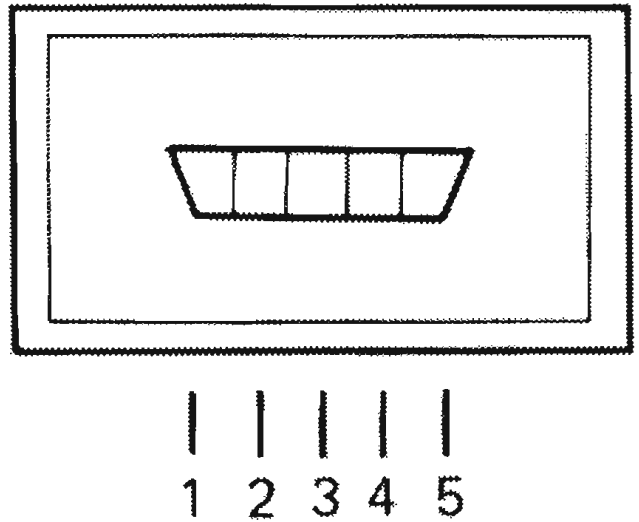
<REMOTE CONTROL FUNCTION (R.U.C. Models)>

$0 = V_L$ 0 – 1.5 V
$1 = V_H$ 3.3 – 5 V

INPUT DATA

2 pin	3 pin	FUNCTION MODE
0	0	–
1	0	CH UP
0	1	CH DOWN
1	1	P1/10 ↔ P11/20

REMOTE CONTROL
Terminals



• IC214: LC7210

This is the CMOS LSI utilized to tune the CSL (Computer Servo Lock) tuning system for FM/AM radio which has realized stable station selection by PLL (Phase Locked Loop) synthesizer, precise automatic station search (applicable to all areas of the world and multiple bands) by SL^2 (Signal Locked Loop) voltage synthesizer, and optimum tuning point reception by AFC operation.

When combined with a prescaler (÷100), this LSI can be controlled by a 4-bit microcomputer in the controller.

The functions are:

- SL^2 auto search control
- PLL control
- Analog switch for S-curve AFC
- Station-originated frequency counter
- Data generation for FM band IF offset adjustment (5 bits)

Terminal No.	Description	I/O	Funciton
1	Xin	IN	Oscillation terminals. By connecting Quartz across Xin and Xout, and load capacity across both teminals and Vss, basic clock signal is generated (32kHz).
2	Xout	OUT	
3	Vss	–	Ground terminal
4	DI/DO	IN	Pull-up feature. Input terminal which controls whether data terminal ($D_0 \sim _3$) signal is input mode (DI/DO = 1) or output mode. (DI/DO = 0).
5	STB	IN	Pull-up feature. Determines the timing of internal latch, FF clock pulse and set/reset signal which are determined by control input ($C_0 \sim _3$).
6	D_3	I/O	I/O terminals. Push-pull output. Transfers (DI/DO = 1) data to internal data bus (4 bits) or outputs the contents of internal data bus.
7	D_2		
8	D_1		
9	D_0		
10	C_3	IN	Pull-up feature. Input used to create signal which specifies which logic is to be connected with internal data bus.
11	C_2		
12	C_1		
13	C_0		
14	M/L	OUT	Outputs "1" only when received band is MW. NC.
15	PLL	OUT	Push-pull. Outputs "1" while PLL operation is made.
16	Sout	OUT	Tri-state. Connected with push-pull output and analog switch. • PLL mode: Charge pump output can be obtained. • SEARCH mode: Auto search output can be obtained. • AFC mode: Conducts to Sin terminal via analog switch. High impedance state in other modes
17	$\overline{SD}$	IN	Controls whether reception is made by SL^2 or PLL when FM is received.
18	Sin	IN	Connected with analog switch or comparator input. • AFC mode: Conducts to Sout terminal via analog switch and makes reception by AFC. • AUTO SEARCH mode: Discriminates S signal between SH and SL via wind comparator and uses as input which controls search speed limit and stop.
19	AFC	OUT	Outputs "1" in AFC mode. Outputs "0" in other than AFC mode.
20	SMK	IN	Prohibits search stop and speed control by SH and SL in AUTO SEARCH mode ("1"). Controls when "0" is input.
21	F/A	OUT	Band data output terminal. Outputs "1" in FM mode.
22	Ain	IN	AM (FM) local oscillator frequency input terminal. Pull-down transistor is turned on in FM mode.
23	Fin	IN	1/100 dividing output of AM (FM) local oscillator frequency is input. Pull-down transistor is turned off in FM mode in which reception is not made by AFC.
24	VDD	–	Power source +5V
25	A/D	IN	Input used to generate data for compensating the shift of center frequency of FM IF filter.
26	Vref	–	Power source for setting wind comparator level (Sin) and power source for A/D converter ladder network of FM fine.
27	$\overline{PSC}$	OUT	Outputs "0" when PLL or counter is operated in FM mode. Outputs "1" in other cases (other than when reception is made in FM mode, and other than in FM mode).
28	LOC	I/O	Detects the locking of CSL operation, connected with CR integration circuit. Judges as LOCK state when "1" is input and as UNLOCK state when "0" is input.

• IC213 : XA744A0 CSL Controller V5.0 3040 (LC6510C-3040)

1-chip type 4-bit microcomputer which incorporates 4096 x 8 bit ROM (for programming) and 256 x 4 bit RAM (for data memory)

Terminal No.	Description	I/O	Function
1	PA2 REM ϕ	IN	Remote Control INPUT
2	PA3 REM 1	IN	Remote Control INPUT
3	PB_0 K1	IN	Key matrix input. Judges the switches 101 to 117.
4	PB_1 K2	IN	
5	PB K3	IN	
6	PB_3 K4	IN	
7	PC_0 C0	OUT	Control output. Specifies which logic of LC7210 is connected with data bus.
8	PC_1 C1	OUT	
9	PC_2 C2	OUT	
10	PC_3 C3	OUT	
11	PD_0 D0	I/O	Data bus. Sends and receives data to and from LC7210.
12	PD_1 D1	I/O	
13	PD_2 D2	I/O	
14	PD_3 D3	I/O	
15	PE_n STB	OUT	Strobe output.
16	PE_1 DI/DO	OUT	Specifies the direction of I/O of data bus.
17	PE_2 MUTE	OUT	Muting output. +4.5V (reference value) in MUTING mode.
18	PE_3 A/D	OUT	Signal Quality/IF Offset select. Signal Quality at "1" IF Offset at "0".
19	RES	IN	Reset input. +5V in normal condition.
20	TEST	—	
21	Vss	—	Power ground.
22	OSC1	IN	Terminals for clock oscillating circuit.
23	OSC2	OUT	
24	PF_0 H	OUT	Display, segment output. h segment.
25	PF_1 G	OUT	g segment.
26	PF_2 F	OUT	f segment.
27	PF_3 E	OUT	e segment.
28	PG_0 D	OUT	d segment.
29	PG_1 C	OUT	c segment.
30	PG_2 B	OUT	b segment.
31	PG_3 A	OUT	a segment.
32	PH_0 TA	OUT	Display, digit output
33	PH_1 TB	OUT	
34	PH_2 TC	OUT	
35	PH_3 MUTE	OUT	Meter Mute Control
36	PI_0 AUTO BLEND	OUT	AUTOBLEND ON: "0"
37	PI_1 MONO	OUT	Mono Mode Control Mono: "0"
38	HOLD	IN	Hold mode demand input terminal.
39	INT	—	INTVAL
40	Vdd	—	Power source +5V.
41	PA_0 U	IN	Destination symbol.
42	PA_1 G	IN	

42 pin / 41 pin	0	1
0	J	—
1	G	U