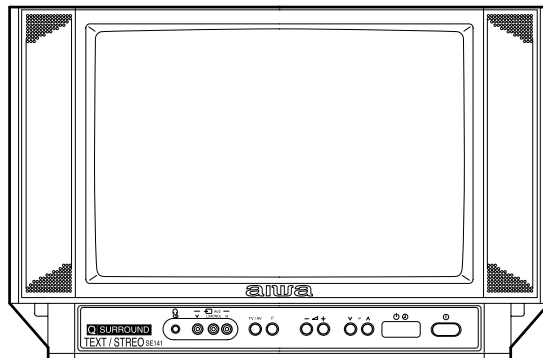




SERVICE MANUAL

COLOR TELEVISION

- This Service Manual is the "Revision Publishing" and replaces "Simple Manual" TV-SE141 (K), (S/M Code No. 09-997-416-3T1).
- This Service Manual does not include "NOTICES BEFORE REPAIRING", "DISASSEMBLY INSTRUCTIONS" and "ADJUSTMENT". These items will be issued in the next Supplement.

SPECIFICATIONS

Tuner System	Frequency synthesized tuner
TV System	PAL-I
Channel Coverage	UHF: 21 to 69 ch
Programme Memory	100 TV stations
Antenna Input	75 ohms, unbalanced
Picture Tube	14"
Screen Size	280 (W) X 211 (H) mm (11 ¹ / ₈ X 8 ³ / ₈ in.) 335 mm (diagonal)
Video Input	1 Vp-p 75 ohms
Audio Input	0.5 Vrms., 33 k ohms more
Speaker	50 X 120 mm (2 X 4 ³ / ₄ in.)
Operating Voltage	230 V AC, 50 Hz
Power Consumption	70 W (Standby mode: 6 W)
Phone Jack	Stereo-mini jack
Operating Temperature	5°C – 40°C
Operating Humidity	35% – 80%
Dimensions	450 (W) X 320 (H) X 375 (D) mm (17 ³ / ₄ X 12 ⁵ / ₈ X 14 ⁷ / ₈ in.)
Weight	10.6 kg (23.32 lbs.)

- Design and specifications are subject to change without notice.

ACCESSORIES / PACKAGE LIST

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-A91-447-010	ANT, LOOP	UHF PAL/TS99201
2	8Z-JB7-901-010	IB, K (E)	-SE141 -K
3	8Z-JB4-953-010	RC UNIT,	RC-ZVT03

ELECTRICAL MAIN PARTS LIST

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC				MAIN C.B			
	8Z-JB4-612-010	IC,TMP87CP38N-LA71		BT301	84-LB2-631-010	CONN ASSY,5P TN-4	
	87-A21-133-080	IC,BMR-0101D		BT401	8Z-JB4-660-010	CONN ASSY,5P 401-401 AUDIO	
	87-A21-433-010	IC,KS24C041I		BT402	8Z-JB4-661-010	CONN ASSY,6P 402-402 AUDIO	
	87-A91-538-010	RCR UNIT,SBX1981-72P		BT403	8Z-JB4-668-010	CONN ASSY,8P 403-403 AUDIO	14"
	87-070-282-010	IC,BU2092		BT404	8Z-JB4-663-010	CONN ASSY,9P 404-404 AUDIO	
	87-027-958-010	IC,TC4051BP		BT803	8Z-JB4-659-010	CONN ASSY, 5P MAIN-NK 14"	
	87-A20-129-010	IC,SN76861NJ-09		C1	87-010-033-080	CAP,E 10-16 M BK	
	87-027-656-010	IC,TC4066BP		C2	87-018-134-080	CAPACITOR,TC-U 0.01-16	
	87-A21-241-010	IC,MC14551BCP		C3	87-018-109-080	CAP, CER 22P-50V	
	87-A21-165-010	IC,TB1240AN		C4	87-018-109-080	CAP, CER 22P-50V	
	87-A21-167-010	IC,AN5862K		C5	87-010-033-080	CAP,E 10-16 M BK	
	87-A21-090-010	IC,LA4600		C6	87-010-033-080	CAP,E 10-16 M BK	
	87-A21-169-010	IC,MM1124B		C7	87-018-134-080	CAPACITOR,TC-U 0.01-16	
	87-A21-299-010	IC,LA6458SLL		C8	87-010-033-080	CAP,E 10-16 M BK	
	87-A20-312-010	IC,M62420SP		C9	87-A12-091-080	CAP,E 10-50 SMG	
	87-A21-259-010	IC,MM1454XD		C10	87-018-134-080	CAPACITOR,TC-U 0.01-16	
	87-070-237-010	IC,LA7832		C11	87-A12-091-080	CAP,E 10-50 SMG	
	87-A21-261-010	IC,MSP3417D		C12	87-018-119-080	CAP, CER 100P-50V	
	87-A21-287-010	IC,SAAS261PS/222		C13	87-018-134-080	CAPACITOR,TC-U 0.01-16	
	87-A21-062-010	IC,M24C02-BN6		C14	87-010-033-080	CAP,E 10-16 M BK	
	87-A20-980-010	IC,STR-S6707N		C16	87-010-033-080	CAP,E 10-16 M BK	
	87-A20-389-010	IC,NJM7809FA		C17	87-018-119-080	CAP,TC U 100P-50 K B	
	87-020-903-010	IC,NJM7805FA		C18	87-018-119-080	CAP,TC U 100P-50 K B	
				C47	87-010-314-080	C-CAP,S 22P-50 J CH GRM	
				C48	87-010-314-080	C-CAP,S 22P-50 J CH GRM	
TRANSISTOR				C49	87-010-314-080	C-CAP,S 22P-50 J CH GRM	
	87-A30-091-080	FET,2SJ460		C50	87-010-312-080	C-CAP,S 15P-50 J CH GRM	
	87-A30-090-080	FET,2SK2541		C51	87-010-312-080	C-CAP,S 15P-50 J CH GRM	
	87-026-462-080	TR,2SC1740 S(RS 0.3W)		C57	87-018-197-080	C-CAP,S 0.01-25 K B C2012	
	87-A30-066-080	TR,2SA1175FE		C101	87-A12-090-080	CAP,E 4.7-50 SMG	
	89-337-794-580	TR,2SC3779 D/E		C102	87-A12-072-080	CAP,E 100-25 SMG	
	87-A30-065-080	TR,2SC2785FE		C103	87-018-134-080	CAPACITOR,TC-U 0.01-16	
	87-A30-269-040	C-FET,2SJ461-T1		C104	87-A12-072-080	CAP,E 100-25 SMG	
	87-A30-087-080	C-FET,2SK2158		C105	87-018-134-080	CAPACITOR,TC-U 0.01-16	
	89-324-122-080	TR,2SC2412K		C106	87-A10-207-080	CAP,TCS 0.01-50KBUP050	
	89-110-372-080	TR,2SA1037(140MHZ 200MW)		C107	87-010-150-080	C-CAP,S 6P-50 D CH	
	87-026-617-080	C-TR,DTC323TK-T147		C108	87-010-150-080	C-CAP,S 6P-50 D CH	
	89-109-504-080	TR,2SA950Y		C111	87-018-134-080	CAPACITOR,TC-U 0.01-16	
	87-A30-005-010	TR,2SC2688M/L		C113	87-A10-307-080	CAP,M 0.1-50 J	
	87-A30-095-010	TR,2SD2333LS/C202		C114	87-018-134-080	CAPACITOR,TC-U 0.01-16	
	89-334-674-580	TR,2SC3467 D/E		C116	87-A12-066-080	CAP,E 47-16 SMG	
	87-A30-041-110	TR,SE115N		C117	87-018-134-080	CAPACITOR,TC-U 0.01-16	
	87-A30-342-080	TR,2SC4002D/E		C118	87-018-134-080	CAPACITOR,TC-U 0.01-16	
	89-110-155-080	TR,2SA1015GR		C119	87-A12-087-080	CAP,E 1-50 SMG	
	89-423-953-010	TR,2SD2395F		C120	87-018-134-080	CAPACITOR,TC-U 0.01-16	
	87-A30-051-010	TR,2SD2331		C121	87-016-628-080	CAP,E 10-25 SSL	
				C122	87-A10-332-080	CAP,M 0.01-50 K	
				C123	87-018-119-080	CAP,TC U 100P-50 K B UP050	
				C124	87-A12-083-080	CAP,E 0.1-50 M SSL	
				C125	87-016-628-080	CAP,E 10-25 M SSL	
DIODE				C126	87-018-134-080	CAPACITOR,TC-U 0.01-16	
	87-020-465-080	DIODE,1SS133		C129	87-018-209-080	CAP,TC U 0.1-50 Z F UP050	
	87-070-345-080	DIODE,IN4148		C301	87-A12-084-080	CAP,E 0.22-50 SMG	
	87-070-444-080	ZENER,HZS33-1TA		C302	87-018-132-080	CAP, CER 2200P-16V	
	87-017-024-080	C-DIODE,DA204K		C303	87-018-148-080	CAP,TC-U 12P-50 CH	
	87-020-330-080	DIODE,DAP202K		C304	87-018-209-080	CAP, CER 0.1-50V	
	87-020-331-080	CHIP-DIODE,DAN202K		C305	87-018-209-080	CAP, CER 0.1-50V	
	87-A40-001-080	ZENER,MTZJ12C		C306	87-018-209-080	CAP, CER 0.1-50V	
	87-A40-235-080	ZENER,MTZJ9.1C		C307	87-018-134-080	CAPACITOR,TC-U 0.01-16	
	87-A40-350-080	ZENER,MTZJ 4.7C		C308	87-A12-061-080	CAP,E 47-10 SMG	
	87-070-092-080	DIODE,S5566B		C309	87-018-147-080	CAP,TC-U 10P-50 CH	
	87-A40-286-080	DIODE,RGP10JE-5025		C310	87-018-147-080	CAP,TC-U 10P-50 CH	
	87-A40-794-080	DIODE,EGP20G		C311	87-018-147-080	CAP,TC-U 10P-50 CH	
	87-017-654-060	DIODE,GBU6J		C312	87-A10-891-080	CAP,E 4.7-25 SME(K)	
	87-A40-450-090	DIODE,RU 1P		C313	87-018-119-080	CAP, CER 100P-50V	
	87-A40-665-090	DIODE,UF3GL-5700		C315	87-018-196-080	CAP, CER 1500P-16V	
	87-A40-354-090	DIODE,UF3GL-6251		C316	87-A12-086-080	CAP,E 0.47-50 SMG	
	87-A40-827-080	C-ZENER,HZM5.1NB2		C317	87-A12-001-080	CAP,E 2200-10 M SMG	
	87-A40-785-080	DIODE,SB040					

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C318	87-018-134-080		CAPACITOR,TC-U 0.01-16	C814	87-A11-779-090		CAP,M/P 1000P-1.6K J ECWH (VB)
C319	87-A12-086-080		CAP,E 0.47-50 SMG	C815	87-A10-867-090		CAP,CER 2200P-2K K R
C321	87-018-134-080		CAPACITOR,TC-U 0.01-16	C816	87-A10-731-090		CAP,E 220-160 M KMF
C322	87-018-119-080		CAP, CER 100P-50V	C817	87-A11-354-090		CAP,E 100-160 M SMG
C323	87-018-209-080		CAP, CER 0.1-50V	C819	87-A12-067-080		CAP,E 330-16 SSL
C324	87-018-209-080		CAP, CER 0.1-50V	C820	87-A10-833-090		CAP,CER 1000P-2K K R
C326	87-018-133-080		CAPACITOR,CER 4700P-16V	C821	87-016-051-090		CAP,E 2200-35 M SMG
C327	87-A11-150-080		CAP,TC U 0.47-50 Z F	C822	87-A12-082-090		CAP,E 1000-35 SMG
C328	87-A12-086-080		CAP,E 0.47-50 SMG	C824	87-A10-378-080		CAP,E 10-16 M 11L SME
C329	87-018-209-080		CAP, CER 0.1-50V	C825	87-A10-469-080		CAP,CER 2200P-500 K B DD10
C339	87-018-109-080		CAP,TC U 22P-50 J SL UP050	C830	87-010-378-080		CAP,E 10-16 M 11L SME
C342	87-010-033-080		CAP,E 10-16 M BK	C831	87-010-378-080		CAP,E 10-16 M 11L SME
C343	87-018-134-080		CAPACITOR,TC-U 0.01-16	C833	87-010-378-080		CAP,E 10-16 M 11L SME
C344	87-A11-983-080		CAP,E 10-16 LL BP	C837	87-010-378-080		CAP,E 10-16 M 11L SME
C345	87-010-263-080		CAP,E 100-10 M 11L SME	C839	87-010-378-080		CAP,E 10-16 M 11L SME
C350	87-018-134-080		CAP,TC U 0.01-16 N Y UP050	C851	87-010-378-080		CAP,E 10-16 M 11L SME
C351	87-010-033-080		CAP,E 10-16 M BK	C852	87-A11-132-080		CAP,TC U 0.01-50 K B
C355	87-A12-087-080		CAP,E 1-50 SMG	CN1	87-099-407-010		CONN,7P V WHT EH
C360	87-018-134-080		CAP,TC U 0.01-16 N Y UP050	CN201	87-A60-628-010		CONN,11P V 2MM JMT
C361	87-010-263-080		CAP,E 100-10 M 11L SME	CN202	87-A60-625-010		CONN,8P V 2MM JMT
C362	87-018-209-080		CAP,TC U 0.1-50 Z F UP050	CN203	87-A60-627-010		CONN,10P V 2MM JMT
C397	87-010-378-080		CAP,E 10-16 M 11L SME	CN204	87-A60-623-010		CONN,6P V 2MM JMT
C398	87-018-209-010		CAP,TC U 0.1-50 Z F UP050	CN400	87-JB8-601-010		CONN ASSY,4P SP-20
C399	87-010-196-080		C-CAP,S 0.1-25 Z F C2012	CN480	87-049-469-010		CONN,4P V WHT EH
C478	87-010-213-080		C-CAP,S 0.015-25 K B GRM	CN601	87-A60-933-010		CONN,4P V B04(5-3)B-DVS-L
C480	87-A12-094-080		CAP,E 47-50 SMG	CN711	87-A60-734-010		CONN,8P JL-BT
C481	87-018-134-080		CAP,TC U 0.01-16 NY UP050	CN712	87-A60-732-010		CONN,6P JL-BT
C482	87-A12-087-080		CAP,E 1-50 SMG	CN751	87-A60-734-010		CONN,8P JL-BT
C483	87-A12-087-080		CAP,E 1-50 SMG	CN752	87-A60-731-010		CONN,5P JL-BT
C484	87-010-178-080		C-CAP,S 1000P-50 K B C2012	△ CN801	82-481-649-010		CONN, 2P V VT-50P
C485	87-010-178-080		C-CAP,S 1000P-50 K B C2012	△ CN802	87-099-674-010		CONN, 2P V VA
C487	87-018-196-080		CAP,TC U 1500P-16 N X UP050	D8	87-A40-422-010		LED,SLP-581D-51 Y-G/R
C495	87-018-209-010		CAP,TC U 0.1-50 Z F UP050	△ FB01	87-035-458-010		FUSE,4A 250V T W/C
C496	87-010-180-080		C-CAP,S 1500P-50 K B C2012	FB1	87-003-320-080		F-BEAD,FBR07HA121NB
C497	87-018-196-080		CAP,TC U 1500P-16 N X UP050	FB301	8Z-JB4-637-010		CORE,CP22RB 190120080M
C498	87-010-196-080		C-CAP,S 0.1-25 Z F C2012	FB601	87-003-320-080		F-BEAD,FBR07HA121NB
C499	87-018-209-010		CAP,TC U 0.1-50 Z F UP050	FB801	87-003-320-080		F-BEAD,FBR07HA121NB
C501	87-018-127-080		CAP, CER 470P-50V	FB802	87-003-320-080		F-BEAD,FBR07HA121NB
C502	87-018-134-080		CAPACITOR,TC-U 0.01-16	FB803	87-003-320-080		F-BEAD,FBR07HA121NB
C503	87-A12-091-080		CAP,E 10-50 SMG	FB804	87-003-320-080		F-BEAD,FBR07HA121NB
C507	87-018-114-080		CAP,TC U 39P-50J SL UP050	FB805	87-003-320-080		F-BEAD,FBR07HA121NB
C508	87-018-131-080		CAP,TC U 1000P-50 K B UP050	FB808	87-003-320-080		F-BEAD,FBR07HA121NB
C509	87-A12-095-080		CAP,E 100-50 SMG	△ FC801	87-A90-160-080		FUSE CLAMP,FC 51F
C510	87-A12-080-080		CAP,E 220-35 SMG	△ FC802	87-A90-160-080		FUSE CLAMP,FC 51F
C513	87-A10-011-090		CAP,E 2200-25 SMG	FL103	87-A90-224-080		FLTR, TP56.0MB
C514	87-A12-087-080		CAP,E 1-50 SMG	FL105	87-A91-046-010		FLTR,SAW OFW-K3953M
C601	87-016-373-080		CAP,E 10-250 M SME	FL107	87-A91-389-010		FLTR,SAW OFW-K9353M
C603	87-016-217-080		CAP,E 4.7-160	FR601	87-029-077-090		RES,FUSE 10-1/2W J
C605	87-A10-863-010		CAP,CER 820P-2K K R	FR602	87-A00-106-060		RES,FUSE 3.3-1W J R-TYPE
C606	87-A11-252-080		CAP,M/P 8200P-1.6 K H B32652	FR603	87-A00-600-090		RES,FUSE 0.47-1W J RF1S
C609	87-010-957-080		CAP,E 330-25 SMG	FR604	87-029-150-090		RES,FUSE 3.9-2W J
△ C610	87-A12-082-090		CAP,E 1000-35 SMG	FR617	87-A00-463-090		RES,FUSE 1-1/2W J
△ C611	87-010-976-080		CAP,CER 1000P-500 B	HL5	84-LB3-216-010		HLDR,LED
△ C612	87-010-974-080		CAP,CER 220P-500 B	J480	87-A60-858-010		JACK,3.5 BLK ST 2SW
C614	87-016-515-080		CAP,CER 1000P-1K B	J481	87-A61-021-010		JACK,PIN 3P W/SW YKC21-5734
C615	87-012-386-090		CAP,CER 470P-2K K BN DE	JW561	87-A00-641-090		RES,M/F 56-3W J RSS3L20
C616	87-A11-053-010		CAP,M/P 0.56-250 J B32652	L1	87-003-226-080		MICRO INDUCTOR 100UJ
C617	88-238-450-810		CERAMIC CAPACITOR,150P/500V	L2	87-005-477-080		COIL,22UH FLR50 J
C619	87-016-217-080		CAP,E 4.7-160M 11L SME	L101	87-005-444-080		COIL 100UH,K
C636	87-018-125-080		CAP,TC U 330P-50 K B UP050	L102	87-003-102-080		COIL, 10UH
C714	87-010-555-080		CAP,E 100-10 M 5L MA	L104	8Z-JB4-636-010		COIL,TRAP40.4MHZ
△ C801	87-A10-688-090		CAP,M/P 0.22-275 K (B81133)	L105	87-003-106-080		COIL,0.33UH
△ C802	87-A10-688-090		CAP,M/P 0.22-275 K (B81133)	L106	87-003-146-080		COIL,15UH LAL02
△ C803	87-A10-517-010		CAP,CER 3300P-4K M E KX	L108	87-003-149-080		COIL,47UH J LAL02
△ C804	87-A10-517-010		CAP,CER 3300P-4K M E KX	L109	87-003-098-080		COIL,2.2UH
C808	87-A10-646-090		CAP,E 220-400 SMH (25.4*40)	L110	8Z-JB4-634-110		COIL,VCO 38.9MHZ
C809	87-A12-073-080		CAP,E 220-25 SMG	L111	87-003-149-080		COIL,47UH J LAL02
C810	87-A10-728-080		CAP,E 680-10 M LXV	L112	87-003-149-080		COIL,47UH J LAL02
C811	87-018-198-080		CAP,TC-U 2700P-16 X	L113	87-003-149-080		COIL,47UH J LAL02
C812	87-A10-645-090		CAP,M/P 0.01-1K J MMH	L301	87-005-473-080		COIL,10UH J FLR50

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
L333	87-A50-609-080		COIL,100UH K LHLCO6TB	C429	87-A10-918-080		CAP,E 100-16 SMG
L401	87-005-440-080		COIL,47UH K FLR50	C430	87-010-196-080		CHIP CAPACITOR,0.1-25
L402	87-005-440-080		COIL,47UH K FLR50	C431	87-A12-091-080		CAP,E 10-50 SMG
L603	87-A50-040-010		COIL,2.2MH	C432	87-A12-091-080		CAP,E 10-50 SMG
L801	87-A50-176-080		COIL,33UH-PJ87	C433	87-010-322-080		C-CAP,S 100P-50 CH
L802	87-A50-170-010		COIL,390UH RCH106	C434	87-010-322-080		C-CAP,S 100P-50 CH
△ LF801	8Z-JB4-692-010		FLTR,ELF18D225L	C436	87-A10-918-080		CAP,E 100-16 SMG
△ LF802	8Z-JB4-692-010		FLTR,ELF18D225L	C437	87-A12-088-080		CAP,E 2.2-50 SMG
△ PR801	87-A90-090-080		PROTECTOR,1.5A 491SERIES 60V	C438	87-A12-091-080		CAP,E 10-50 SMG
△ PR802	87-A90-094-080		PROTECTOR,4A 491SERIES 60V	C439	87-A12-091-080		CAP,E 10-50 SMG
△ PR803	87-A90-090-080		PROTECTOR,1.5A 491SERIES 60V	C440	87-A12-066-080		CAP,E 47-16 SMG
△ PS801	87-A91-407-010		P-COUPLER,ON3171-R	C441	87-010-197-080		CAP, CHIP 0.01 DM
△ PS802	87-A91-407-010		P-COUPLER,ON3171-R	C443	87-A12-091-080		CAP,E 10-50 SMG
△ PT801	8Z-JB4-686-010		PT,SW ZJB(K/EH)M	C444	87-A12-088-080		CAP,E 2.2-50 SMG
R104	87-A00-608-090		RES,M/F 6.8K-2W J RSS2L15	C451	87-A12-091-080		CAP,E 10-50 SMG
R486	87-A00-150-090		RES,M/F 220-1W J RSF(S)	C452	87-A12-091-080		CAP,E 10-50 SMG
R487	87-A00-150-090		RES,M/F 220-1W J RSF(S)	C453	87-A12-062-080		CAP,E 100-10 SMG
R603	87-A00-200-090		RES,M/F 100-2W J RSF(S)	C454	87-A12-066-080		CAP,E 47-16 SMG
R610	87-A00-225-090		RES,M/F 2.2K-5W J RSV5	C455	87-010-197-080		CAP, CHIP 0.01 DM
R804	87-A00-543-080		RES,SD 8.2M-1W J RCR60	C456	87-A12-088-080		CAP,E 2.2-50 SMG
R805	87-A00-333-090		RES,M/F 100K-3W J RSS	C457	87-A12-088-080		CAP,E 2.2-50 SMG
R806	87-A00-536-090		RES,CEM 0.47-5W J RGC5	C458	87-A12-091-080		CAP,E 10-50 SMG
R807	87-A00-333-090		RES,M/F 100K-3W J RSS	C459	87-A12-066-080		CAP,E 47-16 SMG
R808	87-A00-243-090		RES,M/F 22-1W J RSF(S)	C460	87-A12-091-080		CAP,E 10-50 SMG
R809	87-A00-332-090		RES,CEM 1-10W J RGC	C461	87-A12-091-080		CAP,E 10-50 SMG
R810	87-A00-332-090		RES,CEM 1-10W J RGC	C462	87-A12-066-080		CAP,E 47-16 SMG
R812	87-A00-170-090		RES,M/F 82K-3W J RSF(S)	C465	87-010-196-080		CHIP CAPACITOR,0.1-25
R816	87-A00-223-090		RES,M/F 47K-2W J RSF(S)	C466	87-A12-091-080		CAP,E 10-50 SMG
R830	8Z-JB4-830-080		RES,M/F 1M-1/4W J RCR25	C467	87-A10-918-080		CAP,E 100-16 SMG
R833	87-A00-601-090		RES,M/F 8.2-1W J SPR	C468	87-A12-091-080		CAP,E 10-50 SMG
SCR801	87-A90-965-010		VRIS,TNR15G471K	C469	87-A12-091-080		CAP,E 10-50 SMG
SP401	87-JB8-018-010		SPKR,F 6*12 8OHM 7W	C470	87-A12-091-080		CAP,E 10-50 SMG
SP402	87-JB8-018-010		SPKR,F 6*12 8OHM 7W	C471	87-010-196-080		CHIP CAPACITOR,0.1-25
SW2	87-A90-712-080		SW,TACT EVQ11L07K	C476	87-010-193-080		C-CAP,S 0.033-25 Z F C2012
SW3	87-A90-712-080		SW,TACT EVQ11L07K	C477	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
SW4	87-A90-712-080		SW,TACT EVQ11L07K	C495	87-018-209-080		CAP,TC U 0.1-50 Z F UP050
SW5	87-A90-712-080		SW,TACT EVQ11L07K	CN401	87-009-195-010		CONN,5P B5BEH
SW6	87-A90-712-080		SW,TACT EVQ11L07K	CN402	87-009-034-010		CONN,6P PH V
SW7	87-A90-712-080		SW,TACT EVQ11L07K	CN403	87-099-408-010		CONN,8P EH V WHT
△ SW801	87-A91-410-010		SW,AC PUSH 1-1-1 ESB92SH1B	CN404	87-009-037-010		CONN 9P PH V
△ T601	8Z-JBU-605-010		FBT, HFT3609(SAN)14-C	FB400	87-018-209-010		CAP,TC U 0.1-50 Z F UP050
△ T602	85-JT2-653-010		PT,HDT-TU141-2	JW400	87-018-209-010		CAP,TC U 0.1-50 Z F UP050
△ TH801	87-A90-759-010		POS-THMS,PTH451C272BF300N270				
TU101	8Z-JB4-633-010		TU UNIT, 115-B-8026EV				
X1	87-030-187-080		VIB,XTAL 8.000MHZ AT49	SCART C.B			
X301	87-A70-054-080		VIB,XTAL 4.43MHZ AQC-1018	BT201	87-009-550-010		CONN 11P V PH
				BT202	8Z-JB4-665-010		CONN ASSY,8P TO CN202 MAIN
				BT203	8Z-JB4-666-010		CONN ASSY,11P TO CN203 MAIN
				BT204	8Z-JB4-667-010		CONN ASSY,6P TO CN204 MAIN
AUDIO C.B				C201	87-010-494-080		CAP ELECT GAS 1/50
C401	87-A12-090-080		CAP,E 4.7-50 SMG	C202	87-010-494-080		CAP ELECT GAS 1/50
C402	87-A12-090-080		CAP,E 4.7-50 SMG	C203	87-010-494-080		CAP ELECT GAS 1/50
C404	87-010-197-080		CAP, CHIP 0.01 DM	C204	87-010-498-080		CAP,E 10-16 M 5L SRE
C406	87-010-197-080		CAP, CHIP 0.01 DM	C209	87-A12-094-080		CAP,E 47-50 SMG
C407	87-A12-063-080		CAP,E 220-10 SMG	C210	87-010-197-080		CAP, CHIP 0.01 DM
C408	87-010-197-080		CAP, CHIP 0.01 DM	C213	87-016-044-080		CAP,E 100-16 5L GAS
C409	87-A12-068-080		CAP,E 470-16 SSL	C221	87-010-494-080		CAP ELECT GAS 1/50
C410	87-A12-068-080		CAP,E 470-16 SSL	C222	87-010-560-080		CAP,E 10-50 GAS
C411	87-A12-087-080		CAP,E 1-50 SMG	C223	87-010-494-080		CAP ELECT GAS 1/50
C413	87-A12-084-080		CAP,E 0.22-50 SMG	C224	87-010-560-080		CAP,E 10-50 GAS
C414	87-A12-084-080		CAP,E 0.22-50 SMG	C225	87-A10-189-080		CAP,E 220-10 M
C415	87-A12-090-080		CAP,E 4.7-50 SMG	C226	87-010-560-080		CAP,E 10-50 GAS
C416	87-A10-831-080		CAP,E 1000-25 M SMG	C227	87-010-197-080		CAP, CHIP 0.01 DM
C418	87-010-196-080		CHIP CAPACITOR,0.1-25	C228	87-A11-796-080		C-CAP,S 4.7-10 Z F
C419	87-010-379-080		CAP,E 22-16 SME	C230	87-010-498-080		CAP,E 10-16 M 5L SRE
C420	87-010-196-080		CHIP CAPACITOR,0.1-25	C232	87-010-498-080		CAP,E 10-16 M 5L SRE
C421	87-010-196-080		CHIP CAPACITOR,0.1-25	C233	87-A11-796-080		C-CAP,S 4.7-10 Z F
C422	87-010-196-080		CHIP CAPACITOR,0.1-25	C234	87-010-560-080		CAP,E 10-50 GAS
C423	87-010-196-080		CHIP CAPACITOR,0.1-25	C235	87-010-197-080		CAP, CHIP 0.01 DM
C428	87-A12-062-080		CAP,E 100-10 SMG	C236	87-010-560-080		CAP,E 10-50 GAS

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C237	87-010-197-080		CAP, CHIP 0.01 DM	C710	87-010-197-080		CAP, CHIP 0.01 DM
C238	87-010-805-080		C-CAP,S 1-16 Z F	C715	87-010-197-080		CAP, CHIP 0.01 DM
C239	87-010-805-080		C-CAP,S 1-16 Z F	C716	87-010-316-080		C-CAP,S 33P-50 CH
C240	87-012-140-080		C-CAP,S 470P-50 CH	C716	87-010-316-080		C-CAP,S 33P-50 J CH GRM
C241	87-012-140-080		C-CAP,S 470P-50 CH	C719	87-010-498-080		CAP,E 10-16 M 5L SRE
C242	87-012-154-080		C-CAP,S 150P-50 CH	C720	87-012-157-080		C-CAP,S 330P-50 CH
C243	87-012-154-080		C-CAP,S 150P-50 CH	C723	87-010-498-080		CAP,E 10-16 GAS
C245	87-010-318-080		C-CAP,S 47P-50 CH	C724	87-010-494-080		CAP ELECT GAS 1/50
C246	87-010-318-080		C-CAP,S 47P-50 CH	C725	87-010-197-080		CAP, CHIP 0.01 DM
C247	87-010-318-080		C-CAP,S 47P-50 CH	C726	87-010-197-080		C-CAP,S 0.01-25 K B C2012
C249	87-010-318-080		C-CAP,S 47P-50 CH	C727	87-010-497-080		CAP,E 4.7-35 5L
C250	87-010-318-080		C-CAP,S 47P-50 CH	C728	87-010-197-080		CAP, CHIP 0.01 DM
C251	87-010-322-080		C-CAP,S 100P-50 CH	C729	87-010-555-080		CAP,E 100-10 GAS
C252	87-010-322-080		C-CAP,S 100P-50 CH	C730	87-010-321-080		C-CAP,S 82P-50 J CH
C253	87-010-318-080		C-CAP,S 47P-50 CH	C731	87-012-140-080		CAP 470P
C258	87-010-494-080		CAP ELECT GAS 1/50	C732	87-010-189-080		C-CAP,S 8200P-50 B
C259	87-010-494-080		CAP ELECT GAS 1/50	C733	87-010-183-080		C-CAP,S 2700P-50 B
C260	87-010-494-080		CAP ELECT GAS 1/50	C734	87-012-142-080		CAP, S 0.33-16
C263	87-010-419-080		CAP,E 4.7-16 5L	C737	87-010-552-080		CAP,E 22-16 GAS
C264	87-010-419-080		CAP,E 4.7-16 5L	C739	87-012-157-080		C-CAP,S 330P-50 CH
C265	87-010-805-080		CAP, S 1-16	C740	87-010-318-080		C-CAP,S 47P-50 J CH GRM
C266	87-010-805-080		CAP, S 1-16	C741	87-012-140-080		CAP 470P
C267	87-A11-796-080		C-CAP,S 4.7-10 Z F	C742	87-010-189-080		C-CAP,S 8200P-50 B
C268	87-010-805-080		CAP, S 1-16	C743	87-010-183-080		C-CAP,S 2700P-50 B
C269	87-010-805-080		CAP, S 1-16	C744	87-012-142-080		CAP, S 0.33-16
C270	87-010-805-080		CAP, S 1-16	C745	87-012-157-080		C-CAP,S 330P-50 CH
C271	87-010-805-080		CAP, S 1-16	C748	87-012-154-080		C-CAP,S 150P-50 CH
C272	87-010-805-080		CAP, S 1-16	CN701	87-A60-722-010		CONN,8P JL-R
C273	87-010-805-080		CAP, S 1-16	CN702	87-A60-720-010		CONN,6P JL-R
C274	87-010-805-080		CAP, S 1-16	L701	87-005-461-080		COIL,1UH J FLR50
C275	87-A11-796-080		C-CAP,S 4.7-10 Z F	L702	87-005-461-080		COIL,1UH J FLR50
C280	87-010-805-080		CAP, S 1-16	L703	87-005-473-080		COIL,10UH J FLR50
C281	87-010-805-080		CAP, S 1-16	L705	87-005-473-080		COIL,10UH J FLR50
C282	87-010-994-080		C-CAP,S 680P-50 J CH	L707	87-005-473-080		COIL,10UH J FLR50
C283	87-010-994-080		C-CAP,S 680P-50 J CH	L708	87-005-485-080		COIL,100UH J FLR50
C298	87-A10-189-080		CAP,E 220-10 M	X701	87-A70-199-080		VIB,XTAL 18.432MHZ
J201	87-JB1-615-010		CONN,21P V SCART				
L201	87-005-473-080		COIL,10UH J FLR50				
L203	87-A50-599-080		C-COIL,S 47UH LQG21F470N	NK C.B			
R289	87-A91-578-080		C-F-BEAD,BK2125LM182-T				
R290	87-A91-578-080		C-F-BEAD,BK2125LM182-T	△ C551	87-010-976-080		CAP,CER 1000P-500 B
				△ C552	87-012-397-010		CAP,CER 1000P-2K BN
				C553	87-012-145-080		CAP, CHIP S 270P CH
				C554	87-012-145-080		CAP, CHIP S 270P CH
				C555	87-012-158-080		C-CAP,S 390P-50 CH
TEXT C.B				C556	87-016-624-080		CAP,E 10-16 M SSL
C751	87-010-196-080		CHIP CAPACITOR,0.1-25	C557	87-016-624-080		CAP,E 10-16 M SSL
C752	87-010-196-080		CHIP CAPACITOR,0.1-25	CN550	86-LBN-622-010		CONN ASSY,1P CRT-GND
C753	87-010-196-080		CHIP CAPACITOR,0.1-25	CN555	87-A61-060-080		CONN,1P V RED TP00706
C754	87-010-197-080		CAP, CHIP 0.01 DM	CN903	87-A60-485-010		CONN,2P V LV GRA
C755	87-010-555-080		CAP,E 100-10 GAS	L551	87-005-444-080		COIL 100UH,K
C756	87-010-498-080		CAP,E 10-16 GAS	PN551	87-009-195-010		CONN,5P B5BEH
C757	87-010-196-080		CHIP CAPACITOR,0.1-25	PN552	87-049-590-010		CONN,5P V WHT 8283
C758	87-010-313-080		C-CAP,S 18P-50 J CH GRM	R551	87-A00-165-090		RES,M/F 15K-2W J RSF(S)
C759	87-010-313-080		C-CAP,S 18P-50 J CH GRM	R552	87-A00-165-090		RES,M/F 15K-2W J RSF(S)
C760	87-010-495-080		CAP,E2.2-50	R553	87-A00-165-090		RES,M/F 15K-2W J RSF(S)
CN750	87-A60-722-010		CONN,8P JL-R	R554	87-A00-604-090		RES,3.3K-1/2W J RCR50L
CN751	87-A60-719-010		CONN,5P JL-R	R555	87-A00-604-090		RES,3.3K-1/2W J RCR50L
L751	87-005-481-080		COIL,47UH J FLR50	R556	87-A00-604-090		RES,3.3K-1/2W J RCR50L
X751	83-JU3-667-080		VIB,XTAL 12.0M	R564	87-A00-139-090		RES,M/F 390-1/2W J
NICAM C.B				S0551	8Z-JB4-670-010		SOCKET,CRT 9P CVT3327 1603
C701	87-010-318-080		C-CAP,S 47P-50 CH				
C702	87-010-318-080		C-CAP,S 47P-50 CH				
C703	87-010-145-080		C-CAP,S 1P-50 CH				
C704	87-010-145-080		C-CAP,S 1P-50 C CH GRM				
C705	87-010-553-080		CAP,E 47-16				
C706	87-010-197-080		CAP, CHIP 0.01 DM				
C707	87-010-197-080		CAP, CHIP 0.01 DM				
C708	87-010-496-080		CAP,E 3.3-50 5L				
C709	87-010-197-080		C-CAP,S 0.01-25 K B C2012				

TRANSISTOR ILLUSTRATION



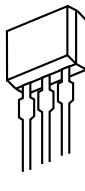
E C B

2SA1015GR
2SC3467D/E



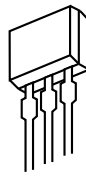
B E C

2SC3779D/E
2SC4002D/E



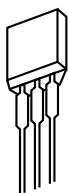
E C B

2SA1175FE
2SA950Y
2SC2785FE



S D G

2SJ460
2SK2541



E C B

2SC1740



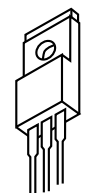
B C E

2SD2331
2SD2333LS
SE115N



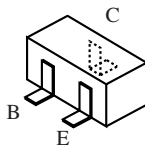
E C B

2SC2688M/L

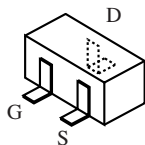


B C E

2SD2395F



2SA1307
2SC2412K
DTC323TK-T147



2SJ461-T1
2SK2158

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち

Chip Resistor Part Coding



A
抵抗部品コード
Resistor Code

桁表示
Figure
抵抗値
Value of resistor

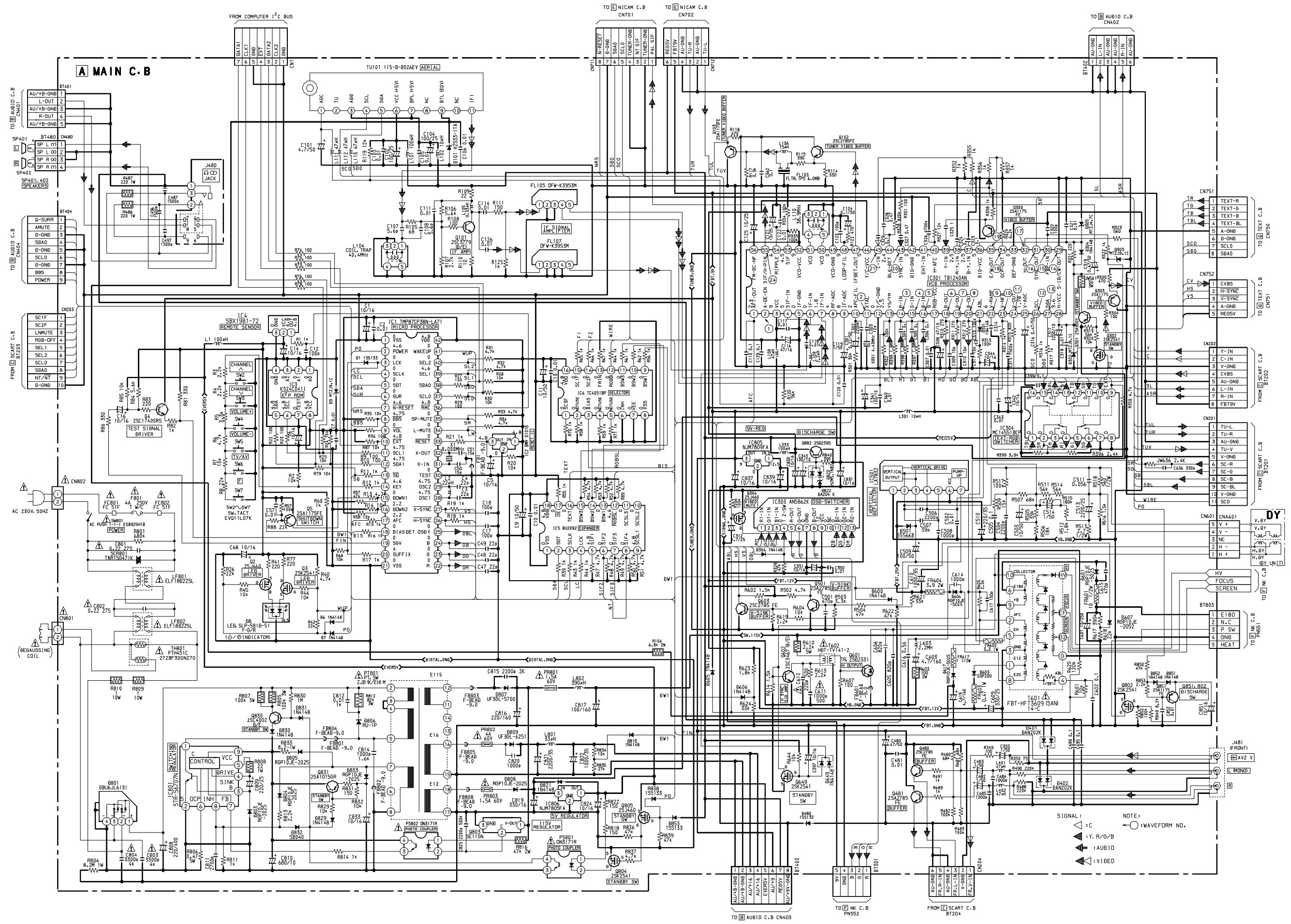
チップ抵抗
Chip resistor

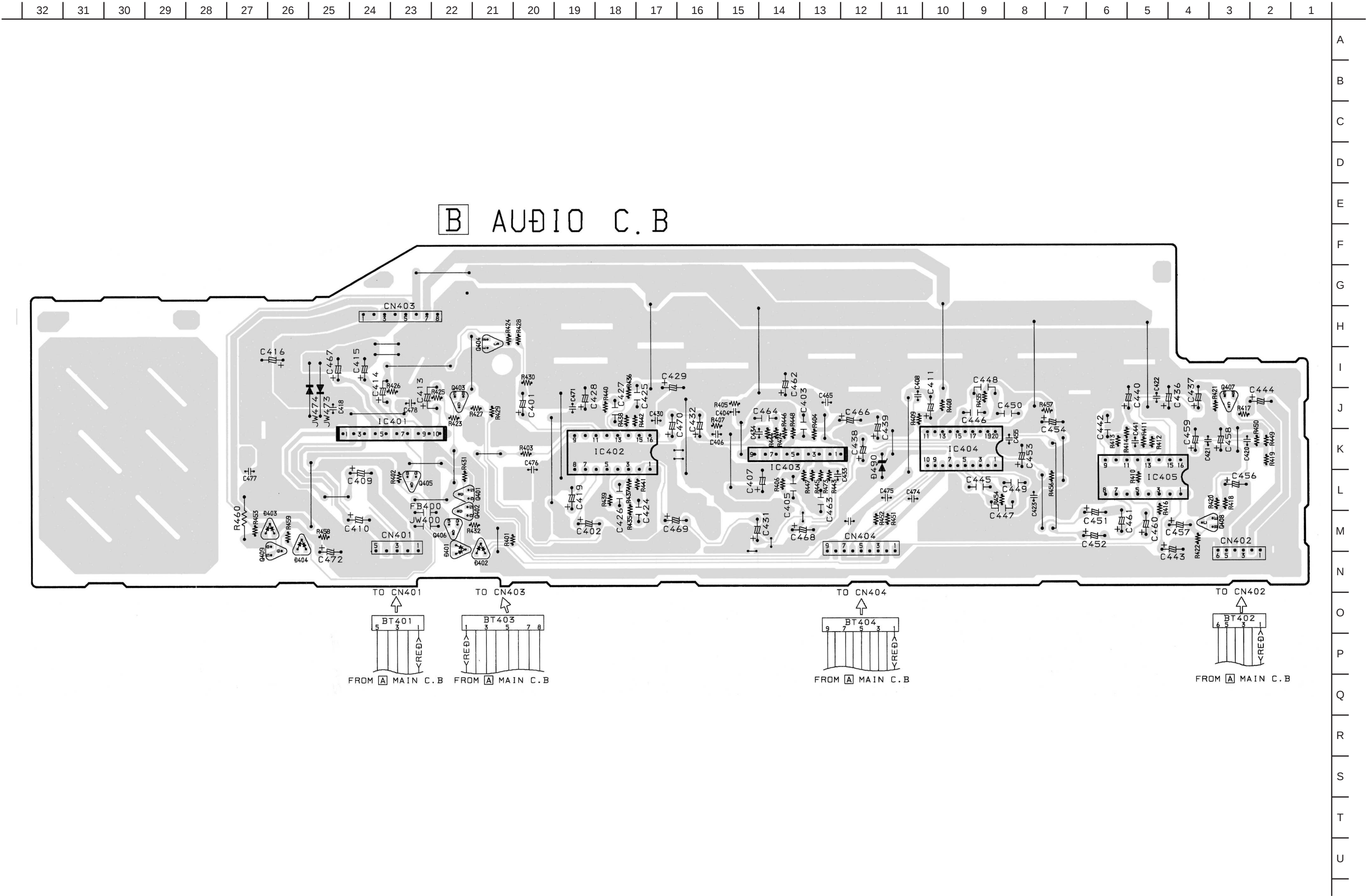
容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード : A Resistor Code : A
				外形／Form	L	W	t	
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
--	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	--

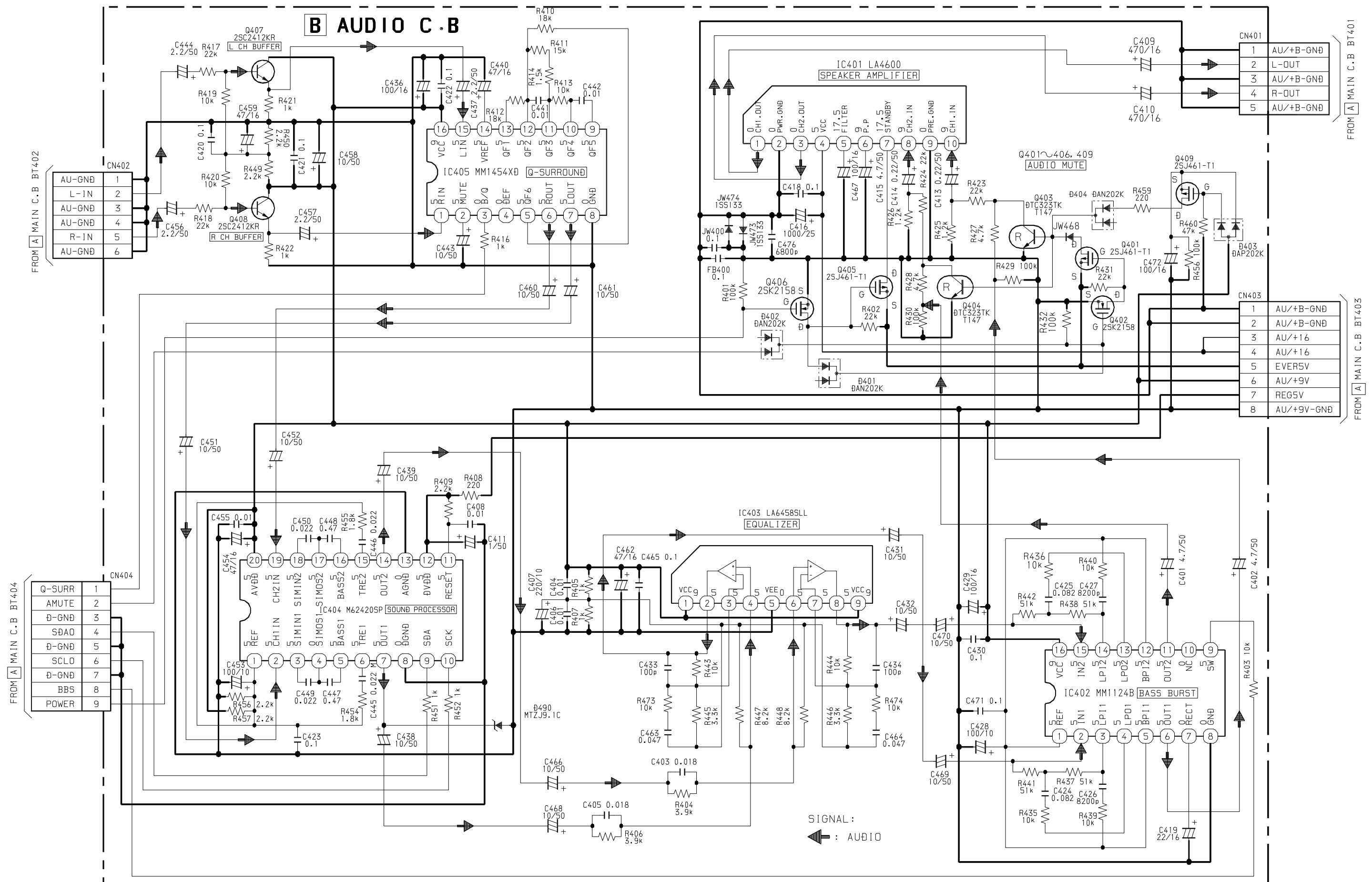


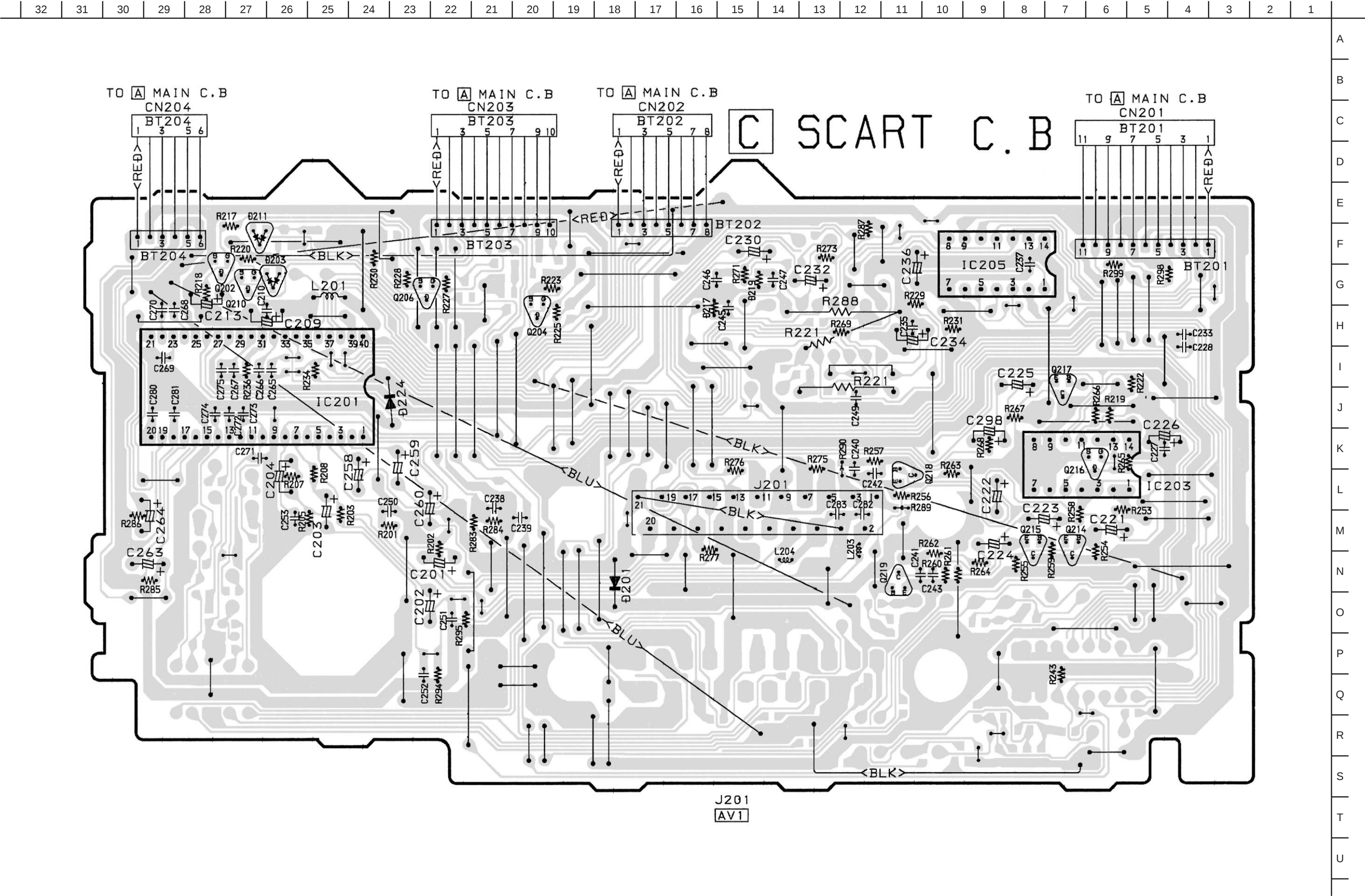
SCHEMATIC DIAGRAM – 1 (MAIN)



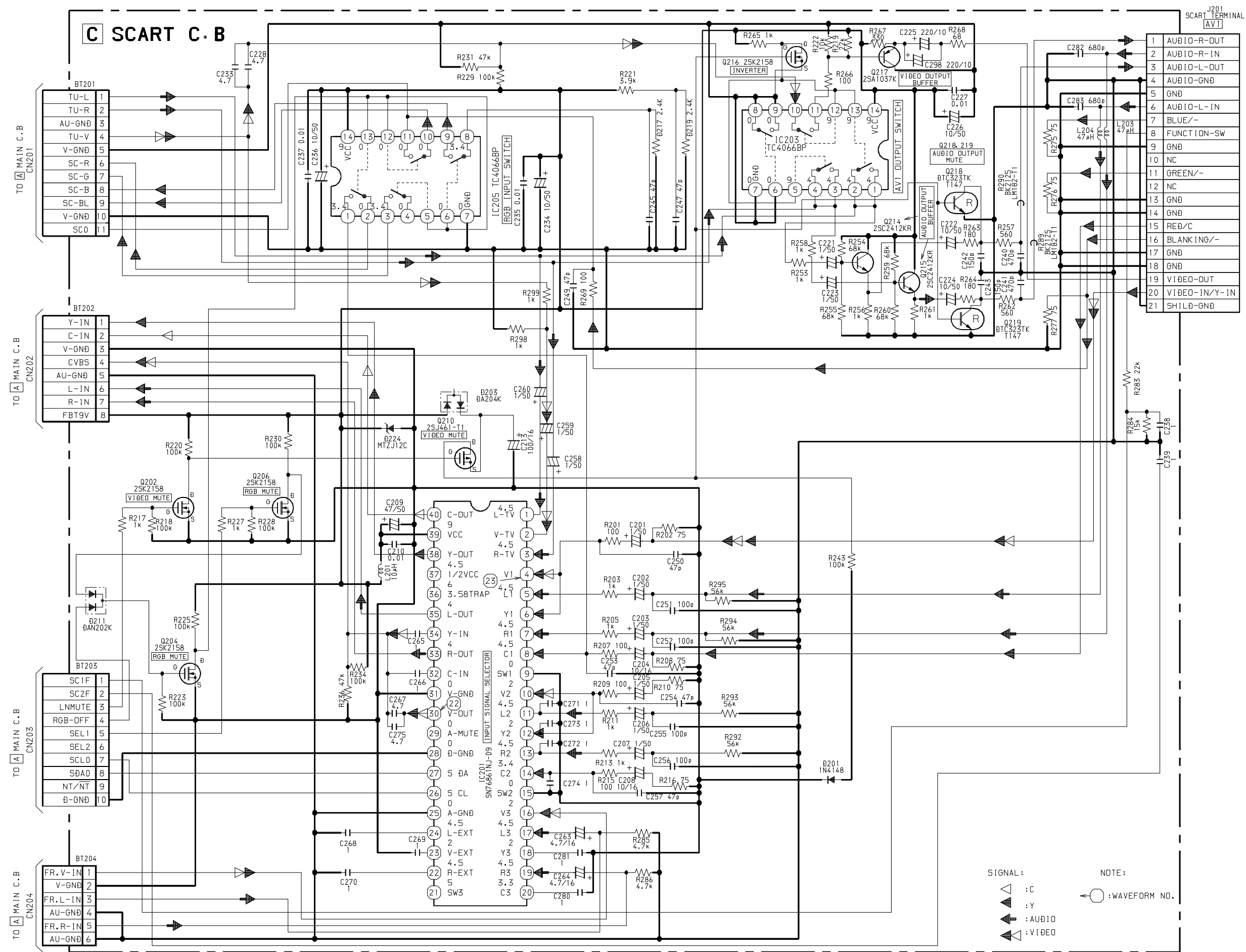


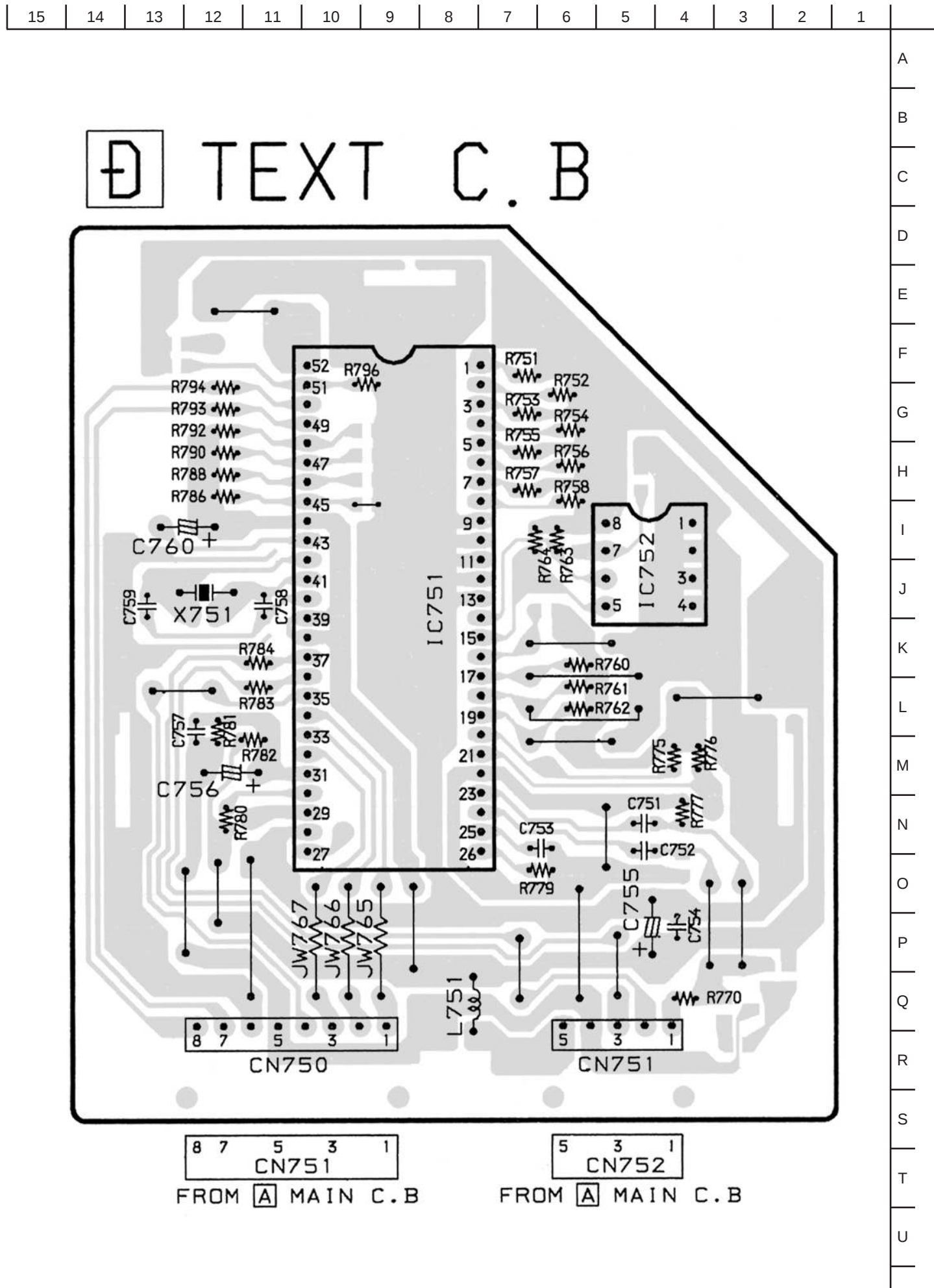
SCHEMATIC DIAGRAM – 2 (AUDIO)

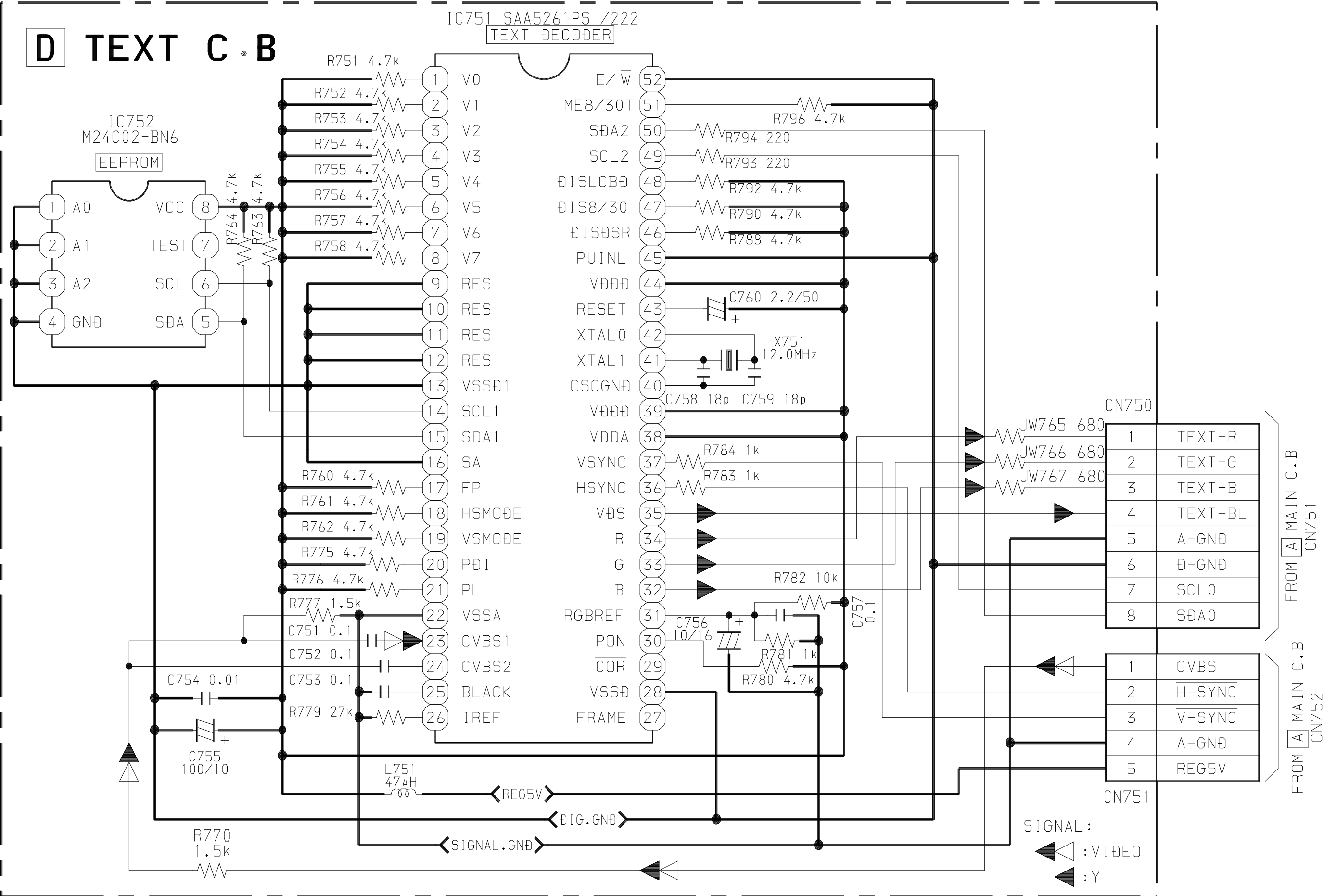




SCHEMATIC DIAGRAM – 3 (SCART)

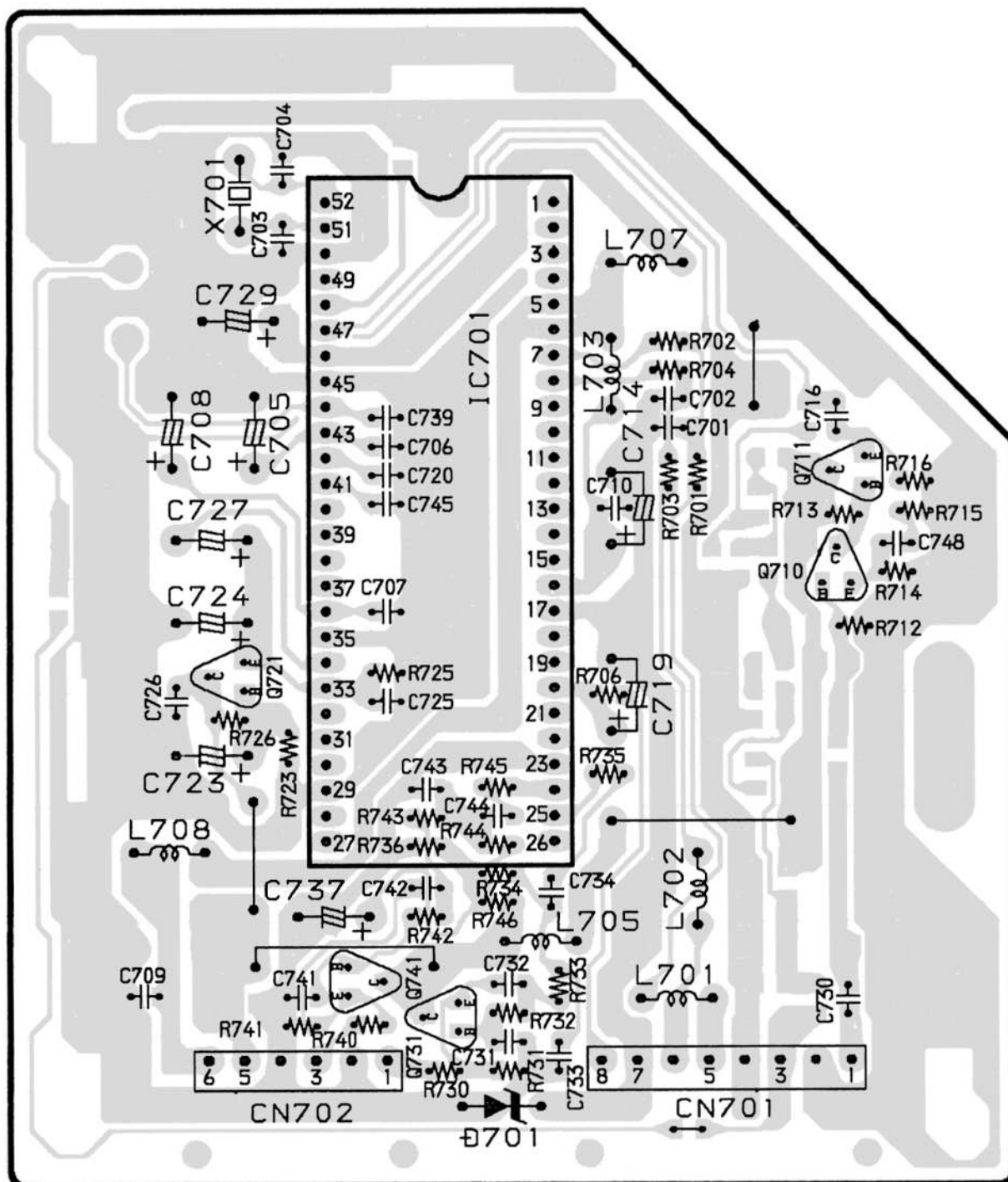






15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---

E NICAM C.B



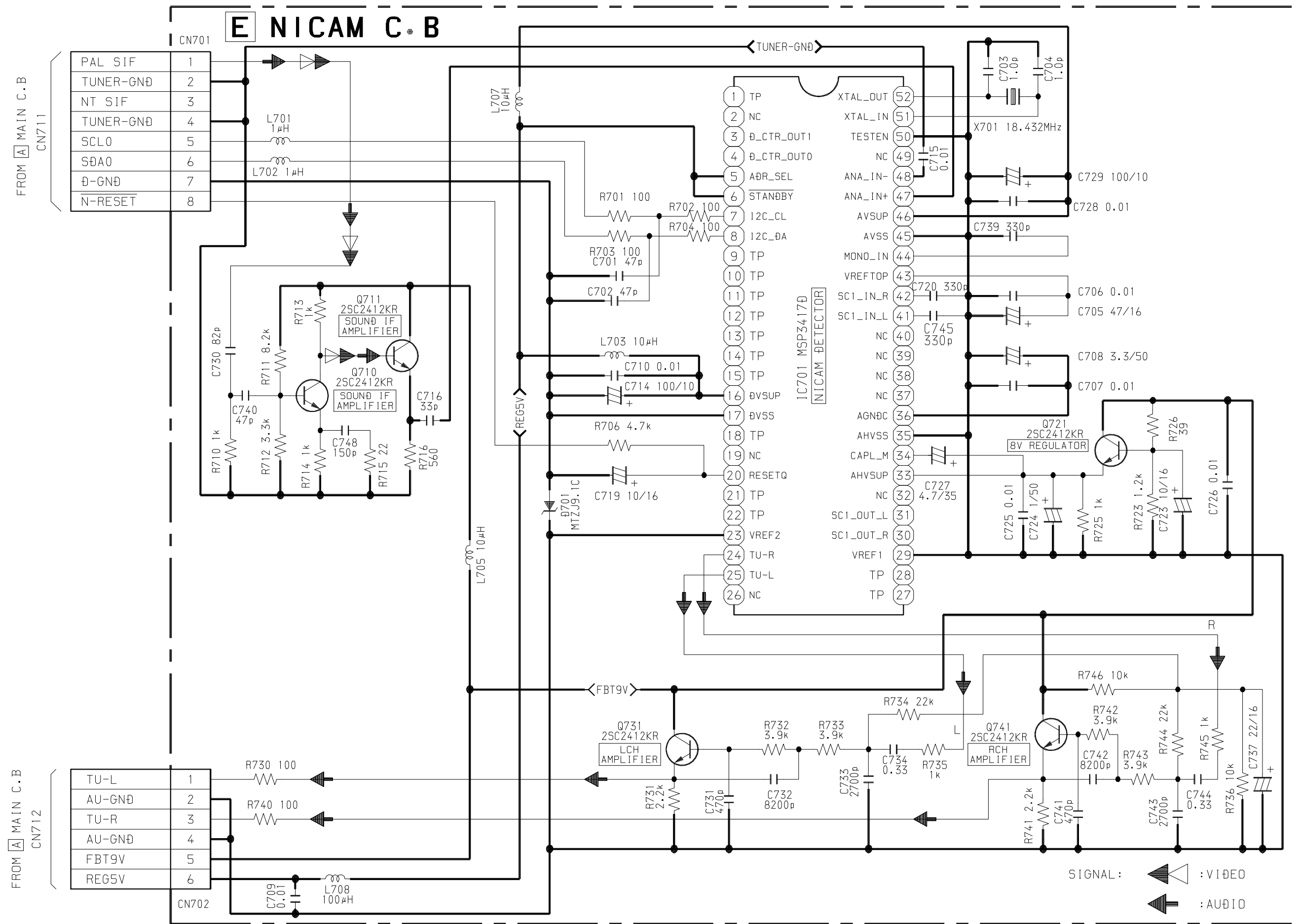
6 5 3 1
CN712

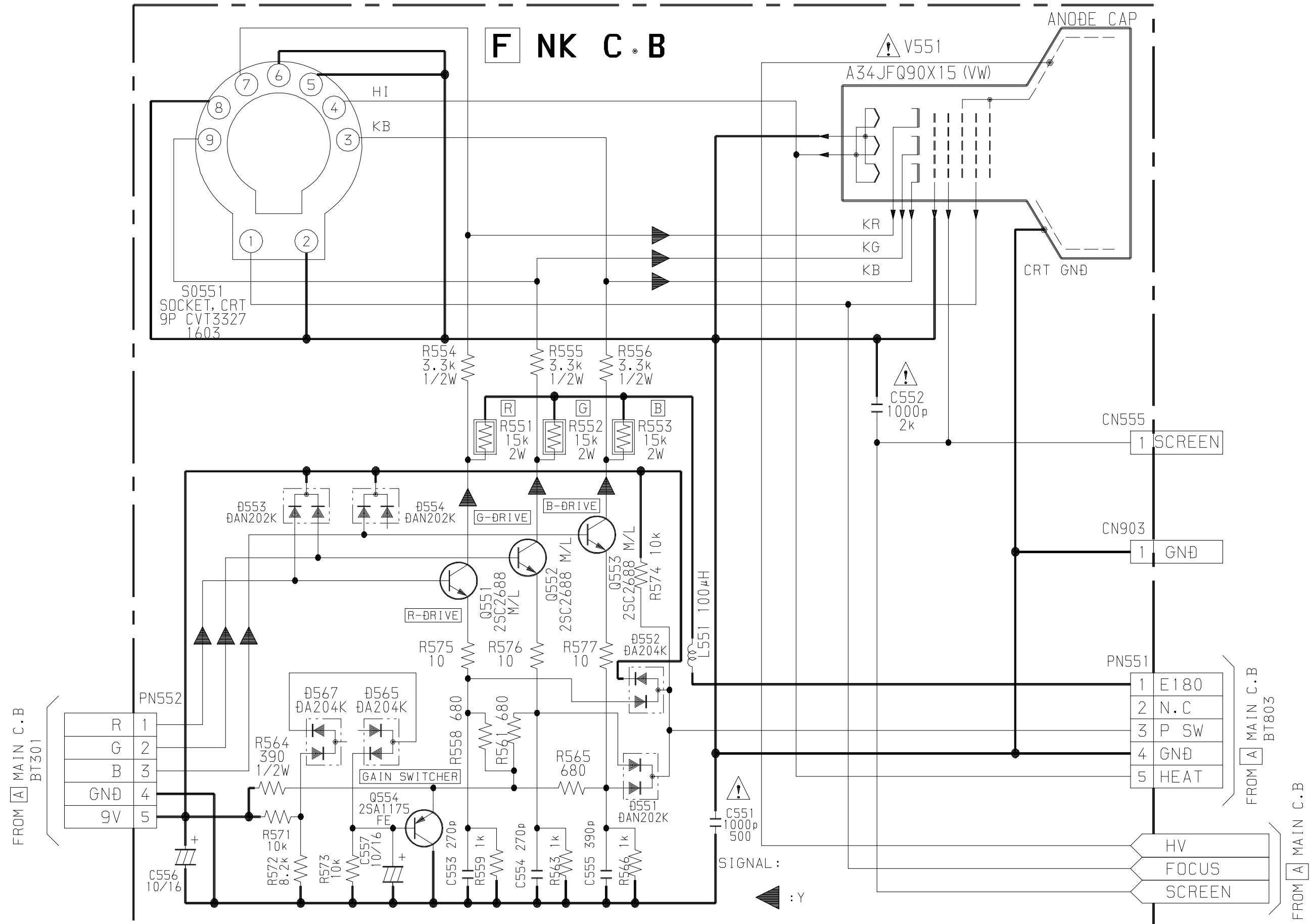
FROM [A] MAIN C.B

8 7 5 3 1
CN711

FROM [A] MAIN C.B

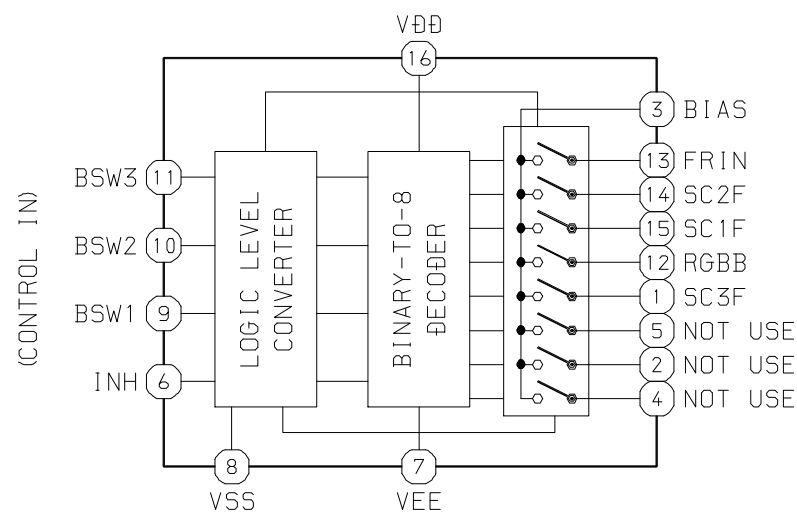
SCHEMATIC DIAGRAM – 5 (NICAM)



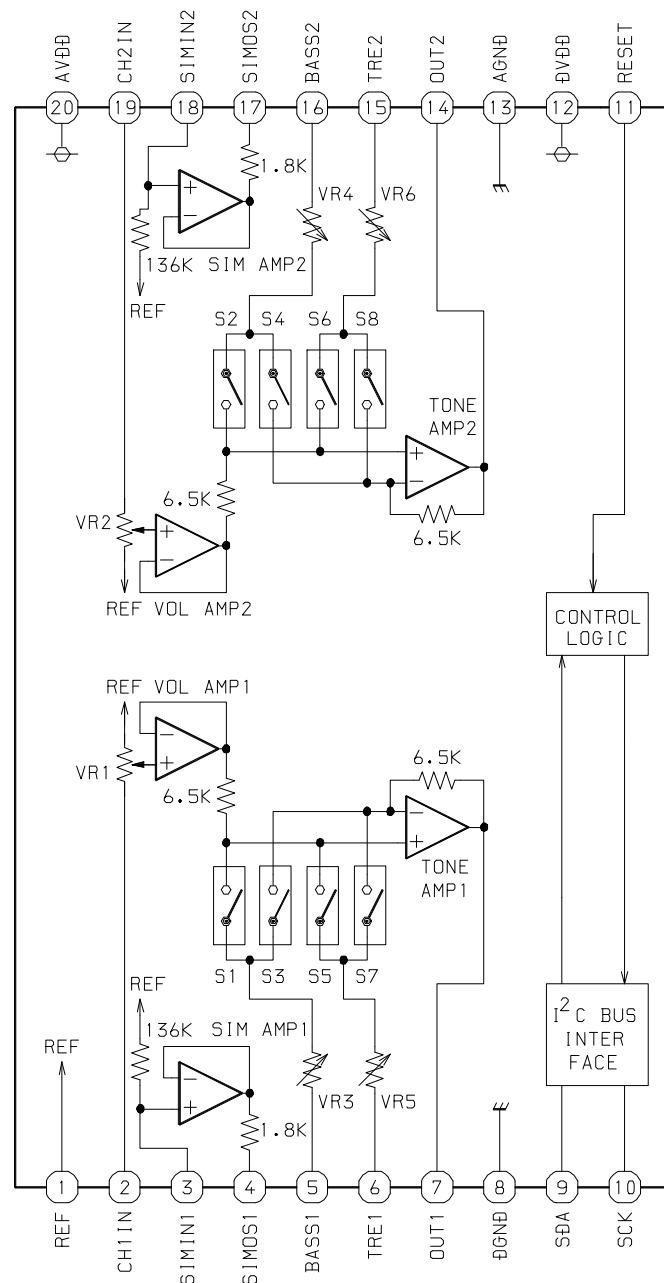


IC BLOCK DIAGRAM

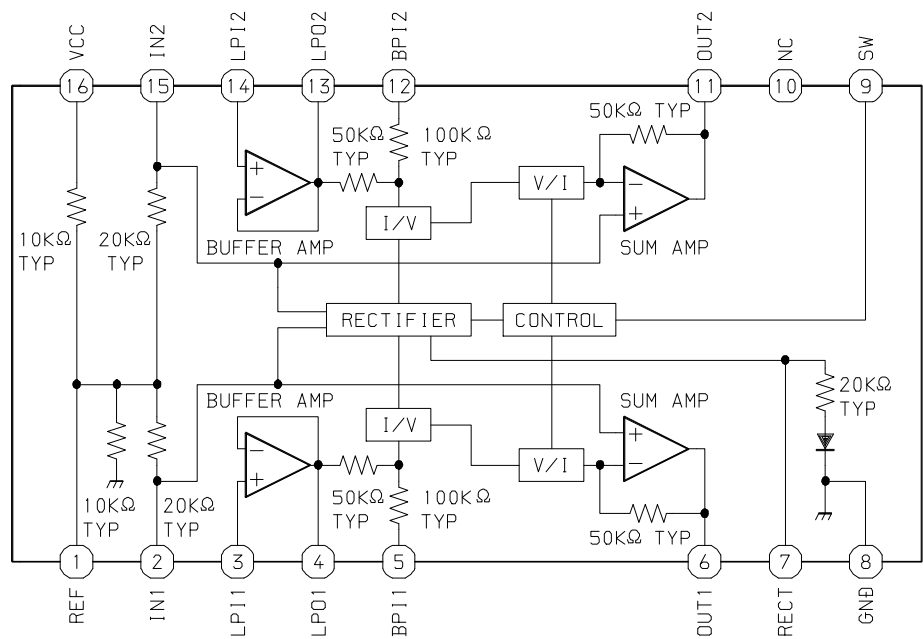
IC, TC4051BP



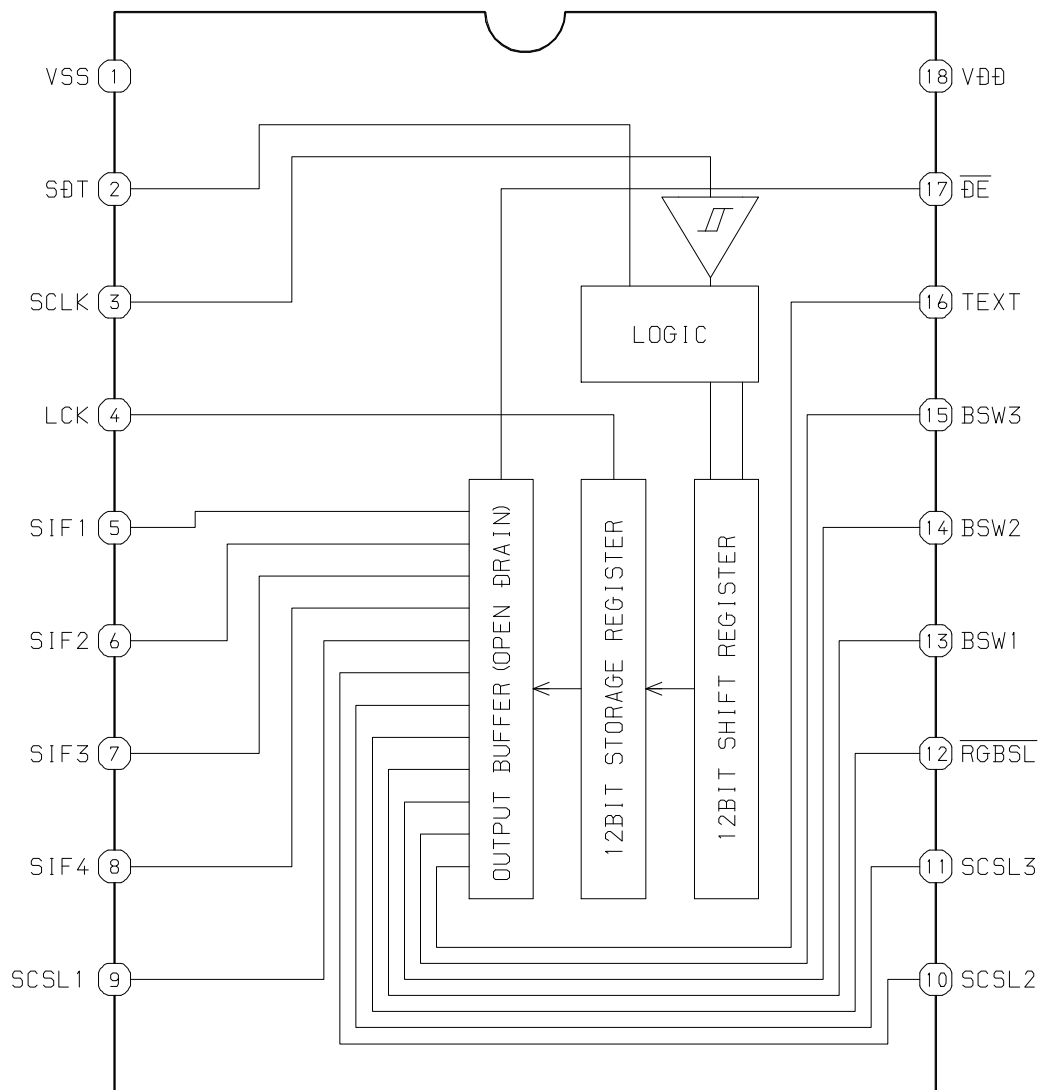
IC, M62420SP



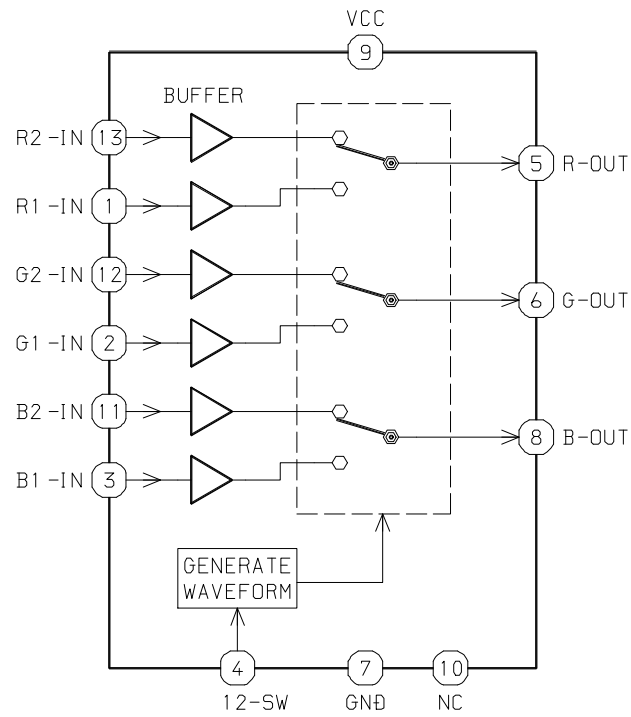
IC, MM1124B



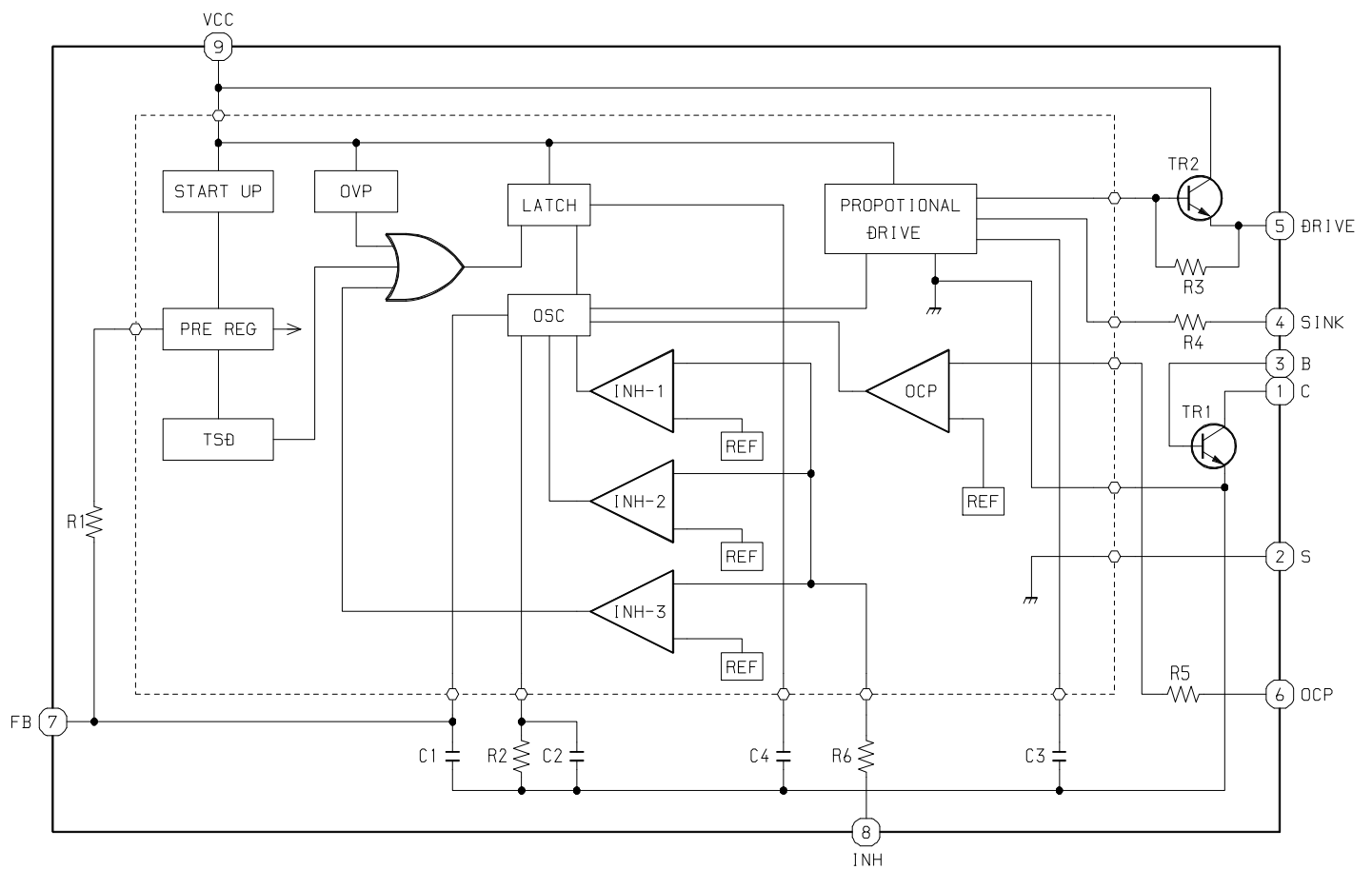
IC, BU2092



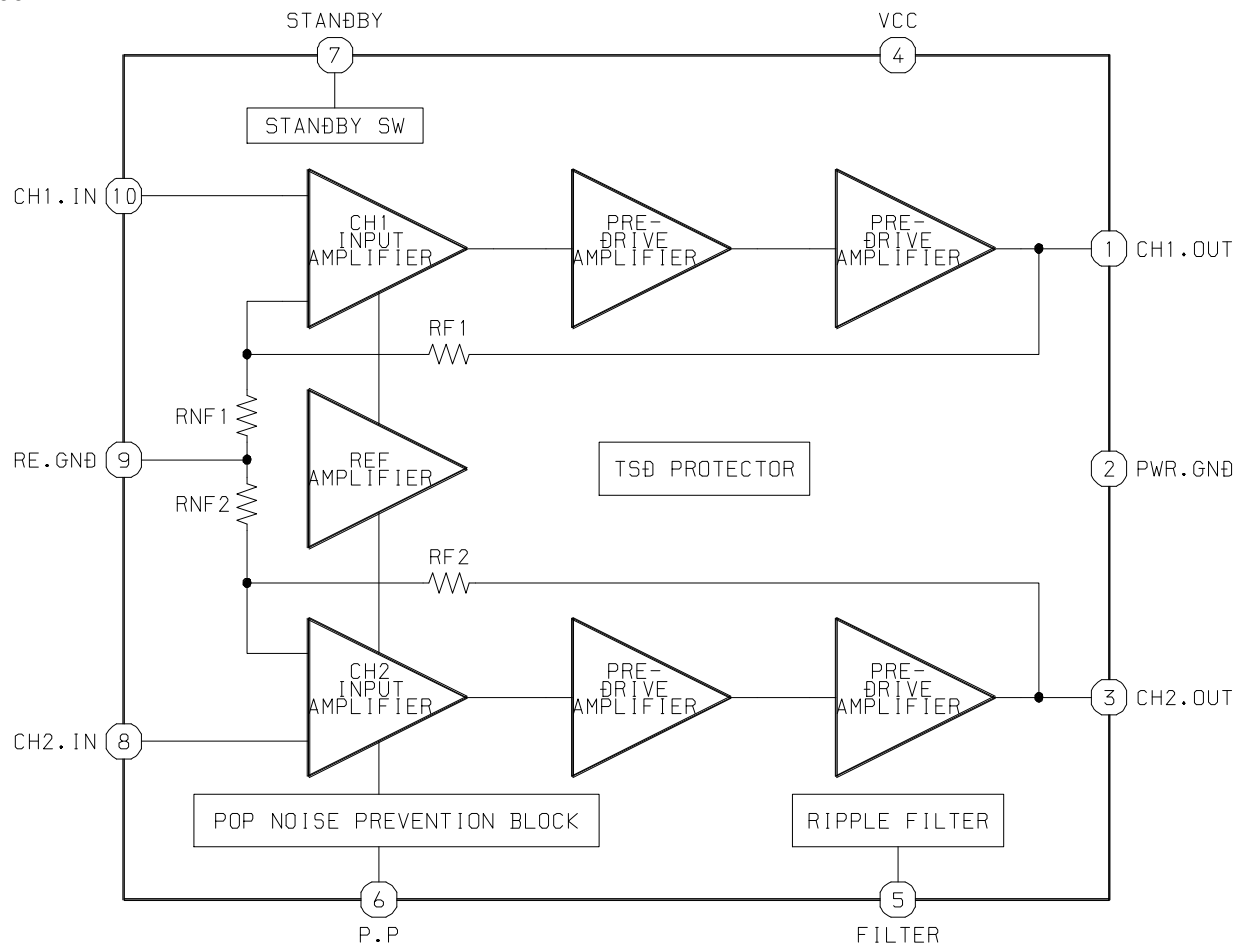
IC, AN5862K



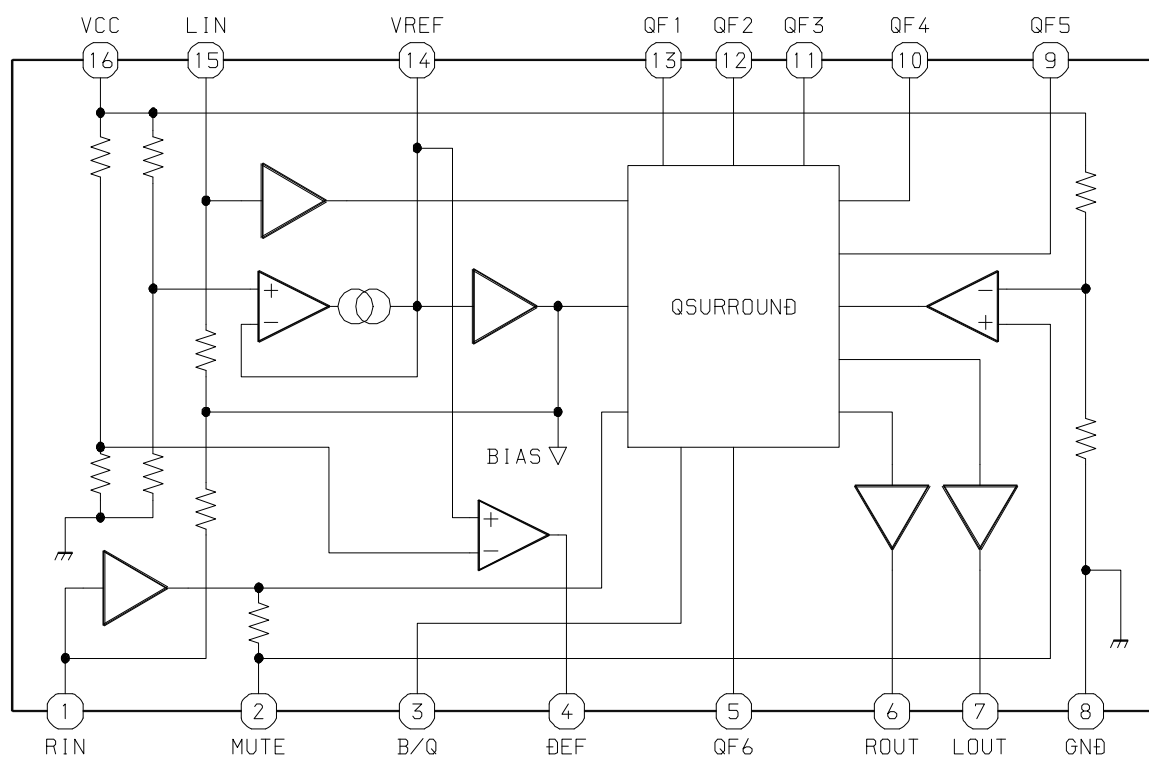
IC, STR-S6707N

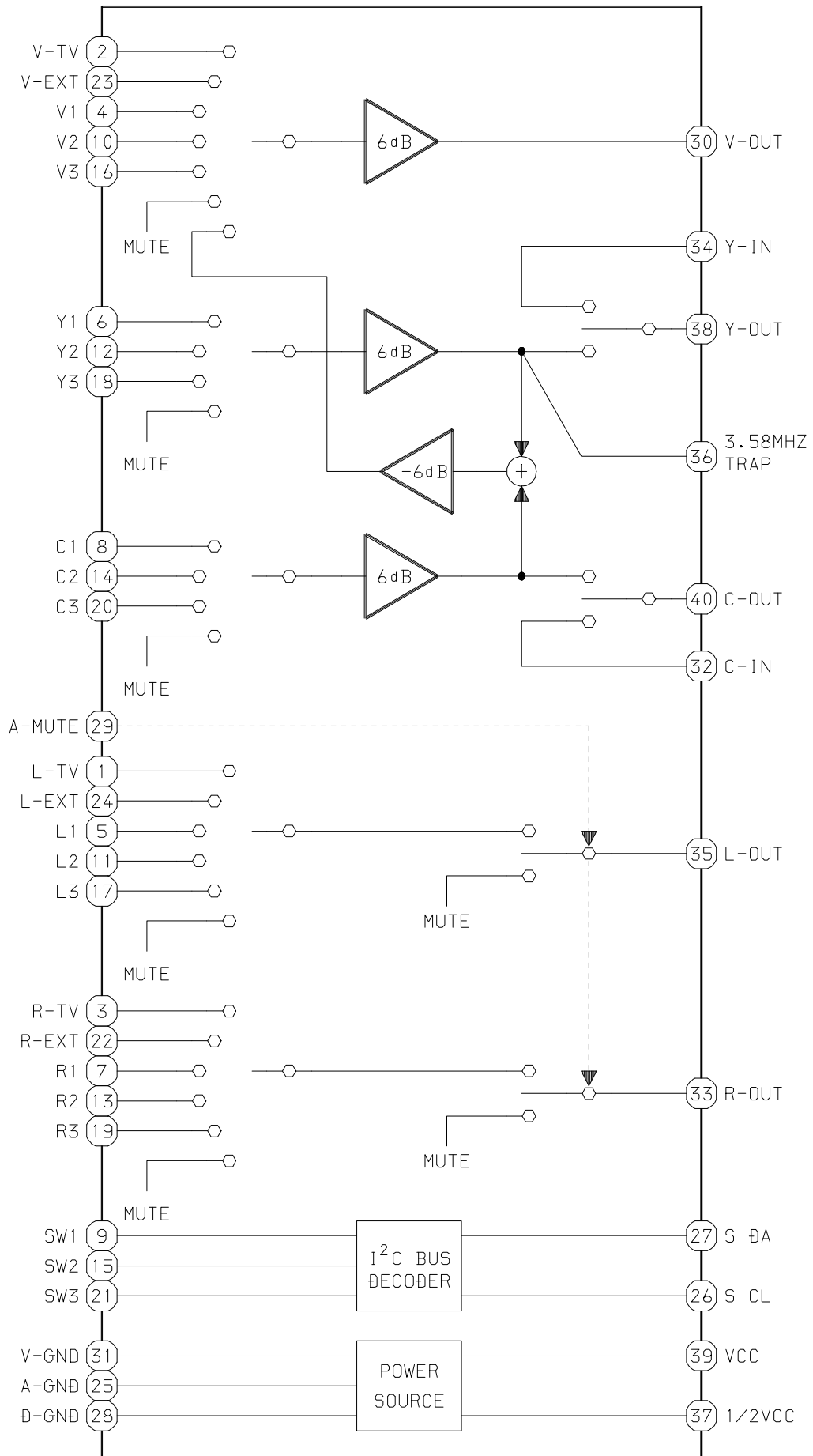


IC, LA4600

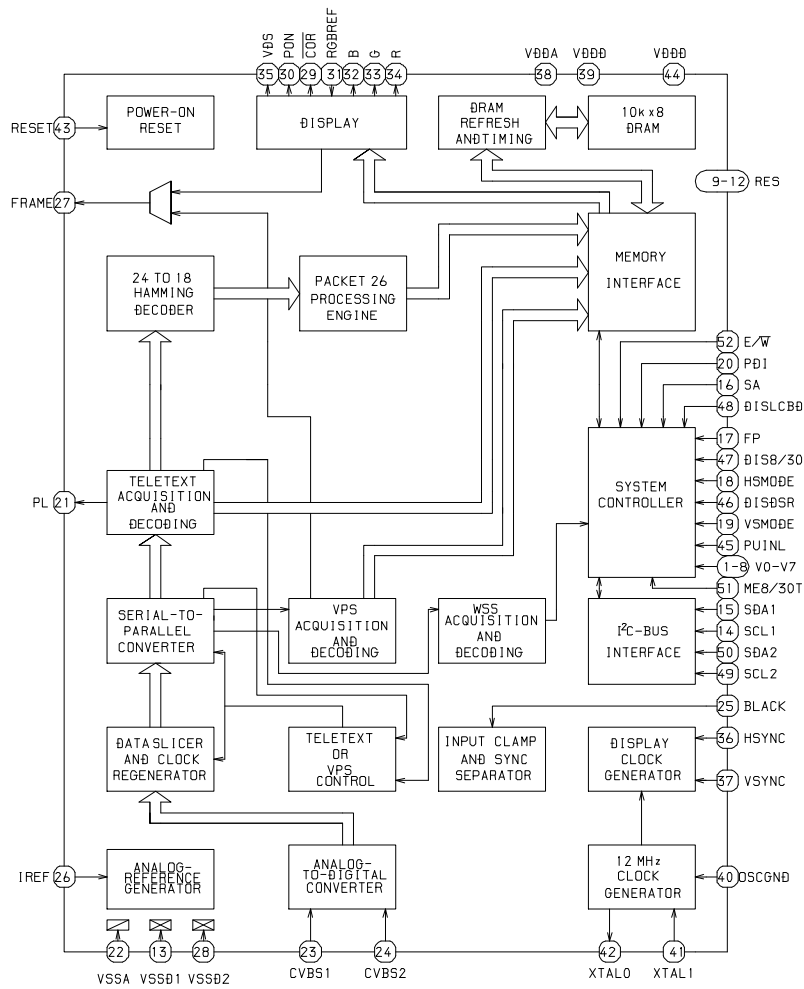


IC, MM1454XD

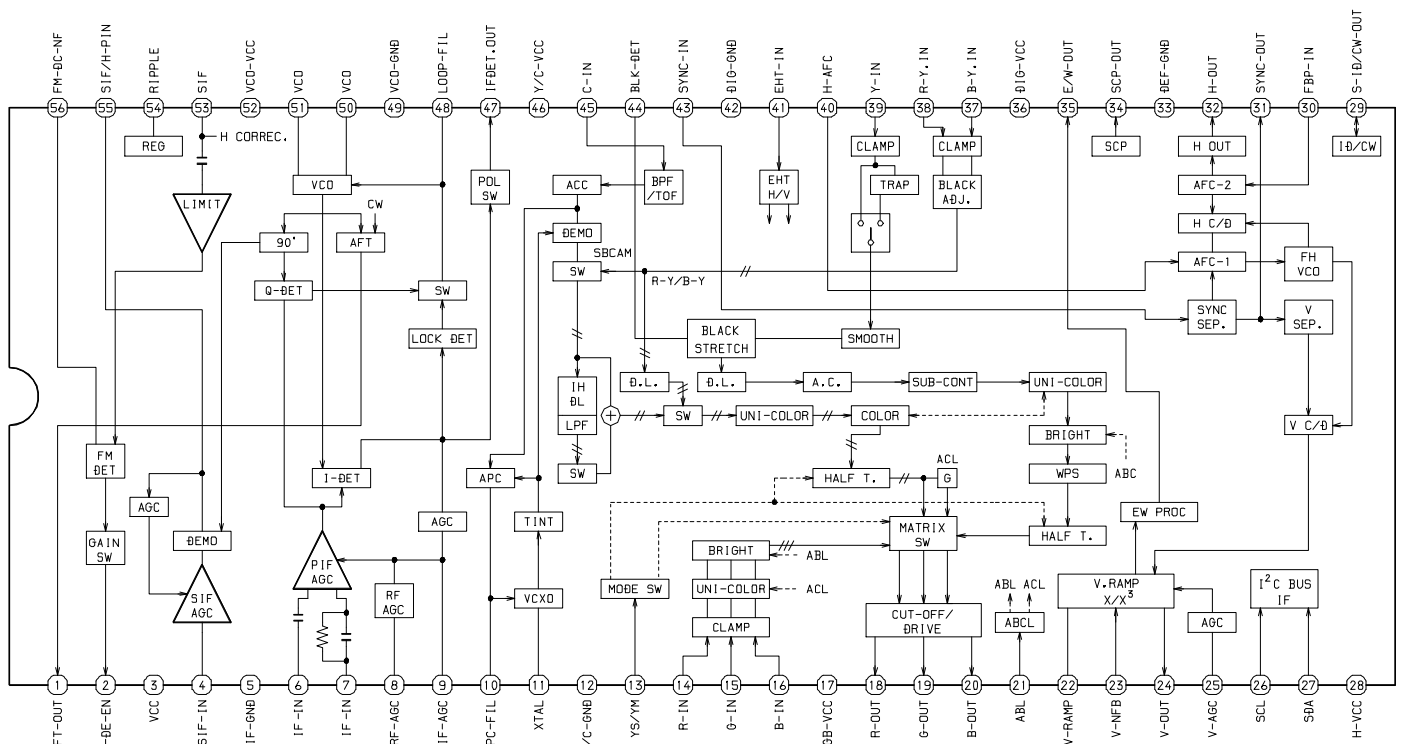




IC, SAA5261PS/222



IC, TB1240AN



IC DESCRIPTION

IC, TMP87CP38N-LA71

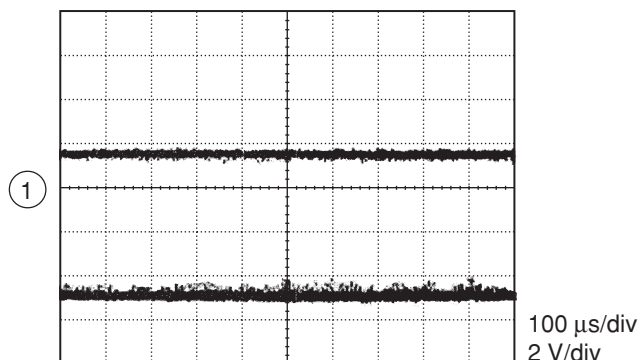
Pin No.	Pin Name	I/O	Description
1	VSS	–	GND.
2	POWER	O	Power control output (H = ON).
3	LCK	O	Serial latch clock.
4	SCLK	O	Serial clock.
5	SDT	O	Serial data.
6	Q SUR	O	Q Surround switching (H = ON).
7	$\overline{\text{N RESET}}$	O	NICAM reset (H= ON/L = Reset).
8	$\overline{\text{BBS}}$	O	Bass boost / S-woofer (L= Boost).
9	$\overline{\text{VOL}}$	O	Main volume control output.
10	$\overline{\text{EXT}}$	I	EXT bus sw (L= EXT).
11	SCL1	O	I ² C-Bus CH1 clock output.
12	SDA1	O	I ² C-Bus CH1 data output.
13	$\overline{\text{SD}}$	I	SYNC detect input.
14	KEY	I	Key input (5V= Key OFF).
15	DOWN1	I	Power condition 1 (L/Mid = Good, H = Bad).
16	DOWN2	I	Power condition 2 (Mid = Good, L/H = Bad).
17	AFC	I	Tuner AFT voltage input.
18	BIAS DET	I	Source voltage (Function/RGB).
19	SGV	O	Video signal generate (Factory) output.
20	SUFFIX	I	Feature select (initial) input.
21	VSS	–	GND.
22	R	O	OSD red output.
23	G	O	OSD green output.
24	B	O	OSD blue output.
25	OSD Y	O	OSD blanking output.
26	$\overline{\text{H-SYNC}}$	I	OSD H SYNC input.
27	$\overline{\text{V-SYNC}}$	I	OSD V SYNC input.
28	OSC1	–	OSD dot clock.
29	OSC2	–	OSD dot clock.
30	TEST	–	GND.
31	X-IN	I	8 MHz clock input.
32	X-OUT	O	8 MHz clock output.
33	$\overline{\text{RESET}}$	I	Reset input (L= Reset).
34	L-MUTE	O	Line out mute output (H = Mute).
35	SP MUTE	O	Speaker mute output (H = Mute).
36	$\overline{\text{RMC}}$	I	Remote control signal input.
37	SCL0	O	I ² C-Bus CH2 clock output.
38	SDA0	O	I ² C-Bus CH2 data output.
39	SEL1	O	Input select sw1.
40	SEL2	O	Input select sw2.
41	WAKEUP	O	ON timer LED (H= Timer on.)
42	VDD	–	VDD.

IC, MSP3417D

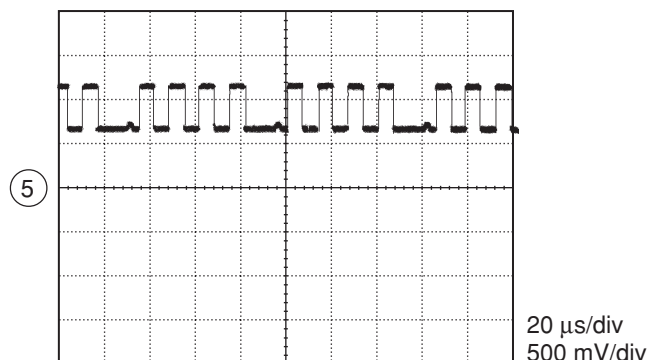
Pin No.	Pin Name	I/O	Description
1	TP	–	Test pin.
2	NC	–	Not connected.
3	D_CTR_OUT1	O	Digital control output 1.
4	D_CTR_OUT0	O	Digital control output 0.
5	ADR_SEL	I	I ² C Bus address select.
6	$\overline{\text{STANDBY}}$	I	Standby (L = Standby).
7	I ² C_CL	I/O	I ² C clock.
8	I ² C_DA	I/O	I ² C data.
9~15	TP	–	Test pin.
16	DVSUP	–	Digital power supply 5V.
17	DVSS	–	Digital ground.
18	TP	–	Test pin.
19	NC	I	Not connected.
20	RESETQ	I	Power on reset.
21~22	TP	–	Test pin.
23	VREF2	–	Reference ground 2 highvoltage part.
24	TU-R	O	Loudspeaker out right.
25	TU-L	O	Loudspeaker out left.
26	NC	–	Not connected.
27~28	TP	–	Test pin.
29	VREF1	–	Reference ground 1 highvoltage part.
30	SC1_OUT_R	O	Scart output 1 right.
31	SC1_OUT_L	O	Scart output 1 left.
32	NC	–	Not connected.
33	AHVSUP	–	Analog power supply 8V.
34	CAPL_M	–	Volume capacitor MAIN.
35	AHVSS	–	Analog ground.
36	AGNDC	–	Analog reference voltage high voltagpart.
37~40	NC	–	Not connected.
41	SC1_IN_L	I	Scart input 1 in left.
42	SC1_IN_R	I	Scart input 1 in right.
43	VREFTOP	–	Reference voltage IF A/D converter.
44	MONO_IN	I	Mono input.
45	AVSS	–	Analog ground.
46	AVSUP	–	Analog power supply 5V.
47	ANA_IN1+	I	IF input 1.
48	ANA_IN-	I	IF common.
49	NC	–	Not connected.
50	TESTEN	I	Test pin.
51	XTAL_IN	I	Crystal oscillator.
52	XTAL_OUT	O	Crystal oscillator.

WAVEFORM

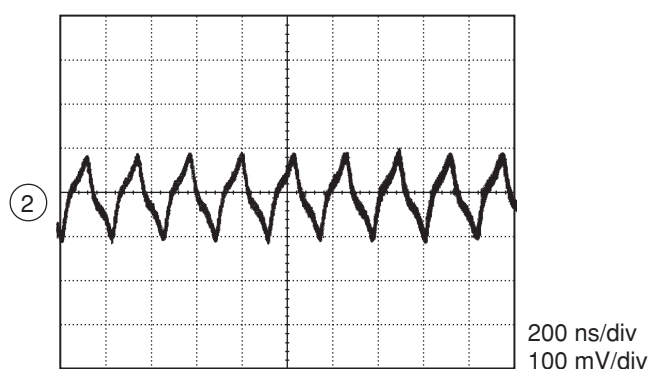
① IC301 PIN2: A-DE-EN



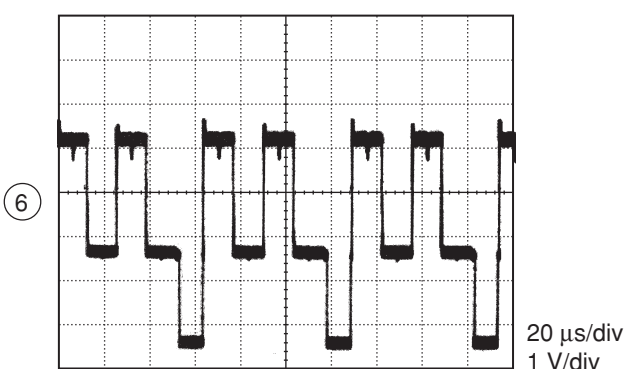
⑤ IC301 PIN16: B-IN



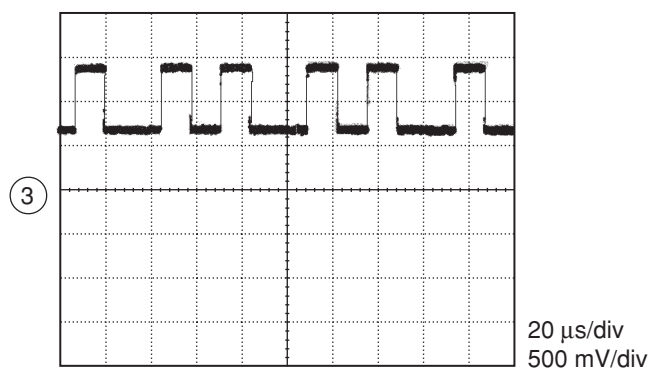
② IC301 PIN11: XTAL



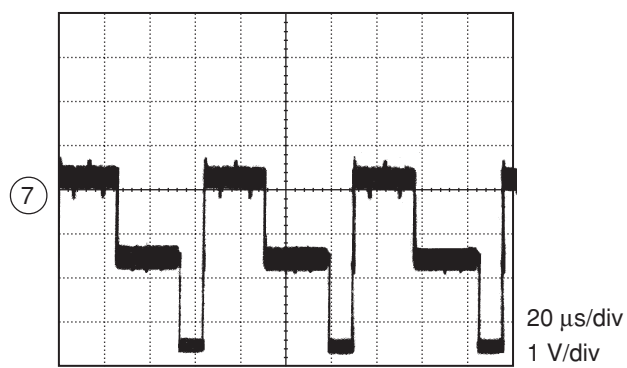
⑥ IC301 PIN18: R-OUT



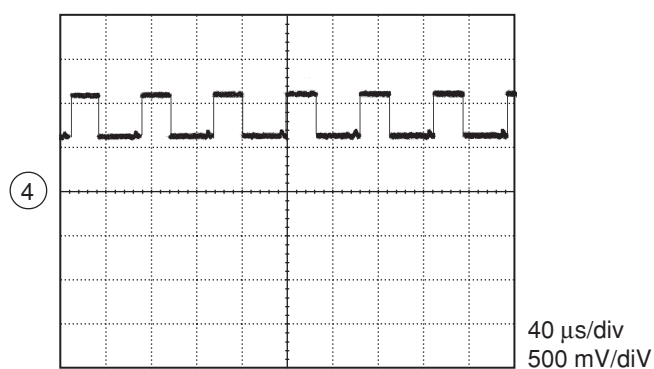
③ IC301 PIN14: R-IN



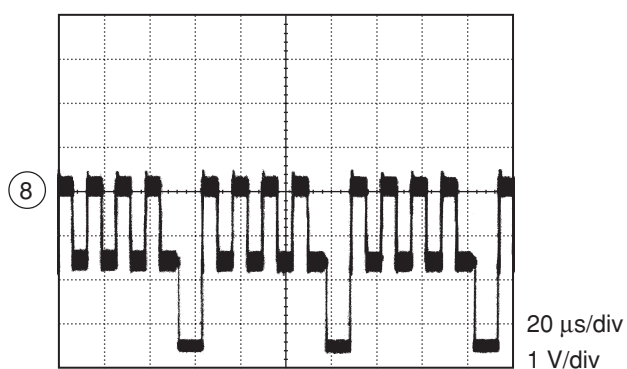
⑦ IC301 PIN19: G-OUT



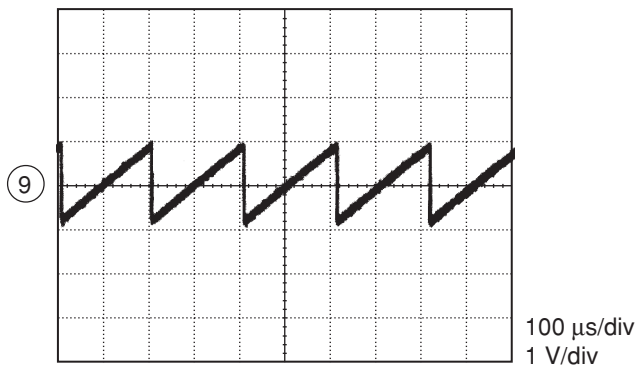
④ IC301 PIN15: G-IN



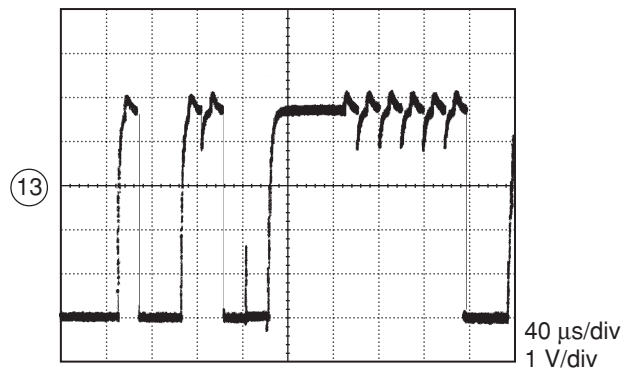
⑧ IC301 PIN20: B-OUT



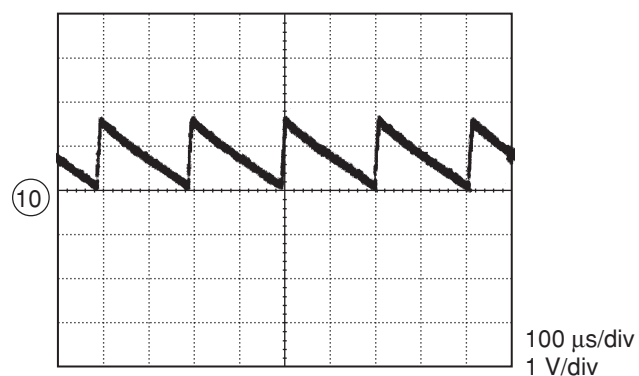
⑨ IC301 PIN22: V-RAMP



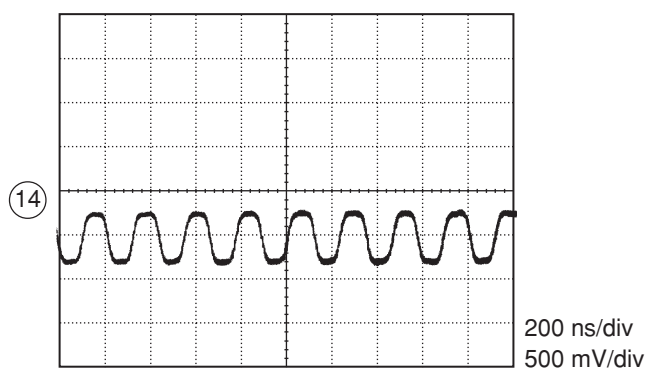
⑬ IC301 PIN27: SDA



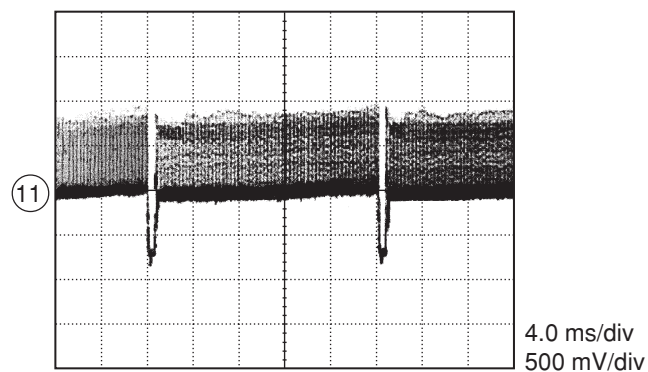
⑩ IC301 PIN23: V-NFB



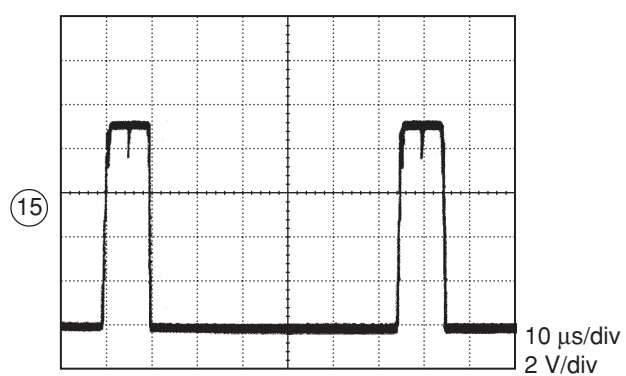
⑭ IC301 PIN29: S-ID/CW-OUT



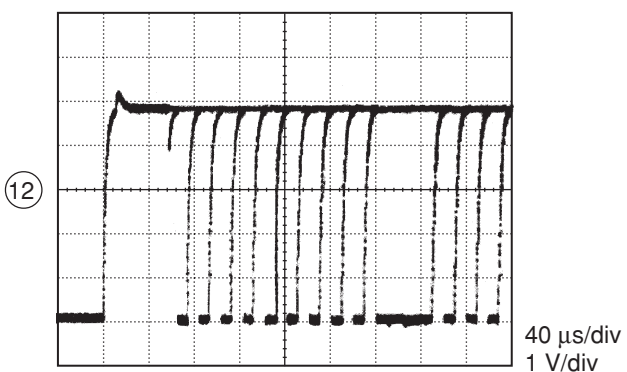
⑪ IC301 PIN24: V-OUT



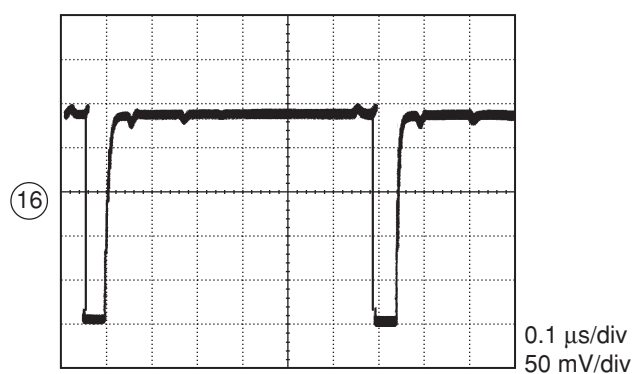
⑮ IC301 PIN30: FBP-IN



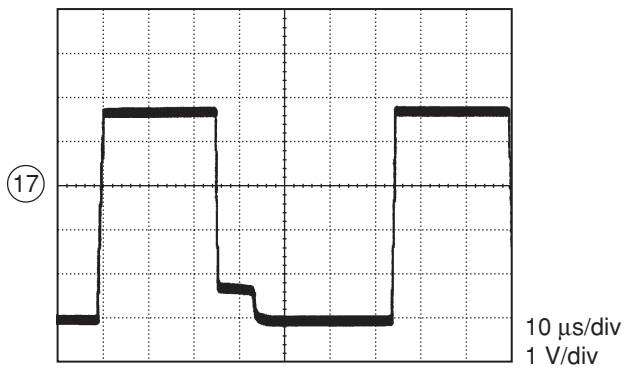
⑫ IC301 PIN26: SCL



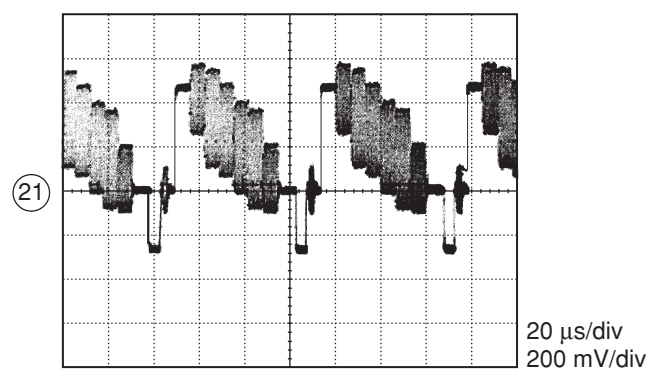
⑯ IC301 PIN31 : SYNC-OUT



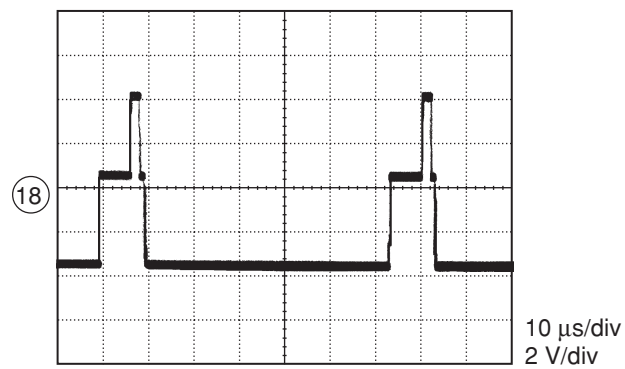
⑪ IC301 PIN32: H-OUT



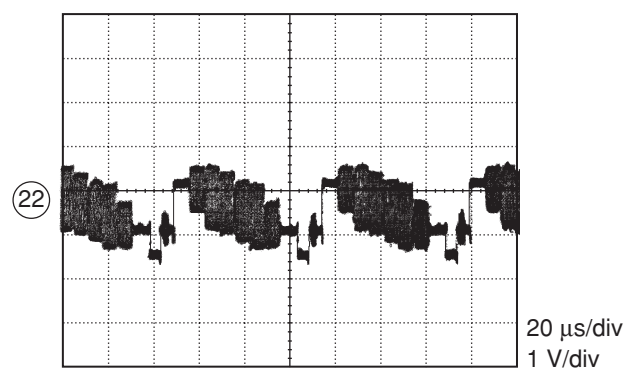
⑪ IC301 PIN45: C-IN



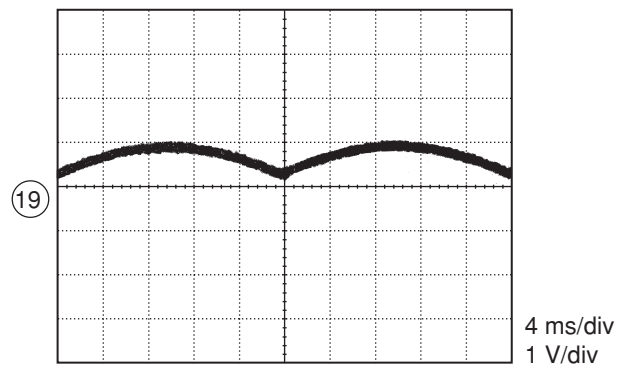
⑪ IC301 PIN34: SCP-OUT



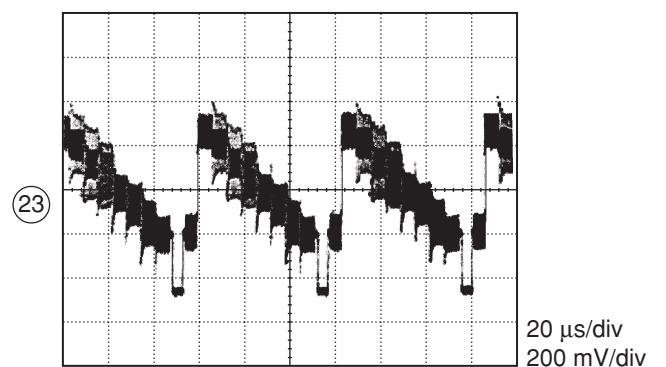
⑪ IC201 PIN30: V-OUT (SCART C.B)



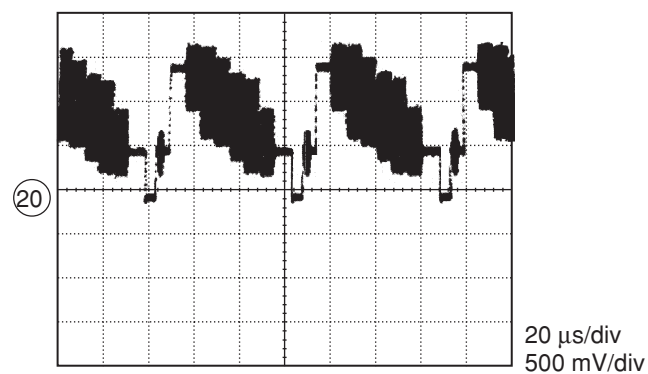
⑪ IC301 PIN35: E/W-OUT



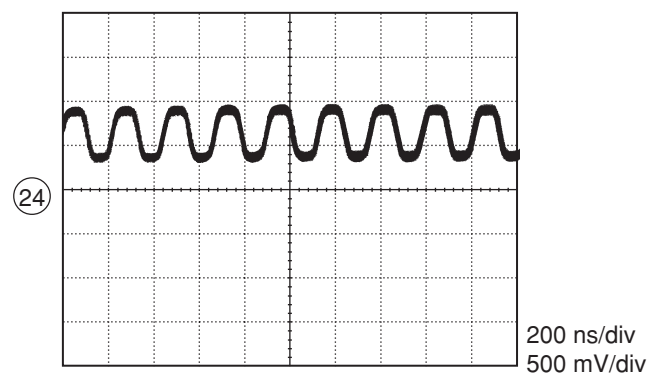
⑪ IC201 PIN4: V1 (SCART C.B)



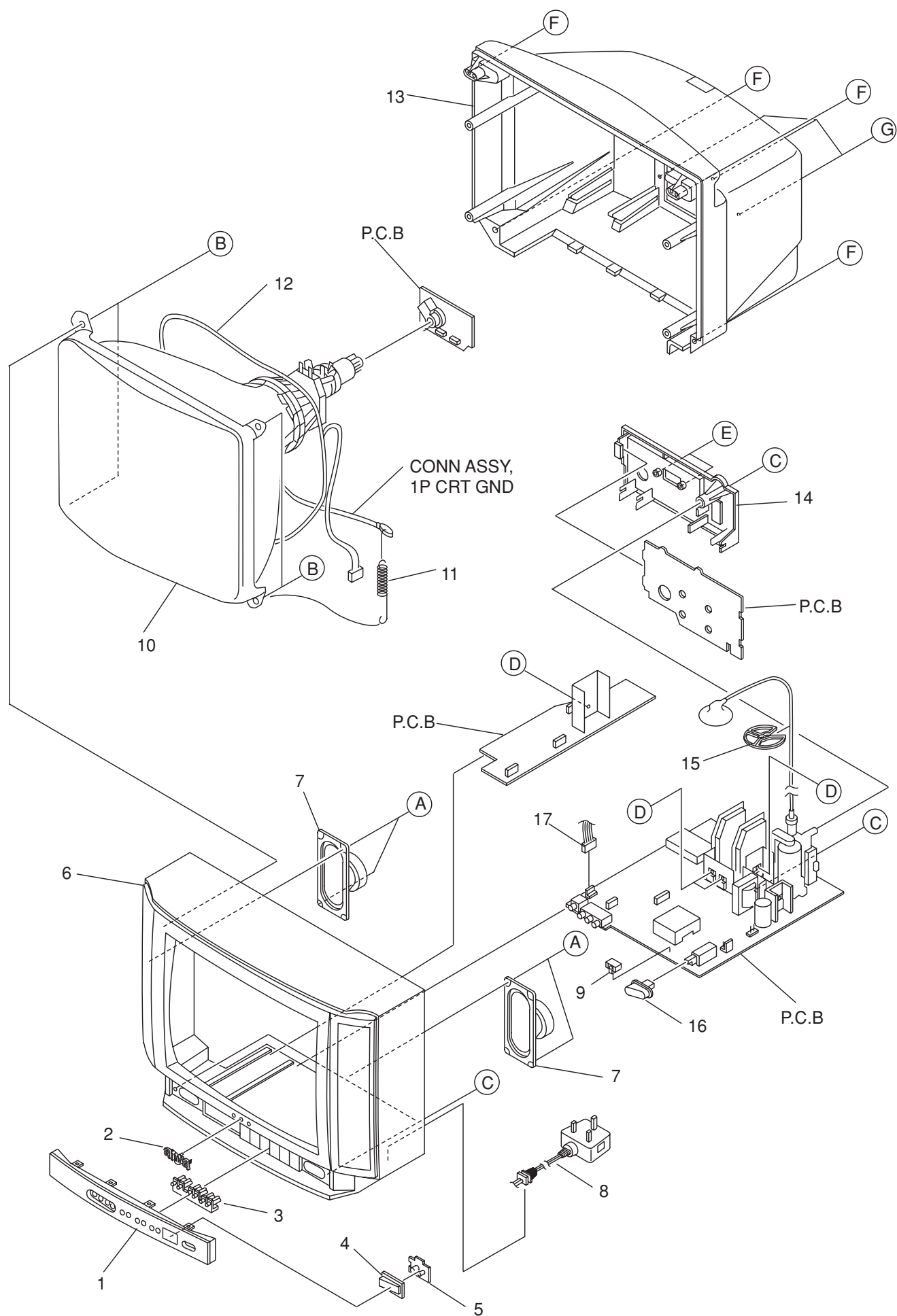
⑪ IC301 PIN43: SNYNC-IN



⑪ IC301 PIN55: SIF/H-PIN



MECHANICAL EXPLODED VIEW 1 / 1



MECHANICAL PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8Z-JB7-003-010		PANEL,MAIN
2	87-054-087-010		BADGE,AIWA 40
3	8Z-JB7-004-010		KEY,MAIN K
4	8Z-JBU-005-010		LENS,RC
5	8Z-JBU-006-010		LENS,LED
6	8Z-JB7-011-010		CABI,FR EU
7	8Z-JB7-672-010		SPKR,F 50*120
△	8	8Z-JB4-696-010	AC CORD SET,K2 BLK
9	84-LB3-216-010		HLD,LED
△	10	86-LBT-610-010	CRT,A34JFQ90X15 (VW)
11	84-LB3-205-010		SPR-E,EARTH
12	84-LB3-640-010		DGC, 14PAL3
13	8Z-JB7-012-010		CABI,REAR EU
14	8Z-JB7-010-010		PANEL,REAR K
15	87-A90-332-010		HLD,RF-2001 HV CABLE
16	8Z-JB7-007-010		BTN,POWER
17	8Z-JBH-631-010		CONN ASSY,4P V WHT SP-14
A	87-078-070-010		BVIT3B+4-12
B	87-078-203-110		S-SCREW,W5-25
C	87-067-680-010		BVI T3+3-10
D	87-067-579-010		TAPPING SCREW, BVT2+3-8
E	87-B10-071-010		BVT2+3-16 W/O SLOT B
F	87-067-844-010		BVT2+4-16 BLK
G	87-067-690-010		TAPPING SCREW, BVIT3+3-12

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange	GM	Metallic Green
YM	Metallic Yellow	DM	Metallic Orange		

アイワ株式会社 〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111 (代表)
AIWA CO.,LTD. 2-11, IKENOHATA 1-CHOME, TAITO-KU, TOKYO 110, JAPAN TEL:03 (3827) 3111