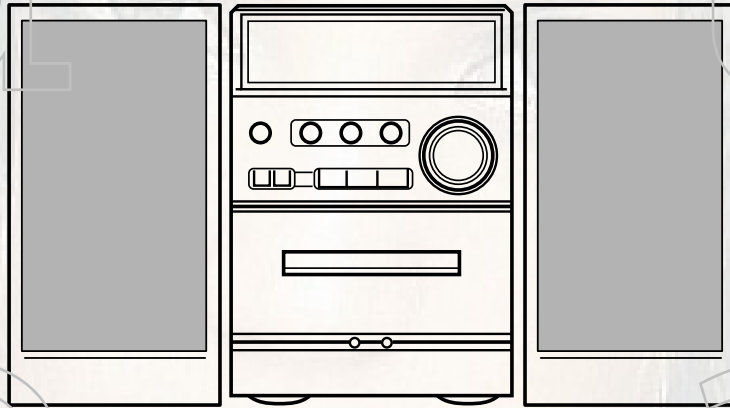


# XR-EM30 XR-EM31

EZ(S),K(S)

EZ(S)



# SERVICE MANUAL

CD STEREO SYSTEM

BASIC TAPE MECHANISM : CMAL5Z213B

BASIC CD MECHANISM : KSM-213 RDM

SYSTEM	CD CASSEIVER	SPEAKER	REMOTE CONTROLLER
XR-EM30	CX-SLEM30	SX-SLEM30	RC-CAS07
XR-EM31	CX-SLEM31		

- This Service Manual is the "Revision Publishing" and replaces "Simple Manual" XR-EM30 <U(S), EZ(S), K(S)> (S/MCode 09-023-454-8T1).



S/M Code No. 09-023-454-8R2

REVISION

DATA

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**MAIN UNIT CX-LEM30,31**

**TUNER**

FM tuning range 87.5 MHz to 108 MHz  
 FM usable sensitivity (IHF) 16.8 dBf  
 FM antenna terminal 75 ohms (unbalanced)  
 MW tuning range 531 kHz to 1602 kHz (9 kHz step)

MW usable sensitivity 350  $\mu$ V/m  
 LW tuning range 144 kHz to 290 kHz  
 LW usable sensitivity 1400  $\mu$ V/m  
 M/W/LW antenna Loop antenna

**AMPLIFIER**

Power output Rated: 12 W + 12 W(6 ohms, T.H.D. 1 %, 1 kHz/DIN 45500)  
 Reference: 15 W + 15 W(6 ohms, T.H.D. 10 %, 1 kHz/DIN 45324)

Input  
 Outputs

**DIN MUSIC POWER**  
 36 W + 36 W (EZ MODEL)  
 AUX IN: 500 mV  
 SPEAKERS: 6 ohms or more  
 PHONES: 32 ohms or more

**CASSETTE DECK**

Track format 4 tracks, 2 channels stereo  
 Frequency response 50 Hz – 10000 Hz  
 Recording system AC bias  
 Heads Recording/playback  $\times$  1, erase  $\times$  1

**CD PLAYER**

Laser Semiconductor laser ( $\lambda = 780$  nm)  
 D/A converter 1 bit dual  
 Signal-to-noise ratio 80 dB (1 kHz, 0 dB)  
 Wow and flutter Unmeasurable

**GENERAL**

Power requirements 230 V AC, 50 Hz  
 Power consumption 45 W  
 Dimensions (W  $\times$  H  $\times$  D) 163  $\times$  230  $\times$  219.3 mm  
 Weight 2.7 kg (EM30), 2.8 kg (EM31)

**SPEAKER SYSTEM SX-LEM30**

Speakers system 2 way, bass reflex (magnetic shielded)  
 Speaker units Woofer: 100 mm cone  
 Tweeter: 20 mm ceramic  
 Impedance 6 ohms  
 Dimensions (W  $\times$  H  $\times$  D) 140  $\times$  230  $\times$  195 mm  
 Weight 1.9 kg

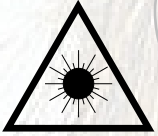
- Design and specifications are subject to change without notice.

## PROTECTION OF EYES FROM LASER BEAM DURING SERVICING -1/1

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 laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

### VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylitävälle näkymättömälle lasersäteilylle.

### WARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvisning, kan användaren utsättas för osynlig laserstråling, som överskrider gränsen för laserklass 1.

### CAUTION

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

### ATTENTION

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

### ADVARSEL!

Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.

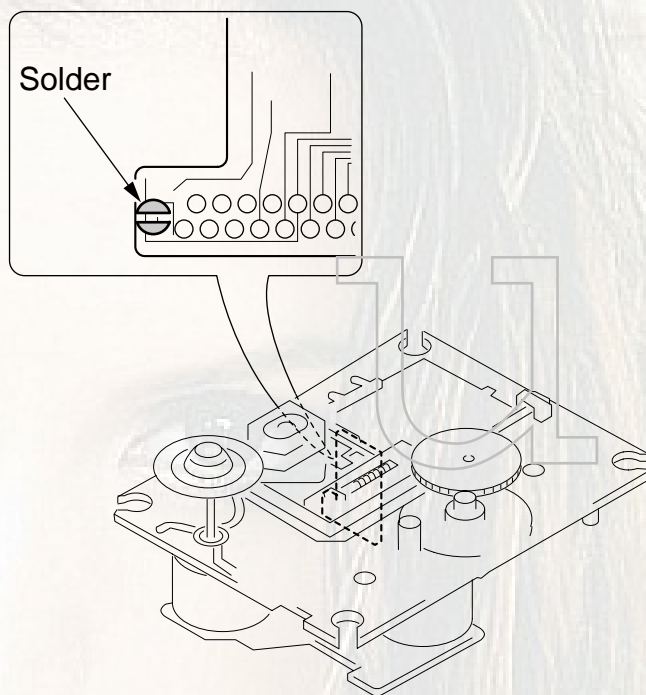
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

## PRECAUTION TO REPALCE OPTICAL BLOCK -1/1 (KSM-213 RDM)

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

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

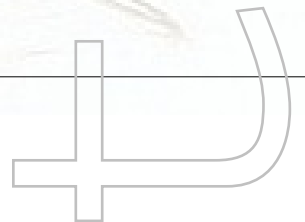
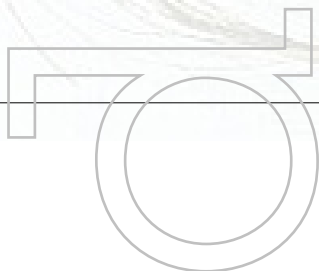
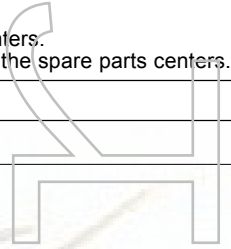


# ACCESSORIES PARTS LIST -1/1

- ! = SAFETY PARTS
- C = Components marked

All components used on this model at the production line are shown in this service manual.  
 However, please note that not all components will be available as spare parts for after-sales service.  
 Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.  
 Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
				XR-EM30 EZSC	XR-EM30 KSC	XR-EM31 EZSC
X AS1001	87-A92-346-010	ANT,WIRE FM EZ/K L=1500	a	b	c	
X AS1002	87-099-811-010	CONVERSION PLUG (VDE TO B	.	b	.	
X AS1003	87-056-168-010	Europe Warranty Informati	a	b	c	
0 AS1004	8C-CL6-907-010	IB,EZ (9L)BF SIZE:(210x14	a	.	.	
0 AS1004	8C-CL6-905-010	IB,K(E)BF SIZE:(210x148)m	.	b	.	
0 AS1004	8C-CL6-906-010	IB,EZ(9L)BF SIZE:(210x148	.	.	c	
X AS1005	87-B50-079-010	LIST,FACILITY (B)-0007 M:	a	b	c	
0 AS1006	87-A90-054-010	Ant. Loop AM-CON C	a	b	c	
0 AS1007	8C-CL6-701-010	REMOTE CONTROL UNIT RC-CA	a	b	c	



# ELECTRICAL PARTS LIST -1/15

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 C = Components marked

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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
					XR-EM30 EZSC	XR-EM30 KSC	XR-EM31 EZSC
		0 C	0471 87-010-404-080	CAP,E 4.7-50M SSL F=5MM,	a	b	c
		0 C	0501 87-010-263-040	ELECT. CAP. 100UF +/-20%	a	b	c
		0 C	0502 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0503 87-010-263-040	ELECT. CAP. 100UF +/-20%	a	b	c
		0 C	0504 87-010-263-040	ELECT. CAP. 100UF +/-20%	a	b	c
		0 C	0505 87-010-263-040	ELECT. CAP. 100UF +/-20%	a	b	c
		0 C	0506 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0507 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0508 87-A10-353-080	C-CAP 0.22UF 10V K B SIZE	a	b	c
		0 C	0509 87-A11-070-080	C-CAP, U 0.033UF-16V K X7	a	b	c
		0 C	0510 87-012-268-080	C-CAP, U 330P-50V J C0G	a	b	c
		0 C	0511 87-A10-201-080	C-CAP S. 0.33UF K Cer.	a	b	c
		0 C	0512 87-010-785-080	C-CAP, U 0.015UF-25V K X7	a	b	c
		0 C	0513 87-A11-177-080	C-CAP,S 0.15UF-16V K CER.	a	b	c
		0 C	0514 87-012-278-080	C-CAP, U 2200P-50V K X7R	a	b	c
		0 C	0515 87-010-787-080	C-CAP, U 0.022UF-25V K X7	a	b	c
		0 C	0516 87-016-397-080	C-CAP,U 0.047UF 16V J B S	a	b	c
		0 C	0517 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0518 87-012-197-080	C-CAP, U 150P-50V J C0G	a	b	c
		0 C	0519 87-012-286-080	C-CAP, U 0.01UF-25V K X7R	a	b	c
		0 C	0520 87-012-282-080	C-CAP, U 4700P-50V K X7R	a	b	c
		0 C	0521 87-012-199-080	C-CAP, U 220P-50V J C0G	a	b	c
		0 C	0522 87-A10-353-080	C-CAP 0.22UF 10V K B SIZE	a	b	c
		0 C	0523 87-012-280-080	C-CAP, U 3300P-50V K X7R	a	b	c
		0 C	0524 87-012-360-080	C-CAP.S 1UR 10V K CER	a	b	c
		0 C	0525 87-010-380-080	E-CAP 47UF, +/-20% 16V	a	b	c
		0 C	0527 87-012-170-080	C-CPA, U 8 P-50V D C0G	a	b	c
		0 C	0529 87-012-280-080	C-CAP, U 3300P-50V K X7R	a	b	c
		0 C	0530 87-012-195-080	C-CAP, U 100P-50V J C0G	a	b	c
		0 C	0531 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0532 87-012-274-080	C-CAP, U 1000P-50V K X7R	a	b	c
		0 C	0533 87-010-404-040	CAP.4.7UF M ELEC.50V P=2.	a	b	c
		0 C	0534 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0535 87-010-380-080	E-CAP 47UF, +/-20% 16V	a	b	c
		0 C	0536 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0537 87-010-405-040	ELECT. CAP. 10UF +/-20% 5	a	b	c
		0 C	0538 87-A11-070-080	C-CAP, U 0.033UF-16V K X7	a	b	c
		0 C	0539 87-012-360-080	C-CAP.S 1UR 10V K CER	a	b	c
		0 C	0540 87-A11-177-080	C-CAP,S 0.15UF-16V K CER.	a	b	c
		0 C	0541 87-010-263-040	ELECT. CAP. 100UF +/-20%	a	b	c
		0 C	0542 87-012-274-080	C-CAP, U 1000P-50V K X7R	a	b	c
		0 C	0551 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0552 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0581 87-010-221-040	CAP.E.470-10 M SMG	a	b	c
		0 C	0582 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0583 87-010-380-080	E-CAP 47UF, +/-20% 16V	a	b	c
		0 C	0584 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0729 87-018-211-080	Axial Cer CAP. 0.01UF +/-	a	b	c
		0 C	0801 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0802 87-012-195-080	C-CAP, U 100P-50V J C0G	a	b	c
		0 C	0803 87-012-195-080	C-CAP, U 100P-50V J C0G	a	b	c
		0 C	0804 87-012-195-080	C-CAP, U 100P-50V J C0G	a	b	c
		0 C	0805 87-012-195-080	C-CAP, U 100P-50V J C0G	a	b	c
		0 C	0806 87-012-195-080	C-CAP, U 100P-50V J C0G	a	b	c
		0 C	0811 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0814 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		X C	0818 88-708-640-010	CAP.0.0018UF J Mylar 100V	a	b	c
		0 C	0819 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0823 87-A11-096-080	CAP.220PF +/-5% 50V	a	b	c
		0 C	0851 87-010-248-040	CAP. 220UF-10V M ELECT.P	a	b	c
		0 C	0852 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0853 87-010-221-040	CAP.E.470-10 M SMG	a	b	c
		0 C	0854 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0855 87-010-038-080	ELECT. CAP. 22 UF/25V M	a	b	c
		0 C	0856 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0858 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0859 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0860 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0861 87-012-199-080	C-CAP, U 220P-50V J C0G	a	b	c
		0 C	0862 87-012-197-080	C-CAP, U 150P-50V J C0G	a	b	c
		0 C	0864 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0866 87-012-172-080	C-CAP, U 10P-50V D C0G	a	b	c
		0 C	0867 87-012-170-080	C-CPA, U 8 P-50V D C0G	a	b	c
		0 C	0868 87-010-404-040	CAP.4.7UF M ELEC.50V P=2.	a	b	c
		0 C	0969 87-012-286-080	C-CAP, U 0.01UF-25V K X7R	a	b	c
		0 C	0870 87-012-274-080	C-CAP, U 1000P-50V K X7R	a	b	c
		0 C	0871 87-012-195-080	C-CAP, U 100P-50V J C0G	a	b	c
		0 C	0872 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0873 87-012-274-080	C-CAP, U 1000P-50V K X7R	a	b	c
		0 C	0881 87-A10-039-080	C-CAP 470P 50V J C0G CER.	a	b	c

# ELECTRICAL PARTS LIST -2/15

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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
					XR-EM30 EZSC	XR-EM30 KSC	XR-EM31 EZSC
		0 C	0882 87-A10-039-080	C-CAP 470P 50V J COG CER.	a	b	c
		0 C	0883 87-010-400-080	CAP.0.47UF M ELEC. 50V	a	b	c
		0 C	0884 87-010-400-080	CAP.0.47UF M ELEC. 50V	a	b	c
		0 C	0885 87-012-274-080	C-CAP, U 1000P-50V K X7R	a	b	c
		0 C	0886 87-012-274-080	C-CAP, U 1000P-50V K X7R	a	b	c
		0 CN	0501 87-A60-424-010	CONN, 16P V TOC-B	a	b	c
		0 CN	0502 8Z-CH4-667-010	6P CONN- ASSY PITCH=2.0mm	a	b	c
		0 CN	0802 87-A90-178-010	2PINS SOCKET (150V) (DC:5	a	b	c
		0 CN	0803 87-A90-178-010	2PINS SOCKET (150V) (DC:5	a	b	c
		S D	0581 87-A40-553-080	DIODE,1N4003 LES	a	b	c
		S D	0851 87-A40-270-080	C-DIODE MC2838	a	b	c
		S D	0852 87-A40-270-080	C-DIODE MC2838	a	b	c
		0 FF	0501 8B-CK6-612-010	FF-CABLE,16P 1.0 CD L=(4+	a	b	c
		S IC	0501 87-A20-446-010	C-IC LA9241ML	a	b	c
		S IC	0551 87-017-917-080	C-IC,BU4066BCF(SOP14)	a	b	c
		S IC	0581 87-A22-256-040	C-IC CD-DRIVER BA5949FP	a	b	c
		S IC	0851 87-A21-319-010	C-IC LC78622NE DSP	a	b	c
		X JR	0501 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		X JR	0502 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		X JR	0503 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		X JR	0505 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		X JR	0506 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		X JR	0601 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		X JR	0811 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		X JR	0812 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		X JR	0813 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		X JR	0814 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		X JR	0815 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		X PN	0601 8B-CK5-661-010	WIRE,FASTEN LUG MD L=145mm	a	b	c
		S Q	0501 89-111-625-080	C-TR 2SA1162GR (O.15W)	a	b	c
		S Q	0581 87-A30-495-080	TRANSISTOR 2SA1981Y (TO-9	a	b	c
		X R	0501 88-108-479-080	C-RES, U 4R7 1/16W J	a	b	c
		X R	0502 88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
		X R	0521 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		X R	0523 88-108-154-080	C-RES, U 150K 1/16W J	a	b	c
		X R	0524 88-108-184-080	C-RES, U 180K 1/16W J	a	b	c
		X R	0526 88-108-154-080	C-RES, U 150K 1/16W J	a	b	c
		O R	0528 88-108-122-080	C-RES, U 1.2K 1/16W J	a	b	c
		X R	0529 88-108-564-080	C-RES U 560K 1/16W J	a	b	c
		X R	0540 88-108-472-080	C-RES U 4.7K 1/16W J	a	b	c
		X R	0541 88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
		X R	0542 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		X R	0543 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		X R	0545 88-108-479-080	C-RES, U 4R7 1/16W J	a	b	c
		X R	0546 88-118-100-080	C-RES,S 10-1/10W J	a	b	c
		O R	0547 88-108-101-080	C-RES, U 100 1/16W J	a	b	c
		O R	0551 87-022-225-080	C-RES U 2.7k ohm 1/16W F	a	b	c
		O R	0552 87-022-225-080	C-RES U 2.7k ohm 1/16W F	a	b	c
		O R	0553 87-022-225-080	C-RES U 2.7k ohm 1/16W F	a	b	c
		O R	0554 87-022-225-080	C-RES U 2.7k ohm 1/16W F	a	b	c
		O R	0555 88-118-683-080	C-RES,S 68 K-1/10W J	a	b	c
		O R	0556 87-022-284-080	C-RES U 68k ohm 1/16W F	a	b	c
		O R	0557 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
		O R	0558 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
		O R	0559 87-022-255-080	C-RES U 47k ohm 1/16W F	a	b	c
		O R	0560 87-022-255-080	C-RES U 47k ohm 1/16W F	a	b	c
		X R	0561 88-108-183-080	C-RES U 18K J 1/16W	a	b	c
		X R	0562 88-108-183-080	C-RES U 18K J 1/16W	a	b	c
		O R	0563 87-022-288-080	C-RES U 150k ohm 1/16W F	a	b	c
		O R	0564 87-022-288-080	C-RES U 150k ohm 1/16W F	a	b	c
		X R	0565 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		X R	0566 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		X R	0567 88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
		X R	0568 88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
		O R	0569 88-108-332-080	C-RES U 3.3K 1/16WJ	a	b	c
		O R	0581 88-140-229-080	RES 2.2 J C 1/2W 52mm TAP	a	b	c
		O R	0582 88-108-101-080	C-RES, U 100 1/16W J	a	b	c
		O R	0583 88-108-333-080	C-RES,U 33K-1/16W J	a	b	c
		O R	0584 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
		X R	0591 88-108-472-080	C-RES U 4.7K 1/16W J	a	b	c
		O R	0592 88-108-822-080	C-RES U 8.2K 1/16W J	a	b	c
		X R	0593 88-108-682-080	C-RES U 6.8K 1/16W J	a	b	c
		O R	0594 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		O R	0595 88-108-223-080	C-RES U 22K J 1/16W	a	b	c
		X R	0596 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		O R	0703 88-108-153-080	C-RES, U 15K 1/16W J	a	b	c
		X R	0704 88-108-222-080	C-RES, U 2.2K 1/16W J	a	b	c
		O R	0705 87-022-284-080	C-RES U 68k ohm 1/16W F	a	b	c
		O R	0706 88-108-123-080	C-RES U 12K 1/16W J	a	b	c
		O R	0707 88-118-683-080	C-RES,S 68 K-1/10W J	a	b	c



# ELECTRICAL PARTS LIST -3/15

! = SAFETY PARTS  
 C = Components marked

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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
					XR-EM30 EZSC	XR-EM30 KSC	XR-EM31 EZSC
		X R	0708 88-108-393-080	C-RES U 39K 1/16W	a	b	c
		0 R	0709 88-118-683-080	C-RES,S 68 K-1/10W J	a	b	c
		0 R	0710 88-108-821-080	C-RES, U 820 1/16W J	a	b	c
		X R	0711 88-108-182-080	C-RES, U 1.8K 1/16W J	a	b	c
		0 R	0712 88-108-223-080	C-RES U 22K J 1/16W	a	b	c
		0 R	0713 88-108-123-080	C-RES U 12K 1/16W J	a	b	c
		0 R	0714 88-108-272-080	C-RES, U 2.7K 1/16W J	a	b	c
		X R	0715 88-108-682-080	C-RES U 6.8K 1/16W J	a	b	c
		0 R	0716 88-118-683-080	C-RES,S 68 K-1/10W J	a	b	c
		0 R	0717 88-108-333-080	C-RES.U 33K-1/16W J	a	b	c
		X R	0718 88-108-152-080	C-RES, U 1.5K 1/16W J	a	b	c
		X R	0719 88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
		X R	0720 88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
		0 R	0727 88-108-563-080	C-RES. U 56K J 1/16W	a	b	c
		X R	0730 88-108-564-080	C-RES U 560K 1/16W J	a	b	c
		X R	0731 88-108-682-080	C-RES U 6.8K 1/16W J	a	b	c
		0 R	0732 88-108-101-080	C-RES, U 100 1/16W J	a	b	c
		X R	0733 88-108-152-080	C-RES, U 1.5K 1/16W J	a	b	c
		0 R	0734 88-108-103-080	C-RES U 10K 1/16W J	a	b	c
		X R	0735 88-108-393-080	C-RES U 39K 1/16W	a	b	c
		0 R	0736 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
		X R	0737 88-108-331-080	C-RES, U 330 1/16W J	a	b	c
		0 R	0738 88-108-223-080	C-RES U 22K J 1/16W	a	b	c
		0 R	0739 88-108-473-080	C-RES U 47K 1/16W J	a	b	c
		0 R	0801 88-108-101-080	C-RES, U 100 1/16W J	a	b	c
		0 R	0802 88-108-101-080	C-RES, U 100 1/16W J	a	b	c
		0 R	0803 88-108-101-080	C-RES, U 100 1/16W J	a	b	c
		0 R	0804 88-108-101-080	C-RES, U 100 1/16W J	a	b	c
		0 R	0805 88-108-101-080	C-RES, U 100 1/16W J	a	b	c
		0 R	0806 88-108-101-080	C-RES, U 100 1/16W J	a	b	c
		X R	0851 88-130-339-080	C-RES 3.30HM 1/4W J 26mm	a	b	c
		X R	0852 88-108-220-080	C-RES, U 22 1/16W J	a	b	c
		X R	0854 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		X R	0855 88-108-681-080	C-RES, U 680 1/16W J	a	b	c
		X R	0856 88-108-273-080	C-RES U 27K J 1/16W	a	b	c
		0 R	0857 88-108-122-080	C-RES, U 1.2K 1/16W J	a	b	c
		0 R	0858 88-108-333-080	C-RES.U 33K-1/16W J	a	b	c
		X R	0859 88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
		X R	0860 88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
		X R	0864 88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
		X R	0865 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		0 R	0866 88-108-333-080	C-RES.U 33K-1/16W J	a	b	c
		0 R	0867 88-108-101-080	C-RES, U 100 1/16W J	a	b	c
		0 R	0868 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
		0 R	0870 83-XML-617-080	C-COIL BK2125HM601	a	b	c
		X R	0881 88-108-152-080	C-RES, U 1.5K 1/16W J	a	b	c
		X R	0882 88-108-152-080	C-RES, U 1.5K 1/16W J	a	b	c
		0 R	0883 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
		0 R	0884 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
		0 R	0885 88-108-103-080	C-RES U 10K 1/16W J	a	b	c
		0 R	0886 88-108-103-080	C-RES U 10K 1/16W J	a	b	c
		X R	0887 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		X R	0888 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
		0 SFR0501	87-024-437-080	SFR, 100K H RH063MC	a	b	c
		0 SW	0801 87-036-389-010	SW. PUSH 1-1-1 (50V DC /0	a	b	c
		0 X	0851 87-A70-046-010	X' TAL 16.9344MHz CSA-309	a	b	c
FRONT		0 C	0102 87-012-278-080	C-CAP, U 2200P-50V K X7R	a	b	c
FRONT		0 C	0103 87-010-263-080	ELECT. CAP. 100UF +/-20%	a	b	c
FRONT		0 C	0106 87-010-260-080	CAP. 47UF M ELEC. 25V P=5	a	b	c
FRONT		0 C	0301 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
		0 C	0302 87-012-286-080	C-CAP, U 0.01UF-25V K X7R	a	b	c
FRONT		0 C	0304 87-010-415-080	ELECT.Cap 10UF M 50V Pitc	a	b	c
FRONT		0 C	0307 87-010-421-080	CAP.4.7UF M ELEC. 50V P=2	a	b	c
FRONT		0 C	0308 87-010-421-080	CAP.4.7UF M ELEC. 50V P=2	a	b	c
FRONT		0 C	0309 87-010-787-080	C-CAP, U 0.022UF-25V K X7	a	b	c
FRONT		0 C	0310 87-010-248-080	CAP.220UF-10V M ELECT. Pi	a	b	c
FRONT		0 C	0312 87-A11-136-080	CAP. 0.022UF K 50V B TYP	a	b	c
FRONT		0 C	0315 87-A10-025-080	C-CAP. U 0.22UF-16V Z Y5V	a	b	c
FRONT		0 C	0329 87-010-787-080	C-CAP, U 0.022UF-25V K X7	a	b	c
FRONT		0 C	0330 87-012-178-080	C-CAP, U 18P-50V J COG	a	b	c
FRONT		0 C	0331 87-012-184-080	C-CAP, U 33P-50V J COG	a	b	c
FRONT		0 C	0333 87-015-694-040	E-CAP.0.47UF M ELEC. 50V	a	b	c
FRONT		0 C	0338 87-012-286-080	C-CAP, U 0.01UF-25V K X7R	a	b	c
FRONT		0 C	0339 87-012-286-080	C-CAP, U 0.01UF-25V K X7R	a	b	c
FRONT		0 C	0340 87-012-286-080	C-CAP, U 0.01UF-25V K X7R	a	b	c
FRONT		0 C	0341 87-010-260-080	CAP. 47UF M ELEC. 25V P=5	a	b	c
FRONT		0 C	0342 87-012-286-080	C-CAP, U 0.01UF-25V K X7R	a	b	c
FRONT		0 C	0343 87-012-286-080	C-CAP, U 0.01UF-25V K X7R	a	b	c
FRONT		0 C	0344 87-012-275-080	C-CAP, U 1200P-50V K X7R	a	b	c
FRONT		0 C	0348 87-010-248-040	CAP. 220UF-10V M ELECT.P	a	b	c

# ELECTRICAL PARTS LIST -4/15

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UNIT-NAME	! C REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
				XR-EM30 EZSC	XR-EM30 KSC	XR-EM31 EZSC
FRONT	0 CN	0301 87-099-720-010	CONNECTOR 30P (DC:125V/0,	a	b	c
FRONT	0 CN	0302 87-A60-624-010	7PINS FFC SOCKET ANGLE TY	a	b	c
FRONT	S D	0104 87-A40-748-080	ZENER UZ5.6BSA 26mm TAPE	a	b	c
FRONT	S D	0105 87-070-345-080	DIODE IN-4148,26mm TAPE	a	b	c
FRONT	S D	0301 87-020-465-080	DIODE 1SS133 26mm TAPE	a	b	c
FRONT	S D	0302 87-020-465-080	DIODE 1SS133 26mm TAPE	a	b	c
FRONT	S D	0318 87-020-465-080	DIODE 1SS133 26mm TAPE	a	b	c
FRONT	0 FF	0301 S1-204-182-000	FF-CABLE PITCH=1.25mm L=9	a	b	c
FRONT	0 FL	0301 8C-CL6-608-010	VACUUM FLUORESCENT DISPLA	a	b	c
FRONT	S IC	0301 8C-CL6-601-010	C-IC,LC876748A-5Z32	a	b	c
FRONT	S IC	0303 87-A21-245-010	IC RPM6938-V4 REMOTE CONT	a	b	c
FRONT	X JR	0301 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
FRONT	X JR	0302 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
FRONT	X JR	0303 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
FRONT	X JR	0312 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
FRONT	X JR	0314 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
FRONT	X JR	0316 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
FRONT	X JR	0321 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
FRONT	0 L	0301 87-A50-333-010	COIL CLK 9.43 MHz KHSC-86	a	b	c
FRONT	S Q	0104 89-327-125-080	C-TR 2SC2712GR (100mW)	a	b	c
FRONT	S Q	0109 89-327-125-080	C-TR 2SC2712GR (100mW)	a	b	c
FRONT	S Q	0301 87-026-210-040	C-TR, DTC114EK (0.2W)	a	b	c
FRONT	S Q	0302 89-112-965-080	TRANSISTOR 2SA1296GR AI R	a	b	c
FRONT	S Q	0303 89-112-965-080	TRANSISTOR 2SA1296GR AI R	a	b	c
FRONT	S Q	0306 87-A30-074-080	C-TR, RT1P 141C (150mw)	a	b	c
FRONT	S Q	0310 89-327-125-080	C-TR 2SC2712GR (100mW)	a	b	c
FRONT	S Q	0314 87-A30-494-080	TR, 2SA1980G 'T0-92' AI R	a	b	c
FRONT	0 R	0129 88-108-471-080	C-RES, U 470 1/16W J	a	b	c
FRONT	0 R	0148 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
FRONT	X R	0149 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
FRONT	X R	0150 88-108-222-080	C-RES, U 2.2K 1/16W J	a	b	c
FRONT	X R	0151 88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	0 R	0301 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
FRONT	0 R	0302 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
FRONT	0 R	0303 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
FRONT	0 R	0304 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
FRONT	0 R	0305 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
FRONT	0 R	0306 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
FRONT	0 R	0307 88-108-101-080	C-RES, U 100 1/16W J	a	b	c
FRONT	0 R	0308 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
FRONT	0 R	0309 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
FRONT	0 R	0311 88-121-222-080	RES 2K2 J C 1/8W 26mm TAP	a	b	c
FRONT	0 R	0312 88-121-392-080	RES 3.9K 1/8W J C 26mm TA	a	b	c
FRONT	0 R	0313 88-108-103-080	C-RES U 10K 1/16W J	a	b	c
FRONT	X R	0314 88-121-129-080	RES 1.2 OHM 1/8W J	a	b	c
FRONT	0 R	0315 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
FRONT	0 R	0316 88-108-101-080	C-RES, U 100 1/16W J	a	b	c
FRONT	0 R	0317 88-108-103-080	C-RES U 10K 1/16W J	a	b	c
FRONT	0 R	0318 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
FRONT	0 R	0319 88-108-101-080	C-RES, U 100 1/16W J	a	b	c
FRONT	0 R	0320 88-108-101-080	C-RES, U 100 1/16W J	a	b	c
FRONT	0 R	0321 88-108-101-080	C-RES, U 100 1/16W J	a	b	c
FRONT	0 R	0322 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
FRONT	0 R	0323 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
FRONT	0 R	0324 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
FRONT	X R	0328 88-108-682-080	C-RES U 6.8K 1/16W J	a	b	c
FRONT	X R	0329 88-108-392-080	C-RES U 3.9K 1/16W J	a	b	c
FRONT	X R	0330 88-108-392-080	C-RES U 3.9K 1/16W J	a	b	c
FRONT	0 R	0331 88-108-272-080	C-RES, U 2.7K 1/16W J	a	b	c
FRONT	0 R	0332 88-108-272-080	C-RES, U 2.7K 1/16W J	a	b	c
FRONT	X R	0333 88-108-182-080	C-RES, U 1.8K 1/16W J	a	b	c
FRONT	X R	0334 88-108-182-080	C-RES, U 1.8K 1/16W J	a	b	c
FRONT	X R	0335 88-108-152-080	C-RES, U 1.5K 1/16W J	a	b	c
FRONT	X R	0336 88-108-152-080	C-RES, U 1.5K 1/16W J	a	b	c
FRONT	0 R	0337 88-108-103-080	C-RES U 10K 1/16W J	a	b	c
FRONT	0 R	0338 88-108-103-080	C-RES U 10K 1/16W J	a	b	c
FRONT	0 R	0339 88-108-103-080	C-RES U 10K 1/16W J	a	b	c
FRONT	0 R	0340 88-108-103-080	C-RES U 10K 1/16W J	a	b	c
FRONT	X R	0341 88-108-222-080	C-RES, U 2.2K 1/16W J	a	b	c
FRONT	X R	0342 88-108-222-080	C-RES, U 2.2K 1/16W J	a	b	c
FRONT	0 R	0344 88-108-563-080	C-RES. U 56K J 1/16W	a	b	c
FRONT	0 R	0345 88-108-101-080	C-RES, U 100 1/16W J	a	b	c
FRONT	0 R	0346 88-108-103-080	C-RES U 10K 1/16W J	a	b	c
FRONT	X R	0347 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
FRONT	0 R	0348 88-108-103-080	C-RES U 10K 1/16W J	a	b	c
FRONT	0 R	0349 88-108-103-080	C-RES U 10K 1/16W J	a	b	c
FRONT	0 R	0350 88-108-223-080	C-RES U 22K J 1/16W	a	b	c
FRONT	0 R	0352 88-108-223-080	C-RES U 22K J 1/16W	a	b	c
FRONT	0 R	0354 88-108-223-080	C-RES U 22K J 1/16W	a	b	c
FRONT	0 R	0355 88-108-223-080	C-RES U 22K J 1/16W	a	b	c

# ELECTRICAL PARTS LIST -5/15

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					XR-EM30 EZSC	XR-EM30 KSC	XR-EM31 EZSC
FRONT	0 R	0356	88-108-223-080	C-RES U 22K J 1/16W	a	b	.
FRONT	0 R	0357	88-108-223-080	C-RES U 22K J 1/16W	a	b	c
FRONT	0 R	0359	88-108-223-080	C-RES U 22K J 1/16W	a	b	c
FRONT	0 R	0360	88-108-223-080	C-RES U 22K J 1/16W	a	b	c
FRONT	0 R	0361	88-121-104-080	100 K 1/8W J RES. 26mm TA	a	b	c
FRONT	X R	0370	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	0 R	0371	88-108-224-080	C-RES, U 220K 1/16W J	a	b	c
FRONT	0 R	0372	88-108-333-080	C-RES.U 33K-1/16W J	a	b	c
FRONT	0 R	0373	88-108-153-080	C-RES, U 15K 1/16W J	a	b	c
FRONT	X R	0374	88-108-472-080	C-RES U 4.7K 1/16W J	a	b	c
FRONT	0 R	0375	88-108-224-080	C-RES, U 220K 1/16W J	a	b	c
FRONT	0 R	0377	88-108-101-080	C-RES, U 100 1/16W J	a	b	c
FRONT	0 R	0378	88-108-103-080	C-RES U 10K 1/16W J	a	b	c
FRONT	0 R	0379	88-108-103-080	C-RES U 10K 1/16W J	a	b	c
FRONT	X R	0384	88-108-100-080	C-RES, U 10 1/16W J	a	b	c
FRONT	X R	0392	88-108-222-080	C-RES, U 2.2K 1/16W J	a	b	c
FRONT	0 R	0393	88-108-103-080	C-RES U 10K 1/16W J	a	b	c
FRONT	X R	0503	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0504	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0505	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0506	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0507	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0508	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0509	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0510	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0511	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0512	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0513	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0514	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0515	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0516	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0517	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0518	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0519	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0520	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0530	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0531	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0532	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0533	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0534	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0535	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0536	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0537	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0538	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	X R	0539	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
FRONT	0 S	0301	87-A91-704-080	LIGHT TOUCH SWITCH (150V)	a	b	c
FRONT	0 S	0302	87-A91-704-080	LIGHT TOUCH SWITCH (150V)	a	b	c
FRONT	0 S	0303	87-A91-704-080	LIGHT TOUCH SWITCH (150V)	a	b	c
FRONT	0 S	0304	87-A91-704-080	LIGHT TOUCH SWITCH (150V)	a	b	c
FRONT	0 S	0305	87-A91-704-080	LIGHT TOUCH SWITCH (150V)	a	b	c
FRONT	0 S	0306	87-A91-704-080	LIGHT TOUCH SWITCH (150V)	a	b	c
FRONT	0 S	0307	87-A91-704-080	LIGHT TOUCH SWITCH (150V)	a	b	c
FRONT	0 S	0308	87-A91-704-080	LIGHT TOUCH SWITCH (150V)	a	b	c
FRONT	0 S	0309	87-A91-704-080	LIGHT TOUCH SWITCH (150V)	a	b	c
FRONT	0 S	0310	87-A91-704-080	LIGHT TOUCH SWITCH (150V)	a	b	c
FRONT	0 S	0312	87-A91-704-080	LIGHT TOUCH SWITCH (150V)	a	b	c
FRONT	0 S	0351	87-A92-291-010	SW,RTRY RE012104PVB25FINB	a	b	c
MAIN	0 C	0101	87-A12-442-000	CAP.E 3300UF25V M 85 IV	a	b	c
MAIN	0 C	0102	87-012-286-080	C-CAP, U 0.01UF-25V K X7R	a	b	c
MAIN	0 C	0104	87-A12-381-000	CAP.E 2200UF 25V M 85 IV	a	b	c
MAIN	0 C	0105	87-A10-039-080	C-CAP 470P 50V J COG CER.	a	b	c
MAIN	0 C	0106	87-010-264-040	CAP.E,100-10 5L F=2.5mm	a	b	c
MAIN	0 C	0107	87-010-404-080	CAP,E 4.7-50M SSL F=5MM,	a	b	c
MAIN	0 C	0108	87-010-260-080	CAP. 47UF M ELEC. 25V P=5	a	b	c
MAIN	0 C	0109	87-010-260-080	CAP. 47UF M ELEC. 25V P=5	a	b	c
MAIN	0 C	0110	87-010-260-080	CAP. 47UF M ELEC. 25V P=5	a	b	c
MAIN	0 C	0111	87-010-247-080	CAP,E 100-50 M SSL F=5MM,	a	b	c
MAIN	0 C	0112	87-010-263-080	ELECT. CAP. 100UF +/-20%	a	b	c
MAIN	0 C	0113	87-010-403-080	CAP,E 3.3-50 M SSL F=5.5M	a	b	c
MAIN	0 C	0114	87-010-374-080	CAP. 47UF M ELEC. 10V P=5	a	b	c
MAIN	0 C	0115	87-A10-303-080	CAP. 0.047UF J Poly F 50V	a	b	c
MAIN	0 C	0116	87-A10-303-080	CAP. 0.047UF J Poly F 50V	a	b	c
MAIN	0 C	0120	87-012-274-080	C-CAP, U 1000P-50V K X7R	a	b	c
MAIN	0 C	0121	87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
MAIN	0 C	0122	87-010-260-080	CAP. 47UF M ELEC. 25V P=5	a	b	c
MAIN	0 C	0123	87-010-260-080	CAP. 47UF M ELEC. 25V P=5	a	b	c
MAIN	0 C	0125	87-A10-307-080	POLYESTER FILM CAP. 0.1UF	a	b	c
MAIN	0 C	0126	87-A10-307-080	POLYESTER FILM CAP. 0.1UF	a	b	c
MAIN	0 C	0131	87-A11-719-080	C-CAP.0.1UF-50V Z CER.	a	b	c
MAIN	0 C	0132	87-A11-719-080	C-CAP.0.1UF-50V Z CER.	a	b	c

# ELECTRICAL PARTS LIST -6/15

! = SAFETY PARTS  
 C = Components marked

All components used on this model at the production line are shown in this service manual.  
 However, please note that not all components will be available as spare parts for after-sales service.  
 Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.  
 Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
					XR-EM30 EZSC	XR-EM30 KSC	XR-EM31 EZSC
MAIN	0 C	0140	87-012-274-080	C-CAP, U 1000P-50V K X7R	a	b	c
MAIN	0 C	0151	87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
MAIN	X C	0203	88-266-660-810	CAP, SC 2200P-25 K SR DD4	a	.	c
MAIN	X C	0203	88-266-660-810	CAP, SC 2200P-25 K SR DD4	.	b	c
MAIN	X C	0204	88-266-660-810	CAP, SC 2200P-25 K SR DD4	a	.	c
MAIN	X C	0204	88-266-660-810	CAP, SC 2200P-25 K SR DD4	.	b	c
MAIN	0 C	0205	87-012-199-080	C-CAP, U 220P-50V J COG	a	b	c
MAIN	0 C	0206	87-012-199-080	C-CAP, U 220P-50V J COG	a	b	c
MAIN	0 C	0207	87-010-401-080	ELECT CAP 1UF +/-20% 50V	a	b	c
MAIN	0 C	0208	87-010-401-080	ELECT CAP 1UF +/-20% 50V	a	b	c
MAIN	0 C	0209	87-010-401-080	ELECT CAP 1UF +/-20% 50V	a	b	c
MAIN	0 C	0210	87-010-401-080	ELECT CAP 1UF +/-20% 50V	a	b	c
MAIN	X C	0211	88-700-860-810	CAP.0.068 UF J POLY F 50V	a	b	c
MAIN	X C	0212	88-700-860-810	CAP.0.068 UF J POLY F 50V	a	b	c
MAIN	0 C	0213	87-010-260-080	CAP. 47UF M ELEC. 25V P=5	a	b	c
MAIN	0 C	0214	87-010-260-080	CAP. 47UF M ELEC. 25V P=5	a	b	c
MAIN	0 C	0215	87-012-199-080	C-CAP, U 220P-50V J COG	a	b	c
MAIN	0 C	0216	87-012-199-080	C-CAP, U 220P-50V J COG	a	b	c
MAIN	0 C	0217	87-010-959-080	C-CAP,U 0.056UF 16V Z F S	a	b	c
MAIN	0 C	0218	87-010-959-080	C-CAP,U 0.056UF 16V Z F S	a	b	c
MAIN	0 C	0219	87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
MAIN	0 C	0220	87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
MAIN	0 C	0221	87-010-785-080	C-CAP 0.015U 25V K CER.EI	a	b	c
MAIN	0 C	0222	87-010-785-080	C-CAP 0.015U 25V K CER.EI	a	b	c
MAIN	0 C	0223	87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
MAIN	0 C	0224	87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
MAIN	0 C	0225	87-A10-596-080	C-CAP,S 100P-100 J CH	a	b	c
MAIN	0 C	0226	87-A10-596-080	C-CAP,S 100P-100 J CH	a	b	c
MAIN	0 C	0227	87-012-282-080	C-CAP, U 4700P-50V K X7R	a	b	c
MAIN	0 C	0235	87-012-286-080	C-CAP, U 0.01UF-25V K X7R	a	b	c
MAIN	0 C	0236	87-012-286-080	C-CAP, U 0.01UF-25V K X7R	a	b	c
MAIN	0 C	0238	87-012-278-080	C-CAP, U 2200P-50V K X7R	a	b	c
MAIN	0 C	0268	87-010-380-080	CAP. 47UF M ELEC. 16V P=5	a	b	c
MAIN	0 C	0271	87-A10-297-080	CAP.0.015UF J Poly F 50V	a	b	c
MAIN	0 C	0272	87-A10-297-080	CAP.0.015UF J Poly F 50V	a	b	c
MAIN	0 C	0274	87-012-195-080	C-CAP, U 100P-50V J COG	a	b	c
MAIN	0 C	0275	87-012-195-080	C-CAP, U 100P-50V J COG	a	b	c
MAIN	0 C	0283	87-010-263-080	ELECT. CAP. 100UF +/-20%	a	b	c
MAIN	0 C	0284	87-010-263-080	ELECT. CAP. 100UF +/-20%	a	b	c
MAIN	0 C	0314	87-010-370-040	CAP E 330UF 6.3V M PITCH=	a	b	c
MAIN	0 C	0340	87-012-199-080	C-CAP, U 220P-50V J COG	a	b	c
MAIN	0 C	0446	87-010-260-080	CAP. 47UF M ELEC. 25V P=5	a	b	c
MAIN	0 C	0447	87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
MAIN	0 C	0450	87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
MAIN	0 C	0451	87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
MAIN	0 C	0452	87-010-248-080	CAP.220UF-10V M ELECT. Pi	a	b	c
MAIN	0 C	0453	87-012-279-080	C-CAP, U 2700P-50V K X7R	a	b	c
MAIN	0 C	0454	87-012-279-080	C-CAP, U 2700P-50V K X7R	a	b	c
MAIN	0 C	0455	87-012-279-080	C-CAP, U 2700P-50V K X7R	a	b	c
MAIN	0 C	0456	87-012-286-080	C-CAP, U 0.01UF-25V K X7R	a	b	c
MAIN	0 C	0457	87-A12-361-080	CAP.M.5600P-100 J CP	a	b	c
MAIN	0 C	0458	87-012-274-080	C-CAP, U 1000P-50V K X7R	a	b	c
MAIN	0 C	0459	87-010-575-080	C-CAP, U 560P-50V K X7R	a	b	c
MAIN	0 C	0461	87-012-269-080	C-CAP, U 390P-50V K X7R	a	b	c
MAIN	0 C	0462	87-012-269-080	C-CAP, U 390P-50V K X7R	a	b	c
MAIN	0 C	0601	87-012-275-080	C-CAP, U 1200P-50V K X7R	a	b	c
MAIN	0 C	0602	87-012-275-080	C-CAP, U 1200P-50V K X7R	a	b	c
MAIN	0 C	0603	87-012-280-080	C-CAP, U 3300P-50V K X7R	a	b	c
MAIN	0 C	0604	87-012-280-080	C-CAP, U 3300P-50V K X7R	a	b	c
MAIN	0 C	0611	87-010-545-080	CAP,E 0.22-50 M SSL F=5MM	a	b	c
MAIN	0 C	0612	87-010-545-080	CAP,E 0.22-50 M SSL F=5MM	a	b	c
MAIN	0 C	0613	87-010-400-080	ELECT CAP 0.47UF +/-20% 5	a	b	c
MAIN	0 C	0614	87-010-400-080	ELECT CAP 0.47UF +/-20% 5	a	b	c
MAIN	0 C	0615	87-012-172-080	C-CAP, U 10P-50V D COG	a	b	c
MAIN	0 C	0616	87-010-408-080	CAP,E 47-50 M SSL F=5MM,	a	b	c
MAIN	0 C	0617	87-010-408-080	CAP,E 47-50 M SSL F=5MM,	a	b	c
MAIN	0 C	0619	87-010-404-080	CAP,E 4.7-50M SSL F=5MM,	a	b	c
MAIN	0 C	0620	87-010-404-080	CAP,E 4.7-50M SSL F=5MM,	a	b	c
MAIN	0 C	0627	87-012-286-080	C-CAP, U 0.01UF-25V K X7R	a	b	c
MAIN	0 C	0628	87-012-286-080	C-CAP, U 0.01UF-25V K X7R	a	b	c
MAIN	X C	0637	87-012-261-080	C-CAP, U 68P-50V J COG	a	b	c
MAIN	X C	0638	87-012-261-080	C-CAP, U 68P-50V J COG	a	b	c
MAIN	0 C	0639	87-A10-039-080	C-CAP 470P 50V J COG CER.	a	b	c
MAIN	0 C	0640	87-A10-039-080	C-CAP 470P 50V J COG CER.	a	b	c
MAIN	0 C	0641	87-012-284-080	C-CAP, U 6800P-50V X7R	a	b	c
MAIN	0 C	0642	87-012-284-080	C-CAP, U 6800P-50V X7R	a	b	c
MAIN	0 C	0643	87-010-379-010	ELECT. CAP. 22UF +/-20% 1	a	b	c
MAIN	0 C	0644	87-010-379-010	ELECT. CAP. 22UF +/-20% 1	a	b	c
MAIN	0 C	0645	87-012-286-080	C-CAP, U 0.01UF-25V K X7R	a	b	c
MAIN	0 C	0646	87-012-286-080	C-CAP, U 0.01UF-25V K X7R	a	b	c

# ELECTRICAL PARTS LIST -7/15

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All components used on this model at the production line are shown in this service manual.

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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
					XR-EM30 EZSC	XR-EM30 KSC	XR-EM31 EZSC
MAIN		0 C	0647 87-012-282-080	C-CAP, U 4700P-50V K X7R	a	b	c
MAIN		0 C	0648 87-012-282-080	C-CAP, U 4700P-50V K X7R	a	b	c
MAIN		0 C	0649 87-012-198-080	C-CAP, U 180P-50V J COG	a	b	c
MAIN		0 C	0650 87-012-198-080	C-CAP, U 180P-50V J COG	a	b	c
MAIN		0 C	0651 87-010-402-080	CAP,E 2.2-50M SSL F=5MM,	a	b	c
MAIN		0 C	0652 87-010-402-080	CAP,E 2.2-50M SSL F=5MM,	a	b	c
MAIN		0 C	0660 87-012-278-080	C-CAP, U 2200P-50V K X7R	a	b	c
MAIN		0 C	0661 87-012-278-080	C-CAP, U 2200P-50V K X7R	a	b	c
MAIN		0 C	0663 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
MAIN		0 C	0670 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	a	b	c
MAIN		0 C	0703 87-012-275-080	C-CAP, U 1200P-50V K X7R	a	b	c
MAIN		0 C	0704 87-012-275-080	C-CAP, U 1200P-50V K X7R	a	b	c
MAIN		0 C	0869 87-012-286-080	C-CAP, U 0.01UF-25V K X7R	.	.	c
MAIN		0 C	0871 87-012-199-080	C-CAP, U 220P-50V J COG	.	.	c
MAIN		0 C	0873 87-A10-039-080	C-CAP 470P 50V J COG CER.	.	.	c
MAIN		0 C	0874 87-010-405-080	CAP,E 10-50 M SSL F=5MM,	.	.	c
MAIN		0 C	0875 87-010-759-080	C-CAP, U 0.1UF-25V Z Y5V	.	.	c
MAIN		0 C	0876 87-010-405-080	CAP,E 10-50 M SSL F=5MM,	.	.	c
MAIN		0 C	0877 87-012-286-080	C-CAP, U 0.01UF-25V K X7R	.	.	c
MAIN		0 C	0878 87-012-184-080	C-CAP, U 33P-50V J COG	.	.	c
MAIN		0 C	0879 87-012-180-080	C-CAP, U 22P-50V J COG	.	.	c
MAIN		0 CN	0351 87-A60-624-010	CONN 7P V H TYPE 2MM JMT	a	b	c
MAIN		0 CN	0601 87-099-719-010	CONNECTOR 30P H (DC:125V/	a	b	c
MAIN		0 CN	0702 87-A60-189-010	CONNECTOR 16P V (TUC-P16P-	a	b	c
MAIN		0 CNA	0001 S1-2P2-018-900	2PINS CONNECTOR ASSY L=26	a	b	c
MAIN		S D	0100 87-A40-270-080	C-DIODE MC2838	a	b	c
MAIN		S D	0101 87-070-345-080	DIODE IN-4148,26mm TAPE	a	b	c
MAIN		S D	0101 87-A40-535-080	DIODE, 1N5393 GW 52mm Tap	a	b	c
MAIN		S D	0102 87-A40-535-080	DIODE, 1N5393 GW 52mm Tap	a	b	c
MAIN		S D	0103 87-A40-535-080	DIODE, 1N5393 GW 52mm Tap	a	b	c
MAIN		S D	0104 87-A40-535-080	DIODE, 1N5393 GW 52mm Tap	a	b	c
MAIN		S D	0105 87-A40-553-080	DIODE,1N4003 LES	a	b	c
MAIN		S D	0106 87-A40-553-080	DIODE,1N4003 LES	a	b	c
MAIN		S D	0107 87-A40-776-080	ZENER,UZ27BSD 26mm TAPE	a	b	c
MAIN		0 D	0108 88-121-123-080	RES 12 K 1/8W J 26mm TAPE	a	b	c
MAIN		S D	0109 87-A40-269-080	C-DIODE MC2836	a	b	c
MAIN		S D	0110 87-A40-764-080	ZENER,UZ10BSC 26mm TAPE	a	b	c
MAIN		S D	0112 87-020-465-080	DIODE 1SS133 26mm TAPE	a	b	c
MAIN		S D	0116 87-A40-553-080	DIODE,1N4003 LES	a	b	c
MAIN		S D	0117 87-A40-553-080	DIODE,1N4003 LES	a	b	c
MAIN		S D	0171 87-020-465-080	DIODE 1SS133 26mm TAPE	a	b	c
MAIN		S D	0201 87-A40-269-080	C-DIODE MC2836	a	b	c
MAIN		S D	0202 87-A40-270-080	C-DIODE MC2838	a	b	c
MAIN		S D	0203 87-A40-269-080	C-DIODE MC2836	a	b	c
MAIN		S D	0204 87-A40-269-080	C-DIODE MC2836	a	b	c
MAIN		S D	0205 87-A40-270-080	C-DIODE MC2838	a	b	c
MAIN		S D	0206 87-A40-270-080	C-DIODE MC2838	a	b	c
MAIN		S D	0207 87-A40-270-080	C-DIODE MC2838	a	b	c
MAIN		S D	0208 87-A40-270-080	C-DIODE MC2838	a	b	c
MAIN		S D	0209 87-A40-270-080	C-DIODE MC2838	a	b	c
MAIN		S D	0301 87-020-465-080	DIODE 1SS133 26mm TAPE	a	b	c
MAIN		S D	0601 87-A40-745-080	ZENER UZ4.7BSA 26mm	a	b	c
MAIN		S D	0602 87-A40-745-080	ZENER UZ4.7BSA 26mm	a	b	c
MAIN		S D	0604 87-020-465-080	DIODE 1SS133 26mm TAPE	a	b	c
MAIN		0 FB	0110 83-XM1-617-080	C-COIL BK2125HM601	a	b	c
MAIN		0 FB	0111 83-XM1-617-080	C-COIL BK2125HM601	a	b	c
MAIN		0 FB	0602 83-XM1-617-080	C-COIL BK2125HM601	a	b	c
MAIN		0 FB	0603 87-A90-896-080	F-BCAD 035600 STYT Taping	a	b	c
MAIN		0 FB	0618 87-A90-896-080	F-BCAD 035600 STYT Taping	a	b	c
MAIN		S IC	0102 87-A21-364-010	IC , NJM7806FA 6V REGULAT	a	b	c
MAIN		S IC	0601 87-A22-236-040	C-IC,BD3881FV	a	b	c
MAIN		S IC	0801 87-A20-440-040	RDS IC BU1920FS-E2 (87-A2	.	.	c
MAIN		0 J	0231 87-099-816-010	HEADPHONE JACK Dia:3.5mm	.	.	c
MAIN		X J	0241 87-A60-217-010	SPEAKER TERMINAL 4 pins P	a	b	c
MAIN		0 J	0601 S2-3A0-321-000	3 PIN JACK BOARD (MSP-243	a	b	c
MAIN		X JR	0110 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
MAIN		X JR	0111 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
MAIN		X JR	0201 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
MAIN		X JR	0211 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
MAIN		X JR	0212 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
MAIN		X JR	0213 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
MAIN		X JR	0214 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
MAIN		X JR	0231 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
MAIN		X JR	0241 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
MAIN		X JR	0242 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
MAIN		X JR	0251 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
MAIN		X JR	0252 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
MAIN		X JR	0253 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
MAIN		X JR	0255 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
MAIN		0 JR	0617 83-XM1-617-080	C-COIL BK2125HM601	a	b	c

# ELECTRICAL PARTS LIST -8/15

! = SAFETY PARTS  
C = Components marked

All components used on this model at the production line are shown in this service manual.

However, please note that not all components will be available as spare parts for after-sales service.

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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
					XR-EM30 EZSC	XR-EM30 KSC	XR-EM31 EZSC
MAIN		X JR 0872	88-108-000-080	C-JUMPER, JR 1/16W J	.	.	.
MAIN		0 JW 0061	87-A90-896-080	F-BCAD 035600 STYT Taping	a	b	c
MAIN		0 JW 0096	87-A90-896-080	F-BCAD 035600 STYT Taping	a	b	c
MAIN		0 JW 0117	87-A90-896-080	F-BCAD 035600 STYT Taping	a	b	c
MAIN		0 L 0125	87-005-849-080	FIXED INDUCTOR 10UH	a	b	c
MAIN		0 L 0201	87-A50-610-010	CHOCK COIL 1.0UH PIN L=4.	a	b	c
MAIN		0 L 0202	87-A50-610-010	CHOCK COIL 1.0UH PIN L=4.	a	b	c
MAIN		0 L 0451	87-007-342-010	COIL OSC 85K BIAS (87-007	a	b	c
MAIN		0 L 0861	87-003-098-080	FIXED INDUCTOR 2.2UH LAL0	.	.	.
MAIN		0 FN 0101	8C-CL6-609-010	CONNECTOR ASSY 5P Pitch=2	a	b	c
MAIN	!	S PR 0201	87-A90-764-080	PROTECTOR 1.25A 60V 491 T	a	b	c
MAIN	!	S PR 0202	87-A90-764-080	PROTECTOR 1.25A 60V 491 T	a	b	c
MAIN	!	S PR 0203	87-A90-764-080	PROTECTOR 1.25A 60V 491 T	a	b	c
MAIN	!	S PR 0204	87-A90-764-080	PROTECTOR 1.25A 60V 491 T	a	b	c
MAIN		S Q 0102	87-A30-630-080	TR, 2SC5343GL TO-92 TAPIN	a	b	c
MAIN		S Q 0103	87-A30-076-080	C-TR, AMPLIFY 2SC3052 (15	a	b	c
MAIN		S Q 0104	87-A30-494-080	TR, 2SA1980G 'TO-92' AI R	a	b	c
MAIN		S Q 0105	87-A30-515-080	TR, 2SA1979 (625mW) O/Y A	a	b	c
MAIN		S Q 0106	89-327-125-080	C-TR 2SC2712GR (100mW)	a	b	c
MAIN		S Q 0107	89-327-125-080	C-TR 2SC2712GR (100mW)	a	b	c
MAIN		S Q 0108	89-111-625-080	C-TR 2SA1162GR (O.15W)	a	b	c
MAIN		S Q 0109	89-327-125-080	C-TR 2SC2712GR (100mW)	a	b	c
MAIN		S Q 0110	89-111-625-080	C-TR 2SA1162GR (O.15W)	a	b	c
MAIN		S Q 0111	89-213-702-080	PNP TRANSISTOR 2SB1370E (	a	b	c
MAIN		S Q 0112	89-327-125-080	C-TR 2SC2712GR (100mW)	a	b	c
MAIN		S Q 0201	89-111-625-080	C-TR 2SA1162GR (O.15W)	a	b	c
MAIN		S Q 0202	89-111-625-080	C-TR 2SA1162GR (O.15W)	a	b	c
MAIN		S Q 0203	89-111-625-080	C-TR 2SA1162GR (O.15W)	a	b	c
MAIN		S Q 0204	89-111-625-080	C-TR 2SA1162GR (O.15W)	a	b	c
MAIN		S Q 0205	89-327-125-080	C-TR 2SC2712GR (100mW)	a	b	c
MAIN		S Q 0206	89-327-125-080	C-TR 2SC2712GR (100mW)	a	b	c
MAIN		S Q 0207	89-327-125-080	C-TR 2SC2712GR (100mW)	a	b	c
MAIN		S Q 0208	89-327-125-080	C-TR 2SC2712GR (100mW)	a	b	c
MAIN		S Q 0209	87-A30-630-080	TR, 2SC5343GL TO-92 TAPIN	a	b	c
MAIN		S Q 0210	87-A30-630-080	TR, 2SC5343GL TO-92 TAPIN	a	b	c
MAIN		S Q 0211	87-A30-256-010	TR 2SD1933 "ROHM"	a	b	c
MAIN		S Q 0212	87-A30-256-010	TR 2SD1933 "ROHM"	a	b	c
MAIN		S Q 0213	87-A30-255-010	TR 2SB1342 "ROHM"	a	b	c
MAIN		S Q 0214	87-A30-255-010	TR 2SB1342 "ROHM"	a	b	c
MAIN		S Q 0215	89-111-625-080	C-TR 2SA1162GR (O.15W)	a	b	c
MAIN		S Q 0216	89-111-625-080	C-TR 2SA1162GR (O.15W)	a	b	c
MAIN		S Q 0217	87-A30-494-080	TR, 2SA1980G 'TO-92' AI R	a	b	c
MAIN		S Q 0218	89-327-125-080	C-TR 2SC2712GR (100mW)	a	b	c
MAIN		S Q 0219	87-A30-630-080	TR, 2SC5343GL TO-92 TAPIN	a	b	c
MAIN		S Q 0220	87-A30-630-080	TR, 2SC5343GL TO-92 TAPIN	a	b	c
MAIN		S Q 0221	87-A30-630-080	TR, 2SC5343GL TO-92 TAPIN	a	b	c
MAIN		S Q 0222	87-A30-630-080	TR, 2SC5343GL TO-92 TAPIN	a	b	c
MAIN		S Q 0223	89-327-125-080	C-TR 2SC2712GR (100mW)	a	b	c
MAIN		S Q 0224	89-327-125-080	C-TR 2SC2712GR (100mW)	a	b	c
MAIN		S Q 0225	89-327-125-080	C-TR 2SC2712GR (100mW)	a	b	c
MAIN		S Q 0226	89-327-125-080	C-TR 2SC2712GR (100mW)	a	b	c
MAIN		S Q 0261	89-327-125-080	C-TR 2SC2712GR (100mW)	a	b	c
MAIN		S Q 0262	89-327-125-080	C-TR 2SC2712GR (100mW)	a	b	c
MAIN		S Q 0263	89-111-625-080	C-TR 2SA1162GR (O.15W)	a	b	c
MAIN		S Q 0304	87-A30-387-040	C-TR,DTA124EUA (UMT3) (DI	a	b	c
MAIN		S Q 0305	87-A30-087-080	C-FET,2SK2158 [NEC]	a	b	c
MAIN		S Q 0306	87-A30-387-040	C-TR,DTA124EUA (UMT3) (DI	a	b	c
MAIN		S Q 0307	87-A30-087-080	C-FET,2SK2158 [NEC]	a	b	c
MAIN		S Q 0308	87-A30-087-080	C-FET,2SK2158 [NEC]	a	b	c
MAIN		S Q 0309	89-111-625-080	C-TR 2SA1162GR (O.15W)	a	b	c
MAIN		S Q 0310	89-111-625-080	C-TR 2SA1162GR (O.15W)	a	b	c
MAIN		S Q 0450	87-A30-076-080	C-TR, AMPLIFY 2SC3052 (15	a	b	c
MAIN		S Q 0451	87-A30-630-080	TR, 2SC5343GL TO-92 TAPIN	a	b	c
MAIN		S Q 0452	89-327-125-080	C-TR 2SC2712GR (100mW)	a	b	c
MAIN		S Q 0453	87-A30-630-080	TR, 2SC5343GL TO-92 TAPIN	a	b	c
MAIN		S Q 0454	87-A30-630-080	TR, 2SC5343GL TO-92 TAPIN	a	b	c
MAIN		S Q 0456	87-026-210-040	C-TR, DTC114EK (0.2W)	a	b	c
MAIN		S Q 0457	89-112-965-080	TRANSISTOR 2SA1296GR AI R	a	b	c
MAIN		S Q 0861	89-327-125-080	C-TR 2SC2712GR (100mW)	.	.	.
MAIN		S Q 0863	89-327-125-080	C-TR 2SC2712GR (100mW)	.	.	.
MAIN	X	R 0101	88-121-229-080	RES 2.2 J C 1/8W 26mm TAP	a	b	c
MAIN	X	R 0102	88-121-229-080	RES 2.2 J C 1/8W 26mm TAP	a	b	c
MAIN	X	R 0103	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
MAIN	O	R 0104	88-121-471-080	RES 470 OHM 1/8W J C 26mm	a	b	c
MAIN	O	R 0105	88-108-823-080	C-RES, U 82K 1/16W J	a	b	c
MAIN	X	R 0106	88-108-680-080	C-RES, U 68 1/16W J	a	b	c
MAIN	X	R 0108	88-108-472-080	C-RES U 4.7K 1/16W J	a	b	c
MAIN	O	R 0109	88-108-103-080	C-RES U 10K 1/16W J	a	b	c
MAIN	O	R 0110	88-108-471-080	C-RES, U 470 1/16W J	a	b	c
MAIN	X	R 0111	88-108-221-080	C-RES, U 220 1/16W J	a	b	c

# ELECTRICAL PARTS LIST -9/15

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UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
					XR-EM30 EZSC	XR-EM30 KSC	XR-EM31 EZSC
MAIN	X R	0113	88-108-154-080	C-RES, U 150K 1/16W J	a	b	c
MAIN	0 R	0114	88-121-103-080	RES 10 K 1/8W J 26mm TAPE	a	b	c
MAIN	0 R	0115	88-108-103-080	C-RES U 10K 1/16W J	a	b	c
MAIN	X R	0116	88-121-229-080	RES 2.2 J C 1/8W 26mm TAP	a	b	c
MAIN	0 R	0117	88-108-333-080	C-RES.U 33K-1/16W J	a	b	c
MAIN	X R	0118	88-121-229-080	RES 2.2 J C 1/8W 26mm TAP	a	b	c
MAIN	0 R	0119	88-121-333-080	RES 33 K C 1/8W 26mm TAPE	a	b	c
MAIN	X R	0120	88-108-472-080	C-RES U 4.7K 1/16W J	a	b	c
MAIN	X R	0121	88-108-472-080	C-RES U 4.7K 1/16W J	a	b	c
MAIN	X R	0122	88-108-100-080	C-RES, U 10 1/16W J	a	b	c
MAIN	X R	0123	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
MAIN	0 R	0130	88-121-471-080	RES 470 OHM 1/8W J C 26mm	a	b	c
MAIN	0 R	0131	88-108-153-080	C-RES, U 15K 1/16W J	a	b	c
MAIN	0 R	0132	88-108-153-080	C-RES, U 15K 1/16W J	a	b	c
MAIN	0 R	0133	88-108-123-080	C-RES U 12K 1/16W J	a	b	c
MAIN	X R	0134	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
MAIN	0 R	0201	88-108-473-080	C-RES U 47K 1/16W J	a	b	c
MAIN	0 R	0202	88-108-473-080	C-RES U 47K 1/16W J	a	b	c
MAIN	0 R	0203	88-108-103-080	C-RES U 10K 1/16W J	a	b	c
MAIN	0 R	0204	88-108-103-080	C-RES U 10K 1/16W J	a	b	c
MAIN	X R	0205	88-118-390-080	C-RES,S 39 1/10W J	a	b	c
MAIN	X R	0206	88-118-390-080	C-RES,S 39 1/10W J	a	b	c
MAIN	0 R	0207	88-108-223-080	C-RES U 22K J 1/16W	a	b	c
MAIN	0 R	0208	88-108-223-080	C-RES U 22K J 1/16W	a	b	c
MAIN	0 R	0209	88-121-101-080	RES 100 OHM 1/8W J 26mm T	a	b	c
MAIN	0 R	0210	88-121-101-080	RES 100 OHM 1/8W J 26mm T	a	b	c
MAIN	0 R	0211	88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
MAIN	0 R	0212	88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
MAIN	0 R	0213	88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
MAIN	0 R	0214	88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
MAIN	0 R	0215	88-108-103-080	C-RES U 10K 1/16W J	a	b	c
MAIN	0 R	0216	88-121-103-080	RES 10 K 1/8W J 26mm TAPE	a	b	c
MAIN	0 R	0217	88-108-223-080	C-RES U 22K J 1/16W	a	b	c
MAIN	0 R	0218	88-108-223-080	C-RES U 22K J 1/16W	a	b	c
MAIN	0 R	0219	88-121-102-080	RES 1 K 1/8W J 26mm TAPE	a	b	c
MAIN	0 R	0220	88-121-102-080	RES 1 K 1/8W J 26mm TAPE	a	b	c
MAIN	0 R	0221	88-121-102-080	RES 1 K 1/8W J 26mm TAPE	a	b	c
MAIN	0 R	0222	88-121-102-080	RES 1 K 1/8W J 26mm TAPE	a	b	c
MAIN	0 R	0223	87-A00-258-080	RES M/F 0.22-1W J	a	b	c
MAIN	0 R	0224	87-A00-258-080	RES M/F 0.22-1W J	a	b	c
MAIN	X R	0225	88-108-472-080	C-RES U 4.7K 1/16W J	a	b	c
MAIN	X R	0226	88-108-472-080	C-RES U 4.7K 1/16W J	a	b	c
MAIN	0 R	0227	88-108-101-080	C-RES, U 100 1/16W J	a	b	c
MAIN	0 R	0228	88-108-101-080	C-RES, U 100 1/16W J	a	b	c
MAIN	X R	0229	88-108-100-080	C-RES, U 10 1/16W J	a	b	c
MAIN	X R	0230	88-108-682-080	C-RES U 6.8K 1/16W J	a	b	c
MAIN	X R	0231	88-130-221-080	RES 220 J C 1/4W 26mm TA	a	b	c
MAIN	X R	0232	88-130-221-080	RES 220 J C 1/4W 26mm TA	a	b	c
MAIN	0 R	0233	88-121-102-080	RES 1 K 1/8W J 26mm TAPE	a	b	c
MAIN	0 R	0234	88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
MAIN	0 R	0235	88-108-103-080	C-RES U 10K 1/16W J	a	b	c
MAIN	0 R	0236	88-130-100-080	RES 10 OHM 1/4W J 26mm TA	a	b	c
MAIN	X R	0237	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
MAIN	X R	0238	88-108-104-080	C-RES, U 100K 1/16W J	a	b	c
MAIN	X R	0239	88-118-390-087	C-RES,S 39 1/10W J	a	b	c
MAIN	X R	0240	88-118-390-080	C-RES,S 39 1/10W J	a	b	c
MAIN	0 R	0241	88-108-101-080	C-RES, U 100 1/16W J	a	b	c
MAIN	X R	0242	88-108-682-080	C-RES U 6.8K 1/16W J	a	b	c
MAIN	0 R	0243	88-108-101-080	C-RES, U 100 1/16W J	a	b	c
MAIN	0 R	0244	88-108-471-080	C-RES, U 470 1/16W J	a	b	c
MAIN	X R	0245	88-108-100-080	C-RES, U 10 1/16W J	a	b	c
MAIN	X R	0246	88-108-392-080	C-RES U 3.9K 1/16W J	a	b	c
MAIN	X R	0247	88-108-392-080	C-RES U 3.9K 1/16W J	a	b	c
MAIN	X R	0248	88-130-221-080	RES 220 J C 1/4W 26mm TA	a	b	c
MAIN	0 R	0249	87-A00-258-080	RES M/F 0.22-1W J	a	b	c
MAIN	0 R	0250	87-A00-258-080	RES M/F 0.22-1W J	a	b	c
MAIN	0 R	0251	88-108-153-080	C-RES, U 15K 1/16W J	a	b	c
MAIN	0 R	0252	88-108-153-080	C-RES, U 15K 1/16W J	a	b	c
MAIN	0 R	0253	88-108-332-080	C-RES U 3.3K 1/16WJ	a	b	c
MAIN	0 R	0254	88-108-332-080	C-RES U 3.3K 1/16WJ	a	b	c
MAIN	X R	0255	88-130-221-080	RES 220 J C 1/4W 26mm TA	a	b	c
MAIN	0 R	0256	88-130-100-080	RES 10 OHM 1/4W J 26mm TA	a	b	c
MAIN	0 R	0257	88-108-473-080	C-RES U 47K 1/16W J	a	b	c
MAIN	0 R	0258	88-108-103-080	C-RES U 10K 1/16W J	a	b	c
MAIN	0 R	0259	88-108-103-080	C-RES U 10K 1/16W J	a	b	c
MAIN	0 R	0260	88-108-122-080	C-RES, U 1.2K 1/16W J	a	b	c
MAIN	X R	0261	88-108-222-080	C-RES, U 2.2K 1/16W J	a	b	c
MAIN	X R	0262	88-108-222-080	C-RES, U 2.2K 1/16W J	a	b	c
MAIN	0 R	0263	88-108-473-080	C-RES U 47K 1/16W J	a	b	c
MAIN	X R	0264	88-108-105-080	C-RES, U 1M 1/16W J	a	b	c

# ELECTRICAL PARTS LIST -10/15

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					XR-EM30 EZSC	XR-EM30 KSC	XR-EM31 EZSC
MAIN		0 R	0265 88-108-153-080	C-RES, U 15K 1/16W J	a	b	c
MAIN		0 R	0266 88-121-102-080	RES 1 K 1/8W J 26mm TAPE	a	b	c
MAIN		0 R	0268 88-121-101-080	RES 100 OHM 1/8W J 26mm T	a	b	c
MAIN		0 R	0269 88-108-101-080	C-RES, U 100 1/16W J	a	b	c
MAIN		0 R	0270 88-108-101-080	C-RES, U 100 1/16W J	a	b	c
MAIN		0 R	0271 88-108-122-080	C-RES, U 1.2K 1/16W J	a	b	c
MAIN		0 R	0273 88-108-561-080	C-RES, U 560 1/16W J	a	b	c
MAIN		0 R	0274 88-108-561-080	C-RES, U 560 1/16W J	a	b	c
MAIN		0 R	0275 88-108-122-080	C-RES, U 1.2K 1/16W J	a	b	c
MAIN		0 R	0276 88-108-122-080	C-RES, U 1.2K 1/16W J	a	b	c
MAIN	X R	0277 88-108-222-080	C-RES, U 2.2K 1/16W J	a	b	c	
MAIN	X R	0278 88-108-222-080	C-RES, U 2.2K 1/16W J	a	b	c	
MAIN	0 R	0281 88-108-562-080	C-RES U 5.6K 1/16W J	a	b	c	
MAIN	0 R	0282 88-108-562-080	C-RES U 5.6K 1/16W J	a	b	c	
MAIN	0 R	0283 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c	
MAIN	0 R	0284 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c	
MAIN	0 R	0290 88-108-223-080	C-RES U 22K J 1/16W	a	b	c	
MAIN	0 R	0291 88-108-223-080	C-RES U 22K J 1/16W	a	b	c	
MAIN	0 R	0292 88-108-122-080	C-RES, U 1.2K 1/16W J	a	b	c	
MAIN	X R	0325 88-108-105-080	C-RES, U 1M 1/16W J	a	b	c	
MAIN		0 R	0327 88-121-472-080	RES 4.7K 1/8W J C 26mm TA	a	b	c
MAIN		0 R	0328 88-121-202-080	RES 2K J C 1/8W 26mm TAPE	a	b	c
MAIN		0 R	0329 88-121-202-080	RES 2K J C 1/8W 26mm TAPE	a	b	c
MAIN		0 R	0440 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c
MAIN		0 R	0441 88-121-102-080	RES 1 K 1/8W J 26mm TAPE	a	b	c
MAIN		0 R	0450 88-108-103-080	C-RES U 10K 1/16W J	a	b	c
MAIN		0 R	0451 88-108-103-080	C-RES U 10K 1/16W J	a	b	c
MAIN		0 R	0452 88-121-103-080	RES 10 K 1/8W J 26mm TAPE	a	b	c
MAIN	X R	0453 88-108-222-080	C-RES, U 2.2K 1/16W J	a	b	c	
MAIN	X R	0454 88-130-082-080	RES,8.2 ohm 1/4W 5% 26mm	a	b	c	
MAIN	X R	0455 88-108-183-080	C-RES U 18K J 1/16W	a	b	c	
MAIN	X R	0456 88-108-183-080	C-RES U 18K J 1/16W	a	b	c	
MAIN	X R	0457 88-108-472-080	C-RES U 4.7K 1/16W J	a	b	c	
MAIN	X R	0458 88-108-472-080	C-RES U 4.7K 1/16W J	a	b	c	
MAIN	0 R	0459 88-108-563-080	C-RES. U 56K J 1/16W	a	b	c	
MAIN	X R	0460 88-108-104-080	C-RES, U 100K 1/16W J	a	b	c	
MAIN	0 R	0465 88-108-103-080	C-RES U 10K 1/16W J	a	b	c	
MAIN	0 R	0466 88-108-103-080	C-RES U 10K 1/16W J	a	b	c	
MAIN	X R	0603 88-108-393-080	C-RES U 39K 1/16W	a	b	c	
MAIN	X R	0604 88-108-393-080	C-RES U 39K 1/16W	a	b	c	
MAIN	X R	0609 88-108-472-080	C-RES U 4.7K 1/16W J	a	b	c	
MAIN	X R	0610 88-108-472-080	C-RES U 4.7K 1/16W J	a	b	c	
MAIN	X R	0613 88-108-472-080	C-RES U 4.7K 1/16W J	a	b	c	
MAIN	0 R	0614 88-108-103-080	C-RES U 10K 1/16W J	a	b	c	
MAIN	X R	0615 88-108-472-080	C-RES U 4.7K 1/16W J	a	b	c	
MAIN	0 R	0617 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c	
MAIN	0 R	0618 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c	
MAIN	X R	0619 88-108-152-080	C-RES, U 1.5K 1/16W J	a	b	c	
MAIN	X R	0620 88-108-152-080	C-RES, U 1.5K 1/16W J	a	b	c	
MAIN	0 R	0621 88-121-101-080	RES 100 OHM 1/8W J 26mm T	a	b	c	
MAIN	X R	0622 88-130-181-080	RES 180 J C 1/4W 26mm TAP	a	b	c	
MAIN	X R	0623 88-130-181-080	RES 180 J C 1/4W 26mm TAP	a	b	c	
MAIN	X R	0624 88-140-221-080	RES 220 J C 1/2W 26mm TAP	a	b	c	
MAIN	0 R	0625 88-108-103-080	C-RES U 10K 1/16W J	a	b	c	
MAIN	0 R	0626 88-108-103-080	C-RES U 10K 1/16W J	a	b	c	
MAIN	0 R	0627 88-121-103-080	RES 10 K 1/8W J 26mm TAPE	a	b	c	
MAIN	X R	0631 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c	
MAIN	X R	0632 88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c	
MAIN	X R	0633 88-108-472-080	C-RES U 4.7K 1/16W J	a	b	c	
MAIN	X R	0634 88-108-472-080	C-RES U 4.7K 1/16W J	a	b	c	
MAIN	X R	0635 88-108-680-080	C-RES, U 68 1/16W J	a	b	c	
MAIN	X R	0636 88-108-680-080	C-RES, U 68 1/16W J	a	b	c	
MAIN	0 R	0637 88-108-471-080	C-RES, U 470 1/16W J	a	b	c	
MAIN	0 R	0638 88-108-471-080	C-RES, U 470 1/16W J	a	b	c	
MAIN	0 R	0639 88-108-272-080	C-RES, U 2.7K 1/16W J	a	b	c	
MAIN	0 R	0640 88-108-272-080	C-RES, U 2.7K 1/16W J	a	b	c	
MAIN	X R	0641 88-108-182-080	C-RES, U 1.8K 1/16W J	a	b	c	
MAIN	X R	0642 88-108-182-080	C-RES, U 1.8K 1/16W J	a	b	c	
MAIN	0 R	0643 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c	
MAIN	0 R	0644 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c	
MAIN	0 R	0645 88-108-103-080	C-RES U 10K 1/16W J	a	b	c	
MAIN	0 R	0646 88-108-103-080	C-RES U 10K 1/16W J	a	b	c	
MAIN	X R	0647 88-108-222-080	C-RES, U 2.2K 1/16W J	a	b	c	
MAIN	X R	0648 88-108-222-080	C-RES, U 2.2K 1/16W J	a	b	c	
MAIN	X R	0649 88-108-183-080	C-RES U 18K J 1/16W	a	b	c	
MAIN	X R	0650 88-108-183-080	C-RES U 18K J 1/16W	a	b	c	
MAIN	0 R	0651 88-108-122-080	C-RES, U 1.2K 1/16W J	a	b	c	
MAIN	0 R	0652 88-108-122-080	C-RES, U 1.2K 1/16W J	a	b	c	
MAIN	0 R	0653 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c	
MAIN	0 R	0654 88-108-102-080	C-RES, U 1K 1/16W J	a	b	c	



# ELECTRICAL PARTS LIST -11/15

! = SAFETY PARTS  
 C = Components marked

All components used on this model at the production line are shown in this service manual.

However, please note that not all components will be available as spare parts for after-sales service.

Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.

Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
					XR-EM30 EZSC	XR-EM30 KSC	XR-EM31 EZSC
MAIN	X R	0655	88-108-183-080	C-RES U 18K J 1/16W	a	b	c
MAIN	X R	0656	88-108-183-080	C-RES U 18K J 1/16W	a	b	c
MAIN	X R	0657	88-108-394-080	C-RES. 390K 1/10W OR 1/16	a	b	c
MAIN	X R	0658	88-108-394-080	C-RES. 390K 1/10W OR 1/16	a	b	c
MAIN	O R	0660	88-121-222-080	RES 2K2 J C 1/8W 26mm TAP	a	b	c
MAIN	O R	0661	88-121-222-080	RES 2K2 J C 1/8W 26mm TAP	a	b	c
MAIN	X R	0662	88-108-222-080	C-RES, U 2.2K 1/16W J	a	b	c
MAIN	X R	0663	88-108-222-080	C-RES, U 2.2K 1/16W J	a	b	c
MAIN	X R	0670	88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
MAIN	X R	0671	88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
MAIN	O R	0672	88-108-822-080	C-RES U 8.2K 1/16W J	a	b	c
MAIN	O R	0673	88-108-822-080	C-RES U 8.2K 1/16W J	a	b	c
MAIN	O R	0674	88-108-103-080	C-RES U 10K 1/16W J	a	b	c
MAIN	O R	0675	88-108-103-080	C-RES U 10K 1/16W J	a	b	c
MAIN	O R	0676	88-108-683-080	C-RES 68K 1/16W J	a	b	c
MAIN	O R	0677	88-108-683-080	C-RES 68K 1/16W J	a	b	c
MAIN	X R	0694	88-140-221-080	RES 220 J C 1/2W 26mm TAP	a	b	c
MAIN	X R	0697	88-130-101-080	RES 100 OHM 1/4W J 26mm T	a	b	c
MAIN	X R	0701	88-108-273-080	C-RES U 27K J 1/16W	a	b	c
MAIN	X R	0702	88-108-273-080	C-RES U 27K J 1/16W	a	b	c
MAIN	X R	0705	88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
MAIN	X R	0706	88-108-000-080	C-JUMPER, JR 1/16W J	a	b	c
MAIN	X R	0707	88-108-393-080	C-RES U 39K 1/16W	a	b	c
MAIN	X R	0709	88-121-225-080	RES 2.2 M J C 1/8W 26mm T	a	b	c
MAIN	O R	0861	88-108-471-080	C-RES, U 470 1/16W J	.	.	c
MAIN	O R	0862	88-108-272-080	C-RES, U 2.7K 1/16W J	.	.	c
MAIN	X R	0863	88-108-104-080	C-RES, U 100K 1/16W J	.	.	c
MAIN	O R	0864	88-108-123-080	C-RES U 12K 1/16W J	.	.	c
MAIN	O R	0865	88-108-471-080	C-RES, U 470 1/16W J	.	.	c
MAIN	X R	0867	88-108-104-080	C-RES, U 100K 1/16W J	.	.	c
MAIN	O R	0870	88-108-102-080	C-RES, U 1K 1/16W J	.	.	c
MAIN	O R	0871	88-108-102-080	C-RES, U 1K 1/16W J	.	.	c
MAIN	O R	0872	88-108-474-080	C-RES U 470K 1/16W J	.	.	c
MAIN	O X	0861	87-A70-091-010	QUARTZ CRYSTAL 4.332MHz	.	.	c
MAIN	O C	0872	87-012-199-080	C-CAP, U 220P-50V J COG	.	.	c
PT	O CN	0101	87-009-195-010	SOCKET,CONN 5PIN V WHI EH	a	b	c
PT	! S F	0102	87-035-367-010	T3.15AL AC:250V (5x20)mm	a	b	c
PT	! S F	0103	87-035-367-010	T3.15AL AC:250V (5x20)mm	a	b	c
PT	! O FC	0103	87-A90-160-080	FUSE HOLDER (87-A90-160-0	a	b	c
PT	! O FC	0104	87-A90-160-080	FUSE HOLDER (87-A90-160-0	a	b	c
PT	! O FC	0105	87-A90-160-080	FUSE HOLDER (87-A90-160-0	a	b	c
PT	! O FC	0106	87-A90-160-080	FUSE HOLDER (87-A90-160-0	a	b	c
PT	X PN	0001	87-033-220-010	PIN DIA 1 COATING (87-033	a	b	c
PT	! X PT	0101	8C-CL6-216-010	POWER TRANSFORMER,230V,50	a	b	c
PT	! O T	0101	87-A60-317-010	TERMINAL 1P MSC (TERMINAL	a	b	c
PT	! O T	0102	87-A60-317-010	TERMINAL 1P MSC (TERMINAL	a	b	c
PT	! X W	0101	87-A80-143-010	AC POWER CODE ASSY, E.BLAC	a	b	c
TUNER	O C	0772	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0781	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0782	86-ZA1-616-080	C-CAP,U 0.01-50 K B (MUR)	a	b	c
TUNER	O C	0783	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0785	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0786	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0788	87-012-167-080	C-CAP,U 5P-50 C CH GRM	a	b	c
TUNER	O C	0789	87-010-786-080	C-CAP,U 0.018-25 K B GRM	a	b	c
TUNER	O C	0790	87-010-786-080	C-CAP,U 0.018-25 K B GRM	a	b	c
TUNER	O C	0792	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0793	87-A10-262-080	C-CAP,U 1-10 Z F	a	b	c
TUNER	O C	0795	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0796	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0797	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0799	87-A12-070-040	CAP,E 33-25 SMG	a	b	c
TUNER	O C	0800	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0801	87-A10-262-080	C-CAP,U 1-10 Z F	a	b	c
TUNER	O C	0802	87-010-829-080	C-CAP,U 0.047-16 Z F CM/CB	a	b	c
TUNER	O C	0804	87-A12-062-040	CAP,E 100-10 SMG	a	b	c
TUNER	O C	0807	87-A10-463-080	C-CAP,U 0.47-10 Z F	a	b	c
TUNER	O C	0808	87-A10-262-080	C-CAP,U 1-10 Z F	a	b	c
TUNER	O C	0809	87-A10-262-080	C-CAP,U 1-10 Z F	a	b	c
TUNER	O C	0814	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0815	87-A10-463-080	C-CAP,U 0.47-10 Z F	a	b	c
TUNER	O C	0816	87-A10-463-080	C-CAP,U 0.47-10 Z F	a	b	c
TUNER	O C	0818	87-012-276-080	C-CAP,U 1500P-50 K B GRM	a	b	c
TUNER	O C	0821	87-A11-796-080	C-CAP,S 4.7-10 Z F	a	b	c
TUNER	O C	0823	87-012-274-080	C-CAP,U 1000P-50 K B GRM	a	b	c
TUNER	O C	0824	87-A11-796-080	C-CAP,S 4.7-10 Z F	a	b	c
TUNER	O C	0825	87-A11-317-080	C-CAP,U 0.068U-16 K B	a	b	c
TUNER	O C	0831	87-A12-069-040	CAP,E 22-25 SMG	a	b	c
TUNER	O C	0837	87-A12-022-080	C-CAP,U 0.22-16 Z F	a	b	c
TUNER	O C	0842	87-010-831-080	C-CAP,U 0.1-16 Z F GRM	a	b	c

# ELECTRICAL PARTS LIST -12/15

! = SAFETY PARTS  
 C = Components marked

All components used on this model at the production line are shown in this service manual.  
 However, please note that not all components will be available as spare parts for after-sales service.  
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 Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
					XR-EM30 EZSC	XR-EM30 KSC	XR-EM31 EZSC
TUNER	O C	0847	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0848	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0850	87-A10-262-080	C-CAP,U 1-10 Z F	a	b	c
TUNER	O C	0851	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0852	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0853	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0854	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0855	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0856	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0859	87-010-831-080	C-CAP,U 0.1-16 Z F GRM	a	b	c
TUNER	O C	0860	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0901	87-012-162-080	C-CAP,U 1P-50 C CH GRM	a	b	c
TUNER	O C	0902	87-012-165-080	C-CAP,U 3P-50 C CH GRM	a	b	c
TUNER	O C	0903	87-012-164-080	C-CAP,U 2P-50 C CH GRM	a	b	c
TUNER	O C	0904	86-ZA1-615-080	C-CAP,U 680P-25 J CH	a	b	c
TUNER	O C	0905	87-012-162-080	C-CAP,U 1P-50 C CH GRM	a	b	c
TUNER	O C	0906	87-012-172-080	C-CAP,U 10P-50 D CH GRM	a	b	c
TUNER	O C	0907	87-012-166-080	C-CAP,U 4P-50 C CH GRM	a	b	c
TUNER	O C	0908	87-012-165-080	C-CAP,U 3P-50 C CH GRM	a	b	c
TUNER	O C	0909	86-ZA1-615-080	C-CAP,U 680P-25 J CH	a	b	c
TUNER	O C	0910	87-012-164-080	C-CAP,U 2P-50 C CH GRM	a	b	c
TUNER	O C	0911	87-012-166-080	C-CAP,U 4P-50 C CH GRM	a	b	c
TUNER	O C	0912	87-012-195-080	C-CAP,U 100P-50 J CH GRM	a	b	c
TUNER	O C	0913	86-ZA1-616-080	C-CAP,U 0.01-50 K B (MUR)	a	b	c
TUNER	O C	0914	86-ZA1-616-080	C-CAP,U 0.01-50 K B (MUR)	a	b	c
TUNER	O C	0915	86-ZA1-616-080	C-CAP,U 0.01-50 K B (MUR)	a	b	c
TUNER	O C	0916	86-ZA1-616-080	C-CAP,U 0.01-50 K B (MUR)	a	b	c
TUNER	O C	0917	87-012-178-080	C-CAP,U 18P-50 J CH GRM	a	b	c
TUNER	O C	0918	87-012-172-080	C-CAP,U 10P-50 D CH GRM	a	b	c
TUNER	O C	0919	87-012-184-080	C-CAP,U 33P-50 J CH GRM	a	b	c
TUNER	O C	0920	87-012-184-080	C-CAP,U 33P-50 J CH GRM	a	b	c
TUNER	O C	0921	87-012-180-080	C-CAP,U 22P-50 J CH GRM	a	b	c
TUNER	O C	0922	87-012-174-080	C-CAP,U 12P-50 J CH GRM	a	b	c
TUNER	O C	0923	86-ZA1-616-080	C-CAP,U 0.01-50 K B (MUR)	a	b	c
TUNER	O C	0924	87-012-164-080	C-CAP,U 2P-50 C CH GRM	a	b	c
TUNER	O C	0925	87-012-164-080	C-CAP,U 2P-50 C CH GRM	a	b	c
TUNER	O C	0926	88-108-101-080	C-RES,U 100-1/16W J	a	b	c
TUNER	O C	0927	87-012-195-080	C-CAP,U 100P-50 J CH GRM	a	b	c
TUNER	O C	0931	87-A12-319-080	C-CAP,U 0.1-25 K B	a	b	c
TUNER	O C	0932	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0933	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0934	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0935	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0936	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0937	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0938	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0939	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0942	87-012-168-080	C-CAP,U 6P-50 D CH GRM	a	b	c
TUNER	O C	0946	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0947	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0948	87-012-270-080	C-CAP,U 470P-50 K B GRM	a	b	c
TUNER	O C	0950	86-ZA1-616-080	C-CAP,U 0.01-50 K B (MUR)	a	b	c
TUNER	O C	0952	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0957	87-012-174-080	C-CAP,U 12P-50 J CH GRM	a	b	c
TUNER	O C	0958	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0962	87-A10-262-080	C-CAP,U 1-10 Z F	a	b	c
TUNER	O C	0963	87-010-831-080	C-CAP,U 0.1-16 Z F GRM	a	b	c
TUNER	O C	0971	87-010-381-010	CAP,E 330-16 M SME	a	b	c
TUNER	O C	0972	87-A11-063-080	C-CAP,S 4.7-10 Z F	a	b	c
TUNER	O C	0973	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0974	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0976	87-010-831-080	C-CAP,U 0.1-16 Z F GRM	a	b	c
TUNER	O C	0979	87-012-195-080	C-CAP,U 100P-50 J CH GRM	a	b	c
TUNER	O C	0981	87-A12-066-040	CAP,E 47-16 SMG	a	b	c
TUNER	O C	0982	87-010-831-080	C-CAP,U 0.1-16 Z F GRM	a	b	c
TUNER	O C	0983	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0984	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0985	87-012-195-080	C-CAP,U 100P-50 J CH GRM	a	b	c
TUNER	O C	0987	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0988	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0989	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O C	0990	87-012-195-080	C-CAP,U 100P-50 J CH GRM	a	b	c
TUNER	O C	0991	87-012-182-080	C-CAP,U 27P-50 J CH GRM	a	b	c
TUNER	O C	0992	87-012-172-080	C-CAP,U 10P-50 D CH GRM	a	b	c
TUNER	O C	0993	87-012-274-080	C-CAP,U 1000P-50 K B GRM	a	b	c
TUNER	O C	0994	87-012-195-080	C-CAP,U 100P-50 J CH GRM	a	b	c
TUNER	O C	0995	87-012-274-080	C-CAP,U 1000P-50 K B GRM	a	b	c
TUNER	O C	0996	87-012-195-080	C-CAP,U 100P-50 J CH GRM	a	b	c
TUNER	O C	0997	87-010-831-080	C-CAP,U 0.1-16 Z F GRM	a	b	c
TUNER	O C	0998	87-A12-066-040	CAP,E 47-16 SMG	a	b	c

# ELECTRICAL PARTS LIST -13/15

! = SAFETY PARTS  
C = Components marked

All components used on this model at the production line are shown in this service manual.

However, please note that not all components will be available as spare parts for after-sales service.

Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.

Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
					XR-EM30 EZSC	XR-EM30 KSC	XR-EM31 EZSC
TUNER	O C	0999	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O CF	0831	87-008-423-010	FLTR,CF SFE10.7MS3G-A	a	b	c
TUNER	O CF	0832	82-785-747-010	CF,MS2GH-A	a	b	c
TUNER	O CN	0991	87-A60-650-010	CONN,16P H GRY TUC-P16X-C1	a	b	c
TUNER	S D	0801	87-020-465-080	DIODE,1SS133	a	b	c
TUNER	S D	0803	87-020-465-080	DIODE,1SS133	a	b	c
TUNER	X D	0896	88-100-000-010	PLATING-JW, 0.58 SN95	a	b	c
TUNER	O D	0901	87-A41-048-040	C-VARI-CAP,HVM16-03 TL	a	b	c
TUNER	O D	0902	87-A41-048-040	C-VARI-CAP,HVM16-03 TL	a	b	c
TUNER	O D	0903	87-A41-048-040	C-VARI-CAP,HVM16-03 TL	a	b	c
TUNER	S D	0942	87-A40-270-080	C-DIODE,MC2838	a	b	c
TUNER	X D	0944	88-108-000-080	C-JUMPER,U	a	b	c
TUNER	O D	0951	87-A40-799-040	C-VARI-CAP,KV1610S	a	b	c
TUNER	S D	0991	87-017-149-080	ZENER,HZS6A2L	a	b	c
TUNER	S D	0992	87-020-465-080	DIODE,1SS133	a	b	c
TUNER	S IC	0801	87-A22-060-010	IC,LA1845N-A	a	b	c
TUNER	S IC	0991	87-A21-928-010	IC,LC72131D-N	a	b	c
TUNER	O J	0832	87-A61-823-010	TERMINAL,ANT PAL AJ-2073	a	b	c
TUNER	X J	0940	87-A60-633-010	CONN,2P H 2.5MM JMT	a	b	c
TUNER	X JR	0782	88-108-000-080	C-JUMPER,U	a	b	c
TUNER	O JR	0783	88-108-103-080	C-RES,U 10K-1/16W J	a	b	c
TUNER	X JR	0801	88-129-000-080	C-JUMPER, 3216	a	b	c
TUNER	X JR	0802	88-129-000-080	C-JUMPER, 3216	a	b	c
TUNER	X JR	0805	88-108-000-080	C-JUMPER,U	a	b	c
TUNER	X JR	0806	88-129-000-080	C-JUMPER, 3216	a	b	c
TUNER	X JR	0807	88-129-000-080	C-JUMPER, 3216	a	b	c
TUNER	X JR	0821	88-108-000-080	C-JUMPER,U	a	b	c
TUNER	X JR	0822	88-108-000-080	C-JUMPER,U	a	b	c
TUNER	X JR	0835	88-108-000-080	C-JUMPER,U	a	b	c
TUNER	X JR	0887	88-129-000-080	C-JUMPER, 3216	a	b	c
TUNER	X JR	0901	88-118-000-080	C-JUMPER,S	a	b	c
TUNER	X JR	0902	88-108-000-080	C-JUMPER,U	a	b	c
TUNER	X JR	0903	88-108-000-080	C-JUMPER,U	a	b	c
TUNER	X JR	0904	88-108-000-080	C-JUMPER,U	a	b	c
TUNER	X JR	0905	88-129-000-080	C-JUMPER, 3216	a	b	c
TUNER	X JR	0906	88-129-000-080	C-JUMPER, 3216	a	b	c
TUNER	X JR	0907	88-129-000-080	C-JUMPER, 3216	a	b	c
TUNER	X JR	0908	88-108-000-080	C-JUMPER,U	a	b	c
TUNER	X JR	0954	88-108-000-080	C-JUMPER,U	a	b	c
TUNER	X JR	0991	88-118-000-080	C-JUMPER,S	a	b	c
TUNER	S JW	0942	87-020-465-080	DIODE,1SS133	a	b	c
TUNER	O JW	0959	87-A11-132-080	CAP,TC U 0.01-50 K B	a	b	c
TUNER	O L	0801	87-A50-694-010	COIL,FM-DET 2 (COILS)	a	b	c
TUNER	O L	0802	87-A91-551-010	FLTR,PCFJZH-450 L(TOK)	a	b	c
TUNER	O L	0811	87-005-847-080	COIL,2.2UH K CECS	a	b	c
TUNER	O L	0832	87-005-847-080	COIL,2.2UH K CECS	a	b	c
TUNER	O L	0901	8C-ZA3-642-010	COIL,FM ANT/RF-1-Z	a	b	c
TUNER	O L	0902	8C-ZA3-643-010	COIL,FM ANT/RF-2-Z	a	b	c
TUNER	O L	0903	87-003-098-080	COIL,2.2UH K LAL02	a	b	c
TUNER	O L	0904	8C-ZA3-642-010	COIL,FM ANT/RF-1-Z	a	b	c
TUNER	O L	0905	8C-ZA3-643-010	COIL,FM ANT/RF-2-Z	a	b	c
TUNER	O L	0906	87-005-847-080	COIL,2.2UH K CECS	a	b	c
TUNER	O L	0907	8C-ZA3-644-010	COIL,FM OSC-Z	a	b	c
TUNER	O L	0908	88-ZA1-624-010	COIL,FM IFT 7-6.2 (COILS)	a	b	c
TUNER	O L	0941	87-A50-020-010	COIL,ANT LW (COI) 252KHZ	a	b	c
TUNER	O L	0942	87-A50-019-010	COIL,OSC LW (COI) 856KHZ	a	b	c
TUNER	O L	0952	87-A50-754-010	COIL,MW ANT (3BLW)	a	b	c
TUNER	O L	0953	87-A50-755-010	COIL,MW OSC (3BLW)	a	b	c
TUNER	S Q	0835	89-327-143-080	C-TR,2SC2714O	a	b	c
TUNER	S Q	0836	87-A30-677-040	C-TR,SRA2207S	a	b	c
TUNER	S Q	0901	89-503-602-080	C-FET,2SK360E	a	b	c
TUNER	S Q	0902	87-A30-664-080	C-TR,2SC2620B	a	b	c
TUNER	S Q	0903	87-A30-664-080	C-TR,2SC2620B	a	b	c
TUNER	S Q	0904	87-A30-699-040	C-TR,2SC5477-T22	a	b	c
TUNER	S Q	0905	87-A30-664-080	C-TR,2SC2620B	a	b	c
TUNER	S Q	0948	87-A30-675-040	C-TR,2SD1306NE07TL	a	b	c
TUNER	S Q	0951	87-A30-074-080	C-TR,RT1P 141C	a	b	c
TUNER	S Q	0952	87-A30-675-040	C-TR,2SD1306NE07TL	a	b	c
TUNER	S Q	0953	89-503-602-080	C-FET,2SK360E	a	b	c
TUNER	S Q	0981	87-A30-494-080	TR,2SA1980G	a	b	c
TUNER	S Q	0982	87-A30-540-040	C-TR,2SC5343SF/S(G)	a	b	c
TUNER	S Q	0983	87-A30-540-040	C-TR,2SC5343SF/S(G)	a	b	c
TUNER	X R	0789	88-108-333-080	C-RES,U 33K-1/16W J	a	b	c
TUNER	O R	0790	87-012-286-080	C-CAP,U 0.01-25 K B GRM	a	b	c
TUNER	O R	0791	88-108-102-080	C-RES,U 1K-1/16W J	a	b	c
TUNER	X R	0793	88-108-221-080	C-RES,U 220-1/16W J	a	b	c
TUNER	X R	0795	88-108-000-080	C-JUMPER,U	a	b	c
TUNER	O R	0801	88-108-103-080	C-RES,U 10K-1/16W J	a	b	c
TUNER	O R	0802	88-108-223-080	C-RES,U 22K-1/16W J	a	b	c
TUNER	X R	0803	88-108-183-080	C-RES,U 18K-1/16W J	a	b	c

# ELECTRICAL PARTS LIST -14/15

! = SAFETY PARTS  
 C = Components marked

All components used on this model at the production line are shown in this service manual.  
 However, please note that not all components will be available as spare parts for after-sales service.  
 Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.  
 Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

UNIT-NAME	! C	REF-NO	PARTS-NO	PARTS-NAME	SUFFIX&MODEL		
					XR-EM30 EZSC	XR-EM30 KSC	XR-EM31 EZSC
TUNER	X R	0804	88-108-000-080	C-JUMPER,U	a	b	c
TUNER	O R	0805	88-108-332-080	C-RES,U 3.3K-1/16W J	a	b	c
TUNER	X R	0806	88-108-682-080	C-RES,U 6.8K-1/16W J	a	b	c
TUNER	X R	0809	88-108-000-080	C-JUMPER,U	a	b	c
TUNER	X R	0810	88-108-000-080	C-JUMPER,U	a	b	c
TUNER	O R	0813	88-108-224-080	C-RES,U 220K-1/16W J	a	b	c
TUNER	X R	0814	88-108-222-080	C-RES,U 2.2K-1/16W J	a	b	c
TUNER	X R	0815	88-121-682-080	RES,6.8K-1/8W J	a	b	c
TUNER	X R	0816	88-108-472-080	C-RES,U 4.7K-1/16W J	a	b	c
TUNER	O R	0818	88-108-103-080	C-RES,U 10K-1/16W J	a	b	c
TUNER	X R	0823	88-108-393-080	C-RES,U 39K-1/16W J	a	b	c
TUNER	O R	0826	88-108-223-080	C-RES,U 22K-1/16W J	a	b	c
TUNER	X R	0832	88-108-391-080	C-RES,U 390-1/16W J	a	b	c
TUNER	X R	0840	88-108-221-080	C-RES,U 220-1/16W J	a	b	c
TUNER	O R	0850	88-108-103-080	C-RES,U 10K-1/16W J	a	b	c
TUNER	O R	0853	88-108-102-080	C-RES,U 1K-1/16W J	a	b	c
TUNER	X R	0854	88-108-331-080	C-RES,U 330-1/16W J	a	b	c
TUNER	X R	0855	88-108-183-080	C-RES,U 18K-1/16W J	a	b	c
TUNER	O R	0856	88-108-103-080	C-RES,U 10K-1/16W J	a	b	c
TUNER	X R	0857	88-108-181-080	C-RES,U 180-1/16W J	a	b	c
TUNER	X R	0858	88-108-271-080	C-RES,U 270-1/16W J	a	b	c
TUNER	X R	0860	88-121-101-080	RES,100-1/8W J	a	b	c
TUNER	X R	0890	88-108-474-080	C-RES,U 470K-1/16W J	a	b	c
TUNER	X R	0901	88-108-104-080	C-RES,U 100K-1/16W J	a	b	c
TUNER	X R	0902	88-108-104-080	C-RES,U 100K-1/16W J	a	b	c
TUNER	X R	0903	88-108-221-080	C-RES,U 220-1/16W J	a	b	c
TUNER	O R	0904	88-108-103-080	C-RES,U 10K-1/16W J	a	b	c
TUNER	X R	0905	88-108-221-080	C-RES,U 220-1/16W J	a	b	c
TUNER	X R	0906	88-108-564-080	C-RES,U 560K-1/16W J	a	b	c
TUNER	X R	0908	88-108-271-080	C-RES,U 270-1/16W J	a	b	c
TUNER	X R	0909	88-108-181-080	C-RES,U 180-1/16W J	a	b	c
TUNER	X R	0910	88-108-334-080	C-RES,U 330K-1/16W J	a	b	c
TUNER	X R	0911	88-108-181-080	C-RES,U 180-1/16W J	a	b	c
TUNER	X R	0912	88-108-104-080	C-RES,U 100K-1/16W J	a	b	c
TUNER	X R	0913	88-108-152-080	C-RES,U 1.5K-1/16W J	a	b	c
TUNER	X R	0914	88-108-472-080	C-RES,U 4.7K-1/16W J	a	b	c
TUNER	X R	0915	88-108-104-080	C-RES,U 100K-1/16W J	a	b	c
TUNER	X R	0916	88-108-470-080	C-RES,U 47-1/16W J	a	b	c
TUNER	O R	0944	88-108-101-080	C-RES,U 100-1/16W J	a	b	c
TUNER	X R	0945	88-108-104-080	C-RES,U 100K-1/16W J	a	b	c
TUNER	X R	0947	88-108-183-080	C-RES,U 18K-1/16W J	a	b	c
TUNER	X R	0948	88-108-472-080	C-RES,U 4.7K-1/16W J	a	b	c
TUNER	O R	0952	88-108-562-080	C-RES,U 5.6K-1/16W J	a	b	c
TUNER	X R	0954	88-108-222-080	C-RES,U 2.2K-1/16W J	a	b	c
TUNER	X R	0956	88-108-471-080	C-RES,U 470-1/16W J	a	b	c
TUNER	X R	0958	88-108-472-080	C-RES,U 4.7K-1/16W J	a	b	c
TUNER	O R	0959	88-108-103-080	C-RES,U 10K-1/16W J	a	b	c
TUNER	X R	0962	88-121-221-080	RES,220-1/8W J	a	b	c
TUNER	X R	0964	88-108-330-080	C-RES,U 33-1/16W J	a	b	c
TUNER	O R	0972	88-108-102-080	C-RES,U 1K-1/16W J	a	b	c
TUNER	O R	0973	88-108-102-080	C-RES,U 1K-1/16W J	a	b	c
TUNER	O R	0974	88-108-101-080	C-RES,U 100-1/16W J	a	b	c
TUNER	O R	0975	88-108-562-080	C-RES,U 5.6K-1/16W J	a	b	c
TUNER	O R	0976	88-108-102-080	C-RES,U 1K-1/16W J	a	b	c
TUNER	O R	0977	88-108-102-080	C-RES,U 1K-1/16W J	a	b	c
TUNER	X R	0978	88-108-681-080	C-RES,U 680-1/16W J	a	b	c
TUNER	X R	0980	88-108-684-080	C-RES,U 680K-1/16W J	a	b	c
TUNER	X R	0981	88-121-471-080	RES,470-1/8W J	a	b	c
TUNER	O R	0982	88-108-103-080	C-RES,U 10K-1/16W J	a	b	c
TUNER	O R	0983	88-108-562-080	C-RES,U 5.6K-1/16W J	a	b	c
TUNER	O R	0984	88-108-562-080	C-RES,U 5.6K-1/16W J	a	b	c
TUNER	X R	0985	88-121-471-080	RES,470-1/8W J	a	b	c
TUNER	X R	0986	88-108-222-080	C-RES,U 2.2K-1/16W J	a	b	c
TUNER	X R	0988	88-108-000-080	C-JUMPER,U	a	b	c
TUNER	X R	0989	88-121-102-080	RES,1K-1/8W J	a	b	c
TUNER	O R	0990	88-108-563-080	C-RES,U 56K-1/16W J	a	b	c
TUNER	O R	0992	88-108-103-080	C-RES,U 10K-1/16W J	a	b	c
TUNER	O R	0994	88-108-103-080	C-RES,U 10K-1/16W J	a	b	c
TUNER	O R	0996	88-108-103-080	C-RES,U 10K-1/16W J	a	b	c
TUNER	X R	0997	88-108-154-080	C-RES,U 150K-1/16W J	a	b	c
TUNER	O R	0998	88-108-102-080	C-RES,U 1K-1/16W J	a	b	c
TUNER	O R	0999	88-108-103-080	C-RES,U 10K-1/16W J	a	b	c
TUNER	X SH	0901	8C-ZA3-604-010	SHLD-CASE,CZA-3	a	b	c
TUNER	X SH	0902	8C-ZA3-619-010	SHLD-CASE,CZA-3 EZ P	a	b	c
TUNER	O TC	0942	87-A91-774-080	TRIMMER, PLY 30P 6.8X5.4 CDYL	a	b	c
TUNER	O X	0992	87-A70-306-010	VIB,XTAL 4.500MHZ CSA-309ST	a	b	c

- Regarding connectors, they are not stocked as they are not the initial order items.  
The connectors are available after they are supplied from connector manufacturers upon the order is received.

○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

TRANSISTOR ILLUSTRATION-1/1



E C B

2SA1981Y  
2SA1296  
2SC5343G



B C E

2SA1296G  
2SA1979  
2SA1980G



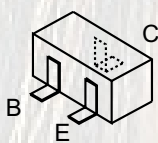
B C E

2SB1342  
2SB1370E  
2SD1933



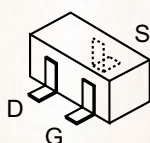
G D S

2SC5477



B E C

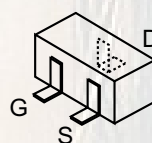
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2SC2712GR  
2SC2714O  
2SC3052  
2SC5343SF/S(G)



D G S

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DTA124EUA  
DTC114EK  
RT1F141C  
SRA2207S

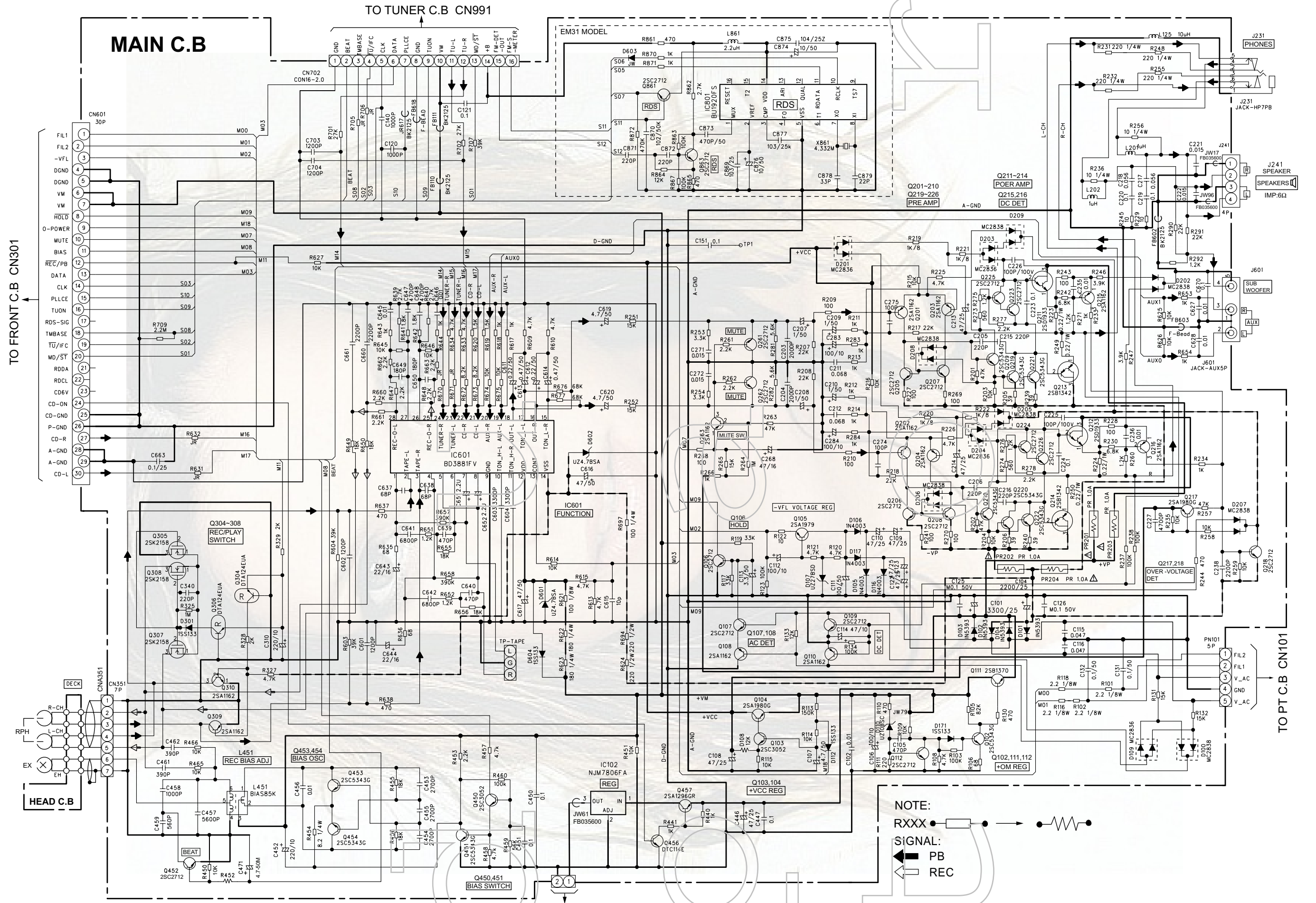
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G S D

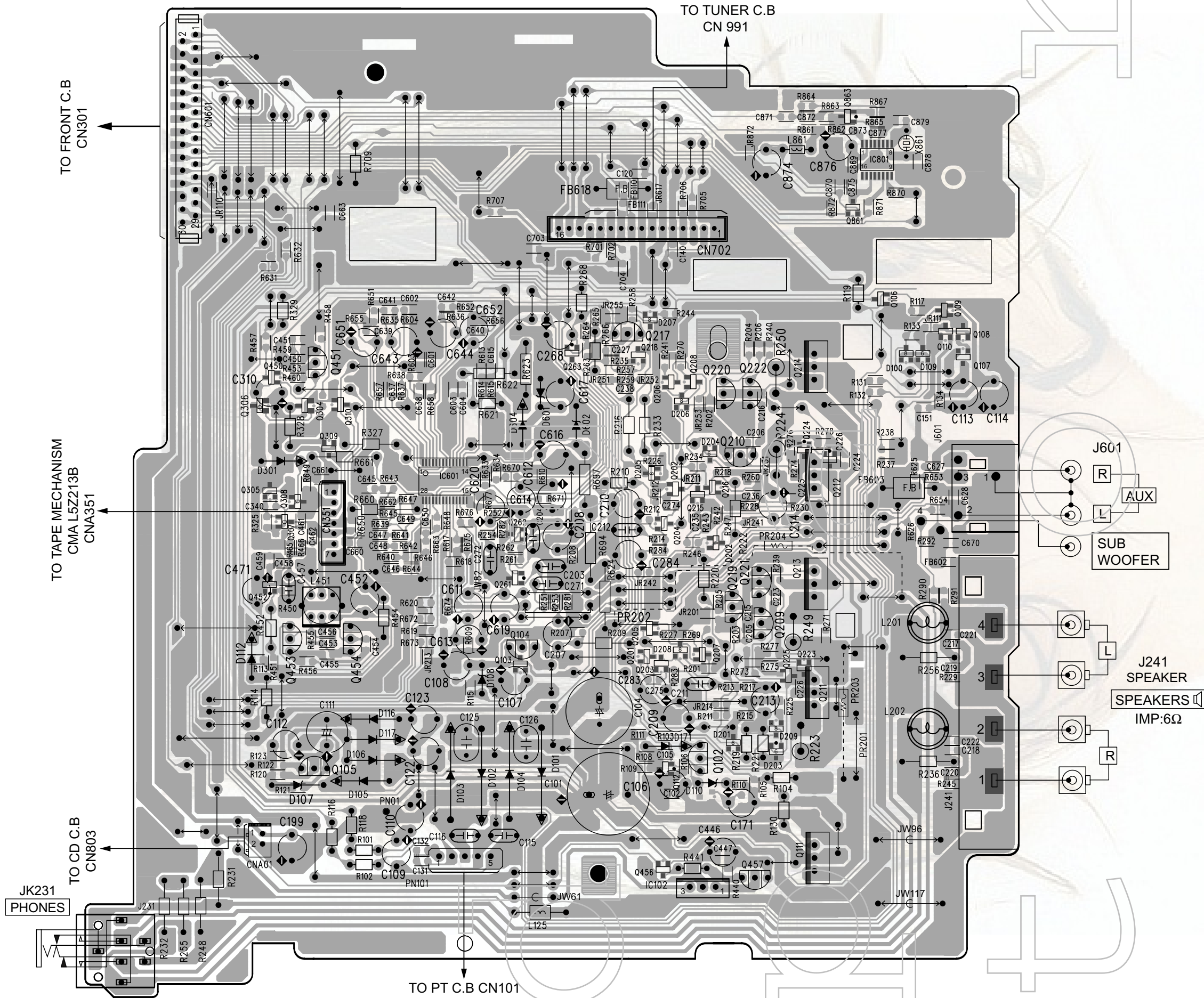
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SCHEMATIC DIAGRAM -1/5 (MAIN)



NOTE:  
 RXXX ● ——— ●  
 SIGNAL: ← ● ——— ●  
 ← ● ——— ●  
 ← ● ——— ●  
 ← ● ——— ●  
 ← ● ——— ●

MAIN C.B



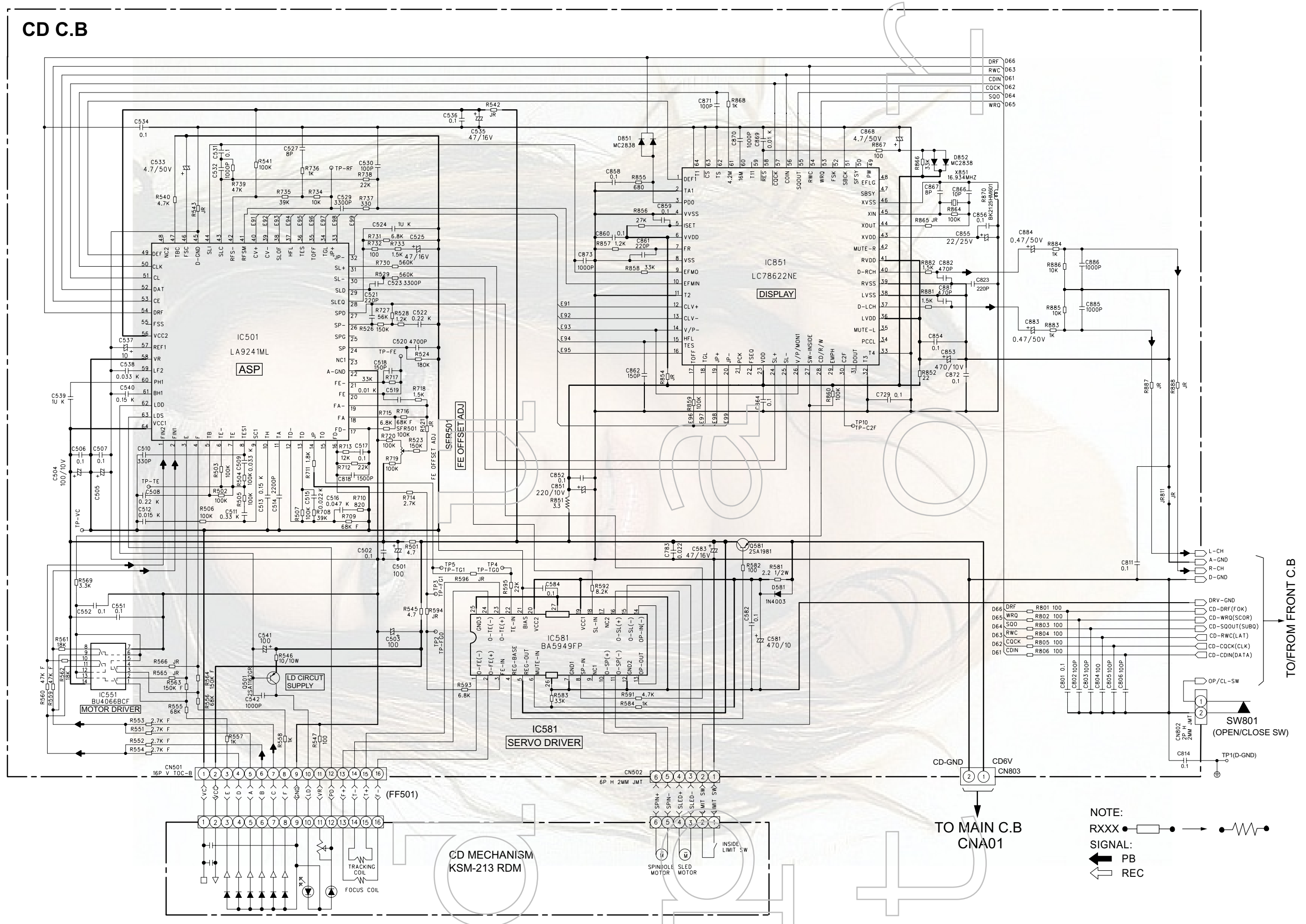
NOTE :

- PRXXX = Resistor
- RXXX = Resistor
- RXXX = Resistor
- LXXX = Inductor
- FBXXX = Variable capacitor
- CXXX = Capacitor
- CXXX = Polarized capacitor
- CXXX = Polarized capacitor
- LXXX = Inductor
- XXXX = Diode
- QXXX = Triode
- QXXX = Diode
- RXXX = Resistor
- DXXX = Diode
- QXXX = Triode
- DXXX = Diode
- DXXX = Diode
- QXXX = Triode

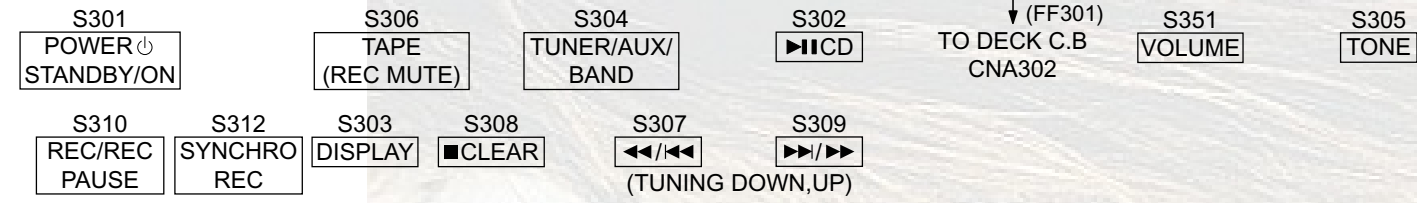
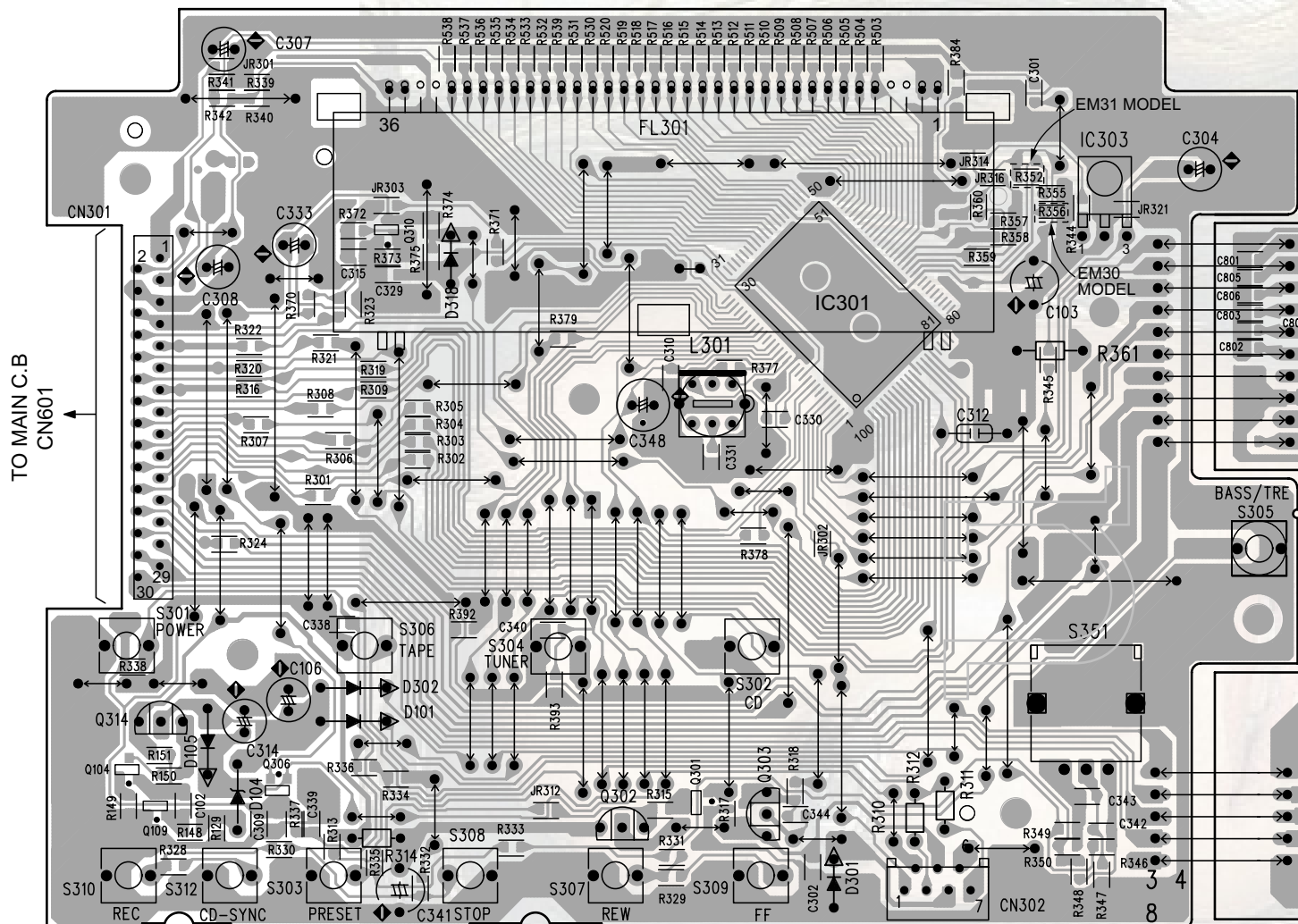
A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P  
Q  
R  
S  
T  
U



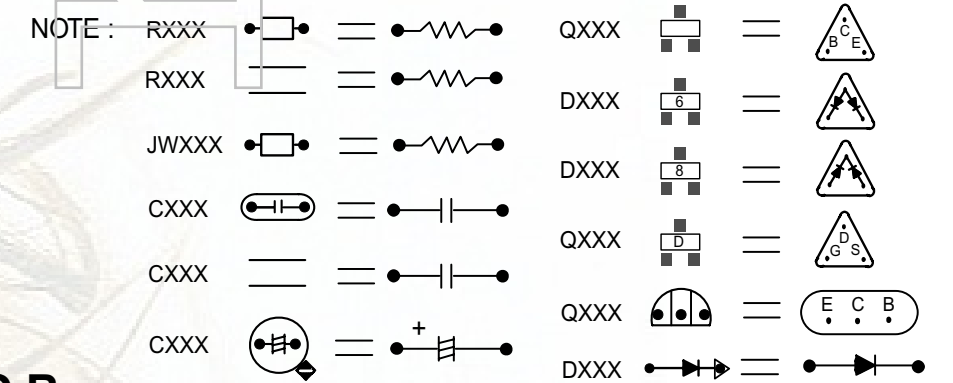
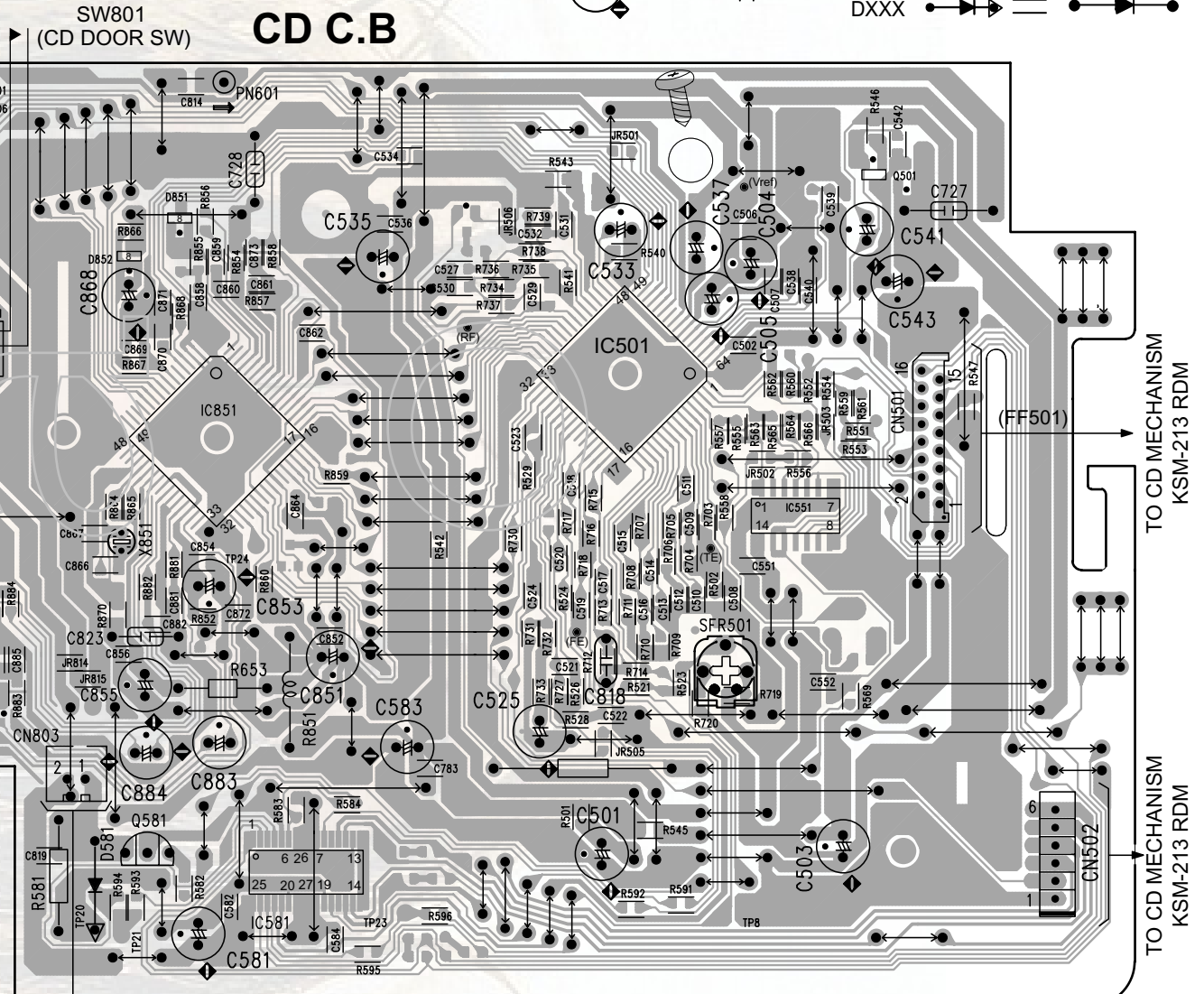




**FRONT C.B**

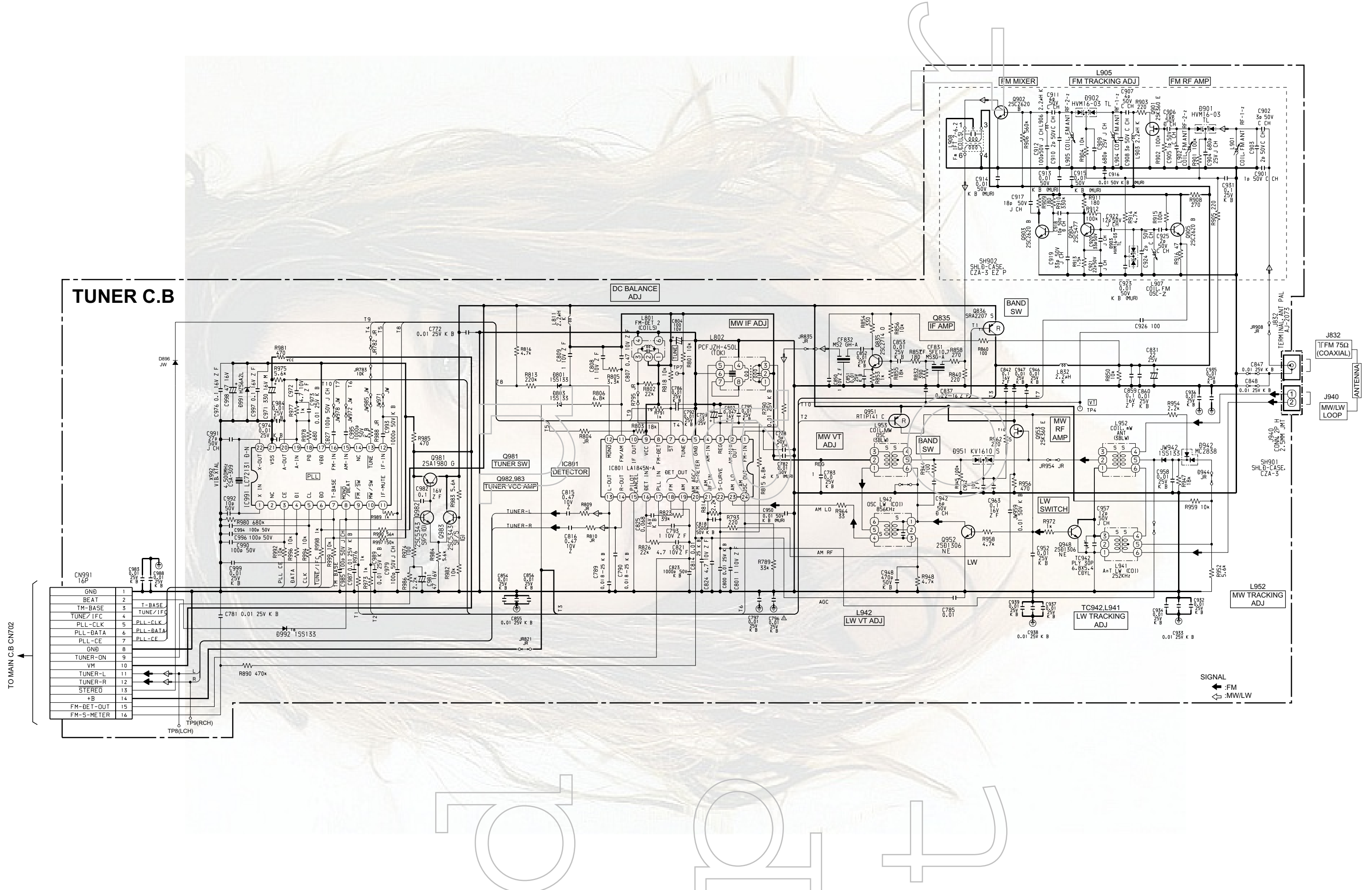


**CD C.B**



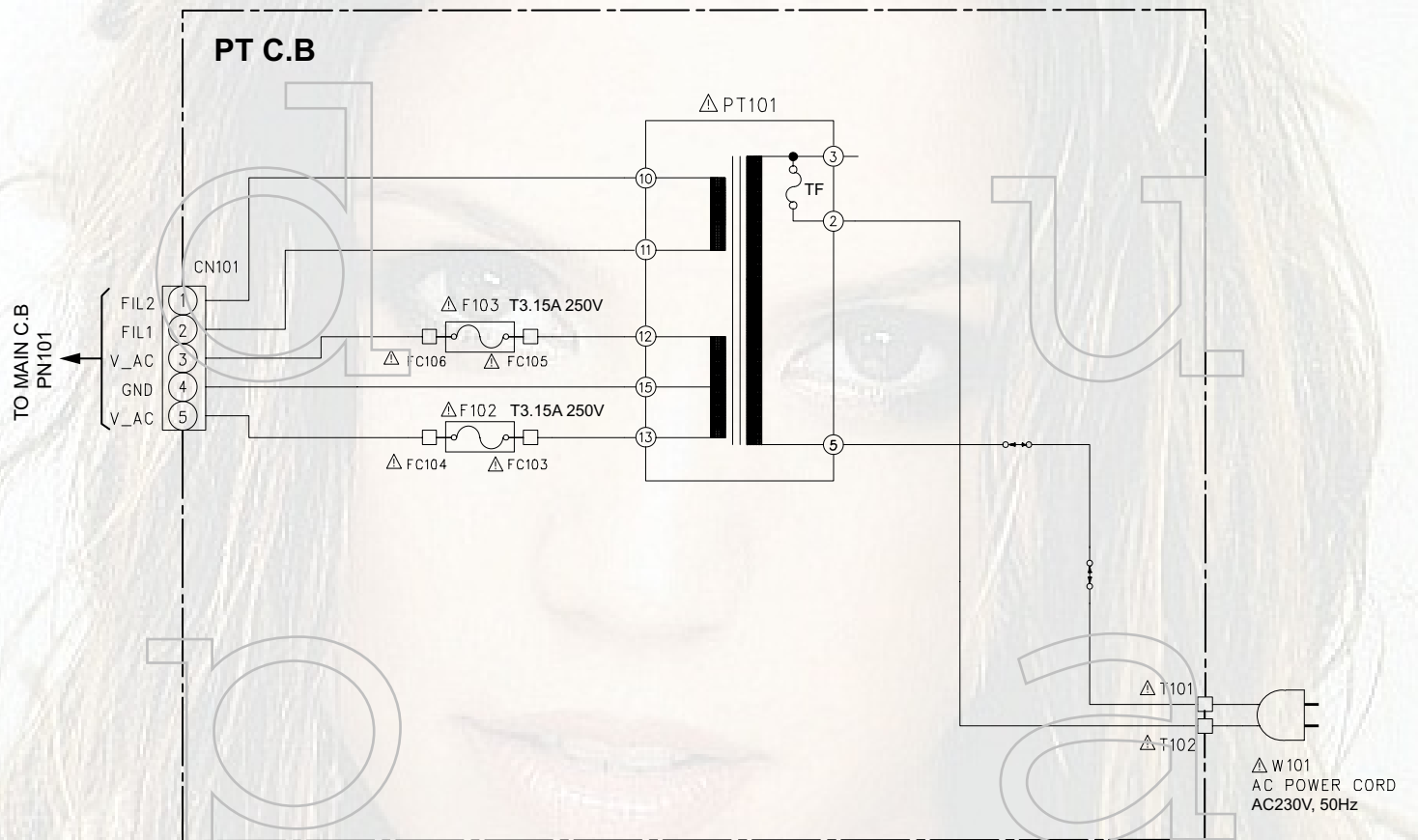
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SCHEMATIC DIAGRAM -4/5 (TUNER)

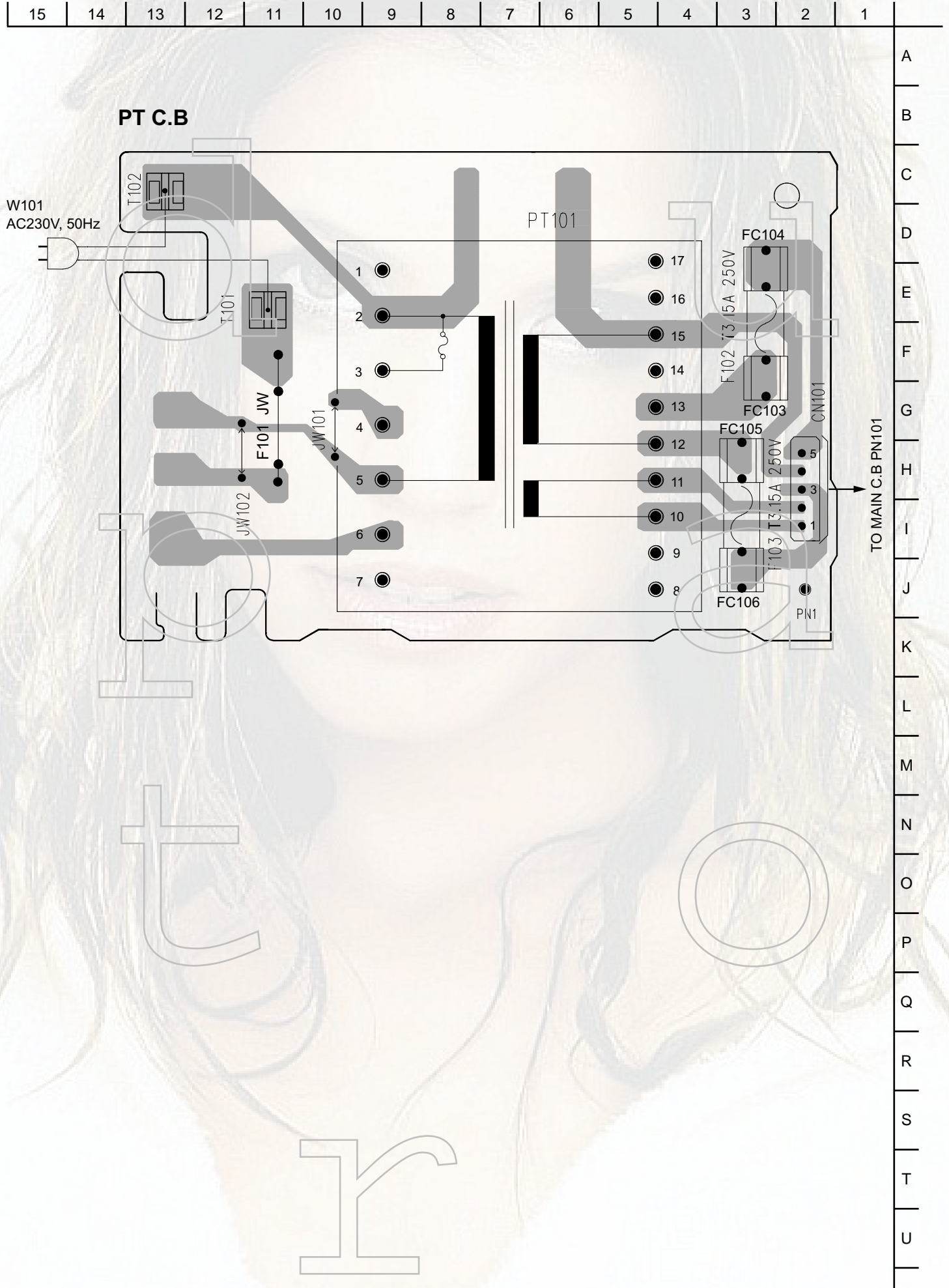




SCHEMATIC DIAGRAM -5/5 (PT)



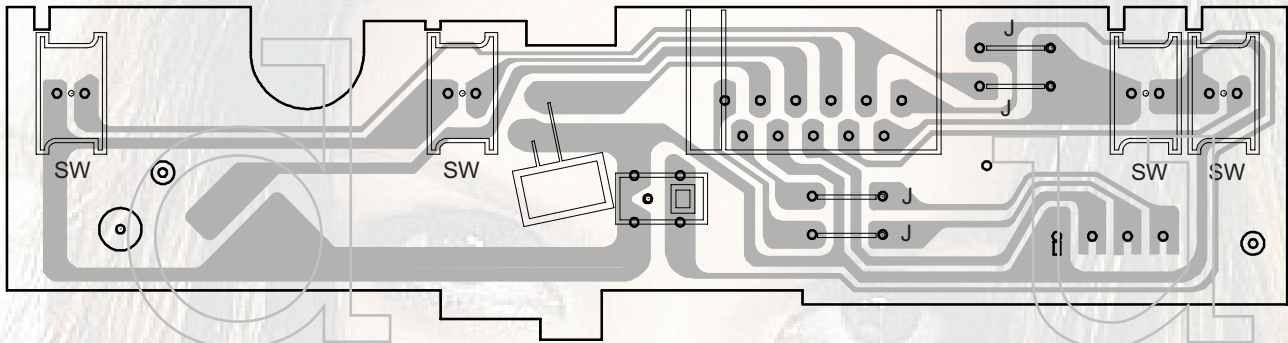
WIRING-4/5 (PT)



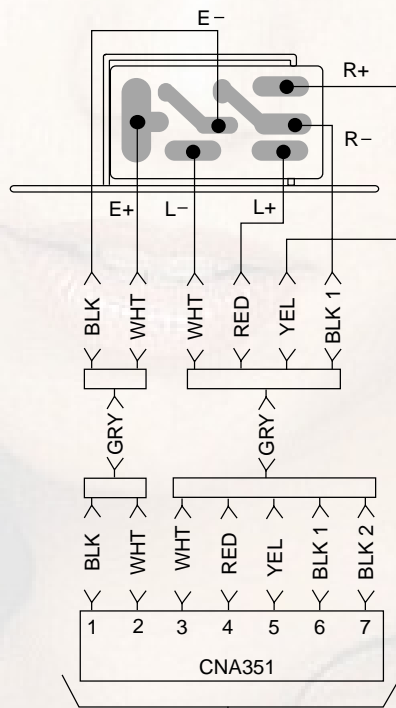
WIRING -5/5 (DECK)

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
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DECK C.B



DECK  
R / P HEAD



TO MAIN C.B  
CN351

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VOLTAGE CHART -1/3

COMMON PARTS

Unit : V

TRANSISTOR							
MAIN C.B	B	C	E	FRONT/CD C.B	B	C	E
Q106 2SC2712	0	0	0	Q310 2SC2712	0.67	0.09	0.01
Q105 2SA1979	-26.8	-33.5	-25.2	Q104 2SC2712	0.58	11.27	0.01
Q263 2SA1162	-0.74	0.91	0.26	Q109 2SC2712	0.59	0.58	0
Q262 2SC2712	-0.75	0	0	Q306 RTIP141E	0.09	5.11	5.14
Q112 2SC2712	0.63	1.05	0	Q301 2DTC114EK	5.22	0.06	0.1
Q102 2SC5343	0.72	17.25	0.11	Q314 2SA1980	11.46	5.88	12.15
Q216 2SC2712	-1.8	0	0	Q302 2SA1296	12.14	1.36	12.15
Q863 2SC2712	0	0	0	Q303 2SA1296	1.46	0	1.5
Q861 2SC2712	0	0	0	Q501 2SA1162	3.59	1.86	4.32
Q110 2SA1162	0	-0.65	0	Q581 2SA1981	5.36	4.9	6.07
Q109 2SC2712	0	0.66	0				
Q108 2SA1162	-0.65	0	0				
Q107 2SC2712	0.66	0.02	0				
Q207 2SC2712	-18.24	-17.95	-18.85				
Q205 2SC2712	-18.21	-17.6	-18.82				
Q201 2SA1162	0.03	-17.63	0.63				
Q203 2SA1162	0.03	-17.89	0.63				
Q208 2SC2712	-18.56	-18.25	-19.22				
Q204 2SA1162	0.03	-18.03	0.63				
Q202 2SA1162	0.03	-17.74	0.63				
Q223 2SC2712	-0.46	1.03	-0.46				
Q215 2SC1162	0	-19.23	0				
Q225 2SC2712	0.06	1.03	-0.46				
Q104 2SA1980	1.03	18.25	0				
Q103 2SC3052	5.78	11.45	5.27				
Q456 DTC114E	4.86	0.03	0				
Q457 2SA1926	11.4	12.08	12.15				
Q220 2SC5343	-18.61	-1.12	-19.21				
Q210 2SC5343	-18.65	1.03	-18.10				
Q206 2SC2712	-18.62	-18.07	-19.26				
Q221 2SC5343	-18.76	-1.14	-19.34				
Q219 2SC5343	-18.76	-1.13	-19.26				
Q209 2SC5343	-18.16	1.03	-18.7				
Q226 2SC8712	-0.46	1.03	-1.12				
Q224 2SC2712	0.06	1.03	-0.45				
Q222 2SC5343	-18.65	-1.12	-19.25				
Q217 2SA1980	10.85	-19.28	10.86				
Q218 2SC2712	-19.47	10.58	-19.47				
Q216 2SA1162	0	-19.28	0				

MAIN C.B	INT	OUT	ADJ
IC 102 (NJM7806 )	12.08	6.09	0

IC601 (BD3881 FV )	(Pin)	1	2	3	4	5	6	7	8	9	10	11
	(V)	0	0	0	0	0	0	0	0	0	0	0
	(Pin)	12	13	14	15	16	17	18	19	20	21	22
	(V)	4.76	0.14	4.92	0	0	0	0	0	0	0	0
	(Pin)	23	24	25	26	27	28	29	30	31	32	33
	(V)	0	0	0	0	0	0					

# VOLTAGE CHART -2/3

## FRONT/CD C.B

Unit : V

IC301 LC876748 A	(Pin)	1	2	3	4	5	6	7	8	9	10	11
	(V)	4.37	0.02	5.26	1.15	4.82	0.23	0	0	1.34	0	5.03
	(Pin)	12	13	14	15	16	17	18	19	20	21	22
	(V)	2.45	5.14	0	2.43	5.19	5.19	3.39	2.7	0	0	5.15
	(Pin)	23	24	25	26	27	28	29	30	31	32	33
	(V)	5.15	0	0	1.99	0	0.06	4.98	0	0	0	0
	(Pin)	34	35	36	37	38	39	40	41	42	43	44
	(V)	0	0	0	-22.7	-22.5	-22.4	-22.3	-22.4	-22.4	-22.4	-22.4
	(Pin)	45	46	47	48	49	50	51	52	53	54	55
	(V)	-18	5.19	5.57	-18.2	-22.1	-22.6	-26	-18.2	-18.1	-12.3	-9.19
	(Pin)	56	57	58	59	60	61	62	63	64	65	66
	(V)	-8.9	18.19	-22	-25.8	-18	-25.8	-25.8	-25.8	-25.8	-25.8	0
	(Pin)	67	68	69	70	71	72	73	74	75	76	77
	(V)	4.9	2.48	0	4.93	5.19	0	0	0	0	0	0
	(Pin)	78	79	80	81	82	83	84	85	86	87	88
	(V)	0	0	0	0	0	0	0	0	0.05	0	0
	(Pin)	89	90	91	92	93	94	95	96	97	98	99
	(V)	0	5.27	0.12	0	0	2.22	0	0	0.04	5.19	5.28
	(Pin)	100										
	(V)	5.22										

## TAPE SECTION

	B	C	E		B	C	E
Q309 2SA1162	0.28	0	0	Q305 2SK2158	0	0	2.22
Q310 2SA1162	0.28	0	0	Q307 2SK2158	0	0	2.22
Q306 DTA124EU A	0	2.55	2.56	Q308 2SK2158	0	0	2.18
Q304 DTA124EU A	0	2.55	2.56				

## RECORD SECTION

	B	C	E		B	C	E
Q452 2SC2712	0.32	0.12	0	Q450 2SC3052	0.84	0.23	0.23
Q453 2SC5343	12.14	12.15	11.92				
Q454 2SC5343	12.06	12.15	11.92				

## CD SECTION

IC501 LA9241ML	(Pin)	1	2	3	4	5	6	7	8	9
	(V)	2.5	2.5	2.53	2.54	2.51	2.51	2.51	2.52	2.51
	(Pin)	10	11	12	13	14	15	16	17	18
	(V)	2.5	2.5	2.5	2.47	2.52	2.5	2.8	2.51	2.42
	(Pin)	19	20	21	22	23	24	25	26	27
	(V)	2.51	2.57	2.51	0	0.94	2.49	2.44	2.52	2.59
	(Pin)	28	29	30	31	32	33	34	35	36
	(V)	2.51	2.58	2.4	2.32	0.06	0.06	4.79	0.06	1.07
	(Pin)	37	38	39	40	41	42	43	44	45
	(V)	0.04	0.6	0.06	0.29	2.18	2.4	2.43	2.5	0
	(Pin)	46	47	48	49	50	51	52	53	54
	(V)	2.51	2.51	0	0.04	2.32	4.3	5.24	0	4.82
	(Pin)	55	56	57	58	59	60	61	62	63
	(V)	0	4.91	2.51	2.51	2.32	2.34	2.06	3.57	1.36
	(Pin)	64								
	(V)	2.86								

VOLTAGE CHART -3/3

Unit : V

IC851 LC78622NE	(Pin)	1	2	3	4	5	6	7	8	9
	(V)	0.05	0.03	1.64	0	1.85	4.87	0.09	0	25
	(Pin)	10	11	12	13	14	15	16	17	18
	(V)	2.37	0	0	0	4.87	0.03	1.15	0.06	4.79
	(Pin)	19	20	21	22	23	24	25	26	27
	(V)	0.06	0.06	2.34	4.74	4.8	0.06	0.06	0.6	4.75
	(Pin)	28	29	30	31	32	33	34	35	36
	(V)	0.05	0.05	0.05	2.41	0	0	0	0.05	4.72
	(Pin)	37	38	39	40	41	42	43	44	45
	(V)	1.91	0	0	1.92	4.72	0	4.8	1.98	2.05
	(Pin)	46	47	48	49	50	51	52	53	54
	(V)	0	0.13	0.04	0.14	2.4	0	2.4	1.4	0
	(Pin)	55	56	57	58	59	60	61	62	63
	(V)	0.32	5.24	4.19	4.74	0	1.86	2.23	0	0
	(Pin)	64								
	(V)	0								
IC581 BA5949FP	(Pin)	1	2	3	4	5	6	7	8	9
	(V)	2.2	2.99	2.52	5.31	4.92	5.46	0	2.52	0
	(Pin)	10	11	12	13	14	15	16	17	18
	(V)	2.88	2.23	0	2.52	2.51	2.48	0	0	2.52
	(Pin)	19	20	21	22	23	24	25	26	27
	(V)	5.75	5.7	2.51	2.51	2.58	2.55	0		

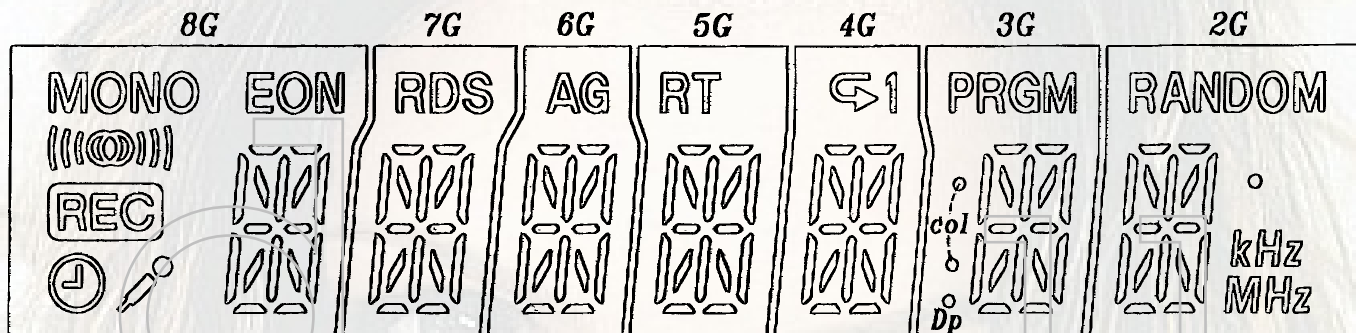
TUNER SECTION

	B	C	E		B	C	E
Q111 2SD1307	17.7	12.15	0	Q216 2SA1162	0	-19.28	0
Q213 2SB1342	-1.12	-19.3	0	Q981 2SA1980	11.38	8.28	12.2
Q212 2SD1933	1.02	-18.25	0	Q982 2SC3052	5.29	11.38	4.72
Q222 2SB1342	-1.12	-19.3	0	Q983 2SC3052	5.32	8.28	4.73
Q211 2SD1933	1.03	-18.25	0	Q835 2SC2714	0.02	6.4	3.98
Q215 2SA1162	0	-19.23	0	Q951 KRA102	0.69	8.2	8.27
Q905 2SC2620	0.95	6.07	0.2	Q952 2SD1306	0.7	0	0
Q904 2SC2620	3.33	5.76	2.64	Q836 2SA2207	0.94	8.13	8.27
Q903 2SC2620	0.73	5.83	0	Q948 2SD1306	0.74	0	0
Q902 2SC2620	0.66	8.13	0				
FET	2	1	3				
Q953 2SK360	0.61	0	8.28				
Q901 2SK360	0	0	6.32				

IC 991 (LC72131)	(Pin)	1	2	3	4	5	6	7	8	9
	(V)	2.63	0	0	0.14	0.02	5.88	2.05	8.27	0.04
	(Pin)	10	11	12	13	14	15	16	17	18
	(V)	0.03	0.02	0	8.25	0.04	0	2.68	5.55	0.97
	(Pin)	19	20	21	22	23	24	25	26	27
	(V)	0.97	1.73	0	2.63					

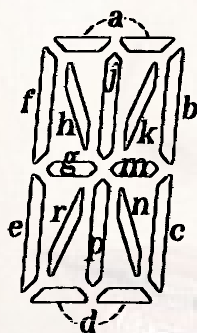
IC801 (LA1845N-A)	(Pin)	1	2	3	4	5	6	7	8	9
	(V)	2.32	8.27	2.32	2.31	0	8.26	7.78	8.72	8.72
	(Pin)	10	11	12	13	14	15	16	17	18
	(V)	0.44	7.18	7.25	3.52	3.48	0	2.32	2.07	2.6
	(Pin)	19	20	21	22	23	24	25	26	27
	(V)	0	1.93	2.78	2.78	8.27	6.73			

GRID ASSIGNMENT



1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20.

1G

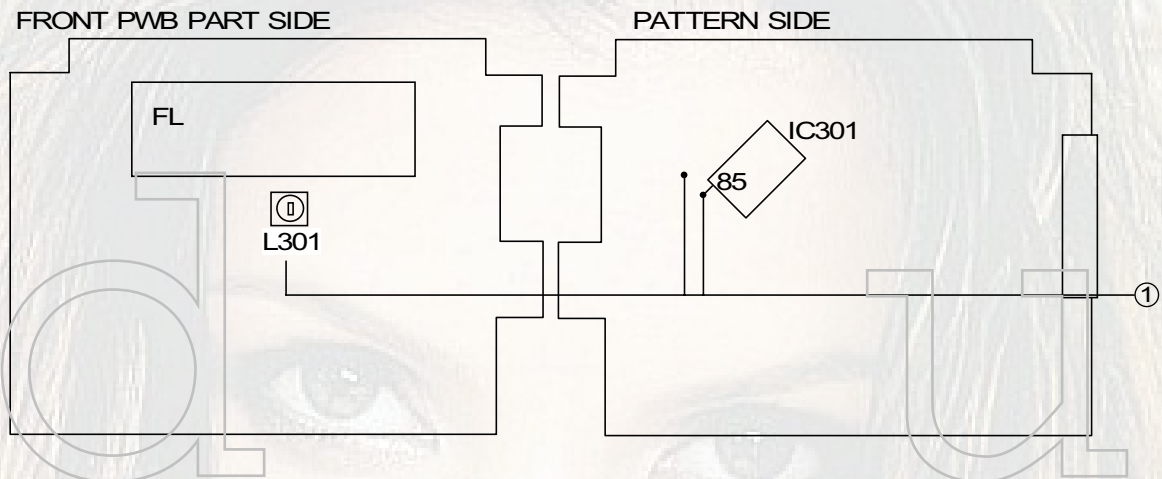


(8G-2G)

ANODE CONNECTION

|     | 8G    | 7G  | 6G | 5G | 4G | 3G   | 2G     | 1G  |
|-----|-------|-----|----|----|----|------|--------|-----|
| P1  | a     | a   | a  | a  | a  | a    | a      | 1.  |
| P2  | b     | b   | b  | b  | b  | b    | b      | 2.  |
| P3  | f     | f   | f  | f  | f  | f    | f      | 3.  |
| P4  | h     | h   | h  | h  | h  | h    | h      | 4.  |
| P5  | j     | j   | j  | j  | j  | j    | j      | 5.  |
| P6  | k     | k   | k  | k  | k  | k    | k      | 6.  |
| P7  | m     | m   | m  | m  | m  | m    | m      | 7.  |
| P8  | g     | g   | g  | g  | g  | g    | g      | 8.  |
| P9  | c     | c   | c  | c  | c  | c    | c      | 9.  |
| P10 | e     | e   | e  | e  | e  | e    | e      | 10. |
| P11 | r     | r   | r  | r  | r  | r    | r      | 11. |
| P12 | p     | p   | p  | p  | p  | p    | p      | 12. |
| P13 | n     | n   | n  | n  | n  | n    | n      | 13. |
| P14 | d     | d   | d  | d  | d  | d    | d      | 14. |
| P15 | EON   | RDS | AG | RT | 1  | PRGM | RANDOM | 15. |
| P16 | MONO  | -   | -  | -  | ↶  | col  | ○      | 16. |
| P17 | (MON) | -   | -  | -  | -  | Dp   | kHz    | 17. |
| P18 | REC   | -   | -  | -  | -  | -    | MHz    | 18. |
| P19 | 🕒     | -   | -  | -  | -  | -    | -      | 19. |
| P20 | 🔧     | -   | -  | -  | -  | -    | -      | 20. |

## ELECTRICAL ADJUSTMENT -1/8



### 1. Clock Adjustment

#### Requirements

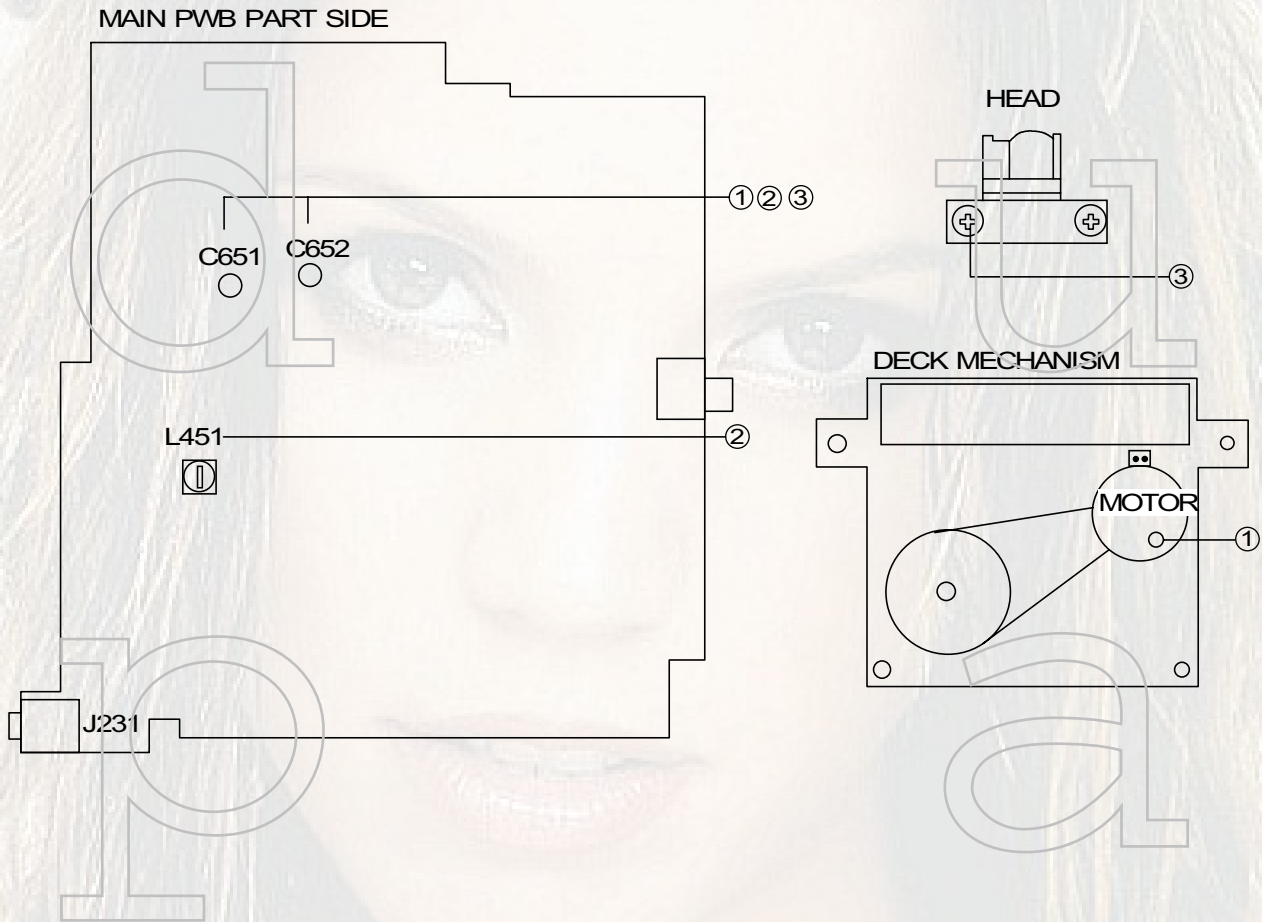
Test point: TP1(IC301 85pin), GND

Adjustment point: L301

- 1) While pressing and holding down the POWER button and the TUNER / BAND button, insert the AC plug to outlet.
- 2) Adjust L301 so that the oscilloscope indicates the frequency within  $297.99 \pm 0.3\text{Hz}$ .

# ELECTRICAL ADJUSTMENT -2/8

## DECK ADJUSTMENT



### 1. Tape Speed Adjustment

#### Requirements

Measuring equipments : wow-flutter meter (frequency counter )

Test Tape: TTA-100 (3KHz)

Test point: C651(Lch),C652(Rch),GND

Adjustment point : Tape speed adjustment point (motor)

- 1) Connect Test point to the Wow - flutter meter.
- 2) Insert the test tape (TTA-100), play back center of the tape and adjust the motor until it becomes 3,000Hz +3 / -2%.

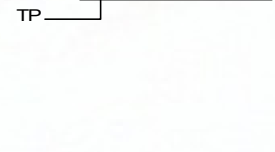
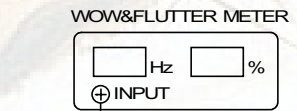
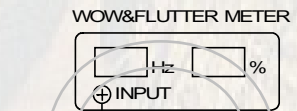
### 2. Wow – Flutter Check

#### Requirements

Test tape: TTA-100 (3KHz)

Test point: C651(Lch),C652(Rch),GND

- 1) Connect the Test point to the Wow – flutter meter.
- 2) Set the indicator to JIS and the mode to W RMS (WTD) of the Wow - flutter meter.
- 3) Play back the center of the test tape (TTA-100) and check that it is below 0.25%.



## ELECTRICAL ADJUSTMENT -3/8

### 3. Head Azimuth Adjustment

#### Requirements

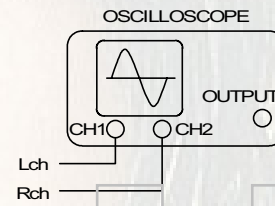
Measuring equipment: Oscilloscope

Test Tape: TTA-330 (8KHz)

Test point: C651(Lch),C652(Rch),GND

Adjustment point: Head azimuth screw

- 1) Connect the Test point to the oscilloscope of CH1 and CH2.
- 2) Set the V mode of the oscilloscope to ADD.
- 3) Insert the test tape (TTA-330), play back the center of the tape and adjustment the head azimuth screw until the waveform of the oscilloscope has reached the maximum when playing back at 10KHz.
- 4) After the adjustment, bond lock (1600B) the screw.



### 4. REC. Bias Frequency Adjustment

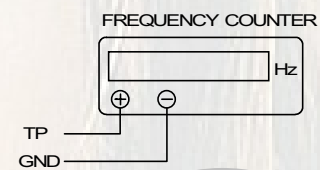
#### Requirement

Measuring equipment: frequency counter

Test point: L451 6pin, GND

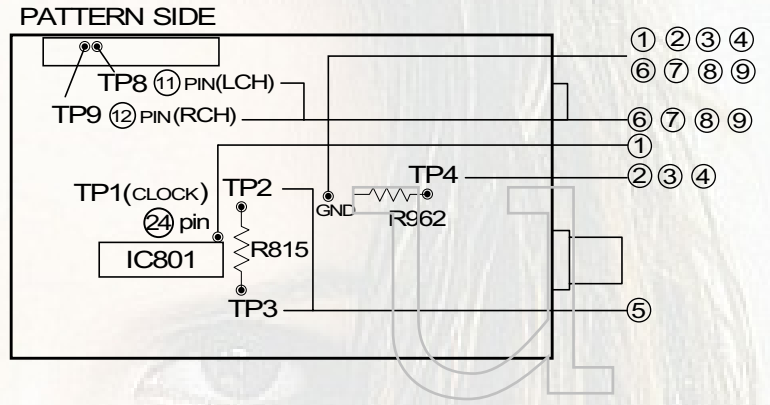
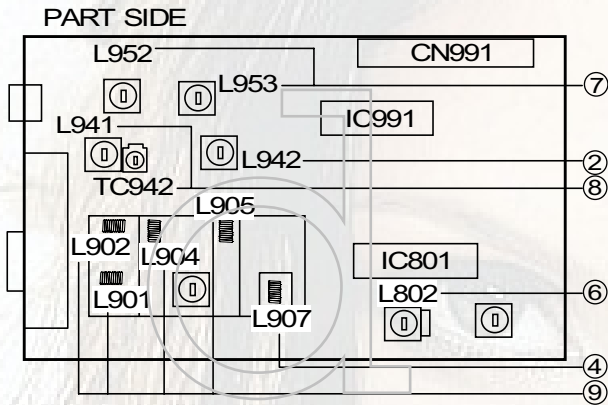
Adjustment point: L451

- 1) Connect the JW38 to the frequency counter.
- 2) Set the recording condition to the main unit.
- 3) Adjust the L451 until it becomes 85KHz $\pm$ 0.5KHz.



# ELECTRICAL ADJUSTMENT -4/8

## TUNER ADJUSTMENT



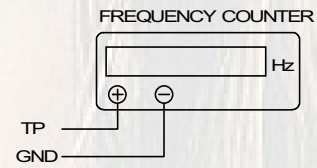
### 1. Clock Check

#### Requirements

Measuring equipment: Frequency counter

Test point: TP1 (CLOCK), GND

- 1) Adjust the reception frequency of the main unit to 1710KHz.
- 2) Check that the test point frequency is  $2160 \pm 0.045$  KHz.



### 2. Vt Adjustment (LW)

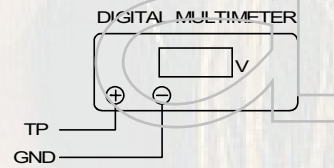
#### Requirement

Measuring equipment: Digital multi-meter

Test point: TP4 (R962), GND

Adjustment point: L942

- 1) Adjust the reception frequency of the main unit to 144KHz.
- 2) Adjust L942 until the test point voltage (VT) is  $1.3V \pm 0.05V$ .



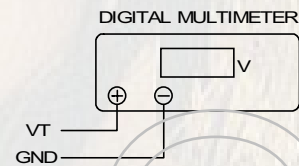
### 3. Vt Check (MW)

#### Requirement

Measuring equipment: Digital multi-meter

Test point: TP4 (R962), GND

- 1) Adjust the reception frequency of the main unit to 531KHz.
- 2) Check that the test point (VT) voltage is about 0.5V.
- 3) Adjust the reception frequency of the main unit to 1602KHz.
- 4) Check that the test point (VT) voltage is below 8.0V.



### 4. Vt Adjustment (FM)

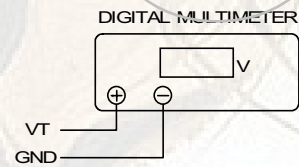
#### Requirement

Measuring equipment: Digital multi-meter

Test point: TP4 (R962), GND

Adjustment point: L907

- 1) Adjust the reception frequency of the main unit to 108.0MHz.
- 2) Adjust L907 until the test point voltage (VT) is  $7.0V \pm 0.1V$ .
- 3) Adjust the reception frequency of the main unit to 87.5MHz.
- 4) Check that the test point (VT) voltage is about 0.5V.





## ELECTRICAL ADJUSTMENT -5/8

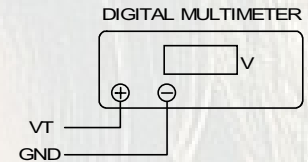
### 5. Dc Balance Check

#### Requirement

Measuring equipment: Digital multi-meter

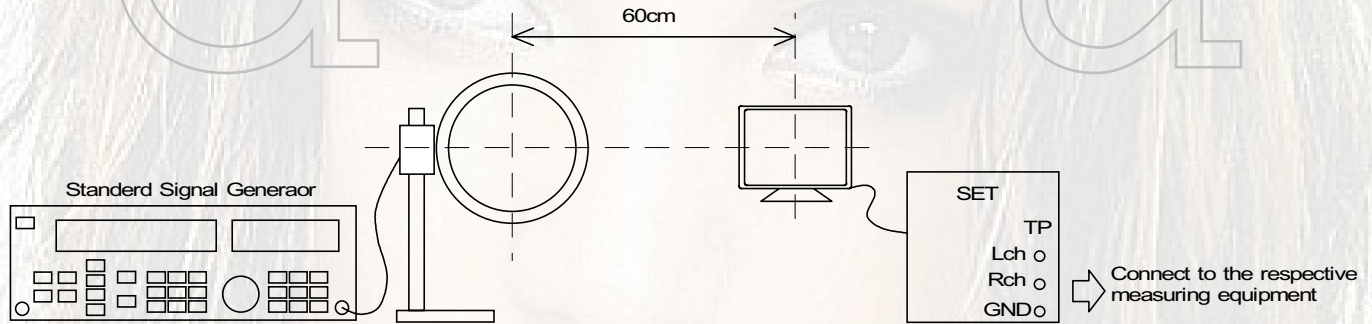
Test point: TP2, 3

- 1) Adjust the reception frequency of the main unit to 98.0MHz.
- 2) Check that the test point voltage difference between TP4 and TP5 is  $0mV \pm 500mV$ .



### <LW / MW ADJUSTMENT>

For LW / MW adjustment, do wiring and connection as in the following.



### 6. If Adjustment (MW)

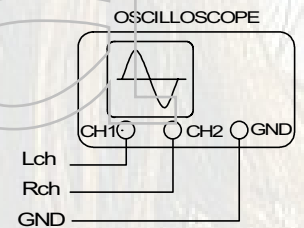
#### Requirement

Measuring equipment: Oscilloscope or Millivoltmeter

Test point: TP8(Lch), TP9(Rch), GND

Adjustment point: L802

- 1) Adjust the setting of Standard Signal Generator (hereinafter S.S.G.) to 999KHz of 30% variation.
- 2) Adjust the receiving frequency of the main unit at 999KHz.
- 3) While looking at the waveform on the oscilloscope, reduce the output level all the way (till a certain degree of is monitored through the oscilloscope).
- 4) Adjust L802 until the waveform of the oscilloscope reaches the maximum.



### 7. Tracking Adjustment (MW)

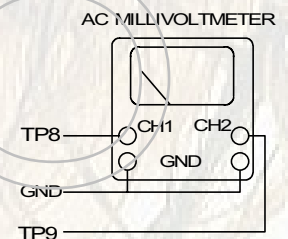
#### Requirement

Measuring equipment: Millivoltmeter

Test point: TP8(Lch), TP9(Rch), GND

Adjustment point: L952, L953

- 1) Adjust the S.S.G. setting to 999KHz of 30% variation and reduce the output level all the way (till a certain degree of is monitored through the oscilloscope).
- 2) Adjust the reception frequency of the main unit to 999KHz.
- 3) Adjust L952 until the value of the millivoltmeter reaches the maximum.
- 4) Adjust the S.S.G. setting to 603KHz of 30% variation and reduce the output level all the way (till a certain degree of is monitored through the oscilloscope).
- 5) Adjust the reception frequency of the main unit to 603KHz.
- 6) Adjust L953 until the value of the millivoltmeter reaches the maximum.
- 7) Repeat the adjustment 2 or 3 times from step 1 to 6 above.



## ELECTRICAL ADJUSTMENT -6/8

### 8. Tracking Adjustment (LW)

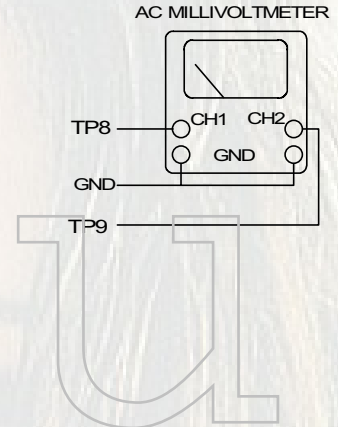
#### Requirement

Measuring equipment: Millivoltmeter

Test point: TP8(Lch), TP9(Rch), GND

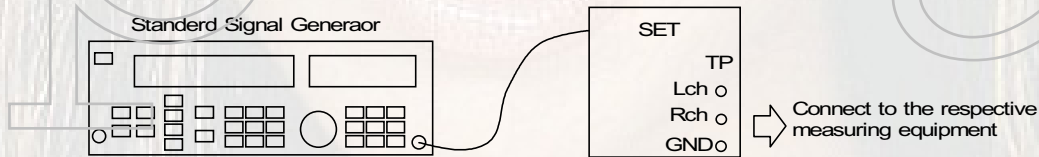
Adjustment point: L941, TC942

- 1) Adjust the S.S.G. setting to 144KHz of 30% variation and reduce the output level all the way (till a certain degree of is monitored through the oscilloscope).
- 2) Adjust the reception frequency of the main unit to 144KHz.
- 3) Adjust L941 until the value of the millivoltmeter reaches the maximum.
- 4) Adjust the S.S.G. setting to 290KHz of 30% variation and reduce the output level all the way (till a certain degree of is monitored through the oscilloscope).
- 5) Adjust the reception frequency of the main unit to 290KHz.
- 6) Adjust TC942 until the value of the milivoltmeter reaches the maximum.
- 7) Repeat the adjustment 2 or 3 times from step 1 to 6 above.



### <FM ADJUSTMENT>

For adjusting FM, do wiring function and connection as in the following.



### 9. Tracking Adjustment

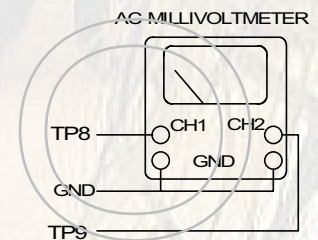
#### Requirement

Measuring equipment: millivoltmeter

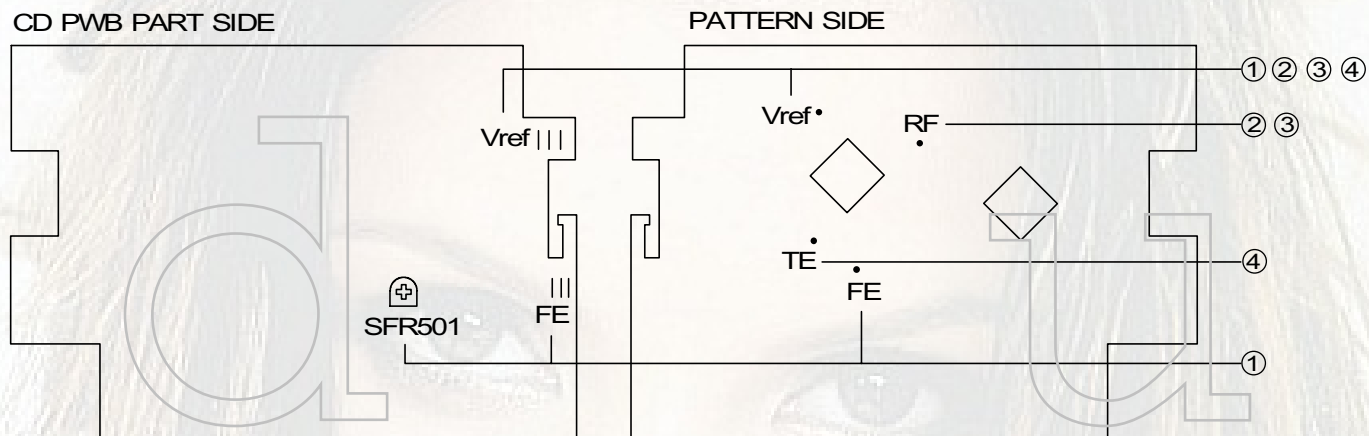
Test point: TP8(Lch), TP9(Rch), GND

Adjustment point: L905, L904, L902, L901

- 1) Adjust the S.S.G. setting to 144KHz of 30% variation and reduce the output level all the way (till a certain degree of is monitored through the oscilloscope).
- 2) Adjust L905 > L904 > L902 > L901 until the value of the milivoltmeter reaches the maximum.
- 3) Adjust L901 > L902 > L904 > L905 until the value of the milivoltmeter reaches the maximum.
- 4) Repeat the adjustment 2 or 3 times from step 2 to 3 above.



**CD CHECK**



Perform the adjustments after the main unit enters the test mode.

Place the CD mechanism on level ground.

Equipment and tools required

Measuring equipment

Digital multi-meter

Jitter meter (KIKUSUI 6235)

Test disc: TCD-782

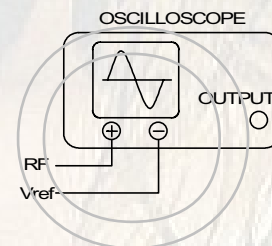
ATD-001

**1. Focus Offset Adjustment**

- 1) Connect a digital multimeter to the FE and Vref.
- 2) Playback the second track of the TCD-782.
- 3) Adjust SFR501 until the digital multimeter indicates  $20 \pm 5\text{mV}$ .

**2. Rf Waveform Check**

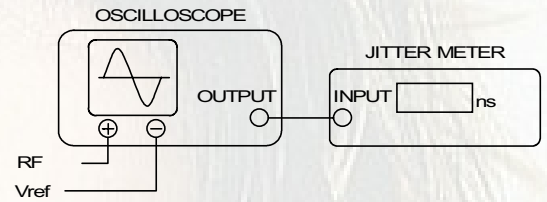
- 1) Connect oscilloscope to the test point RF and Vref.
- 2) Playback the 2<sup>nd</sup> track of TCD-782.
- 3) Check that the RF waveform has the maximum amplitude and the center of the wedge waveform has the clear blank.



## ELECTRICAL ADJUSTMENT -8/8

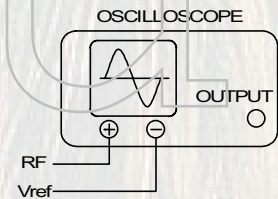
### 3. Jitter Check

- 1) While oscilloscope is kept connected in the same test point as in step2. RF WAVEFORM CHECK, connect the output terminal of an oscilloscope to the input terminal of the jitter meter.
- 2) Set the VOLT range selector of oscilloscope to 500mV range or below.
- 3) Play back 2<sup>nd</sup> track of TCD-782.
- 4) Check that jitter meter indicates 28.0ns or less.



### 4. Tracking Balance Check

- 1) Connect the TE and Vref to the oscilloscope.
- 2) Playback the second track of TCD-782 and press the PAUSE button.
- 3) Check that the traverse waveforms of oscilloscope are up and down symmetrical.



### 5. Play Ability Check

- 1) Play back the 3<sup>rd</sup>, 8<sup>th</sup> and 13<sup>th</sup> track of ATD-001. Check that the noise does not occur sound skipping does not occur.

## CD TEST MODE -1/1

### 1. How to Start the CD Test Mode

While pressing the CD OPEN/CLOSE button, insert the AC plug to the power outlet.  
When the test mode is started, the message [TEST] is displayed.

### 2. How to Exit the CD Test Mode

Press the POWER button, push other FUNCTION button or disconnect the AC plug.

### 3. Function Descriptions and Application of the CD Test Mode

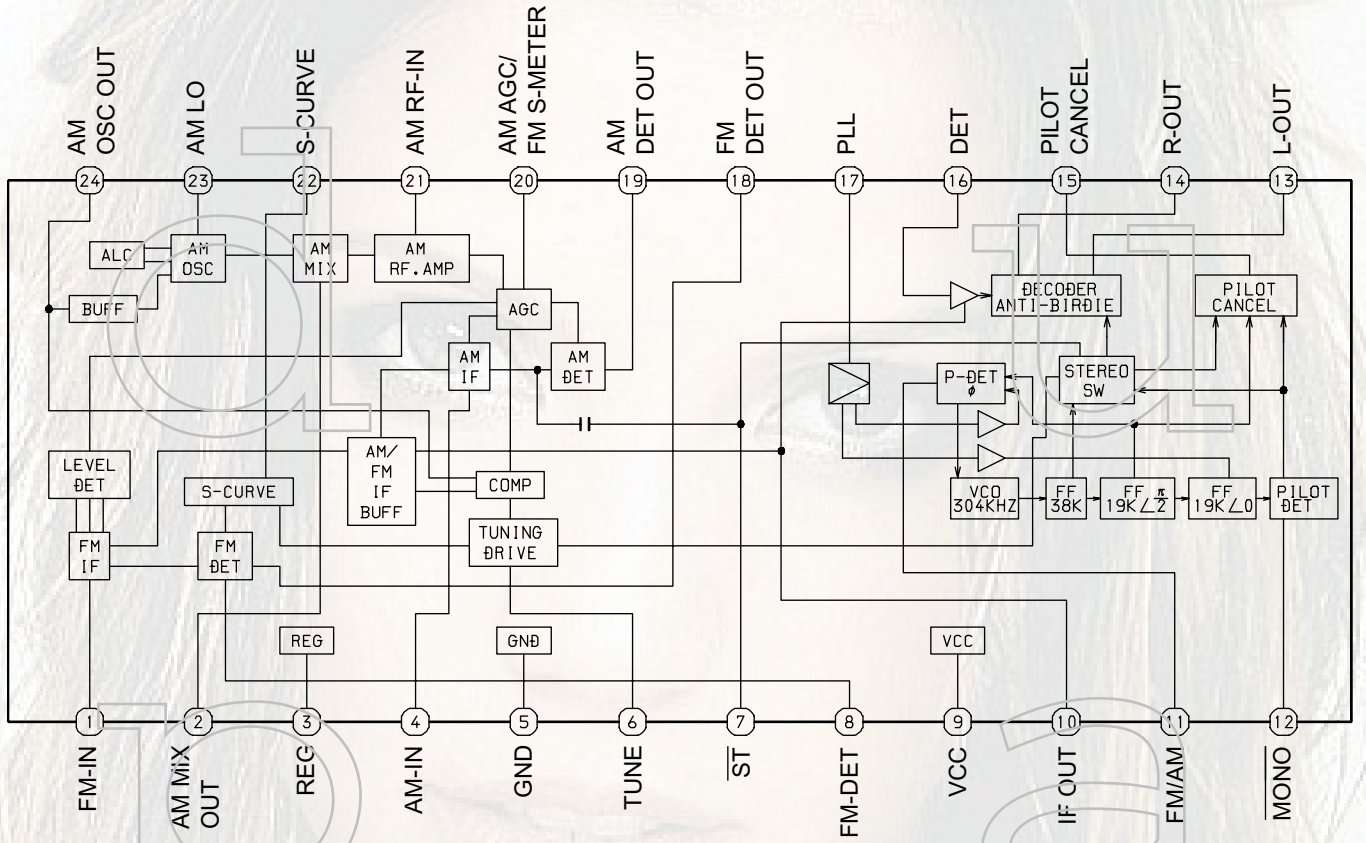
| No | Mode          | Operation    | Display              | Function   | Checking item  |
|----|---------------|--------------|----------------------|--|--|
| 1  | Start mode    |              | All indicators light | <ul style="list-style-type: none"><li>All FL indicators light</li></ul>  | <ul style="list-style-type: none"><li>FL check</li><li>Microprocessor check</li></ul>  |
| 2  | Search mode   | STOP button  | READING              | <ul style="list-style-type: none"><li>LD illuminates all the time</li><li>Focus search continuous operations *1,*2</li><li>Spindle motor continuous kick</li></ul> | <ul style="list-style-type: none"><li>APC circuit check</li><li>Laser current measurement</li><li>Focus search waveform check</li><li>Focus error waveform check (FOK in the search mode is ignored)</li></ul> |
| 3  | Play mode     | Play button  | Normal               | <ul style="list-style-type: none"><li>Normal playback</li><li>If TOC cannot be read, focus search is continued</li></ul>   | <ul style="list-style-type: none"><li>Each servo circuit is checked</li><li>FOK check</li><li>RF waveform check (About 1.1Vp-p)</li></ul>  |
| 4  | Traverse mode | PAUSE button | Normal               | <ul style="list-style-type: none"><li>Tracking servo OFF/ON</li><li>Each time PAUSE button is pressed, the tracking servo repeats turning OFF/ON</li></ul>         | <ul style="list-style-type: none"><li>Tracking balance check</li></ul>   |

\*1: The driver IC heats up and the protection circuit starts working when the focus search is continued for 10 minutes or longer. There can be a case that operations can not be performed correctly. In such a case, turn off the main power. After cooling down the machine, restart the machine.

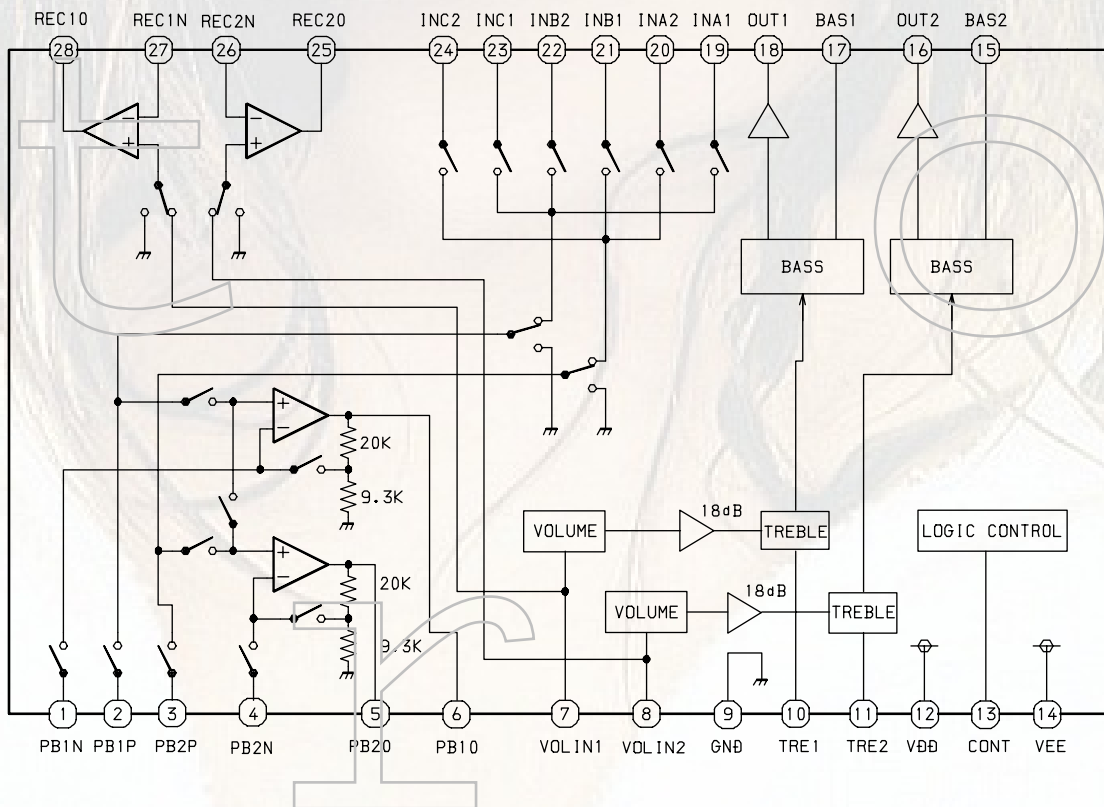
\*2: After the focus search is executed three times, the gain is changed to the CD-RW gain from the fourth time.

IC BLOCK DIAGRAM -1/2

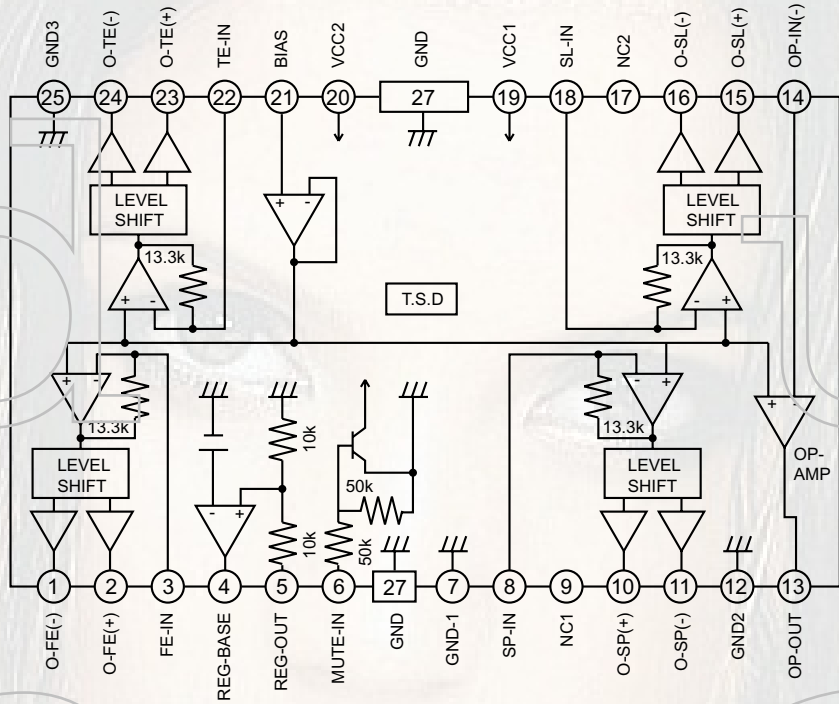
IC,LA1845N-A



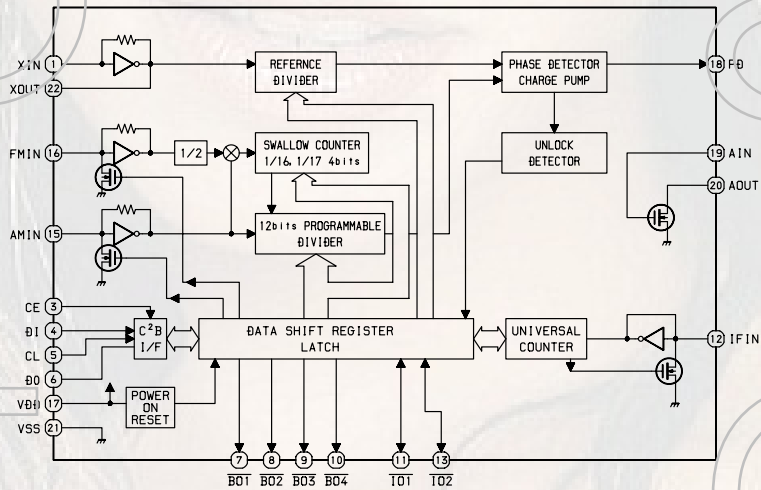
IC,BD3881FV



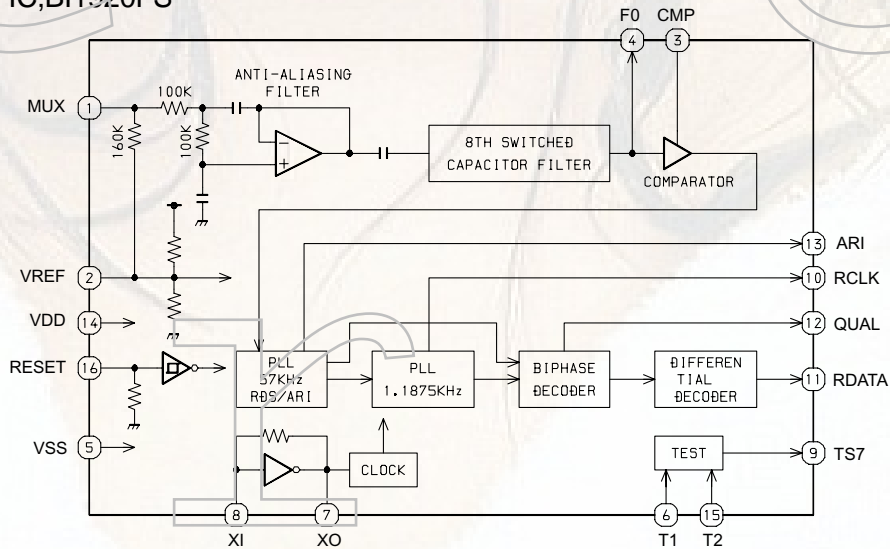
IC,BA5949FP



IC,LC72131D-N



IC,BI1920FS



IC DESCRIPTION-1/3 (LC876748A-5Z32)-1/2

| Pin No. | Pin Name        | I/O/C/P | Description   |
|---------|-----------------|---------|---|
| 1       | O-COCK          | O       | CD control Q code clock signal output.                  |
| 2       | O-RWC           | O       | CD control command LAT signal output.                   |
| 3       | O-CDIN          | O       | CD control command data signal output.                  |
| 4       | I-WRQ           | I       | CD control SCOR signal input.                           |
| 5       | I-DRF           | I       | CD control focus ok input.                              |
| 6       | I-SQOUT         | I       | CD control Q code input.                                |
| 7       | NC              | O       | NC  |
| 8       | O-MOTOR         | O       | Motor control output.                                   |
| 9       | O-SOL           | O       | Cass. Play control signal output.                       |
| 10      | O-CLOCK_SHIFT   | O       | Clock shift output for micro-computer when using tuner. |
| 11      | I-RESET         | I       | Reset input for MICON.                                  |
| 12      | NC              | —       | NC  |
| 13      | O-DECK          | O       | Deck control output.                                    |
| 14      | VSS1            | —       | Connect to GND.   |
| 15      | XIN             | —       | Main clock input 9.43MHz.                               |
| 16      | XOUT            | —       | Main clock.   |
| 17      | VDD1            | —       | Digital power supply pin.                               |
| 18      | I-HOLD          | I       | Hold input.   |
| 19      | I-VOL           | I       | Volume control input.                                   |
| 20      | NC              | —       | NC  |
| 21      | I-SW-TP         | I       | Deck meahanism SW AD input.                             |
| 22-23   | I-KEY2 - I-KEY1 | I       | Key AD input 1-2.                                       |
| 24      | I-CDTSW         | I       | CD mecha. Switch input.                                 |
| 25      | NC              | I       | NC  |
| 26      | I-AS            | I       | Cass. Deck AS switch signal input.                      |
| 27      | NC              | —       | Not use.  |
| 28      | I-RDCL          | I       | Not use.  |
| 29      | I-RMC           | I       | System Remote control signal input.                     |
| 30      | NC              | —       | Not use.  |
| 31      | NC              | —       | Not use.  |
| 32-36   | NC              | —       | Not use.  |
| 37-44   | O-G1 - O-G8     | O       | VFD driver control data signal output.                  |
| 45      | O-P1            | O       | VFD driver control data signal output.                  |
| 46      | VDD3            | —       | Digital power supply pin.                               |
| 47-50   | O-P2 - O-P5     | O       | VFD driver control data signal output.                  |
| 51      | VEE             | —       | Connect to GND.   |
| 52-66   | O-P6 - O-P20    | O       | VFD driver control data signal output.                  |
| 67      | I-FMW           | I       | FM selection initialisation resistor connect.           |
| 68      | I-LW            | I       | LM selection initialisation resistor connect.           |
| 69      | NC              | —       | Not use.  |
| 70      | I-AM10K         | I       | AM(10k) selection initialisation resistor connect.      |



IC DESCRIPTION-1/3 (LC876748A-5Z32)-2/2

| Pin No. | Pin Name  | I/O/CP | Description                                     |
|---------|-----------|--------|---|
| 71      | I-RDS     | I      | Not use.  |
| 72      | VDD4      | —      | Digital power supply pin.                       |
| 73      | D-VDD     | —      | Not use.  |
| 74      | EZK-VDD   | —      | Not use.  |
| 75      | IN-ECO    | I      | Not use.  |
| 76-84   | NC        | —      | Not use.  |
| 85      | KSCAN     | I/O    | Initial scan I/P.                               |
| 86      | O-MUTE    | O      | Mute signal output.                             |
| 87      | O-BIAS    | O      | Bias ON/OFF output.                             |
| 88      | O-TU-ON   | O      | Tuner power supply ON/OFF output.               |
| 89      | AVSS      | —      | Connect to GND.                                 |
| 90      | VDD2      | —      | Digital power supply pin.                       |
| 91      | I-RDDA    | I      | Not use.  |
| 92      | I-ST      | I      | Stereo/Mono control signal input.               |
| 93      | I-TU/IFC  | I      | Tuner SD detection input /Tuner IF count input. |
| 94      | I-TMBASE  | I      | Reference clock input for timer switch.         |
| 95      | O-PLLCE   | O      | Tuner PLL IC chip enable output.                |
| 96      | O-PLL CLK | O      | PLL IC clock putput.                            |
| 97      | O-MA DATA | O      | BD3881FP (VOL & FUNC) control data output.      |
| 98      | O-REC     | O      | Cass. Deck Rec/Play control output.             |
| 99      | O-POWER   | O      | Power control ON/OFF output.                    |
| 100     | CD-ON     | O      | CD Power Supply ON/OFF output.                  |

# IC DESCRIPTION-2/3 (LC78622NE)-1/2

| Pin No. | Pin Name     | I/O | Description   |  |
|---------|--------------|-----|---|--|
| 1       | DEFI         | I   | Defect sense signal (DEF) input pin. (Connect to 0V when not used)  |  |
| 2       | TAI          | I   | For PLL.  | Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.  |
| 3       | PDO          | O   |   | Phase comparator output pin to control external VCO.   |
| 4       | VVSS         | -   |   | GND pin for built-in VCO. Be sure to connect to 0V.  |
| 5       | ISET         | I   |   | Pin to which external resistor adjusting the PDO output current.   |
| 6       | VVDD         | -   |   | Power supply pin for built-in VCO.   |
| 7       | FR           | I   |   | Pin for VCO frequency range adjustment.  |
| 8       | VSS          | -   |   | Digital system GND. Be sure to connect to 0V.  |
| 9       | EFMO         | O   | For slice level control.  | EFM signal output pin.   |
| 10      | EFMIN        | I   |   | EFM signal input pin.  |
| 11      | TEST2        | I   | Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.   |  |
| 12, 13  | CLV+, CLVD   | O   | Disc motor control output. Three level output is possible using command.  |  |
| 14      | V/P          | O   | Rough servo or phase control automatic selection monitoring output pin. Rough servo at H. Phase servo at L.   |  |
| 15      | HFL          | I   | Track detect signal input pin. Schmidt input.   |  |
| 16      | TES          | I   | Tracking error signal input pin. Schmidt input.   |  |
| 17      | TOFF         | O   | Tracking OFF output pin.  |  |
| 18      | TGL          | O   | Tracking gain selection output pin. Gain boost at L.  |  |
| 19, 20  | JP+, JPD     | O   | Track jump control signal output pin. Three level output is possible using command.   |  |
| 21      | PCK          | O   | EFM data playback clock monitoring pin 4.3218 MHz when phase is locked in.  |  |
| 22      | FSEQ         | O   | Sync signal detection output pin. H when the sync signal which is detected from EFM signal and the sync signal which is internally generated agree. (Not connected) |  |
| 23      | VDD          | -   | Digital system power supply pin.  |  |
| 24      | SL+          | I/O | General purpose input/output pin 1 to 5.  | The pin is controlled by the serial data command from microprocessor. When the pin is not used, set the pin to the input terminal and connect to 0V, or alternately set the pin to output terminal and leave the pin open. |
| 25      | SL-          | I/O |   |  |
| 26      | CONT3        | I/O |   |  |
| 27      | PUIN         | I/O |   |  |
| 28      | RW           | I/O |   |  |
| 29      | EMPH         | O   | De-emphasis monitor output pin. De-emphasis disc is being played back at H. (Not connected)   |  |
| 30      | C2F          | O   | C2 flag output pin. (Not connected)   |  |
| 31      | DOUT         | O   | DIGITAL OUT output pin. (EIAJ format)   |  |
| 32, 33  | TEST3, TEST4 | I   | Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.   |  |
| 34      | NC           | -   | Not used. Set the pin to open.  |  |
| 35      | MUTEL        | O   | L-channel 1-bit DAC.  | L-channel mute output pin. (Not connected)   |
| 36      | LVDD         | -   |   | L-channel power supply pin.  |
| 37      | LCHO         | O   |   | L-channel output pin.  |
| 38      | LVSS         | -   |   | L-channel GND. Be sure to connect to 0V.   |
| 39      | RVSS         | -   | R-channel 1-bit DAC.  | R-channel GND. Be sure to connect to 0V.   |
| 40      | RCHO         | O   |   | R-channel output pin.  |
| 41      | RVDD         | -   |   | R-channel power supply pin.  |
| 42      | MUTER        | O   |   | R-channel mute output pin. (Not connected)   |

## IC DESCRIPTION-2/3 (LC78622NE)-2/2

| Pin No. | Pin Name | I/O | Description   |
|---------|----------|-----|---|
| 43      | XVDD     | -   | Crystal oscillator power supply pin.  |
| 44      | XOUT     | O   | Pin to which external 16.9344 MHz crystal oscillator is connected.  |
| 45      | XIN      | I   |   |
| 46      | XVSS     | -   | Crystal oscillator GND pin. Be sure to connect to 0V.   |
| 47      | SBSY     | O   | Subcode block sync signal output pin. (Not connected)   |
| 48      | EFLG     | O   | C1, C2, single and dual correction monitoring pin. (Not connected)  |
| 49      | PW       | O   | Subcode P, Q, R, S, T, U and W output pin. (Not connected)  |
| 50      | SFSY     | O   | Subcode frame sync signal output pin. Falls down when subcode enters standby. (Not connected)                           |
| 51      | SBCK     | I   | Subcode read clock input pin. Schmidt input. (Be sure to connected to 0V when not in use)                               |
| 52      | FSX      | O   | Pin outputting the 7.35 kHz sync signal which is generated by dividing frequency of crystal oscillator. (Not connected) |
| 53      | WRQ      | O   | Subcode Q output standby output pin.  |
| 54      | RWC      | I   | Read/write control input pin. Schmidt input.  |
| 55      | SQOUT    | O   | Subcode Q output pin.   |
| 56      | COIN     | I   | Command input pin from microprocessor.  |
| 57      | CQCK     | I   | Command input read clock or subcode read input clock from SQOUT pin   |
| 58      | RES      | I   | LC78622 reset input pin. Set this pin to L once when the main power is turned on.                                       |
| 59      | TST11    | O   | Test signal output pin. Use this pin as open (normally L output). (Not connected)                                       |
| 60      | 16M      | O   | 16.9344 MHz output pin. (Not connected)   |
| 61      | 4.2M     | O   | 4.2336 MHz output pin.  |
| 62      | TEST5    | I   | Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.                                       |
| 63      | CS       | I   | Chip select signal input pin with built-in pull-down resistor. Be sure to connect to 0V while it is not controlling.    |
| 64      | TEST1    | I   | Test signal input pin without built-in pull-down resistor. Be sure to connect to 0V.                                    |

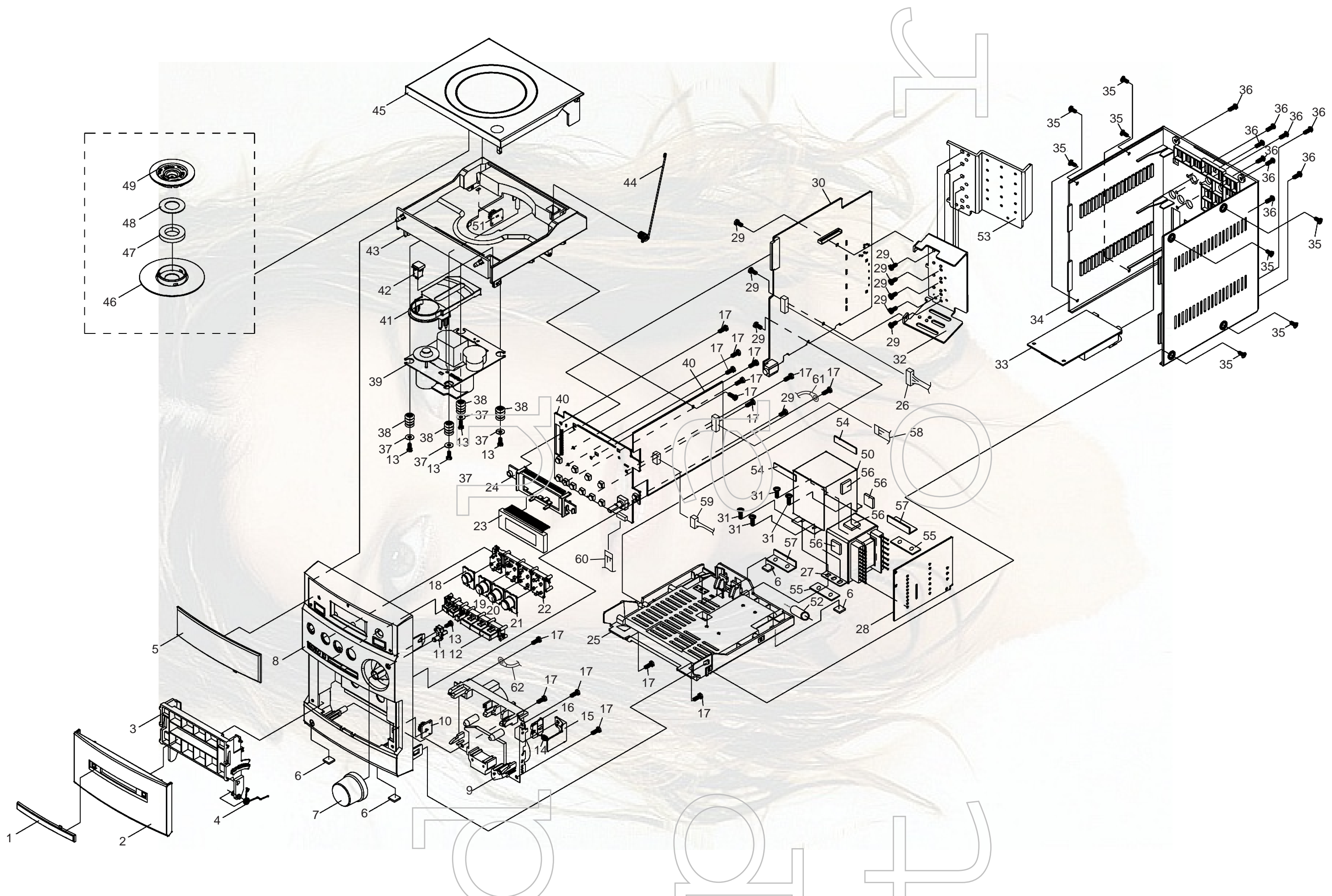
**Note:** The same potential must be applied to the respective power supply terminals. (VDD, VVDD, LVDD, RVDD, XVDD)

# IC DESCRIPTION-3/3 (LA9241ML)-1/2

| Pin No. | Pin Name | I/O | Description   |
|---------|----------|-----|---|
| 1       | FIN2     | I   | Pin to which external pickup photo diode is connected. RF signal is created by adding with the FIN1 pin signal. FE signal is created by subtracting from the FIN1 pin signal. |
| 2       | FIN1     | I   | Pin to which external pickup photo diode is connected.  |
| 3       | E        | I   | Pin to which external pickup photo diode is connected. TE signal is created by subtracting from the F pin signal.   |
| 4       | F        | I   | Pin to which external pickup photo diode is connected.  |
| 5       | TB       | I   | DC component of the TE signal is input.   |
| 6       | TED      | I   | Pin to which external resistor setting the TE signal gain is connected between the TE pin.  |
| 7       | TE       | O   | TE signal output pin.   |
| 8       | TESI     | I   | TES 'Track Error Sense' comparator input pin. TE signal is passed through a band-pass filter then input.  |
| 9       | SCI      | I   | Shock detection signal input pin.   |
| 10      | TH       | I   | Tracking gain time constant setting pin.  |
| 11      | TA       | O   | TA amplifier output pin.  |
| 12      | TDD      | I   | Pin to which external tracking phase compensation constants are connected between the TD and VR pins.   |
| 13      | TD       | I   | Tracking phase compensation setting pin.  |
| 14      | JP       | I   | Tracking jump signal (kick pulse) amplitude setting pin.  |
| 15      | TO       | O   | Tracking control signal output pin.   |
| 16      | FD       | O   | Focusing control signal output pin.   |
| 17      | FDD      | I   | Pin to which external focusing phase compensation constants are connected between the FD and FA pins.   |
| 18      | FA       | I   | Pin to which external focusing phase compensation constants are connected between the FDD and FAD pins.   |
| 19      | FAD      | I   | Pin to which external focusing phase compensation constants are connected between the FA and FE pins.   |
| 20      | FE       | O   | FE signal output pin.   |
| 21      | FED      | I   | Pin to which external FE signal gain setting resistor is connected between the FE pin.  |
| 22      | AGND     | -   | Analog signal GND.  |
| 23      | SP       | -   | Single ended output of the CV+ and CV- pin input signal.  |
| 24      | SPD      | O   | Spindle amp input.  |
| 25      | SPG      | I   | Pin to which external spindle gain setting resistor in 12 cm mode is connected.   |
| 26      | SPD      | I   | Pin to which external spindle phase compensation constants are connected together with SPD pin.   |
| 27      | SPD      | O   | Spindle control signal output pin.  |
| 28      | SLEQ     | I   | Pin to which external sled phase compensation constants are connected.  |
| 29      | SLD      | O   | Sled control signal output pin.   |
| 30, 31  | SLD, SL+ | I   | Sled advance signal input pin from microprocessor.  |
| 32, 33  | JP-, JP+ | I   | Tracking jump signal input pin from DSP.  |
| 34      | TGL      | I   | Tracking gain control signal input from DSP. Low gain when TGL = H.   |
| 35      | TOFF     | I   | Tracking off control signal input pin from DSP. Off when TOFF = H.  |

IC DESCRIPTION-3/3 (LA9241ML)-2/2

| Pin No. | Pin Name           | I/O | Description  |
|---------|--------------------|-----|--|
| 36      | TES                | O   | Pin from which TES signal is output to DSP.  |
| 37      | HFL                | O   | High Frequency Level is used to judge whether the main beam position is on top of bit or on top of mirror. |
| 38      | SLOF               | I   | Sled servo off control input pin.  |
| 39, 40  | CV $\bar{D}$ , CV+ | I   | CLV error signal input pin from DSP.   |
| 41      | RFSM               | O   | RF output pin.   |
| 42      | RFS $\bar{D}$      | I   | RF gain setting and EFM signal 3T compensation constant setting pin together with RFSM pin.                |
| 43      | SLC                | O   | Slice Level Control is the output pin which controls the RF signal data slice level by DSP.                |
| 44      | SLI                | I   | Input pin which control the data slice level by the DSP.   |
| 45      | DGND               | -   | Digital system GND.  |
| 46      | FSC                | O   | Output pin to which external focus search smoothing capacitor is connected.                                |
| 47      | TBC                | I   | Tracking Balance Control EF balance variable range setting pin.  |
| 48      | NC                 | -   | No connection.   |
| 49      | DEF                | O   | Disc defect detector output pin.   |
| 50      | CLK                | I   | Reference clock input pin. 4.23 MHz of the DSP is input.   |
| 51      | CL                 | I   | Microprocessor command clock input pin.  |
| 52      | DATA               | I   | Microprocessor command data input pin.   |
| 53      | CE                 | I   | Microprocessor command chip enable input pin.  |
| 54      | DRF                | O   | Detect RF RF level detector output.  |
| 55      | FSS                | I   | Focus Search Select focus search mode ( $\pm$ search/+ search) select pin.                                 |
| 56      | VCC2               | -   | Servo system and digital system Vcc pin.   |
| 57      | REF1               | -   | Pin to which external bypass capacitor for reference voltage is connected.                                 |
| 58      | VR                 | O   | Reference voltage output pin.  |
| 59      | LF2                | I   | Disc defect detector time constant setting pin.  |
| 60      | PH1                | I   | Pin to which external capacitor for RF signal peak holding is connected.                                   |
| 61      | BH1                | I   | Pin to which external capacitor for RF signal bottom holding is connected.                                 |
| 62      | LDD                | O   | APC circuit output pin.  |
| 63      | LDS                | I   | APC circuit input pin.   |
| 64      | VCC1               | -   | RF system Vcc pin.   |



# MECHANICAL PARTS LIST -1/1

! = SAFETY PARTS  
 C = Components marked

All components used on this model at the production line are shown in this service manual.  
 However, please note that not all components will be available as spare parts for after-sales service.  
 Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.  
 Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

| UNIT-NAME | ! C | REF-NO | PARTS-NO | PARTS-NAME                                | SUFFIX&MODEL |         |         |
|-----------|-----|--------|----------|---|--------------|---------|---------|
|           |     |        |          |   | XR-EM30      | XR-EM30 | XR-EM31 |
|           |     |        |          |   | EZSC         | KSC     | EZSC    |
|           |     | 0      | MC1001   | 8C-CL6-008-010 WINDOW,CASS,SAN,94HB,CHIM  | a            | b       | c       |
|           |     | 0      | MC1002   | 8C-CL6-006-010 LID CASS PS,HI650 THAI     | a            | b       | c       |
|           |     | 0      | MC1003   | 8C-CL6-005-110 BOX, CASS HIPS J-NL008 TH  | a            | b       | c       |
|           |     | 0      | MC1004   | 8C-CL6-217-010 SPR-T CASS CFL6 DIA:0.9 S  | a            | b       | c       |
|           |     | 0      | MC1005   | 8C-CL6-007-010 WINDOW,FL SAN, CHIMEI PN-  | a            | b       | .       |
|           |     | 0      | MC1005   | 8C-CL6-027-110 WINDOW FL RDS              | .            | .       | c       |
|           |     | 0      | MC1006   | 8Z-CL8-204-010 RUBBER FOOT (PORON HH48C)  | a            | b       | c       |
|           |     | 0      | MC1007   | 8C-CL6-009-010 KNOB,RTRY VOL ABS,GP22,E4  | a            | b       | c       |
|           |     | 0      | MC1008   | 8C-CL6-001-010 CABI, FR PS,HI650,THAI PE  | a            | b       | .       |
|           |     | 0      | MC1008   | 8C-CL6-028-010 CABI,FR RDS PS, HI650,94H  | .            | .       | c       |
|           |     | X      | MC1009   | M8-CZK-290-170 Cassette Deck CMAL5Z213A   | a            | b       | c       |
|           |     | 0      | MC1010   | 86-NFZ-231-010 Damper 70 [DAMPER 70 86-N  | a            | b       | c       |
|           |     | 0      | MC1011   | 8C-CL6-015-010 KEY,TONE ABS,BASF GP22,E4  | a            | b       | c       |
|           |     | 0      | MC1012   | 8C-CL6-014-010 KEY OPE ABS,BASF GP22,E41  | a            | b       | c       |
|           |     | 0      | MC1013   | 87-342-074-010 BH/TS 2.6 x L8mm (A122608  | a            | b       | c       |
|           |     | 0      | MC1014   | 82-NF5-228-010 Cassette Locker Spring Di  | a            | b       | c       |
|           |     | 0      | MC1015   | 88-CL5-202-010 HLD, LOCK (POM) 88-CC5-2   | a            | b       | c       |
|           |     | 0      | MC1016   | 82-NF5-229-010 LEVER, CASS LOCKER         | a            | b       | c       |
|           |     | 0      | MC1017   | 87-741-096-410 BH/TS 3 x L10mm (TOYO NO.  | a            | b       | c       |
|           |     | X      | MC1018   | 8C-CL6-010-010 CAP KEY POWER ABS,BASF GP  | a            | b       | c       |
|           |     |        |          |   | XR-EM30      | XR-EM30 | XR-EM31 |
|           |     |        |          |   | EZSC         | KSC     | EZSC    |
|           |     | X      | MC1019   | 8C-CL6-011-010 CAP KEY TAPE ABS,BASF GP2  | a            | b       | c       |
|           |     | X      | MC1020   | 8C-CL6-012-010 CAP,KEY TU/AUX ABS,BASF G  | a            | b       | c       |
|           |     | X      | MC1021   | 8C-CL6-013-010 CAP,KEY CD,ABS GP22,BASF,  | a            | b       | c       |
|           |     | X      | MC1022   | 8C-CL6-203-010 FRAME KEY ABS,BASF GP22,E  | a            | b       | c       |
|           |     | 0      | MC1023   | 8C-CL6-608-010 VACUUM FLUORESCENT DISPLA  | a            | b       | c       |
|           |     | X      | MC1024   | 8C-CL6-202-010 HLD, FL ABS,J-BLACK CHIME  | a            | b       | c       |
|           |     | X      | MC1025   | 8C-CL6-212-010 CHAS, MAIN No.1 ABS J-NL0  | a            | b       | c       |
|           |     | 0      | MC1026   | 88-CL4-701-010 CONN,ASSY 7PINS RPEH, PIT  | a            | b       | c       |
|           |     | !      | MC1027   | 8C-CL6-216-010 POWER TRANSFORMER,230V,50  | a            | b       | c       |
|           |     | X      | MC1028   | 8C-CL6-607-010 PWB CFL6 PT (4 IN 1) SIZE  | a            | b       | c       |
|           |     | 0      | MC1029   | 87-741-094-410 BH/TS 3 x L6mm             | a            | b       | c       |
|           |     | X      | MC1030   | 9C-CL6-605-010 PWB CFL6 MAIN SIZE:197x19  | a            | b       | c       |
|           |     | 0      | MC1031   | 87-B10-269-010 BH/TS 3 x L12mm (A1230120  | a            | b       | c       |
|           |     | X      | MC1032   | 8C-CL6-209-010 HT SINK PLT                | a            | b       | c       |
|           |     | X      | MC1033   | A8-CZA-390-070 CZA-3 TUNER BOARD PART AS  | a            | b       | c       |
|           |     | X      | MC1033a  | S2-511-30G-02V PWB 3Band TUNER THK=1.6mm  | a            | b       | c       |
|           |     | 0      | MC1034   | 8C-CL6-031-010 CABI,REAR E2 492J (T2) PS  | a            | b       | c       |
|           |     | 0      | MC1035   | 87-B10-239-010 KH/TS 3 x L8mm (A13300800  | a            | b       | c       |
|           |     | 0      | MC1036   | 87-B10-230-010 RH/TS 3xL10mm,PLATING:NIC  | a            | b       | c       |
|           |     | 0      | MC1037   | 87-WA5-253-010 Belt Clip Washer (Dia:10   | a            | b       | c       |
|           |     |        |          |   | XR-EM30      | XR-EM30 | XR-EM31 |
|           |     |        |          |   | EZSC         | KSC     | EZSC    |
|           |     | 0      | MC1038   | 88-CH6-220-110 Cushion,CDA Rubber(88-CH6  | a            | b       | c       |
|           |     | 0      | MC1039   | M8-CZK-490-070 CD MECH W/PICK UP (KSM-21  | a            | b       | c       |
|           |     | X      | MC1040   | 8C-CL6-606-010 PWB CFL6 FR/CD (2 IN 1) S  | a            | b       | c       |
|           |     | 0      | MC1041   | 88-CH6-019-110 PANEL CD (ABS) BLACK       | a            | b       | c       |
|           |     | 0      | MC1042   | 87-036-389-010 SW. PUSH 1-1-1 (50V DC /0  | a            | b       | c       |
|           |     | 0      | MC1043   | 8C-CL6-003-010 CHAS,CD (T1) PS, HI650,94  | a            | b       | c       |
|           |     | 0      | MC1044   | 8C-CL6-207-010 SPRT-CD SUS304 DIA:1.4     | a            | b       | c       |
|           |     | 0      | MC1045   | 8C-CL6-004-010 LID CD ABS, CHI ME1758,94  | a            | b       | c       |
|           |     | 0      | MC1046   | 8B-CH4-223-010 BASE,CHUCK (N) ABS BLACK   | a            | b       | c       |
|           |     | 0      | MC1047   | 87-036-368-010 CD Door Magnet (87-036-36  | a            | b       | c       |
|           |     | 0      | MC1048   | 84-CD5-217-010 Plate Magnet OD=30.4mm, I  | a            | b       | c       |
|           |     | 0      | MC1049   | 85-CD7-217-210 HLD,CHUCK A (BASF) BLACK   | a            | b       | c       |
|           |     | X      | MC1050   | 8C-CL7-202-010 SHIELD,PLATE PT. MATERIAL  | a            | b       | c       |
|           |     | 0      | MC1051   | 8Z-NF6-210-010 DMPR,150 N                 | a            | b       | c       |
|           |     | 0      | MC1052   | 87-A90-562-010 F-BEAD , 9.5-17.5-28.5 BR  | a            | b       | c       |
|           |     | X      | MC1053   | 8C-CL6-211-010 HT,Sink Main ASSY 15W      | a            | b       | c       |
|           |     | X      | MC1054   | 8C-CL6-213-010 SH PT PC,T=1.0mm W/DOUBLE  | a            | b       | c       |
|           |     | X      | MC1055   | 8C-CL6-215-010 FELT CLOTH, 52x12x0.5mm W  | a            | b       | c       |
|           |     | X      | MC1056   | 8C-CL6-214-010 CUSHION-R, PORON, 15x15x3  | a            | b       | c       |
|           |     | X      | MC1057   | 8C-CL6-216-010 HT-SINK PT AL T=2mm        | a            | b       | c       |
|           |     |        |          |   | XR-EM30      | XR-EM30 | XR-EM31 |
|           |     |        |          |   | EZSC         | KSC     | EZSC    |
|           |     | 0      | MC1058   | 8B-CK6-612-010 FF-CABLE,16P 1.0 CD L=(4+  | a            | b       | c       |
|           |     | 0      | MC1059   | 8A-CLD-622-010 CONN ASSY, 2P CD DOOR P=2  | a            | b       | c       |
|           |     | 0      | MC1060   | S1-204-182-000 FF-CABLE PITCH=1.25mm L=9  | a            | b       | c       |
|           |     | 0      | MC1061   | 87-064-185-010 Mounting Lug (PG CW-2) (C  | a            | b       | c       |
|           |     | X      | MC1062   | 88-CL4-707-010 WIRE,ASSY 1P (DECK) L=35mm | a            | b       | c       |

COLOR NAME TABLE -1/1

| 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    | PT                 | Transparent Pink   |
| LA                 | Aqua Blue         | GL                 | Light Green        | HT                 | Transparent Gray   |
| HM                 | Metallic Gray     | NH                 | Champagne Gold     | M                  | Wood Pattern       |

10

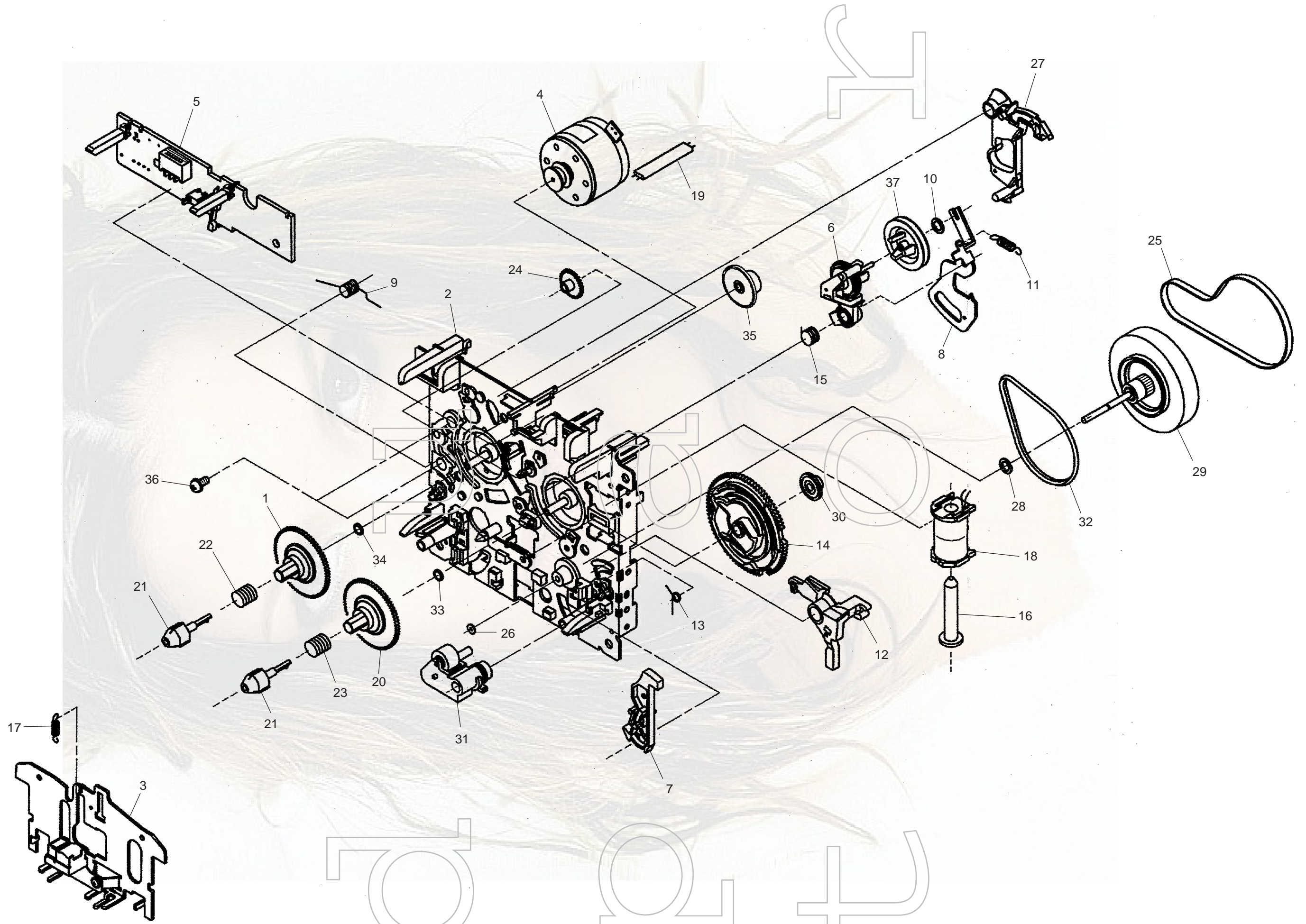
a

t

o

r





# MECHANISM PARTS LIST -1/1 (CMAL5Z213B)

! = SAFETY PARTS  
 C = Components marked

All components used on this model at the production line are shown in this service manual.

However, please note that not all components will be available as spare parts for after-sales service.

Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.

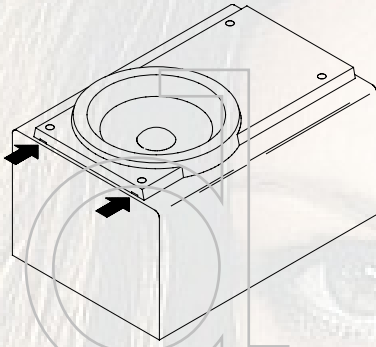
Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

| UNIT-NAME | ! C | REF-NO | PARTS-NO       | PARTS-NAME          | SUFFIX&MODEL |
|-----------|-----|--------|----------------|---------------------|--------------|
|           |     |        |                |                     | CMAL5Z213B   |
|           | O   | ST1001 | SF-D52-W61-000 | REEL BASE           | a            |
|           | O   | ST1002 | SF-612-239-000 | CHASSIS BASE BLK    | a            |
|           | O   | ST1003 | SF-513-888-000 | PLATE HD BLK        | a            |
|           | O   | ST1004 | SF-525-348-000 | MTR MAIN BLK        | a            |
|           | O   | ST1005 | SF-567-703-000 | PCB CONTROL BLK     | a            |
|           | O   | ST1006 | SF-522-063-000 | CLUTCH ASSY BLK     | a            |
|           | O   | ST1007 | SF-D58-K13-000 | ARM INTERLOCK R     | a            |
|           | O   | ST1008 | SF-C65-W21-000 | LEVER F/R           | a            |
|           | O   | ST1009 | SF-K34-Y11-000 | B/C SP              | a            |
|           | O   | ST1010 | SF-J11-117-000 | WASHER 1.7X0.25     | a            |
|           | O   | ST1011 | SF-K35-E14-000 | SP ARM F/R          | a            |
|           | O   | ST1012 | SF-D58-P15-000 | ARM PLAY            | a            |
|           | O   | ST1013 | SF-K32-R21-000 | SP ARM PLAY         | a            |
|           | O   | ST1014 | SF-D61-C14-000 | CAM GEAR            | a            |
|           | O   | ST1015 | SF-K35-K14-000 | CAM SP              | a            |
|           | O   | ST1016 | SF-L41-S22-000 | PLANGER             | a            |
|           | O   | ST1017 | SF-K32-T32-000 | SPRING HB           | a            |
|           | O   | ST1018 | SF-765-295-000 | SOLENOID BLK        | a            |
|           | X   | ST1019 | SW-G58-H02-000 | 2 CORE JUMPER LEAD  | a            |
|           | O   | ST1020 | SF-D52-W51-000 | REEL BASE           | a            |
|           |     |        |                |                     | CMAL5Z213B   |
|           | O   | ST1021 | SF-D53-M51-000 | REEL FEATHER        | a            |
|           | O   | ST1022 | SF-K32-U12-000 | SP REEL (L)         | a            |
|           | O   | ST1023 | SF-K32-V12-000 | SP REEL (R)         | a            |
|           | O   | ST1024 | SF-D53-K52-000 | PLAY GEAR (A)       | a            |
|           | O   | ST1025 | SF-F19-U31-000 | MAIN BELT           | a            |
|           | O   | ST1026 | SU-J16-F11-000 | PW, 1.75X0.4        | a            |
|           | O   | ST1027 | SF-D58-T12-000 | LEVER BRAKE         | a            |
|           | O   | ST1028 | SF-J11-130-000 | PW, 2.6X0.25        | a            |
|           | O   | ST1029 | SF-R26-D11-000 | ASSY F/W            | a            |
|           | O   | ST1030 | SF-D59-F12-000 | BUSH                | a            |
|           | O   | ST1031 | SF-514-135-000 | ROLLER PINCH R BLK  | a            |
|           | O   | ST1032 | SF-F19-S31-000 | F/R BELT            | a            |
|           | O   | ST1033 | SF-J11-135-000 | PW, 4.1X0.25        | a            |
|           | O   | ST1034 | SF-J11-131-000 | PW, 4.1X0.13        | a            |
|           | O   | ST1035 | SF-D60-L12-000 | FF GEAR (E)         | a            |
|           | O   | ST1036 | SF-G11-414-000 | SCREW, PAN 2.6X5 ZN | a            |
|           | O   | ST1037 | SF-D60-B15-000 | PULLEY F/R          | a            |

# SPEAKER DISASSEMBLY INSTRUCTIONS -1/1

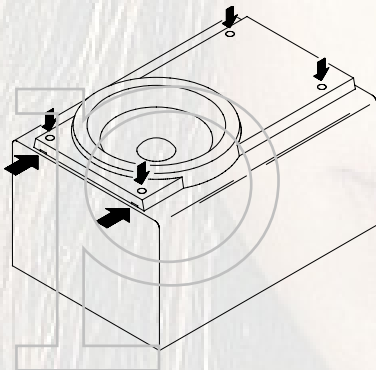
## Type.1

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



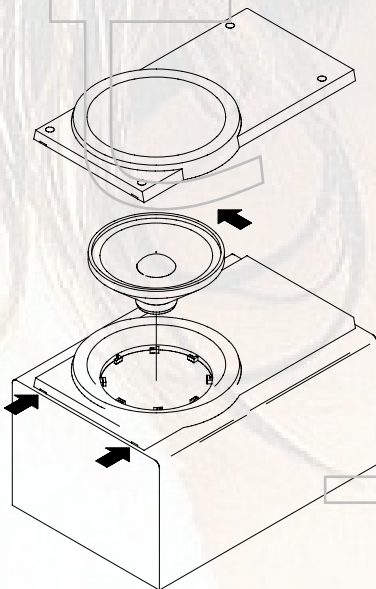
## Type.2

Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver. Remove the screws from hold where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.

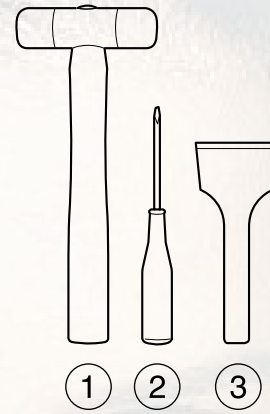


## Type.3

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Turn the speaker unit to counterclockwise direction while inserting a flat-bladed screwdriver into one of the hollows around speaker unit, and then remove the speaker unit. After replacing the speaker unit, install it turning to clockwise direction until "click" sound comes out.



## Type.4



## TOOLS

- 1 Plastic head hammer
- 2 (-) flat head screwdriver
- 3 Cut chisel

## How to Remove the PANEL, FR

1. Insert the (-) flat head screwdriver tip into the gap between the PANEL, FR and the PANEL, SPKR. Tap the head of the (-) flat head screwdriver with the plastic hammer head, and create the clearance as shown in Fig-1.
2. Insert the cut chisel in the clearance, and tap the head of the cut chisel with plastic hammer as shown in Fig-2, to remove the PANEL, FR.
3. Place the speaker horizontally. Tap head of the cut chisel with plastic hammer as shown in Fig-3, and remove the PANEL, FR completely.

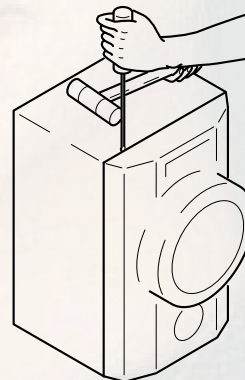


Fig-1

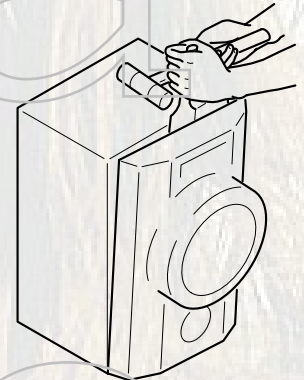


Fig-2

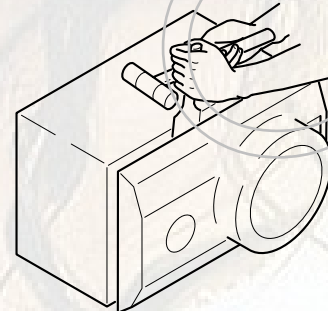


Fig-3

## How to Attach the PANEL, FR

Attach the PANEL, FR to the PANEL, SPKR. Tap the four corners of the PANEL, FR with the plastic hammer to fit the PANEL, FR into the PANEL, SPKR completely.

# SPEAKER PARTS LIST -1/1 (SX-SLEM30)

- ! =  SAFTY PARTS
- C = Components marked

All components used on this model at the production line are shown in this service manual.  
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| UNIT-NAME | ! C | REF-NO | PARTS-NO | PARTS-NAME     | SUFFIX&MODEL       |   |
|-----------|-----|--------|----------|----------------|--------------------|---|
|           |     |        |          |                | SX-SLEM30          |   |
|           |     |        |          |                | YJMN               |   |
|           |     | O      | SP1001   | 88-NSK-610-010 | SPKR, CERAMIC ASSY | a |
|           |     | X      | SP1002   | 8B-CPX-016-010 | BADGE, AIWA 27.5   | a |
|           |     | O      | SP1003   | 8C-CP5-007-010 | CORD, SPKR O       | a |
|           |     | O      | SP1004   | 8C-CP5-008-010 | CORD, BUSH O       | a |
|           |     | O      | SP1005   | 8C-CP6-001-010 | GRILLE, FRAME ASSY | a |
|           |     | X      | SP1006   | 8C-CP6-002-010 | NET,               | a |
|           |     | O      | SP1007   | 8C-CP6-602-010 | SPKR, 100 16/2     | a |
|           |     | O      | SP1008   | 8C-CP7-001-010 | CABI, M            | a |
|           |     | X      | SP1009   | 8C-CP7-003-010 | GRILLE, FRAME      | a |

# OTHERS PARTS LIST -1/1 (CX-SLEM30)

! = SAFETY PARTS  
 C = Components marked

All components used on this model at the production line are shown in this service manual.  
 However, please note that not all components will be available as spare parts for after-sales service.  
 Components marked S and O are designated as spare parts for service and will be stocked at the spare parts centers.  
 Components marked X and R are not designated as spare parts for after sales service, and will not be stocked at the spare parts centers.

| UNIT-NAME | ! C REF-NO     | PARTS-NO                  | PARTS-NAME      | SUFFIX&MODEL    |                 |                 |
|-----------|----------------|---------------------------|-----------------|-----------------|-----------------|-----------------|
|           |                |                           |                 | XR-EM30<br>EZSC | XR-EM30<br>KSC  | XR-EM31<br>EZSC |
| X         | 87-A90-230-010 | "Nylon Tie 4""            | a               | b               | c               |                 |
| X         | 8C-CL6-851-010 | CUSHION, FRONT            | a               | b               | c               |                 |
| X         | 8C-CL6-851-010 | CUSHION, REAR             | a               | b               | c               |                 |
| X         | 8C-CL6-218-010 | PLATE SHIELD TAPE         | a               | b               | c               |                 |
| X         | 8C-CL6-029-010 | SH,FL PC T=0.3/0.5mm[HONG | a               | b               | c               |                 |
| X         | 93-324-066-010 | SH,FOAMED MAT 0.5-500-300 | a               | b               | c               |                 |
| X         | 87-057-995-010 | CLASS 1 LABEL SIZE:(52x27 | a               | b               | c               |                 |
| X         | S3-018-000-101 | COVER PLATE PC THK=0.3mm  | a               | b               | c               |                 |
| X         | 8C-FL6-856-010 | CTN,PRINTED 30EZSC SIZE:( | a               | b               | .               |                 |
| X         | 8C-FL6-851-010 | CTN,PRINTED EZSC SIZE:(57 | .               | .               | c               |                 |
| X         | S4-608-833-000 | ICT LABEL SIZE:(26 x 10)m | a               | .               | c               |                 |
| X         | S4-609-461-000 | LBL,FUSE (T3.15AL 250V) M | a               | b               | c               |                 |
| X         | 88-100-000-01C | "R-3" (Kin Fung) Tin Coa  | a               | b               | c               |                 |
| X         | 87-B40-085-010 | Polybag 8 1/2" x 13 1/2"  | a               | b               | c               |                 |
| X         | 87-B40-093-010 | Polybag Size: (450 x 650  | a               | b               | c               |                 |
| X         | 87-B40-281-010 | Label Bar Code A          | a               | b               | c               |                 |
| X         | 87-057-961-010 | LBL,CAUTION TRIANGLE 2 SI | a               | b               | c               |                 |
| X         | 8C-CL6-970-010 | LBL,POP K SIZE:(42x42)mm  | a               | b               | c               |                 |
| X         | 87-B40-057-010 | Polybag 7" x 7" x 0.05    | a               | .               | c               |                 |
| X         | 8C-CL6-051-010 | LBL,SPEC EZ SIZE:82x54.5m | a               | .               | .               |                 |
|           |                |                           | XR-EM30<br>EZSC | XR-EM30<br>KSC  | XR-EM31<br>EZSC |                 |
| X         | S4-608-833-000 | ICT LABEL SIZE:(26 x 10)m | .               | b               | .               |                 |
| X         | 87-056-600-010 | diff. label k Size:30x20m | .               | b               | .               |                 |
| X         | S4-005-355-000 | BAG PV 0.05-101.6-254PL S | .               | b               | .               |                 |
| X         | 8C-CL6-042-010 | LBL,SPEC K SIZE:(82x54.5) | .               | b               | .               |                 |
| X         | 8C-CL6-041-010 | LBL,SPEC EZ SIZE:(82X54.5 | .               | .               | c               |                 |





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