

# XR-C5090

## SERVICE MANUAL

E Model



Refer to RM-X4S SERVICE MANUAL (9-925-698-00) issued previously for information of remote commander (RM-X4S) supplied with this set

Model Name Using Similar Mechanism	XR-C340
Tape Transport Mechanism Type	MG-25F-136

### SPECIFICATIONS

#### Cassette player section

Tape track	4-track 2-channel stereo
Wow and flutter	0.08 % (WRMS)
Frequency response	30 – 18,000 Hz
Signal-to-noise ratio	58 dB

#### Tuner section

##### FM

Tuning range	FM tuning interval: 50 kHz/200 kHz switchable 87.5 – 108.0 MHz (at 50 kHz step) 87.5 – 107.9 MHz (at 200 kHz step)
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	8 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz	0.5 % (stereo), 0.3 % (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz
Capture ratio	2 dB

##### AM

Tuning range	AM tuning interval: 9 kHz/10 kHz switchable 531 – 1,602 kHz (at 9 kHz step) 530 – 1,710 kHz (at 10 kHz step)
Antenna terminal	External antenna connector
Intermediate frequency	10.71 MHz/450kHz
Sensitivity	30 $\mu$ V

#### Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	40 W $\times$ 4 (at 4 ohms)

#### General

Outputs	Power antenna control lead/Power amplifier control lead/Telephone ATT control lead Rear line out (1)
Tone controls	Bass $\pm$ 8 dB at 100 Hz Treble $\pm$ 8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 188 $\times$ 58 $\times$ 181 mm (w/h/d)
Mounting dimensions	Approx. 182 $\times$ 53 $\times$ 164 mm (w/h/d)
Mass	Approx. 1.2 kg
Supplied accessories	Parts for installation and connections (1 set) Front panel case (1) Rotary commander RM- X4S

*Design and specifications are subject to change without notice.*

## FM/AM CASSETTE CAR STEREO



# SONY®

## SECTION 6 DIAGRAMS

### 6-1. IC PIN FUNCTION DESCRIPTION

#### • MAIN BOARD IC501 $\mu$ PD17708GC-567-3B9 (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Function
1	AMSSEL	I	Setting terminal for the AMS selection fixed at "L"
2	POS3	I	Tape position detect input from tape operation switch on the mechanism block
3	POS2	I	
4	POS0	I	
5	POS1	I	
6	TAPEON	O	Tape system power supply on/off control signal output terminal "H": tape on
7	CM ON	O	Capstan/reel motor (M901) drive signal output terminal "H": motor on
8	LM LOD	O	Loading/tape operation motor control signal output to the LB1638M (IC351) (For the loading direction and forward side operation) *1
9	LM EJ	O	Loading/tape operation motor control signal output to the LB1638M (IC351) (For the eject direction and reverse side operation) *1
10	TUNON	O	Tuner system power supply on/off control signal output to the BA3918 (IC611) "H": tuner on
11	FM ON	O	FM system power supply on/off control signal output to the BA3918 (IC611) "H": FM on
12	PW ON	O	Main system power supply on/off control signal output to the BA3918 (IC611) "H": power on
13	MUT	O	Line muting control signal output terminal "H": line muting on
14	VOLCE	O	Chip enable signal output to the electrical volume (IC331)
15	VOLCKO	O	Serial data transfer clock signal output to the electrical volume (IC331)
16	VOLSO	O	Serial data output to the electrical volume (IC331)
17	AMPON	O	Standby control signal output to the power amplifier (IC751) "L": standby
18	AMPMUT	O	Muting control signal output to the power amplifier (IC751) "L": muting on
19	DX/LO	O	Local/DX selection signal output to the FM/AM tuner unit (TU1) "L": DX, "H": local
20	AM MONO	O	AM forced monaural signal output terminal Not used (open)
21	GND	—	Ground terminal
22	DSTSEL	I	Destination setting terminal (frequency select switch (S502) input terminal) "L": AM 9k step or FM 50k step, "H": AM 10k step or FM 200k step
23	DBASIN	I	D-BASS switch (SW951) input (A/D input)
24	KEYIN1	I	Key input terminal (A/D input) ▲, INTRO 1, REPEAT 2, SHUF 3, BL SKIP 6, ATA 5, 4, PRESET DISC +/- keys input (LSW921 to LSW927, LSW929 and LSW930)
25	KEYIN0	I	Key input terminal (A/D input) OFF, SOURCE, MODE ◀▶, + ▶▶▶▶ SEEK AMS, - ◀◀◀◀ SEEK AMS, VOLUME -, SEL, VOLUME +, ATT, DSPL, BTM, LCL keys input (LSW901 to LSW912)
26	RC IN0	I	Rotary remote commander shift key A/D input terminal
27	VSM	I	FM and AM signal meter voltage detection input from the FM/AM tuner unit (TU1)
28	AMIFIN	I	AM intermediate frequency detection signal input from the FM/AM tuner unit (TU1)
29	FMIFIN	I	FM intermediate frequency detection signal input from the FM/AM tuner unit (TU1)
30	VDD2	—	Power supply terminal (+5V)
31	FM OSC	I	FM local oscillator detection signal input from the FM/AM tuner unit (TU1)
32	AM OSC	I	AM local oscillator detection signal input from the FM/AM tuner unit (TU1)
33	GND	—	Ground terminal
34	NCO	O	Not used (open)
35	EO1	O	Main charge-pump control signal output terminal
36	TEST0	I	Setting terminal for the test (fixed at "L")
37	NCO	O	Not used (open)
38	SEKOUT	O	Seek control signal output to the FM/AM tuner unit (TU1)
39	MW/SW	O	MW/SW selection signal output to the FM/AM tuner unit (TU1) "L": MW, "H": SW
40	BEEP	O	Beep sound output terminal

Pin No.	Pin Name	I/O	Function
41	KEYACK	I	Input of acknowledge signal for the key entry Acknowledge signal is input to accept function and eject keys in the power off status On at input of "H"
42	BU IN	I	Battery detect signal input terminal "H": battery on
43	MTLSEL	I/O	METAL control in/out terminal At initial mode: auto/manual mode selection input of METAL function "L": manual mode At manual mode: METAL on/off control signal output terminal ("H" output: METAL on) At auto mode: input at MTLIN (pin 69) Not used this function in this set (fixed at "H")
44	DOLON	I/O	Dolby control in/out terminal At initial mode: valid/invalid selection input of dolby function ("L" input: valid) At normal mode: dolby on/off control signal output ("H" output : dolby on) Not used this function in this set (fixed at "H")
45	AMSIN	I	Whether a music is present or not from CXA2509AQ (IC301) is detected at auto music sensor "L": music is present, "H": music is not present
46	ST	I/O	Input of FM stereo detection signal from FM/AM tuner unit (TU1), and output of forced monaural control signal to FM/AM tuner unit (TU1) (Commonly used for stereo display input and forced monaural output) FM stereo detection at input of "L", forced monaural at output of "L"
47	AMS ON	O	Tape auto music sensor control signal output to the CXA2509AQ (IC301) "L" is output to lower the gain for audio level at FF/REW
48	N/R OUT	O	Forward/reverse direction control signal output to the CXA2509AQ (IC301) "L": forward direction, "H": reverse direction
49	TAPMUT	O	Tape muting on/off control signal output to the CXA2509AQ (IC301) "H": tape muting on
50	ILLON	O	Power supply on/off control signal output terminal at the illumination and liquid crystal display driver (IC901) "H": power on At power select switch (S501) on mode: "H" output at the accessory on At power select switch (S501) off mode: "H" output at the power on
51	SD IN	I	Station detector detect input from the FM/AM tuner unit (TU1) Stop level for SEEK, BTM, etc. is determined SD is present at input of "H"
52	NOSESW	I	Detects the removal of the attaching and removing type front panel block "L": attaching
53	TELMUT	I	Telephone muting signal input terminal At input of "L", the signal is attenuated by -20 dB
54	REL T	I	Reel table rotation detect signal input from the take-up and supply reel sensor
55	ACCIN	I	Accessory detect signal input terminal "L": accessory on
56	TESTIN	I	Setting terminal for the test mode "L": test mode (normally fixed at "H")
57	RC IN1	I	Rotary remote commander shift key A/D input terminal
58	PW SEL	I	Power select switch (S501) input terminal "L": position A (halt mode), "H": position B (operation mode)
59	MTLIN	I	Input terminal to set whether the auto metal function is present or not "L": auto metal function is present (fixed at "H")
60	ADON	O	Power supply on/off control signal output for the A/D conversion
61	KEYSEL	I	Setting terminal for the key (fixed at "H")
62	SEKOUTSEL	I	Active selection terminal for the SEKOUT (pin 68) (fixed at "H")
63	COLORSEL	I	Setting terminal for the illumination color "L": amber, "H": green (fixed at "H")
64	LCDCE	O	Chip enable output to the liquid crystal display driver (IC901)
65	LCDCKO	O	Serial data transfer clock signal output to the liquid crystal display driver (IC901)
66	LCDSO	O	Serial data output to the liquid crystal display driver (IC901)
67	LCDINH	O	Blank indicate control signal output to the liquid crystal display driver (IC901) "L": no display
68	UNICKI	I	Serial data reading clock signal input terminal (for SONY bus)
69	UNISO	O	Serial data output to the bus interface (IC581) (for SONY bus)

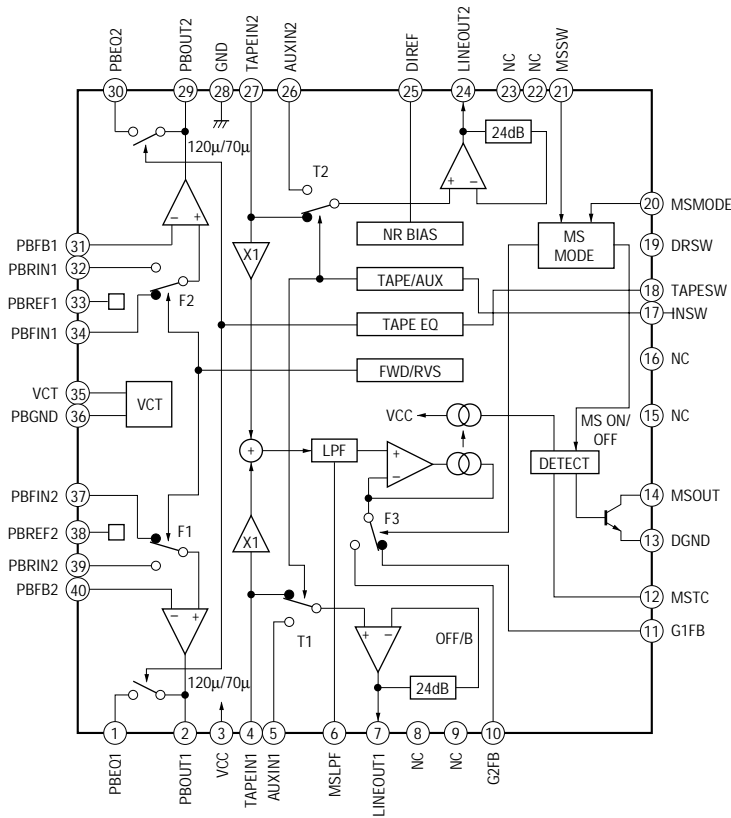
Pin No.	Pin Name	I/O	Function
70	UNISI	I	Serial data input from the bus interface (IC581) (for SONY bus)
71	UNICKO	O	Serial data transfer clock signal output to the bus interface (IC581) (for SONY bus)
72	BUSON	O	Bus on/off control signal output to the bus interface (IC581) (for SONY bus) “L”: bus on
73	SYSRST	O	Reset signal output to the bus interface (IC581) (for SONY bus) “L”: reset
74	VREG	O	CPU regulator output terminal Connected to capacitor
75	GND	—	Ground terminal
76	X OUT	O	Main system clock output terminal (4.5 MHz)
77	X IN	I	Main system clock input terminal (4.5 MHz)
78	CE	I	CPU chip enable signal input (fixed at “H”)
79	VDD1	—	Power supply terminal (+5V)
80	RESET	I	System reset signal input from the reset signal generator (IC551) and reset switch (S551) “L” is input for several 100 msec after power on, then it changes to “H”

\*1 loading/tape operation motor control

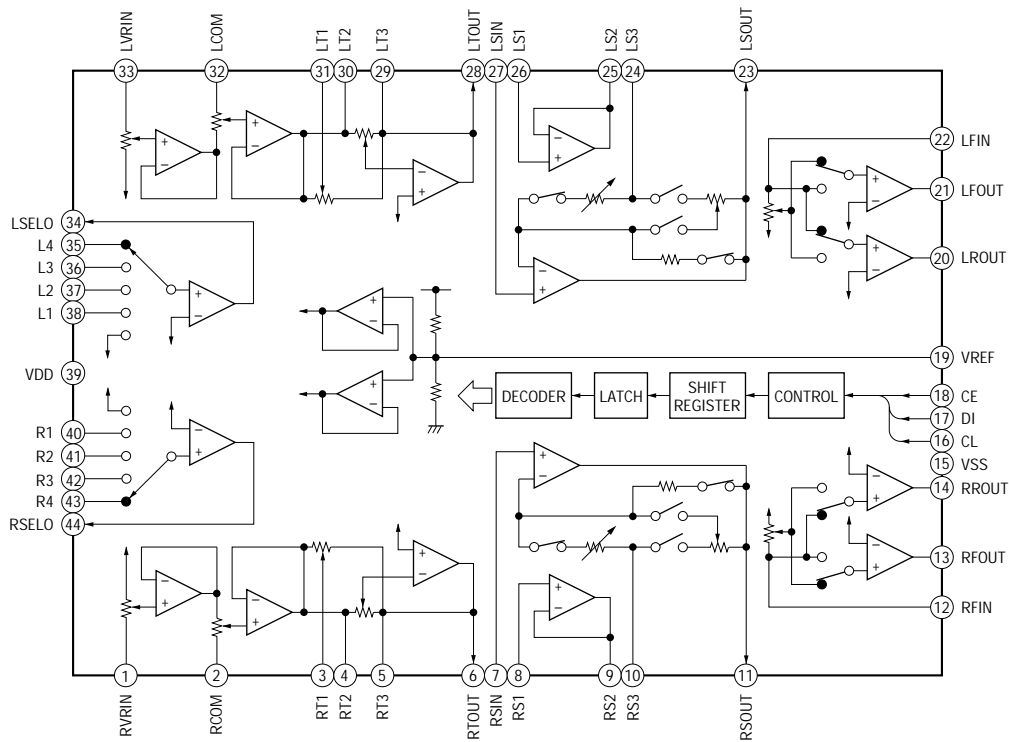
MODE TERMINAL	STOP	LOADING/ FORWARD	EJECT/ REVERSE	BRAKE
LM LOD (pin ⑧)	“L”	“H”	“L”	“H”
LM EJ (pin ⑨)	“L”	“L”	“H”	“H”

• IC Block Diagrams – MAIN Board –

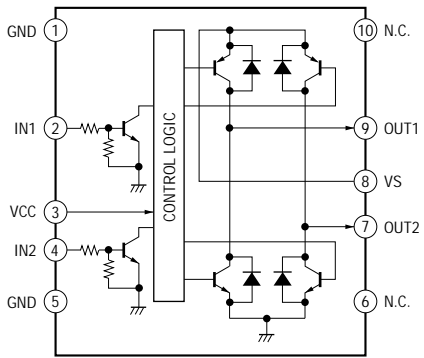
IC301 CXA2509AQ-T4



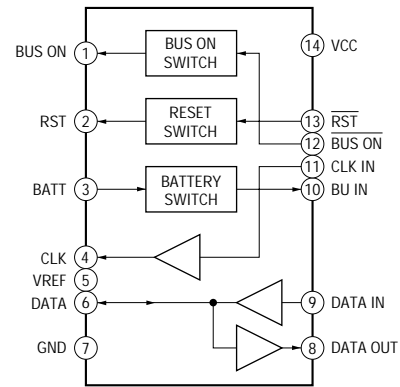
IC331 LC75373ED



**IC351 LB1638M**



**IC581 BA8270F-E2**



**IC611 BA3918-V2**

