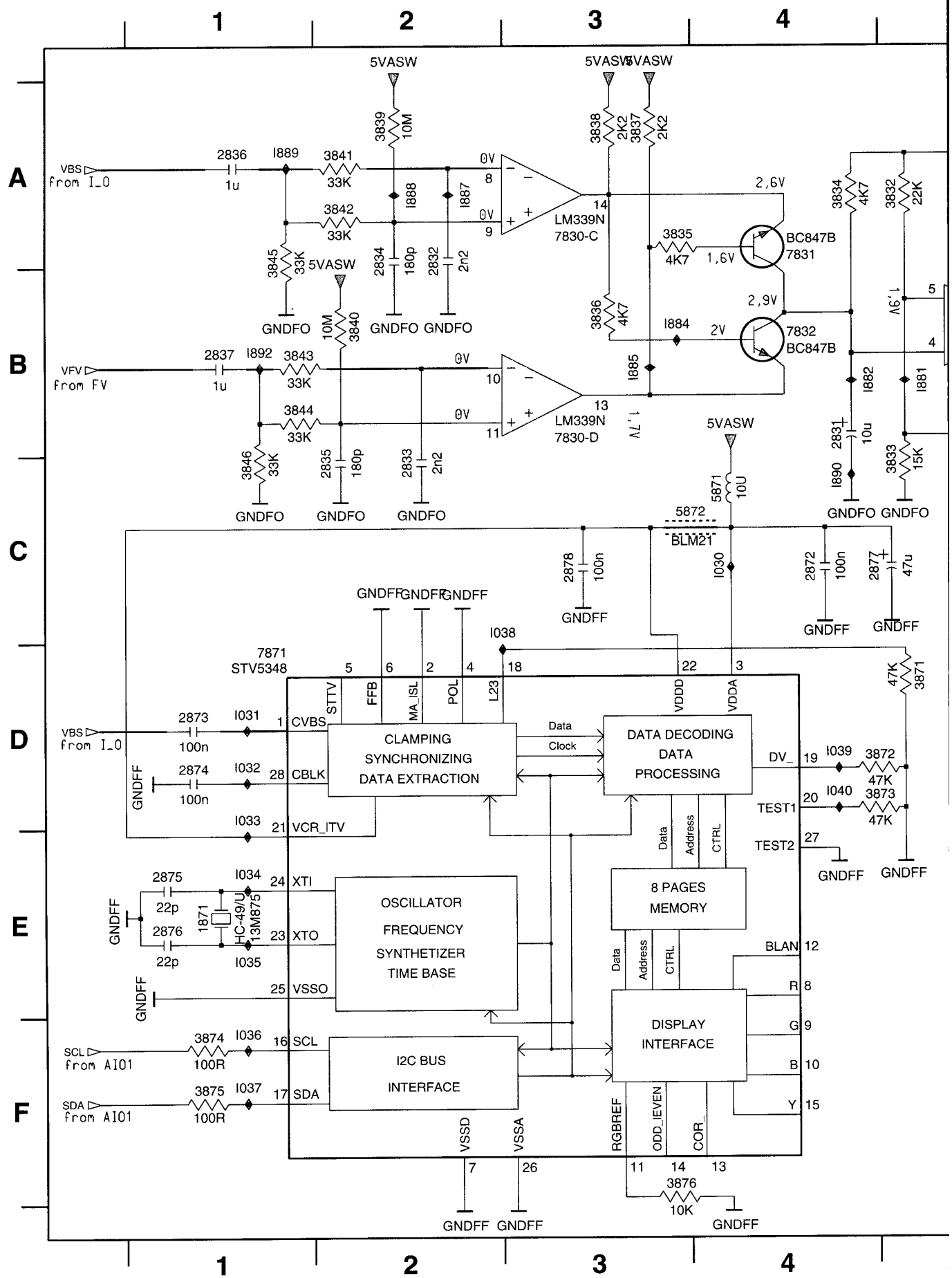
Interconnections Manual Page

PS 3-18	FM-STEREO-TDA 3-22	AF 3-24	AL 3-26	HA 3-30	CNR 3-34	AIO1 3-36	DE 3-39	VPS; FOME; PE
FV 3-20	FM-STEREO-MSP 3-23	ER 3-25	VS 3-29	VS-SEC 3-33	IO 3-35	AIO2 3-40	VPO 3-41	3-42



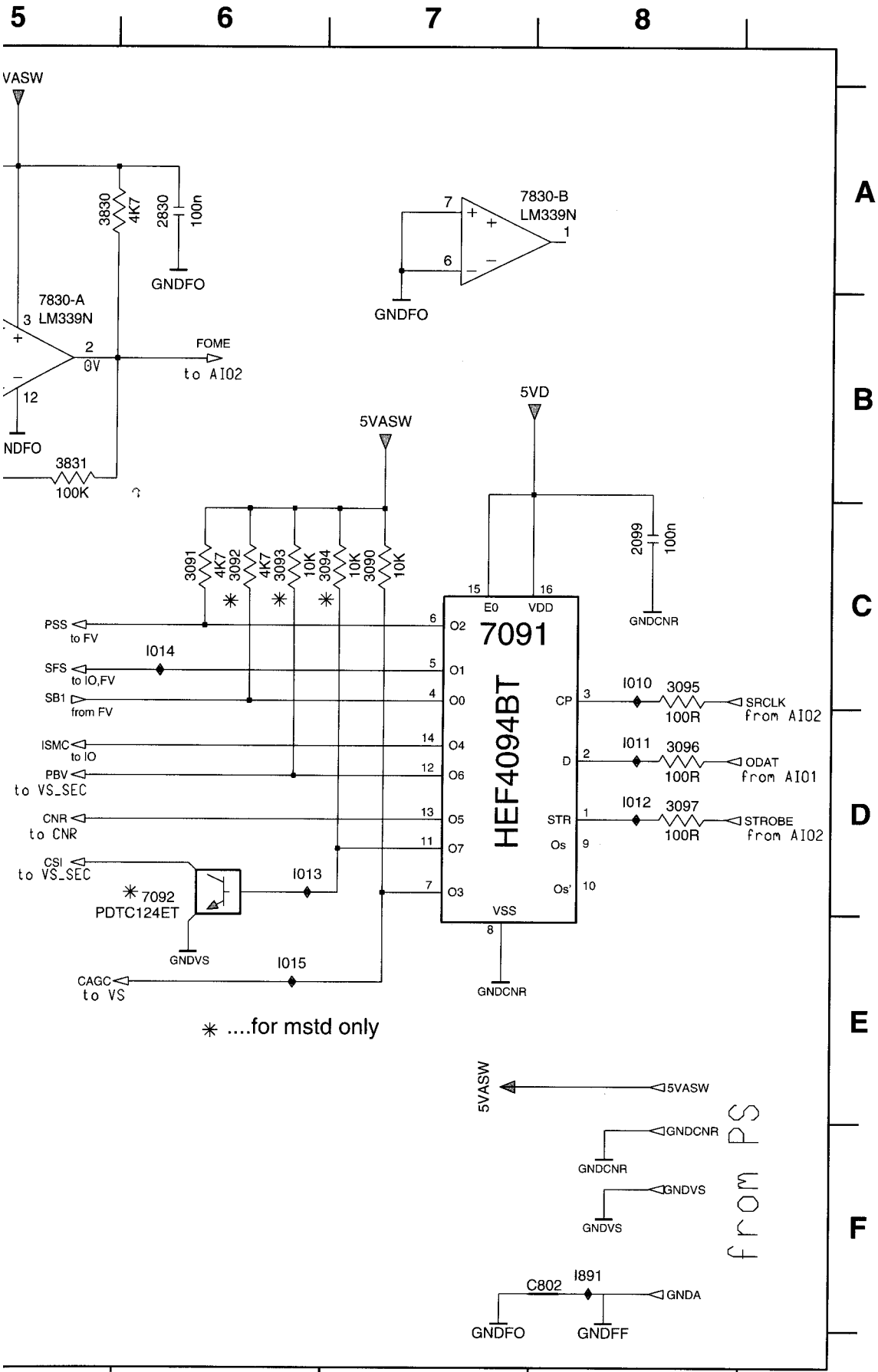
1851 D9 I871 C4
2839 B6 I872 D5
2840 E5 I873 B4
2841 F8 I874 B3
2842 D4 I875 B3
2843 B3 I876 B2
2844 E9 I877 E5
2845 G7 I879 G3
2846 G6
2847 G5
2849 F7
2850 A8
2851 F9
2852 B7
2853 B5
2854 B2
2855 C3
2856 C3
2857 D4
2858 F3
2859 E4
2860 E10
2861 E10
2862 D10
2863 F9
2864 B3
2865 B2
2866 A2
2867 B1
2868 F4
2869 F5
3849 D9
3851 B5
3852 C3
3853 C3
3854 E2
3855 F8
3856 C2
3857 B10
3858 C10
3859 D2
3860 E3
3861 E3
3862 F4
3863 B4
3864 F4
3865 E3
3866 E3
3867 B2
3868 B2
3869 B3
3870 A2
3880 F5
3881 F4
3882 F4
3883 G5
3884 G6
3885 F6
3886 G6
4851 D10
5851 A7
5852 D4
5853 A8
5854 B3
5856 B1
7851 B5
7852 E3
7853 F3
7854 B3
7855 B2
7856 G4
7857 E6
C803 F10
F9805 B7
F9806 E9
F9807 D9
I840 D9
I841 B5
I842 C3
I843 C3
I855 E7
I856 G6
I857 F7
I858 F5
I859 D4
I860 D2
I861 D4
I862 F4
I863 E3
I864 E3
I865 F3
I866 B9
I867 C9
I868 A8
I869 E10
I870 E3

Follow me part (FOME, VPS, PE)



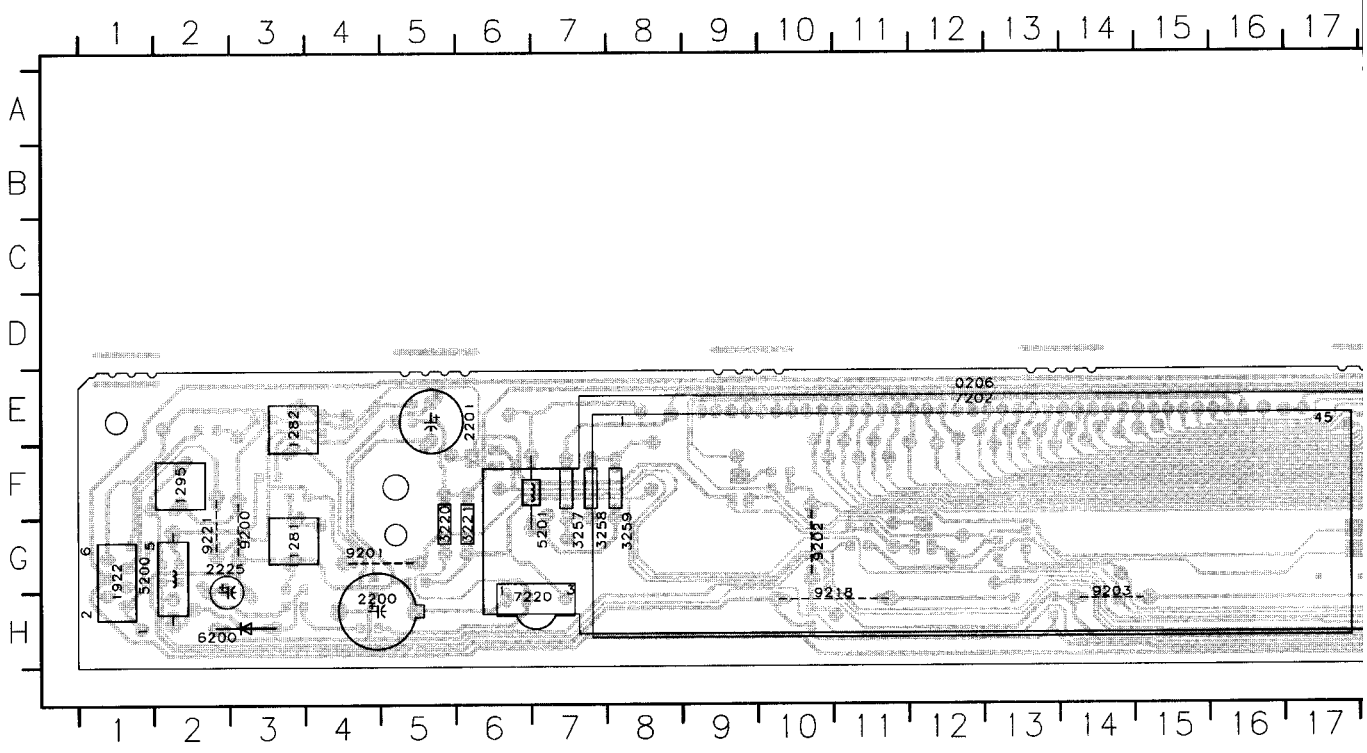
Interconnections Manual Page

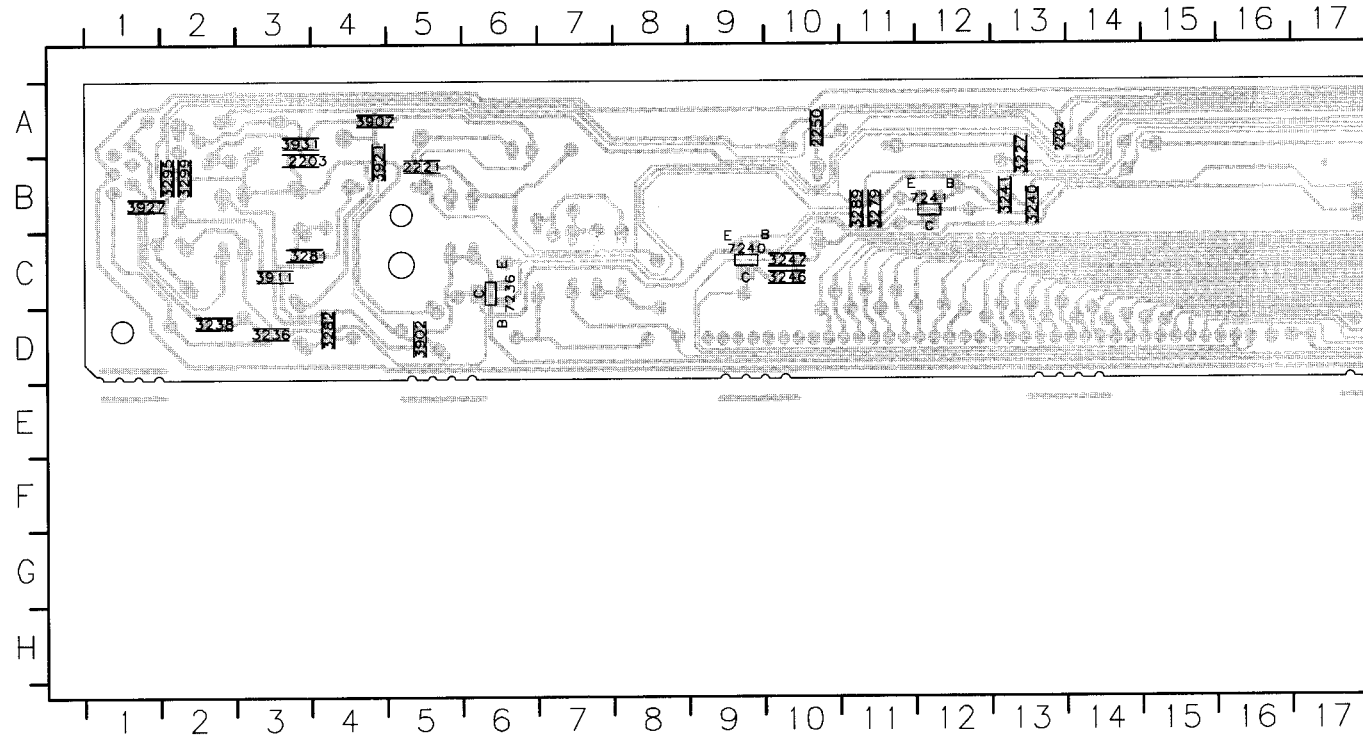
PS 3-18	FM-STEREO-TDA 3-22	AF 3-24	AL 3-26	HA 3-30	CNR 3-34	AIO1 3-36	DE 3-39	VPS; FOME; PE 3-42
FV 3-20	FM-STEREO-MSP 3-23	ER 3-25	VS 3-29	VS-SEC 3-33	IO 3-35	AIO2 3-40	VPO 3-41	

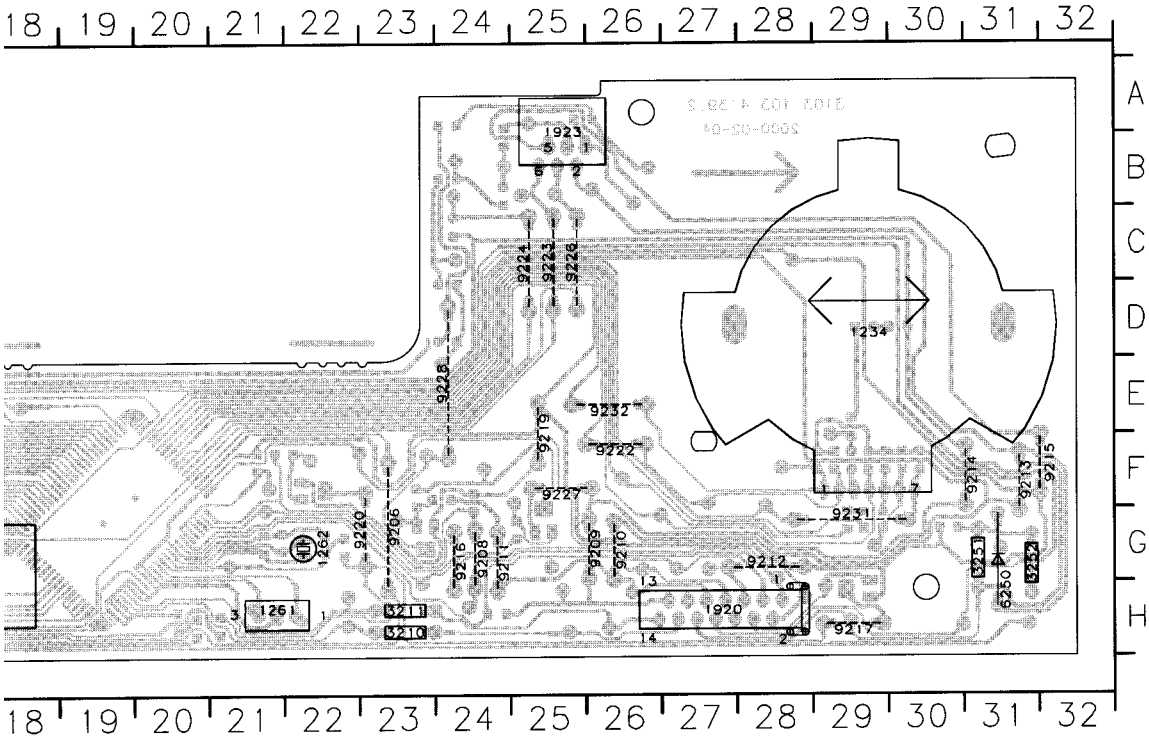


1871 E1
2099 C8
2830 A6
2831 B4
2832 A2
2833 C2
2834 A2
2835 C2
2836 A1
2837 B1
2872 C4
2873 D1
2874 D1
2875 E1
2876 E1
2877 C4
2878 C3
3090 C7
3091 C6
3092 C6
3093 C6
3094 C7
3095 C8
3096 D8
3097 D8
3830 A5
3831 B5
3832 A5
3833 C5
3834 A4
3835 A3
3836 B3
3837 A3
3838 A3
3839 A2
3840 B2
3841 A2
3842 A2
3843 B1
3844 B1
3845 A1
3846 C1
3871 D5
3872 D5
3873 D5
3874 F1
3875 F1
3876 F3
5871 C4
5872 C3
7091 C7
7092 D6
7830-A B5
7830-B A7
7830-C A3
7830-D B3
7831 A4
7832 B4
7871 D1
C802 F8
I010 C8
I011 D8
I012 D8
I013 D6
I014 C6
I015 E6
I030 C4
I031 D1
I032 D1
I033 D1
I034 E1
I035 E1
I036 F1
I037 F1
I038 C2
I039 D4
I040 D4
I881 B5
I882 B4
I884 B3
I885 B3
I887 A2
I888 A2
I889 A1
I890 C4
I891 F8
I892 B1

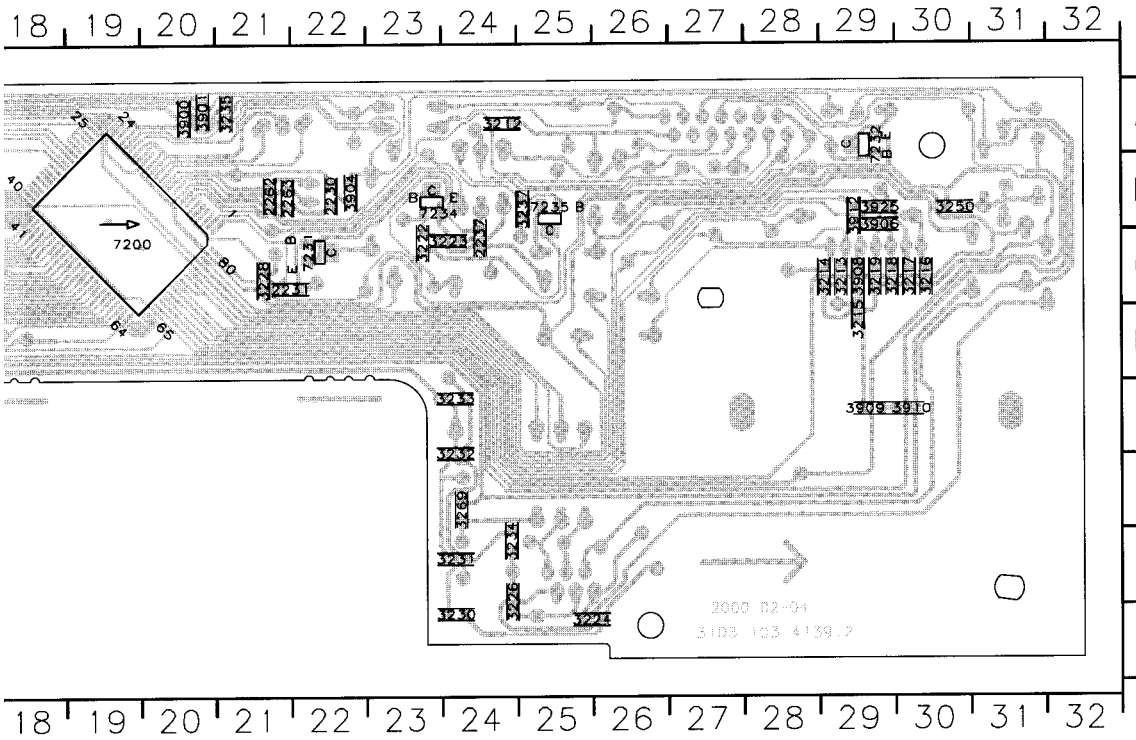
Display Control ADCP18 (DC)







0206 E12
1234 D29
1261 H21
1262 G22
1281 G3
1282 F3
1285 F2
1920 H27
1923 G1
1943 A25
2200 H4
2201 E6
2225 G2
3210 H23
3211 H23
3220 G6
3221 G6
3251 G31
3252 G31
3254 G7
3257 G7
3258 G7
3259 G6
5200 G1
5201 G7
6200 H2
6250 H31
7202 E12
7220 H7
9200 G3
9201 G4
9202 C10
9203 H14
9206 G23
9208 G24
9209 G26
9210 G26
9211 G24
9212 G28
9213 F31
9214 F31
9215 G24
9216 H29
9218 H10
9219 F25
9220 G22
9221 G6
9225 G25
9224 G25
9226 G25
9228 F24
9231 F29
9232 F26



2202 A13
2203 B3
2221 B5
2230 B22
2231 C21
2237 C24
2250 A10
2262 B21
2263 B21
3212 A24
3213 C29
3214 C29
3215 D29
3216 C30
3217 C30
3218 C29
3219 C29
3222 C23
3223 C24
3224 H25
3226 G24
3227 B13
3228 C21
3230 H24
3231 G24
3232 E24
3233 E24
3235 A21
3236 D3
3237 B25
3238 D2
3240 B13
3241 B13
3246 C10
3247 C10
3250 B30
3269 F24
3279 B11
3281 C3
3282 D4
3289 B11
3295 B2
3299 B2
3900 A20
3901 A20
3902 D5
3904 B22
3906 B29
3907 A4
3908 C29
3909 E29
3910 E30
3911 C3
3912 B29
3921 B4
3925 B29
3927 B1
3931 A3
7200 C19
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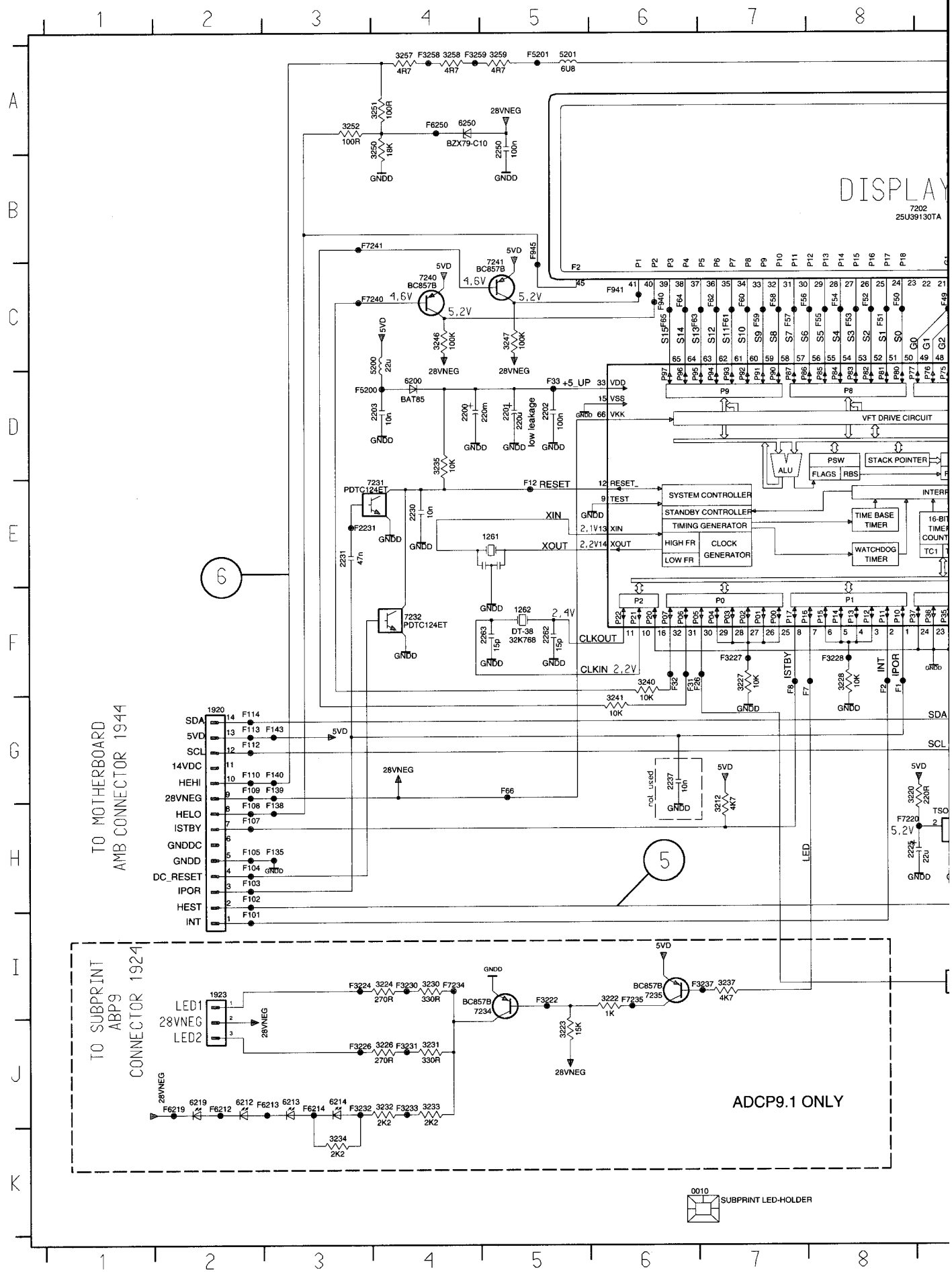
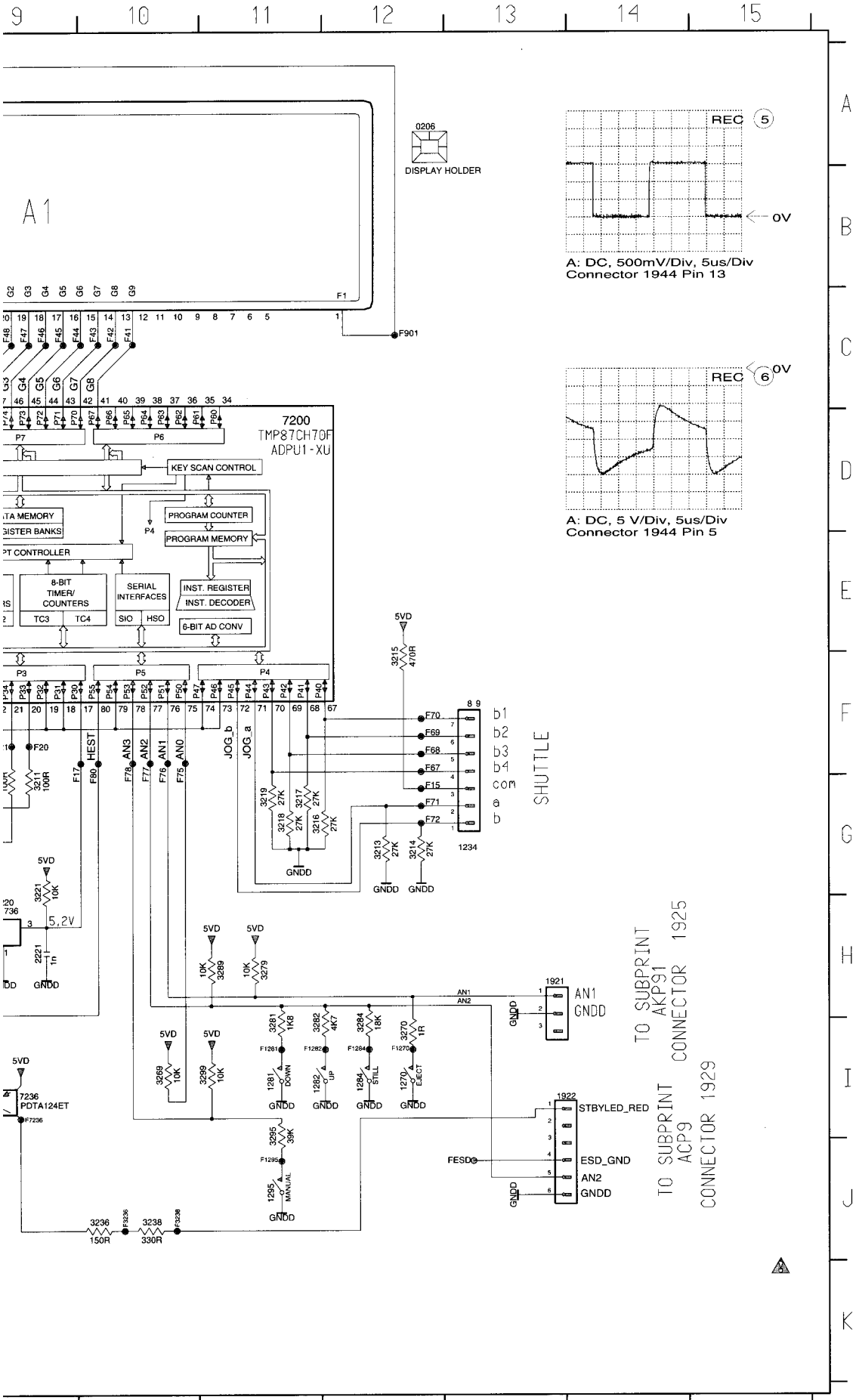
7232 A29
7234 B23
7235 B25
7236 C6
7240 C9
7241 B12

Display Control ADCP18 (DC)



Interconnections Manual Page



F1 F8
F2 F8
F7 F8
F8 F7
F12 E5
F15 G12
F17 F10
F20 F9
F21 F9
F26 F7
F31 F6
F32 F6
F33 D5
F41 C10
F42 C10
F43 C10
F44 C10
F45 C9
F46 C9
F47 C8
F48 C9
F49 C9
F50 C8
F51 C8
F52 C8
F53 C8
F54 C8
F55 C8
F56 C7
F57 C7
F58 C7
F59 C7
F60 C7
F61 C7
F62 C7
F63 C6
F64 C6
F65 C6
F66 G5
F67 F12
F68 F12
F69 F12
F70 F12
F71 G12
F72 G12
F75 F10
F76 F10
F77 F10
F78 F10
F80 F10
0010 K6
0205 A12
1234 G13
1261 E5
1262 F5
1270 I12
1281 I11
1282 I11
1284 I12
1295 J11
1920 G2
1921 H13
1922 I13
1923 I2
2200 D4
2201 D5
2202 D5
2203 D4
2221 H9
2225 H8
2230 E4
2231 E3
2237 G5
2250 A5
2262 F5
2263 F5
3210 G9
3211 G9
3212 H7
3213 G12
3214 G12
3215 F12
3216 G11
3217 G11
3218 G11
3219 G11
3220 G8
3221 G9
3222 I6
3223 J5
3224 I4
3226 J4
3227 F7
3228 F8
3230 I4
3231 J4
3232 J4
3233 J4
3234 K3
3235 D4
3236 J10
3237 I7
3238 J10
3240 F6
3241 G6
3246 C4
3247 C5
3250 A4
3251 A4
3252 A3
3257 A4
3258 A4
3259 A5
3269 I10
3270 I12
3279 H11
3281 I11
3282 I11
3284 I12
3289 H11
3295 I11
3299 I11
5200 C4
5201 A5
6200 D4
6212 J2
6213 J3
6214 J3
6219 J2
6250 A4
7200 D11
7202 B3
7220 H3
7231 E3
7232 F4
7234 I5
7235 I6
7236 I9
7240 C4
7241 B5
F101 I2
F102 H2
F103 H2
F104 H2
F105 H2
F107 H2
F108 H2
F109 G2
F110 G2
F112 G2
F113 G2
F114 G2
F1270 I12
F1281 I11
F1282 I11
F1284 I12
F1295 J11
F135 H3
F138 H3
F139 G3
F140 G3
F143 G3
F2231 E3
F3222 I5
F3224 I3
F3226 J3
F3227 F7
F3228 F8
F3230 I4
F3231 J4
F3232 J3
F3233 J4
F3236 J10
F3237 I7
F3238 J10
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F3259 A4
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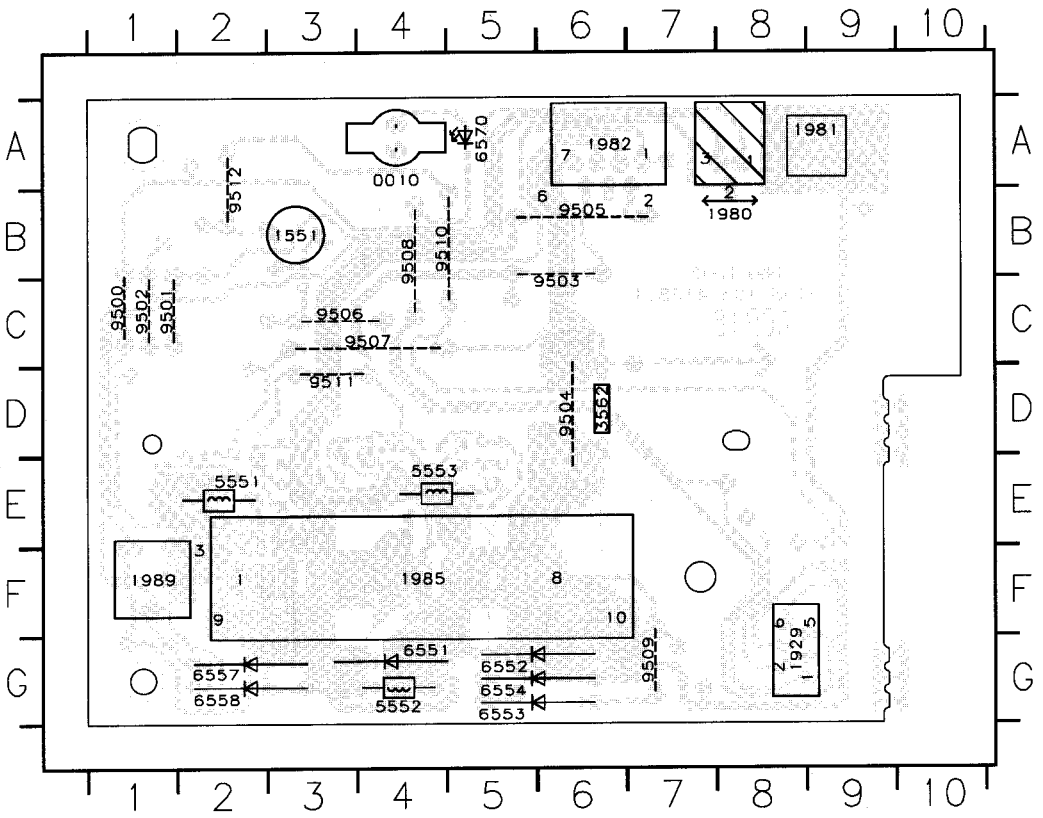
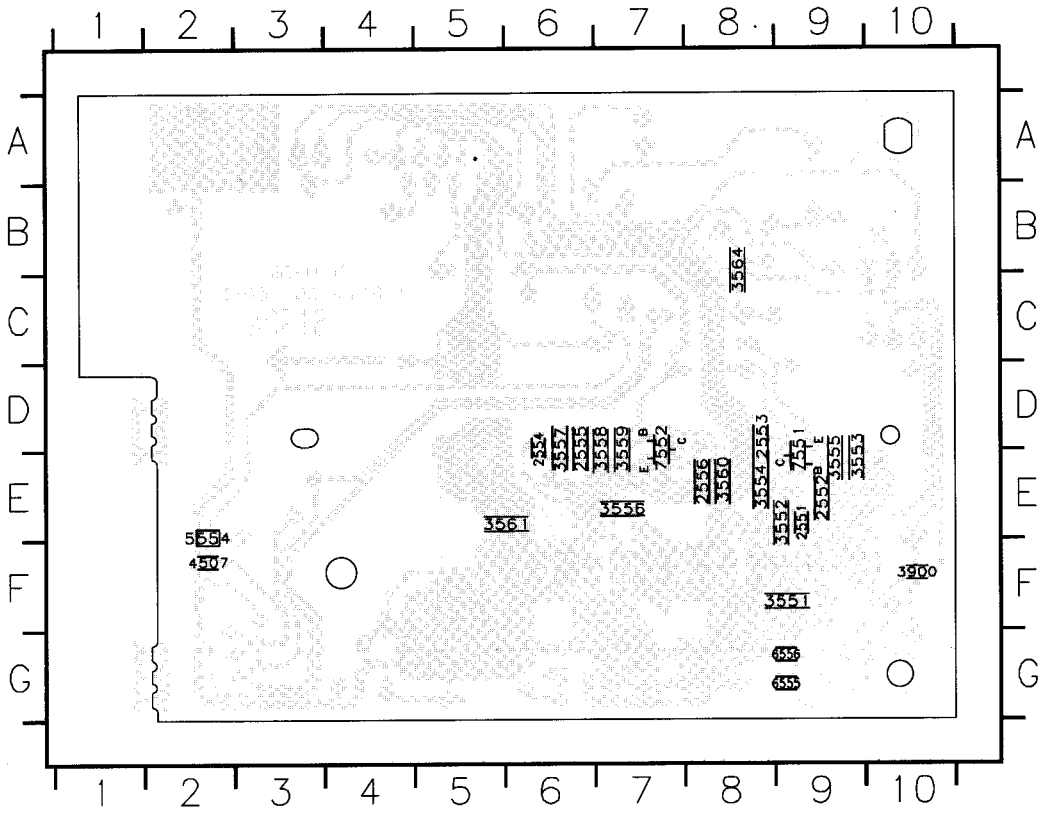
F5201 A5
F6212 J2
F6213 J3
F6214 J3
F6219 J2
F6250 A4
F7220 H8
F7234 I4
F7235 I5
F7236 I9
F7240 C4
F7241 B4
F901 C12
F940 C6
F941 C6
F945 B5
FESD J13

Connector PCB ACP18

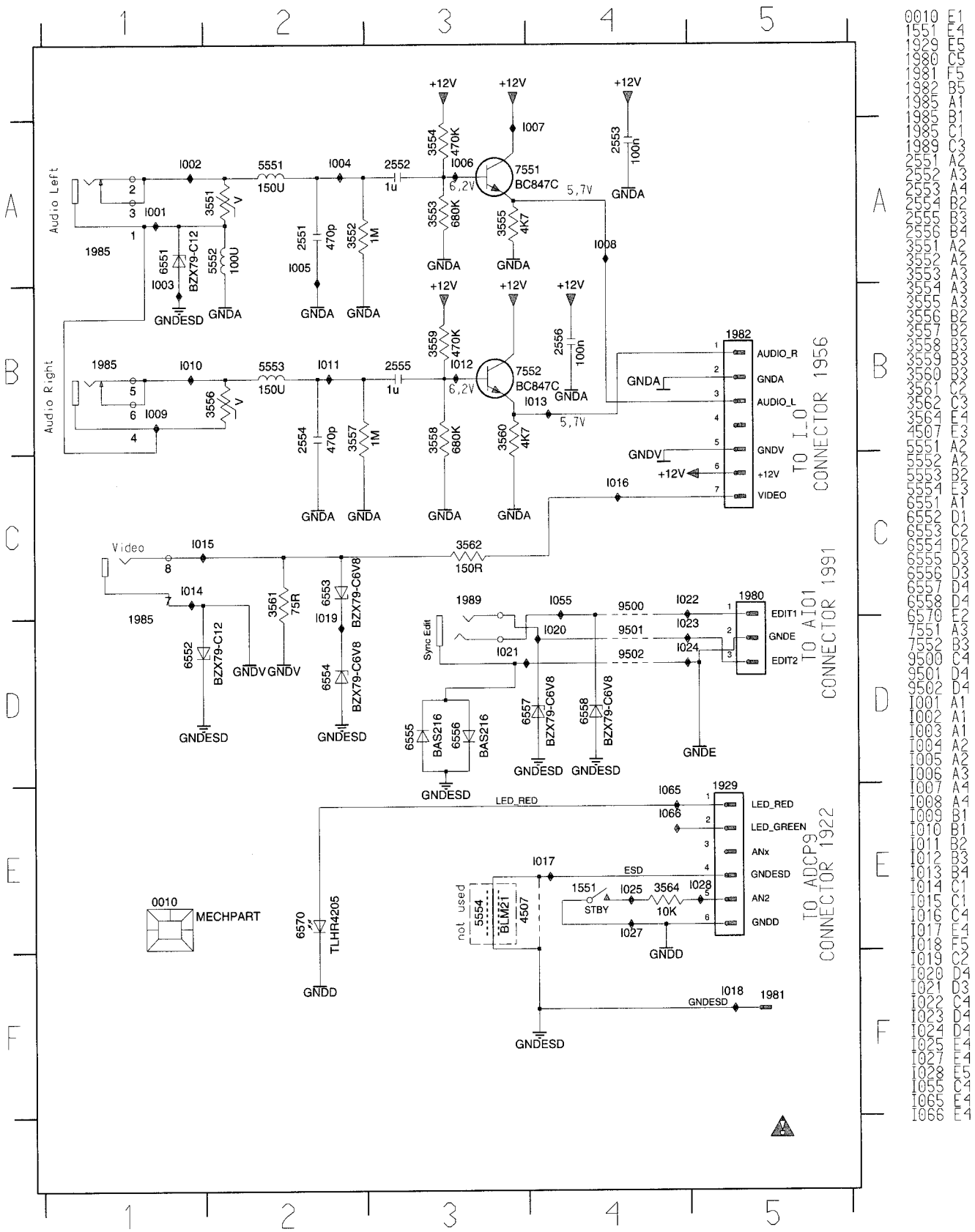
0010 A4	1981 A8	3562 D6	6551 G4	6557 G2	9501 C1	9505 B6	9509 G7
1551 B3	1982 A6	5551 E2	6552 G5	6558 G2	9502 C1	9506 C3	9510 B4
1929 G8	1985 F4	5552 G4	6553 G5	6570 A4	9503 C6	9507 C4	9511 D3
1980 A8	1989 F1	5553 E4	6554 G5	9500 C1	9504 D6	9508 B4	9512 A2



2551 E9	2555 D6	3553 E9	3557 D6	3561 E6	5554 E2	7552 D7	
2552 E9	2556 E8	3554 E8	3558 D7	3564 B8	6555 G9		
2553 D8	3551 F9	3555 E9	3559 D7	3900 F10	6556 G9		
2554 D6	3552 E9	3556 E7	3560 E8	4507 F2	7551 E9		



Connector PCB ACP18



4. DRIVE ASSEMBLY

This tape deck has three motors; one providing precision drive for the scanner unit; the second providing direct drive for the capstan and belt drive for the reel tables; the third motor drives the lift and tape threading/dethreading operations.

Special features are:

Quick start
Short winding time
Automatic cleaning of video heads by cleaning roller

To obtain a high repair standard we have developped a range of service kit's. These kit's covers the spare parts which are engaged together.
The tape deck's sensors are located on the motherboard underneath the tape deck, and included in its circuitry, lay out and parts list.

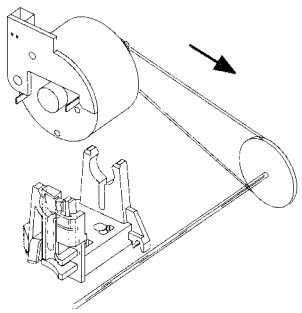
4.1 Deck parts replacement

The procedure for the removal and refitting of the following parts is described; only the lift, the scanner, the capstan motor and the A/C head are fixed by screws.
All the other deck assembly parts are held only by snap hooks.

For the replacement of parts on the underside of the tape deck, remove the tape deck from the motherboard.

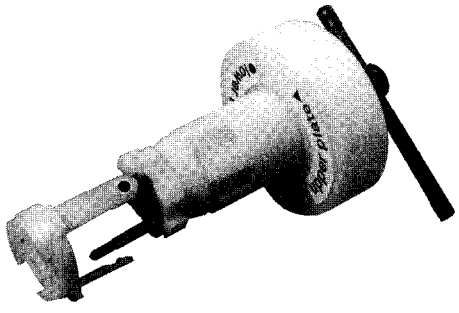
Manual extraction of cassette:
If, after the Eject button has been pressed, the drive does not unthread and eject the cassette, the dethreading/eject operation can also be carried out manually by turning the wheel at the rear of the threading motor.

fig. 1

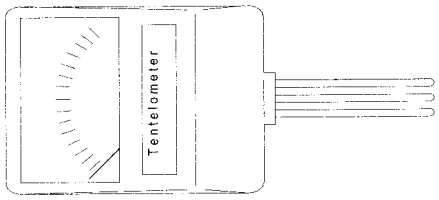


IMPORTANT:
After each repair has been carried out in the drive assembly, the first operation after repairing must be to bring the cassette compartment into „eject" position by hand.

Auxiliary tools for deck adjustment:

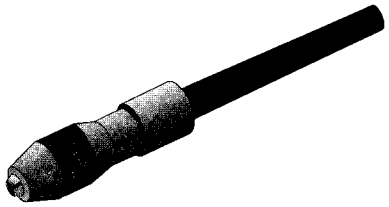


Tool for removing the head disc 4822 395 90977

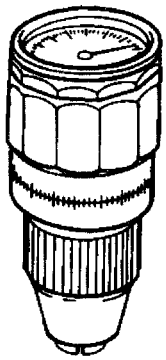


Tentelometer 4822 395 90584

Tool for tapetension adjustment 4822 395 50188



Handle 4822 256 90493



Torquemeter:

600 gf-cm 4822 395 90232
90 gf-cm 4822395 80196

Post adjustment screwdriver 4822 395 50275

Testcassette 4822 397 30103

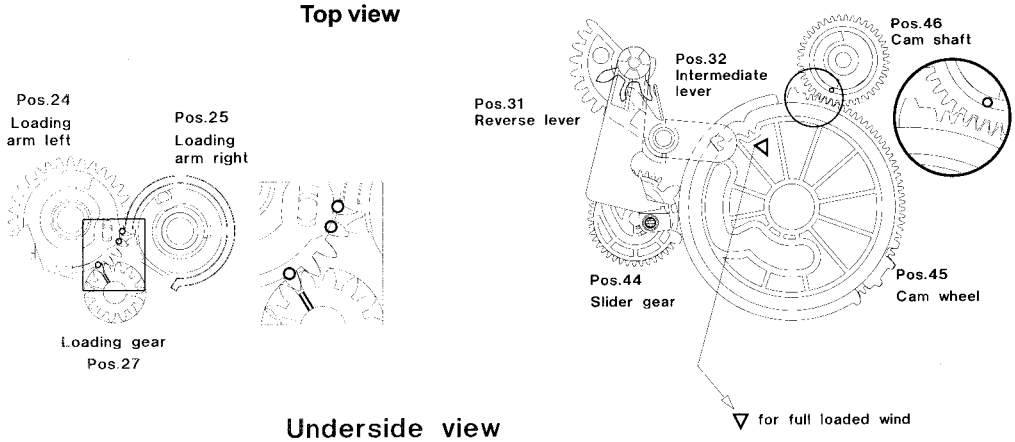
Nylon gloves 5322 395 94022

4.1.1 Deck lay out diagram

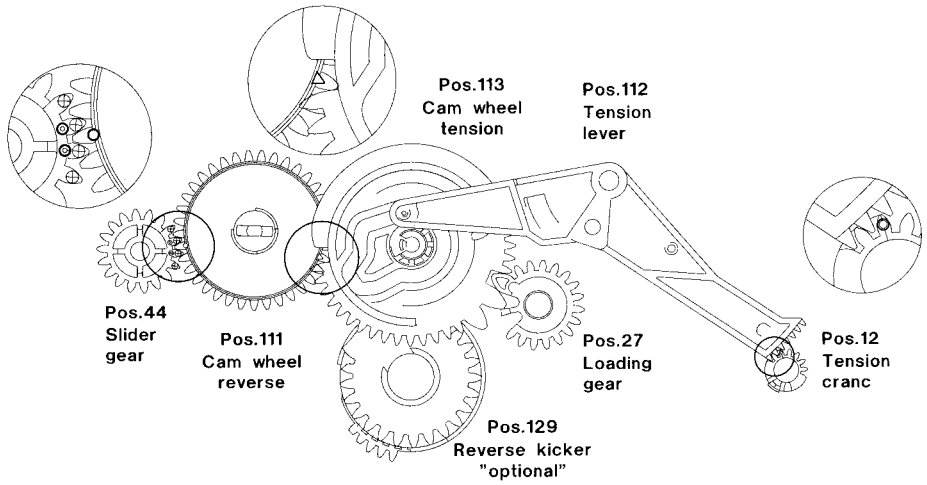
Deck in position „threaded out".

The following diagrams indicate the relative position of the gearwheels and levers when the deck is in the threaded out (cassette-compartment down) position.

Top view



Underside view



4.1.2 The Lift

Refitting the lift compartment:
Ensure the lift compartment is down and gear A is rotated one click stop anticlockwise from the down position.
The removal and refitting of the lift can be carried out in all deck positions with the exception of „eject" (ensure that gears 103/105 are free and if present the cassette loader gear 2 pos.105 is positioned to the rear).

To remove the lift:
Free the holding bracket (Fig. 2) by rotating it up and back from the upper end.
Unscrew the 4 screws on the underside of the deck.
Carefully remove the lift vertically, noting the position of the record protect operating lever.

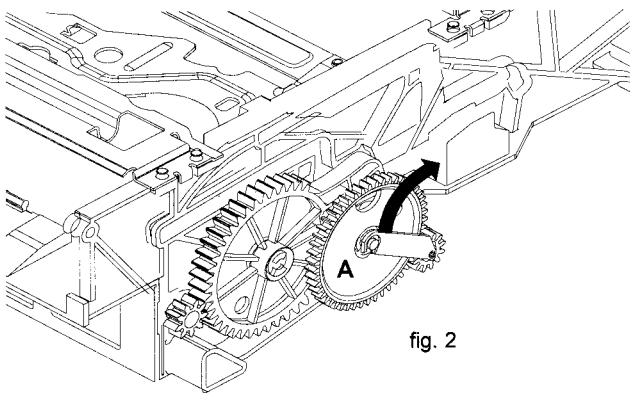


fig. 2

4.1.3 Head disc replacement

Removal :
Nylon gloves should be worn when handling the head disc.
Turn the headdisc until the long hole of the rotor appears in the bigger hole of the scannermotor
Insert the reference pin C (included with each service head disc) through the bigger hole of the lid of the scanner motor until the pin snaps in the long hole of the rotor. (Fig. 3)

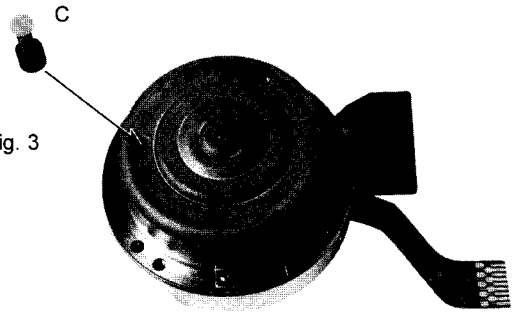
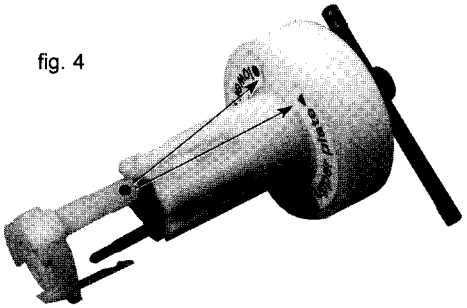


fig. 3

Important:
Choose Installation/Removal of the upper/lower clamping element by turning and attaching the reference element to the tool. (Fig. 4)

fig. 4



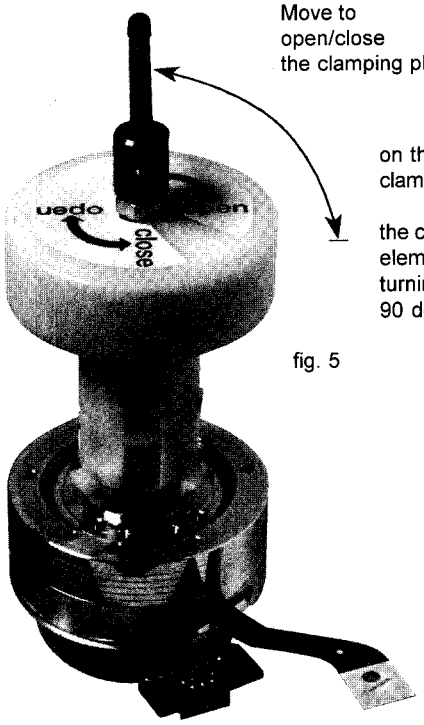


fig. 5

Position the tool on the upper clamping element, loosen the clamping element by turning the lever 90 degrees and remove it from the head disc. (Fig. 5)

Prepare the tool for the lower clamping element.Position the tool on the head disc and make sure that all 3 pins are snapped in the the lower clamping element. Loosen the clamping element by turning the lever 90 degrees and remove the head disc plus the tool from the scanner spindle. (Fig.6)

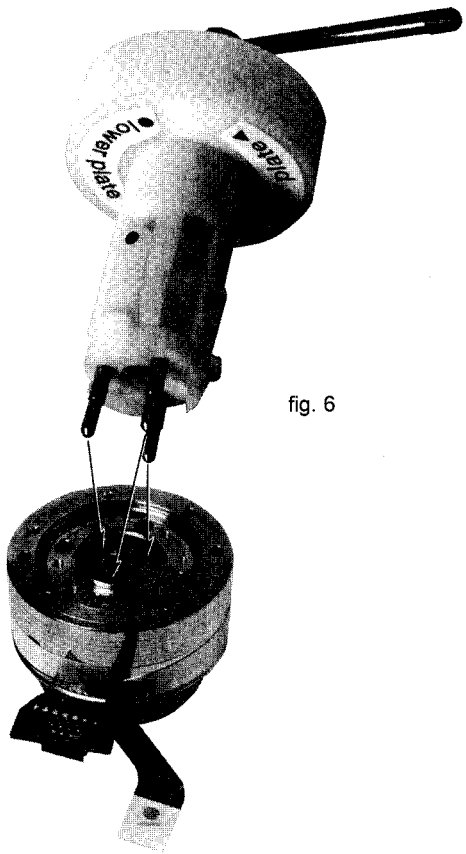


fig. 6

Installation:
Before carrying out the installation of the new head disc make sure that the scanner motor spindle is clean and undamaged. (The spindle has to be free of grease and must not be touched with bare hands)
Insert the 2 Mylar foils (included with each head disc) in the head disc. (Fig.7)

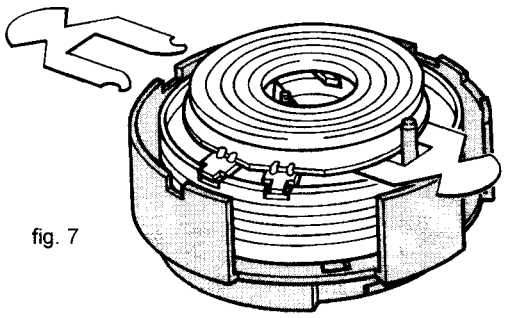


fig. 7

Position the tool (reference: lower clamping element) on the new headdisc (with protective cover) and loosen the lower clamping element.
Position the head disc so that pin D of the protective cover engages in the hole of the stator (the arrow on the protective cover must point towards the scanner print). (Fig. 8)

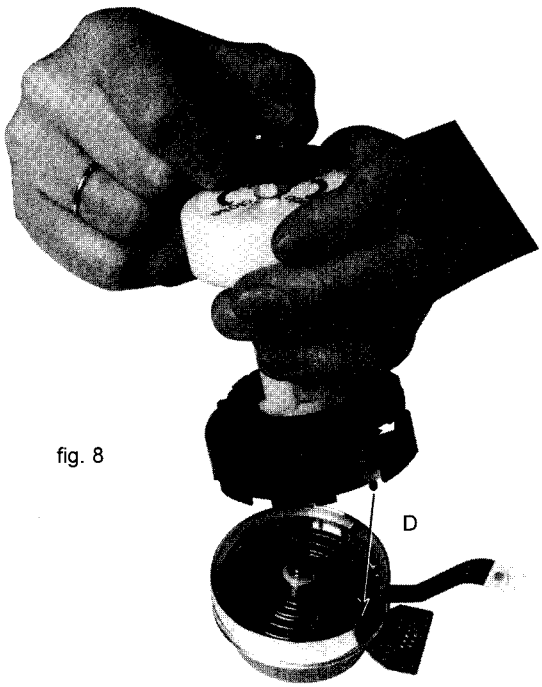


fig. 8

Reach the exact position through pressing the tool down with a force of 1 N. and fix the lower clamping element by turning the lever towards „close".
Remove the tool.
Change the tool to „upper clamping element" and position the clamping element exactly. (Fig. 9)

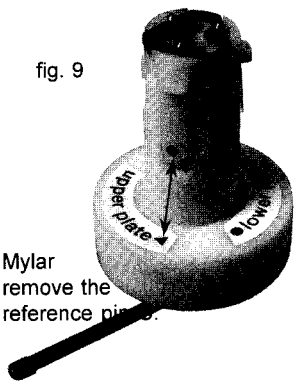


fig. 9

Tighten the clamping element through turning the lever towards „open".
Position the tool planely on the head disc and fix the clamping element. (Fig.5 „close")
Remove the protecting cap from the head disc, withdraw the two foils and Mylar remove the reference pi[illegible].

After replacing the head disc, carry out the following adjustments and checks :
Head switching pulse (gap position, chapter 3)
Write current adjustments (chapter 3)

Check tape path alignment (see paragraph 4.2.1.)

4.1.4 A/C Head (Combi head) (Pos. 36)

Remove the fixing spring (A) (fig. 10)
Remove the fixing screw and replace the A/C head.
Use a new fixing spring (included with new A/Chead) for reassembly.

After the A/C head has been replaced, all adjustments described in paragraph 4.2.1.2 and paragraph 4.2.2 have to be carried out.

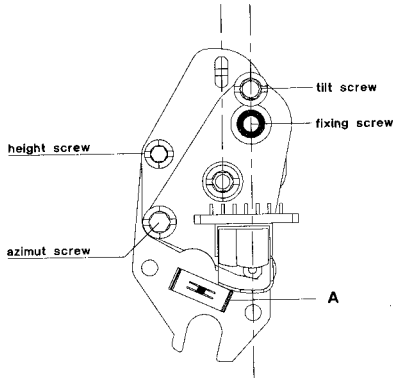


fig. 10

4.1.5 Threading motor (Pos. 38)

Remove the belt and disconnect the connector plug.
Remove the threading motor from the motor supports (Fig. 11).

During reassembly ensure that the threading motor is correctly located in the front and rear supports.

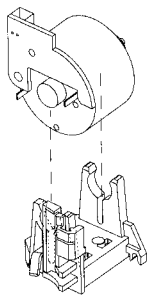


fig. 11

4.1.6 Capstan motor (Pos. 127)

Remove the tape deck.
Remove the belt (pos.126) on the underside;
Remove the three capstan motor fixing screws (Fig. 12) and withdraw the capstan motor downward from the drive assy.
The reassembly is carried out in reverse order. Make sure that the capstan is free of grease.

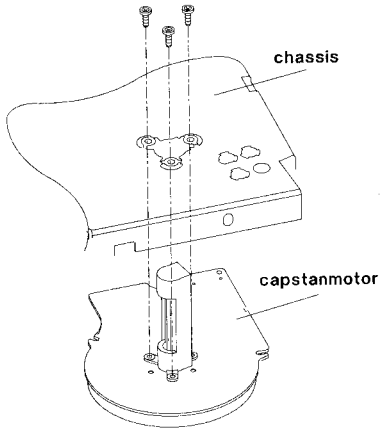


fig. 12

4.1.7 Pressure roller (Pos. 37)

Remove the tape deck
Unhook and remove the pressure roller tension spring.
Release the pressure roller guide (pos. 41) from the guide in the threading motor holder by pressing the top of the motor guide rearwards and rotating the pressure roller guide assembly clockwise by approximately a quarter of a turn (Fig. 13) The pressure roller and guide can now be lifted clear.

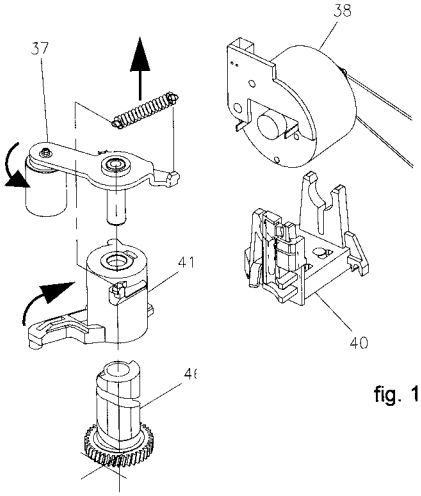
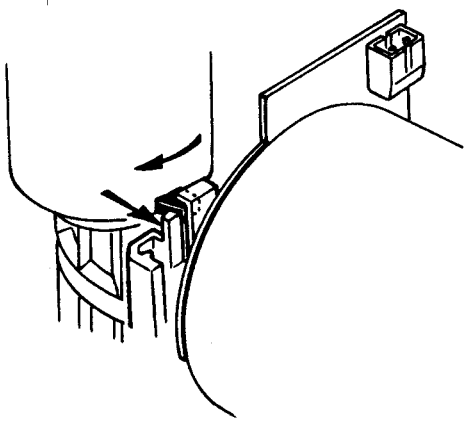


fig. 13



Ensure that no grease from the pressure roller guide gets to the capstan or pressure roller.
The reassembly is carried out in reverse order.

4.1.8 Roller unit right (Pos. 26)

Remove the tape deck.
Compress the two snap hooks by means of a pair of tweezers and remove the roller assy from the roller unit right (Fig. 14).
Unhinge the loading arm right from the holding plate and push the latter towards the front of the deck to remove from the guide (right).

NOTE: During reassembly ensure the link from 25 is engaged in the hole of the holder plate 26.

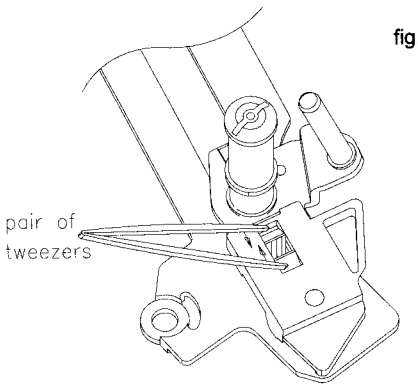


fig. 14

After replacing the roller unit (right), the tape path has to be checked, and adjusted if necessary (paragraph 4.2.1).

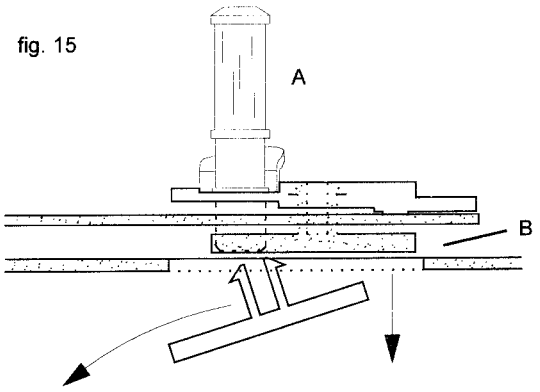
4.1.9 Roller unit left (Pos.23)

Set the drive assy to „Eject" position.
Unhook the tension arm spring (pos. 11), to avoid the tension arm spring being pre-loaded.
At the bottom side of the drive assy remove the tension lever (pos.112).
Compress the two snap hooks by means of a pair of tweezers (Fig. 9)and remove the roller assy (A) from the plate (B).
Unhinge the loading arm (left) from the holding plate and remove the latter downward from the drive assy through the recess in the chassis (Fig. 15).
The reassembly is carried out in reverse order.

NOTE : During reassembly
1. Place the carriage holding plate in the assembly with the half-round cutout nearest the rear of the deck.
2. When the loading arm is refitted ensure the pin on the underside of 23 is through the link of 24B.

After replacing the roller unit (left) the tape path has to be checked (paragraph 4.2.1.), and adjusted if necessary.

fig. 15

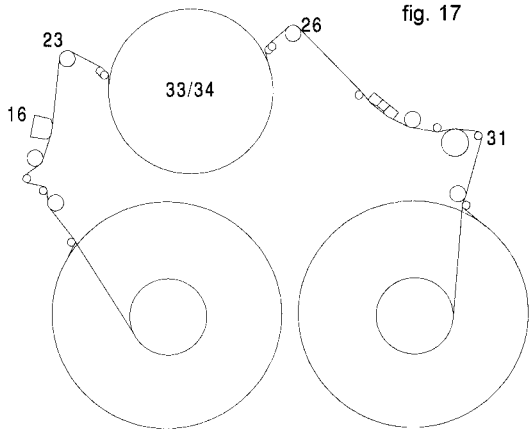


4.2 Adjustments

Adjustments must not be made in the service position.

4.2.1 Tape path

fig. 17



4.2.1.1 Roller left unit/roller unit right

Preparation:
Connect one input of a dual trace oscilloscope to observe the tape sync pulse CTL. The other input (DC coupled) to observe the tracking information TRIV.
Trigger the oscilloscope externally on the head pulse HP1 ("SWIN").

Playback the black and white section of the alignment test tape.
Set the deck in the condition where the video heads are running along the upper edge of the tracks only by:
1. Call the service test program (chapter 2.1)
2. Activate manual tracking (service test program step 03) and watch the tape sync pulse move to the left in relation to the TRIV signal.
3. Note the extreme left hand position reached by the sync pulse, repeat as necessary.
4. Stop the movement of the pulse when the TRIV signal reduces to 1/2 to 2/3 maximum amplitude by pressing the normal play button. A noisy picture (disturbances) is visible on the TV set and the CTL pulse should be to the left of the display.
The recorder will hold this position until the service test progam step 03 is left.
This condition works only if X-distance is adjusted.

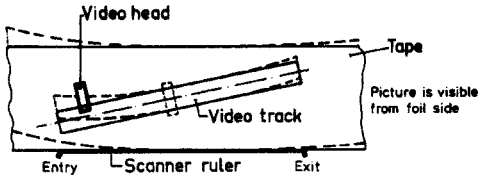
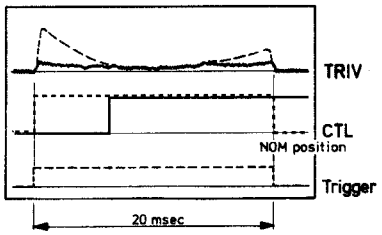


fig. 18



Adjustment:
Adjust the left and right roller units to make the tracking signal TRIV straight and flat as possible (Fig. 18).

4.2.1.2 A/C Combi head

Tilt angle adjustment

Set the drive to feature mode (e.g. +7)
Adjustment :

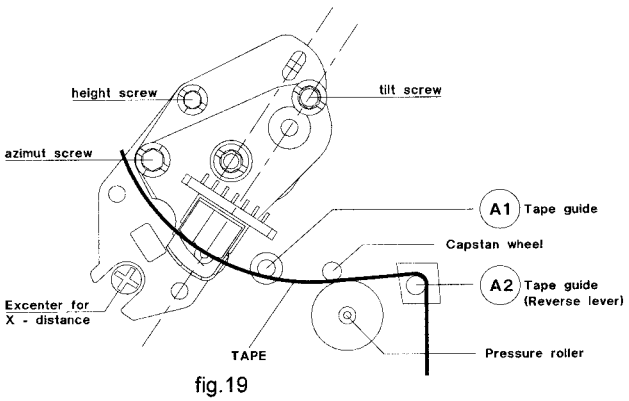


fig.19

By means of the tilt angle adjusting screw move the tape until the lower edge just touches the tape guide A1 (see Fig. 19) the tape must not be distorted at the lower edge (by pressing onto guide).

Adjustment of the azimuth angle and the head height

Connect an oscilloscope to the linear Audio output.
Play the section of the test cassette with the audio signal 400 Hz.
Adjust for maximum output voltage by means of the height adjustment screw
Play the section of the test cassette with the audio signal 8 kHz.
Adjust to maximum output voltage by means of the azimuth adjustment screw (Fig. 19).
If necessary, repeat this procedure
Check the tilt angle adjustment

If the tape path was completely out of adjustment or if several components in the tape path have been replaced, it is possible, that the adjustments described in paragraph 4.2.1.1 and paragraph 4.2.1.2 have to be repeated several times.

4.2.2 Adjustment of the horizontal distance (x-distance)

Before this adjustment is carried out, insert the test cassette (start from Eject position). Call the service test program (tracking value will take up its nominal position) and press the „play" button.
Playback the black/white part of the test cassette.)

Display the TRIV signal on an oscilloscope (DC-coupled) and adjust for maximum voltage by means of the excentric screw (Fig.19).

4.2.3 Brake band and tape tension

Due to further development it is no longer necessary to make theseadjustments after replacement of the brake band.
If the brake band or tape tension are completely misadjusted, set them to a center position; set the drive to „play" and adjust the brake band until the edge of the elbow of the tape tension arm is aligned with the left inner edge of the left guide (fig. 20).

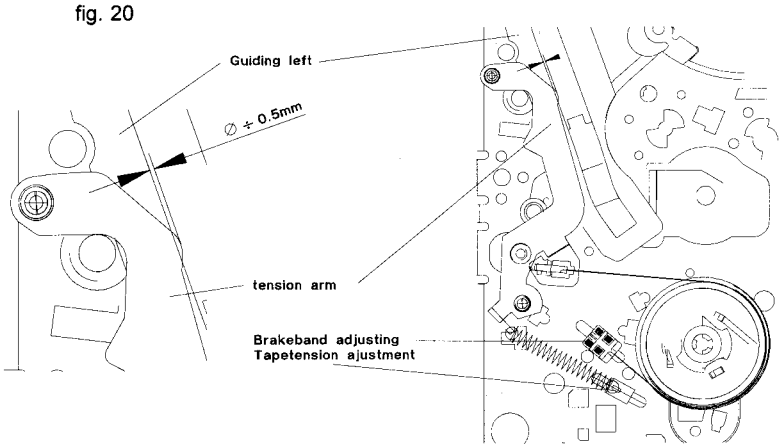
4.2.4 Friction clutch control check

Set the drive to „Play" position.
Place the torquemeter on the right reel.
Turn the capstan motor to move the right reel clockwise.
Keep turning, until the indication at the torquemeter no longer changes (Fig. 21)
The torque has to be 10,5 mNm +/-25% (105gFcm +/-25%)

4.2.5 Reverse brake control

Set the drive to „Reverse" position.
Place a torquemeter on the right reel and turn the latter counterclockwise, until the reel just starts to flip.
The value indicated at the torquemeter has to be 7mNm +/-3mNm (70 gFcm +/-30gFcm) (Fig. 21).

fig. 20



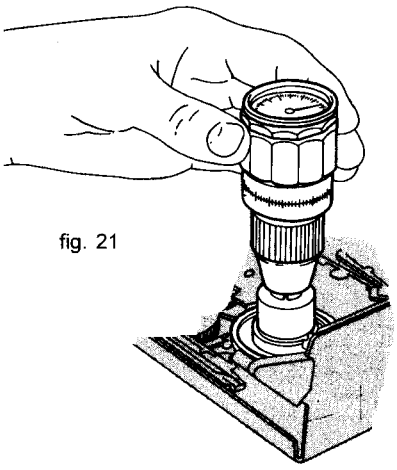
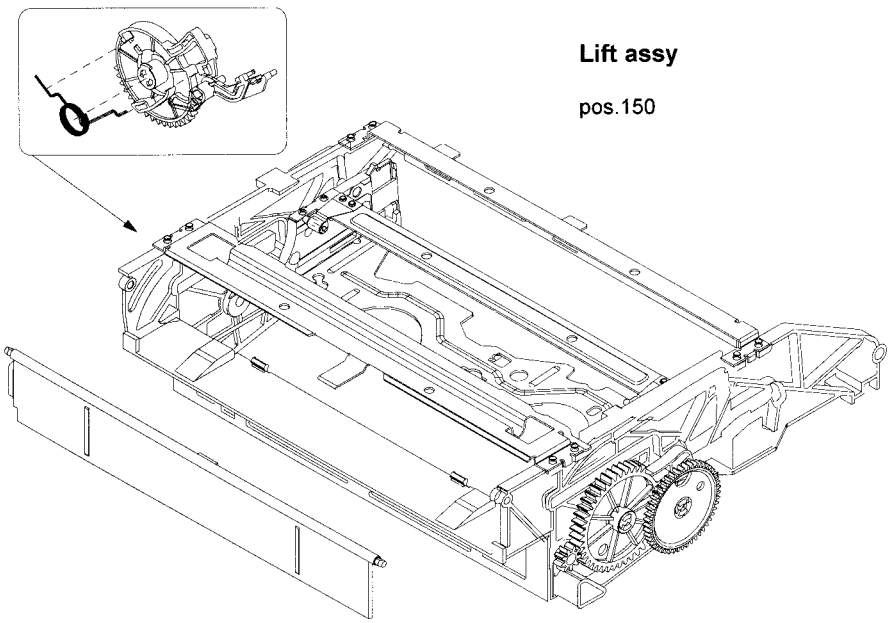


fig. 21

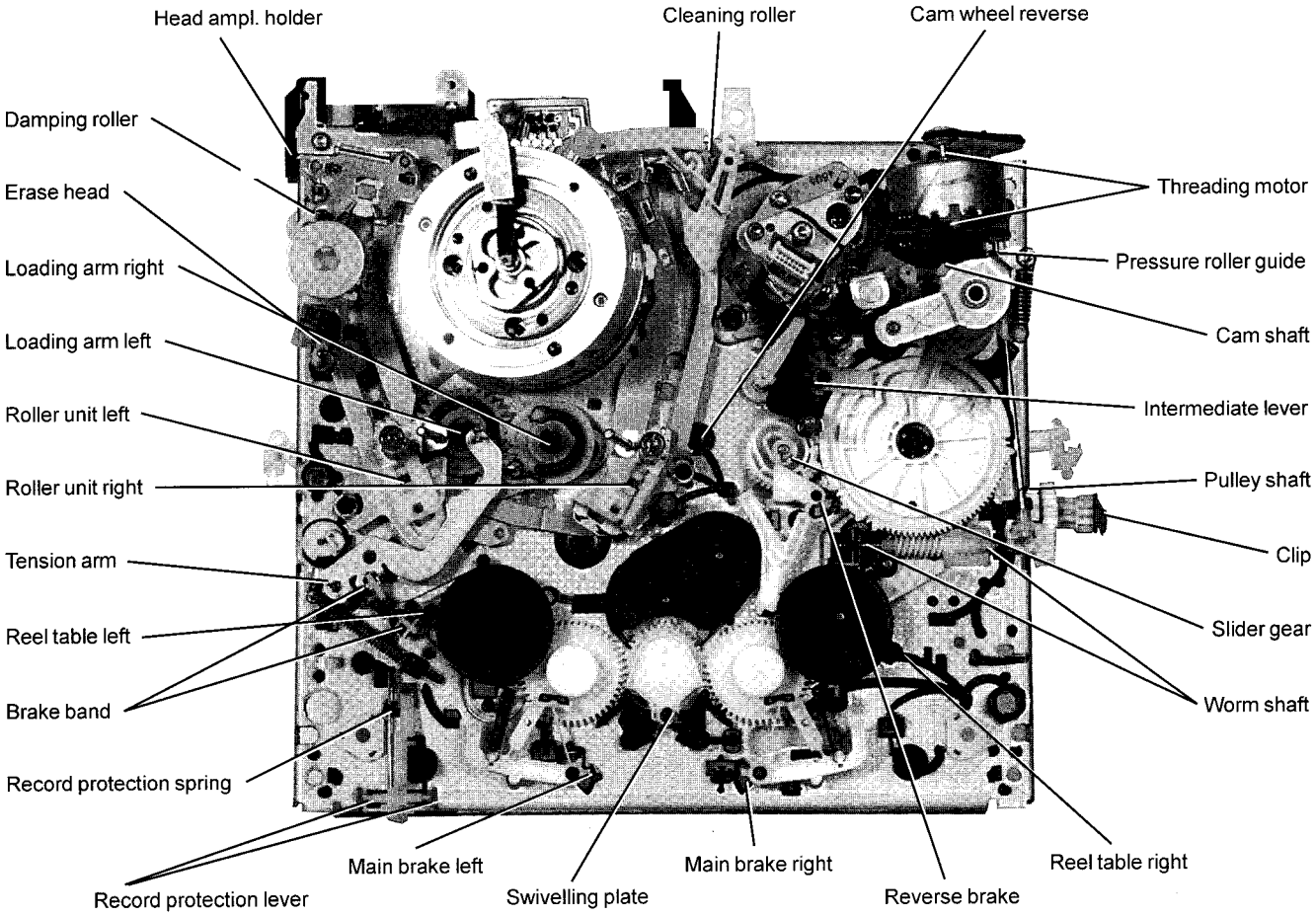


Lift assy

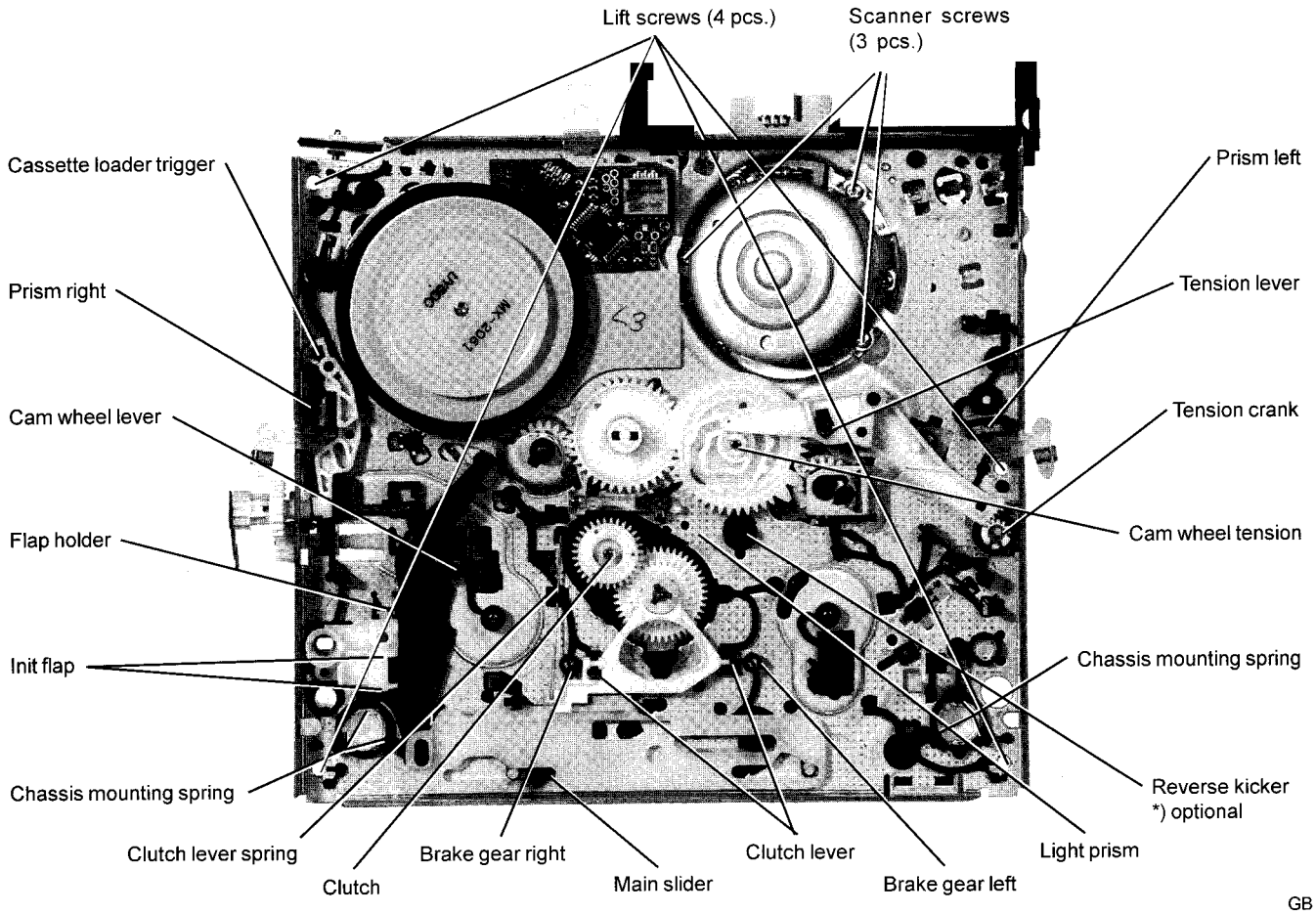
pos.150

In order to make the replacement of the deck parts easier, the snap hooks are marked with an arrow.

TOP VIEW

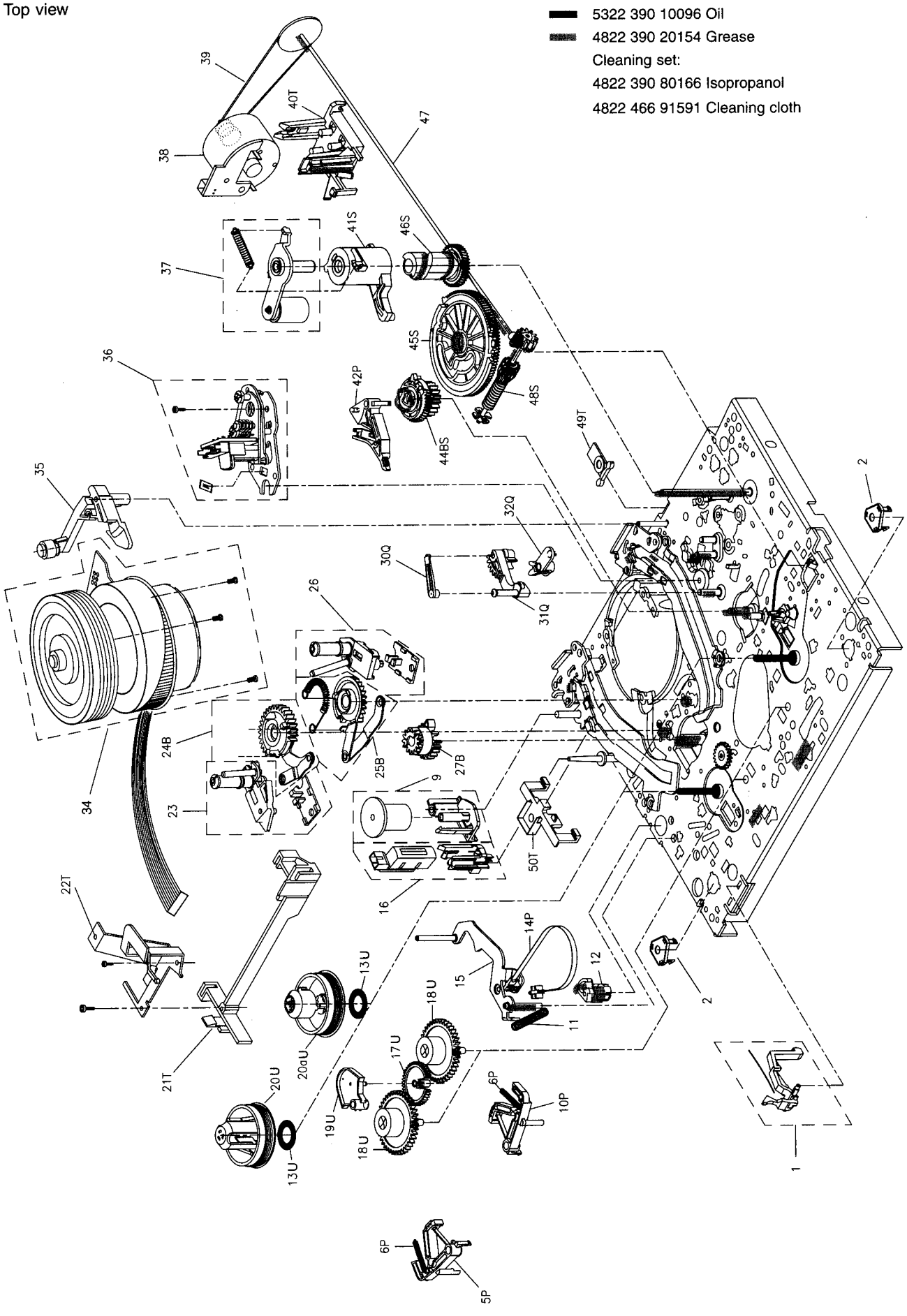


UNDERSIDE VIEW

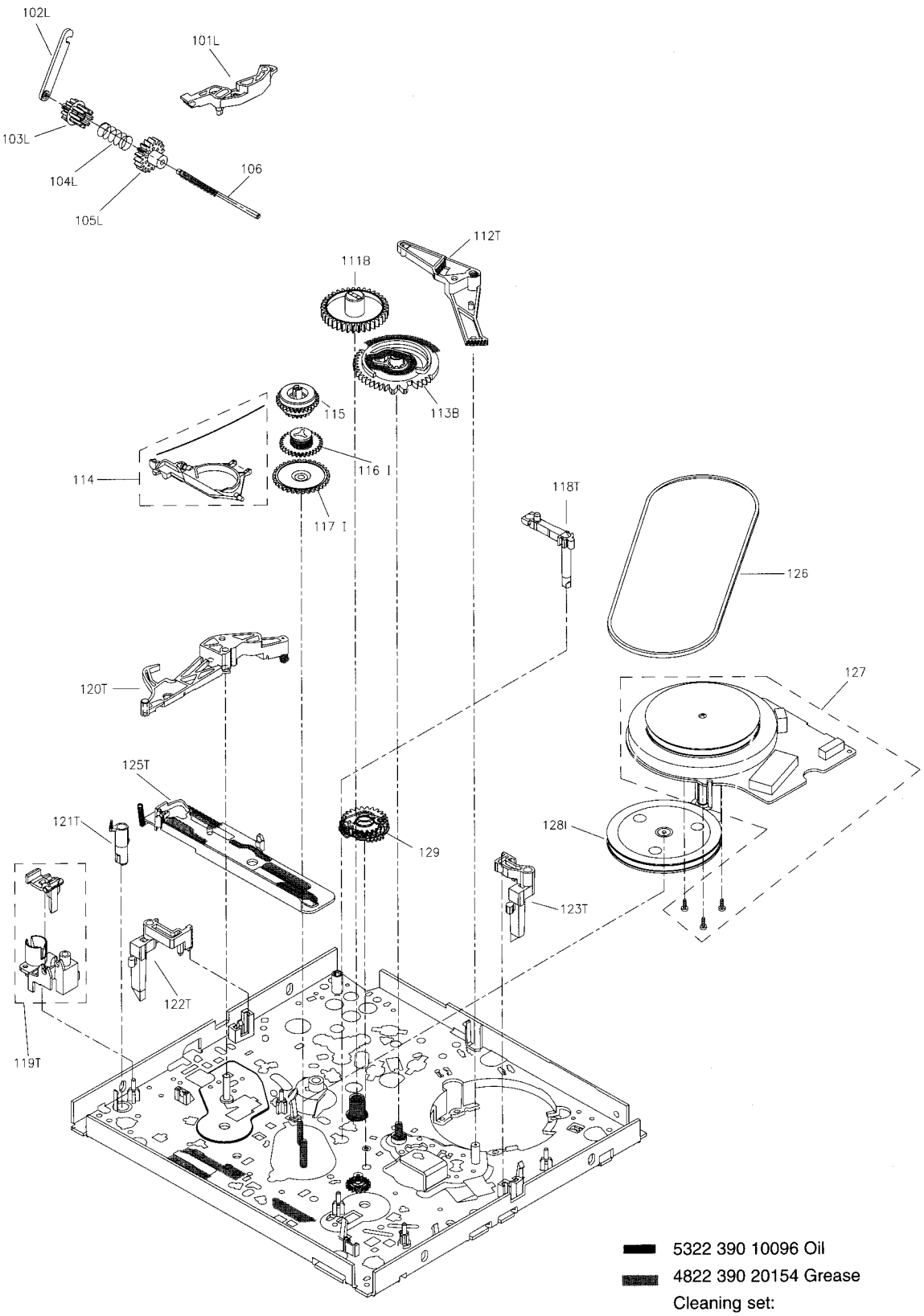


4.3 Exploded view

Top view



Underside view



5322 390 10096 Oil
4822 390 20154 Grease
Cleaning set:
4822 390 80166 Isopropanol
4822 466 91591 Cleaning cloth

4.4 MECHANICAL PARTS LIST

Pos.	Description	KITS								Code number 4822
		B	I	L	P	Q	S	T	U	
1	Rec. protection lever (with spring)									402 10202
2	Chassis mounting spring (2x)									492 71022
5	Main brake left				P					
6	Main brake spring (2x)				P					
9	Damping roller *)									528 70782
10	Main brake right				P					
11	Tension arm spring									492 33317
12	Tension crank									403 70551
13	Slip ring								U	
14	Tension band				P					
15	Tension arm									403 70547
16	Erase head									249 10522
17	Swivelling gear								U	
18	Brake gear (2x)								U	
19	Swivelling plate								U	
20	Reel table (S)								U	
20a	Reel table (T)								U	
21	Headamplifier holder							T		
22	Bracket							T		
23	Roller unit left									528 70771
24	Loading arm left	B								
25	Loading arm right	B								
26	Roller unit right									528 70772
27	Loading gear	B								
30	Reverse clip					Q				
31	Reverse lever					Q				
32	Intermediate lever					Q				
34	Scanner assy. 4/2 (Head disc and motor)									**4822** 218 12032
35	Cleaning roller									528 70773
36	A/C Head (with clip and screws)									249 10468
37	Pressure roller (with spring)									528 70774
38	Threading motor									361 10809
39	Threading belt									358 20421
40	Motor holder							T		
41	Pressure roller guide						S			
42	Reverse brake				P					
44	Slider gear	B					S			
45	Cam wheel						S			
46	Cam shaft						S			
47	Pulley shaft									528 81462
48	Worm shaft						S			
49	Chassis mounting clip							T		
50	WD-holder							T		

Pos.	Description	KITS								Code number 4822
		B	I	L	P	Q	S	T	U	
101	Cassette loader trigger			L						
102	Clip			L						
103	Cassette loader gear1			L						
104	Cassette loader spring			L						
105	Cassette loader gear2			L						
106	Spindle									535 93277
111	Cam wheel reverse	B								
112	Tension lever							T		
113	Cam wheel tension	B								
114	Clutch lever (with spring)									403 70549
115	Clutch									528 20736
116	Changing gear		I							
117	Double gear		I							
118	Light prism							T		
119	Init flap and holder							T		
120	Cam wheel lever							T		
121	S-VHS lever							T		
122	Prism rihgt							T		
123	Prism left							T		
125	Main slider							T		
126	Driving belt									358 31166
127	Capstan motor (with screws)									361 10805
129	Reverse kicker with transmission gears *)									522 20451
128	Gear pulley		I							
150	Lift									443 64112
KIT	B									310 31955
KIT	I									310 31963
KIT	L									310 32116
KIT	P									310 32191
KIT	Q									310 10658
KIT	S									310 10661
KIT	T									310 10662
KIT	U						3103			109 09190

*) optional

Um eine hohen Reparaturstandard zu gewährleisten sind mit Ausnahme von Kit T immer alle im Kit enthaltenen Teile zu tauschen.

In order to guarantee a high repairstandard all spare parts included in a kit have to be replaced with the exception of kit T.

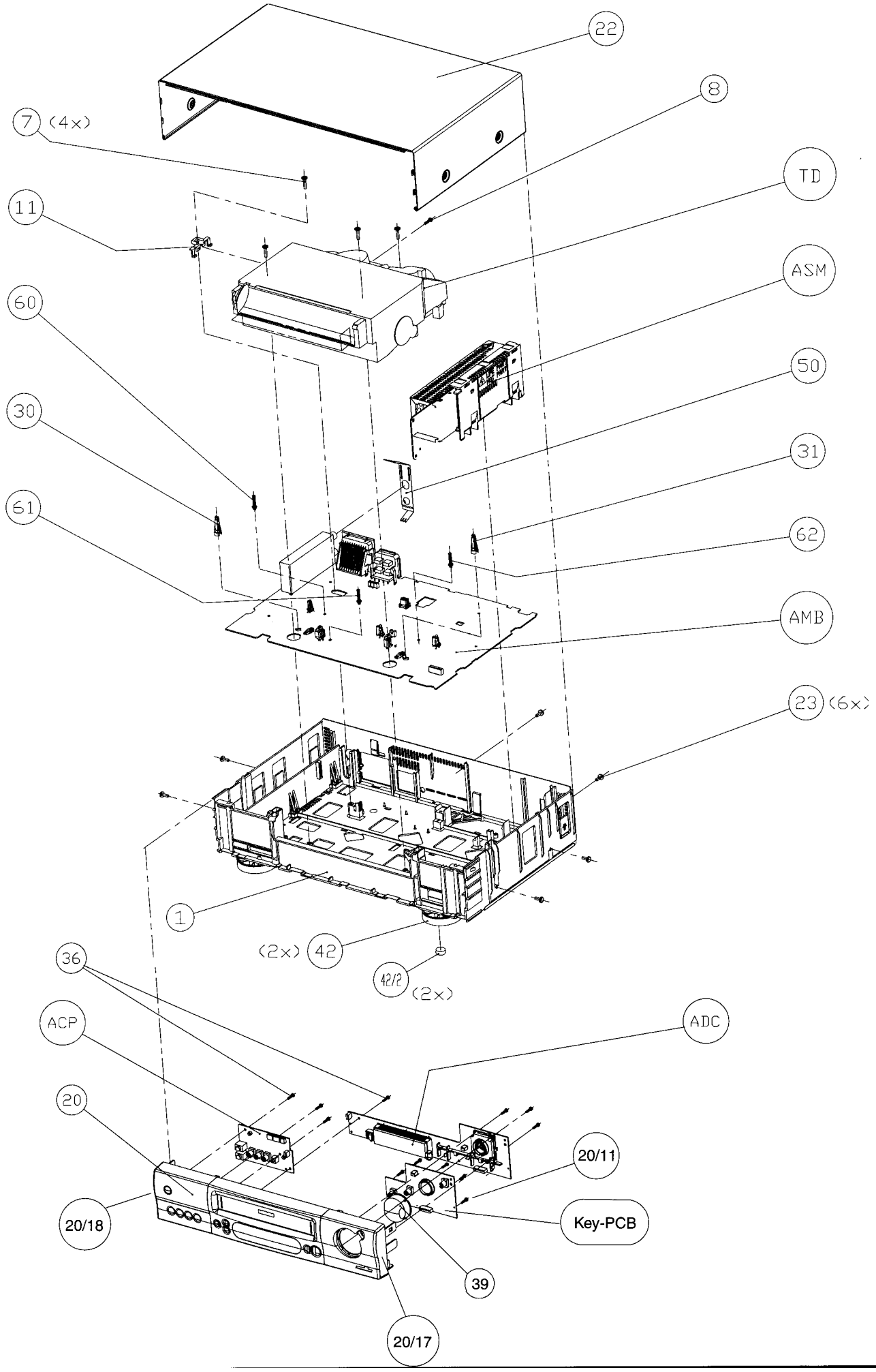
Per una riparazione garantita ocorre sostituire tutti i pezzi contenuti nei kit, fatta eccetione per il kit T.

Para obtener un estandár de reparaciones elevado,es necesario cambiar todas las partes contenidas en el kit, la única exceptión es para el kit T.

A fin d'obtenir un standard de réparations élevé, toutes les pièces de rechange incluses dans un kit sont à remplacer, exception faite du kit T.

Om een hoge reparatiekwaliteit te waarbogen moeten, met uitzondering van kit T, altijd alle zich in een kit bevindende onderdelen worden vervangen.

Exploded View of the Set & Mechanical Parts



Set Parts List

Position	Code Number	Description
1	3103 138 90890	FRAME ASSY
7	3103 100 42400	SCREW P3,5X16
8	4822 502 14431	SCREENING SCREW
11	4822 256 10504	TD-HOLDER
20	3103 138 89930	CONTROL PANEL ASSY VR710/02/16/58
20	3103 138 90750	CONTROL PANEL ASSY VR710/07
20	3103 138 90770	CONTROL PANEL ASSY VR710/39
20	3103 138 91070	CONTROL PANEL ASSY VR765/02/16/58
20	3103 138 91080	CONTROL PANEL ASSY VR765/07
20	3103 138 91100	CONTROL PANEL ASSY VR765/39
20	3103 138 89940	CONTROL PANEL ASSY VR810/02/16
20	3103 138 90780	CONTROL PANEL ASSY VR810/07
20	3103 138 90800	CONTROL PANEL ASSY VR810/39
20	3103 138 90810	CONTROL PANEL ASSY VR910/02/16/58
20	3103 138 90820	CONTROL PANEL ASSY VR910/07
20	3103 138 90840	CONTROL PANEL ASSY VR910/39
20/6	3103 178 29410	LIFT FLAP ASSY VR710-VR810
20/6	3103 178 29770	LIFT FLAP ASSY VR765-VR910
20/7	4822 492 70896	LEG SPRING LIFT FLAP
20/11	2511 076 50010	SCREW 3X8
20/12	3103 138 90140	KEY-PCB VR710/02/07/16/58
20/12	3103 138 91200	KEY-PCB VR710/39
20/12	3103 138 90150	KEY-PCB VR810/02/07/16/39
20/12	3103 138 91180	KEY-PCB VR765/02/07/16/58
20/12	3103 138 91380	KEY-PCB VR765/39
20/12	3103 138 91190	KEY-PCB VR910/02/07/16/39/58
20/17	3103 104 25620	SIDE CAP RIGHT VR710-VR810
20/17	3103 178 31360	SIDE CAP RIGHT VR765-VR910
20/18	3103 104 25610	SIDE CAP LEFT VR710-VR810
20/18	3103 178 31370	SIDE CAP LEFT VR765-VR910
22	3103 141 23350	COVER LAQUERED VR710-VR810
22	3103 141 23410	COVER LAQUERED VR765-VR910
23	4822 502 14109	PLASTITE SCREW 3,5X10
30, 31	4822 256 10198	DISTANCE HOLDER DECK
36	2511 076 50013	SCREW BK3X10
39	3103 104 25670	JOG KNOB VR810
39	3103 178 29840	JOG KNOB VR910
40	3103 104 25680	SHUTTLE RING VR810
40	3103 178 29830	SHUTTLE RING VR910
41	3103 178 29130	AV-COVER VR710-VR810/02/07/16/58
41	3103 178 29590	AV-COVER VR710-VR810/39
41	3103 178 29730	AV-COVER VR765-VR910/02/07/16/58
41	3103 178 30220	AV-COVER VR765-VR910/39
42	3103 178 29460	FOOT ASSY
42/2	4822 462 41806	FOOT RUBBER INLAY
43	2511 076 50013	SCREW BK3X10
50	4822 492 11687	SPRING
60, 61, 62	4822 256 10359	DISTANCE HOLDER MOBO

Power Supply ASM

MISCELLANEOUS

1115	242202514547	CONNECTOR 17P F 1.25 FFC 0.3
1150 ▲	311225024750	MAINS BUSH
1151 ▲	310313886490	FUSE T1.25A
1152 ▲	242254943073	SURGE PROTECT
1153 ▲	242208610514	FUSE T100mA

CAPACITORS

2150 ▲	222233629146	220	nF	275V
2151	202030890136	100	nF	400V
2152	222215190014	47	µF	400V
2153 ▲	202055490127	2.2	nF	250V
2154	202002191332	47	µF	50V
2155	222236545473	47	nF	250V
2156	202055890442	47	pF	2kV
2157	202055890442	47	pF	2kV
2158	202055295376	4.7	nF	50V
2159	202055291156	1	nF	50V
2160	202030890117	100	nF	50V
2161	202232600028	689	pF	100V
2162	202030890117	100	nF	50V
2163	319802534790	47	µF	25V
2164	319802531010	100	µF	25V
2165	202002191408	470	µF25V	
2166	202002191408	470	µF25V	
2167	202002191408	470	µF25V	
2168	222237065682	6.8	nF	400V
2170	202002191332	47	µF	50V
2172	202055295376	4.7	nF	50V
2173	202002191386	2200	µF	16V
2174	202002490502	1000	µF	6.3V
2175	202030890117	100	nF	50V

RESISTORS

3150	212255000124	VDR DC 1MA/470V MAX 775V		
3151 ▲	232224213335	3.3	M	
3152	212010390018	220	R	
3153 ▲	232224213335	3.3	M	
3154 ▲	232224213335	3.3	M	
3155 ▲	232220533109	10	R	
3156	232219463123	12	k	
3157 ▲	232220733102	1	k	FUSE NFR25H
3158 ▲	232220533479	47	R	NFR25
3159	319801106890	68	R	
3160	319801104710	470	R	0.17W
3161	319801101820	1.8	k	0.17W
3162	319801108230	82	k	
3163	319801108220	8.2	k	0.17W
3164	319801102220	2.2	k	0.17W
3165	319801104720	4.7	k	0.17W
3166	319801102230	22	k	0.17W
3167	232215623902	3.9	k	1%
3168	319801101530	15	k	0.17W
3169	232215621003	10	k	1%
3170	319801104710	470	R	0.17W
3171	232215621008	1.0	R	1%
3172	319801101090	10	R	0.17W
3175	319801102210	220	R	0.17W
3176	319801101020	1	k	0.17W
3177	319801101030	10	k	0.17W
3178	232215625602	5.6	k	1%
3179	212036890118	470	R	TRIMMER
3180	232215624702	4.7	k	1%
3181	319801101090	10	R	0.17W
3182	319801101090	10	R	0.17W
3183	319801101510	150	R	0.17W
3184	319801101030	10	k	0.17W
3185	319801106810	680	R	0.17W
3186	319801101020	1	k	0.17W
3187	319801104710	470	R	0.17W
3188	319801102240	220	k	0.17W
3189	319801104730	47	k	0.17W
3190	319801101020	1	k	0.17W
3191 ▲	230620403479	47	R	FUSE NFR25
3192	319801103920	3.9	k	0.17W
3193	319801106830	68	k	
3194	319801104720	4.7	k	0.17W
3195 ▲	232220533478	4.7	R	FUSE NFR25
3196	319801106810	680	R	0.17W
3197	319801101050	1	M	0.17W
3198	319801102240	220	k	0.17W
3199	232215623309	33	R	1%

COILS

5150 ▲	311243820170	LINE FILTER CHOKE (TDK)
5151 ▲	310312830460	TRANSF TDK SRW32ES
5153	242254943921	BEAD 150MHZ 1K B
5154	319801821090	10 µH
5155	242253596691	COIL 0MUH33 PM20
5156	242253594642	22 µH

DIODES

6151	933838660673	1N4006GP
6152	933838660673	1N4006GP
6153	933838660673	1N4006GP
6154	933838660673	1N4006GP
6155	933548710673	1N4003GP A (GI) A
6156	933548710673	1N4003GP A (GI) A
6157	933723420133	BYD33J
6158	933548710673	1N4003GP A (GI) A
6159	933548710673	1N4003GP A (GI) A
6160	933838660673	1N4006GP
6161	933624760133	BAT85
6162	932203213673	MTZJ5.6B A (RHM0)
6163	932203213673	MTZJ5.6B A (RHM0)
6164	932208187683	BYW98-200 RL
6165	932208187683	BYW98-200 RL
6166	932212672673	BYV27-200 A(TEGO)
6167	933723400133	BYD33D
6168	319801033390	BZX79-F33
6169	933723400133	BYD33D
6170	932212818682	SB340L-7010-PKG1
6172	319801010010	1N4148
6173	319801010010	1N4148
6174	319801010010	1N4148

TRANSISTORS & IC's

7150	932207704687	FET POW STP3NA60 FI
7151	932205310682	MC44603P
7152 ▲	932208848682	OPTO COUPL K1150PG (TEG)
7153	932208367676	TL431CZ-AP
7154	319802043430	BC327-25
7155	319802043430	BC327-25
7156	319802040030	BC547B
7157	319802040030	BC547B
7158	932210646687	FET POW STD17N06-1(ST00)L
7159	319802040030	BC547B
7160	933535470126	MPSA43
7161	319802043430	BC327-25

REPAIR KITS

4822 310 11237	POWER SUPPLY REPAIR KIT

▲... Safety component, use only this type

Motherboard

MISCELLANEOUS

0007	310310761690	TACHO HOLDER
0008	310310761840	TACHO HOLDER
0020	310310761680	MOBO SENSORHOLDER DECK
0021	310310761680	MOBO SENSORHOLDER DECK
0022	310310761680	MOBO SENSORHOLDER DECK
1001	242254301125	CRYSTAL 4.43MHz
1322	▲ 242208610776	FUSE 0.5A
1323	▲ 242208610779	FUSE 1.0A
1324	▲ 242208610776	FUSE 0.5A
1325	▲ 242208610779	FUSE 1.0A
1451	242254300922	RESXTL 20MHZ 20P AT-49 A
1460	310310790110	SWITCH ASSY
1461	310310790110	SWITCH ASSY
1701	242254290063	TUMOD V+U PLL IEC BGIDK B
1703	242254944341	OFWK9656M
1704	242254942068	OFWG3956M
1704	932204272682	OFWK3953M
1705	242254941595	FILTER BS 5.5MHz
1705	242254940808	CER.FILTER TPS6,0MB-TF21F
1708	311229712190	TP926L MK2 (BOOSTER)

when changing TUMOD order also spring 4822 492 11687

1760	242254301119	CRYSTAL 4MHz
1761	242254300781	CRYSTAL 18.432MHz
1871	242254300779	QUARTZ 13MHZ875 20P HC49U
1911	310310720440	CONNECTOR 9P
1942	242202514527	CON BM V17P F1.25 FFC 0.3
1944	242202514524	CON V 14P F1.25 FFC 0.3
1946	310310720720	CAPSTAN-MOBO-SOCKET JST
1947	242202514512	CONNECTOR 3 PIN
1948	242202514515	CONNECTOR 6 PIN
1951	310310024010	SCART SOCKET 7133
1952	310310024210	SCART SOCKET 7135
1954	310310023300	CINCH 4FOLD
1956	242202514516	CONNECTOR 7 PIN
1957	242203411514	CONNECTOR 1 PIN
1960	242202514516	CONNECTOR 7 PIN
1964	242202509405	CONNECTOR 2 PIN
1991	242202514512	CONNECTOR 3 PIN

CAPACITORS

2000	319802321040	100 nF 25V
2001	319801701030	10 nF 50V
2002	319801701030	10 nF 50V
2003	319801701030	10 nF 50V
2004	319801721050	1 µF 16V
2005	319801721050	1 µF 16V
2006	319801701030	10 nF 50V
2007	319801701030	10 nF 50V
2008	319802321040	100 nF 25V
2009	319801701030	10 nF 50V
2011	319802322240	220 nF 25V
2012	319802304730	47 nF 25V
2013	319801702230	22 nF 50V
2014	319802321040	100 nF 25V
2015	319802951080	1 µF 50V
2016	319801701040	100 nF 16V
2017	319801721050	1 µF 16V
2018	319802931090	10 µF 25V
2019	319802931090	10 µF 25V
2020	319801701030	10 nF 50V
2021	319802931090	10 µF 25V
2022	319802321040	100 nF 25V
2023	319802321040	100 nF 25V
2024	319802922290	22 µF 16V
2025	319801701030	10 nF 50V
2026	319801701030	10 nF 50V
2027	319802954780	4.7 µF 50V
2028	319801701030	10 nF 50V
2029	319801721050	1 µF 16V
2030	319802951080	1 µF 50V
2032	319801701030	10 nF 50V
2033	319801701030	10 nF 50V
2034	319802321040	100 nF 25V
2035	319802922290	22 µF 16V
2036	202255205335	220 pF 50V
2037	319801602290	22 pF 50V
2038	202255205337	390 pF 50V
2039	319802902210	220 µF 6.3V
2040	319801608290	82 pF 50V
2041	319802321040	100 nF 25V
2042	319801602290	22 pF 50V
2043	319801603990	39 pF 50V
2044	319802321040	100 nF 25V
2045	319801701030	10 nF 50V
2046	319801604790	47 pF 50V
2047	319802921010	100 µF 16V
2049	319801602790	27 pF 50V
2050	319801701030	10 nF 50V
2052	319801602210	220 pF 50V
2053	319802924790	47 µF 16V
2054	319802954780	4.7 µF 50V
2055	319802924790	47 µF 16V
2056	319802954780	4.7 µF 50V
2057	319801724730	47 nF 50V
2060	319802321040	100 nF 25V
2071	319801701030	10 nF 50V
2072	319801601510	150 pF 50V
2073	319802921010	100 µF 16V
2074	202255205335	220 pF 50V
2075	319801701030	10 nF 50V
2076	319802321040	100 nF 25V
2077	319801701040	100 nF 16V
2078	319801701030	10 nF 50V
2079	319801608290	82 pF 50V
2080	319801601010	100 pF 50V
2082	319801701030	10 nF 50V
2083	319801701030	10 nF 50V
2084	319802931090	10 µF 25V
2085	202055295343	470 nF 16V
2086	319801701030	10 nF 50V
2087	319801606810	680 pF 50V
2088	319801721050	1 µF 16V
2089	319801702230	22 nF 50V
2090	319801602210	220 pF 50V
2091	319801701030	10 nF 50V
2092	319801601010	100 pF 50V
2093	319801604790	47 pF 50V
2094	319802321040	100 nF 25V
2095	319801721050	1 µF 16V
2096	319801701040	100 nF 16V
2097	319801601090	10 pF 50V
2098	319801701030	10 nF 50V
2099	202055295338	100 nF
2101	319801601010	100 pF 50V
2104	319801602290	22 pF 50V
2105	202055295677	220 nF
2106	319802924790	47 µF 16V
2107	319801701030	10 nF 50V
2108	319801702230	22 nF 50V
2110	319801701030	10 nF 50V
2111	319801701030	10 nF 50V
2112	319801701030	10 nF 50V
2113	319801701030	10 nF 50V
2114	319801701030	10 nF 50V
2115	319801701030	10 nF 50V
2116	319801701030	10 nF 50V
2117	319801701030	10 nF 50V
2118	319801701030	10 nF 50V
2122	202055295677	220 nF
2123	319801701030	10 nF 50V
2124	319801701030	10 nF 50V
2125	319802924790	47 µF 16V
2126	319801602290	22 pF 50V
2321	319802321040	100 nF 25V
2322	319802321040	100 nF 25V
2323	319802532210	220 µF 25V
2324	319802532210	220 µF 25V
2325	319801403340	330 nF 50V
2326	319802532210	220 µF 25V
2328	319802921010	100 µF 16V
2400	319802921010	100 µF 16V
2401	319802321040	100 nF 25V
2402	319801601010	100 pF 50V
2403	319801601010	100 pF 50V
2404	319801702220	2.2 nF 50V
2405	319801602210	220 pF 50V

▲... Safety component, use only this type

2406	319802921010	100 µF	16V
2408	319801721050	1 µF	16V
2411	319801702220	2.2 nF	50V
2412	319801701030	10 nF	50V
2451	319802321040	100 nF	25V
2452	319802922290	22 µF	16V
2453	319801721050	1 µF	16V
2454	319802321040	100 nF	25V
2455	319802321040	100 nF	25V
2456	319801602790	27 pF	50V
2457	319801603390	33 pF	50V
2458	319801701030	10 nF	50V
2459	319801602790	27 pF	50V
2461	319801704720	4.7 nF	50V
2462	319802531010	100 µF	25V
2463	319801701030	10 nF	50V
2471	319802924790	47 µF	16V
2472	319802921010	100 µF	16V
2473	319801704720	4.7 nF	50V
2474	319801702220	2.2 nF	50V
2475	319802924790	47 µF	16V
2476	319801703330	33 nF	50V
2477	319802321040	100 nF	25V
2478	319801701030	10 nF	50V
2479	319801701030	10 nF	50V
2480	319802921010	100 µF	16V
2482	319802321040	100 nF	25V
2483	319801702230	22 nF	50V
2484	202001292784	1 µF	50V
2485	202001292784	1 µF	50V
2486	202001292784	1 µF	50V
2487	319802321040	100 nF	25V
2489	319802532210	220 µF	25V
2490	319802321040	100 nF	25V
2491	319801601010	100 pF	50V
2492	319801702230	22 nF	50V
2493	319801701030	10 nF	50V
2494	319802321040	100 nF	25V
2495	319801724730	47 nF	50V
2496	319801702230	22 nF	50V
2497	319801701030	10 nF	50V
2501	212255100008	VDR	MAX 21V
2502	212255100008	VDR	MAX 21V
2503	212255100008	VDR	MAX 21V
2504	212255100008	VDR	MAX 21V
2505	212255100008	VDR	MAX 21V
2506	212255100008	VDR	MAX 21V
2507	212255100008	VDR	MAX 21V
2508	212255100008	VDR	MAX 21V
2509	212255100008	VDR	MAX 21V
2510	212255100008	VDR	MAX 21V
2511	212255100008	VDR	MAX 21V
2512	212255100008	VDR	MAX 21V
2513	319802921010	100 µF	16V
2514	319802924790	47 µF	16V
2515	319802321040	100 nF	25V
2516	319802321040	100 nF	25V
2517	319802321040	100 nF	25V
2518	319802321040	100 nF	25V
2519	319802321040	100 nF	25V
2520	319802321040	100 nF	25V
2521	319802321040	100 nF	25V
2522	319802321040	100 nF	25V
2523	319802924790	47 µF	16V
2526	319801721050	1 µF	16V
2527	319802924790	47 µF	16V
2528	319801721050	1 µF	16V
2529	319802924790	47 µF	16V
2530	319801721050	1 µF	16V
2532	319801601090	10 pF	50V
2533	319801721050	1 µF	16V
2534	319801601090	10 pF	50V
2535	319802931090	10 µF	25V
2536	319802931090	10 µF	25V
2537	319801604710	470 pF	50V
2538	319801604710	470 pF	50V
2539	319801701030	10 nF	50V
2540	319801701030	10 nF	50V
2541	319801601010	100 pF	50V
2542	319801606890	68 pF	50V
2543	319801701020	1 nF	50V
2544	319801701020	1 nF	50V
2545	319801701040	100 nF	16V
2546	319801601010	100 pF	50V
2547	319801601010	100 pF	50V
2601	319802321040	100 nF	25V
2602	319802922290	22 µF	16V
2603	319802924790	47 µF	16V
2604	319801721050	1 µF	16V
2605	319801701030	10 nF	50V
2606	319802321040	100 nF	25V
2607	319802924790	47 µF	16V
2608	319802321040	100 nF	25V
2609	319802924790	47 µF	16V
2610	319801701530	15 nF	50V
2611	202255205244	39 nF	50V
2612	319801702220	2.2 nF	50V
2613	319802931090	10 µF	25V
2614	319802321040	100 nF	25V
2615	319802924790	47 µF	16V
2616	319802952280	2.2 µF	50V
2617	319801721050	1 µF	16V
2618	319801701030	10 nF	50V
2619	319801701020	1 nF	50V
2620	319801603310	330 pF	50V
2621	319801701020	1 nF	50V
2622	202255205341	820 pF	50V
2623	319802931090	10 µF	25V
2624	319802304730	47 nF	25V
2625	202030090606	12 nF	50V
2626	319802922290	22 µF	16V
2641	319802924790	47 µF	16V
2642	319801701020	1 nF	50V
2643	319802924790	47 µF	16V
2644	202030090611	27 nF	50V
2645	319801703330	33 nF	50V
2646	202030090573	10 nF	50V
2651	319802921010	100 µF	16V
2652	319801701030	10 nF	50V
2653	319801701040	100 nF	16V
2654	319801702230	22 nF	50V
2655	319802952280	2.2 µF	50V
2656	319801601010	100 pF	50V
2657	223891015649	100 nF	25V
2658	319801703320	3.3 nF	50V
2659	319802924790	47 µF	16V
2660	319802931090	10 µF	25V
2661	223891015649	100 nF	25V
2662	319801701030	10 nF	50V
2663	319801703320	3.3 nF	50V
2664	319802924790	47 µF	16V
2665	319802931090	10 µF	25V
2666	319801701020	1 nF	50V
2668	202055295677	220 nF	
2669	202055295677	220 nF	
2671	319802951080	1 µF	50V
2672	319802951080	1 µF	50V
2674	202055295677	220 nF	
2675	202055295677	220 nF	
2677	202055295677	220 nF	
2678	202055295677	220 nF	
2679	319802951080	1 µF	50V
2680	319802931090	10 µF	25V
2681	319802951080	1 µF	50V
2683	319802931090	10 µF	25V
2684	319801721050	1 µF	16V
2685	319802931090	10 µF	25V
2686	202055295677	220 nF	
2687	319802321040	100 nF	25V
2701	202002191355	2.2 µF	50V
2702	319802321040	100 nF	25V
2703	319802552290	22 µF	50V
2704	319801604710	470 pF	50V
2705	319801701030	10 nF	50V
2706	319802931090	10 µF	25V
2707	319802321040	100 nF	25V
2708	319802322240	220 nF	25V
2709	202055294914	8.2 pF	50V
2710	319802321040	100 nF	25V
2712	319801701020	1 nF	50V
2713	319801601210	120 pF	50V
2714	319801602210	220 pF	50V

Motherboard

2715	319802952280	2.2	µF	50V
2720	319802921010	100	µF	16V
2721	319802321040	100	nF	25V
2722	319801604710	470	pF	50V
2723	319802321040	100	nF	25V
2724	319801701030	10	nF	50V
2725	202055295499	100	nF	50V
2726	319802952280	2.2	µF	50V
2727	319801701040	100	nF	16V
2728	319801601010	100	pF	50V
2729	319801605690	56	pF	50V
2730	319801605690	56	pF	50V
2758	319801704720	4.7	nF	50V
2759	319801704720	4.7	nF	50V
2760	319801703320	3.3	nF	50V
2761	319801701040	100	nF	16V
2762	319802571090	10	µF	100V
2763	319801606810	680	pF	50V
2764	319801701030	10	nF	50V
2765	319801701040	100	nF	16V
2766	319802931090	10	µF	25V
2767	319801701030	10	nF	50V
2768	319802571090	10	µF	100V
2769	319802571090	10	µF	100V
2770	319801724740	470	nF	16V
2771	319801604790	47	pF	50V
2772	319801606810	680	pF	50V
2773	319801703320	3.3	nF	50V
2775	319801701030	10	nF	50V
2776	319802954780	4.7	µF	50V
2778	319801724740	470	nF	16V
2779	319801724740	470	nF	16V
2780	319801704720	4.7	nF	50V
2781	319801724740	470	nF	16V
2782	319802924790	47	µF	16V
2783	319801701040	100	nF	16V
2784	319801604790	47	pF	50V
2785	319801724740	470	nF	16V
2786	319801724740	470	nF	16V
2787	319801603380	3.3	pF	50V
2788	319801603380	3.3	pF	50V
2789	319801701030	10	nF	50V
2790	319802571090	10	µF	100V
2791	319801701030	10	nF	50V
2792	319801604790	47	pF	50V
2793	319801721050	1	µF	16V
2794	319801721050	1	µF	16V
2795	319801601020	1	nF	50V
2796	319801601020	1	nF	50V
2797	319801601020	1	nF	50V
2798	319801601020	1	nF	50V
2799	319802924790	47	µF	16V
2800	319801602290	22	pF	50V
2801	319801601090	10	pF	50V
2802	319802321040	100	nF	25V
2803	319802321040	100	nF	25V
2804	319802924790	47	µF	16V
2805	319801721050	1	µF	16V
2806	319801601090	10	pF	50V
2807	319801606810	680	pF	50V
2808	319801721050	1	µF	16V
2809	319801721050	1	µF	16V
2810	319801721050	1	µF	16V
2811	319801701030	10	nF	50V
2812	319802924790	47	µF	16V
2813	319802321040	100	nF	25V
2814	319801701030	10	nF	50V
2815	319801701030	10	nF	50V
2816	319801701030	10	nF	50V
2817	319802321040	100	nF	25V
2818	319801701030	10	nF	50V
2819	319801701030	10	nF	50V
2820	319801704720	4.7	nF	50V
2821	319801701030	10	nF	50V
2822	319802954780	4.7	µF	50V
2823	319802924790	47	µF	16V
2824	319801721050	1	µF	16V
2825	319801701030	10	nF	50V
2826	319801701030	10	nF	50V
2827	319802931090	10	µF	25V
2828	319801601020	1	nF	50V
2829	319801601020	1	nF	50V
2830	319802321040	100	nF	25V
2831	319802931090	10	µF	25V
2832	319801702220	2.2	nF	50V
2833	319801702220	2.2	nF	50V
2834	319801601810	180	pF	50V
2835	319801601810	180	pF	50V
2836	319801721050	1	µF	16V
2837	319801721050	1	µF	16V
2839	319802902210	220	µF	6.3V
2840	319801724740	470	nF	16V
2850	202030890117	100	nF	50V
2851	319802904790	47	µF	6.3V
2852	319802321040	100	nF	25V
2853	319802321040	100	nF	25V
2855	319801701040	100	nF	16V
2856	319802304730	47	nF	25V
2857	319801601210	120	pF	50V
2860	319801701020	1	nF	50V
2863	202055295677	220	nF	
2864	319801608280	8.2	pF	50V
2865	319801602290	22	pF	50V
2866	202055295338	100	nF	
2867	319801602290	22	pF	50V
2872	319802321040	100	nF	25V
2873	319802321040	100	nF	25V
2874	319802321040	100	nF	25V
2875	319801602290	22	pF	50V
2876	319801602290	22	pF	50V
2877	319802924790	47	µF	16V
2878	319802321040	100	nF	25V

RESISTORS

3001	319801102220	2.2	k	0.17W
3002	319802151820	1.8	k	0.1W
3003	319802151020	1	k	0.1W
3004	319802158220	8.2	k	0.1W
3005	319802151020	1	k	0.1W
3006	319801105620	5.6	k	0.17W
3009	319802151010	100	R	0.1W
3010	319801104730	47	k	0.17W
3011	319801101020	1	k	0.17W
3012	319801103930	39	k	0.17W
3013	319802151050	1	M	0.1W
3015	319802155610	560	R	0.1W
3016	319802151030	10	k	0.1W
3017	212010892619	2.2	k	1%
3019	212010892614	680	R	1%
3020	212010893465	1.3	k	1%
3021	319802152240	220	k	0.1W
3022	319802151540	150	k	0.1W
3023	319802152210	220	R	0.1W
3024	319802151030	10	k	0.1W
3025	319802152710	270	R	0.1W
3026	212010892624	4.7	k	1%
3027	319802154710	470	R	0.1W
3029	319802154710	470	R	0.1W
3030	319801106810	680	R	0.17W
3031	319802151020	1	k	0.1W
3032	319802152220	2.2	k	0.1W
3033	319802151510	150	R	0.1W
3034	319801102220	2.2	k	0.17W
3035	319801101010	100	R	0.17W
3036	319801103310	330	R	0.17W
3037	319802152220	2.2	k	0.1W
3041	319801106810	680	R	0.17W
3042	319801104710	470	R	0.17W
3046	319802152220	2.2	k	0.1W
3047	319801104730	47	k	0.17W
3048	319801101040	100	k	0.17W
3061	319802151230	12	k	0.1W
3062	319802151520	1.5	k	0.1W
3063	319802158220	8.2	k	0.1W
3065	319801103920	3.9	k	0.17W
3066	319802154720	4.7	k	0.1W
3067	319801101020	1	k	0.17W
3068	319802153330	33	k	0.1W
3069	319802152720	2.7	k	0.1W
3070	319802151020	1	k	0.1W

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Motherboard

3072	319801101520	1.5	k	0.17W
3073	319802158220	8.2	k	0.1W
3074	212010892514	15	k	1%
3075	319802151040	100	k	0.1W
3076	319802151030	10	k	0.1W
3077	319802153920	3.9	k	0.1W
3078	319802151830	18	k	0.1W
3079	319802156810	680	R	0.1W
3081	319802152220	2.2	k	0.1W
3082	319801104720	4.7	k	0.17W
3083	319801101020	1	k	0.17W
3084	319802152230	22	k	0.1W
3085	319802152730	27	K	0.1W
3086	319802152720	2.7	k	0.1W
3087	319802151030	10	k	0.1W
3088	212036890124	22	k	POT
3089	212036890119	1	k	POT
3090	319801101030	10	k	0.17W
3091	319802154720	4.7	k	0.1W
3092	319802154720	4.7	k	0.1W
3093	319802151030	10	k	0.1W
3094	319802151030	10	k	0.1W
3095	319801101010	100	R	0.17W
3101	319802154720	4.7	k	0.1W
3102	319802155610	560	R	0.1W
3103	319802155610	560	R	0.1W
3104	319802151120	1.1	k	
3105	319802154720	4.7	k	0.1W
3106	319802151530	15	k	0.1W
3107	319802153310	330	R	0.1W
3108	319802154720	4.7	k	0.1W
3109	319802154710	470	R	0.1W
3110	319802153310	330	R	0.1W
3111	319802152240	220	k	0.1W
3112	319802151030	10	k	0.1W
3113	319802153310	330	R	0.1W
3114	212010892631	27	k	1%
3115	212010892672	5.6	R	
3116	319802151230	12	k	0.1W
3118	212036890123	10	k	POT
3119	319802152220	2.2	k	0.1W
3120	319802151020	1	k	0.1W
3321	319801102240	220	k	0.17W
3322	319801104790	47	R	0.17W
3323	319802151030	10	k	0.1W
3325	319802152240	220	k	0.1W
3327	319801102210	220	R	0.17W
3328	319801101020	1	k	0.17W
3330	319801104720	4.7	k	0.17W
3331	319801101040	100	k	0.17W
3332	319802151030	10	k	0.1W
3334	319802151030	10	k	0.1W
3335	319802154720	4.7	k	0.1W
3336	319801101030	10	k	0.17W
3337	319802151040	100	k	0.1W
3340	319801101020	1	k	0.17W
3341	319802151010	100	R	0.1W
3344	319801101010	100	R	0.17W
3352	319801101020	1	k	0.17W
3354	319802154730	47	k	0.1W
3357	319801104730	47	k	0.17W
3358	319801101020	1	k	0.17W
3363	319801103910	390	R	0.17W
3364	319801103330	33	k	0.17W
3365	319802151030	10	k	0.1W
3371	▲ 232220533228	2.2	R	NFR25
3372	319802152230	22	k	0.1W
3373	319802154710	470	R	0.1W
3374	319802152210	220	R	0.1W
3375	319802151030	10	k	0.1W
3376	319802154720	4.7	k	0.1W
3377	319801101080	1	R	0.17W
3378	319802154730	47	k	0.1W
3379	319802153920	3.9	k	0.1W
3380	319801102710	270	R	0.17W
3381	319801105620	5.6	k	0.17W
3382	319802151030	10	k	0.1W
3383	319801101030	10	k	0.17W
3385	319802152230	22	k	0.1W
3386	319801103330	33	k	0.17W
3387	319802158230	82	k	0.1W
3388	319802154720	4.7	k	0.1W
3390	319802154710	470	R	0.1W
3391	319802152250	2.2	M	0.1W
3392	319802151040	100	k	0.1W
3393	319802151040	100	k	0.1W
3394	319802154730	47	k	0.1W
3397	319802151010	100	R	0.1W
3398	319802154720	4.7	k	0.1W
3403	319802151010	100	R	0.1W
3404	319802152730	27	K	0.1W
3405	319802156820	6.8	k	0.1W
3406	319802190020	CHIP JUMPER		
3407	319802151010	100	R	0.1W
3409	319802152220	2.2	k	0.1W
3410	319802152220	2.2	k	0.1W
3413	319801101010	100	R	0.17W
3415	319802152220	2.2	k	0.1W
3416	319802155630	56	k	0.1W
3417	319801102220	2.2	k	0.17W
3419	319802152220	2.2	k	0.1W
3422	319802154730	47	k	0.1W
3423	319802154720	4.7	k	0.1W
3425	319802153330	33	k	0.1W
3426	▲ 232220533109	10	R	
3427	319802152210	220	R	0.1W
3428	319801101020	1	k	0.17W
3429	319802151030	10	k	0.1W
3430	319802151020	1	k	0.1W
3432	319801101030	10	k	0.17W
3433	319801104720	4.7	k	0.17W
3435	319802154720	4.7	k	0.1W
3436	319801101010	100	R	0.17W
3438	319802154730	47	k	0.1W
3440	319802151030	10	k	0.1W
3444	319801103310	330	R	0.17W
3446	319801101030	10	k	0.17W
3447	319801101010	100	R	0.17W
3449	319802151030	10	k	0.1W
3450	319802151030	10	k	0.1W
3451	319802151030	10	k	0.1W
3452	319802151020	1	k	0.1W
3454	319802158210	820	R	0.1W
3455	319802151030	10	k	0.1W
3457	319802154710	470	R	0.1W
3458	319802151020	1	k	0.1W
3459	319802154730	47	k	0.1W
3460	319802154720	4.7	k	0.1W
3461	319802158220	8.2	k	0.1W
3462	319802152230	22	k	0.1W
3463	319802152230	22	k	0.1W
3464	319802154730	47	k	0.1W
3465	319801101020	1	k	0.17W
3466	319801101040	100	k	0.17W
3467	319801102220	2.2	k	0.17W
3472	319802151230	12	k	0.1W
3473	319801101230	12	k	0.17W
3474	319802154720	4.7	k	0.1W
3475	319802154720	4.7	k	0.1W
3476	319802154730	47	k	0.1W
3477	319802154730	47	k	0.1W
3478	319802151030	10	k	0.1W
3479	319801102220	2.2	k	0.17W
3480	319801101020	1	k	0.17W
3483	319801101030	10	k	0.17W
3488	319802151020	1	k	0.1W
3490	319802152230	22	k	0.1W
3492	319801104730	47	k	0.17W
3493	319801104720	4.7	k	0.17W
3495	319801102220	2.2	k	0.17W
3496	319802152210	220	R	0.1W
3497	319802151030	10	k	0.1W
3498	319802151030	10	k	0.1W
3499	319802154720	4.7	k	0.1W
3503	319801102210	220	R	0.17W
3504	319802157590	75	R	0.1W
3505	319802157590	75	R	0.1W
3507	319802152210	220	R	0.1W
3509	319802152210	220	R	0.1W
3511	319802157590	75	R	0.1W
3513	319802152210	220	R	0.1W
3514	319802152210	220	R	0.1W

▲... Safety component, use only this type

Motherboard

3515	319802152210	220	R	0.1W
3516	319802152210	220	R	0.1W
3518	319802157590	75	R	0.1W
3519	319801104720	4.7	k	0.17W
3520	319802151030	10	k	0.1W
3521	319802156820	6.8	k	0.1W
3522	319802155630	56	k	0.1W
3523	319801103910	390	R	0.17W
3524	319801108210	820	R	0.17W
3525	319801103330	33	k	0.17W
3528	319801101230	12	k	0.17W
3529	319801101010	100	R	0.17W
3533	319802152240	220	k	0.1W
3535	319802152240	220	k	0.1W
3536	319801102240	220	k	0.17W
3538	319802152220	2.2	k	0.1W
3543	319802151830	18	k	0.1W
3544	319802154720	4.7	k	0.1W
3545	319802152240	220	k	0.1W
3546	319802151830	18	k	0.1W
3547	319802154720	4.7	k	0.1W
3548	319802152240	220	k	0.1W
3549	319802152230	22	k	0.1W
3550	319802151040	100	k	0.1W
3551	319802153940	390	k	0.1W
3552	319802151040	100	k	0.1W
3553	319802153940	390	k	0.1W
3554	319802151040	100	k	0.1W
3555	319802151040	100	k	0.1W
3556	319802151510	150	R	0.1W
3557	319802151510	150	R	0.1W
3558	319802151010	100	R	0.1W
3559	319802151010	100	R	0.1W
3560	319802151010	100	R	0.1W
3561	319802151010	100	R	0.1W
3562	319801101510	150	R	0.17W
3601	319801104730	47	k	0.17W
3602	319802152250	2.2	M	0.1W
3603	319802158220	8.2	k	0.1W
3604	319801101010	100	R	0.17W
3606	319802151030	10	k	0.1W
3607	319802151230	12	k	0.1W
3608	319802151830	18	k	0.1W
3609	319802152230	22	k	0.1W
3610	319802153320	3.3	k	0.1W
3611	319801103390	33	R	0.17W
3612	319802156820	6.8	k	0.1W
3613	319802151530	15	k	0.1W
3614	319801104720	4.7	k	0.17W
3615	319802153910	390	R	0.1W
3616	319802156810	680	R	0.1W
3617	319802151030	10	k	0.1W
3618	319802154750	4.7	M	0.1W
3619	319802152240	220	k	0.1W
3620	319801102220	2.2	k	0.17W
3621	319802158220	8.2	k	0.1W
3622	319801102230	22	k	0.17W
3623	319802151230	12	k	0.1W
3624	319802154730	47	k	0.1W
3625	319802152220	2.2	k	0.1W
3626	212036890126	100	k	POT
3627	212010891729	390	k	0.1W
3628	319802154730	47	k	0.1W
3629	319802152220	2.2	k	0.1W
3630	319802156810	680	R	0.1W
3631	319801104790	47	R	0.17W
3632	319802151090	10	R	0.1W
3633	212010892664	1.5	R	
3641	319802151830	18	k	0.1W
3642	319801103310	330	R	0.17W
3643	319802153920	3.9	k	0.1W
3644	319802152240	220	k	0.1W
3645	319802153330	33	k	0.1W
3646	319802156830	68	k	0.1W
3647	319802151090	10	R	0.1W
3648	212010892664	1.5	R	
3651	319801101030	10	k	0.17W
3652	212010892633	39	k	1%
3653	319802151010	100	R	0.1W
3654	319801101010	100	R	0.17W
3655	319802156830	68	k	0.1W
3656	319802155620	5.6	k	0.1W
3657	319802156830	68	k	0.1W
3658	319802155620	5.6	k	0.1W
3659	319802151040	100	k	0.1W
3660	319802151040	100	k	0.1W
3663	319802154750	4.7	M	0.1W
3664	319801101020	1	k	0.17W
3700	319802154710	470	R	0.1W
3701	319802153930	39	k	0.1W
3702	319801101040	100	k	0.17W
3703	319802151830	18	k	0.1W
3704	319802153330	33	k	0.1W
3705	319801106810	680	R	0.17W
3706	319802153310	330	R	0.1W
3707	212036890124	22	k	POT
3708	319802151830	18	k	0.1W
3709	319802151540	150	k	0.1W
3710	319802152210	220	R	0.1W
3711	319802153320	3.3	k	0.1W
3712	319802151020	1	k	0.1W
3714	319802151010	100	R	0.1W
3715	319802153310	330	R	0.1W
3715	319802152710	270	R	0.1W
3716	319802153320	3.3	k	0.1W
3718	319802152220	2.2	k	0.1W
3719	319802156820	6.8	k	0.1W
3721	319802154720	4.7	k	0.1W
3722	319802151010	100	R	0.1W
3723	319802151010	100	R	0.1W
3724	319802152230	22	k	0.1W
3726	319802151020	1	k	0.1W
3727	319802155620	5.6	k	0.1W
3728	319802155620	5.6	k	0.1W
3729	319802155620	5.6	k	0.1W
3730	212036890126	100	k	POT
3731	319801104710	470	R	0.17W
3732	319802151010	100	R	0.1W
3733	319802152720	2.7	k	0.1W
3734	319802153310	330	R	0.1W
3762	319802155620	5.6	k	0.1W
3763	319802190020	CHIP JUMPER		
3764	319801104720	4.7	k	0.17W
3765	319801101010	100	R	0.17W
3768	319802155620	5.6	k	0.1W
3770	319802151020	1	k	0.1W
3771	212010891686	7.5	k	
3772	319802151020	1	k	0.1W
3773	319802151020	1	k	0.1W
3774	319802151020	1	k	0.1W
3775	319802152720	2.7	k	0.1W
3776	319802151010	100	R	0.1W
3777	319802151010	100	R	0.1W
3778	319802154710	470	R	0.1W
3779	319802154710	470	R	0.1W
3801	319802152720	2.7	k	0.1W
3802	319802152720	2.7	k	0.1W
3803	319802151040	100	k	0.1W
3804	319801101030	10	k	0.17W
3805	319801101040	100	k	0.17W
3806	319801104790	47	R	0.17W
3807	319801101040	100	k	0.17W
3808	319801102720	2.7	k	0.17W
3809	319802151520	1.5	k	0.1W
3810	319802151820	1.8	k	0.1W
3811	319801101040	100	k	0.17W
3812	319801108220	8.2	k	0.17W
3813	319801102230	22	k	0.17W
3815	319802153310	330	R	0.1W
3817	212036890121	2.2	k	trim.
3818	319801108210	820	R	0.17W
3819	319802151830	18	k	0.1W
3820	319802151830	18	k	0.1W
3821	319801102230	22	k	0.17W
3822	319802152230	22	k	0.1W
3823	319802154740	470	k	0.1W
3830	319802154720	4.7	k	0.1W
3831	319802151040	100	k	0.1W
3832	319802152230	22	k	0.1W
3833	319802151530	15	k	0.1W
3834	319802154720	4.7	k	0.1W
3835	319802154720	4.7	k	0.1W

▲... Safety component, use only this type

3836	319802154720	4.7	k	0.1W
3837	319802152220	2.2	k	0.1W
3838	319802152220	2.2	k	0.1W
3839	319802151060	10	M	
3840	319802151060	10	M	
3841	319802153330	33	k	0.1W
3842	319802153330	33	k	0.1W
3843	319802153330	33	k	0.1W
3844	319802153330	33	k	0.1W
3845	319802153330	33	k	0.1W
3846	319802153330	33	k	0.1W
3851	319802156830	68	k	0.1W
3852	319802153320	3.3	k	0.1W
3853	319802153320	3.3	k	0.1W
3856	212010891725	270	k	0.1W
3857	319801101010	100	R	0.17W
3867	319802151010	100	R	0.1W
3868	319802152220	2.2	k	0.1W
3870	319802158210	820	R	0.1W
3871	319802154730	47	k	0.1W
3872	319802154730	47	k	0.1W
3873	319802154730	47	k	0.1W
3876	319802151030	10	k	0.1W
3880	319801101080	1	R	0.17W
3881	319802158210	820	R	0.1W
3882	319801108210	820	R	0.17W

RESISTORS

4100	319802190020	CHIP JUMPER
4101	319802190020	CHIP JUMPER
4102	319802190020	CHIP JUMPER
4103	319802190020	CHIP JUMPER
4104	319802190020	CHIP JUMPER
4105	319802190020	CHIP JUMPER
4106	319802190020	CHIP JUMPER
4107	319802190020	CHIP JUMPER
4108	319802190020	CHIP JUMPER
4110	319802190020	CHIP JUMPER
4111	319802190020	CHIP JUMPER
4452	319802190020	CHIP JUMPER
4456	319802190020	CHIP JUMPER
4481	319802190020	CHIP JUMPER
4482	319802190020	CHIP JUMPER
4485	319802190020	CHIP JUMPER
4486	319802190020	CHIP JUMPER
4487	319802190020	CHIP JUMPER
4488	319802190020	CHIP JUMPER
4489	319802190020	CHIP JUMPER
4490	319802190020	CHIP JUMPER
4491	319802190020	CHIP JUMPER
4492	319802190020	CHIP JUMPER
4493	319802190020	CHIP JUMPER
4494	319802190020	CHIP JUMPER
4496	319802190020	CHIP JUMPER
4498	319802190020	CHIP JUMPER
4499	319802190020	CHIP JUMPER
4502	319802190020	CHIP JUMPER
4503	319802190020	CHIP JUMPER
4651	319802190020	CHIP JUMPER
4652	319802190020	CHIP JUMPER
4701	319802190020	CHIP JUMPER
4704	319802190020	CHIP JUMPER
4705	319802190020	CHIP JUMPER
4706	319802190020	CHIP JUMPER
4711	319802190020	CHIP JUMPER
4712	319802190020	CHIP JUMPER
4713	319802190020	CHIP JUMPER
4722	319802190020	CHIP JUMPER
4724	319802190020	CHIP JUMPER
4759	319802190020	CHIP JUMPER
4761	319802190020	CHIP JUMPER
4762	319802190020	CHIP JUMPER
4763	319802190020	CHIP JUMPER
4764	319802190020	CHIP JUMPER
4765	319802190020	CHIP JUMPER
4852	319802190020	CHIP JUMPER
4911	319802190020	CHIP JUMPER
4912	319802190020	CHIP JUMPER
4914	319802190020	CHIP JUMPER
4916	319802190020	CHIP JUMPER

COILS

5001	319801821090	10 µH
5002	242253594339	150 µH
5004	242253594335	56 µH
5005	242253594334	47 µH
5006	242253594327	15 µH
5008	242253594325	10 µH
5009	242253594338	100 µH
5010	242253594323	6.8 µH 5%
5071	242253594692	6.8 µH 5%
5072	242253597877	10 µH
5073	242253594335	56 µH
5074	242253594329	22 µH
5075	242253594699	27 µH 5%
5076	319801890090	COIL
5100	242253594272	22 µH 5%
5101	242253597333	100 µH 10%
5322	242253597333	100 µH 10%
5323	242253597342	22 µH 10%
5453	242253594325	10 µH
5454	242253595097	BOB 2,4MU FBA04HA900BB TY
5455	242254941993	IND FXD100MHZ600R BLM21KB
5456	242254941993	IND FXD100MHZ600R BLM21KB
5457	242254941993	IND FXD100MHZ600R BLM21KB
5471	242253594118	INDFXD SPT0203A0U33 PM10A
5501	242253594323	6.8 µH 5%
5601	242253596863	10 µH 5%
5602	310313824910	COIL ASSY
5603	242254941993	IND FXD100MHZ600R BLM21KB
5641	310313824910	COIL ASSY
5701	242253594327	15 µH
5702	242254941645	IND VAR 0,256UH +6-10%
5703	242254941993	IND FXD100MHZ600R BLM21KB
5704	242254941645	IND VAR 0,256UH +6-10%
5706	242253594323	6.8 µH 5%
5708	242253594325	10 µH
5760	319801821090	10 µH
5761	319801821010	COIL
5762	319801821090	10 µH
5803	242254941993	IND FXD100MHZ600R BLM21KB
5804	242254941993	IND FXD100MHZ600R BLM21KB
5805	242254941993	IND FXD100MHZ600R BLM21KB
5806	242254941993	IND FXD100MHZ600R BLM21KB
5807	242254941993	IND FXD100MHZ600R BLM21KB
5853	242253594325	10 µH
5854	242253594327	15 µH
5856	242253594323	6.8 µH 5%
5871	242253594325	10 µH
5872	242254941993	IND FXD100MHZ600R BLM21KB

DIODES

6401	933624760133	BAT85
6460	310313887290	OPTO ASSY TCZT8299-PAER
6503	932203796673	MTZJ6.8C
6507	932203216673	MTZJ12C
6601	933712670673	BZX55-B7V5 A
6702	934025520115	BA792
6761	319801010010	1N4148

TRANSISTORS & IC's

7001	319801042030	BC847B
7002	319801042030	BC847B
7003	932210079685	LC89980M
7004	319801042150	BC857B
7005	932211964671	LA71527M (TSAJ) Y
7006	319801042030	BC847B
7007	319801044020	PDTA124ET
7008	319801042030	BC847B
7009	319801042030	BC847B
7010	933092111215	BFS20
7011	933092111215	BFS20
7014	319801042030	BC847B
7015	319801042150	BC857B
7016	319801042030	BC847B
7071	319801042150	BC857B

Motherboard

7072	932214759682	LA7339A
7073	319801042030	BC847B
7074	319801042030	BC847B
7075	319801042030	BC847B
7091	933406660653	HEF4094BT
7092	319801044120	PDTC124ET
7101	319801042030	BC847B
7102	319801042030	BC847B
7103	932211188668	STV5744ADT
7104	932203746668	STV5712TR
7105	319801044020	PDTA124ET
7106	319801044020	PDTA124ET
7107	319801044120	PDTC124ET
7321	932214226687	FET POW STD16NE06-1 L
7322	933946350215	FET SIG BSS138
7323	932214226687	FET POW STD16NE06-1 L
7324	319801042030	BC847B
7325	319802043530	BC337-25
7326	319802043430	BC327-25
7327	319801042150	BC857B
7328	319801042030	BC847B
7329	319801042030	BC847B
7401	932211746668	M24128-MN6 (ST00) R
7404	319801042030	BC847B
7406	310316530010	TMP93C071F 120PIN
7407	319802043530	BC337-25
7408	319801042150	BC857B
7412	319801044020	PDTA124ET
7413	319801042030	BC847B
7414	319801042030	BC847B
7415	319801042030	BC847B
7440	933979290682	L2722
7441	319801044020	PDTA124ET
7442	319801042030	BC847B
7443	935034880112	SAA1310/N2
7446	935211440112	TDA5241
7451	310317855360	EPROM ASSY ACOP8-Ux
7452	932212786682	CY62256LL-70PC(CYPR) L
7461	310313887290	OPTO ASSY TCZT8299-PAER
7462	310313887290	OPTO ASSY TCZT8299-PAER
7464	932209789682	OPT CP TCRT5000L
7465	932209789682	OPT CP TCRT5000L
7466	932209791682	OPT CP TCST1030L
7502	933628640215	CHIP BC817/40
7504	319801042030	BC847B
7505	319801044120	PDTC124ET
7506	932212428682	STV6401
7508	319801044120	PDTC124ET
7510	319801044120	PDTC124ET
7511	933372950653	HEF4052BT
7512	932209259668	TL072 (ST00) R
7603	933589730215	BC856B
7604	319802043430	BC327-25
7605	933589560215	BC846B
7606	933589560215	BC846B
7607	319801042030	BC847B
7608	933628640215	CHIP BC817/40
7641	319801042150	BC857B
7642	319801042030	BC847B
7643	933628640215	CHIP BC817/40
7651	935262251557	TDA9616H/N2 Y
7701	933372960653	HEF4053BT
7702	319801044120	PDTC124ET
7703	319801042030	BC847B
7704	319801042150	BC857B
7705	935260611118	TDA9818T/V1 R
7705	935262113118	TDA9817T/V1 R
7706	319801042030	BC847B
7707	319801042030	BC847B
7760	935264081557	TDA9873HZ for German Stereo
7761	932214797668	MSP3415D-QG-B3
7761	932215069671	MSP3451G-QG-A1(MIAS) for Smart Sound only
7762	319801042030	BC847B
7801	933092111215	BFS20
7802	319801042150	BC857B
7803	932214339668	TS339CD (ST00)R
7804	933092111215	BFS20
7805	319801044020	PDTA124ET
7807	932211821682	TA1225N (TOSJ) L
7830	933984900682	LM339N ST
7831	319801042030	BC847B
7832	319801042030	BC847B
7851	932213621668	SDA5652-2X
7854	319801042150	BC857B
7855	319801042030	BC847B
7856	319801042150	BC857B
7871	932213702668	STV5348D SO28

RESISTORS

9051	319802190020	CHIP JUMPER
9512	319802190020	CHIP JUMPER
9525	319802190020	CHIP JUMPER
9701	319802190020	CHIP JUMPER

Display Control ADCP18

MISCELLANEOUS

1234	242212915676	SWI JOG-SHUT EVQWM7-001
1261	242254098328	CER RES 8MHZ EFOEC8004T4A
1262	242254300056	CRYSTAL 32.768kHz
1281	242212802921	SWITACT 1P 50MA 12V EVQPV
1282	242212802921	SWITACT 1P 50MA 12V EVQPV
1295	242212802921	SWITACT 1P 50MA 12V EVQPV
1920	242202514524	CONNECTOR 14P F1.25 FFC 0.3
1922	242202514515	CONNECTOR 6 PIN
1923	242202514535	CONNECTOR 6P F 1.25 FFC 0.3

CAPACITORS

2200	202002590011	SUPCAP SD 5V5 220M P80M20
2201	202001293647	ELCAP MS7 6V3 S 220U PM20
2202	319802321040	100 nF 25V
2203	319801701030	10 nF 50V
2221	319801701020	1 nF 50V
2225	319802922290	22 µF 16V
2230	319801701030	10 nF 50V
2231	319801724730	47 nF 50V
2250	202055295499	100 nF 50V
2262	319801601590	15 pF 50V
2263	319801601590	15 pF 50V

RESISTORS

3210	319801101010	100 R 0.17W
3211	319801101010	100 R 0.17W
3212	319802154720	4.7 k 0.1W
3213	319802152730	27 K 0.1W
3214	319802152730	27 K 0.1W
3215	319802154710	470 R 0.1W
3216	319802152730	27 K 0.1W
3217	319802152730	27 K 0.1W
3218	319802152730	27 K 0.1W
3219	319802152730	27 K 0.1W
3220	319801102210	220 R 0.17W
3221	319801101030	10 k 0.17W
3222	319802151020	1 k 0.1W
3223	319802151530	15 k 0.1W
3224	319802152220	2.2 k 0.1W
3226	319802152210	220 R 0.1W
3227	319802151030	10 k 0.1W
3228	319802151030	10 k 0.1W
3230	319802152220	2.2 k 0.1W
3231	319802152210	220 R 0.1W
3232	319802152210	220 R 0.1W
3233	319802152210	220 R 0.1W
3234	319802152210	220 R 0.1W
3235	319802151030	10 k 0.1W
3236	319802152210	220 R 0.1W
3237	319802154720	4.7 k 0.1W
3238	319802152710	270 R 0.1W
3240	319802151030	10 k 0.1W
3241	319802151030	10 k 0.1W
3246	319802151040	100 k 0.1W
3247	319802151040	100 k 0.1W
3250	319802151830	18 k 0.1W
3251	319801101010	100 R 0.17W
3252	319801101010	100 R 0.17W
3257	319801104780	4.7 R 0.17W
3258	319801104780	4.7 R 0.17W
3259	319801104780	4.7 R 0.17W
3269	319802151030	10 k 0.1W
3279	319802151030	10 k 0.1W
3280	319802151030	10 k 0.1W
3281	319802151820	1.8 k 0.1W
3282	319802154720	4.7 k 0.1W
3289	319802151030	10 k 0.1W
3295	319802153930	39 k 0.1W
3299	319802151030	10 k 0.1W
3900	319802190020	CHIP JUMPER
3901	319802190020	CHIP JUMPER
3902	319802190020	CHIP JUMPER
3906	319802190020	CHIP JUMPER
3907	319802190020	CHIP JUMPER
3908	319802190020	CHIP JUMPER
3909	319802190020	CHIP JUMPER
3910	319802190020	CHIP JUMPER
3911	319802190020	CHIP JUMPER
3912	319802190020	CHIP JUMPER
3921	319802190020	CHIP JUMPER
3925	319802190020	CHIP JUMPER
3927	319802190020	CHIP JUMPER
3931	319802190020	CHIP JUMPER

COILS

5200	242253597333	100 µH 10%
5201	242253594323	6.8 µH 5%

DIODES

6200	933624760133	BAT85
6250	319801021090	BZX79-C10

TRANSISTORS & IC's

7200	310316513100	TMP87CH70F AD0P1-1U
7202	310316500250	VACUUM FLUORESC. DISPLAY
7220	932211213687	IR REC TSOP1736(TEGO) L
7231	319801044120	PDTC124ET
7232	319801044120	PDTC124ET
7234	319801042150	BC857B
7235	319801042150	BC857B
7236	319801044020	PDTA124ET
7240	319801042150	BC857B
7241	319801042150	BC857B

⚠... Safety component, use only this type

Connector PCB ACP18, CABLES

MISCELLANEOUS

0010	310310416590	LED-SOCKET
1551	242212802921	SWITACT 1P 50MA 12V EVQPV
1929	242202514515	CONNECTOR 6 PIN
1980	242202514532	CONNECTOR 3 PIN
1981	310314027000	CABLTREE A 1POL BUPI-1957
1982	242202514536	CONNECTOR 7P F 1.25 FFC 0.3
1985	310310024260	CINCH SOCKET 3 FOLD
1989	242202604436	CON HSJ1452

CAPACITORS

2551	319801604710	470 pF 50V
2552	319801721050	1 µF 16V
2553	319801701040	100 nF 16V
2554	319801604710	470 pF 50V
2555	319801721050	1 µF 16V
2556	319801701040	100 nF 16V

RESISTORS

3551	212255100008	VDR MAX 21V
3552	319802151050	1 M 0.1W
3553	319802156840	680 k 0.1W
3554	319802154740	470 k 0.1W
3555	319802154720	4.7 k 0.1W
3556	212255100008	VDR MAX 21V
3557	319802151050	1 M 0.1W
3558	319802156840	680 k 0.1W
3559	319802154740	470 k 0.1W
3560	319802154720	4.7 k 0.1W
3561	319802157590	75 R 0.1W
3562	319801101510	150 R 0.17W
3564	319802151030	10 k 0.1W
3900	319802190020	CHIP JUMPER
4507	319802190020	CHIP JUMPER

COILS

5551	242253594339	150 µH
5552	319801811010	100 µH
5553	242253594339	150 µH

DIODES

6551	319801021290	BZX79-C12
6552	319801021290	BZX79-C12
6553	319801026880	BZX79-C6V8
6554	319801026880	BZX79-C6V8
6555	934025530115	BAS216
6556	934025530115	BAS216
6557	319801026880	BZX79-C6V8
6558	319801026880	BZX79-C6V8
6570	933845770682	LED RED TLHR4205

TRANSISTORS

7551	319801042040	BC847C
7552	319801042040	BC847C

CABLES

	4822 320 50377	ANTENNA cable
	4822 321 63002	SCART cable
⚠	4822 321 10249	SBC1201 MAINS CABLE
⚠	4822 321 10886	MAINS CABLE UK
	4822 320 50377	CONNECT. CABLE PAL
	4822 321 63002	SCART CABLE(PROJ.50)
	4822 321 62401	AUDIO-CABLE
8001	4822 320 11889	FFC TD1-1961
8003	4822 320 12453	FFC 3POL TD3-1947
8004	4822 320 12454	FFC 6POL TD4-1948
8011	4822 320 12455	FFC 7POL 1982-1956
8012	4822 320 12453	FFC 3POL TD3-1947
8013	4822 320 12461	FFC 1961-1102
8014	4822 320 12456	FFC 3POL 1929-1922
8018	4822 320 12458	FFC 17POL 1915-1942
8020	4822 320 12459	FFC 14POL 1944-1920
8024	3103 140 27540	FFC 6POL 1923-keyPCB

REPAIR KITS

4822 310 11237	POWER SUPPLY REPAIR KIT

⚠... Safety component, use only this type