

General Information

Also Covers
Bush 2027 T
Goodmans GTV 211
PT 9601 Chassis

X-Ray Radiation Precaution

- 1. Excessive high voltage can be produce potentially hazardous X-RAY radiation. To avoid such hazard, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is 25KV at zero beam current (minimum brightness) under 220V AC power source. The high voltage must not under any circumstance, exceed 30KV. It is recommended the reading of the high voltage be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter.
- 2. The primary source of X-RAY radiation in this TV receiver is the picture tube. For continued X-RAY radiation protection, the replacement tube must be exactly the same type tube as specified in the part list.

Adjustments

- 1. **System Voltage (+B) Adjustment:**
 - Before switching on TV, all potentiometers should be adjusted at medium level. Then TV is switched on;
 - Adjust all of the analog parameters to minimum with RC
 - Adjust P1 trimpot until find +115 V on the cathode of D2 diode
- 2. **AFT Adjustment:**
 - Place a balloon coil (300 Ohm dc resistance) parallel to L104
 - Apply 80 dB uV 38.9 MHz (39.5 MHz for I) signal via balloon coil
 - Connect a voltmeter to aft pin (pin 9) of IC301
 - Adjust T101 coil until the voltage of this pin being 2.5 V dc
- 3. **Adjustment of G2:**
 - Apply Philips Test pattern
 - Adjust all of the analog parameters to minimum with RC
 - Adjust G2 trimpot until seeing two bars on gray scale
- 4. **Horizontal and Vertical Adjustment:**
 - Apply Philips Test pattern signal
 - Center the picture horizontally while picture shifting to right and left with P101,
 - Make vertical amplitude adjustment with P602 until seeing top and lower lines of picture will be seen.
 - Center the picture with P601
- 5. **AGC Adjustment:**
 - Apply Philips Test Pattern whose amplitude is 60 dB uV to the rf input
 - Adjust P102 until find a picture without snowy

- 6. **Focus Adjustment:**
 - Apply Cross-Hatch Pattern signal
 - Find the optimum concentration point between H and V intersection in the middle of screen.

- 7. **White Balance Adjustment:**
 - Apply Philips Test Pattern signal
 - Adjust all of the trimpots on CRT board to

- medium level
- Adjust color, contrast, brightness to minimum by RC
- Adjust G2
- Apply white pattern, settle in the probe of color analyzer to screen
- Increase brightness until geting Y=10 nits
- Adjust x=270 - 276 nits y=270 - 276 nits via “VR201, VR203, VR205”
- Increase brightness and contrast until Y=90 - 100 nits
- Adjust x, y to same values via “VR202 and VR204”
- Check white balance at high and low contrast level. Again make adjustment if it’s necessary.

IC Data, Pin Functions and Voltages

Video Processing Unit With TDA8362

Video and time base is based on the TDA 8362 Multistandard TV Processor(Pal Decoder),TDA 4665 Baseband Delay Line and TDA8395 Secam Decoder.

The Features of this Concept:

- Multistandard vision IF circuit (positive and negative modulation)
- Multistandard FM sound demodulator (4.5 MHz to 6.5 MHz)
- External Video and Audio Switches
- Integrated chrominance traps and baseband filters
- Integrated luminance delay line
- RGB control circuit with linear RGB inputs
- Horizontal synchronization with two loops and alignment-free horizontal oscillator without external components.
- Vertical count-down circuit (50-60 Hz) and vertical preamplifier
- Low dissipation
- Only one adjustment (vision IF demodulator)

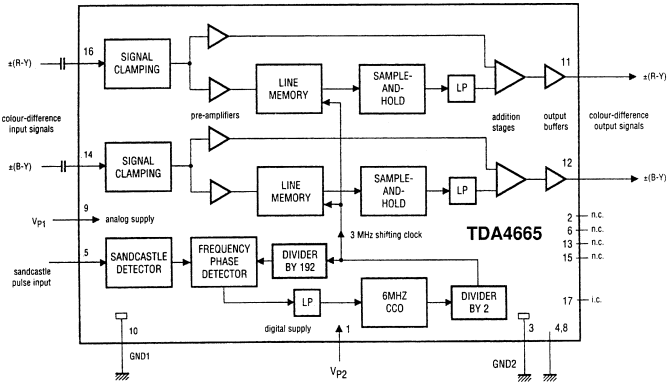
TDA 4665

The TDA4665 is an integrated baseband delay line circuit. It provides a delay of 64 us for the color difference signals. (R-Y) and (B-Y), in multi-standard TVs.

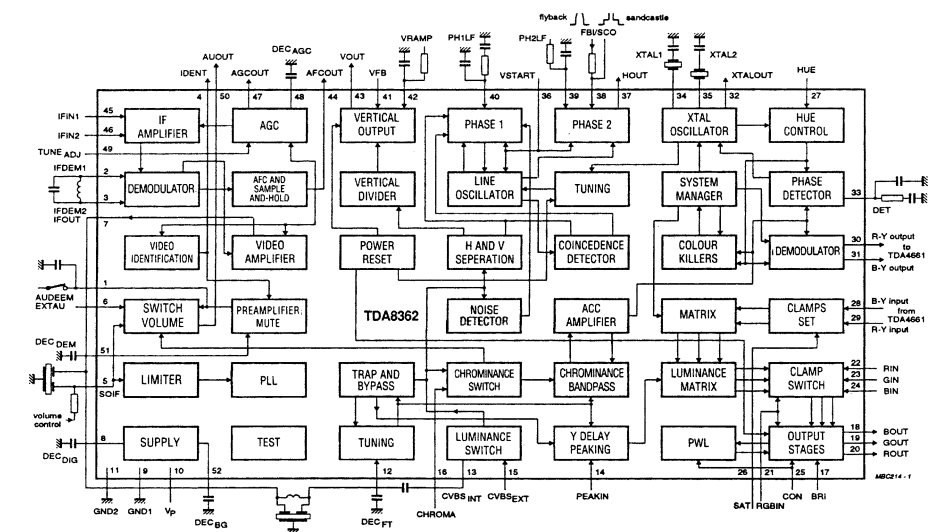
PINNING	PIN VOLTAGE
1 Digital supply voltage	5V
2 Not connected	
3 Digital ground	0V
4 Test input	0V
5 Sandcastle input	-
6 Not connected	
7 Test input	-
8 Test input	-
9 Analog supply voltage	5V
10 Analog ground	-
11 -(R-Y)output	3.25V
12 -(B-Y)output	3.25V
13 Reference current	-
14 -(B-Y) input	1.35V
15 Not connected	-
16 -(R-Y)input	1.35V

PINNING

PIN	PIN VOLTAGE
1 Audio deemphasis and +1- mod.switch	3V and 0.3Vrms (FM Audio)
2 IF-demodulator tuned circuit	6V
3 IF-demodulator tuned circuit	6V
4 Video identification output	5V
5 Sound IF plus volume control	0.5V - 4V
6 External audio input	4V
7 IF video output	2.5V and 2.0 Vpp (Video)
8 Decoupling digital supply	8V
9 Ground	-
10 Positive supply (8V)	8V
11 Ground	-
12 Decoupling filter tuning	3.25V
13 Internal CVBS input	4.25V
14 Peaking input	4V
15 External CVBS input	3.5V
16 Chroma + A/V switch input	0V(TV)-8V (AV)
17 Brightness control input	1V - 3.5V
18 B-output	2.5V - 4Vpp
19 G-output	2.5V - 4Vpp
20 R-output	2.5V - 4Vpp
21 RGB-insertion and blanking	0V TV and 1 .5V RGB mode
22 R-input for insertion	3.3V and 0.7 Vpp
23 G-input for insertion	3.3V and 0.7 Vpp
24 B-input for insertion	3.3V and 0.7 Vpp
25 Contrast control input	0V - 3V
26 Saturation control input	0V - 3V
27 Hue control input (or chroma out)	6V
28 B-Y input signal	4V
29 R-Y input signal	4V
30 R-Y output signal	1.5V
31 B-Y output signal	1.5V
32 4.43MHz output for TDA8395	1 .6V(PAL) 4.5V(SEC)
33 Loop filter burst phase detector	4.5V
34 3.58 MHz X-tal connection	3V
35 4.43MHz X-tal connection	2V
36 Start horizontal oscillator	8V
37 Horizontal output	0.6Vp-p 15.6 KHz
38 Flyback input / sandcastle output	6Vpp
39 G2 loop filter	3V
40 G1 loop filter	375V
41 Vertical feedback input	2.5V and 1.0Vpp
42 Vertical ramp generator	2.5V and 1.5Vpp
43 Vertical output	2.5V
44 AFC output	
45 IF-input	4V
46 IF-input	4V
47 Tuner AGC output	
48 AGC decoupling capacitor	4V
49 Tuner take-over adjustment	-
50 Audio output	3.4V
51 Decoupling sound demodulator	4.5V
52 Decoupling bandgap supply	6.5V



Block Diagram



Microcontroller Unit

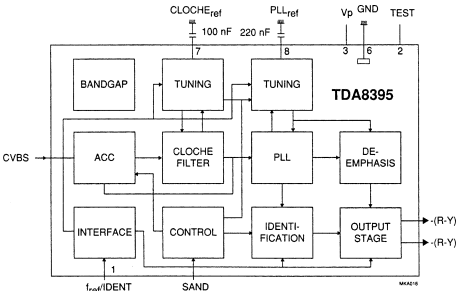
CTV 352 S(for stereo) and CTV 322 (for mono) are a voltage synthesis tuning system with on screen display OSD of all relevant control function. Analog picture settings are controlled by 4 on-chip digital to analog converters. Sound volume can be controlled by the fifth on-chip digital to analog converter in mono only system. Full sound (volume, bass, treble, balance) in German Stereo and Nicam configuration and Teletext can be controlled via the 120 bus using a sound processor and teletext decoder. This controllers can control up to two scart plugs.

PINNING	PIN VOLTAGE
1 Tuning voltage control output	5V - 0V
2 Volume control output	0 - 5V
3 Brightness control output	0 - 5V
4 Color control output	0 - 5V
5 Contrast or hue control output	0 - 5V
6 Tone, balance or hue control output	
7 Band-switch 0-output	
8 Band-switch 1-output	
9 Analogue AFC sense input	2-4V
10 Dual/Non Dual language sound input	-
11 VTR time constant control output	-
12 Ext/mt. audio/video source control output	5V (TV) - 0V(AV)
13 Keyboard scan line input/output	-
14 Keyboard scan line input/output	-
15 Keyboard scan line input/output	-
16 Keyboard scan line input/output	-
17 Keyboard scan line input/output	-
18 Keyboard scan line input/output	-
19 Keyboard scan line input/output	-
20 System mode strobe output	5V
21 Ground supply input	-
22 OSD red output	4.5Vpp
23 OSD green output	4.5Vpp
24 OSD blue output	4.5Vpp
25 OSD fast blanking output	4.5Vpp
26 Horizontal synchronization input	5Vpp HF
27 Vertical synchronization input	5Vpp HF
28 LC oscillator input for OSD	5V
29 LC oscillator output for OSD	5V
30 Test input; connected to ground	-
31 Oscillator input; 10MHz crystal	-
32 Oscillator output	2V
33 Power-on reset input/output	5V
34 Horizontal coincidence input	4.5V
35 RC-5 remote control input	4V
36 Mono/Stereo or language 1/2 output	
37 Sound effect control output	
38 System select output	
39 IC-bus clock signal output	5V & 5Vpp
40 IC-bus data signal output	5V & 5Vpp
41 Standby/On control input/out	0V (ST-BY) 5V (Open)
42 +5V supply voltage input	5V

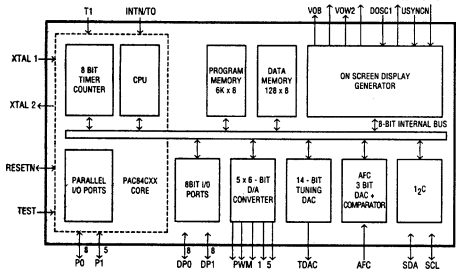
TDA 8395

The TDA8395 is a self calibrating fully integrated SECAM decoder.

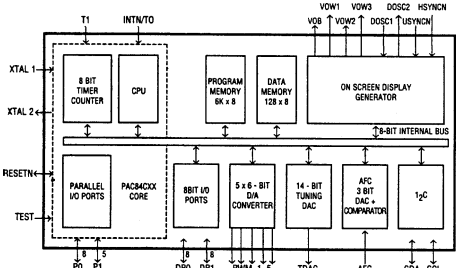
PINNING	PIN VOLTAGE
1 Reference frequency input	-
2 Test output	-
3 Positive supply voltage	8V
4 Not connected	-
5 Not connected	-
6 Ground	0V
7 Cloche reference filter	-
8 PLL reference	-
9 -(R-Y) output	1V
10 -(B-Y) output	1.3V
11 Not connected	-
12 Not connected	-
13 Not connected	-
14 Not connected	-
15 Sandcastle pulse input	6 Vpp
16 Video input	-



Block diagram



Block diagram of PCA84C641



Block diagram of PCA84C841

IC Data, Pin Functions and Voltages Cont'd

Power Supply With TDA4605

The IC TDA4605 controls the MOS power transistor and performs all necessary regulation and monitoring functions in free running flyback converters.

- Features
- Overload protection
 - Burst operation under short circuit conditions
 - Loop error protection
 - Switch-off if line voltage is too low
 - Line voltage compensation of overload point
 - Soft start for quite start up
 - Chip over temperature protection
 - On-chip parasitic transformer oscillation suppression circuit

Pin Definitions and Functions

Pin No. 1 and Function
Information Input Concerning Secondary Voltage

By comparing the regulating voltage - obtained from the regulating winding of the transformer - with the internal reference voltage, the output impulse width on pin 5 is adjusted to the load of the secondary side (normal, overload, short-circuit, no load).

Pin No. 2 and Function
Information Input Regarding the Primary Current
The primary current rise in the primary winding is simulated at pin 2 as a voltage rise by means of external RC-element. When a voltage level is reached thats derived from the regulating voltage at pin 1, the output impulse at pin 5 is terminated. The RC-element serves to set the maximum power at the overload point set.

Pin No. 3 and Function
Input for Primary Voltage Monitoring
In the normal operation V3 is moving between the thresholds V3H and V3L (V3H > V3 > V3L)- V3 <V3L: SMPS is switched OFF (line voltage too low). V3 > V3H Compensation of the overload point regulation (controlled by pin 2) starts at V3H :V3L= 1.7.

Pin No. 4 and Function
Ground

Pin No. 5 and Function
Output
Push-pull output provides ±1 A for rapid charge and discharge of the gate capacitance of thb power MOS-transistor.

Pin No. 6 and Function
Supply Voltage Input
A stable internal reference voltage VREF is derived from the supply voltage also the switching thresholds V6A, V6E, V6 max and V6 mm for the supply voltage detector. If V6 > V6E then VREF is switched on and switched off when V6 <V6A - In addition the logic is only enable for V6 mm <V6 < V6 max-

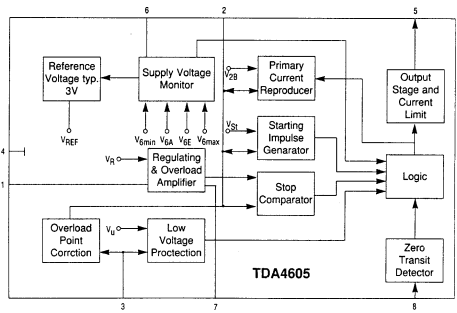
Pin No. 7 and Function
Input for Soft-Start
Start-up will begin with short pulses by connect-ing a capacitor from pin 7 to ground.

Pin No. 8 and Function
Input for the Oscillation Feedback
After starting oscillation, every zero transition of the feedback voltage (falling edge) through zero (failing edge) triggers an output pulse at pin 5. The trigger threshold is at + 50 mV typical.

TUNER
TECC2989VA1 SB and TEMIC KHZ 3303 (for 3 bands) and TECC2985VA1 4B (for single band) VST tuners are used with a band switch circuit LA7910.

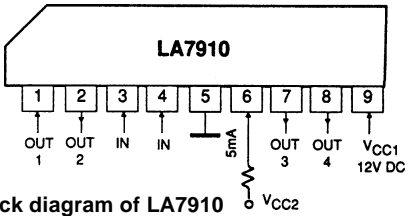
TDA 4605-3

PINNING	PIN VOLTAGE	
	ST-BY	NORM.
1 Information Input Concerning Secondary Voltage	0.4V	0.4V
2 Information Input Regarding the Primary Current	1V	1.2V
3 Input for Primary Voltage Monitor	2.1V	2V
4 Ground	0V	0V
5 Output	0.8V	8V (10Vpp)
6 Supply voltage Input	12V	12.8V
7 Input for Soft-Start and Integrator Circuit	1.1V	1.9V
8 Input for the Feedback of the Oscillator	0.3V	0.4V



LA 7910

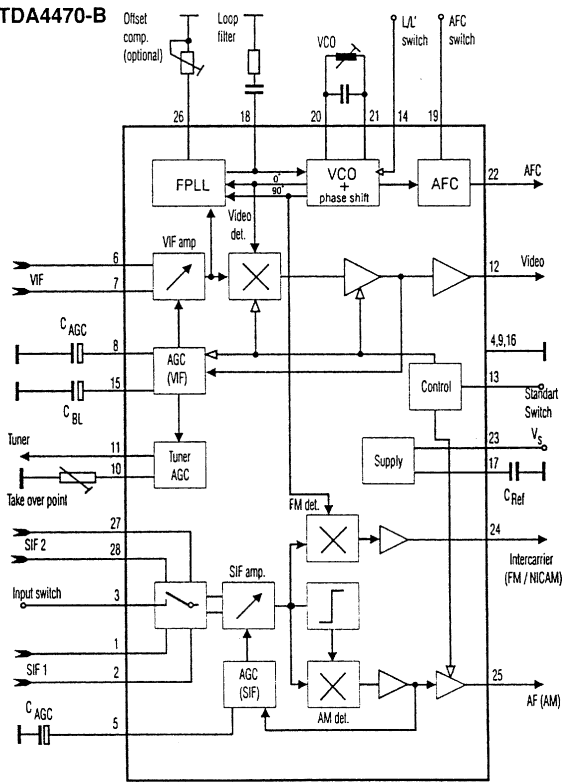
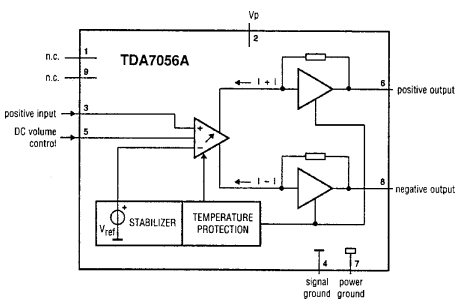
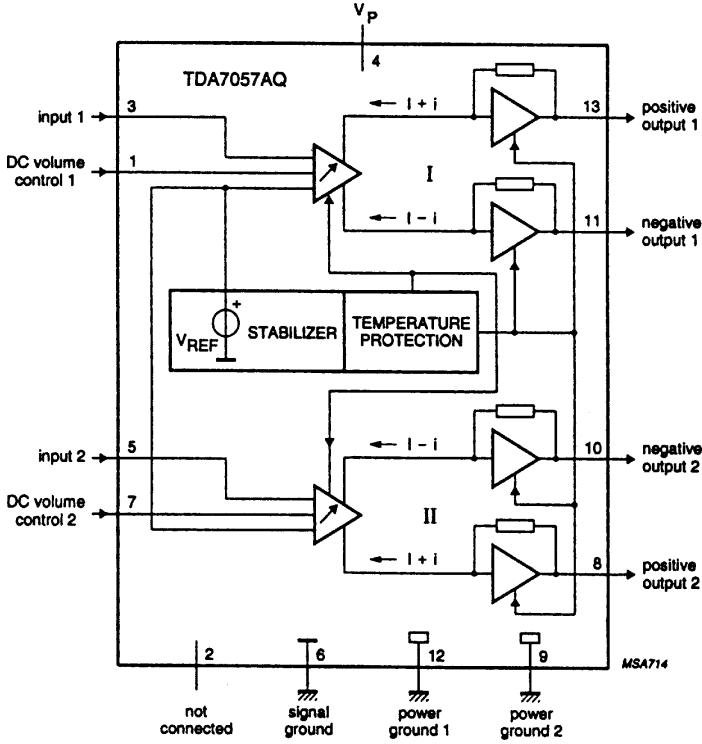
PINNING	PIN VOLTAGE		
	VHF1	VHF3	UHF
1 Output	12	0	0
2 Output	0	12	0
3 Input	0	5V	0
4 Input	0	0	5V
5 Ground	-	-	-
6 Supply voltage (18V)	13.5	13.5	13.5
7 Output	0	0	12
8 Output	0	0	0
9 Supply voltage (12V DC)	12	12	12



Block diagram of LA7910

Audio Output Amplifiers
TDA 7056A Audio amplifier is used on mono TV sets. Output is 4 W RMS on 16 Ohms speaker at 10% THD.
On stereo models TDA 7057AQ is used Outputs are 2X4 W RMS on 8 Ohms speakers at 10 % THD.

PINNING	PIN VOLTAGE	
	DC	AC
1	DC volume control 1	1.0V
2	Not connected	-
3	Voltage input 1	-
4	Positive supply Voltage	12.5
5	Voltage input 2	1.5Vpp
6	Signal ground	-
7	DC volume control 2	1.0V
8	Positive output 2	-
9	Power ground 2	-
10	Negative output 2	-
11	Negative output 1	-
12	Powerground	-
13	Positive output 1	-



PINNING	PIN VOLTAGE	
	DC	AC
1	Not connected	-
2	Positive supply voltage	12.5V
3	Voltage input	1.0Vpp
4	Signal ground	-
5	DC volume control	1.0V
6	Positive output	-
7	Power ground	-
8	Negative output	-
9	Not connected	-

(See Block Diagram)

Sound IF Circuit

On L system, TDA 9830 is used as AM Demodulator on mono TV sets, TDA 4470B is used for Nicam sound intercarrier and AM Demodulator on stereo TV sets with suitable SAW filters.
On BG and I systems, TDA 3845 is used for sound intercarrier with a SAW filter on Nicam TV sets.
On German Stereo models, TBA 120U is used as FM demodulator for stereo sound carrier.

TDA4470B
The TDA4470B is an integrated bipolar circuit for multistandard video/sound IF signal processing in TV/VCR and multimedya applications.

- Features
- 5 V supply voltage, low power consumption
 - Active carrier generation by FPLL principle for true synchronous demodulation
 - Very linear video demodulation, good pulse response and excellent intermodulation figures
 - VCO circuit is operating on picture carrier frequency, the VCO frequency is swithcable for the L' mode
 - Alignment free AFC without external reference circuit, polarity of the AFC curve is switchable
 - VIF AGC for negative modulated signals and for positive modulation
 - Tuner AGC with adjustable take over point
 - Alignment free quasi parallel sound (QPS) mixer for FM/NICAM sound IF signals
 - Intercarrier output signals is gain controlled
 - Complete alignment free AM demodulator with gain controlled AF output
 - Separate SIF AGC with average detection
 - Two independent SIF inputs

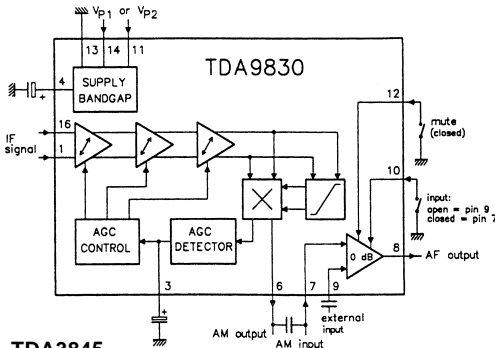
Parallel operation of the AM demodulator and QPS mixer (for NICAM L stereo sound)

PINNING	PIN VOLTAGE	
	DC	AC
1	SIFI input (symmetrical)	-
2	SIFI input (symmetrical)	-
3	Input selector switch	0V - 5V
4	Ground	0V
5	SIF-AGC (time constant)	-
6	VIF input (symmetrical)	-
7	VIF input (symmetrical)	-
8	VIF-AGC (time constant)	-
10	Take over point, tuner AGC	-
11	Tuner AGC output current	-
12	Video output	-
13	Standard switch	0V-5V
14	L' switch	0V-5V
15	Black level capacitor	-
16	Ground	0V
17	Internal reference voltage	-
18	Loop filter	-
19	AEC switch	-
20	VOC circuit	-
21	VCO circuit	-
22	AFO output	-
23	Supply voltage	-
24	Intercarrier output	-
25	AE output - AM sound	-
26	Offset compensation	-
27	SIF2 input (symmetrical)	-
28	SIF2 input (symmetrical)	-

TDA 9830
The TDA9830, is a monolithic integrated circuit, is designed for AM sound demodulation used in L and V standard. The IC provides an audio source selector and also mute switch.

- Features
- Adjustment free wideband synchronous AM demodulator
 - Audio source mute switch
 - Audio level according EN50049
 - 5V to 8V power supply or 12V alternative
 - Low power consumption

PINNING	PIN VOLTAGE	
	DC	AC
1	Sound IF differential input signal	-
2	Not connected	-
3	AGC capacitor	-
4	REF voltage filtering capacitor	-
5	Not connected	-
6	AM demodulator output	0.5Vpp
7	Input signal (from AM) to audio switch	0.5Vpp
8	Output signal from audio switch	0.5Vpp
9	Input signal (from external) to audio switch	0V (int)
		-5(ext)
10	Switch input select control	12V
11	Supply voltage +12V (alternative)	-
12	Mute control	-
13	Ground (0V)	0V
14	Supply voltage +5 to +8V	-
15	Not connected	-
16	Sound IF liffereential input signal	-



TDA3845

The TDA3845 is a quasi split -sound IF circuit which is designed to provide high performance television FM/AM sound.

- Features
- Gain controlled wide band IF amplifier
 - High precision internal 90' phase shifter for quadrature demodulator
 - Amplitude detector for gain control which operates as a peak detector for FM sound and as a mean level detector for AM sound (switchable)
 - In-phase wideband synchronous demodulator for AM detection
 - Stabilizer circuit for ripple rejection and constant output signals
 - ESD protection for all pins
 - Suitable for all FM standards and L as well as L- accent standard
 - NICAM compatible

Continues next page....

IC Data, Pin Functions and Voltages Cont'd

TDA 3845

PINNING	PIN VOLTAGE
1 IF amplifier input 2	-
2 Not connected	-
3 AGC control capacitor	-
4 Optional capacitor (see note 10 to the characteristics)	-
5 Peak/mean detector capacitor	-
6 AM output	1.0Vpp
7 EM/AM switch	0Vpp
8 LC reference circuit for the picture carrier	-
9 LC reference circuit for the picture carrier	-
10 Not connected	-
11 Positive supply voltage 2 (+12V); note 1	12V
12 Intercarrier output	-
13 Ground(0V)	0V
14 Positive supply voltage 1 (+5V)	-
15 Not connected	-
16 IF amplifier input 1	-

TBA120U

The TBA120U is an IF amplifier with a symmetrical FM demodulator and an AF amplifier with adjustable output voltage.

TBA 120U

PINNING	PIN VOLTAGE
1 Ground	0V
2 Mute	-
3 Input resistance	-
4 Supply current and the reference	-
5 Adjustment voltage	-
6 IF output voltage	-
7 Tank to reference	-
8 Adjustable output	-
9 Tank to reference	-
10 IF output voltage	-
11 Positive supply	12V
12 De-emphasize out	0.5Vpp
13 SIF input	-
14 SIF input	-

TELETEXT PART

Simple text stage consists of SAA 5254 Teletext decoder. This IC is controlled via 120 bus. Basically fastext stage consists two IC's, STV 5346 Teletext decoder and CTV 974 Fastext controller with 120 bus interface. For List Mode a 2K EEPROM (PCF8582) can be added.

SAA 5254

PINNING	PIN VOLTAGE
1 + 5V supply	-
2 27 MHz crystal oscillator output	-
3 27 MHz crystal oscillator input	-
4 0V crystal oscillator ground	0V
5 0V ground	0V
6 Positive reference voltage for the ADC.	5V
7 Video black level storage pin, connected to ground via a 100 nF capacitor	-
8 Composite video input pin	-
9 Reference current input pin, connected to ground via a 27kohm resistor	-
10 +5V supply	5V
11 STTV/FB/FFB polarity selection pin	-
12 Sync to TV output pin/line flyback input pin. Function controlled by an internal register bit (scan sync mode)	-
13 PLL time constant switch/field flyback input pin. Function controlled by an internal register bit (scan sync mode)	-
14 0V ground	0V
15 Dot rate character output - RED color info.	-
16 Dot rate character output - GREEN color info.	-
17 Dot rate character output - BLUE color info.	-
18 DC input voltage to define the output high level	-

on the RGB pins	
19 Dot rate fast blanking output	-
20 Ground	0V
21 Programmable output to provide contrast reduction of the TV picture formixed text and picture displays or when viewing newflash/ subtitle pages open drain output	-
22 25Hz output synchronized with the CVBS input's field sync pulses to produce a non-interlaced display adjustment of the vertical deflection currents	-
23 Dot rate character output of teletxt foreground colour information; open drain output	-
24 Serial clock input for the I ² C bus. It can still be driven during power-down of the device	5Vpp
25 Serial data port for the I ² C bus open drain output. It can still be driven during power-down of the device	5Vpp
26 To 40 internally connected. Must be left open-circuit in application	-

PCF84C81 (CTV 974)

PINNING		PIN VOLTAGE	
		With Text	Without Text
1	4-bit I/O Port Bit 2 (P2.2)	5V	5V
2	4-bit I/O Port Bit 3 (P2.3)	4.4V	4.4V
3	Bidirectional Clock for Serial I/O	4.4V	4.4V
4	8-bit I/O Port Bit 0 (P0.0)	5V	5V
5	8-bit I/O Port Bit 1 (P0.1)	5V	5V
6	8-bit I/O Port Bit 2 (P0.2)	0V	0V
7	8-bit I/O Port Bit 3 (P0.3)	4.18V	0V
8	8-bit I/O Port Bit 4 (P0.4)	5V	5V
9	8-bit I/O Port Bit 5 (P0.5)	0V	0V
10	8-bit I/O Port Bit 6 (P0.6)	5V	5V
11	8-bit I/O Port Bit 7 (P0.7)	0V	0V
12	Interrupt input / Test Input 0	0.2V	0V
13	Test Input 1	0.2V	0V
14	Ground	0V	0V
15	Oscillator Input	2.46V	2.46V
16	Oscillator Output	2.46V	2.46V
17	Reset Input	5V	0V
18	8-bit I/O Port Bit 0 (P1.0)	5V	5V
19	8-bit I/O Port Bit 1 (P1.1)	5V	5V
20	8-bit I/O Port Bit 2 (P1.2)	0V	5V
21	8-bit I/O Port Bit 3 (P1.3)	0V	0V
22	8-bit I/O Port Bit 4 (P1.4)	5V	5V
23	8-bit I/O Port Bit 5 (P1.5)	0V	0V
24	8-bit I/O Port Bit 6 (P1.6)	5V	5V
25	8-bit I/O Port Bit 7 (P1.7)	0V	0V
26	4-bit I/O Port Bit 0 (P2.0)	5V	5V
27	4-bit I/O Port Bit 1 (P2.1)	-	-

STV 5346A

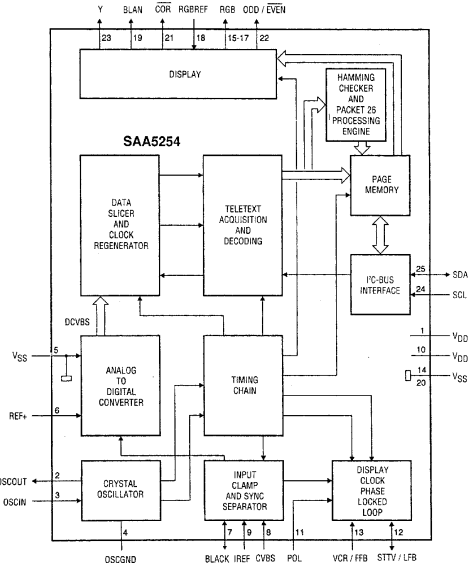
PINNING	
1	Composite Video Signal Input through Coupling Capacitor
2	Master/Slave Selection Mode
3	+5V
4	STTV/LFB/FFB Polarity Selection
5	Composite Sync Output.Line Flyback Input
6	Field Flyback Input
7	Digital Ground
8	Video Red Signal
9	Video Green Signal
10	Video Blue Signal
11	DC Voltage to define RGB High Level
12	Fast Blanking Output TTL Level
13	Open Drain Contrast Reduction Output
14	25Hz Output Field synchronized for non-interlaced display
15	Open Drain Foreground Information Output
16	Serial Clock Input
17	Serial Data Input/Out ut
18	To be connected to VssD
19	To be connected to VssD
20	To be connected to VssD
21	PLL Time Constant Selection
22	+5V
23	Oscillator Output 13.875Mhz
24	Oscillator Output 13.875 Mhz
25	Oscillator Ground
26	Analog Ground
27	Grounded to VssA
28	To connect Black Level Storage Capacitor

Stereo Part

TDA 9840 is used as German Stereo decoder and SAA 7283 is used Nicam decoder via I²C bus interface. On outputs of G/S and Nicam decoder IC's, TDA 8425 sound processor is used . Also this IC controls via I²C bus.

TDA 9840

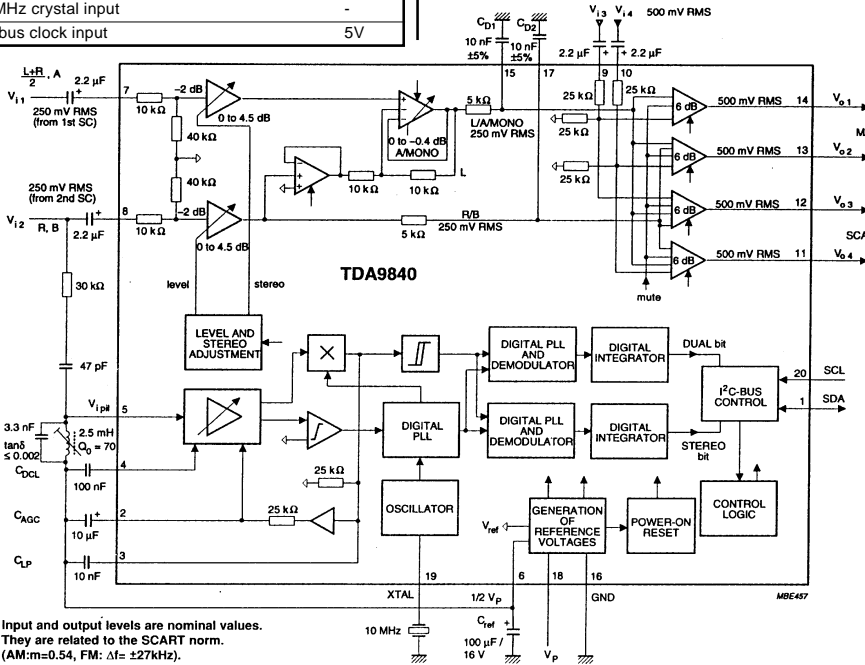
PINNING	PIN VOLTAGE
1 PC-bus data input/output	5 Vpp
2 AGC capacitor of pilot frequency amplifier	-
3 Identification low-pass capacitor	-
4 DC loop capacitor	-
5 Pilot frequency input input voltage	-
6 Capacitor of reference voltage (1/2 Vp)	2.5V
7 AF input signal Vi ₁ (from 1st sound carrier)	0.25Vpp
8 AF input signal Vi ₂ (from 2nd sound carrier)	0.25Vpp
9 AF input signal Vi ₃ (NICAM or AM sound (standard L)	-
10 AF input signal Vi ₄ (NICAM or AM)	-
11 AF output signal Vo ₁ (SCART)	1.0 Vpp
12 AF output signal Vo ₂ (SCART)	1.0 Vpp
13 AF output signal Vo ₂ (main)	0.5 Vpp
14 AF output signal Vo ₃ (main)	0.5 Vpp
15 50 us de-emphasis capacitor of AF Channel 1	-
16 Ground	0V
17 50 us de-emphasis capacitor of AF Channel 2	-
18 Supply voltage (+5 to +8V)	5V
19 10 MHz crystal input	-
20 PC-bus clock input	5V



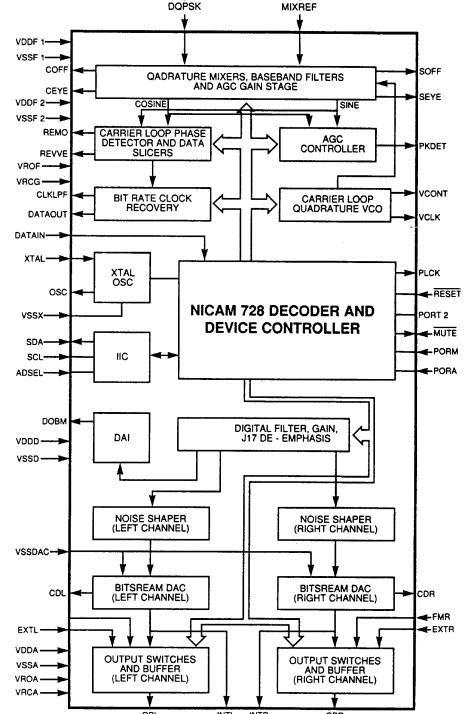
SAA 7283

PINNING	PIN VOLTAGE
1 Mute in ut	5V
2 Digital audio interference output	2.54V
3 Audio VDD	5V
4 Audio V-SS	0V
5 Internal audio reference voltage buffer	2.5V
6 External analogue input (Right)	0.3V
7 Fm sound input (Right)	2.5V
8 Analogue output (Right)	2.5V
9 Not connected	0V
10 Not connected	0V
11 Internal audio reference voltage buffer output	2.5V
12 Quit VSS to DACs	0V
13 Not connected	0V
14 Not connected	0V
15 Analogue audio output (Left)	2.5V
16 FM sound input (Left)	2.5V
17 External analogue input (Left)	0.4V
18 Power-on reset mute	5V
19 Power-on reset audio select	-
20 Carrier loop filter connection	-
21 Carrier loop filter output	-
22 Sine channel eve pattern output	-
23 Sine channel offset compensator capacitor	2.5V

Bipolar TV/VTR Stereo Decoder Block Diagram



PINNING	
24 Demodulator Vss	0V
25 VCO control voltage input	2.5V
26 Demodulator	5.8V
27 VCO control voltage input	5V
28 Mixer voltage reference	2.4V
29 DQPSK input	2.5V
30 Cosine channel offset compensator capacitor	2.5V
31 Cosine channel eye pattern output	2.5V
32 AGC peak detector storage capacitor	2.5V
33 Internal demodulator reference voltage buffered output	2.5V
34 Internal demodulator reference current output	2.5V
35 Internal demodulator reference voltage unbuffered output	2.5V
36 Demodulator V _{DD}	2.5V
37 Demodulator V _{SS}	5V
38 Not connected	0V
39 Clock loop phase comparator output	2V
40 8.192MHz X-tal input	3.1V
41 8.192MHz X-tal output	2.5V
42 X-tal oscillator Vss	0V
43 Data input (Serial - 728 kbits/s)	2.5V
44 Data output (Serial - 728 kbits/s)	0V
45 Clock output (728khz)	0.5V
46 Digital V _{SS}	5V
47 Digital V _{DD}	5V
48 Data output (Serial - 728 kbits/s)	2.5V
49 Clock input (for I ² C)	5Vpp
50 Data input/output (for I ² C)	5Vpp
51 I ² C address bit 0 input	0V
52 I ² C bus bit (controlled from PORT2)	5V



TDA 8425

PINNING	PIN VOLTAGE
1 Input 2 (Left)	5.83V
2 External decouplage capacitor (VCAP)	11.66V
3 Input 2 (Right)	5.84V
4 Supply voltage	11.76V
5 Ground	0V
6 Bass (Right)	5.84V
7 Bass (Right)	5.85V
8 Treble (Right)	5.85V
9 Output (Right)	5.85V
10 Ground	0V
11 Voltage Range	4.3V
12 Voltage Range	4.3V
13 Output (Left)	5.85V
14 Treble (Left)	5.85V
15 Bass (Left)	5.85V
16 Bass (Left)	5.84V
17 External capacitors 2	5.84V
18 Input 1 (left)	5.83V
19 External capacitor 1	5.83V
20 Input (Right)	5.83V

IC Data, Pin Functions and Voltages Cont'd

Vertical Deflection Circuit With TDA3653B

The TDA3G53B is a vertical deflection output circuit for drive of various deflection systems with current up to 1.5 A peak to peak.

- Features
- Driver
 - Output Stage
 - Thermal Protection
 - Flyback Generator
 - Voltage Stabilizer
 - Guard Circuit

TDA 3653B

PINNING	PIN VOLTAGE
1 Output Stage Driver Input	1.2V and 2Vpp
2 Ground	
3 Switching Circuit Input	1.2V and 2Vpp
4 Output Stage Ground	
5. Output Voltage	13V and 45Vpp
6 Supply Voltage for the Output Stage	26V
7 DC Voltage produced by the Guard Circuit	-
8 Flyback Generator Output	8V
9 Supply Voltage	26V

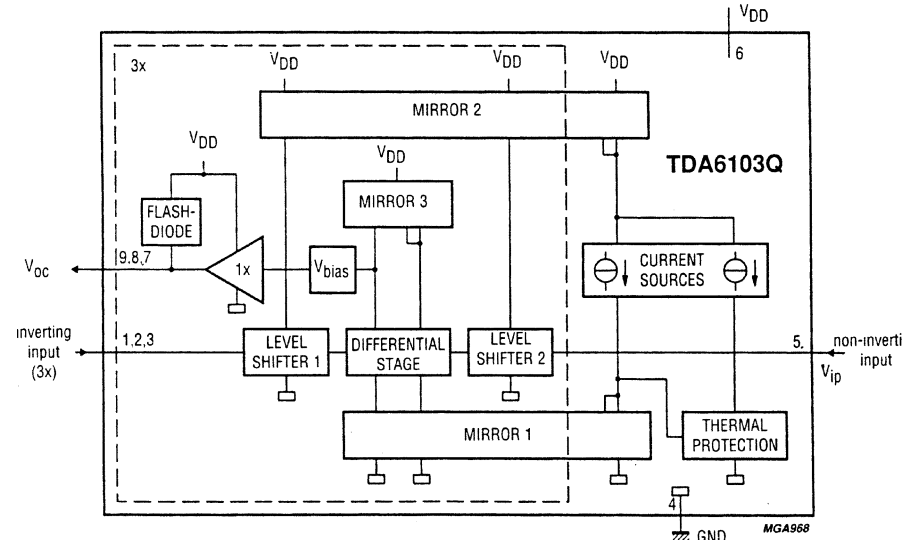
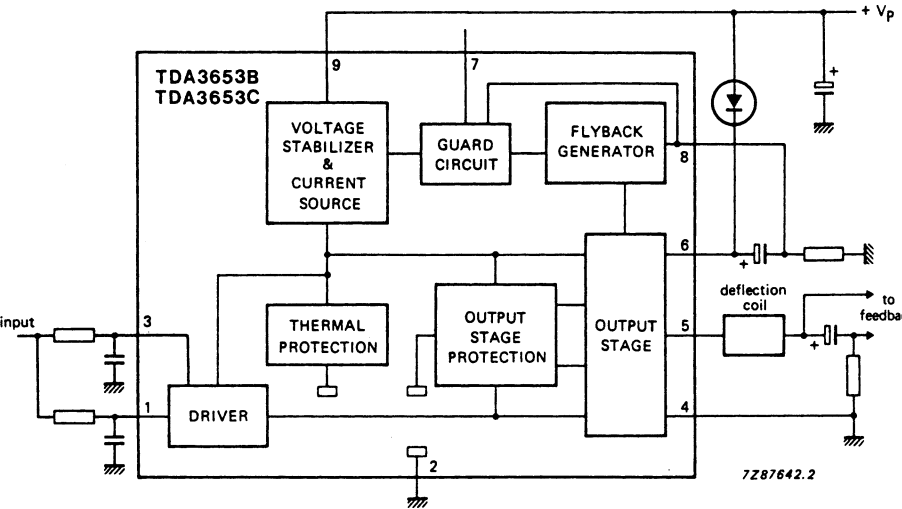
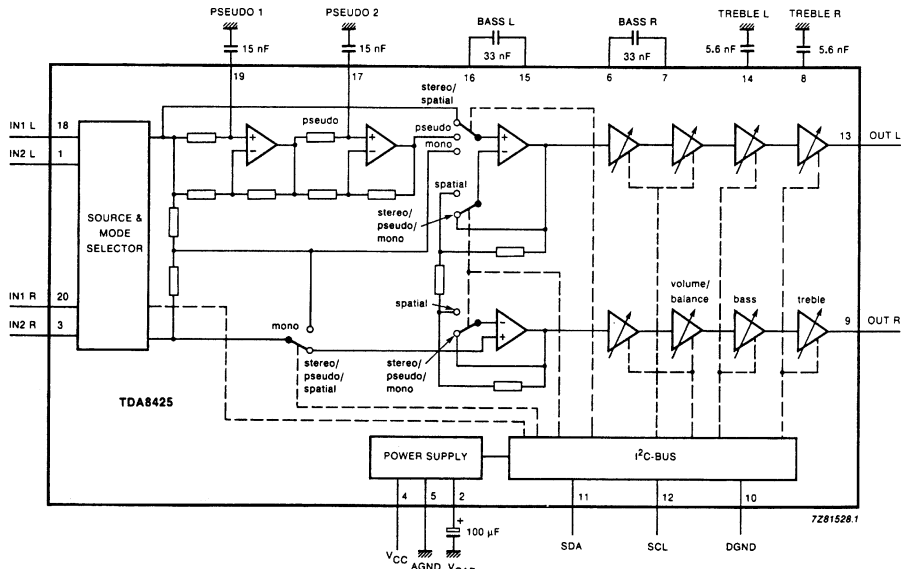
Video Output Amplifier

On CRT Board, TDA 61030 is used as video output amplifier. The TDA 61030 includes three video output amplifier intended to drive the three cathodes of color CRT.

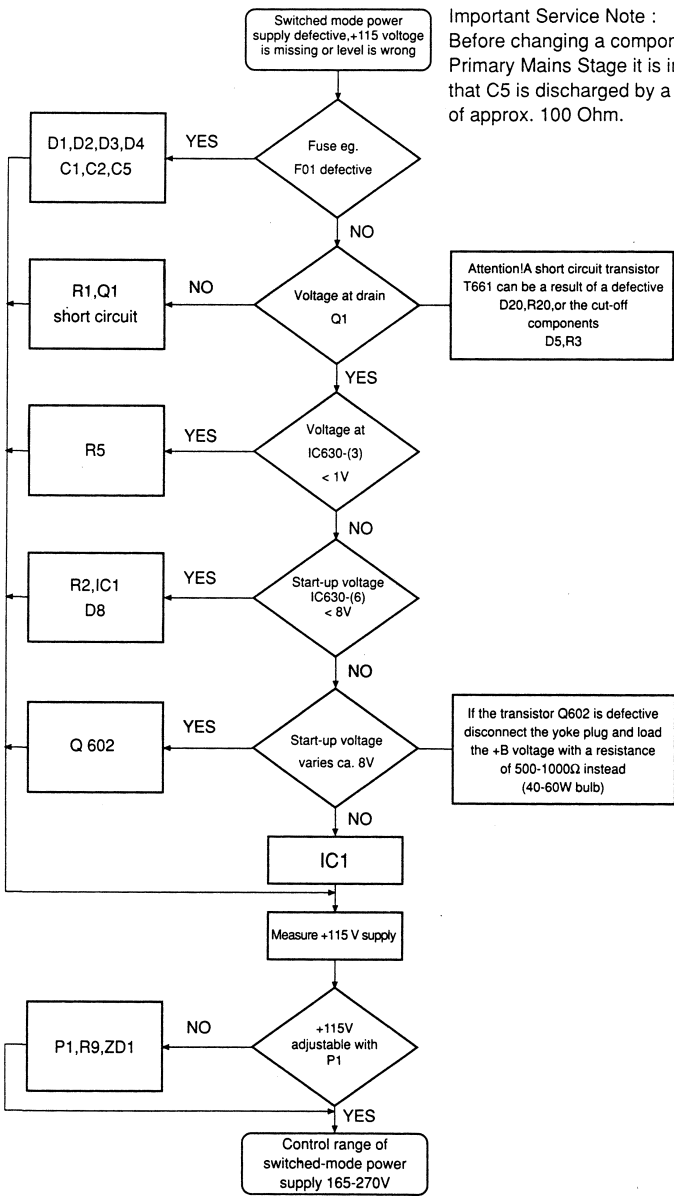
- Features
- High Bandwith 7.5 Mhz typical
 - High slew rate:1600 V/us
 - Simple application with a variety of color decoders
 - Only one supply voltage needed
 - Internal protection against positive appearing ORT flashover discharges
 - One non-inverting input with a low minimum input voltage of 1V
 - Thermal protection
 - Controllable switch-off behavior

TDA 61030

PINNING	PIN VOLTAGE
1 Inverting input 1	1.0Vpp
2 Inverting input 2	1.0Vpp
3 Inverting input 3	1.0Vpp
4 Ground, fin	-
5 Non-inverting input	1.8V
6 Supply voltage	180V
7 Cathode output 3	90Vpp
8 Cathode output 2	90Vpp
9 Cathode output 1	90Vpp

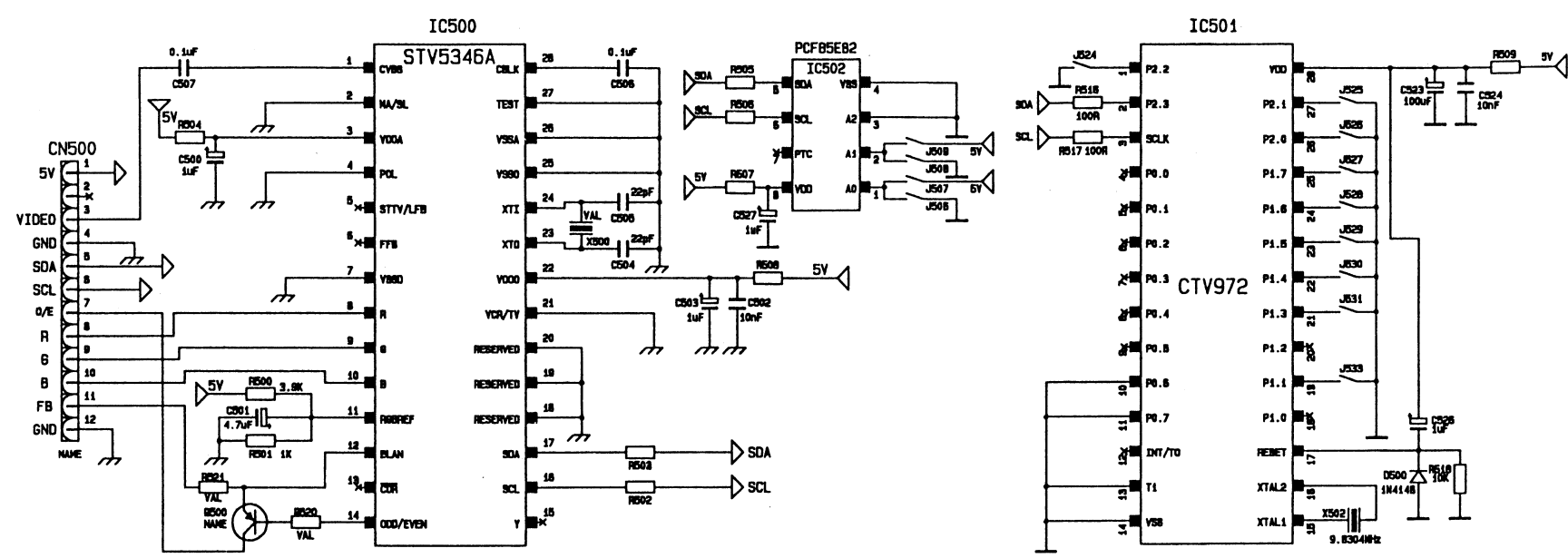


Troubleshooting Guides

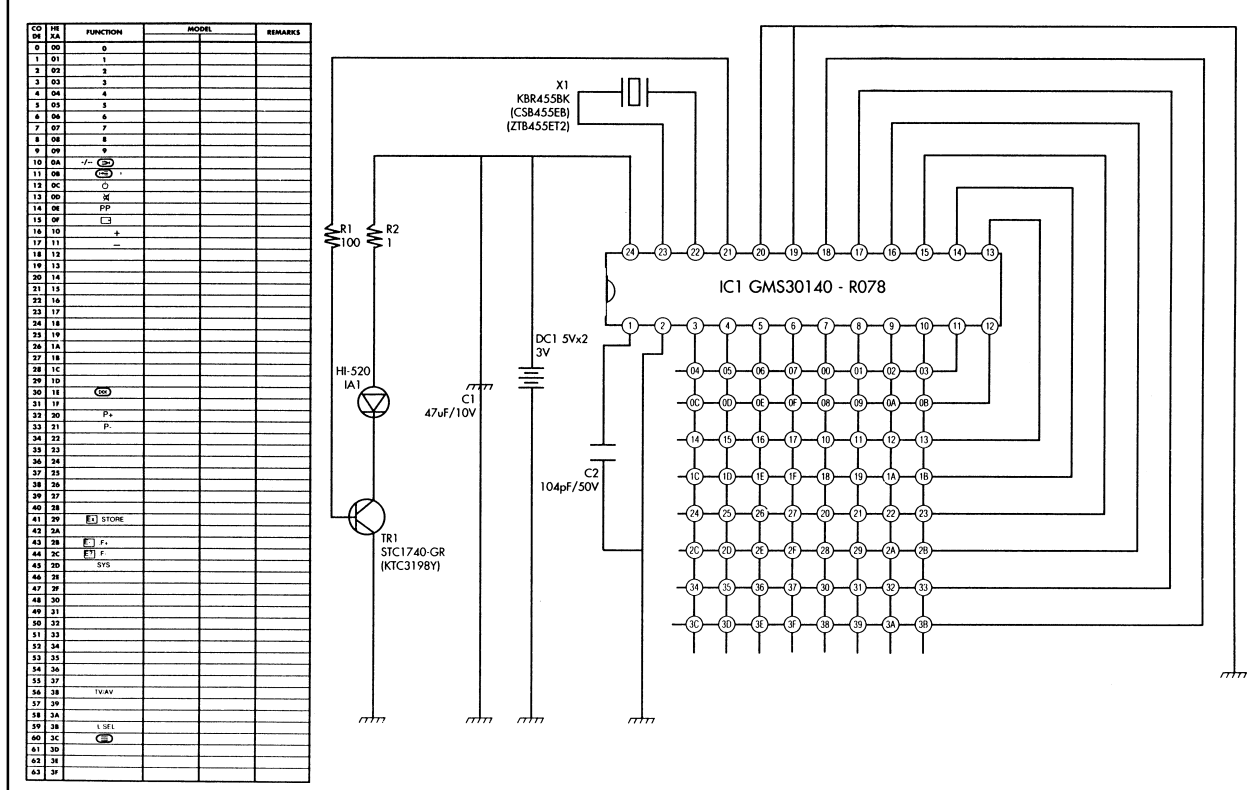


TROUBLE	CHECK POINTS
No color	IC 101, EM 102, C127, IC 102, check pin 38-SSC
No vertical deflection	Check +K, IC 601, pin 42 IC 401, pin 43 IC 401
Vertical linearity	C 625, R 623
Vertical size	C 625, R 624
Vertical shift	R 626, P 601
Horizontal linearity	L 601, C 608
Horizontal size	+B, C 607, L 602
Flue picture	IC 101 pin 25, ABL, FOCUS, HEATER, EHT
Dark picture	IC 101 pin 17, SCREEN, EHT, +M
Noise picture	EM 101, AGC, IF, FI 101
Vert/horizontal synchrony	IC 401
Interference	EM 101, IF, FI 101
No sound	Check IC 101 pin 5 and pin 50, IC 401 pin 3, pin 5, +G
Low sound	IC 101 pin 5, pin 50, IC 401 pin 5, +G, R 403
Sound distortion	IC 401, +G, R 403
Contrast	IC 301 pin 5, IC 101 pin 25, ABL
Brightness	IC 301 pin 3, IC 101 pin 17
Color saturation	IC 301 pin 4, IC 101 pin 26
Tuning	IC 301 pin 1, Q301, +D, EM 101
Memory	IC 302, IC 301, SDA, SCL
Band select	IC 301 pin 7/8, IC 303, +K, EM 101
No video-out on the SCART	Check TV-VID signals, Q651
No video-in on the SCART	Check IC 301 pin 12, IC 101 pin 16 on AV mode, check the video signals on AV mode SCART pin 20 and IC 101 pin 15
No sound out on the SCART	IC 101 pin 1, Q653, Q654
No sound in on the SCART	Check the audio signals on SCART pin 2/6 & IC 101 pin 6
No remote control reception	Check signals on pin 3 EM 302 and IC 301 pin 35

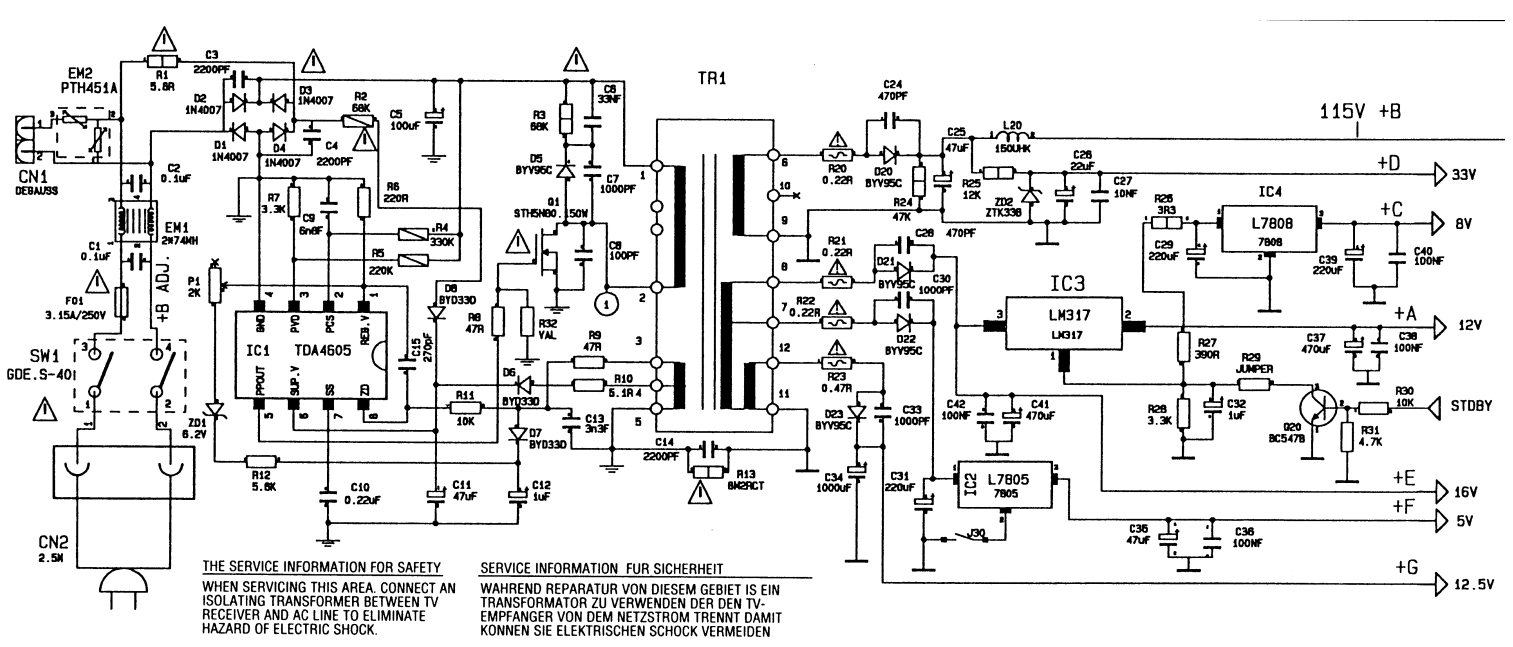
Fastext Diagram



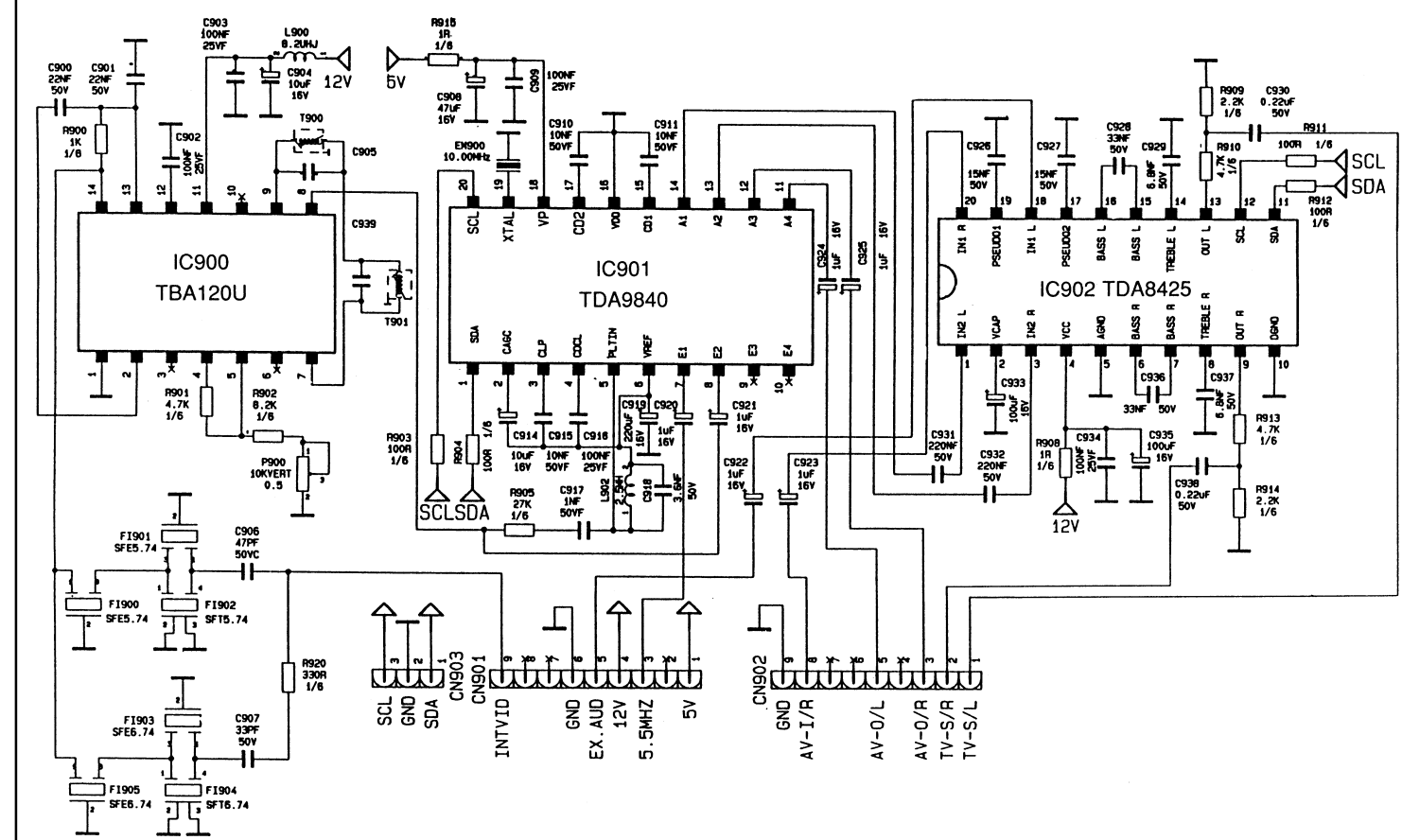
Remote Control Diagram



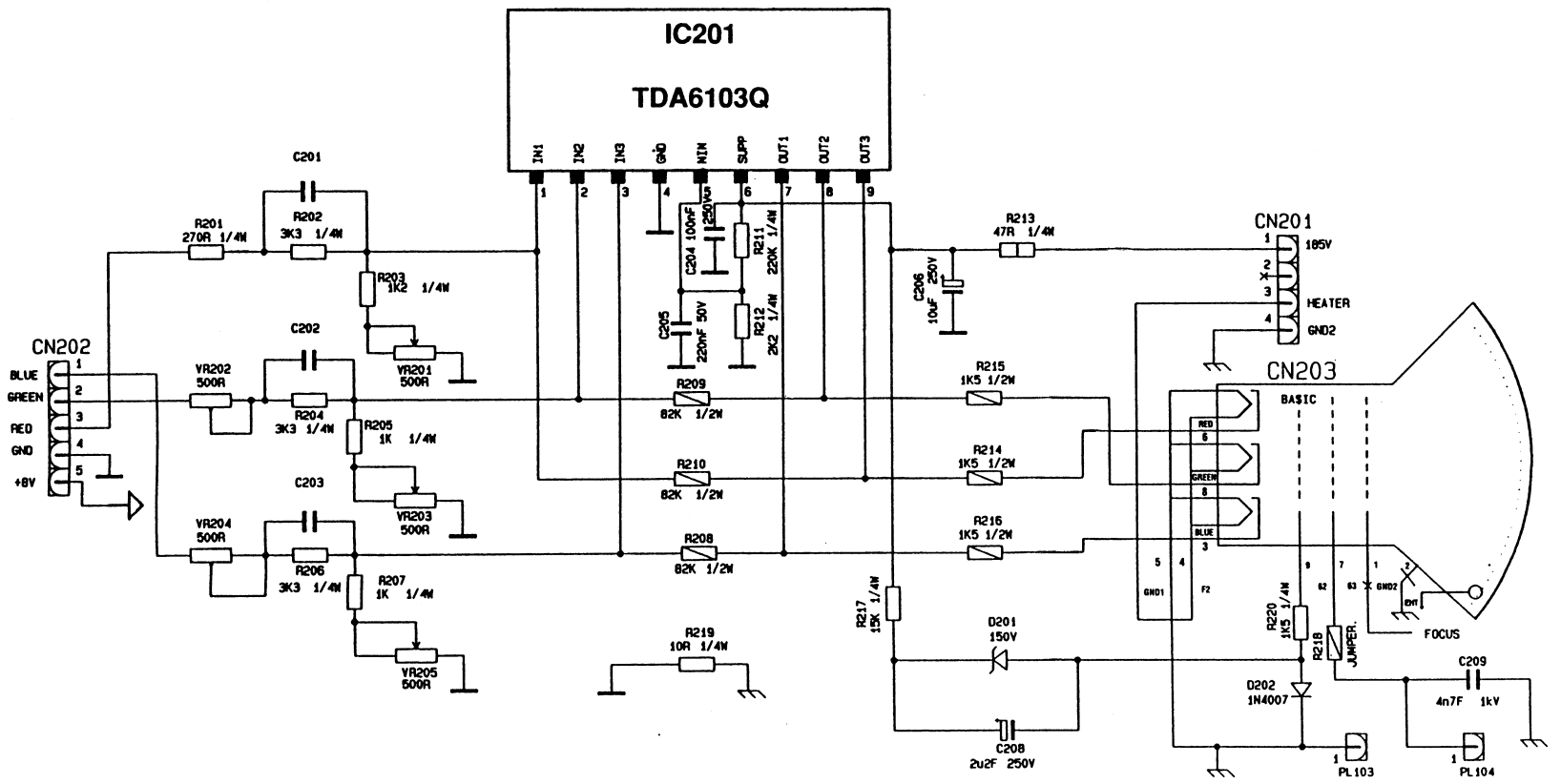
SMPS Diagram



German Stereo Diagram



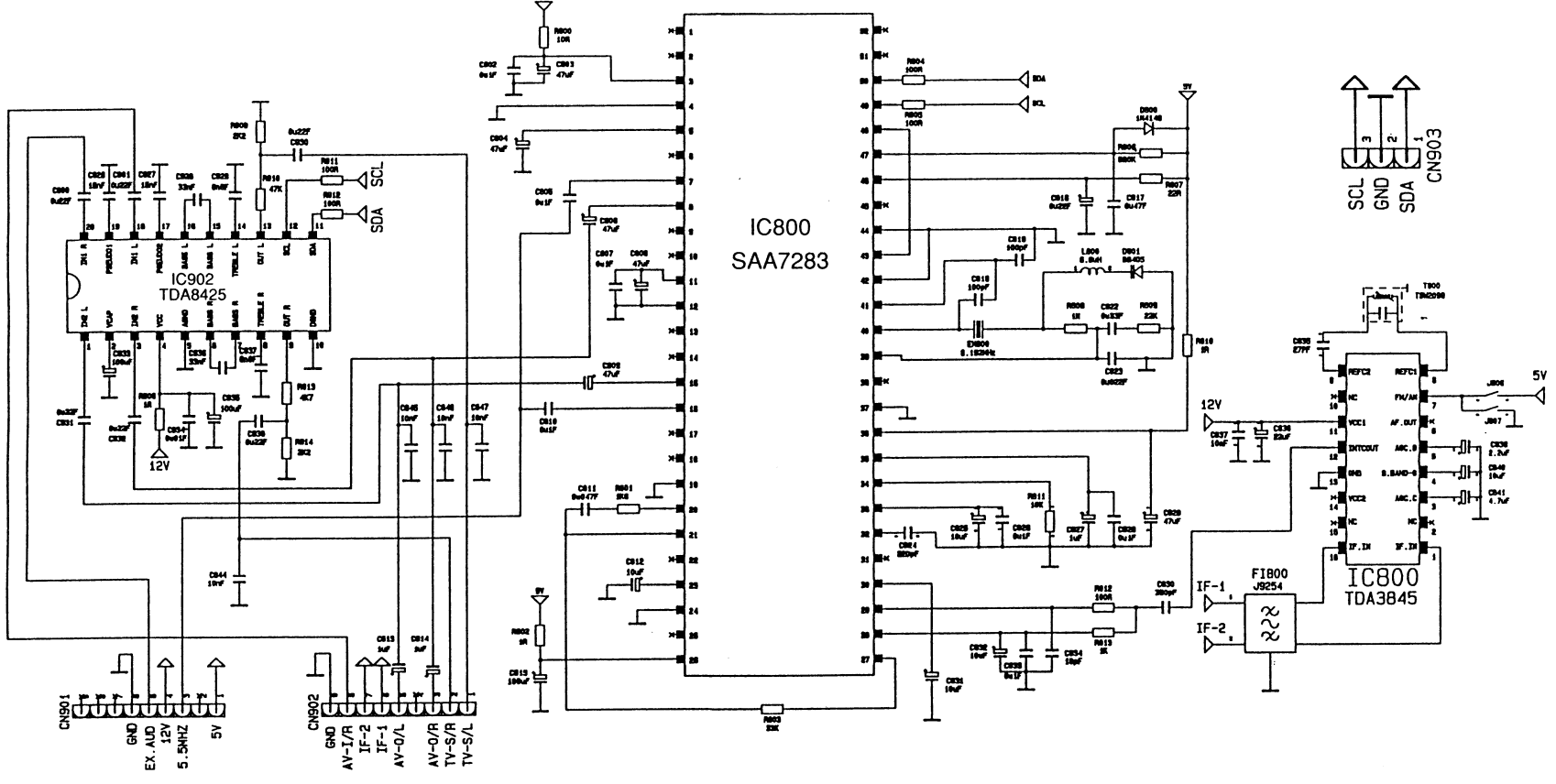
CRT Diagram



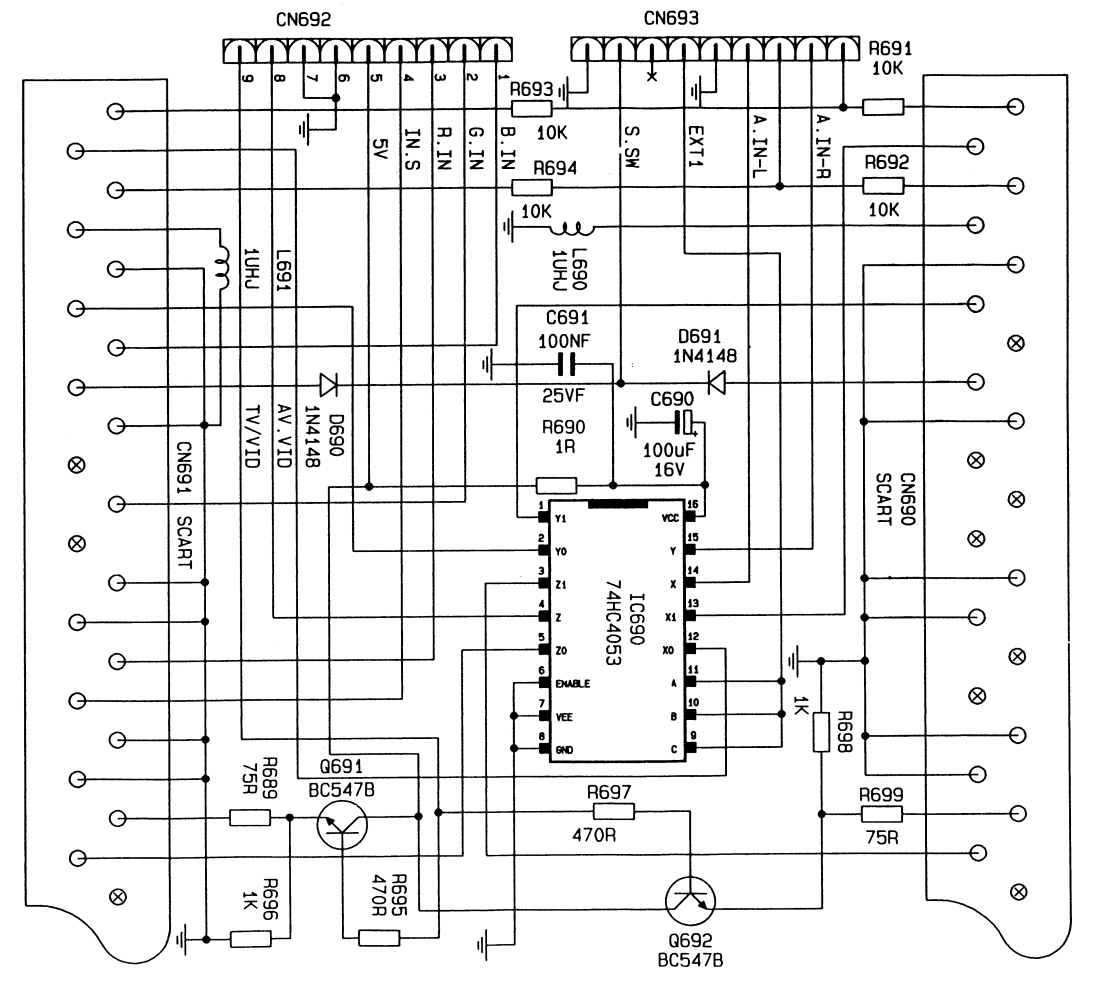
CRT Differences Table

COMPONENT	C 607	R 647	L 602	C 608	R 153
CRT					
20" SAMSUNG	8.2NF	0.1R	JUMPER	470NF	15K
A48ECR11X60	1600V	1W	JUMPER	200V	1/6W
20" SAMSUNG	8.2NF	0.1R	JUMPER	470NF	15K
A48ECR 11X60	1600V	1W	JUMPER	200V	1/6W
21" SAMSUNG	7.8NF	0.1R	56uH	470NF	15K
A51EER 11X38	1600V	1W	56uH	200V	1/6W
20" POLCOLOR	7.8NF	0.1R	110uH	470NF	15K
A48EEV 13X01	1600V	1W	110uH	200V	1/6W
21" POLCOLOR	6.8NF	0.1R	110uH	470NF	15K
A51EEV 13X01	1600V	1W	110uH	200V	1/6W
20" VIDEOCOLOR	7.8NF	0.1R	110uH	470NF	15K
A48EBV 13X011	600V	1 W	110uH	200V	1/6W
21" VIDEOCOLOR	6.8NF	0.1R	56uH	470NF	15K
AS1EBV 13X09	1600V	1W	56uH	200V	1/6W

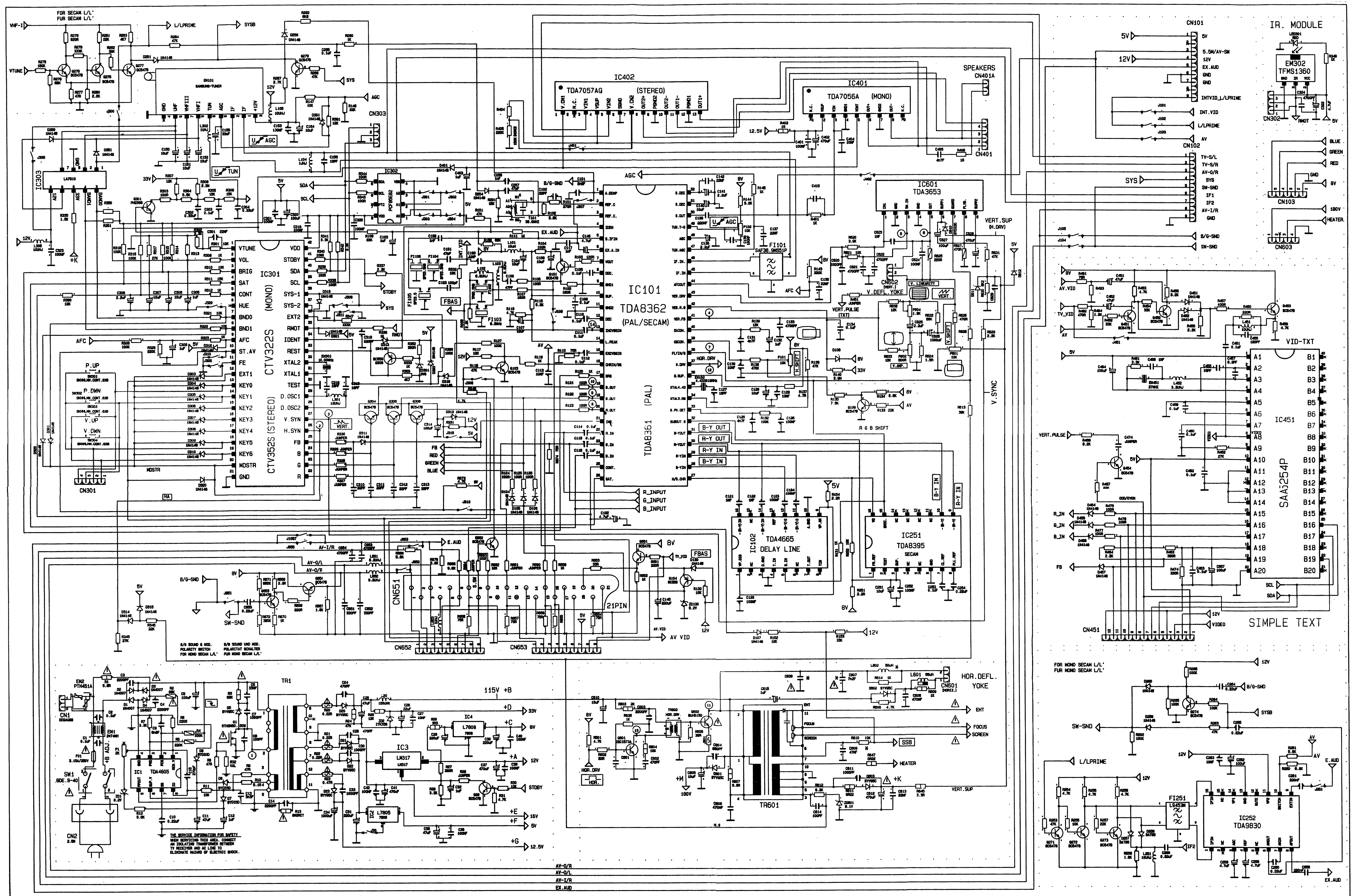
Nicam Diagram



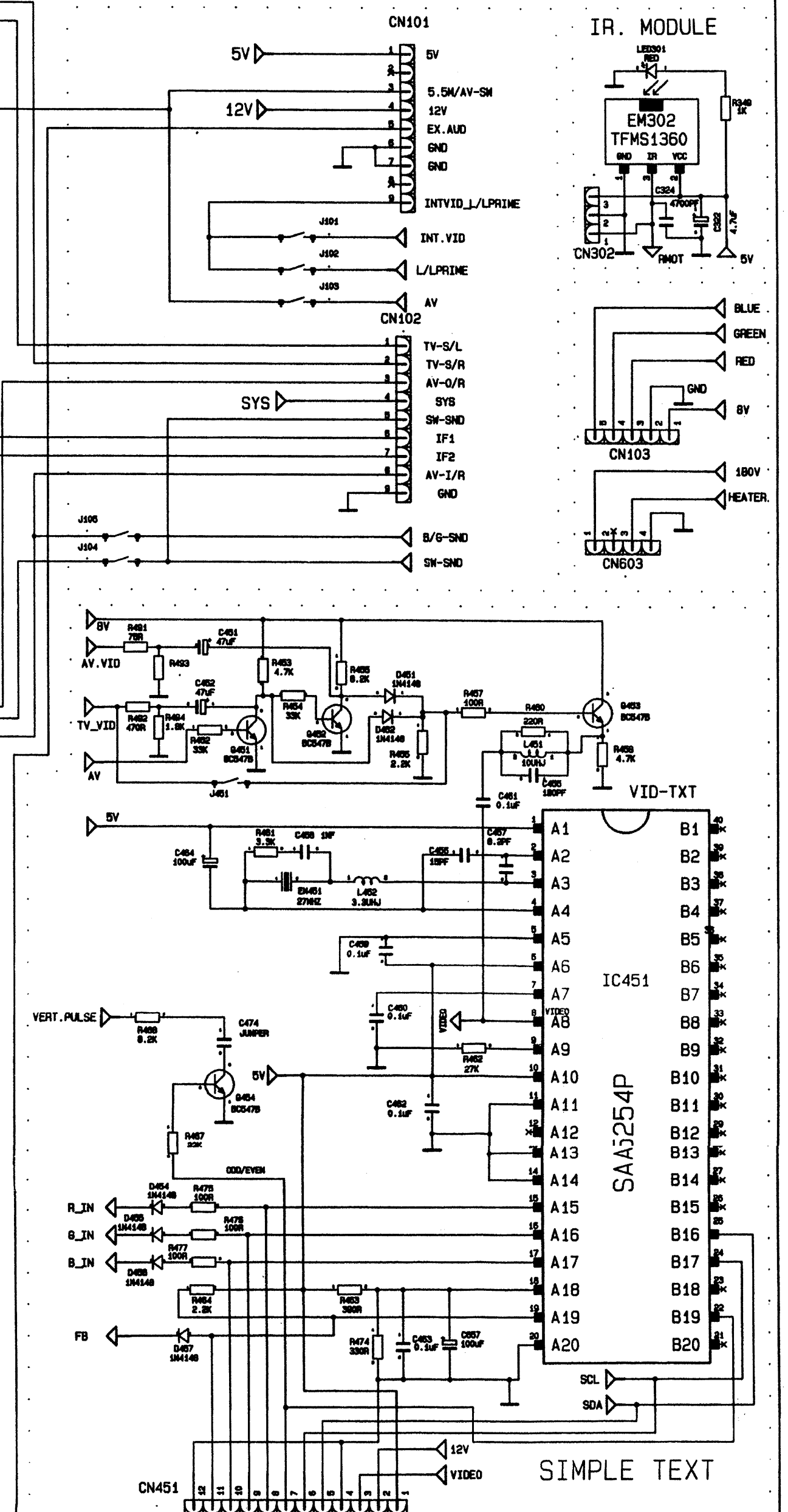
Double Scart Diagram



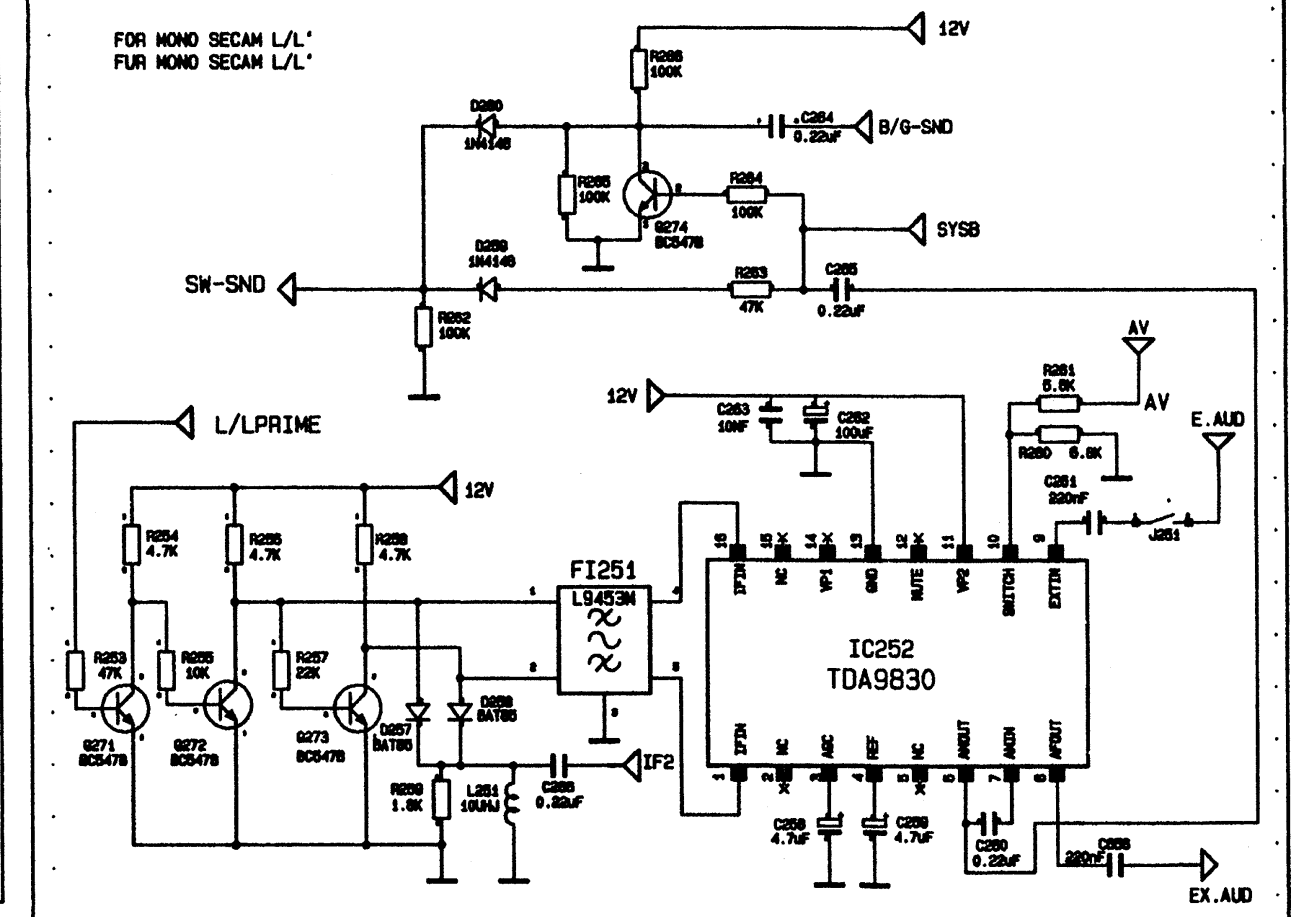
Main Diagram



IR. MODULE



SIMPLE TEXT



- 1) 5us/div 100 volt/div 2) 20 us/div 2 volt/div 3) 5 msn/div 2 volt/div 4) 5 msn/div 0.5 volt/div 5) 5msn/div 1 volt/div 6) 5us/div 20 volt/div 7) 20us/div 2 volt/div 8) 20us/div 2 volt/div 9) 5us/div 2 volt/div 10) 10 us/div 2 volt/div 11) 10 us/div 250 volt/div 12) 20 us/div 0.2 volt/div 13) 20us/div 50 volt/div 14) 20us/div 1 volt/div

