aiwa
SERVICE

XR-MK25 HC,HR

SERVICE MANUAL

COMPACT DISC
STEREO SYSTEM

BASIC TAPE MECHANISM : 2ZM−1 YR6N
BASIC CD MECHANISM : 3ZG−3 E2NC

SYSTEM	SPEAKER	REMOTE CONTROLLER
XR−MK25	SX−M25B	RC−8AT02

aiwa

S/M Code No. 09-989-284-0OT

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SPECIFICATIONS

<FM Tuner section>

Tuning range	87.5MHz to 108MHz
Usable sensitivity(IHF)	13.2dBf
Antenna terminals	75ohms (unbalanced)

<AM Tuner section>

Tuning range	531kHz to 1602kHz (9kHz step) 530kHz to 1710kHz (10kHz step)
Usable sensitivity	350μV/m
Antenna	Loop antenna

<Amplifier section>

Power output	Rated: 16W + 16W (6ohms, T.H.D. 1%, 1kHz) Reference: 20W + 20W (6ohms, T.H.D. 10%, 1kHz)
Total Harmonic distortion	0.08% (10.5W, 1kHz, 6ohms)
Inputs	VIDEO/AUX: 400mV MIC: 1.8mV (10kohms)
Outputs	VIDEO OUT: 1.0Vp-p (75ohms) AUDIO OUT: 530mV (47kohms) SUPER WOOFER: 1.0V SPEAKERS: accepts speakers of 6ohms or more PHONES (stereo minijack): accepts headphones of 32ohms or more

<Cassette deck section>

Track format	4 tracks, 2 channels stereo
Frequency response	CrO_2 tape: 50Hz – 1600Hz Normal tape: 50Hz – 15000Hz
Signal-to-noise ratio	50dB (CrO_2 tape peak level above 1kHz)
Recording system	AC bias
Heads	Recording/playback head x 1 Erase head x1

<Compact disc player section>

Laser	Semiconductor laser (λ=780nm)
D-A converter	1 bit dual
Signal-to-noise ratio	75dB (1kHz, 0dB)
Harmonic distortion	0.1% (1kHz, 0dB)
Wow and flutter	Unmeasurable
Video signal	NTSC/PAL color format (selectable)
Video data	MPEG 1
Audio data	MPEG 1, LAYER 2

<General>

Power requirements	AC: 120V/220V – 240V, switchable, 50/60Hz
Power consumption	55W
Dimensions of main unit (W x H x D)	173 x 255.2 x 248.8mm ($6^7/_8$ x $10^1/_8$ x $9^7/_8$in.)
Weight of main unit	3.65kg (8lbs 1oz.)

<Speaker system>

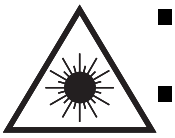
Cabinet type	2 way, bass reflex (magnetic shield type)
Speaker	Woofer: 120mm ($4^3/_4$ in.) cone type Tweeter: 20mm ($^{13}/_{16}$in.) ceramic type
Impedance	6ohms
Output sound pressure level	87dB/W/m
Dimensions (W x H x D)	155 x 253 x 220mm ($6^1/_8$ x 10 x $8^3/_4$in.)
Weight	2.6kg (5lbs 12oz.)

- Design and specifications are subject to change without notice.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!
WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!
Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saataa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

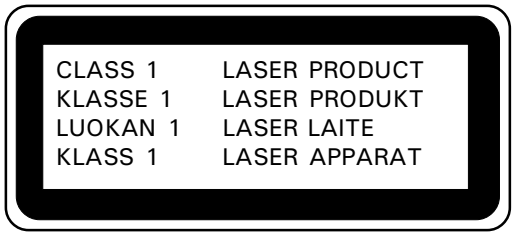
VARNING!
Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herin may result in hazardous radiation exposure.

ATTENTION
L'utillisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL
Usynlig laserståling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

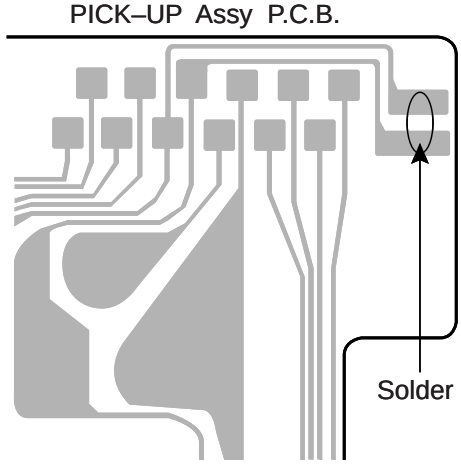


Precaution to replace Optical block

(KSS-213F)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use the clothes do not touch the diode.

1) After the connection, remove solder shown in right figure.



ELECTRICAL MAIN PARTS LIST

REF.NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-020-454-010		IC,DN6851
	87-002-783-110		IC,CXD2500BQ
	84-ZG1-669-010		C-IC,MB89627R-361
	87-A20-255-040		C-IC,SN74LV373NS
	87-A20-464-040		C-IC,LH5164AN-10L
	87-A20-252-040		C-IC,SN74LV00NS
	87-A20-253-040		C-IC,SN74LV04NS
	87-A20-254-040		C-IC,SN74LV32NS
	87-A20-576-040		C-IC,M51945A
	87-A20-725-010		C-IC,CL484-G1
	88-CL4-682-010		IC,LC866548-5J47
	87-017-889-010		IC,NJM4558LD
	87-A20-695-040		C-IC,UPD42426LE-60
	86-NM1-621-040		C-IC,LH5317W1
	87-NF8-614-010		IC,SPS-442-1-W
	87-020-903-010		IC,NJM7805FA
	87-A20-256-040		C-IC,PQ20VZ5U
	87-017-888-080		C-IC,NJM4558MD
	87-A20-372-010		C-IC,TC9409BF
	87-017-726-080		IC,BU4052BCF
	87-A20-715-010		IC,M62439SP
	87-001-982-010		IC,TA7291S
	87-017-745-010		IC,CXA1782BQ
	87-A20-257-040		IC,BA6791FP
	87-070-127-110		IC,LC72131D
	87-A20-913-010		IC,LA1837NL
	87-A20-653-010		C-IC,RL5C293
	87-A20-249-040		C-IC,BU2874FV
TRANSISTOR			
	89-213-702-010		TR,2SB1370E
	89-333-317-080		TR,2SC3331T
	87-A30-196-080		TR,2SC4115SRS
	89-113-187-080		TR,2SA1318TU
	87-A30-198-080		TR,KTC3199GR
	87-A30-197-080		TR,KTA1267GR
	87-026-219-080		TR,DTA144ES
	87-A30-130-010		TR,2SD2241
	87-A30-128-010		TR,2SB1481
	87-A30-047-080		TR,CSD655E
	87-026-609-080		TR,KTA1266GR
	87-026-237-080		C-TR,DTC124XK
	87-026-610-080		TR,KTC3198GR
	87-026-218-080		TR,DTC144ES
	89-109-521-080		TR,2SA952K
	89-112-965-080		TR,2SA1296GR
	87-026-223-080		C-TR,DTC143TK
	89-327-125-080		C-TR,2SC2712GR
	87-026-239-080		C-TR,DTC114TK
	87-026-235-080		C-TR,DTC114EK
	89-416-643-080		C-TR,2SD1664R
	89-111-625-080		C-TR,2SA1162GR
	87-026-233-080		C-TR,DTA114TK
	89-333-266-080		C-TR,2SC3326B
	89-328-785-080		TR,2SC2878A
	89-327-143-080		C-TR,2SC2714(O)
	87-A30-072-080		C-TR,RT1P144C
DIODE			
	87-A40-393-090		DIODE,1N5402GW(F20)
	87-070-274-080		DIODE,1N4003 SEM
	87-A40-312-080		ZENER,DZ33M
	87-A40-291-080		DIODE,1N4148(CPT)
	87-A40-308-080		ZENER,DZ10M
	87-027-703-080		ZENER,HZ7A1L
	87-A40-538-080		C-ZENER,UDZ5.6BTE-17
	87-A40-466-080		ZENER,MTZJ2.7A
	87-A40-234-080		ZENER,MTZJ5.6A
MAIN C.B			
C101	87-016-473-090		CAP,E 3300-35 SME
C102	87-010-197-080		CAP,CHIP 0.01 DM
C104	87-010-398-090		CAP,E 2200-35V
C105	87-012-140-080		CAP,470P
C106	87-010-408-080		CAP,ELECT 47-50V
C107	87-010-384-080		CAP,ELECT 100-25V
C108	87-010-381-080		CAP,ELECT 330-16V
C109	87-010-260-080		CAP,ELECT 47-25V
C110	87-010-260-080		CAP,ELECT 47-25V
C111	87-010-247-080		CAP,ELECT 100-50V
C112	87-010-263-080		CAP,ELECT 100-10V
C113	87-010-403-080		CAP,ELECT 3.3-50V
C114	87-010-374-080		CAP,ELECT 47-10V
C122	87-010-260-080		CAP,ELECT 47-25V
C123	87-010-260-080		CAP,ELECT 47-25V
C131	87-010-196-080		CHIP CAPACITOR,0.1-25
C132	87-010-196-080		CHIP CAPACITOR,0.1-25
C151	87-015-785-080		CHIP CAP,0.1-FZ-25Z
C200	87-010-197-080		CAP,CHIP 0.01 DM
C201	87-010-197-080		CAP,CHIP 0.01 DM
C207	87-010-546-080		CAP,ELECT 0.33-50V
C208	87-010-546-080		CAP,ELECT 0.33-50V
C209	87-010-186-080		CAP,CHIP 4700P
C210	87-010-186-080		CAP,CHIP 4700P
C211	87-010-403-080		CAP,ELECT 3.3-50V
C212	87-010-403-080		CAP,ELECT 3.3-50V
C213	87-010-260-080		CAP,ELECT 47-25V
C214	87-010-260-080		CAP,ELECT 47-25V
C219	87-010-544-080		CAP,ELECT 0.1-50V
C220	87-010-544-080		CAP,ELECT 0.1-50V
C227	87-010-260-080		CAP,ELECT 47-25V
C229	87-010-322-080		C-CAP,S 100P-50 CH
C230	87-010-322-080		C-CAP,S 100P-50 CH
C261	87-010-197-080		CAP,CHIP 0.01 DM
C273	87-010-196-080		CHIP CAPACITOR,0.1-25
C303	87-010-177-080		C-CAP,S 820P-50 SL
C304	87-010-177-080		C-CAP,S 820P-50 SL
C307	87-010-263-080		CAP,ELECT 100-10V
C308	87-010-263-080		CAP,ELECT 100-10V
C311	87-010-195-080		C-CAP,S 0.068-25 F
C312	87-010-195-080		C-CAP,S 0.068-25 F
C313	87-010-184-080		CHIP CAPACITOR,3300P(K)
C314	87-010-184-080		CHIP CAPACITOR,3300P(K)
C315	87-010-374-080		CAP,ELECT 47-10V
C317	87-010-546-080		CAP,ELECT 0.33-50V
C318	87-010-546-080		CAP,ELECT 0.33-50V
C320	87-010-404-080		CAP,ELECT 4.7-50V
C321	87-010-405-080		CAP,ELECT 10-50V
C322	87-010-408-080		CAP,ELECT 47-50V
C340	87-010-322-080		C-CAP,S 100P-50 CH
C361	87-010-374-080		CAP,ELECT 47-10V
C362	87-010-401-080		CAP,ELECT 1-50V
C393	87-010-178-080		CHIP CAP,1000P
C394	87-010-178-080		CHIP CAP,1000P
C401	87-010-401-080		CAP,ELECT 1-50V
C402	87-010-401-080		CAP,ELECT 1-50V
C403	87-010-321-080		CHIP CAPACITOR,82P(J)
C404	87-010-321-080		CHIP CAPACITOR,82P(J)
C405	87-010-188-080		CAP,CHIP 6800P
C406	87-010-188-080		CAP,CHIP 6800P
C407	87-010-426-080		C-CAP,S 0.012-25 B
C408	87-010-426-080		C-CAP,S 0.012-25 B
C451	87-010-198-080		CAP,CHIP 0.022
C452	87-010-382-080		CAP,ELECT 22-25V
C453	87-010-183-080		C-CAP,S 2700P-50 B

REF.NO.	PART NO.	KANRI NO.	DESCRIPTION
C454	87-010-183-080		C-CAP,S 2700P-50 B
C455	87-010-183-080		C-CAP,S 2700P-50 B
C456	87-010-197-080		CAP,CHIP 0.01 DM
C458	87-010-178-080		CHIP CAP,1000P
C459	87-010-175-080		CAP,560P
C461	87-012-158-080		C-CAP,S 390P-50 CH
C462	87-012-158-080		C-CAP,S 390P-50 CH
C502	87-010-544-080		CAP,ELECT 0.1-50V
C503	87-010-320-080		CHIP CAP,68P
C504	87-010-544-080		CAP,ELECT 0.1-50V
C506	87-010-321-080		CHIP CAPACITOR,82P(J)
C507	87-010-406-080		CAP,ELECT 22-50
C508	87-010-405-080		CAP,ELECT 10-50V
C509	87-010-248-080		CAP,ELECT 220-10V
C510	87-010-405-080		CAP,ELECT 10-50V
C512	87-010-401-080		CAP,ELECT 1-50V
C540	87-010-322-080		C-CAP,S 100P-50 CH
C600	87-010-405-080		CAP,ELECT 10-50V
C601	87-010-177-080		C-CAP,S 820P-50 SL
C602	87-010-177-080		C-CAP,S 820P-50 SL
C603	87-010-196-080		CHIP CAPACITOR,0.1-25
C611	87-010-545-080		CAP,ELECT 0.22-50V
C612	87-010-545-080		CAP,ELECT 0.22-50V
C613	87-010-545-080		CAP,ELECT 0.22-50V
C614	87-010-545-080		CAP,ELECT 0.22-50V
C615	87-010-154-080		CAP,CHIP 10P
C616	87-010-408-080		CAP,ELECT 47-50V
C617	87-010-408-080		CAP,ELECT 47-50V
C619	87-010-401-080		CAP,ELECT 1-50V
C620	87-010-401-080		CAP,ELECT 1-50V
C701	87-010-381-080		CAP,ELECT 330-16V
C702	87-010-404-080		CAP,ELECT 4.7-50V
C703	87-010-197-080		CAP,CHIP 0.01 DM
C704	87-010-197-080		CAP,CHIP 0.01 DM
C710	87-010-322-080		C-CAP,S 100P-50 C
C711	87-010-263-080		CAP,ELECT 100-10V
C712	87-010-196-080		CHIP CAPACITOR,0.1-25
C713	87-015-819-080		CAPACITOR,0.01
C714	87-010-197-080		CAP,CHIP 0.01 DM
C721	87-010-312-080		C-CAP,S 15P-50 CH
C722	87-010-312-080		C-CAP,S 15P-50 CH
C723	87-010-178-080		CHIP CAP,1000P
C725	87-010-178-080		CHIP CAP,1000P
C727	87-010-196-080		CHIP CAPACITOR,0.1-25
C728	87-010-248-080		CAP,ELECT 220-10V
C755	87-010-197-080		CAP,CHIP 0.01 DM
C756	87-010-197-080		CAP,CHIP 0.01 DM
C757	87-010-318-080		C-CAP,S 47P-50 CH
C758	87-010-149-080		C-CAP,S 5P-50 CH
C761	87-015-785-080		CHIP CAPACITOR,0.1 FZ-25Z
C762	87-010-197-080		CAP,CHIP 0.01 DM
C763	87-010-194-080		CAP,CHIP 0.047
C764	87-010-319-080		C-CAP,S 56P-50 CH
C765	87-010-197-080		CAP,CHIP 0.01 DM
C766	87-010-197-080		CAP,CHIP 0.01 DM
C767	87-010-405-080		CAP,ELECT 10-50V
C768	87-010-197-080		CAP,CHIP 0.01 DM
C769	87-010-408-080		CAP,ELECT 47-50V
C770	87-015-821-080		C-CAP,0.047
C771	87-010-407-080		CAP,ELECT 33-50V
C772	87-010-194-080		CAP,CHIP 0.047
C773	87-010-196-080		CHIP CAPACITOR,0.1-25
C774	87-010-263-080		CAP,ELECT 100-10V
C775	87-010-421-080		CAP,ELECT 4.7-50V
C776	87-010-197-080		CAP,CHIP 0.01 DM
C777	87-010-400-080		CAP,ELECT 0.47-50V
C778	87-010-071-080		CAP,ELECT 1-50 M 5L SRE
C779	87-010-401-080		CAP,ELECT 1-50V
C780	87-010-196-080		CHIP CAPACITOR,0.1-25
C781	87-010-405-080		CAP,ELECT 10-50V
C782	87-010-405-080		CAP,ELECT 10-50V
C783	87-010-197-080		CAP,CHIP 0.01 DM
C784	87-010-197-080		CAP,CHIP 0.01 DM
C785	87-010-403-080		CAP,ELECT 3.3-50V
C786	87-010-403-080		CAP,ELECT 3.3-50V
C787	87-010-184-080		CHIP CAPACITOR,3300P(K)
C788	87-010-184-080		CHIP CAPACITOR,3300P(K)
C789	87-010-179-080		CAP,CHIP S B1200P
C790	87-010-179-080		CAP,CHIP S B1200P
C791	87-010-405-080		CAP,ELECT 10-50V
C793	87-010-177-080		C-CAP,S 820P-50 SL
C794	87-010-406-080		CAP,ELECT 22-50
C795	87-010-596-080		CAP,S 0.047-16
C796	87-010-403-080		CAP,ELECT 3.3-50V
C797	87-010-180-080		C-CER,1500P
C798	87-010-180-080		C-CER,1500P
C799	87-010-194-080		CAP,CHIP 0.047
C814	87-010-197-080		CAP,CHIP 0.01 DM
C820	87-010-408-080		CAP,ELECT 47-50V
C821	87-010-197-080		CAP,CHIP 0.01 DM
C822	87-010-197-080		CAP,CHIP 0.01 DM
C823	87-010-197-080		CAP,CHIP 0.01 DM
C824	87-010-197-080		CAP,CHIP 0.01 DM
C828	87-010-196-080		CHIP CAPACITOR,0.1-25
C829	87-010-196-080		CHIP CAPACITOR,0.1-25
C959	87-010-196-080		CHIP CAPACITOR,0.1-25
C960	87-010-196-080		CHIP CAPACITOR,0.1-25
C961	87-010-152-080		C-CAP,S 8P-50 CH
CF801	87-008-261-010		FILTER,SFE10.7MA5-A
CF802	87-008-261-010		FILTER,SFE10.7MA5-A
CN202	87-099-719-010		CONN,30P TYK-B(X)
CN351	87-A60-624-010		CONN,7P V 2MM JMT
CN671	87-A60-134-010		CONN,9P V FE
FB2	87-A90-896-080		F-BEAD,035600STY7
FFE801	A8-8ZA-193-070		8ZA-1 YFEUNC
J231	87-A60-420-010		JACK,3.5 ST(MSC)
J241	87-A60-217-010		TERMINAL,SPKR 4P
J251	87-A60-329-010		JACK,3.5 BLK MONO W/SW
J501	87-A60-420-010		JACK,3.5 ST(MSC)
J601	87-A60-354-010		JACK,PIN 2P MSP -242V-05
J801	87-A60-202-010		TERMINAL,ANT 4P MSP-154V-02
L201	87-005-366-010		COIL,1UH
L202	87-005-366-010		COIL,1UH
L451	87-007-342-010		COIL,OSC 85K BIAS
L770	87-005-847-080		COIL,2.2UH(CECS)
L771	87-A50-266-010		COIL,FM DET-2N(TOK)
L772	88-CL4-693-010		FLTR,PCFAYH-450(TOK)
L832	87-005-847-080		COIL,2.2UH(CECS)
L981	87-NF4-650-010		COIL,AM PACK 4N(TOK)
⚠ PR201	87-A90-473-080		PROTECTOR,3.5A 60V 491
⚠ PR202	87-A90-473-080		PROTECTOR,3.5A 60V 491
⚠ PR601	87-026-689-080		PROTECTOR,1A 60V 491
R223	87-A00-258-080		RES,M/F 0.22-1W J
R224	87-A00-258-080		RES,M/F 0.22-1W J
R249	87-A00-258-080		RES,M/F 0.22-1W J
R250	87-A00-258-080		RES,M/F 0.22-1W J
VR501	87-A90-239-010		VR,RTRY 10KA H PRV09
W101	88-CL4-702-010		F-CABLE,5P 2.5
X721	87-A70-061-010		VIB,XTAL 4.500MHZ CSA-309

FRONT C.B

C308	87-010-401-040		CAP,E 1-50 SME
C313	87-010-178-080		CHIP CAP,1000P
C315	87-010-322-080		C-CAP,S 100P-50 CH
C330	87-010-316-080		C-CAP,S 33P-50 CH
C331	87-010-313-080		CAP,CHIP 18P
C332	87-010-316-080		C-CAP,S 33P-50 CH
C340	87-010-178-080		CHIP CAP,1000P
C341	87-010-197-080		CAP,CHIP 0.01 DM

REF.NO.	PART NO.	KANRI NO.	DESCRIPTION
C342	87-010-197-080		CAP,CHIP 0.01 DM
C343	87-010-197-080		CAP,CHIP 0.01 DM
C344	87-010-318-080		C-CAP,S 47P-50 CH
C369	87-010-197-080		CAP,CHIP 0.01 DM
C370	87-010-263-040		CAP,E 100-10
C398	87-A10-189-040		CAP,E 220-10
C399	87-010-197-080		CAP,CHIP 0.01 DM
C401	87-010-404-080		CAP,ELECT 4.7-50V
C402	87-010-404-080		CAP,ELECT 4.7-50V
C403	87-010-405-040		CAP,E 10-50
CN301	87-099-720-010		CONN,30P TYK-B(P)
CN302	87-CL4-704-010		CONN ASSY,9P DECK
CN303	87-099-033-010		CONN,16P 6216 H
D305	87-A40-177-080		LED,L-1154PGD PURE GREEN
D306	87-A40-177-080		LED,L-1154PGD PURE GREEN
D307	87-A40-177-080		LED,L-1154PGD PURE GREEN
D308	87-A40-177-080		LED,L-1154PGD PURE GREEN
D315	87-A40-177-080		LED,L-1154PGD PURE GREEN
D316	87-A40-177-080		LED,L-1154PGD PURE GREEN
D317	87-A40-177-080		LED,L-1154PGD PURE GREEN
D318	87-A40-177-080		LED,L-1154PGD PURE GREEN
FB1	87-A90-896-080		F-BEAD,035600STY7
FC303	88-916-121-110		FF-CABLE,16P 1.25
FL301	88-CE3-602-010		FL,11BT-162GK
L302	87-005-849-080		COIL,10UH(CECS)
S301	87-A90-770-080		SW,TACT TRT134-L4.3
S302	87-A90-770-080		SW,TACT TRT134-L4.3
S303	87-A90-770-080		SW,TACT TRT134-L4.3
S304	87-A90-770-080		SW,TACT TRT134-L4.3
S305	87-A90-770-080		SW,TACT TRT134-L4.3
S306	87-A90-770-080		SW,TACT TRT134-L4.3
S307	87-A90-770-080		SW,TACT TRT134-L4.3
S308	87-A90-770-080		SW,TACT TRT134-L4.3
S309	87-A90-770-080		SW,TACT TRT134-L4.3
S311	87-A90-770-080		SW,TACT TRT134-L4.3
S312	87-A90-770-080		SW,TACT TRT134-L4.3
S313	87-A90-770-080		SW,TACT TRT134-L4.3
S314	87-A90-770-080		SW,TACT TRT134-L4.3
S315	87-A90-770-080		SW,TACT TRT134-L4.3
S316	87-A90-770-080		SW,TACT TRT134-L4.3
S317	87-A90-770-080		SW,TACT TRT134-L4.3
S318	87-A90-770-080		SW,TACT TRT134-L4.3
S351	87-A90-085-010		SW,RTRY EC16B 24204
X302	87-A70-018-080		VIB,CER 6.00MHZ MG200

VCD C.B

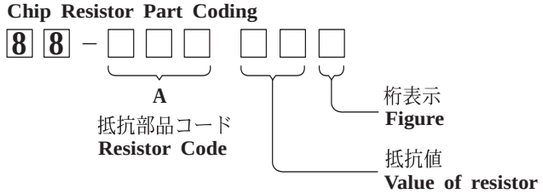
C104	87-010-197-080		CAP,CHIP 0.01 DM
C105	87-010-318-080		C-CAP,S 47P-50 J CH GRM
C106	87-015-677-040		CAP,E 100-6.3 7L
C107	87-012-156-080		C-CAP,S 220P-50 CH
C108	87-010-184-080		CHIP CAPACITOR,3300P(K)
C109	87-010-194-080		CAP,CHIP 0.047
C111	87-010-197-080		CAP,CHIP 0.01 DM
C112	87-016-526-080		C-CAP,S 0.47-16 BK
C118	87-010-196-080		CHIP CAPACITOR,0.1-25
C130	87-010-196-080		CHIP CAPACITOR,0.1-25
C201	87-010-499-040		CAP,E 22-6.3 GAS
C202	87-010-197-080		CAP,CHIP 0.01 DM
C203	87-010-196-080		CHIP CAPACITOR,0.1-25
C204	87-010-316-080		C-CAP,S 33P-50 CH
C205	87-010-316-080		C-CAP,S 33P-50 CH
C206	87-010-197-080		CAP,CHIP 0.01 DM
C207	87-010-197-080		CAP,CHIP 0.01 DM
C208	87-010-197-080		CAP,CHIP 0.01 DM
C209	87-010-197-080		CAP,CHIP 0.01 DM
C210	87-010-197-080		CAP,CHIP 0.01 DM
C211	87-010-197-080		CAP,CHIP 0.01 DM
C212	87-010-196-080		CHIP CAPACITOR,0.1-25
C301	87-015-677-040		CAP,E 100-6.3 7L
C302	87-010-549-040		CAP,E 47-6.3 GAS
C303	87-010-178-080		CHIP CAP,1000P
C304	87-010-197-080		CAP,CHIP 0.01 DM
C305	87-010-197-080		CAP,CHIP 0.01 DM
C306	87-010-197-080		CAP,CHIP 0.01 DM
C307	87-010-197-080		CAP,CHIP 0.01 DM
C308	87-010-197-080		CAP,CHIP 0.01 DM
C309	87-010-197-080		CAP,CHIP 0.01 DM
C310	87-010-197-080		CAP,CHIP 0.01 DM
C311	87-010-197-080		CAP,CHIP 0.01 DM
C312	87-010-318-080		C-CAP,S 47P-50 J CH GRM
C313	87-010-318-080		C-CAP,S47P-50 J CH GRM
C314	87-010-196-080		CHIP CAPACITOR,0.1-25
C315	87-010-196-080		CHIP CAPACITOR,0.1-25
C316	87-015-677-040		CAP,E 100-6.3 7L
C320	87-010-196-080		CHIP CAPACITOR,0.1-25
C330	87-010-152-080		C-CAP,S 8P-50 CH
C331	87-010-152-080		C-CAP,S 8P-50 CH
C401	87-010-380-080		CAP,ELECT 47-16V
C402	87-010-112-080		CAP,ELECT 100-16V
C403	87-010-196-080		CHIP CAPACITOR,0.1-25
C404	87-015-677-040		CAP,E 100-6.3 7L
C405	87-010-197-080		CAP,CHIP 0.01 DM
C406	87-010-112-080		CAP,ELECT 100-16V
C407	87-010-380-080		CAP,ELECT 47-16V
C408	87-010-197-080		CAP,CHIP 0.01 DM
C409	87-015-677-040		CAP,E 100-6.3 7L
C410	87-010-197-080		CAP,CHIP 0.01 DM
C411	87-010-549-040		CAP,E 47-6.3 GAS
C412	87-010-196-080		CHIP CAPACITOR,0.1-25
C413	87-010-380-080		CAP,ELECT 47-16V
C414	87-010-196-080		CHIP CAPACITOR,0.1-25
C501	87-010-498-040		CAP,E 10-16 GAS
C502	87-010-154-080		C-CAP,S 10P-50 D CH GRM
C503	87-010-196-080		CHIP CAPACITOR,0.1-25
C504	87-010-196-080		CHIP CAPACITOR,0.1-25
C505	87-010-313-080		CAP,CHIP 18P
C506	87-010-313-080		CAP,CHIP 18P
C507	87-010-549-040		CAP,E 47-6.3 GAS
C508	87-010-498-040		CAP,E 10-16 GAS
C509	87-010-498-040		CAP,E 10-16 GAS
C510	87-010-498-040		CAP,E 10-16 GAS
C511	87-010-549-040		CAP,E 47-6.3 GAS
C512	87-010-197-080		CAP,CHIP 0.01 DM
C513	87-010-197-080		CAP,CHIP 0.01 DM
C514	87-010-196-080		CHIP CAPACITOR,0.1-25
C515	87-010-318-080		C-CAP,S 47P-50 J CH GRM
C516	87-010-318-080		C-CAP,S 47P-50 J CH GRM
C517	87-010-318-080		C-CAP,S 47P-50 J CH GRM
C518	87-010-197-080		CAP,CHIP 0.01 DM
C519	87-010-197-080		CAP,CHIP 0.01 DM
C520	87-010-182-080		C-CAP,S 2200P-50 KB C3012
C521	87-010-187-080		CAP,CHIP S5600P
C523	87-010-177-080		C-CAP,S 820P-50 SL
C524	87-010-805-080		CAP,S 1-16
C525	87-010-197-080		CAP,CHIP 0.01 DM
C530	87-010-196-080		CHIP CAPACITOR,0.1-25
C531	87-010-497-040		CAP,E 4.7-35 GAS
C532	87-010-497-040		CAP,E 4.7-35 GAS
C533	87-010-318-080		C-CAP,S 47P-50 CH
C534	87-010-318-080		C-CAP,S 47P-50 CH
C535	87-010-497-040		CAP,E 4.7-35 GAS
C536	87-010-497-040		CAP,E 4.7-35 GAS
C537	87-010-178-080		CHIP CAP,1000P
C538	87-010-178-080		CHIP CAP,1000P
C551	87-012-156-080		C-CAP,S 220P-50 J CH GRM
C552	87-012-156-080		C-CAP,S 220P-50 J CH GRM
C553	87-010-180-080		CAP,CHIP 1500P
C554	87-010-180-080		CAP,CHIP 1500P
C555	87-010-498-040		CAP,E 10-16 GAS

REF.NO.	PART NO.	KANRI NO.	DESCRIPTION
C556	87-010-498-040		CAP,E 10-16 GAS
C557	87-010-071-040		CAP,E 1-50 M SL SRE
C558	87-010-071-040		CAP,E 1-50 M SL SRE
C601	87-010-197-080		CAP,CHIP 0.01 DM
C602	87-010-112-040		CAP,E 100-16 SME
C603	87-010-196-080		CHIP CAPACITOR,0.1-25
C701	87-010-311-080		CAP,CHIP 12P
C702	87-016-369-080		C-CAP,S 0.033-25 B K
C703	87-010-197-080		CAP,CHIP 0.01 DM
C704	87-010-197-080		C-CAP,S 0.01-25 KB C2012
C705	87-010-197-080		CAP,CHIP 0.01 DM
C707	87-010-197-080		CAP,CHIP 0.01 DM
C708	87-010-805-080		CAP,S 1-16
C709	87-012-155-080		C-CAP,180P-50CH
C710	87-010-195-080		C-CAP,S 0.068-25 ZF
C711	87-010-499-040		CAP,E 22-6.3 GAS
C712	87-012-140-080		CAP,470P
C713	87-010-196-080		CHIP CAPACITOR,0.1-25
C714	87-010-197-080		CAP,CHIP 0.01 DM
C715	87-016-460-080		C-CAP,S 0.22-16 B
C716	87-010-178-080		C-CAP,S 1000P-50 KB
C717	87-010-196-080		CHIP CAPACITOR,0.1-25
C718	87-010-196-080		CHIP CAPACITOR,0.1-25
C719	87-010-196-080		CHIP CAPACITOR,0.1-25
C720	87-010-549-040		CAP,E 47-6.3 GAS
C721	87-010-549-040		CAP,E 47-6.3 GAS
C722	87-010-497-040		CAP,E 4.7-35 GAS
C725	87-015-677-040		CAP,E 100-6.3 7L
C726	87-010-179-080		C-CAP,S 1200P-50 KB GRM
C727	87-010-112-040		CAP,E 100-16 SME
C728	87-010-549-040		CAP,E 47-6.3 GAS
C729	87-010-182-080		C-CAP,S 2200P-50 B
C731	87-010-196-080		CHIP CAPACITOR,0.1-25
C733	87-010-196-080		CHIP CAPACITOR,0.1-25
C734	87-010-196-080		CHIP CAPACITOR,0.1-25
C735	87-010-196-080		CHIP CAPACITOR,0.1-25
C736	87-010-197-080		CAP,CHIP 0.01 DM
C737	87-010-805-080		CAP,S 1-16
C738	87-010-178-080		C-CAP,S 1000P-50 KB
C751	87-010-196-080		CHIP CAPACITOR,0.1-25
C801	87-015-677-040		CAP,E 100-6.3 7L
C802	87-010-197-080		CAP,CHIP 0.01 DM
C803	87-010-196-080		CHIP CAPACITOR,0.1-25
C804	87-010-196-080		CHIP CAPACITOR,0.1-25
C805	87-010-197-080		CAP,CHIP 0.01 DM
C806	87-010-196-080		CHIP CAPACITOR,0.1-25
C807	87-010-196-080		CHIP CAPACITOR,0.1-25
C808	87-010-196-080		CHIP CAPACITOR,0.1-25
C821	87-012-140-080		CAP,470P
C822	87-010-322-080		C-CAP,S 100P-50 CH
C823	87-012-140-080		CAP,470P
C825	87-016-459-040		CAP,E 470-10 SMG
C830	87-010-196-080		CHIP CAPACITOR,0.1-25
C901	87-010-549-040		CAP,E 47-6.3 GAS
C902	87-010-197-080		CAP,CHIP 0.01 DM
C903	87-010-196-080		CHIP CAPACITOR,0.1-25
C903	87-010-196-080		CHIP CAPACITOR,0.1-25
CON101	87-099-033-010		CONN,16P H BLK 6216
CON102	87-099-197-010		CONN,9P 6216 V
CON601	87-099-210-010		CONN,5P 6216 H
CON701	87-A60-424-010		CONN,16P V TOC-B
CON702	87-A60-154-010		CONN,6P H FE
FB1	83-XM1-617-080		C-COIL,BK2125 HM601
FC102	88-909-101-110		FF-CABLE,9P 1.25 100MM
FC601	88-905-181-110		FF-CABLE,5P-1.25 180MM
FC701	86-ZG1-605-010		CABLE,FFC 16P
FC702	88-906-101-110		FF-CABLE,6P-1.25
J502	87-009-390-010		ACK,PIN 2P
J801	87-009-502-010		JACK,PIN 1P Y EARTH
L101	87-005-196-080		COIL,10UH K EL0606K
L201	87-005-196-080		COIL,10UH K EL0606K
L301	87-005-196-080		COIL,10UH K EL0606K
L302	87-005-196-080		COIL,10UH K EL0606K
L303	87-005-196-080		COIL,10UH K EL0606K
L701	87-005-196-080		COIL,10UH K EL0606K
L702	87-005-196-080		COIL,10UH K EL0606K
L801	87-005-196-080		COIL,10UH
L821	87-005-189-080		COIL,2.7UH
R740	87-022-364-080		C-RES,S 82K-1/10W F
R741	87-022-362-080		C-RES,S 56K-1/10W F
R742	87-022-362-080		C-RES,S 56K-1/10W F
R743	87-022-362-080		C-RES,S 56K-1/10W F
R744	87-022-362-080		C-RES,S 56K-1/10W F
R745	87-022-364-080		C-RES,S 82K-1/10W F
S201	87-A90-300-010		SW,SL SSAA 1-3 B
SFR701	87-024-175-080		SEMI-FIXED RESISTOR,47K
SFR702	87-024-176-080		SEMI-FIXED RESISTOR,100K
SFR703	87-024-175-080		SEMI-FIXED RESISTOR,47K
WR401	88-CL4-709-010		CONN ASSY,3P CD
X201	87-JP7-609-080		VIB,XTAL 8.00MHZ
X301	87-A70-062-080		VIB,XTAL 40.5MHZ
X501	87-030-270-080		VIB,XTAL 16.9344MHZ
			AC2 C.B
⚠	PR101	87-026-681-080	PROTECTOR,5A 60V 491
⚠	PR102	87-026-681-080	PROTECTOR,5A 60V 491
			AC1 C.B
⚠	C10	87-A10-956-010	CAP,CER 1500P-4K ME KX
⚠	F100	87-035-222-010	FUSE,1AT
⚠	F101	87-A90-160-080	FUSE CLAMP,FC 51F
⚠	F102	87-A90-160-080	FUSE CLAMP,FC 51F
⚠	PIN103	87-A60-317-010	TERMINAL,1P MSC
⚠	PIN104	87-A60-317-010	TERMINAL,1P MSC
⚠	PT101	86-NF7-608-010	PT,6NF7-LH(LOW)
⚠	S100	87-A90-234-010	SW,SL 1-2-2 SW2201
			DECK C.B
	PIN1	87-009-352-010	CONN,9P PH H
	SFR1	87-024-581-010	SFR,3.3K H KVSF637A
	SOL2	82-ZM1-634-010	SOL ASSY,23K
	SW2	87-036-110-010	SW,PUSH SPPB 62
	SW3	87-036-110-010	SW,PUSH SPPB 62
	SW4	87-036-110-010	SW,PUSH SPPB 62
	SW5	87-036-110-010	SW,PUSH SPPB 62
	SW6	87-A90-248-010	SW,MICRO ESE11SH2CQX
	W1	82-ZM1-625-010	RBN-CORD,4P-55
			RELAY C.B
	CN301	88-CL4-701-010	CONN ASSY,7P RPEH
			VCD POWER
	CON401	87-099-416-010	CONN,3P EH H WHT
⚠	PR401	87-A90-092-080	PROTECTOR,2.5A 491
			CD DRIVE C.B
	CN3	87-A60-086-010	CONN,6P H 6216
	M20	87-045-358-010	MOT,RF-310TA 43
	M21	87-045-356-010	MOT,RF-310TA 30
	SW1	87-A90-042-010	SW,LEAF MSW-1731 OMVPO
			CD MOTOR C.B
	CN4	87-099-210-010	CONN,5P H BLK 6216

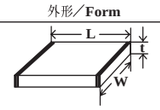
M1	87-045-305-010	MOT,RF-500TB
SW1	87-036-110-010	SW,PUSH SPPB 62
SW2	87-036-110-010	SW,PUSH SPPB 62

○チップ抵抗部品コード／**CHIP RESISTOR PART CODE**

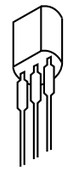
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



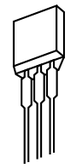
チップ抵抗
Chip resistor

容量 **Wattage**	種類 **Type**	許容誤差 **Tolerance**	記号 **Symbol**	寸法／**Dimensions** 外形／**Form**	**L**	**W**	**t**	抵抗コード :A **Resistor** :A
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

TRANSISTOR ILLUSTRATION



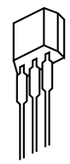
2SA1296
2SC2878
KTA1266
KTC3198



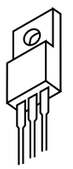
2SC4115
DTA144ES
DTC144ES

2SA952
CSD655E

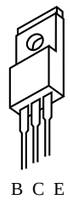
2SA1318
2SC3331



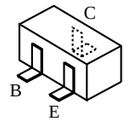
KTA1267
KTC3199



2SB1481
2SD2241



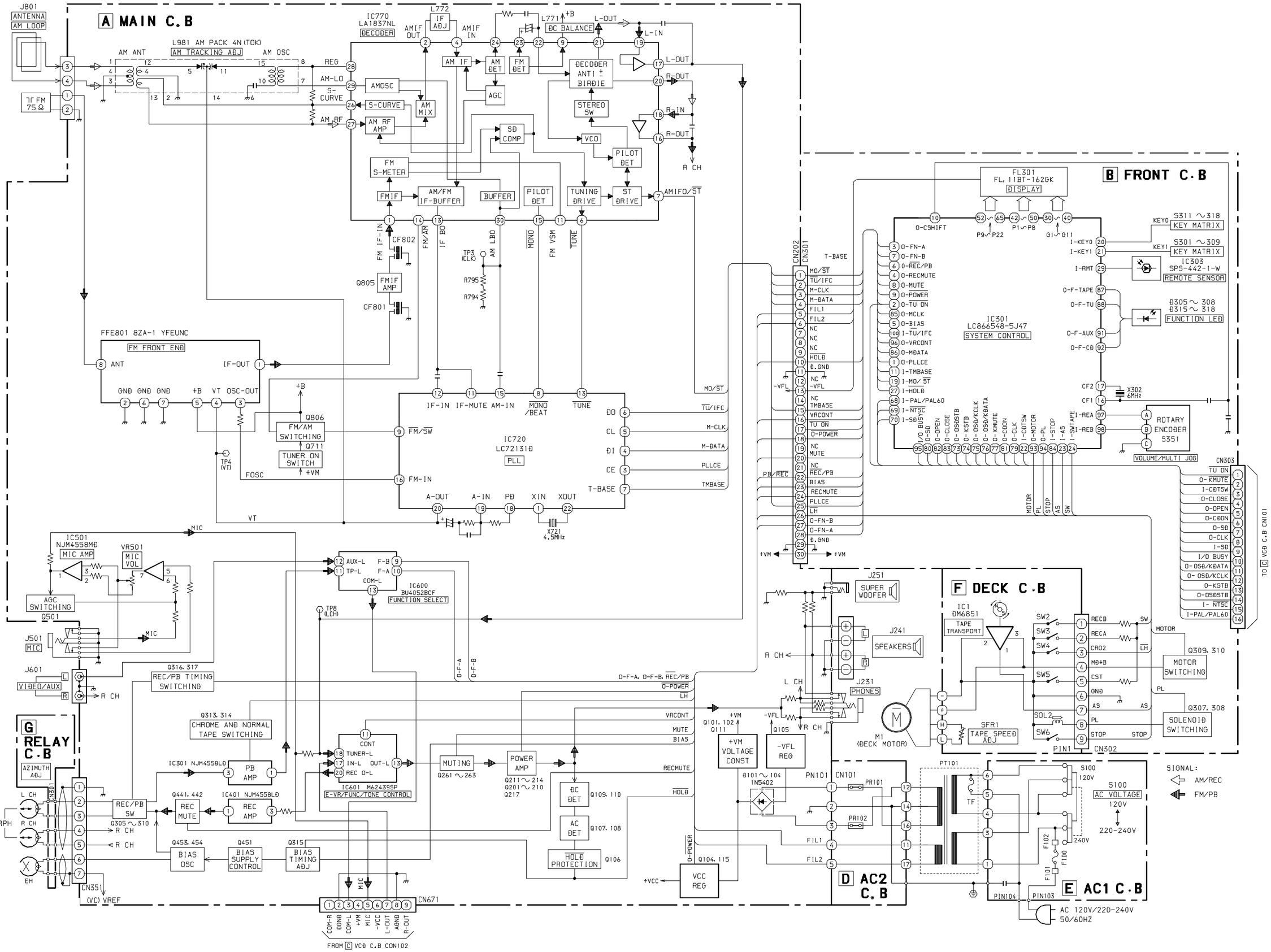
2SB1370



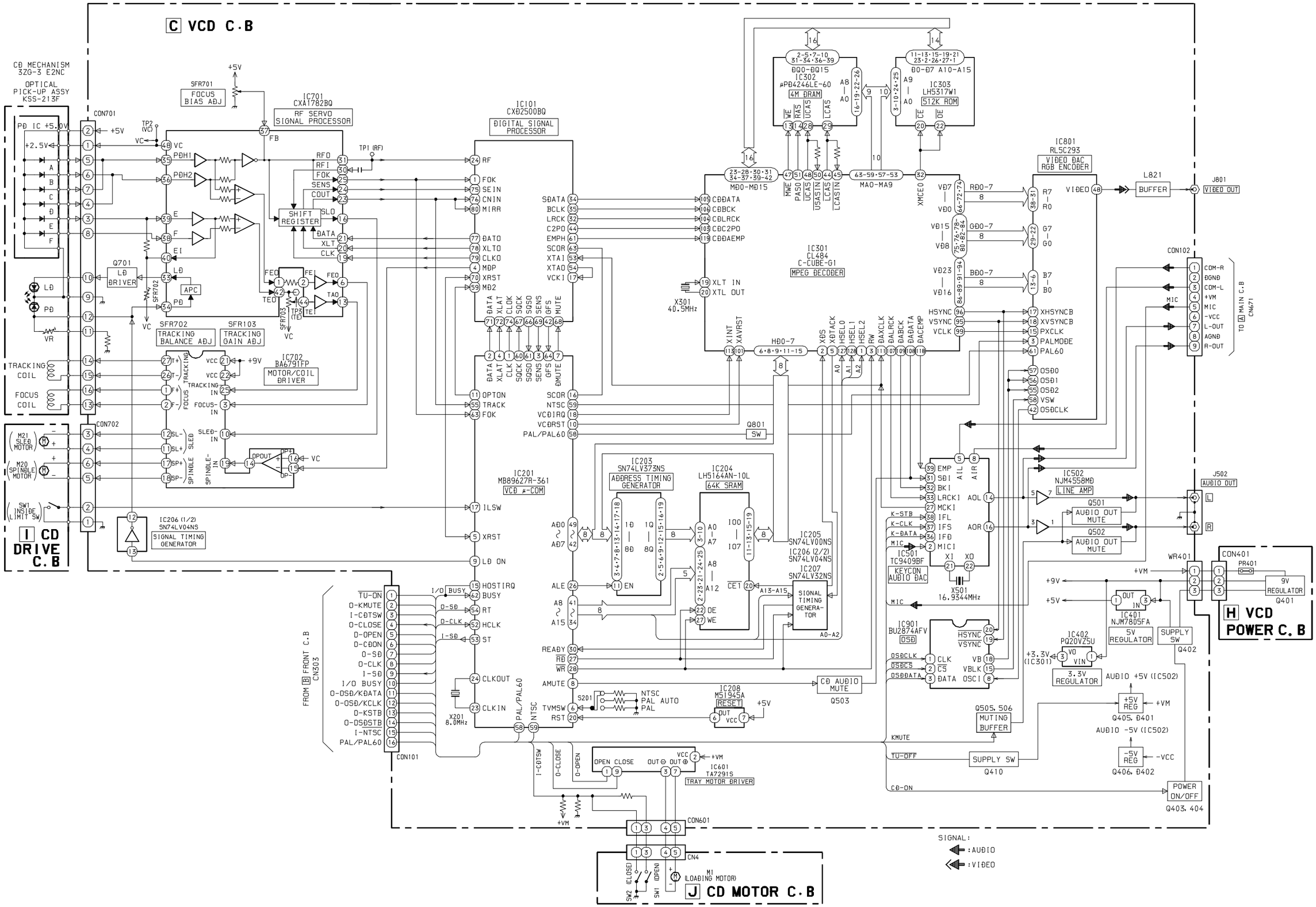
DTA114TK
DTC114EK
DTC114TK
DTC124XK
DTC143TK
RT1P144C

2SA1162
2SC2712
2SC2714
2SC3326
2SD1664

BLOCK DIAGRAM – 1 (MAIN / FRONT / AC2 / AC1 / DECK / RELAY)

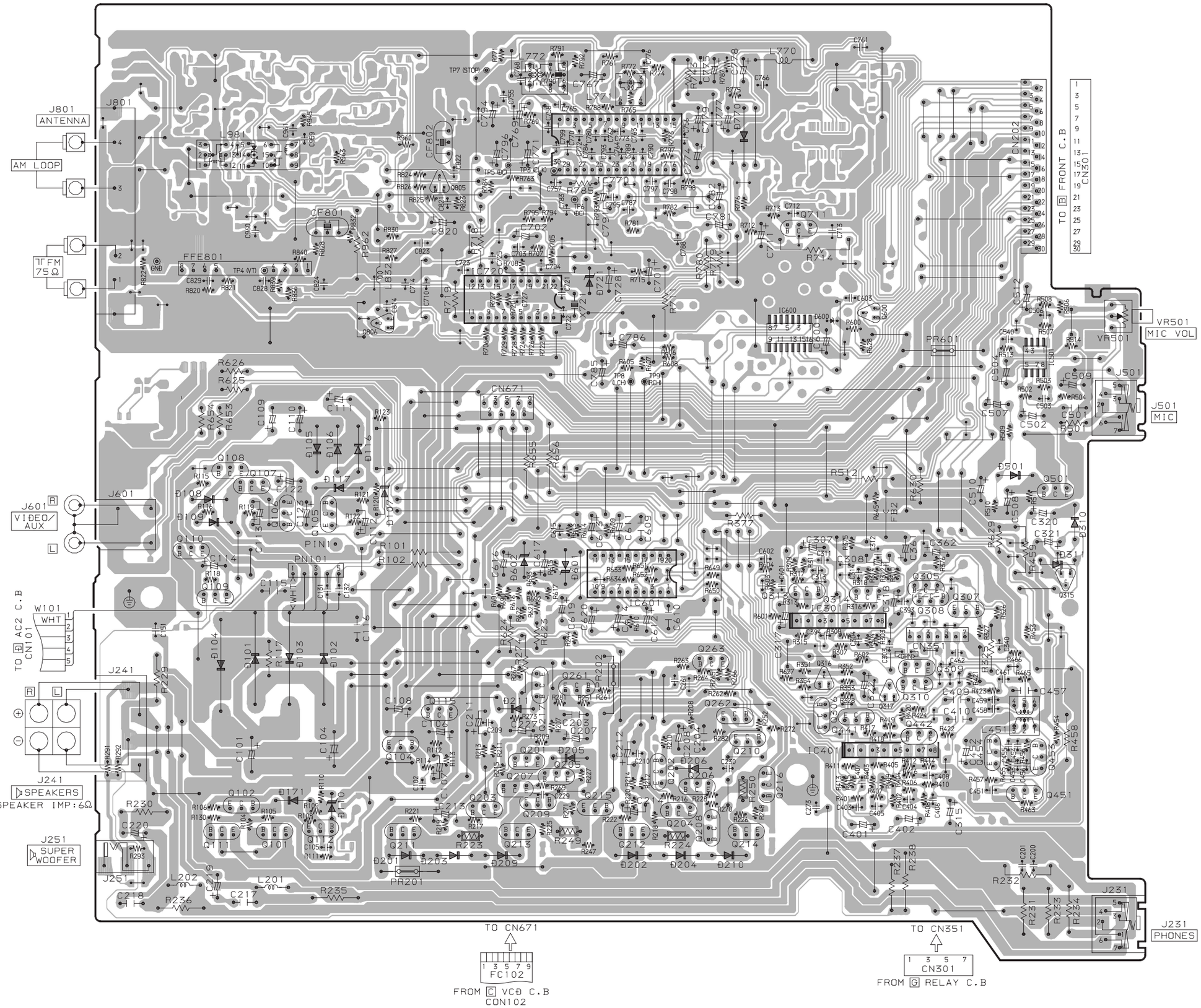


BLOCK DIAGRAM – 2 (VCD / VCD POWER / CD DRIVE / CD MOTOR)

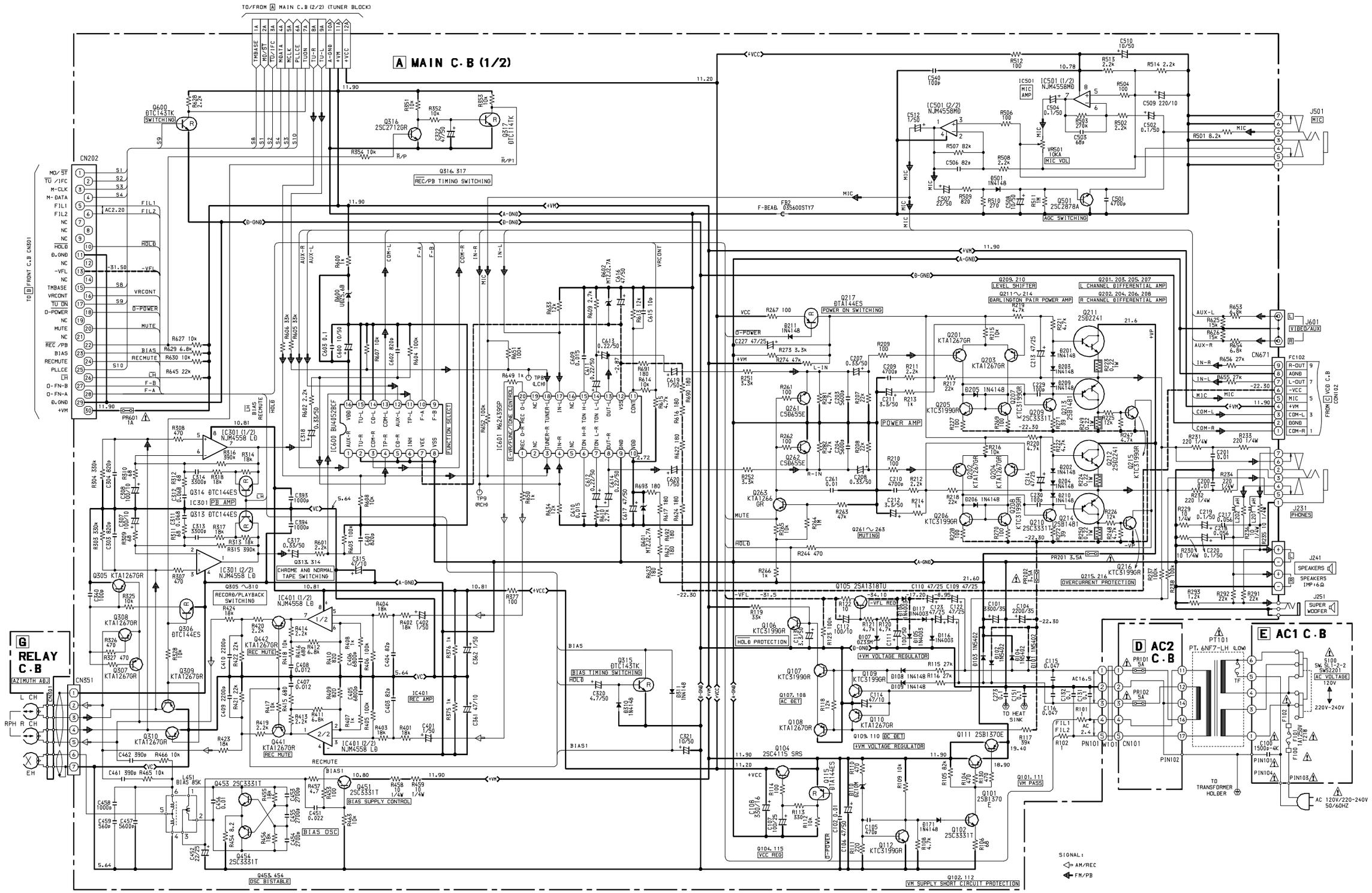


WIRING – 1 (MAIN)

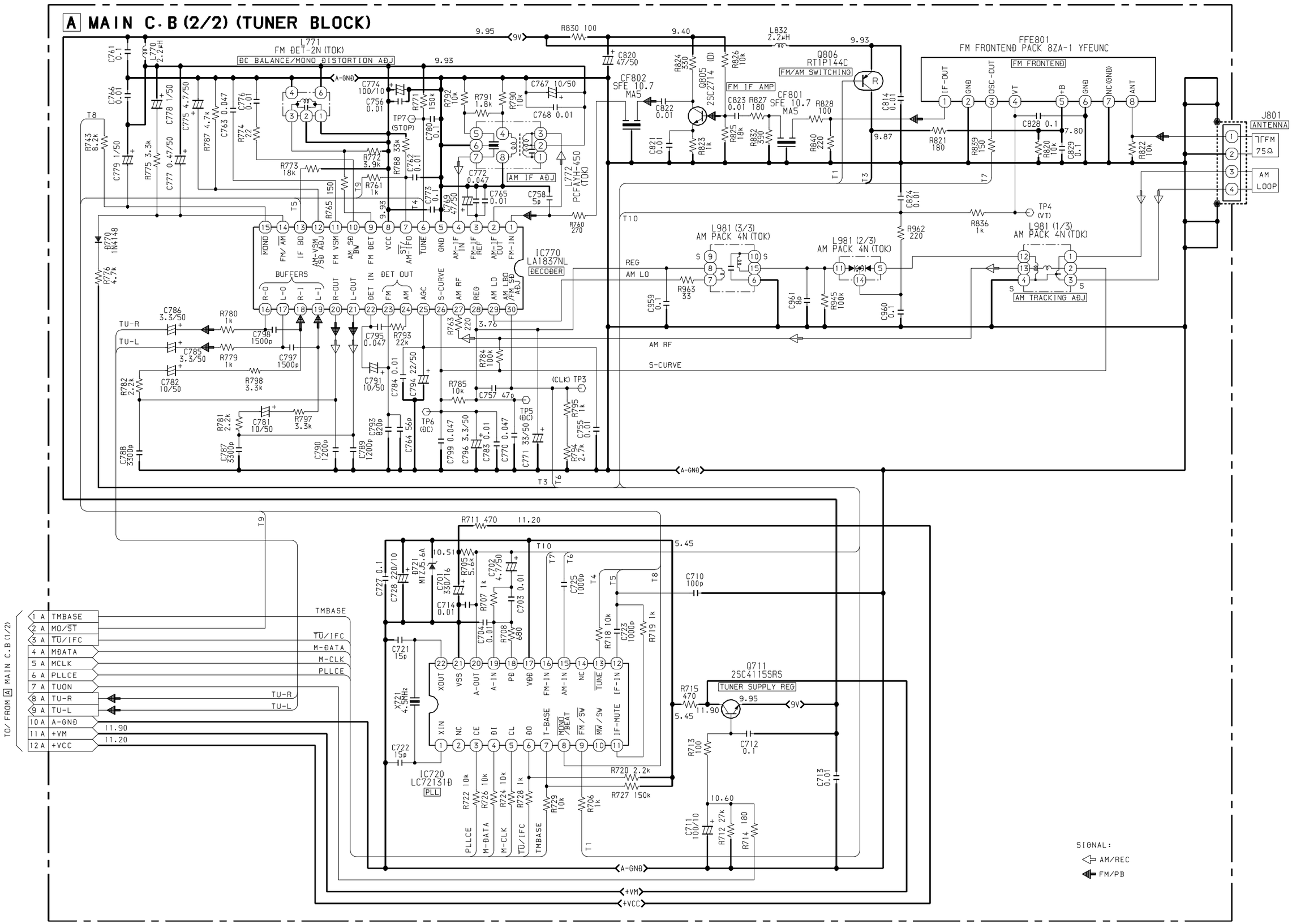
A MAIN C.B



SCHEMATIC DIAGRAM – 1 (MAIN:1/2 / AC2 / AC1 / RELAY)

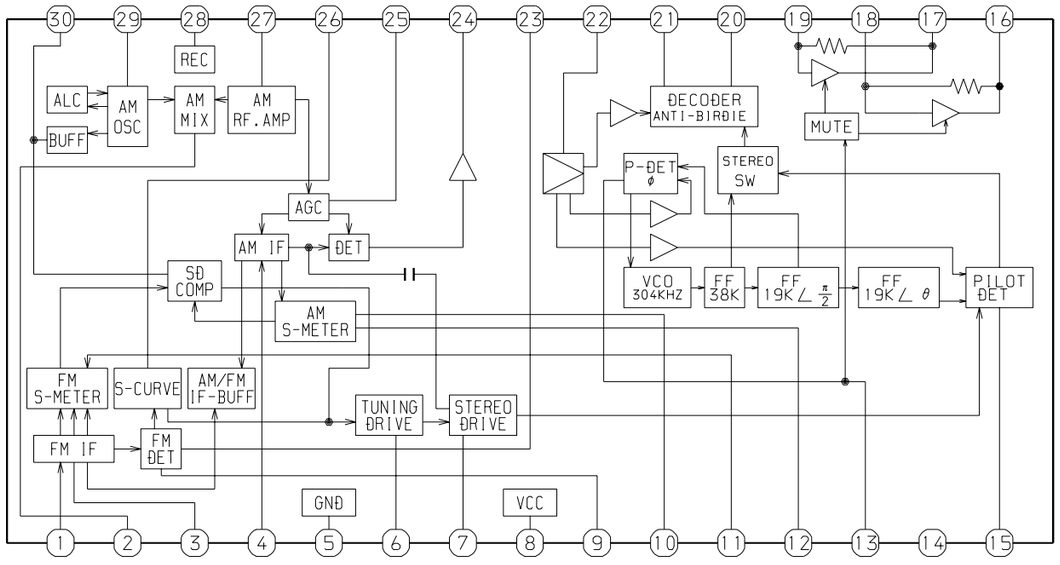


SCHEMATIC DIAGRAM – 2 (MAIN:2/2 – TUNER BLOCK)

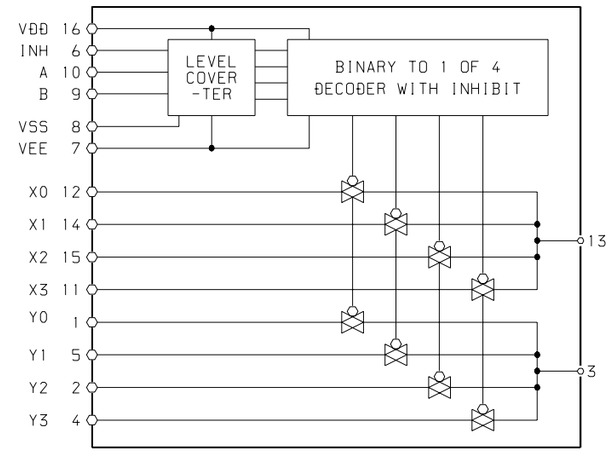


IC BLOCK DIAGRAM – 1

IC, LA1837NL



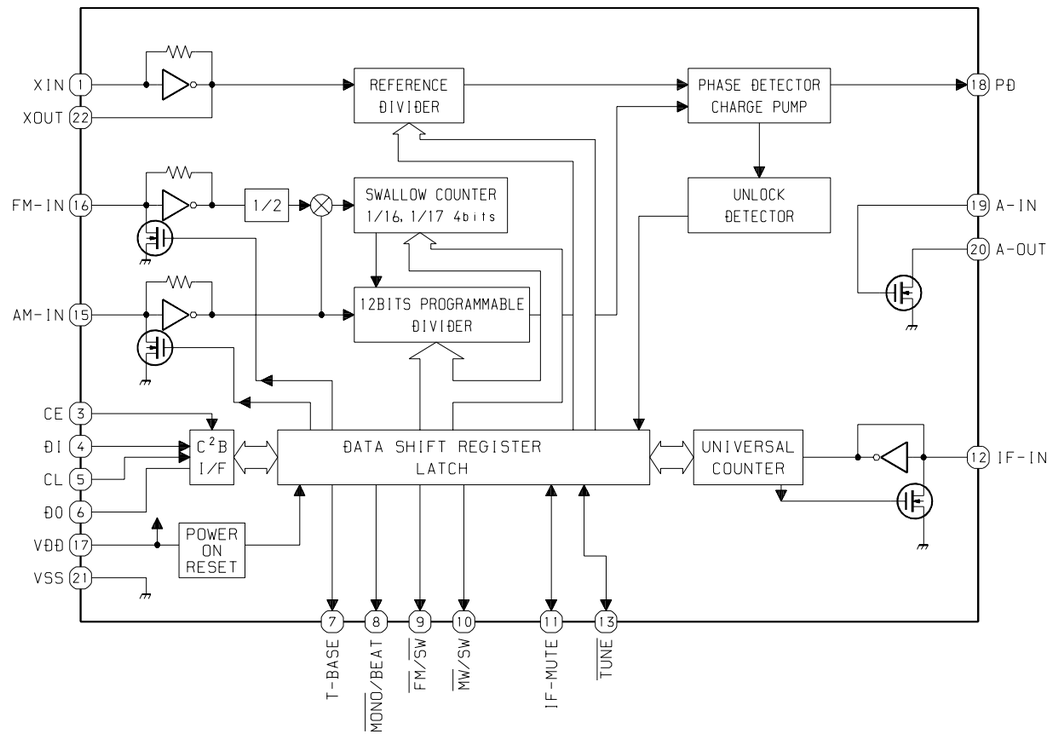
IC, BU4052BCF



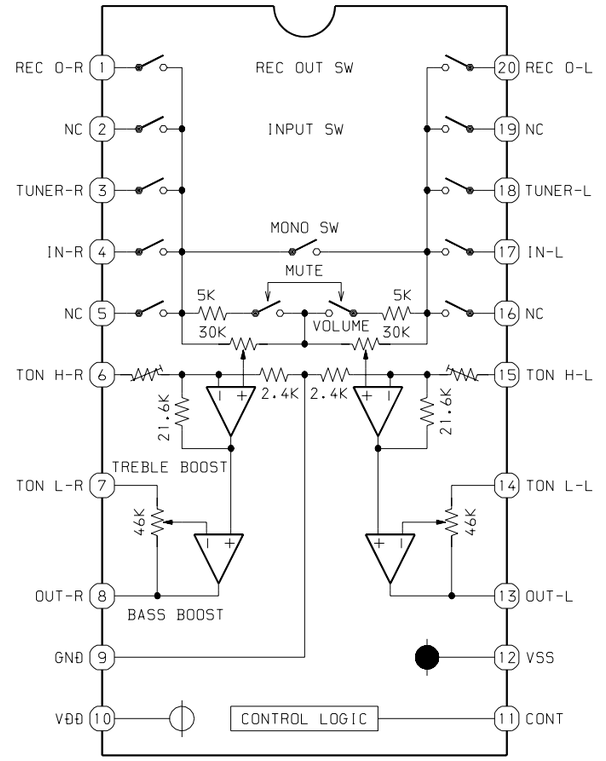
TRUTH TABLE

INHIBIT	A	B	ON SWITCH
L	L	L	X0 Y0
L	H	L	X1 Y1
L	L	H	X2 Y2
L	H	H	X3 Y3
H	X	X	NONE

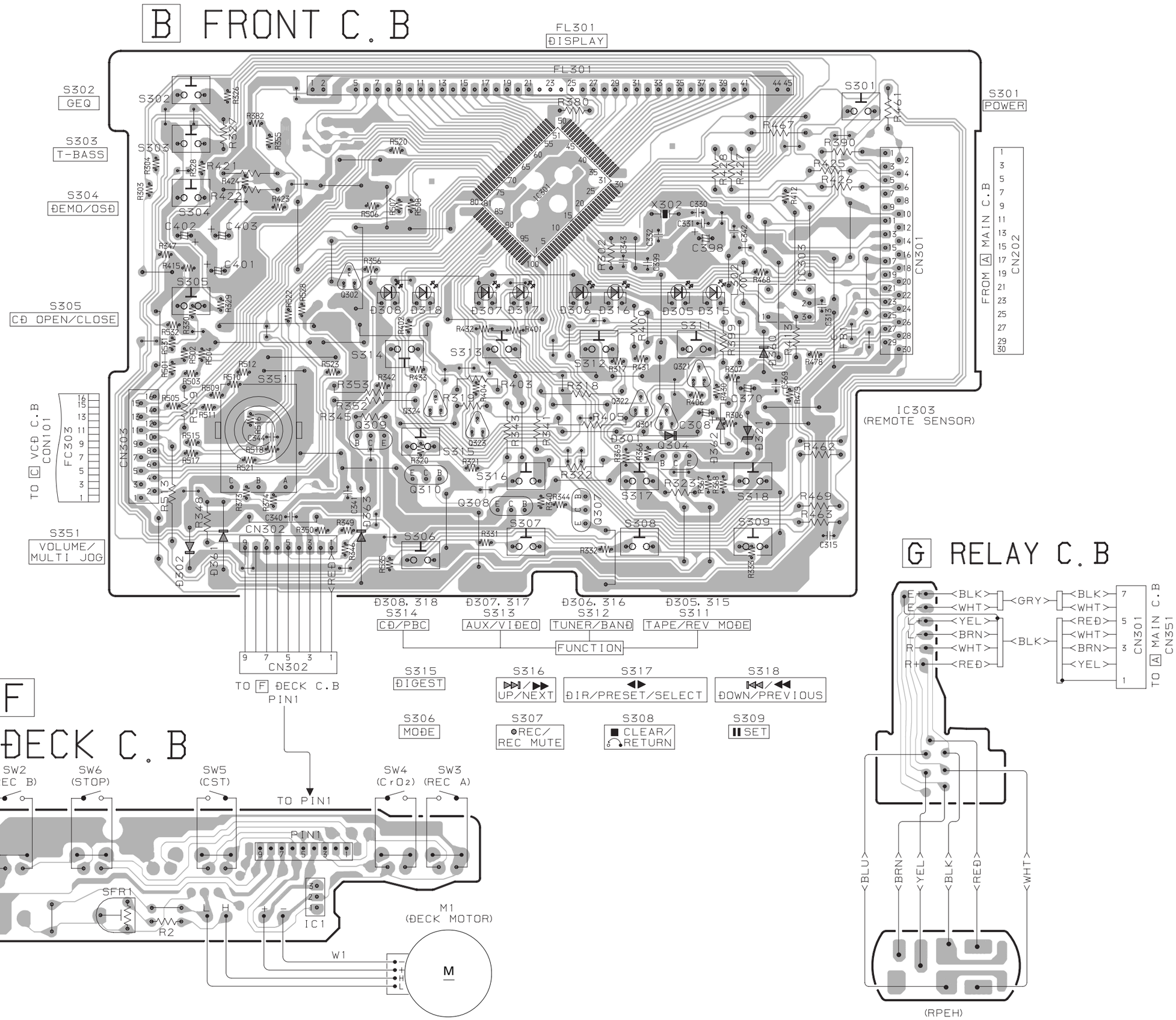
IC, LC72131D



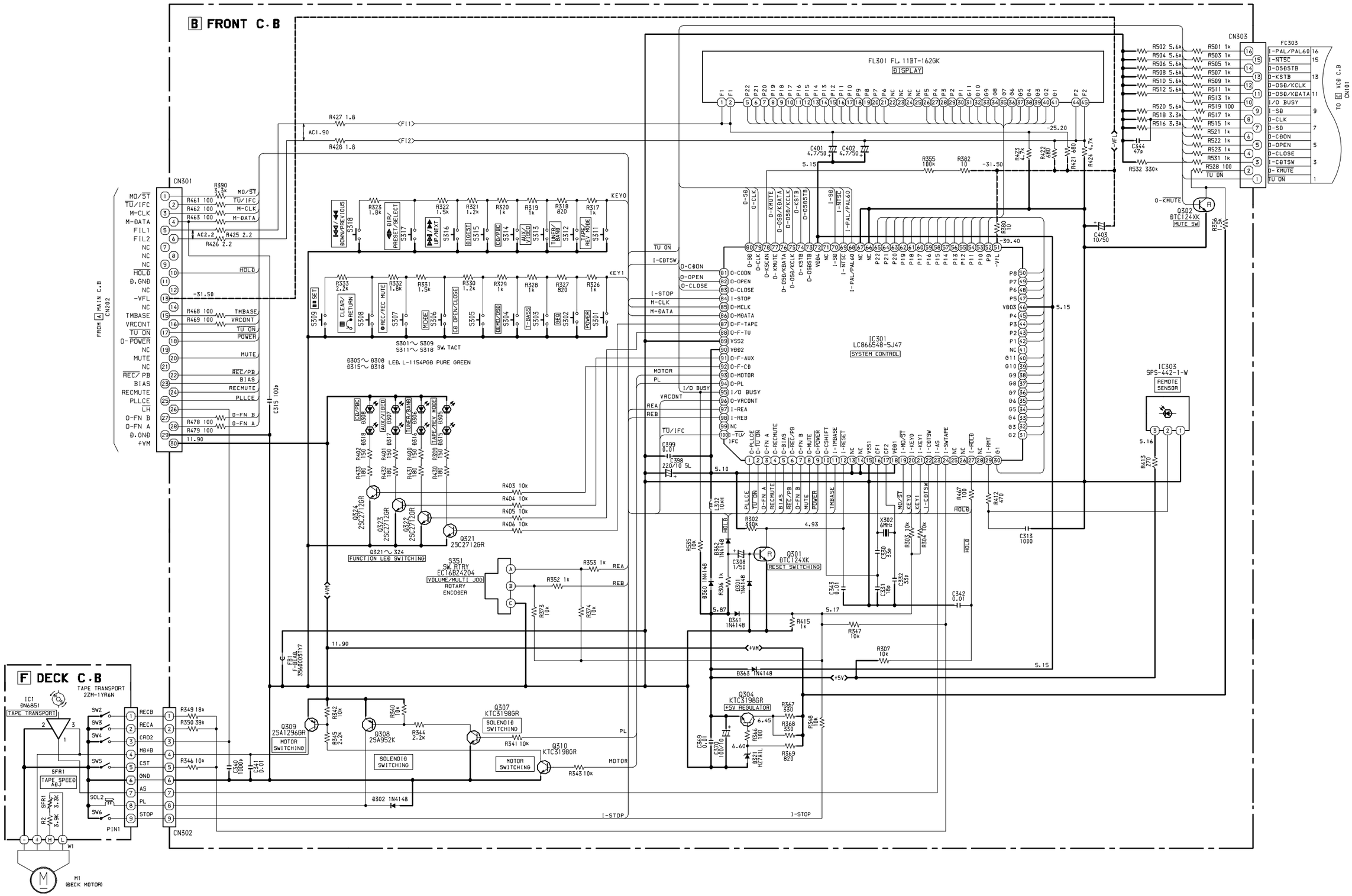
IC, M62439SP



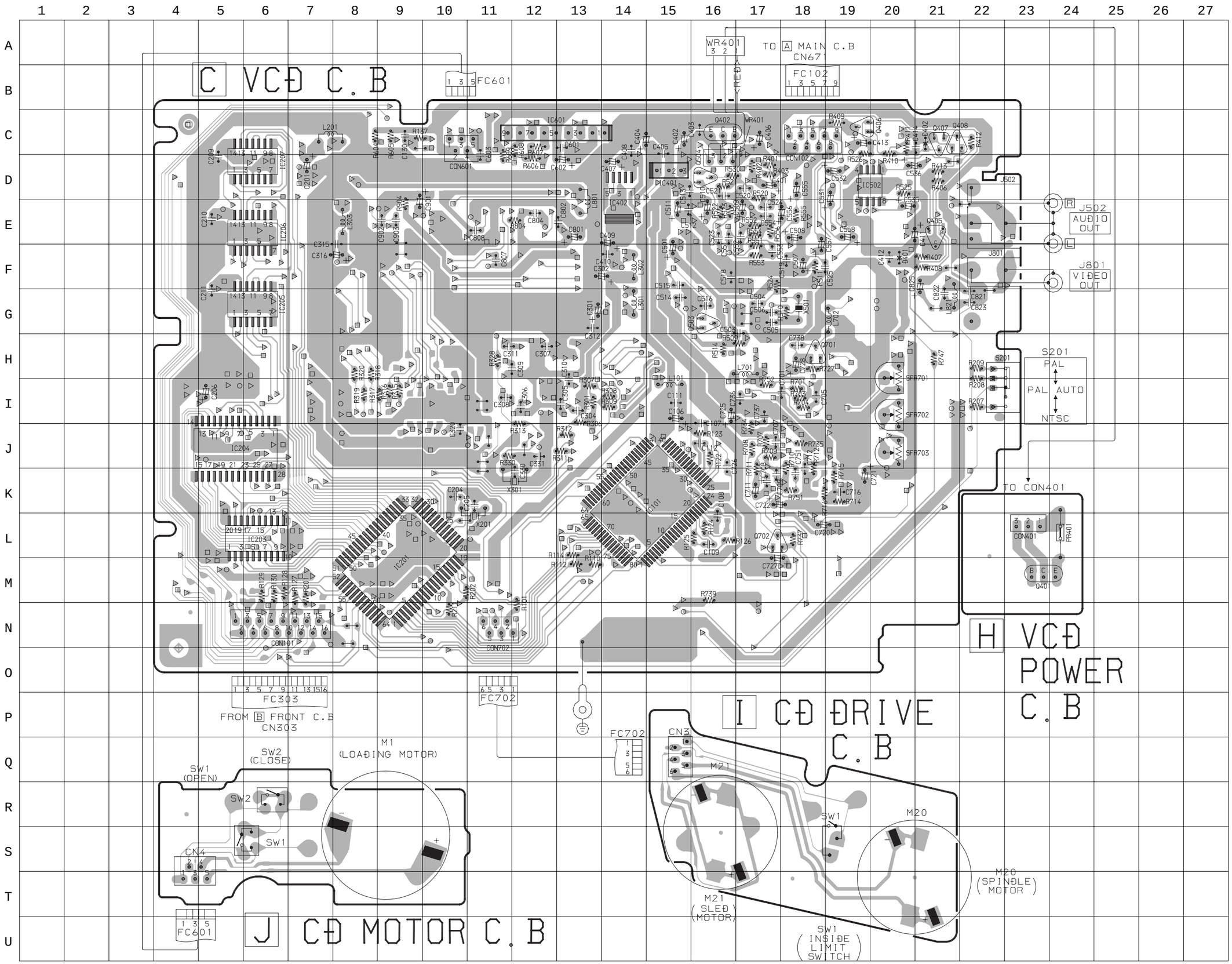
WIRING – 2 (FRONT / DECK / RELAY)



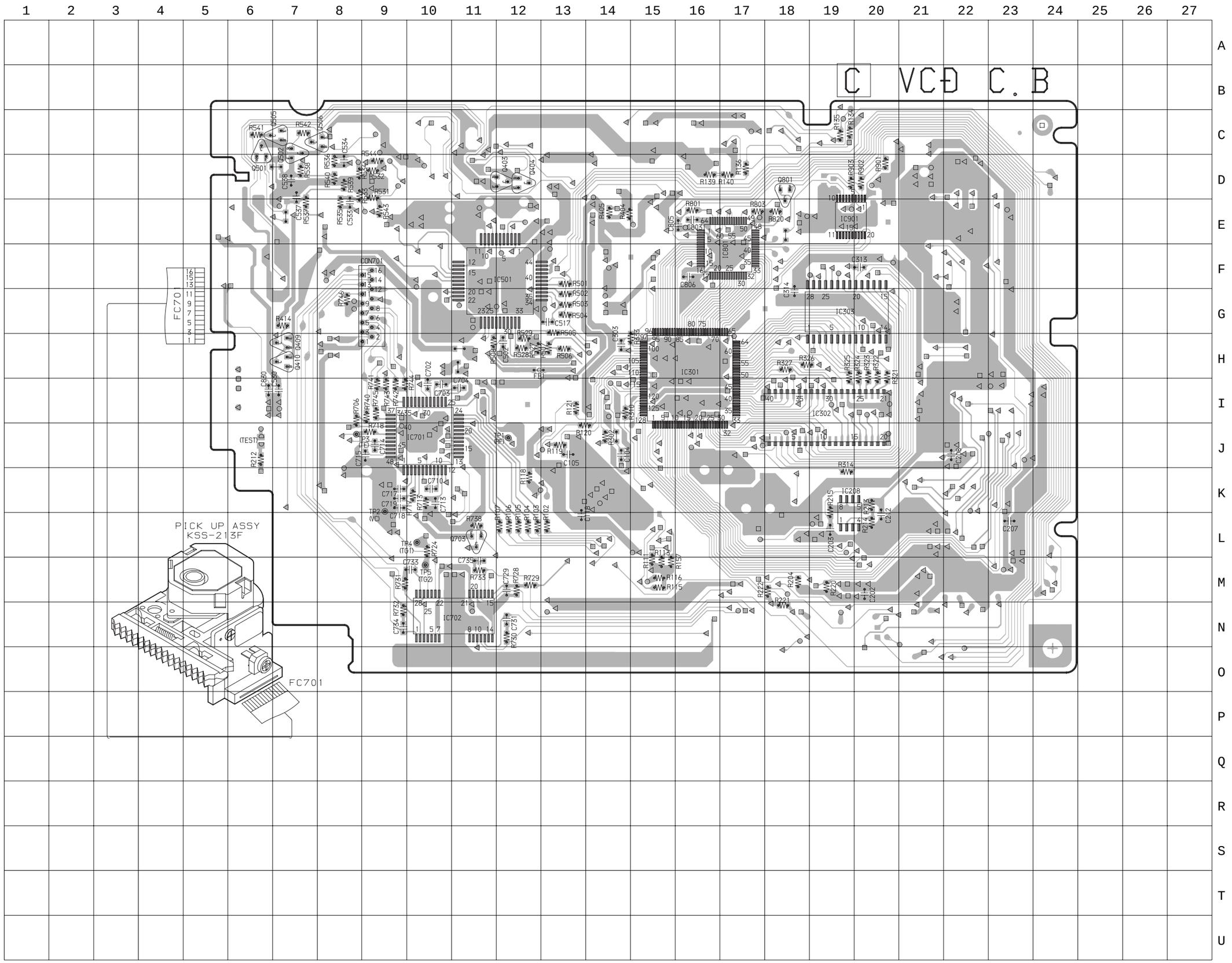
SCHEMATIC DIAGRAM – 3 (FRONT / DECK)



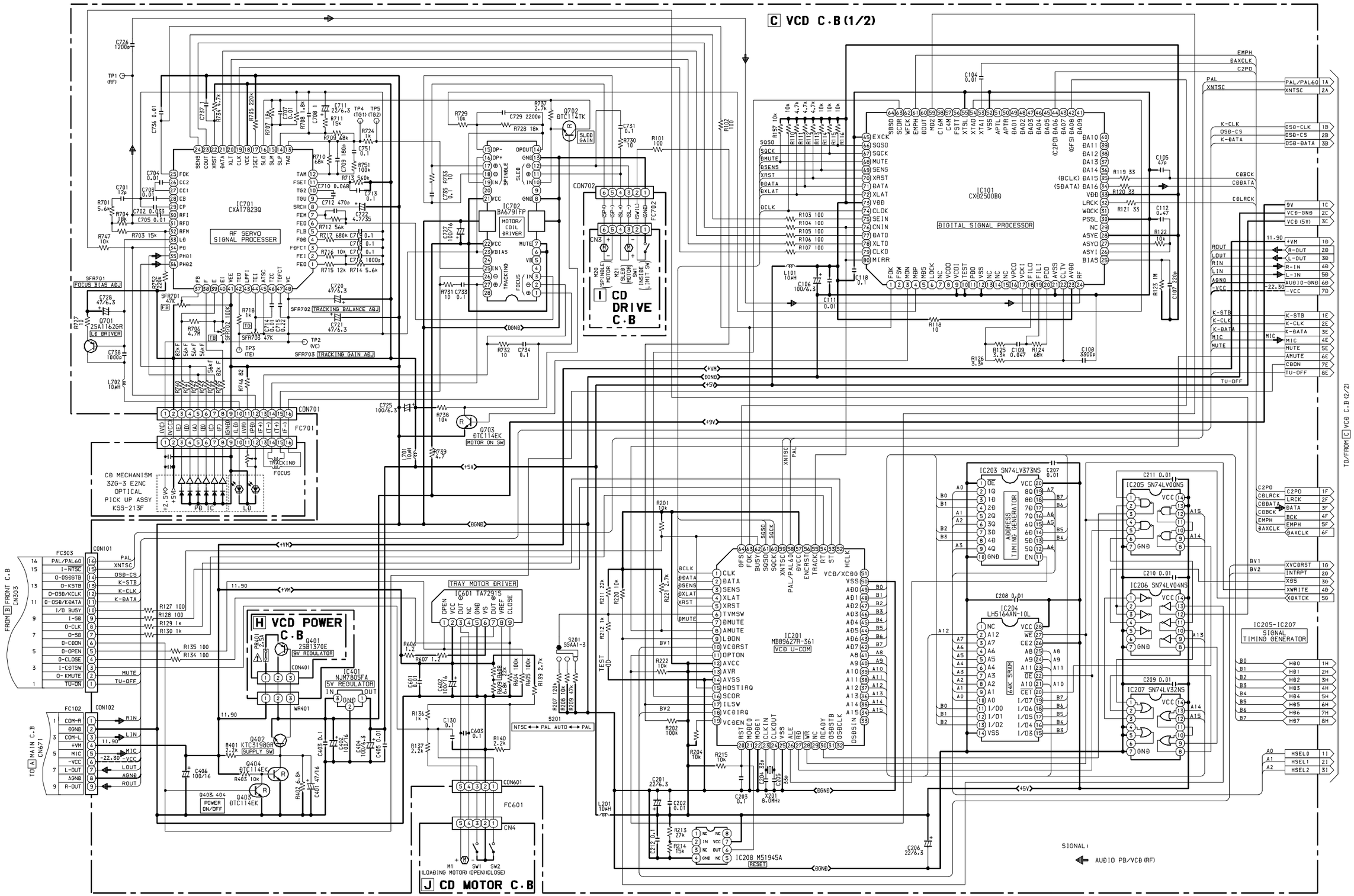
WIRING – 3 (VCD:1/2 / VCD POWER / CD DRIVE / CD MOTOR)



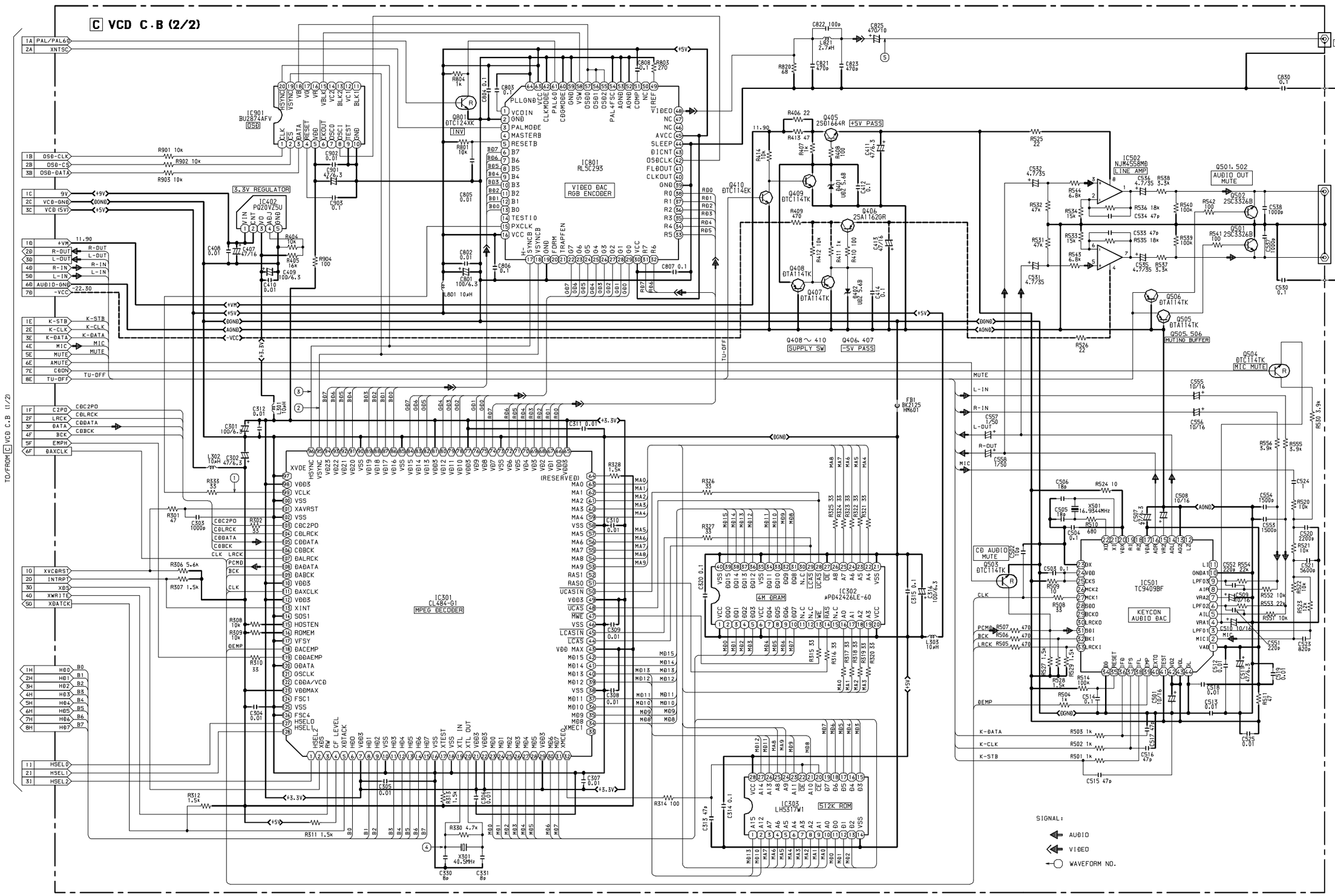
WIRING – 3 (VCD:2/2)



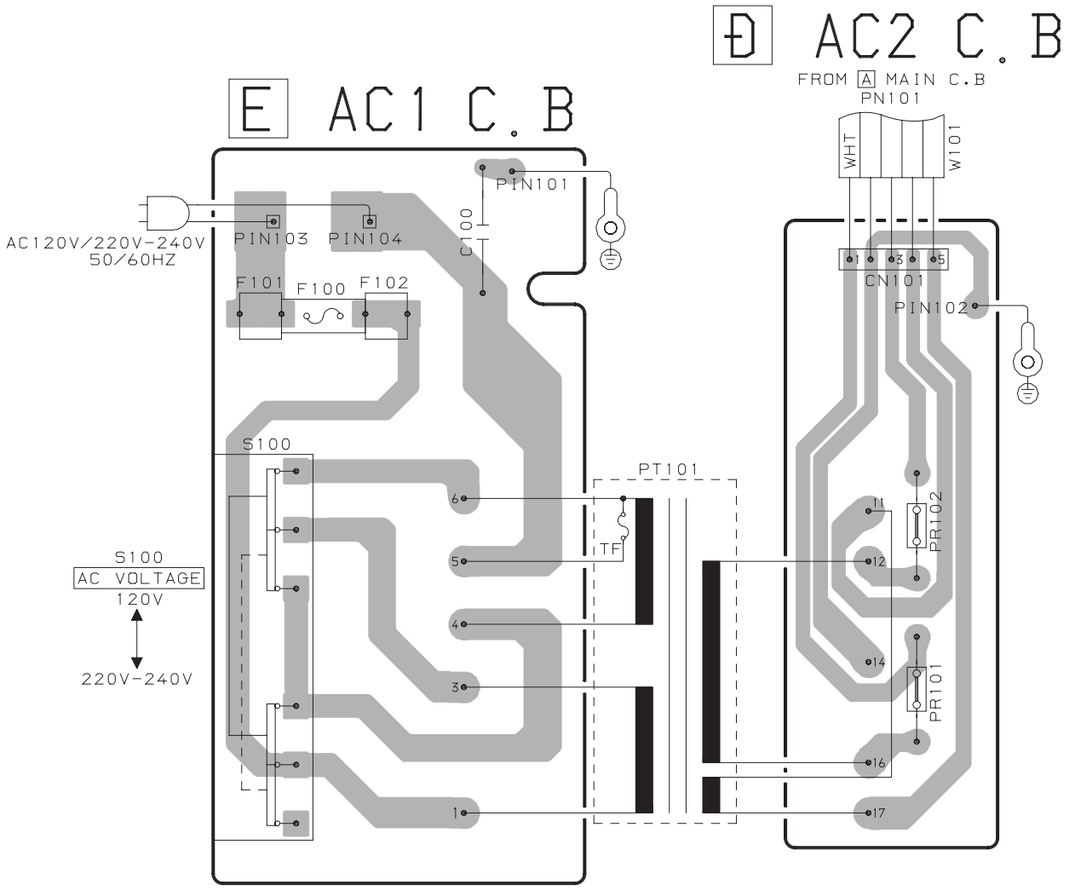
SCHEMATIC DIAGRAM – 4 (VCD:1/2 / VCD POWER / CD DRIVE / CD MOTOR)



SCHEMATIC DIAGRAM – 5 (VCD:2/2)

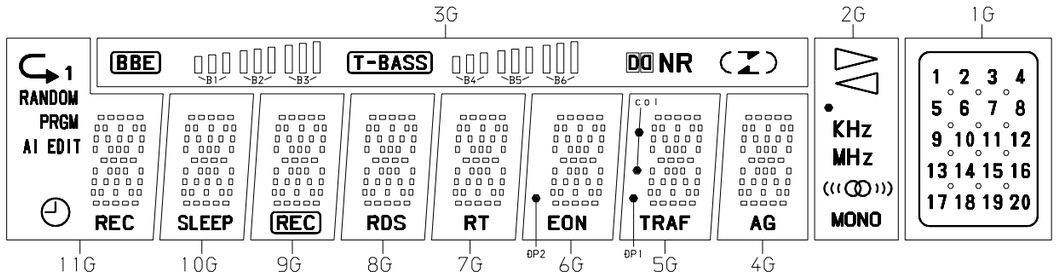


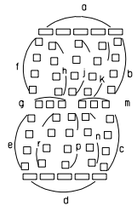
WIRING – 4 (AC2 / AC1)

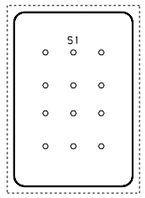


FL (11BT–162GK) GRID ASSIGNMENT / ANODE CONNECTION

GRID ASSIGNMENT





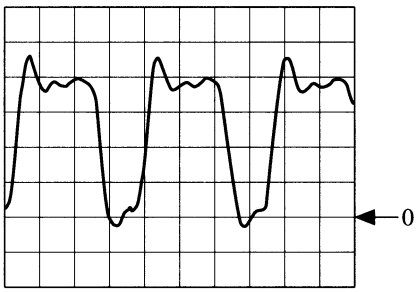


ANODE CONNECTION

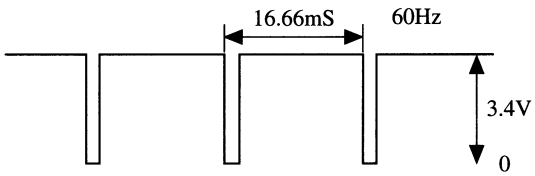
	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	REC	SLEEP	REC	RDS	RT	EON	TRAF	AG	BBE	MONO	20
P2	d	d	d	d	d	d	d	d	B1	(((oo)))	19
P3	n	n	n	n	n	n	n	n	B2	MHz	18
P4	p	p	p	p	p	p	p	p	B3	KHz	17
P5	r	r	r	r	r	r	r	r	T-BASS	○	16
P6	e	e	e	e	e	e	e	e	B4	◁	15
P7	c	c	c	c	c	c	c	c	B5	▷	14
P8	g	g	g	g	g	g	g	g	B6	–	13
P9	m	m	m	m	m	m	m	m	DD NR	–	12
P10	f	f	f	f	f	f	f	f	☾	–	11
P11	b	b	b	b	b	b	b	b	⧗	–	10
P12	k	k	k	k	k	k	k	k	☽	–	9
P13	j	j	j	j	j	j	j	j	–	–	8
P14	h	h	h	h	h	h	h	h	–	–	7
P15	a	a	a	a	a	a	a	a	–	–	6
P16	RANDOM	–	–	–	–	–	COI (UP)	–	–	–	5
P17	🕘	–	–	–	–	–	COI (ĐOWN)	–	–	–	4
P18	1	–	–	–	–	ĐP2	ĐP1	–	–	–	3
P19	PRGM	–	–	–	–	–	–	–	–	–	2
P20	AI	–	–	–	–	–	–	–	–	–	1
P21	EDIT	–	–	–	–	–	–	–	–	–	S1
P22	↪	–	–	–	–	–	–	–	–	–	–

WAVEFORM (VCD)

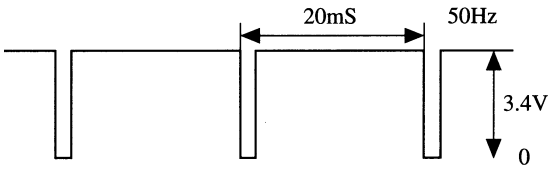
① IC301 PIN 99 (VCLK) VOLT/DIV: 0.1V
13.5MHz ± 1350Hz TIME/DIV: 20nS
CD/VCD MODE
TV MODE • NTSC
• PAL
• PAL AUTO



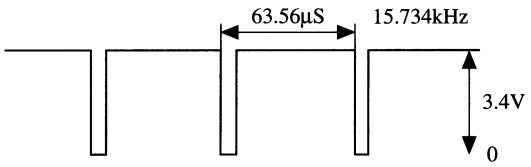
② IC301 PIN 95 (VSYNC)
CD/VCD MODE
TV MODE • NTSC



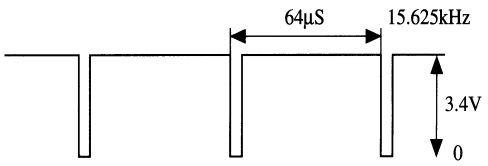
CD/VCD MODE
TV MODE • PAL
• PAL AUTO



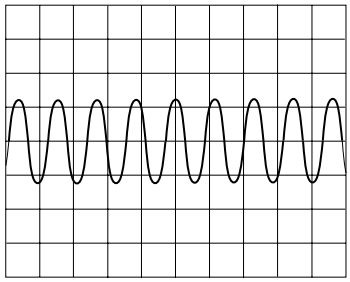
③ IC301 PIN 96 (HSYNC)
CD/VCD MODE
TV MODE • NTSC



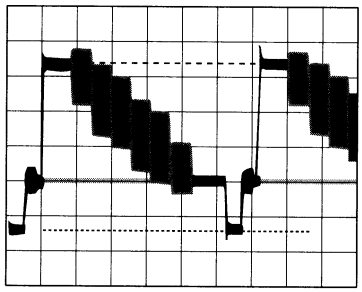
CD/VCD MODE
TV MODE • PAL
• PAL AUTO



④ IC301 PIN 19 (XTLIN) VOLT/DIV: 0.2V
40.5MHz TIME/DIV: 20nS
CD/VCD MODE
TV MODE • NTSC
• PAL
• PAL AUTO

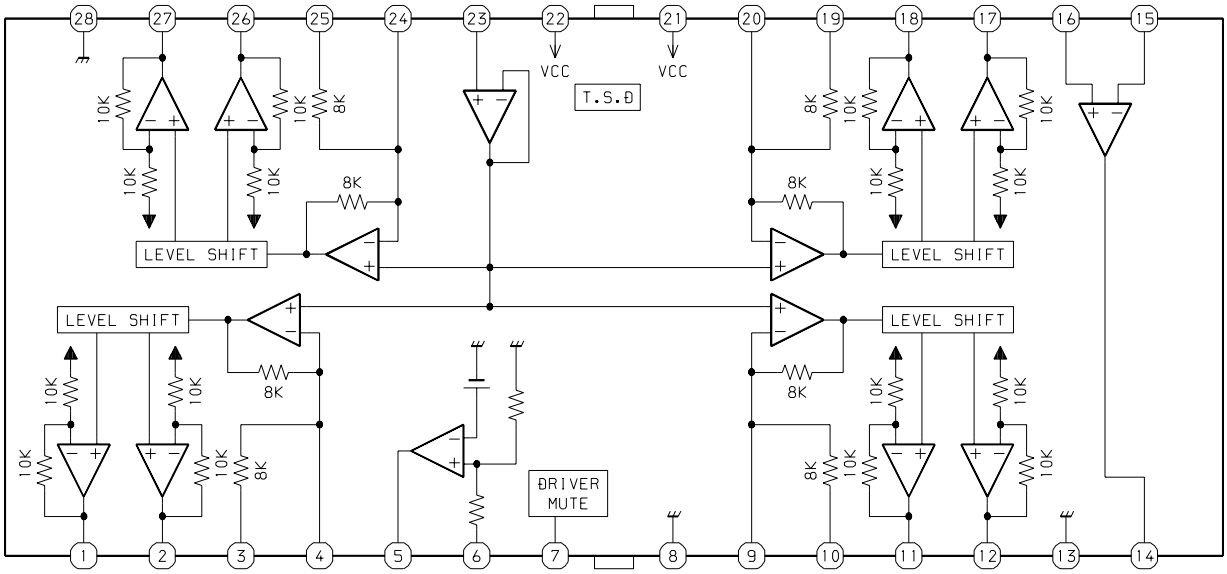


⑤ VIDEO OUT VOLT/DIV: 200mV
C825 (–) SIDE TIME/DIV: 10µS
VCD PLAY: CD–T105 TRACK 4
TV MODE • NTSC

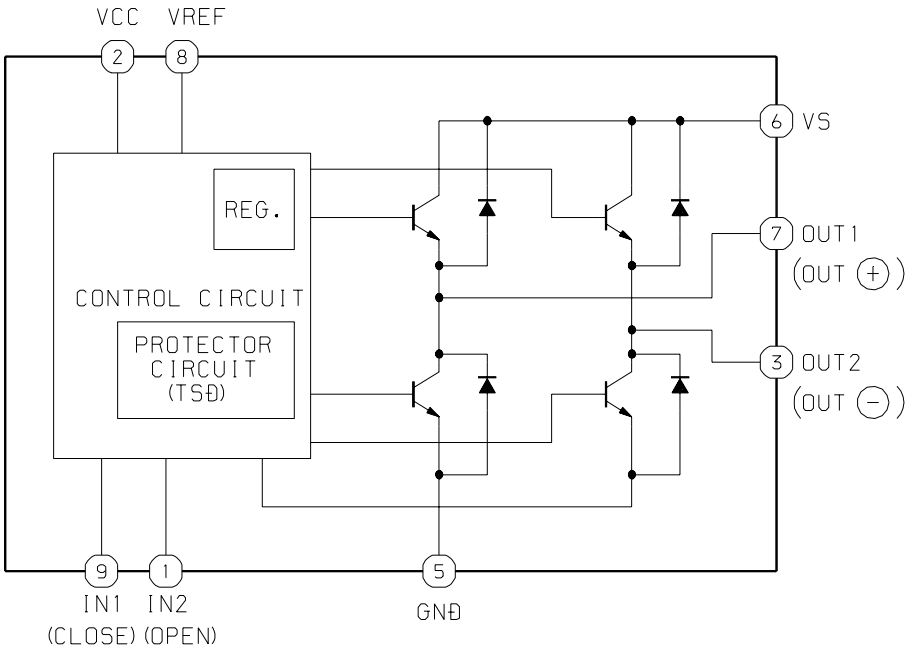


IC BLOCK DIAGRAM – 2

IC, BA6791FP



IC, TA7291S

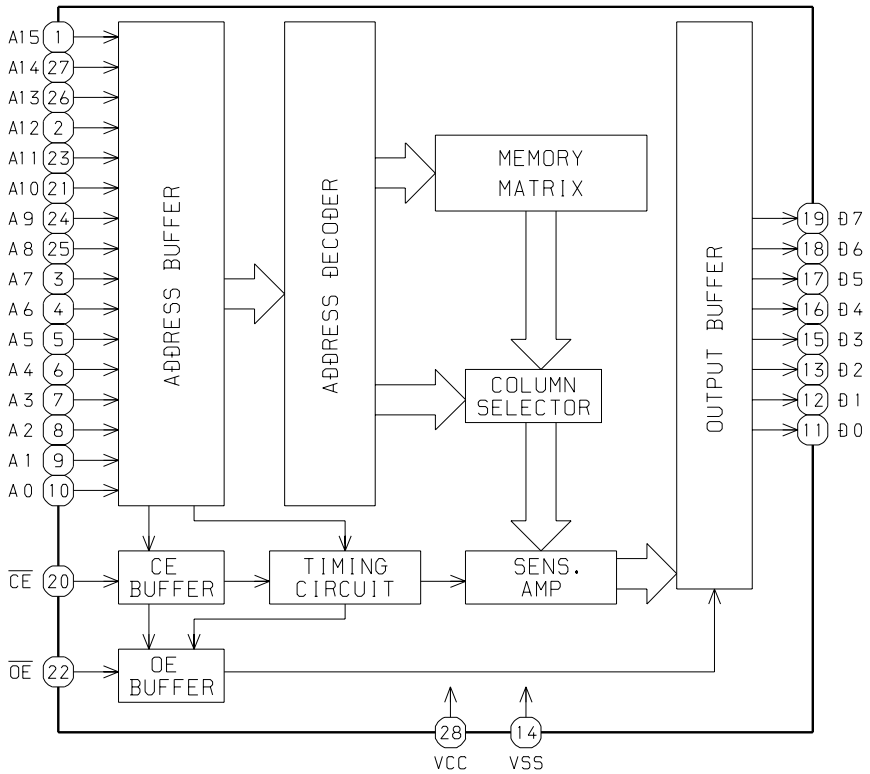


INPUT		OUTPUT		MOĐE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW
0	1	L	H	CCW
1	1	L	L	BRAKE

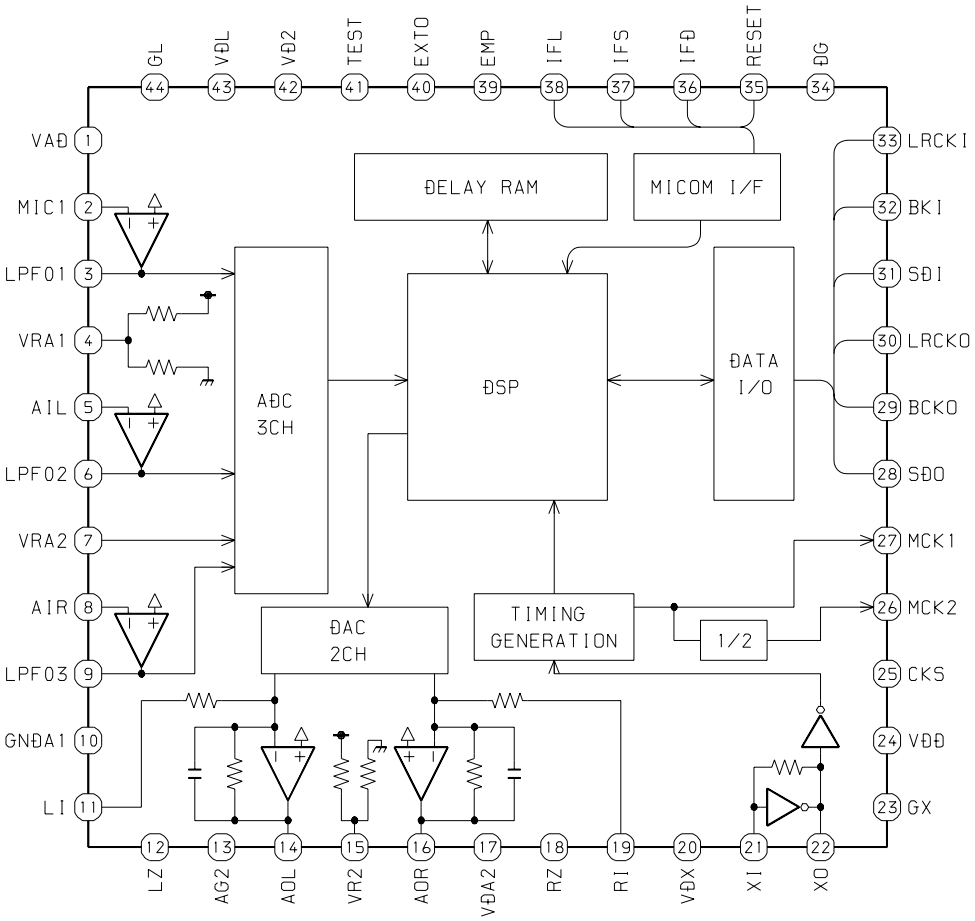
∞ : HI IMPEĐANCE

NOTE : INPUT "H" ACTIVE

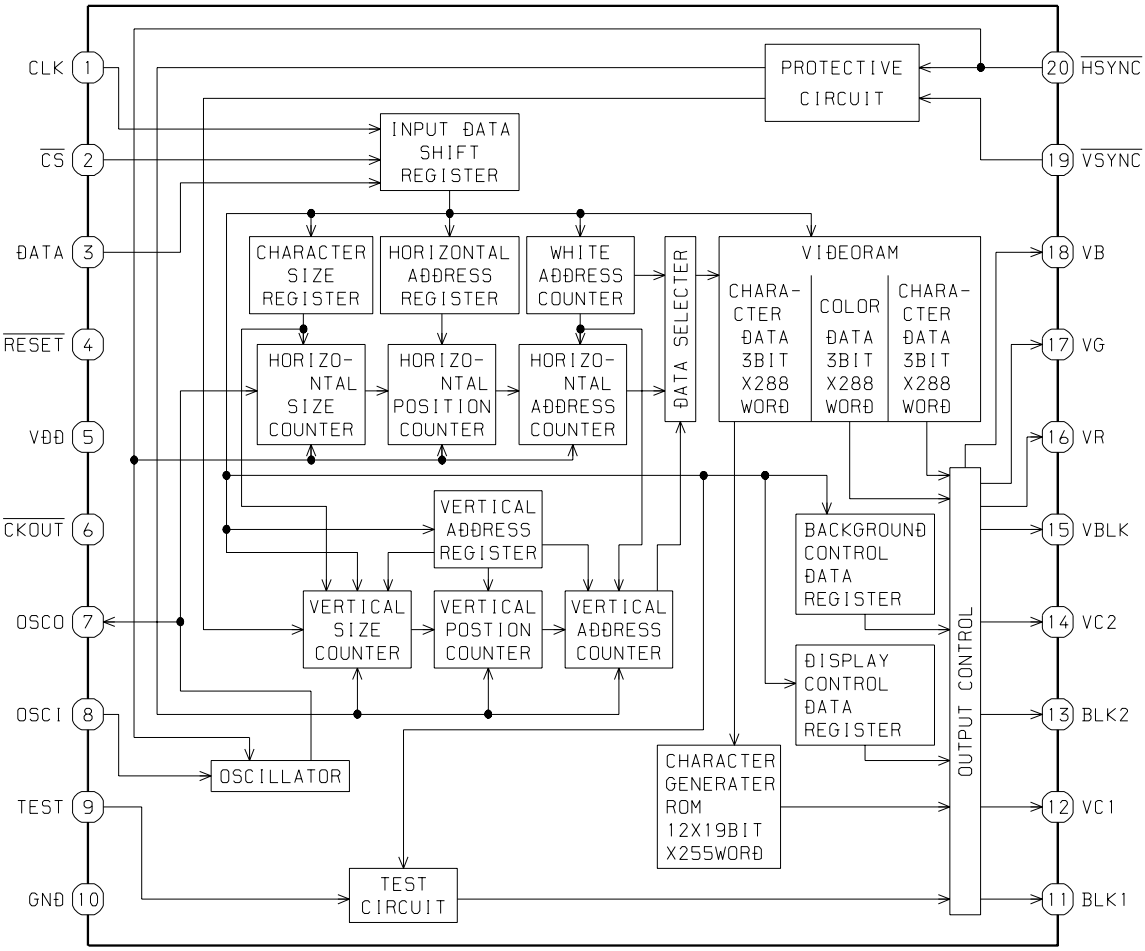
IC, LH5317W1



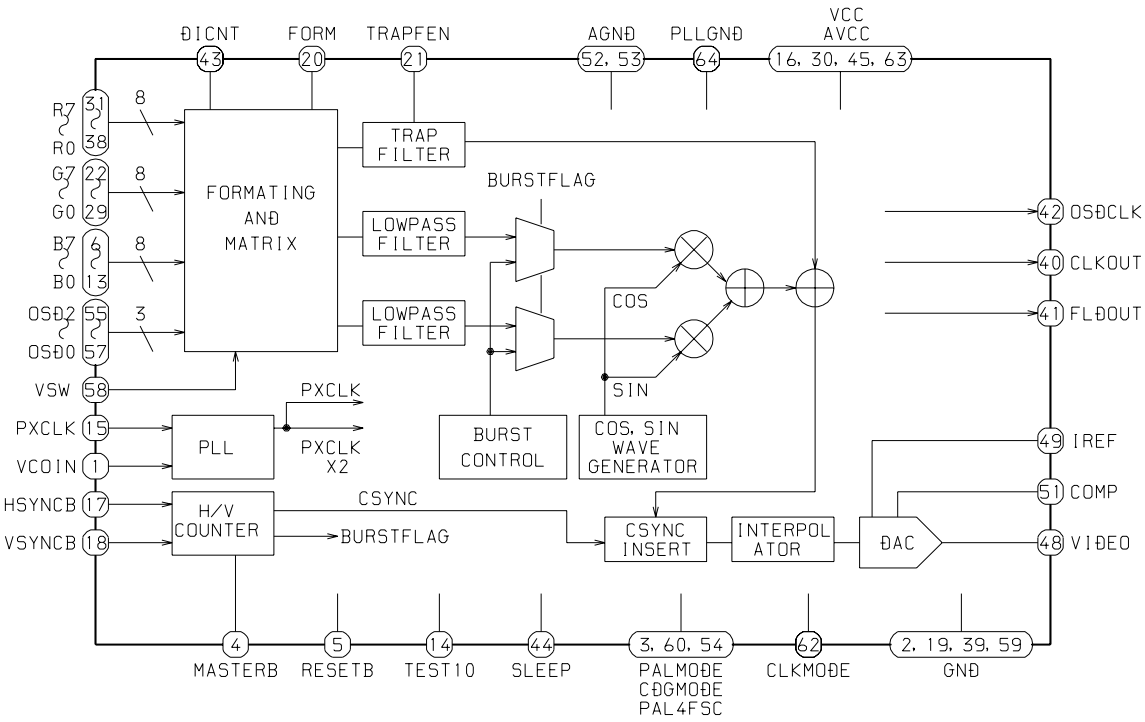
IC, TC9409BF



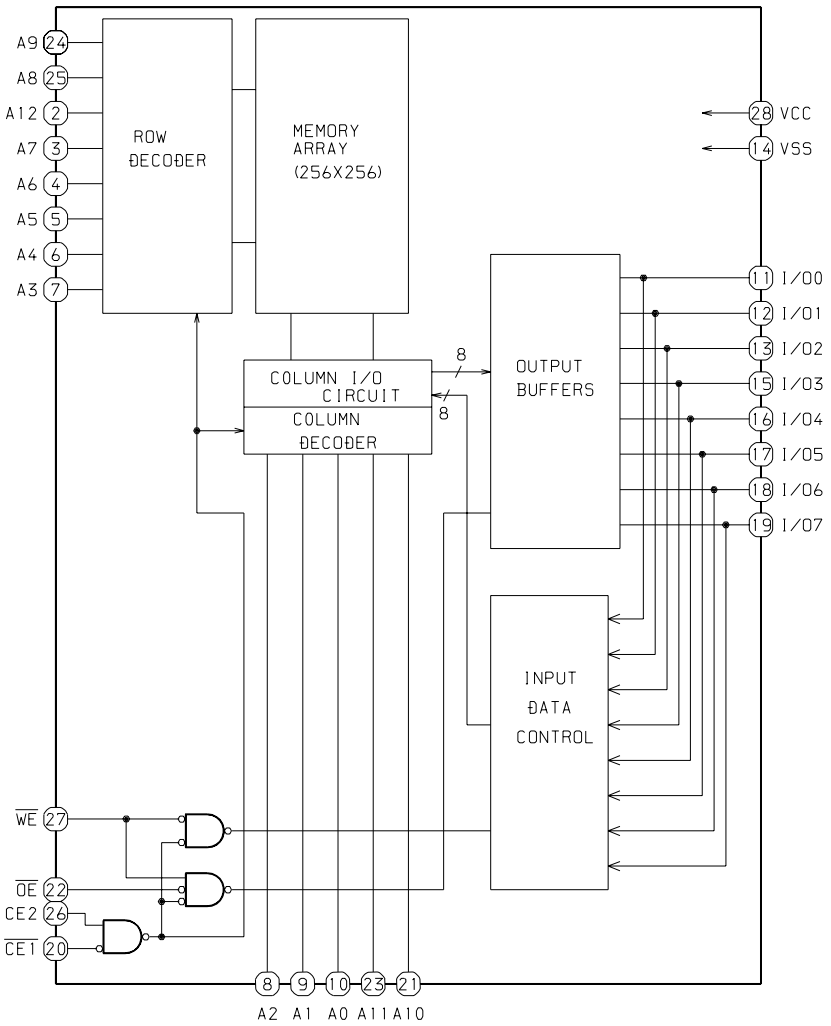
IC, BU2874AFV



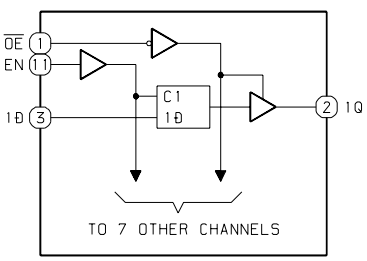
IC, RL5C293



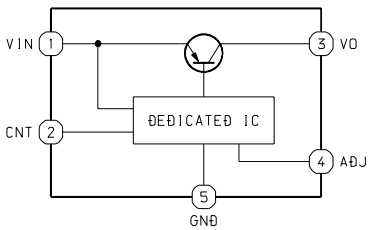
IC, LH5164AN−10L



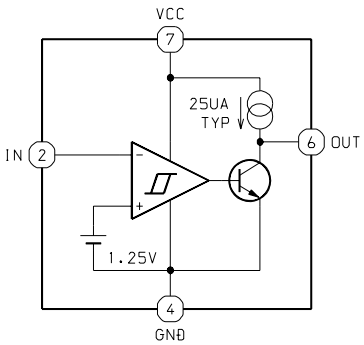
IC, SN74LV373NS



IC, PQ20VZ5U



IC, M51945A



IC DESCRIPTION

IC,LC866548-5J47

Pin No.	Pin Name	I/O	Description
1	O-PLLCE	O	PLL chip enable.
2	O-$\overline{\text{TU ON}}$	O	Tuner mode switch output.
3	O-FN A	O	Function IC control A.
4	O-RECMUTE	O	Record mute.
5	O-BIAS	O	Record bias 85K control.
6	O-$\overline{\text{REC}}$/PB	O	Deck Recording/Playback switch.
7	O-FN B	O	Function IC control B.
8	O-MUTE	O	Mute output.
9	O-$\overline{\text{POWER}}$	O	Power supply on.
10	O-CSHIFT	O	Clock shift for main clock 6MHz.
11	I-TMBASE	I	8Hz time base input.
12	$\overline{\text{RESET}}$	I	Micon reset.
13 ~ 14	NC	–	Not used. (Connected to VDD)
15	VSS1	–	GND.
16	CF1	I	6MHz ceralock.
17	CF2	O	
18	VDD1	–	5V supply.
19	I-MO/$\overline{\text{ST}}$	I	Tuner mono/stereo.
20	I-KEY0	I	Key0 A/D input.
21	I-KEY1	I	Key1 A/D input.
22	I-CDTSW	I	CD tray switch A/D input.
23	I-AS	I	Tape Auto Stop, counter pulse.
24	I-SWTAPE	I	Tpae switch A/D input.
25 ~ 26	NC	–	Not used.
27	I-$\overline{\text{HOLD}}$	I	Hold detect.
28	NC	–	Not used.
29	I-RMT	I	Remote control signal input.
30 ~ 40	G1 ~ G11	O	FL grid G1 ~ G11 outputs.
41	NC	–	Not used.
42 ~ 45	P1 ~ P4	O	FL port P1 ~ P4 outputs.
46	VDD3	–	5V supply.
47 ~ 50	P5 ~ P8	O	FL port P5 ~ P8 outputs.
51	–VFL	–	FL negative supply.
52 ~ 65	P9 ~ P22	O	FL port P9 ~ P22 outputs.
66 ~ 67	NC	–	Not used. (Connected to GND)
68	I-PAL/PAL60	I	I-PAL/PAL60 input.
69	I-$\overline{\text{NTSC}}$	I	NTSC input.
70	I-SD	I	Input serial data to VCD Micon.
71	NC	–	Not used.
72	VDD4	–	5V supply.

Pin No.	Pin Name	I/O	Description
73	O-OSDSTB	O	Strobe output to On-Screen-Display IC.
74	O-KSTB	O	Strobe output to Karaoke IC.
75	O-OSD/KCLK	O	Clock output to Karaoke IC & OSD IC.
76	O-OSD/KDATA	O	Data output to Karaoke IC & OSD IC.
77	O-$\overline{\text{KMUTE}}$	O	Mute for Karaoke IC output.
78	O-KSCAN	O	Key-scan output.
79	O-CLK	O	Output serial clock to VCD Micon.
80	O-SD	O	Output serial data toVCD Micon.
81	O-CDON	O	CD mode switch output.
82	O-OPEN	O	CD door open output.
83	O-CLOSE	O	CD door close output.
84	I-STOP	I	Tape Stop Detect input.
85	O-MCLK	O	Master clock output to PLL IC.
86	O-MDATA	O	Master data output to PLL IC.
87	O-F-TAPE	O	Function TAPE LED on.
88	O-F-TU	O	Function TUNER LED on.
89	VSS2	–	GND.
90	VDD2	–	5V supply.
91	O-F-AUX	O	Function AUX LED on.
92	O-F-CD	O	Function CD LED on.
93	O-MOTOR	O	Deck motor ON/OFF.
94	O-PL	O	Deck plunger ON/OFF.
95	I/O BUSY	I/O	Handshaking signal with VCD micron.
96	O-VRCONT	O	EV (Electronic Volume) control data output to IC, M62439SP.
97	I-REA	I	Rotary encoder clockwise input.
98	I-REB	I	Rotary encoder counter-clockwise input.
99	NC	–	Not used.
100	I-$\overline{\text{TU}}$/IFC	I	Tuner station detect/IF count data.

IC,LC72131D

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>1</td><td>XIN</td><td>I</td><td rowspan="2">A crystal oscillator (4.5MHz) is connected between these pins.</td></tr>
<tr><td>22</td><td>XOUT</td><td>O</td></tr>
<tr><td>2</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>3</td><td>CE</td><td>I</td><td>To enable the IC. Active "H".</td></tr>
<tr><td>4</td><td>DI</td><td>I</td><td>Digital data input from CPU (LC866548) when relevant key is operated. Active "H".</td></tr>
<tr><td>5</td><td>CL</td><td>I</td><td>To clock in the data DI.</td></tr>
<tr><td>6</td><td>DO</td><td>O</td><td>Digital data output to CPU (LC866548).</td></tr>
<tr><td>7</td><td>T-BASE</td><td>O</td><td>Outputs a reference clock signal (8Hz) for the clock.</td></tr>
<tr><td>8</td><td>$\overline{\text{MONO}}$ / BEAT</td><td>O</td><td>Outputs "H" when MONO / BEAT is switched.</td></tr>
<tr><td>9</td><td>$\overline{\text{FM}}$ / $\overline{\text{SW}}$</td><td>O</td><td>Output "L" or "H" as follows:
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><td>AM</td><td>FM</td><td>LW</td><td>MW</td><td>FM</td><td>MW</td><td>SW</td><td>FM</td></tr>
<tr><td>H</td><td>L</td><td>H</td><td>H</td><td>L</td><td>H</td><td>L</td><td>L</td></tr>
</table></td></tr>
<tr><td>10</td><td>$\overline{\text{MW}}$ / SW</td><td>O</td><td>Outputs "L" or "H" as follows: (Not used)
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><td>AM</td><td>FM</td><td>LW</td><td>MW</td><td>FM</td><td>MW</td><td>SW</td><td>FM</td></tr>
<tr><td>L</td><td>L</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td><td>L</td></tr>
</table></td></tr>
<tr><td>11</td><td>IF-MUTE</td><td>O</td><td>To control internal counter.</td></tr>
<tr><td>12</td><td>IF-IN</td><td>I</td><td>General purpose counter input.</td></tr>
<tr><td>13</td><td>$\overline{\text{TUNE}}$</td><td>I</td><td>Receives "L" when station is tuned.</td></tr>
<tr><td>14</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>15</td><td>AM-IN</td><td>I</td><td>Receives the AM local oscillator frequency signal.</td></tr>
<tr><td>16</td><td>FM-IN</td><td>I</td><td>Receives the FM local oscillator frequency signal.</td></tr>
<tr><td>17</td><td>VDD</td><td>–</td><td>Supply power to IC (+5V).</td></tr>
<tr><td>18</td><td>PD</td><td>O</td><td>PLL charge pump output.</td></tr>
<tr><td>19</td><td>A-IN</td><td>I</td><td rowspan="2">The MOS transistor for PLL active low pass filter.</td></tr>
<tr><td>20</td><td>A-OUT</td><td>O</td></tr>
<tr><td>21</td><td>VSS</td><td>–</td><td>Ground.</td></tr>
</table>

Pin No.	Pin Name	I/O	Description
1	HSEL2	I	Host address bus.
2	XDS	I	Data strobe.
3	RW	I	Read/write.
4	CF LEVEL	O	Coded data FIFO level status. Open drain.
5	XDTACK	O	Host data acknowledge. Open drain.
6	HD0	I/O	Host data bus.
7	VDD3	–	Power supply pin. Used in 3.3V.
8 ~ 9	HD1, HD2	I/O	Host data bus.
10	VSS	–	GND.
11 ~ 15	HD3 ~ HD7	I/O	Host data bus.
16	VSS	–	GND.
17	XTEST	I	Test terminal.
18	VSS	–	GND.
19	XTL IN	I	Global clock. 40.5MHz.
20	XTL OUT	O	Global clock. 40.5MHz.
21 ~ 22	VDD3	–	Power supply pin. Used in 3.3V.
23 ~ 28	MD0 ~ MD5	I/O	Memory data bus.
29	VDD3	–	Power supply pin. Used in 3.3V.
30 ~ 31	MD6, MD7	I/O	Memory data bus.
32 ~ 33	XMCE0, XMCE1	O	Chip enable.
34 ~ 37	MD8 ~ MD11	I/O	Memory data bus.
38	VSS	–	GND.
39 ~ 42	MD12 ~ MD15	I/O	Memory data bus.
43	VDD MAX	–	Power supply pin. Used in 5.0V.
44	$\overline{\text{LCAS}}$	O	Lower digit, column address strobe.
45	$\overline{\text{LCASIN}}$	I	Lower digit, data latch enable.
46	VSS	–	GND.
47	$\overline{\text{MWE}}$	O	Write enable.
48	$\overline{\text{UCAS}}$	O	Higher digit, column address strobe.
49	VDD3	–	Power supply pin. Used in 3.3V.
50	$\overline{\text{UCASIN}}$	I	Higher digit, data latch enable.
51	RAS0	O	Lower address strobe.
52	RAS1	O	Lower address strobe. (Not used)
53 ~ 57	MA9 ~ MA5	O	Memory address bus.
58	VSS	–	GND.
59 ~ 63	MA4 ~ MA0	O	Memory address bus.
64	RESERVED	–	Reserved.
65	VDD3	–	Power supply pin. Used in 3.3V.
66 ~ 72	VD0 ~ VD6	O	Pixel data bus. RGB or YCbCr format.
73	VSS	–	GND.

Pin No.	Pin Name	I/O	Description
74 ~ 76	VD7 ~ VD9	O	Pixel data bus. RGB or YCbCr format.
77	VDD3	–	Power supply pin. Used in 3.3V.
78 ~ 80	VD10 ~ VD12	O	Pixel data bus. RGB or YCbCr format.
81	VDD3	–	Power supply pin. Used in 3.3V.
82 ~ 84	VD13 ~ VD15	O	Pixel data bus. RGB or YCbCr format.
85	VSS	–	GND.
86 ~ 89	VD16 ~VD19	O	Pixel data bus. RGB or YCbCr format.
90	VSS	–	GND.
91 ~ 94	VD20 ~ VD23	O	Pixel data bus. RGB or YCbCr format.
95	VSYNC	I/O	Vertical sync signal.
96	HSYNC	I/O	Horizontal sync signal.
97	XVOE	I	Video output enable. (Connected to GND)
98	VDD3	–	Power supply pin. Used in 3.3V.
99	VCLK	I/O	Video clock.
100	VSS	–	GND.
101	XAVRST	I	Hardware reset.
102	VSS	–	GND.
103	CD C2PO	I	Data error. Used during CD-ROM data input.
104	CD LRCK	I	LR clock.
105	CD DATA	I	Serial data input from CD-DSP.
106	CD BCK	I	Bit clock from CD decoder.
107	DA LRCK	O	LR clock.
108	DA DATA	O	Bit serial audio sample signal.
109	DA BCK	O	Audio bit clock.
110	VDD3	–	Power supply pin. Used in 3.3V.
111	DA XCLK	I	External audio frequency clock.
112	VDD3	–	Power supply pin. Used in 3.3V.
113	XINT	O	Interrupt request.
114	S0S1	I	Block start sync. (Connected to GND)
115	HOSTEN	I	Host enable.
116	ROMEM	I	Boot ROM enable.
117	VFSY	I	Frame start or composite sync. (Connected to GND)
118	DAC EMP	O	Output emphasis flag.
119	CDDA EMP	I	Input emphasis flag.
120	GDATA	I	Subcode data. (Connected to GND)
121	GSCLK	I/O	Subcode data clock. (Not used)
122	CDDA/VCD	O	Input data identification. H: CDDA. L: video CD. (Not used)
123	VDDMAX	I	Power supply pin. Used in 5.0V.
124	FSC1	O	Output generated by dividing-by-4 the pin-126 input CLK. (Not used)
125	VSS	–	GND.

Pin No.	Pin Name	I/O	Description
126	FSC4	I	Frequency divider input. (Connected to GND)
127 ~ 128	HSEL0, HSEL1	I	Host address bus.

IC,CXD2500BQ

Pin No.	Pin Name	I/O	Description
1	FOK	I	Focus OK input terminal. Used for SENS output and servo auto sequencer.
2	FSW	O	Spindle motor output filter selection output. (Not used)
3	MON	O	Spindle motor ON-OFF control output.
4	MDP	O	Spindle motor servo control.
5	MDS	O	Spindle motor servo control. (Not used)
6	LOCK	O	H output when GFS is sampled at 460Hz and GFS is H. L output when L is continuously 8 times. (Not used)
7	NC	–	Not used.
8	VCOO	O	Oscillator circuit output for analog EFM PLL. (Not used)
9	VCOI	I	Oscillator circuit input for analog EFM PLL. fLOCK = 8.6436MHz. (Connected to GND)
10	TEST	I	TEST terminal. (Connected to GND)
11	PDO	O	Charge pump output for analog EFM PLL. (Not used)
12	VSS	–	GND.
13 ~ 15	NC	–	Not used.
16	VPCO	O	Charge pump output for vari-pitch PLL. (Not used)
17	VCKI	I	Clock input from external VCO for vari-pitch. fc center = 16.9344MHz.
18	FILO	O	Filter output for master PLL (slave = digital PLL).
19	FILI	I	Filter input for master PLL.
20	PCO	O	Charge pump output for master PLL.
21	AVSS	–	Analog GND.
22	CLTV	I	VCO control voltage input for master.
23	AVDD	–	Analog power supply. (+3.5 V)
24	RF	I	EFM signal input.
25	BIAS	I	Asymmetry circuit constant current input.
26	ASYI	I	Asymmetry comparate voltage input.
27	ASYO	O	EFM full swing output (L = Vss, H = VDD.)
28	ASYE	I	L: asymmetry circuit OFF, H: asymmetry circuit ON. (Connected to VDD)
29	NC	–	Not used.
30	PSSL	I	Audio data output mode selection input. Serial output at L, parallel output at H. (Connected to GND)
31	WDCK	O	D/A interface for 48-bit slot. Word clock f = 2 Fs (Not used).
32	LRCK	O	D/A interface for 48-bit slot. LR clock f = Fs.

Pin No.	Pin Name	I/O	Description
33	VDD	–	Power supply. (+3.5 V)
34	(SDATA) DA16	O	DA16 (MSB) output when PSSL = H. 48-bit slot serial data when PSSL = L. (2's COMP, MSB first).
35	(BCLK) DA15	O	DA15 output when PSSL = H. 48-bit slot bit clock when PSSL = L.
36	(SDATA) DA14	O	DA14 output when PSSL = H. 64-bit slot serial data when PSSL = L. (2's COMP, MSB first). (Not used)
37	(BCLK) DA13	O	DA13 output when PSSL = H. 64-bit slot bit clock when PSSL = L. (Not used)
38	(LRCK) DA12	O	DA12 output when PSSL = H. 64-bit slot LR clock when PSSL = L. (Not used)
39	(GTOP) DA11	O	DA11 output when PSSL = H. GTOP output when PSSL = L. (Not used)
40	(XUGF) DA10	O	DA10 output when PSSL = H. XUGF output when PSSL = L. (Not used)
41	(XPLCK) DA09	O	DA09 output when PSSL = H. XPLCK output when PSSL = L. (Not used)
42	(GFS) DA08	O	DA08 output when PSSL = H. GFS output when PSSL = L.
43	(RFCK) DA07	O	DA07 output when PSSL = H. RFCK output when PSSL = L. (Not used)
44	(C2PO) DA06	O	DA06 output when PSSL = H. C2P0 output when PSSL = L.
45	(XRAOF) DA05	O	DA05 output when PSSL = H. XRAOFoutput when PSSL = L. (Not used)
46	(MNT3) DA04	O	DA04 output when PSSL = H. MNT3 output when PSSL = L. (Not used)
47	(MNT2) DA03	O	DA03 output when PSSL = H. MNT2 output when PSSL = L. (Not used)
48	(MNT1) DA02	O	DA02 output when PSSL = H. MNT1 output when PSSL = L. (Not used)
49	(MNT0) DA01	O	DA01 output when PSSL = H. MNT0 output when PSSL = L. (Not used)
50	APTR	O	Aperture correction control output. H when R channel. (Not used)
51	APTL	O	Aperture correction control output. H when L channel. (not used)
52	VSS	–	GND.
53	XTAI	I	Input to 16.9344MHz X'tal oscillator circuit. or 33.8688MHz input.
54	XTAO	O	16.9344MHz X'tal oscillator output.
55	XTSL	I	X'tal selection input. L when X'tal is 16.9344MHz. H when 33.8688MHz. (Connected to GND)
56	FSTT	O	2/3 divider output of the pins 53 and 54. Does not change with vari-pitch. (Not used)
57	C4M	O	4.2336MHz output. When vari-pitch is performed, it changes too. (Not used)
58	C16M	O	16.2336MHz output. When vari-pitch is performed, it changes too. (Not used)
59	MD2	I	Digital-out ON/OFF control. ON at H, OFF at L.
60	DOUT	O	Digital-out terminal. (Not used)
61	EMPH	O	H output when the playback disc has emphasis. L output without emphasis.
62	WFCK	O	WFCK (Write Frame Clock) output. (Not used)
63	SCOR	O	H output when S0 or S1 of the subcode sync is detected.
64	SBSO	O	Serial output of Sub P to W. (Not used)

Pin No.	Pin Name	I/O	Description
65	EXCK	I	Clock input for SBSO read out. (Connected to GND)
66	SQSO	O	SubQ 8-bit and PCM peak level data. 16-bit output.
67	SQCK	I	Clock input for SQSO readout.
68	MUTE	I	Mute at H. Release at L.
69	SENS	O	SENS output.Output to CPU.
70	XRST	I	System reset. Reset at L.
71	DATA	I	Serial data input from CPU.
72	XLAT	I	Latch input from CPU. Latches serial data at fall-down edge.
73	VDD	–	Power supply (+3.5 V).
74	CLOK	I	Serial data transfer clock input from CPU.
75	SEIN	I	Sensor input from SSP.
76	CNIN	I	Track jump number counted signal input.
77	DATO	O	Serial data output to SSP.
78	XLTO	O	Serial data latch output to SSP. Latches at fall-down edge.
79	CLKO	O	Serial data transfer clock output to SSP.
80	MIRR	I	Mirror signal input. Used for jump of 128 track or more at auto sequencer.

IC,CXA1782BQ

Pin No.	Pin Name	I/O	Description
1	FEO	O	Focus error amplifier output pin. This pin is connected to the FZC comparator input internally.
2	FEI	I	Focus error input pin.
3	FDFCT	I	Capacitor connection pin for time constant used when there is defect.
4	FGD	I	This pin is connected to GND via capacitor when high frequency gain of the focus servo is attenuated.
5	FLB	I	This is a pin where the time constant is externally connected to raise the low frequency gain of the focus servo.
6	FEO	O	Focus drive output.
7	FEM	I	Focus amplifier inverted input pin.
8	SRCH	I	This is a pin where the time constant is externally connected to generate the focus search waveform.
9	TGU	I	This is a pin where the selection time constant is externally connected to set the tracking servo the high frequency gain.
10	TG2	I	This is a pin where the selection time constant is externally connected to set the tracking high frequency gain.
11	FSET	I	Pin for setting peak of the phase compensator of the focus tracking.
12	TAM	I	Tracking amplifier inverted input pin.

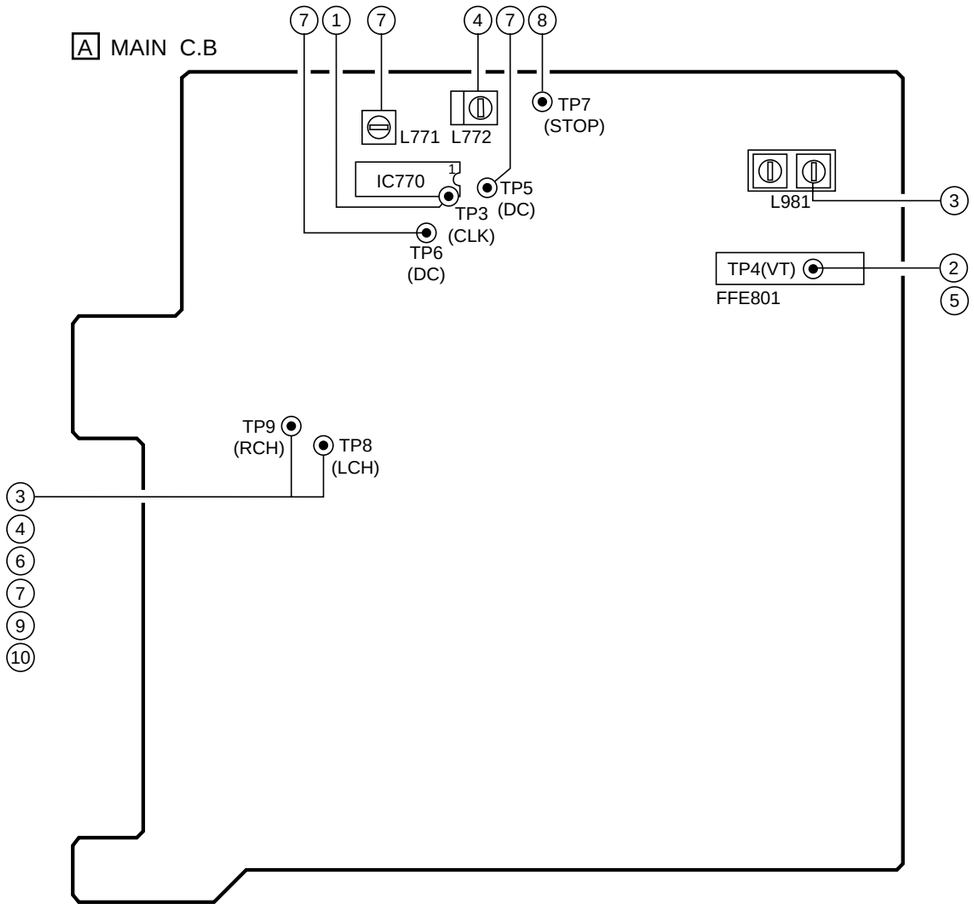
Pin No.	Pin Name	I/O	Description
13	TAO	O	Tracking drive output.
14	SLP	I	Sled amplifier non-inverted input pin.
15	SLM	I	Sled amplifier inverted input pin.
16	SLO	O	Sled drive output.
17	ISET	I	The current which determines height of the focus search, track jump and sled kick is input.
18	VCC	–	+5V power supply pin.
19	CLK	I	Serial data transfer clock input from CPU.
20	XLT	I	Latch input from CPU.
21	DATA	I	Serial data input from CPU.
22	XRST	I	Reset input pin. Reset at L.
23	COUT	O	Signal output to count the number of tracks.
24	SENS	O	FZC, DFCT, TZC, Gain or BAL is output depending on the command from CPU.
25	FOK	O	Output pin of the focus OK comparator.
26	CC2	O	Input pin where the DEFECT bottom hold output is capacitance coupled.
27	CC1	I	DEFECT bottom hold output pin.
28	CB	I	This is a pin where the DEFECT bottom hold capacitor is connected.
29	CP	I	This is a pin where the MIRR hold capacitor is connected and MIRR comparator non-inverted signal is input.
30	RFI	I	Input pin where the RF summing amplifier output is capacitance coupled.
31	RFO	O	RF summing amplifier output pin. (Eye pattern check point)
32	RFM	I	RF summing amplifier inverted input pin. Gain of RF amplifier is determined by the resistor connected between RFO and this pin.
33	LD	O	APC amplifier output pin.
34	PD	I	APC amplifier input pin
35 ~ 36	PHD1 ~ 2	I	RFI-V amplifier inverted pins. These pins are connected to the A+C and B+D pins of the optical pickup.
37	FB	I	Bias adjustment pin of the focus error amplifier.
38 ~ 39	F ~ E	I	F and E I-V amplifier non-inverted input pins. These pins are connected to the F and E of the optical pickup.
40	EI	–	Gain adjustment pin of the I-V amplifier E.
41	VEE	–	GND connection pin.
42	TEO	O	Tracking error amplifier output pin. E-F signal is output.
43	LPFI	I	BAL adjustment comparator input pin. (Not used)
44	TEI	I	Tracking error input pin.
45	ATSC	I	Window comparator input pin for detecting ATSC.
46	TZC	I	Tracking zero-cross comparator input pin.
47	TDFCT	I	Capacitor connection pin for the time constant used when there is defect.
48	VC	O	DC voltage output pin of VREF. (VDD/2)

IC, MB89627R-361

Pin No.	Pin Name	I/O	Description
1	CLK	O	SSP, DSP Control Clock.
2	DATA	O	SSP, DSP Control Data.
3	SENS	I	SSP, DSP Status.
4	XLAT	O	SSP, DSP Command Latch.
5	XRST	O	SSP, DSP Reset.
6	TVMSW	O	NTSC/PAL AUTO/PAL switching.
7	DMUTE	O	Digital Mute.
8	AMUTE	O	Analog Mute.
9	LDON	O	Laser diode power on.
10	VCDRST	O	Video CD Reset.
11	OPTON	O	Optical Digital Output ON.
12	AVCC	–	A/D Converter VCC.
13	AVR	–	A/D Converter VREF.
14	AVSS	–	A/D Converter VSS.
15	HOSTIRQ	I	Host CPU Interrupt Request.
16	SCOR	I	Subcode Sync 0. (Subcode IRQ)
17	ILSW	I	Inter Limit Switch.
18	VCDIRQ	I	Video CD Decoder Interrupt Request.
19	VCDEN	I	Not used. (Connected to VCC through a resistor)
20	RST	I	CPU Reset.
21	MODE0	I	CPU MODE. (Connected to GND)
22	MODE1		
23	CLKIN	O	8MHz System Clock.
24	CLKOUT	I	
25	VSS	–	GND.
26	ALE	O	Address Latch Strobe.
27	$\overline{RD}$	O	Data Read Strobe.
28	$\overline{WR}$	O	Data Write Strobe.
29	NC	–	Not used.
30	READY	I	Video CD Decoder Ready.
31	OSDSTB	O	OSDC Enable. (Not used)
32	OSDCLK	O	OSDC Data Clock. (Not used)
33	OSDSIN	O	OSDC Data. (Not used)
34 ~ 41	A15 ~ A8	O	Address Bus 15 ~ 8.
42 ~ 49	AD7 ~ AD0	I/O	Address/Data Bus 7 ~ 0.
50	VSS	–	GND.
51	VCD/XCDG	O	Video CD/CDG Switch. (Not used)
52	HCLK	I	Host CPU Control Clock.
53	ST	O	Host CPU Control Send Data.
55	TRACK	I	Host CPU Control Receive Data.

Pin No.	Pin Name	I/O	Description
56	ENCRST	O	Video Encoder Reset. (Not used)
57	DVCC	–	DVCC.
58	PAL/PAL60	O	PAL/PAL60 Switch.
59	XNTSC	O	PAL/NTSC Switch.
60	SQCK	O	Subcode Q Read Clock.
61	SQSO	I	Subcode Q Serial Data.
62	BUSY	I/O	Host CPU I/F Busy Signal.
63	FOK	I	Focus Servo OK Detect.
64	GFS	I	Frame Sync Detect.

ADJUSTMENT – 1 <TUNER>



< TUNER SECTION >

1. Clock Frequency Check
   Settings : • Test point : TP3(CLK)
   Method : Set to AM 1602kHz and check that the test point is 2052kHz ± 0.045kHz

2. AM VT Check
   Settings : • Test point : TP4(VT)
   Method : Set to AM 1710kHz and check that the test point is less than 8.5V.
   Then set to AM 530kHz and check that the test point is more than 0.6V.

3. AM Tracking Adjustment
   Settings : • Test point : TP8(Lch), TP9(Rch)
   • Adjustment location : L981(1/3)
   Method : Set to AM 999kHz and adjust L981(1/3) so that the test point becomes maximum.

4. AM IF Adjustment
   Settings : • Test point : TP8(Lch), TP9(Rch)
   L772 ..... 450kHz

5. FM VT Check
   Settings : • Test point : TP4(VT)
   Method : Set to FM 87.5MHz and check that the test point is more than 0.5V.
   Then set to FM 108.0MHz and check that the test point is less than 8.5V.

6. FM Tracking Check
   Settings : • Test point : TP8(Lch), TP9(Rch)
   Method : Set to FM 98.0MHz and check that the test point is less than 9dB.

7. DC Balance / Mono Distortion Adjustment
   Settings : • Test point : TP5, TP6 (DC balance)
   TP8, TP9 (Distortion)
   • Adjustment location : L771
   • Input level : 54dB
   Method : Set to FM 98.0 MHz and adjust L771 so that the voltage between TP5 and TP6 becomes 0V ± 0.04V.
   Next, check that the distortion is less than 1.3%.

8. Auto Stop Level Check
   <AM>
   Settings : • Test point : TP7(STOP)
   • Input level : 50dB
   Method : Set to AM 999kHz and check that the auto stop is at input level of 50dB +10 /–15dB.

   <FM>
   Settings : • Test point : TP7(STOP)
   • Input level : 25dB
   Method : Set to FM 98.0MHz and check that the auto stop is at input level of 25dB ± 10dB.

9. Output Level Check
   <AM>
   Settings : • Test point : TP8(Lch), TP9(Rch)
   • Input level : 74dB
   Method : Set to AM 999kHz and check that the test point is 30mV ± 3dB.

   <FM>
   Settings : • Test point : TP8(Lch), TP9(Rch)
   • Input level : 54dB
   Method : Set to FM 98.0MHz and check that the test point is 120mV ± 3dB.

10. FM Separation Check
    Settings : • Test point : TP8(Lch), TP9(Rch)
    • Input level : 54dB
    Method : Set to FM 98.0MHz and check that the test point is more than 25dB.

PRACTICAL SERVICE FIGURE

<TUNER SECTION>

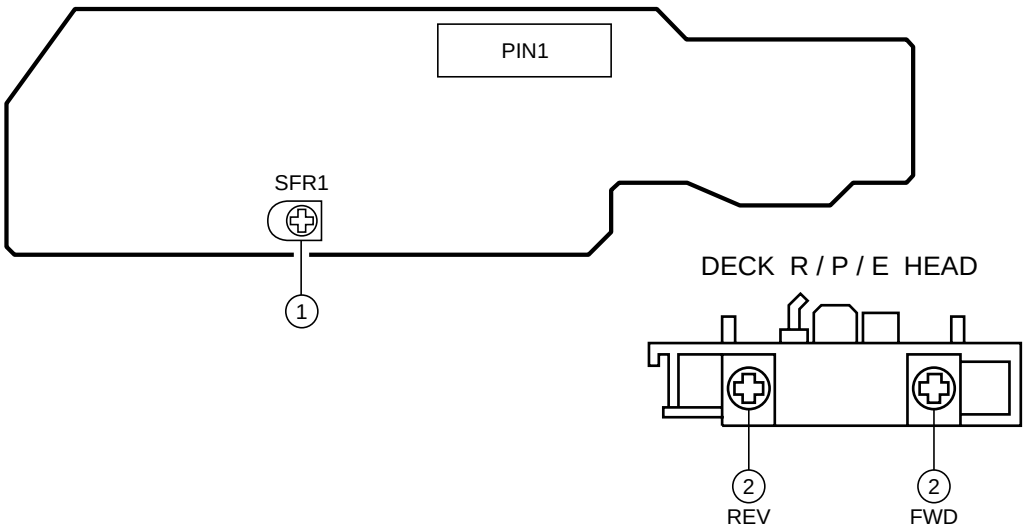
<FM SECTION>

IHF Sensitivity :	Less than 10dB
(THD 3%)	[at 87.5MHz]
	Less than 9dB
	[at 98.0 / 108.0MHz]
S/N 50dB Quieting sensitivity :	
	Less than 36dB
	[at 87.5 / 98.0 / 108.0MHz]
Signal to noise ratio :	More than 68dB (MONO)
(Input 54dB)	More than 66dB (STEREO)
	[at 98.0MHz]
Distortion :	Less than 1.2% (MONO)
(Input 54dB)	Less than 2.0% (STEREO)
	[at 98.0MHz]
Auto stop level :	25dB ± 10dB
	[at 98.0MHz]
Stereo separation :	More than 30dB
	[at 98.0MHz]
Intermediate frequency :	10.7MHz

<AM SECTION>

Sensitivity :	Less than 62dB
	[at 603kHz]
	Less than 58dB
	[at 999 / 1404kHz]
Signal to noise ratio :	More than 36dB
(Input 74dB)	[at 999kHz]
Distortion :	Less than 1.5%
	[at 999kHz]
Auto stop level :	50dB + 10/– 15dB
	[at 999kHz]
Intermediate frequency :	450kHz

F DECK C.B



<DECK SECTION>

1. Tape Speed Adjustment
   Settings : • Test tape : TTA–100
   • Test point : SPK OUT
   • Adjustment location : SFR1
   Method : Play back the test tape and adjust SFR1 for 3000Hz ± 45Hz(FWD) and FWD PLAY speed ± 45Hz(REV).

2. Head Azimuth Adjustment
   Settings : • Test tape : TTA–300
   • Test point : SPK OUT
   • Adjustment location : Head azimuth adjustment screw
   Method : Play back the 10kHz signal of the test tape and adjust screw so that the output becomes maximum. Next, perform on each FWD PLAY and REV PLAY mode.

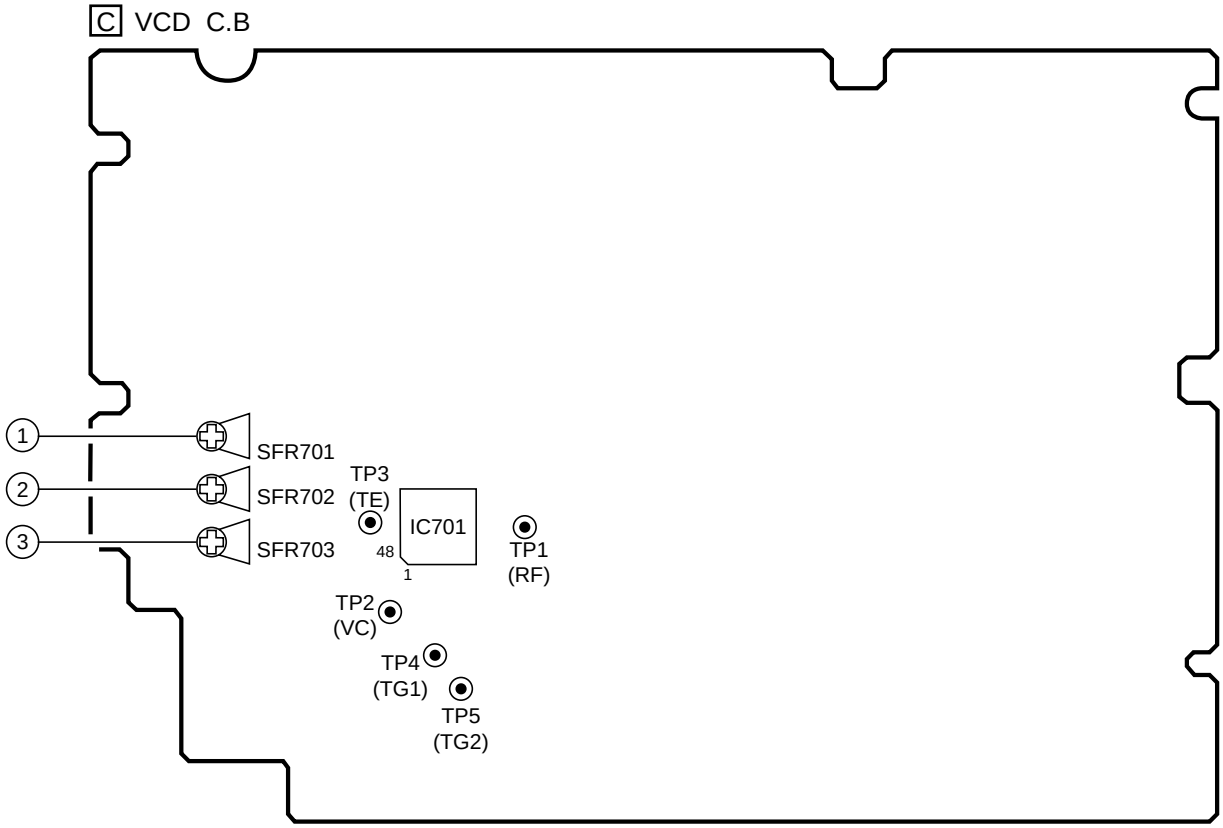
3. PB Frequency Response Check
   Settings : • Test tape : TTA–320
   • Test point : SPK OUT
   Method : Play back the 63Hz, 315Hz and 10kHz signals of the test tape and check that the 63Hz signal with respect to that of the 315Hz signal is –2dB to –10dB and the 10kHz signal with respect to that of the 315Hz signal is +2dB to –7dB.

4. REC/PB Frequency Response Check
   Settings : • Test tape : TTA–602
   • Test point : SPK OUT
   Method : Input a –8dB signal to the AUX terminal. Record the 125Hz, 1kHz and 10kHz signals on the test tape and play back them. Check that the 125Hz signal with respect to that of the 1kHz signal is +1dB to –9dB and the 10kHz signal with respect to that of the 1kHz signal is +4dB to –7dB.

PRACTICAL SERVICE FIGURE

<DECK SECTION>

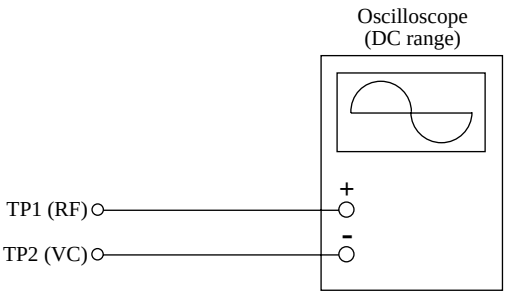
Tape speed :	3000Hz ± 45Hz
Wow & flutter :	Less than 0.14% (W.R.M.S)
Pinch roller pressure :	270 ~ 330g (FWD, REV)
Take-up torque :	30 ~ 55g-cm (FWD, REV)
F.F & REW torque :	75 ~ 180g-cm (FWD, REV)
Back tension :	2 ~ 7g-cm (FWD, REV)
Distortion :	Less than 2.0% (PB, AC)
	Less than 3.0% (REC/PB, AC)
Noise level (Max) :	Less than 120mV (PB, AC)
	Less than 120mV (REC/PB, AC)
S/N ratio :	More than 40dB (PB, AC)
	More then 38dB (REC/PB, AC)
Erasing ratio :	More than 55dB (at 125Hz, AC)
Test tape :	TTA–210
	TTA–602



* **IMPORTANT NOTE:**
The pick-up shutter is incorporated with the pick-up as an assembly part. However, the shutter is not made to function in this model.

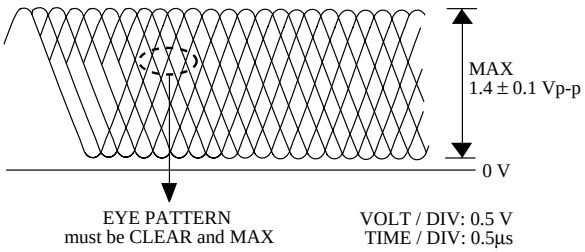
Note : Connect a probe (10:1) of the osilloscope or the frequency counter to a test point.
During adjustment, connect (–) pin of an oscilloscope to TP2 (VC).

1. Focus Bias Adjustment
Make the focus bias adjustment when replacing and repairing the optical block.

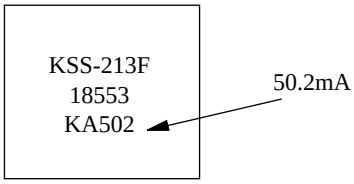


1) Connect an oscilloscope to the test points TP1 (RF) and TP2 (VC).
2) Turn on the power switch.
3) Insert test disc TCD–782 and play back the second composition.
4) Adjust SFR701 so that the RF signal of the test point TP1 (RF) is MAX and CLEARREST.

RF signal waveform

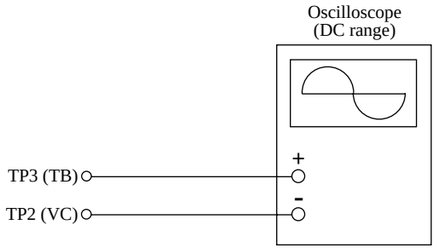


Note : The current of the laser signal can be checked with the voltages on both sides of R727 (10Ω). The difference for the specified value shown on the label must be within ± 6.0mA.

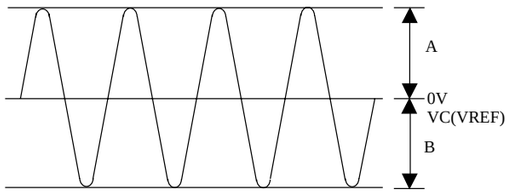


Laser current Iop = $\frac{\text{Voltage across R727}}{10\Omega}$

2. Tracking Balance Adjustment



1) Connect an oscilloscope to the test points TP3 (TB) and TP2 (VC).
2) Turn on the power switch.
3) Insert test disc TCD–782 and press the PLAY button.
4) Connect the center point of SFR703 to TP2 (VC).
5) Adjust SFR702 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.
6) After the adjustment is completed, remove the connected lead wires from the terminals.



A=B

VOLT / DIV: 0.2V
TIME / DIV: 1mS

3. Tracking Gain Adjustment
A servo analyzer is necessary in order to perform this adjustment exactly. However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.
Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when 2-axis device operates. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise increases when the 2–axis device operates increases.

- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.

  When the gain adjustment is off, the symptoms below appear.

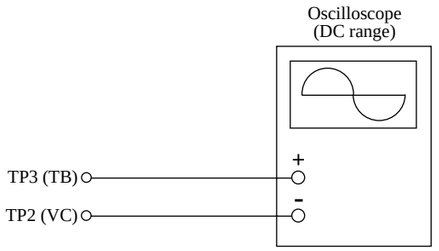
Symptoms \ Gain	(Focus)	Tracking
• The time until music starts becomes longer for STOP → ▶ PLAY or automatic selection (⏮ , ⏭ buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP → ▶ PLAY or automatic selection (⏮ , ⏭ buttons pressed.)	–	low
• Disc stops to rotate shortly after STOP → ▶ PLAY.	low or high	–
• Sound is interrupted during PLAY, or time counter display stops.	–	low
• More noises during the 2-axis device operation.	high	high

The following is a simple adjustment method.

– Simple adjustment –

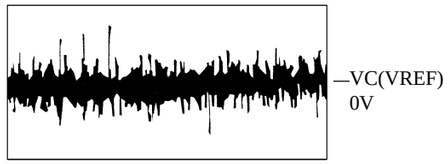
Note : Since exact adjustment cannot be performed, remember the position of the control before performing the adjustment.
If the position after the simple adjustment is only a little different, return the control to the original position.

Procedure :



1) Keep the set horizontal. (If the set is not kept horizontally, this adjustment cannot be performed due to the gravity against the 2–axis device.)
2) Insert test disc TCD–782 and play back the second composition.
3) Connect an oscilloscope to TP3 (TB) and TP2 (VC).

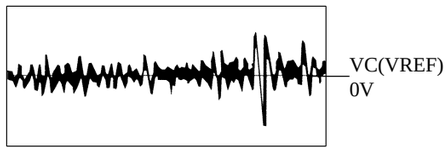
4) Adjust SFR703 so that the waveform appears as shown in the figure below. (tracking gain adjustment)



VOLT/DIV: 0.1 V
TIME/DIV: 1 mS

- Incorrect example

Low tracking gain
(The fundamental wave appears as compared with the waveform adjusted)

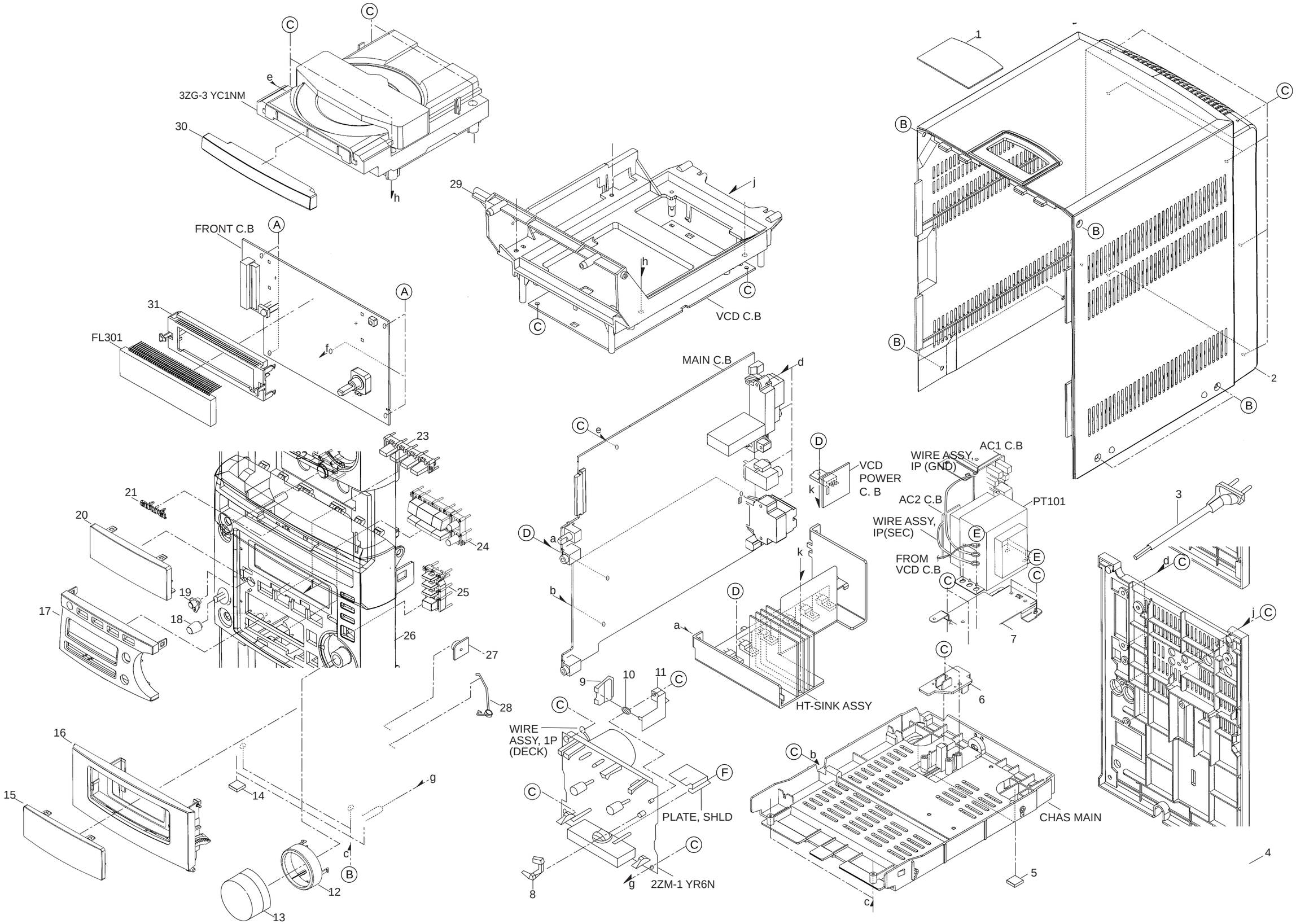


VOLT/DIV: 0.1 V
TIME/DIV: 1 mS

High tracking gain
(The frequency of the fundamental wave is higher than in low gain.)

VOLT/DIV: 0.1 V
TIME/DIV: 1 mS

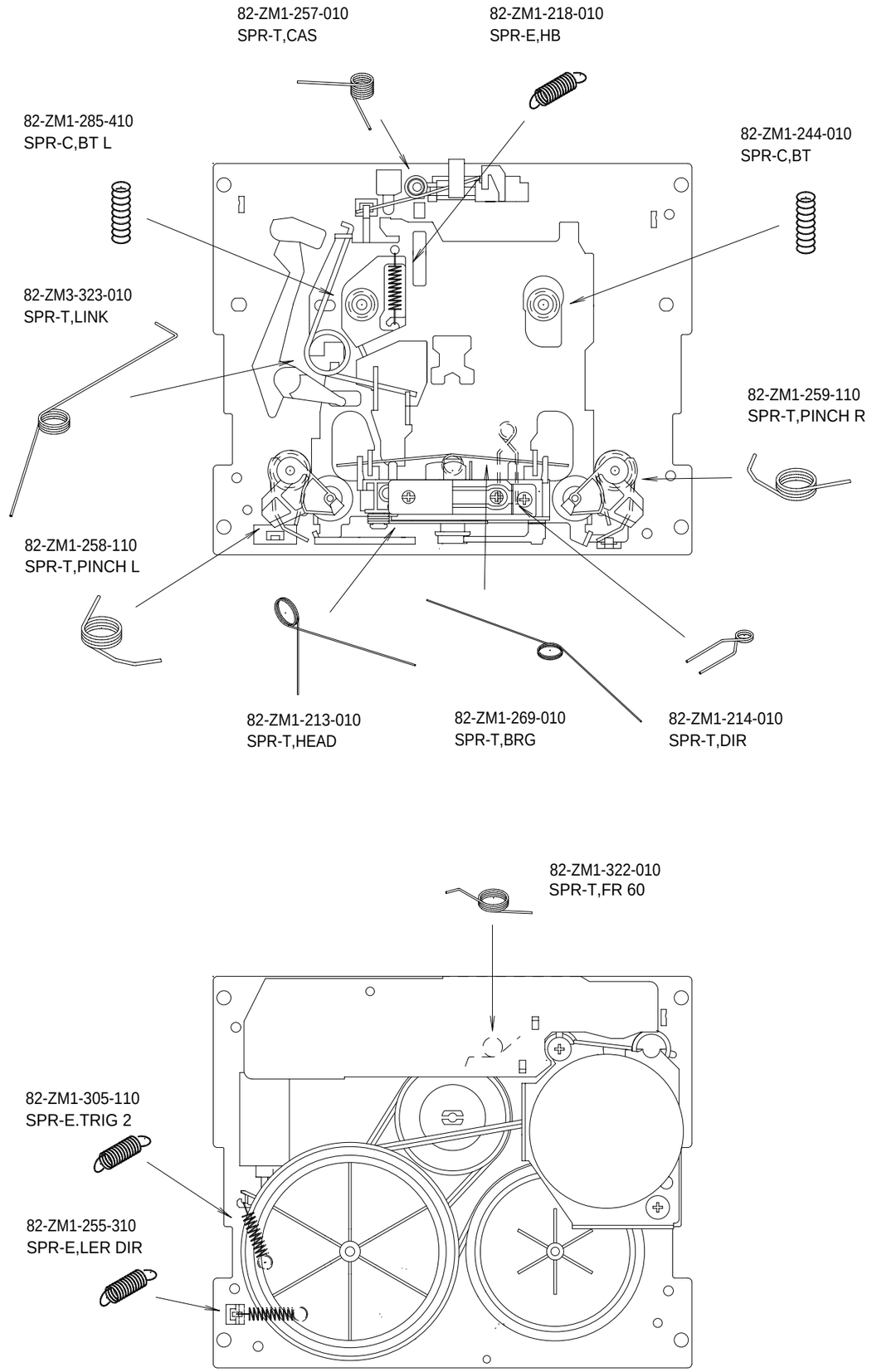
MECHANICAL EXPLODED VIEW 1/1



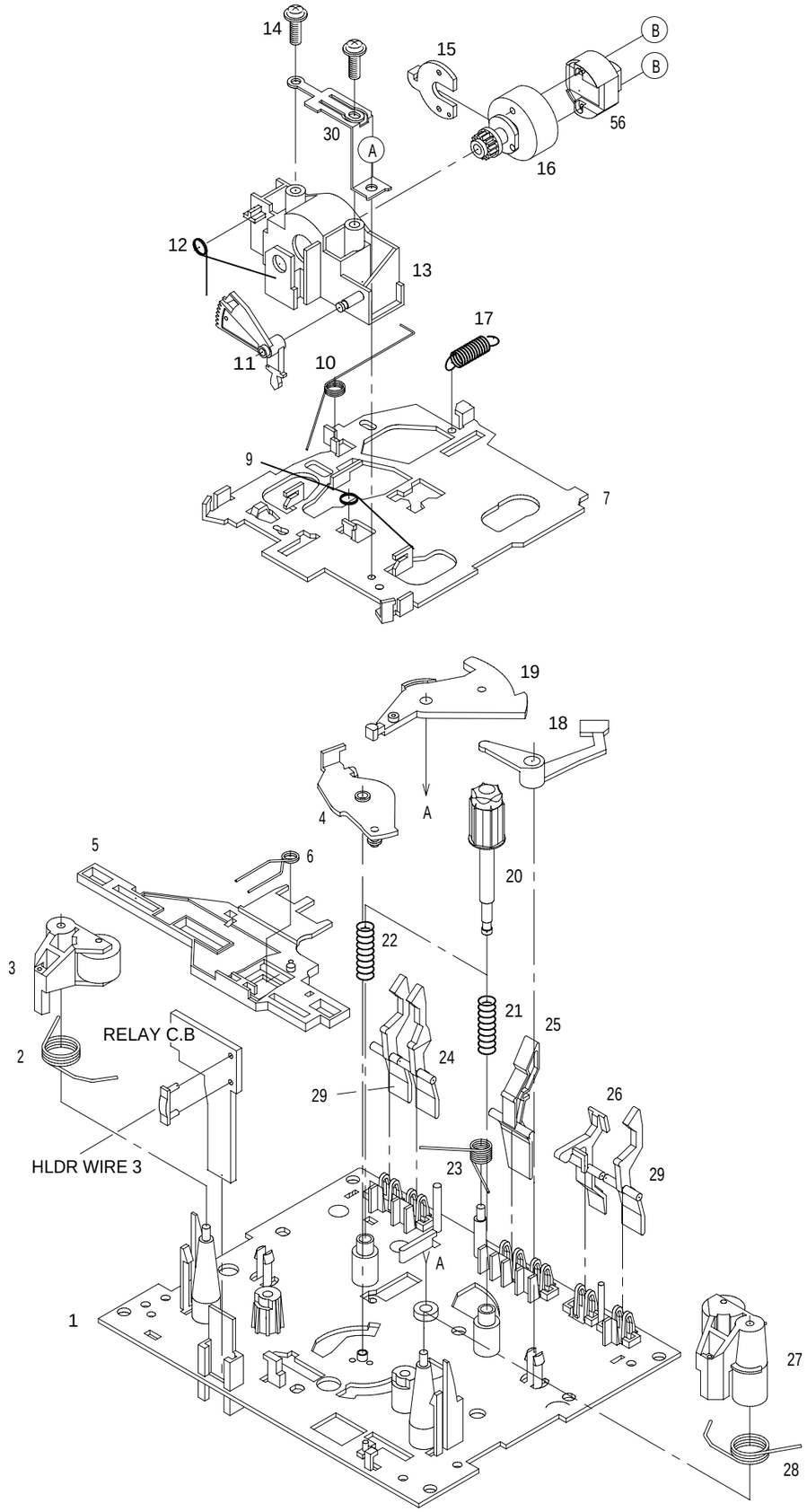
MECHANICAL PARTS LIST 1 / 1

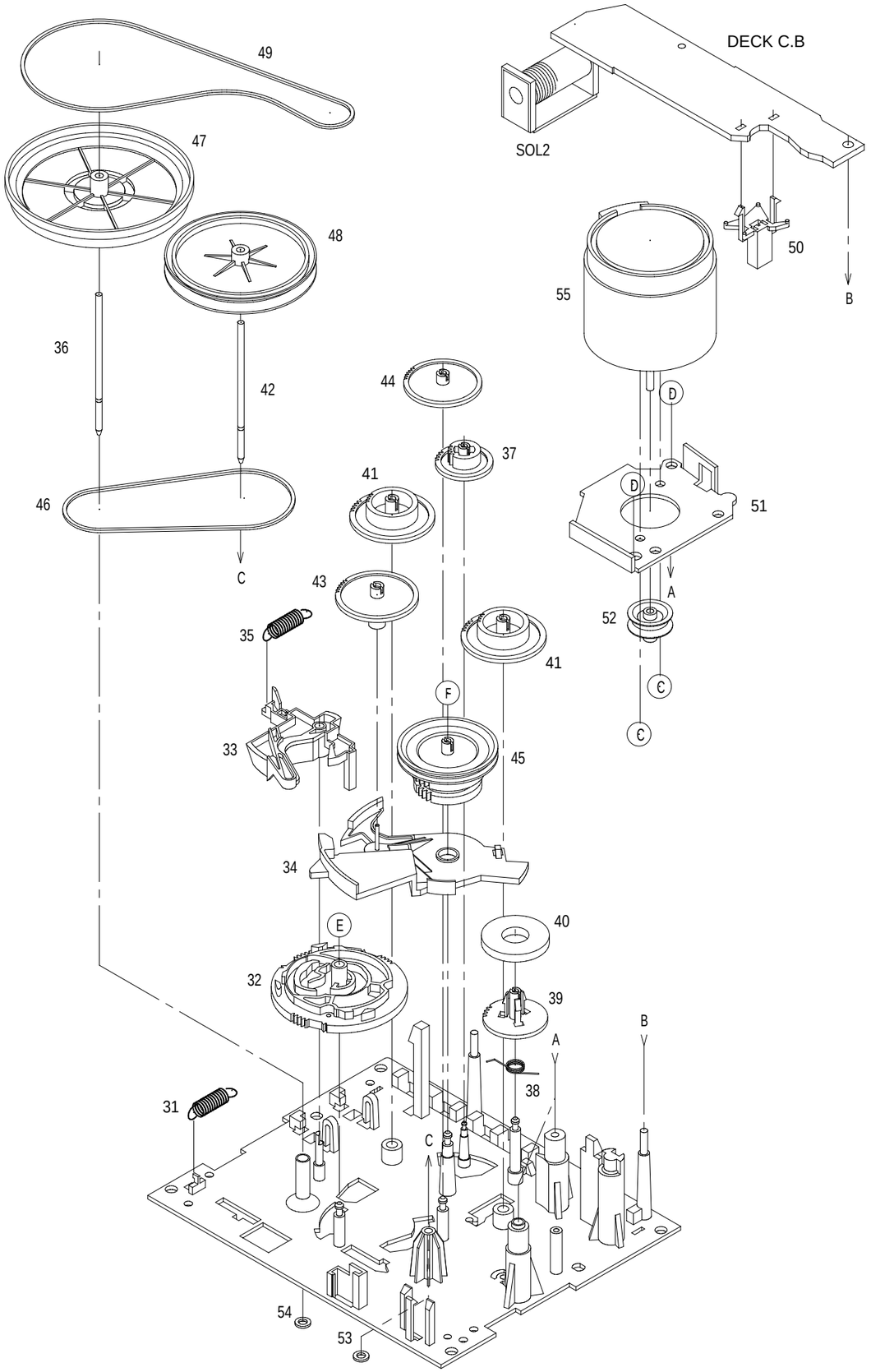
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	88-CL4-053-010		WINDOW,TOP
2	88-CG4-026-010		CABI,TOP
⚠ 3	87-A80-083-010		AC-CORD,HC BLK<HC>
⚠ 3	87-050-079-010		AC-CORD ASSY,E<HR>
4	88-CG4-012-010		PANEL,REAR HCSNCC<HC>
4	88-CG4-011-010		PANEL,REAR HRJSNC<HR>
5	88-CL4-216-010		CUSH,FOOT REAR
6	86-CL7-207-010		HLDR,CORD
7	88-CL4-205-010		HLDR,TRANS
8	82-ZM1-264-010		LVR,EJECT R
9	82-NF5-229-010		PLATE,LOCK
10	82-NF5-228-010		SPR-C,LOCK
11	85-CE6-217-010		HLDR,LOCK
12	88-CL4-046-010		RING,KNOB
13	88-CL4-081-010		KNOB,RTRY VOL
14	88-CL4-215-010		CUSH,FOOT FR
15	88-CL4-052-010		WINDOW,CASS
16	88-CG4-031-010		BOX,CASS
17	88-CG4-041-010		PANEL,FR
18	88-CL4-082-010		KNOB,RTRY MIC
19	88-CL4-085-010		LENS,RC
20	88-CG4-051-010		WINDOW,DISP
21	82-NE6-067-010		BADGE,AIWA 30N
22	88-CL4-064-010		KEY,POWER
23	88-CL4-060-010		KEY,FUNC ASSY
24	88-CL4-062-010		KEY,CONT
25	88-CG4-063-010		KEY,GEQ
26	88-CG4-001-010		CABI,FR
27	87-NF8-220-010		DMPR,150
28	88-CL4-220-010		SPR-T,CASS
29	88-CL4-203-010		HLDR,CD
30	88-CG4-036-010		PANEL,TRAY
31	82-NF7-210-110		GUIDE,FL(*)
A	87-641-096-410		UT1+3-10 GLD
B	87-623-097-410		QT1+3-12 B
C	87-067-703-010		TAPPING SCREW,BVT2+3-10
D	87-067-579-010		TAPPING SCREW,BVT2+3-8
E	87-581-169-410		UIT+4-6
F	87-571-032-410		VIT+2-3

SPRING APPLICATION POSITION



TAPE MECHANISM EXPLODED VIEW 1 / 1

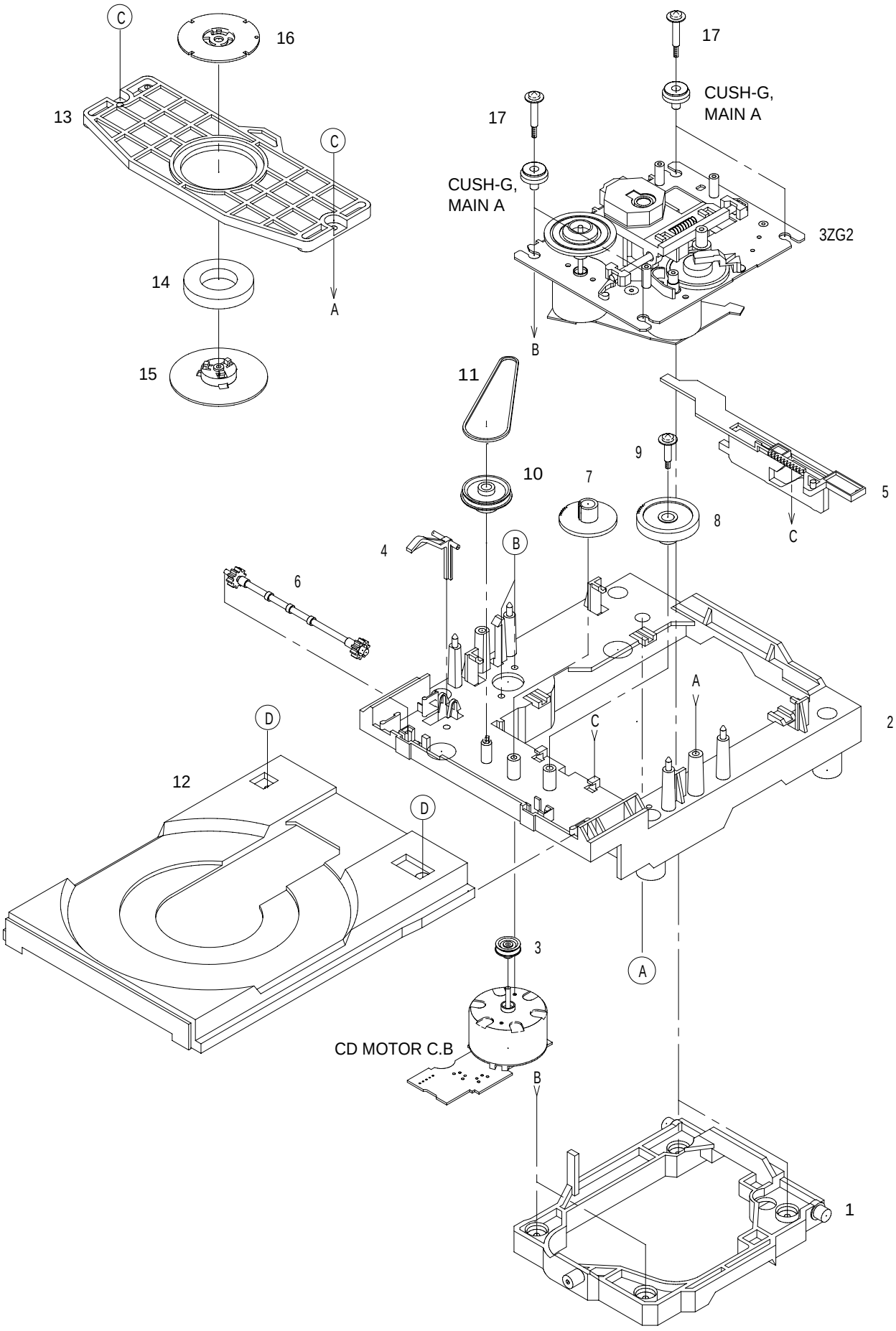




TAPE MECHANISM PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	82-ZM1-327-210		CHAS ASSY,RN
2	82-ZM1-258-010		SPR-T,PINCH L
3	82-ZM1-341-010		LVR ASSY,PINCH L 2
4	82-ZM1-295-310		PLATE ASSY,LINK
5	82-ZM1-266-110		LVR,DIR
6	82-ZM1-214-010		SPR-T,DIR
7	82-ZM1-206-810		CHAS,HEAD
9	82-ZM1-269-210		SPR-T,BRG
10	82-ZM3-323-010		SPR-T,LINK 3
11	82-ZM1-210-110		GEAR,H T
12	82-ZM1-213-010		SPR-T,HEAD
13	82-ZM1-207-610		GUIDE,TAPE
14	82-ZM1-283-310		S-SCREW,AZIMUTH
15	82-ZM1-314-119		PLATE,HEAD
16	82-ZM1-208-110		HLDR,HEAD
17	82-ZM1-218-010		SPR-E,HB
18	82-ZM1-264-010		LVR,EJECT R
19	82-ZM1-222-210		LVR,PLAY
20	82-ZM1-217-310		REEL TABLE
21	82-ZM1-244-510		SPR-C,BT
22	82-ZM1-285-410		SPR-C,BT L
23	82-ZM1-257-010		SPR-T,CAS
24	82-ZM1-241-310		LVR,MC
25	82-ZM1-242-010		LVR,CAS
26	82-ZM1-243-010		LVR,STOP
27	82-ZM1-344-010		LVR ASSY,PINCH R
28	82-ZM1-259-110		SPR-T,PINCH R
29	82-ZM1-240-110		LVR,REC
30	82-ZM1-298-010		SPR-P,EARTH
31	82-ZM1-255-310		SPR-E,LVR DIR
32	82-ZM1-221-110		GEAR,CAM
33	82-ZM1-227-210		LVR,TRIG
34	82-ZM1-224-410		LVR,FR
35	82-ZM1-305-110		SPR-E,TRIG 2
36	82-ZM1-239-010		CAPSTAN 2.2-41.7
37	82-ZM1-223-010		GEAR,PLAY
38	82-ZM1-322-010		SPR-T,FR 60
39	82-ZM1-220-210		GEAR,IDLER
40	82-ZM1-316-010		RING MAGNET 3
41	82-ZM1-216-310		GEAR,REEL
42	82-ZM1-236-010		CAPSTAN,2-41.5
43	82-ZM1-225-010		GEAR,FR
44	82-ZM1-226-010		GEAR,REW
45	82-ZM3-333-210		SLIP DISK ASSY 2
46	82-ZM1-338-010		BELT,FR 4
47	82-ZM1-349-010		FLY-WHL,RH
48	82-ZM1-348-010		FLY-WHL,LW
49	82-ZM1-340-010		BEKT,SBU MAIN 2
50	82-ZM1-245-210		HLDR,IC
51	82-ZM1-246-010		HLDR,MOTOR
52	82-ZM1-247-110		PULLEY,MOTOR
53	82-ZM1-288-010		SH,1.63-3.2-0.5 SLT
54	80-ZM6-243-010		SH,1.75-3.6-0.5 SLT
55	87-045-347-010		MOT,SHU 2L 70(M1)
56	87-046-399-010		HEAD,RPHYK56R-BS409(RPH)
A	82-ZM1-315-010		S-SCREW,GUIDE TAPE
B	80-ZM6-207-010		V+1.6-7
C	87-251-070-410		U+2.6-3
D	87-741-073-410		UT2+2.6-6 GLD
E	87-B10-008-010		PW,2.15-6.8-0.4 SLT
F	82-ZM3-334-010		PW,2.16-6-0.4

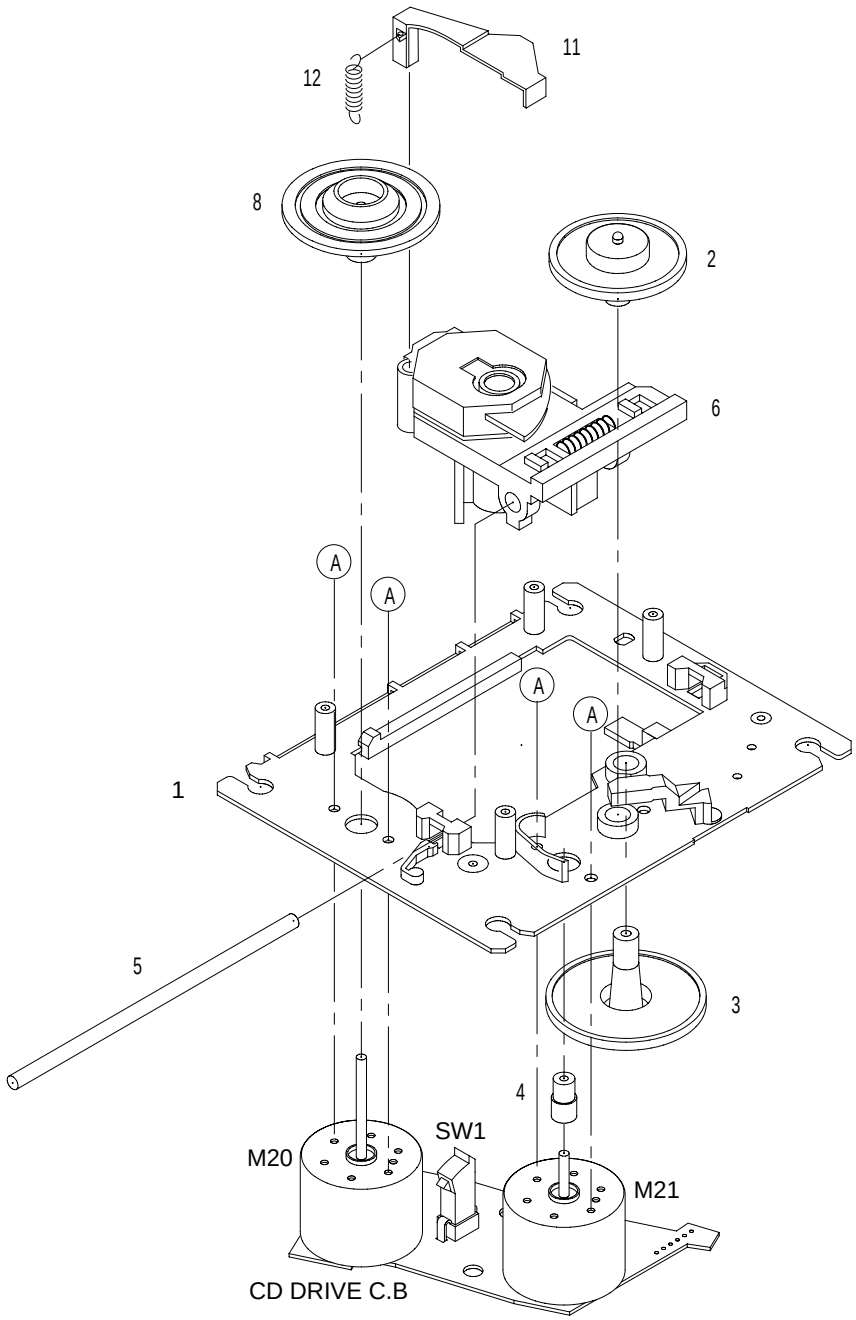
CD MECHANISM EXPLODED VIEW 1 / 2



CD MECHANISM PARTS LIST 1 / 2

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG3-224-310		HLDR,M2
2	83-ZG3-228-610		CHAS,L6
3	83-ZG3-208-010		PULLEY,MOTOR
4	83-ZG3-213-010		LVR,SW
5	83-ZG3-209-610		CAM,SLIDE
6	83-ZG3-207-010		GEAR,TRAY
7	83-ZG3-204-210		GEAR,C
8	83-ZG3-205-010		GEAR,D
9	83-ZG3-217-010		S-SCREW,GEAR D
10	83-ZG3-220-210		GEAR,PULLEY 2
11	83-ZG3-214-010		BELT,L
12	83-ZG3-229-410		TRAY,CD 2
13	83-ZG3-210-110		HLDR,CHUCK
14	83-ZG3-602-010		RING,MAG
15	83-ZG3-212-010		CAP,DISC
16	83-ZG3-211-010		PLATE,DISC
17	81-ZG1-254-010		S-SCEW,MECH HLDR
A	87-067-945-110		VFT2+3-12(F10)
B	87-251-071-110		U+2.6-4
C	87-512-074-210		VFT2+2.6-8
D	87-352-075-210		VT2+2.6-10

CD MECHANISM EXPLODED VIEW 2 / 2



CD MECHANISM PARTS LIST 2 / 2

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG2-243-210		CHAS ASSY,SHT
2	83-ZG2-235-010		GEAR,A3
3	83-ZG2-205-210		GEAR,B
4	83-ZG2-236-010		GEAR MOTOR 3
5	83-ZG2-253-010		SHAFT,SLIDE 5
6	87-A90-836-010		PICKUP,KSS-213F
8	83-ZG2-227-210		TURN TABLE,C1
11	83-ZG2-245-410		LEVER,SHUTTER
12	83-ZG2-250-110		SPR-E,SHT 2
A	87-261-032-210		SCREW V+2-3

ACCESSORIES / PACKAGE LIST

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	88-CG4-901-010		IB,H(EC-H)-C<HR>
1	88-CG4-902-010		IB,H(EC-K)-C<HC>
2	87-043-115-010		ANT,FEEDER FM
3	87-050-103-010		CORD,PIN 1PY1.5M
4	87-A90-030-010		ANT,LOOP AM-NC C
⚠ 5	87-A90-786-010		PLUG,CONVERSION IR46<HC>
⚠ 5	87-A90-312-010		PLUG,CONVERSION WTN-1157R1<HR>
6	88-CL4-951-010		RC UNIT,8AT02

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