

# marantz SYSTEM control protocol

Ver.1.0.0

Application model : M-CR610/ M-CR510

Application terminal: Ethernet

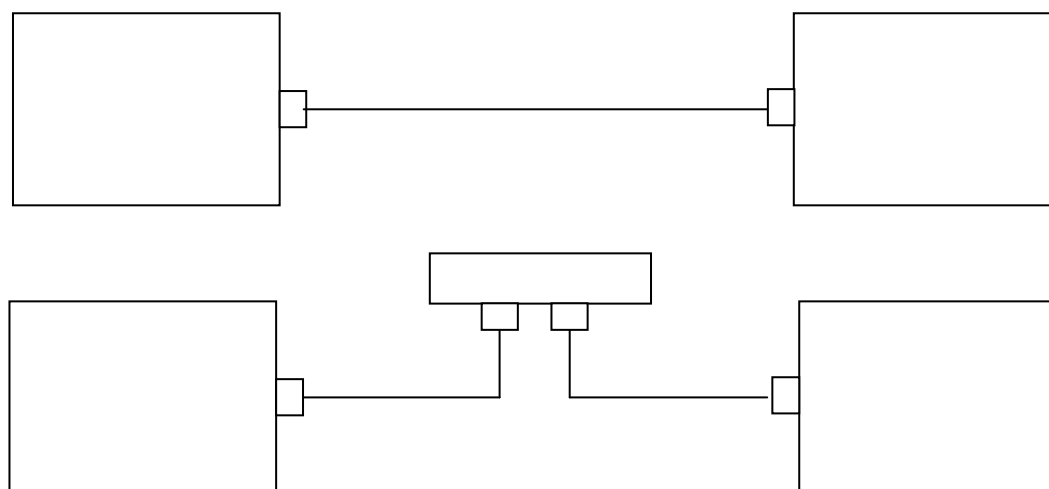
M-CR610 : Rev 11.0.0

M-CR510 : Rev 11.1.0

## Connector specification

### I. Ethernet

Connector type : RJ-45 (10BASE-T/100BASE-TX)



Communication format :

Communication system : A half duplex

Communication speed : 10Mbps/100Mbps

Communication port : TCP port 23 (telnet)

Communication data length : 135bytes (maximum)

Version	Date	Contents	Page
1.0.0	10.May.'13	Original	All

## NETWORK SETUP of M-CR510/M-CR610

### >Procedure of Network Setup mode.

(1) Press **SETUP** button, then Menu appears on OLED-display.

(2) Select "Network > Settings" .

(3) Set parameters described below.

<DHCP>            "On"---Use this setting when DHCP server is on the local network.  
                  "Off"---Use this setting when DHCP server is not on the local network.  
<IP Address>    When <DHCP> sets "Off", please set IP address.  
                  When <DHCP> sets "On", you can confirm the IP address that is set by server.  
<Subnet Mask>   When <DHCP> sets "Off", please set Subnet Mask.  
                  When <DHCP> sets "On", you can confirm the Subnet Mask that is set by server.  
<Gateway>        Set the address of Gateway when Gateway is on the local network.  
                  Do not set this parameter when Gateway is not on the local network.  
<Primary DNS>    Do not set this parameter.  
<Second DNS>    Do not set this parameter.  
<Proxy>           Set this parameter "Off".

<Network Option: Network Standby Mode>.

(1) Press **SETUP** button, then Menu appears on OLED-display.

(2) Select "Network > Network Standby".

(3) Set parameters described below.

      "Network **On**"---Use this setting when using the M-CR510/610 Connected in a network.

      "Network **Off**"--- Use this setting when not using the M-CR510/610 connected in a network.

          This setting is reducing the power consumption in the standby mode.

## Protocol specification

The following three data forms are defined.

- COMMAND** : The message sent to a system from a controller(Touch Panel etc.)  
A command to a system is given from a controller.
- EVENT** : The message sent to a controller (Touch Panel etc.) from a system  
The result is sent, when a system is operated directly and a state changes.  
\*The form of **EVENT** presupposes that it is the same as that of **COMMAND**.  
\*\*Refer to the following table for the contents of **COMMAND** and **EVENT**.
- RESPONSE** : The message sent to a controller (Touch Panel etc.) from a system  
if the 'request command' (**COMMAND**+?**CR**(0x0D)) has came from a controller.  
The **RESPONSE** should be sent within 200ms of receiving the **COMMAND**.  
\*The form of **RESPONSE** presupposes that it is the same as that of **EVENT**.

**Basic specification:** The command by ASCII CODE, parameter expression

\*ASCII CODE which can be used is from 0x20 to 0x7F: the alphabet and the number of 0-9, and space (0x20), some signs,  
AND carriage return (0x0D) --- It is used only as a pause sign.

**Command structure:** COMMAND + PARAMETER + CR (0x0D)

COMMAND: ASCII CODE of 2 characters

Ex.        SI : Select Input source  
          MU : Mute Setting  
          MV : Master Volume setting  
          PW : system Power setting

PARAMETER : ASCII CODE ( up to 25 characters)

ex.        TUNER: function name

\*Special Parameter--- ? : for request command

**The example of a command**                    \* <CR> is the meaning of 0x0D.

SITUNER<CR>        : Select Input source TUNER

MUON<CR>         : Mute Set to On

MVUP<CR>         : Master Volume UP

PWON<CR>         : system Power ON

PWSTANDBY<CR>    : system Power STANDBY

SI?<CR>           : Request command for now playing input source >> Return **RESPONSE** 'SI\*\*\*<CR>'

## Others

- A) **COMMAND** is receivable also during transmission of **EVENT**.
- B) The **RESPONSE** should be sent as opposed to the request command by all the commands with which an **EVENT** exists , not need to the another request commands(ex. SI command).
- C) The **PARAMETER** (with **COMMAND** and **RESPONSE, EVENT**) of minimum level of MASTER VOLUME defines "00".
- D) If the MASTER VOLUME & CHANNEL VOLUME set with 1dB step, the **PARAMETER** (with **COMMAND** and **RESPONSE, EVENT**) defines three ASCII characters as bellows.

Ex.     MASTER VOLUME = 0dB : MV00<CR>  
                              05dB : MV05<CR>  
                              10dB : MV10<CR>  
                              |        |  
                              50dB : MV50<CR>  
                              55dB : MV55<CR>  
                              60dB : MV60<CR>

- E) 1 seconds later, please transmit the next **COMMAND** after transmitting a power on **COMMAND**(PWON).

## COMMAND and PARAMETER list

COMMAND	PARAMETER	Function	example
PW	ON	POWER ON/STANDBY change	PWON<CR>
	STANDBY		PWSTANDBY<CR>
	?	Return PW Status	PW?<CR>
MV	UP	MASTER VOLUME UP/DOWN , direct change to **dB	MVUP<CR>
	DOWN		MVDOWN<CR>
	**		MV45<CR>
	?	Return MV Status	MV?<CR>
MU	ON	OUTPUT MUTE ON/OFF change	MUON<CR>
	OFF		MUOFF<CR>
	?	Return MU Status	MU?<CR>
SI	IRADIO		SIIRADIO<CR>
	SERVER		SISERVER<CR>
	LASTFM	EU Only	SILASTFM<CR>
	PANDORA	NA Only	SIPANDORA<CR>
	SIRIUSXM	NA Only	SISIRIUSXM<CR>
	SPOTIFY	EU/NA Only	SISPOTIFY<CR>
	USB		SIUSB<CR>
	REARUSB		SIREARUSB<CR>
	AUXB	M-CR510:Analog In、M-CR610:Analog In1	SIAUXB<CR>
	AUXC	Analog In2(M-CR610 Only)	SIAUXC<CR>
	AUXD	Digital In	SIAUXD<CR>
	CD	M-CR610 Only	SICD<CR>
	TUNER	M-CR610 Only	SITUNER<CR>
	?	Return SI Status	SI?<CR>
SLP	OFF	SLEEP TIMER setting	SLPOFF<CR>
	***	***:001 to 120 by ASCII , 010=10min	SLP***<CR>
	?	Return SLP Status	SLP?<CR>

※timer

COMMAND	PARAMETER	Function	example
TS	ONCE	ONCE TIMER TIME SET	TSOANCE A0730-AFFFF CD00 05 0<CR>
	@**##-@\$\$%%	@:A or P or 2 (A:AM,P:PM,2:24hour by ASCII)	TSOANCE P0630-PFFFF FA01 05 1<CR>
	[F] [N] VV [O]	**## :start time(**=00~23hours,##=00~59minutes by ASCII)	TSOANCE 21930-2FFFF US00 05 1<CR>
		\$\$%% :stop time(\$\$=00~23hours,%=00~59minutes by ASCII) (Not Use:FFFF)	

		[F]:Function (2bytes by ASCII)	
		FA Favorite	
		CD CD (M-CR610 Only)	
		US Front USB	
		RU Rear USB	
		[N]:preset No.(2bytes by ASCII, except TU="00")	
		VV:VOLUME	
		[O]:ONCE TIMER ON/OFF(0:OFF,1:ON)	
	EVERY @**##-@\$\$%% [F] [N] VV [O]	EVERY TIMER TIME SET @:A or P or 2(A:AM,P:PM,2:24hour by ASCII) **## :start time(**=00~23hours,##=00~59minutes by ASCII) \$\$%% :stop time(\$\$=00~23hours,%=00~59minutes by ASCII) (Not Use:FFFF) [F]:Function (2bytes by ASCII) It is the same as that of ONCE TIMER TIME SET. [N]:preset No.(2bytes by ASCII, except TU="00")	TSEVERY P0630-PFFFF CD00 05 0<CR> TSEVERY P0630-PFFFF FV01 05 1<CR> TSEVERY 21830-2FFFF US00 05 1<CR>
		VV:VOLUME	
		[O]:EVERY TIMER ON/OFF(0:OFF,1:ON)	
	?	TIMER Status	TS?<CR>
CLK		CLOCK	CLK<CR>

COMMAND	PARAMETER	Function	example
PS	BAS UP	BASS UP/DOWN , direct change to **dB	PSBAS UP<CR>
	BAS DOWN	** :00 to 99 by ASCII , 50=0dB	PSBAS DOWN<CR>
	BAS **	SYSTEM can be operated from -10 to +10(40 to 60)	PSBAS 50<CR>
	BAS ?	Return PSBAS Status, 2Steps(40,42,44,...,50,...,56,58,60)	PSBAS ?<CR>
	TRE UP	TREBLE UP/DOWN , direct change to **dB	PSTRE UP<CR>
	TRE DOWN	** :00 to 99 by ASCII , 50=0dB	PSTRE DOWN<CR>
	TRE **	SYSTEM can be operated from -10 to +10(40 to 60)	PSTRE 50<CR>
	TRE ?	Return PSTRE Status,2Steps(40,42,44,...,50,...,56,58,60)	PSTRE ?<CR>
	BAL LEFT	BALANCE LEFT/RIGHT , direct change to **	PSBAL LEFT<CR>
	BAL RIGHT	** :00 to 99 by ASCII , 50=CENTER	PSBAL RIGHT<CR>
	BAL **	SYSTEM can be operated from L6 to R6(44 to 56)	PSBAL 50<CR>
	BAL ?	Return PSBAL Status	PSBAL ?<CR>
	SDB ON	Denon Model:SDB / Marantz Model:BDD ON/OFF	PSSDB ON<CR>
	SDB OFF		PSSDB OFF<CR>
	SDB ?	Return PSSDB Status	PSSDB ?<CR>
	SDI ON	SOURCE DIRECT ON/OFF	PSSDI ON<CR>



	SDI OFF		PSSDI OFF<CR>
	SDI ?	Return PSS.DIRECT Status	PSSDI ?<CR>
	FRONT SPA	Speaker Select(M-CR610 Only)	PSFRONT SPA<CR>
	FRONT SPB	Speaker A / Speaker B / Speaker A+B	PSFRONT SPB<CR>
	FRONT A+B		PSFRONT A+B<CR>
	FRONT ?	Return Speaker Select Status	PSFRONT ?<CR>
FV	**	FAVORITE direct change to No.**	FV 25<CR>
	?	Return FAVORITE List	FV ?<CR>
	MEM **	FAVORITE MEMORY to No.**	FVMEM 01<CR>
	DEL **	FAVORITE DELEAT to No.**	FVDEL 01<CR>

※ANALOG TUNER Control (M-CR610 Only)

COMMAND	PARAMETER	Function	example
TF	ANUP	TUNER Frequency UP/DOWN	TFANUP<CR>
	ANDOWN		TFANDOWN<CR>
	AN***** (6 digits)	--- ***** kHz at AM band (>050000 is AM.) ***** MHz at FM band (<050000 is FM.)	TFAN105000<CR> (1050.00kHz at AM)
	AN?	Return TF Status	TFAN?<CR>
	ANNAME?	Return RDS Station Name ( <b>EU</b> Only)	TFANNAME?<CR>
TM		TUNER BAND , MODE Select	
	ANAM	---Band set to AM	TMANAM<CR>
	ANFM	---Band set to FM	TMANFM<CR>
	?	Return TM Status	TM?<CR>
	ANAUTO	---Tuning mode set to AUTO mode	TMANAUTO<CR>
	ANMANUAL	---Tuning mode set to MANUAL mode	TMANMANUAL<CR>

TF, TP, TM **COMMAND** : '\*' parameters can NOT operate when INPUT source isn't TUNER.

※DAB TUNER Control (M-CR610 Only)

COMMAND	PARAMETER	Function	example
TF	DAUP	STATION UP/DOWN	TFDAUP<CR>
	DADOWN		TFDADOWN<CR>
	DA***	TUNER STATION change ***:Frequency Data	TFDA05A<CR>
	DA?	Return TF Status	TFDA?<CR>
	DANAME?	Return Program Service Name ( <b>EU</b> Only)	TFDANAME?<CR>
TM	DA	---Band set to DAB	TMDA<CR>

TF, TM **COMMAND** : '\*' parameters can NOT operate when INPUT source isn't TUNER.

※Network/Rhapsody/Napster/USB/iPod Direct Extended Control (SS COMMAND)

COMMAND	PARAMETER	Function	example
NS	90	"Cursor Up" Control	NS90<CR>
	91	"Cursor Down" Control	NS91<CR>
	92	"Cursor Left" Control	NS92<CR>
	93	"Cursor Right" Control	NS93<CR>
	94	"Enter (Play/Pause)" Control	NS94<CR>
	9A	"Play" Control (iRadio/mServer/USB) "Play/Pause" Control (iPod Direct)	NS9A<CR>
	9B	"Pause" Control "Play/Pause" Control (iPod Direct)	NS9B<CR>
	9C	"Stop" Control	NS9C<CR>
	9D	"Skip Plus" Control	NS9D<CR>
	9E	"Skip Minus" Control	NS9E<CR>
	9F	Start Fast Forward	NS9F<CR>
	9G	Start Fast Forward	NS9G<CR>
	9H	"Repeat One" (USB/iPod DIRECT/mServer)	NS9H<CR>
	9I	"Repeat All" (USB/iPod DIRECT/mServer)	NS9I<CR>
	9J	"Repeat Off" (USB/iPod DIRECT/mServer)	NS9J<CR>
	9K	"Random On/Repeat ALL" (USB/mServer) "Shuffle Songs" Control (iPod Direct Only)	NS9K<CR>
	9M	"Random Off" (USB/mServer) "Shuffle Off" Control (iPod Direct Only)	NS9M<CR>
	9W	Toggle Switch "Browse Mode/Remote Mode"Control (iPod Direct Only)	NS9W<CR>
	9X	Page Up	NS9X<CR>
	9Y	Page Down	NS9Y<CR>
	9Z	End Fast Forward / Reverse	NS9Z<CR>
NSA		Request Onscreen Display Information List (Ascii)	NSA<CR> (Return NSE0-NSE8, Refer to Page 21)
NSE		Request Onscreen Display Information List (UTF-8 CODE Character)	NSE<CR> (Return NSE0-NSE8, Refer to Page 22)

CD Control (M-CR610 Only)

COMMAND	PARAMETER	Function	example
BD	CURSOR UP	"Cursor Up" Control	BDCURSOR UP<CR>
	CURSOR DOWN	"Cursor Down" Control	BDCURSOR DOWN<CR>
	CURSOR LEFT	"Cursor Left" Control	BDCURSOR LEFT<CR>
	CURSOR RIGHT	"Cursor Right" Control	BDCURSOR RIGHT<CR>
	ENTER	"Enter" Control	BDENTER<CR>
	PLAY	"Play" Control	BDPLAY<CR>
	PAUSE	"Pause" Control	BDPAUSE<CR>
	STOP	"Stop" Control	BDSTOP<CR>
	SKIP +	"Skip Plus" Control	BDSKIP +<CR>
	SKIP -	"Skip Minus" Control	BDSKIP -<CR>
	MANUAL SEARCH +	"Manual Search Plus" Control (Search Forward)	BDMANUAL SEARCH +<CR>
	MANUAL SEARCH -	"Manual Search Minus" Control (Search Reverse)	BDMANUAL SEARCH -<CR>
	DS TRACK ****	Direct Select(Select track number) ****:0000 to 9999 by ASCII, 0000=number0, 3000= number 3000 ---SYSTEM can be operated from 0 to 9999	BDDS TRACK 0010<CR>
	OPEN/CLOSE	Disc tray open / closing	BDOPEN/CLOSE<CR>
	REPEAT	"Repeat" setting	BDREPEAT<CR>
	REPEAT ONE	"Repeat One"	BDREPEAT ONE<CR>
	REPEAT ALL	"Repeat All"	BDREPEAT ALL<CR>
	REPEAT OFF	"Repeat Off"	BDREPEAT OFF<CR>
	RANDOM	"RANDOM" Control	BDRANDOM<CR>
	RANDOM ON	"Random On"	BDRANDOM ON<CR>
	RANDOM OFF	"Random Off"	BDRANDOM OFF<CR>
	FOLDER MODE ON	"Folder Mode On"	BDFOLDER MODE ON<CR>
	FOLDER MODE OFF	"Folder Mode Off"	BDFOLDER MODE OFF<CR>
	FOLDER NAME?	"FOLDER NAME"Request	BDFOLDER NAME?<CR>
	FILE NAME?	"FILE NAME"Request	BDFILE NAME?<CR>
	ARTIST NAME?	"ARTIST NAME"Request	BDARTIST NAME?<CR>
	ALBUM NAME?	"ALBUM NAME"Request	BDALBUM NAME?<CR>
	SONG NAME?	"SONG NAME"Request	BDSONG NAME?<CR>
	STATUS?	Acquires system status (such as the entire player and transfer unit).	BDSTATUS?<CR>
	FOLDER +	"Folder Plus" Control	BDFOLDER +<CR>
	FOLDER -	"Folder Minus" Control	BDFOLDER -<CR>

※Remote Code(C4 Command)

COMMAND	PARAMETER	Function	example
---------	-----------	----------	---------

RCRC5	RC52103800	Remote Code:SLEEP	RCRC52103800<CR>
	RC52101510	Remote Code:CLOCK	RCRC52101510<CR>
	RC52107100	Remote Code:DIMMER	RCRC52107100<CR>
	RC52101200	Remote Code:POWER	RCRC52101200<CR>
	RC52106351	Remote Code:INTERNET RADIO	RCRC52106351<CR>
	RC52106352	Remote Code:ONLINE MUSIC	RCRC52106352<CR>
	RC52106350	Remote Code:MUSIC SERVER	RCRC52106350<CR>
	RC52106310	Remote Code:TUNER(M-CR610 Only)	RCRC52106310<CR>
	RC52106330	Remote Code:ANALOG IN(Code:AUX toggle) (M-CR610 Only)	RCRC52106330<CR>
	RC52106333	Remote Code:DIGITALIN(Code:AUX3) (M-CR610 Only)	RCRC52106333<CR>
	RC52106321	Remote Code:FRONT USB (/iPod/USB)	RCRC52106321<CR>
	RC52106322	Remote Code:REAR USB	RCRC52106322<CR>
	RC52106320	Remote Code:CD(M-CR610 Only)	RCRC52106320<CR>
	RC52103300	Remote Code:PREV/CH-	RCRC52103300<CR>
	RC52105300	Remote Code:PLAY/PAUSE	RCRC52105300<CR>
	RC52103200	Remote Code:NEXT/CH+	RCRC52103200<CR>
	RC52105000	Remote Code:REW/TU-(M-CR610 Only)	RCRC52105000<CR>
	RC52105400	Remote Code:STOP(M-CR610 Only)	RCRC52105400<CR>
	RC52105200	Remote Code:FF/TU+(M-CR610 Only)	RCRC52105200<CR>
	RC52111921	Remote Code:FAVORITES ADD	RCRC52111921<CR>
	RC52111922	Remote Code:FAVORITES CALL	RCRC52111922<CR>
	RC52111901	Remote Code:DBB/TONE	RCRC52111901<CR>
	RC52101300	Remote Code:MUTE	RCRC52101300<CR>
	RC52101600	Remote Code:VOL+	RCRC52101600<CR>
	RC52101700	Remote Code:VOL-	RCRC52101700<CR>
	RC52108720	Remote Code:TOP MENU	RCRC52108720<CR>
	RC52103210	Remote Code:SEARCH	RCRC52103210<CR>
	RC52101100	Remote Code:INFO	RCRC52101100<CR>
	RC52108200	Remote Code:SETUP	RCRC52108200<CR>
	RC52108000	Remote Code:CURSOR UP	RCRC52108000<CR>
	RC52108100	Remote Code:CURSOR DOWN	RCRC52108100<CR>
	RC52108500	Remote Code:CURSOR LEFT	RCRC52108500<CR>
	RC52108600	Remote Code:CURSOR RIGHT	RCRC52108600<CR>
	RC52108700	Remote Code:ENTER	RCRC52108700<CR>
	RC52100100	Remote Code:1	RCRC52100100<CR>
	RC52100200	Remote Code:2	RCRC52100200<CR>
	RC52100300	Remote Code:3	RCRC52100300<CR>

RC52100400	Remote Code:4	RCRC52100400<CR>
RC52100500	Remote Code:5	RCRC52100500<CR>
RC52100600	Remote Code:6	RCRC52100600<CR>
RC52100700	Remote Code:7	RCRC52100700<CR>
RC52100800	Remote Code:8	RCRC52100800<CR>
RC52100900	Remote Code:9	RCRC52100900<CR>
RC52101000	Remote Code:+10a/A	RCRC52101000<CR>
RC52100000	Remote Code:0	RCRC52100000<CR>
RC52104900	Remote Code:CLEAR	RCRC52104900<CR>
RC52102800	Remote Code:RANDOM	RCRC52102800<CR>
RC52102900	Remote Code:REPEAT	RCRC52102900<CR>
RC52111930	Remote Code:PROGRAM/MODE(M-CR610 Only)	RCRC52111930<CR>
RC52102910	Remote Code:SPKR A/B(Speaker A/B toggle)	RCRC52102910<CR>
RC516012	Remote Code:Power on/off	RCRC516012<CR>
RC51601201	Remote Code:Power on	RCRC51601201<CR>
RC52101201	Remote Code:Power on	RCRC52101201<CR>
RC51601202	Remote Code:Power off	RCRC51601202<CR>
RC52101202	Remote Code:Power off	RCRC52101202<CR>
RC51600013	Remote Code:Input select up (Toggle)	RCRC51600013<CR>
RC51600014	Remote Code:Input select down (Toggle)	RCRC51600014<CR>
RC52106300	Remote Code:Input select up (Toggle)	RCRC52106300<CR>
RC52106301	Remote Code:Input select down (Toggle)	RCRC52106301<CR>
RC516017	Remote Code:Vol-	RCRC516017<CR>
RC516016	Remote Code:Vol+	RCRC516016<CR>
RC52104500	Remote Code:OPEN/CLOSE(M-CR610 Only)	RCRC52104500<CR>
RC52105301	Remote Code:PLAY	RCRC52105301<CR>
RC52104801	Remote Code:PAUSE	RCRC52104801<CR>
RC52111910	Remote Code:FOLDER MODE (Toggle) (M-CR610 Only)	RCRC52111910<CR>
RC52111911	Remote Code:ALL(M-CR610 Only)	RCRC52111911<CR>
RC52111912	Remote Code:FOLDER(M-CR610 Only)	RCRC52111912<CR>
RC52108210	Remote Code:iPod MODE (Toggle)	RCRC52108210<CR>
RC52108211	Remote Code:DIRECT	RCRC52108211<CR>
RC52108212	Remote Code:REMOTE	RCRC52108212<CR>
RC52106315	Remote Code:FM(M-CR610 Only)	RCRC52106315<CR>
RC52106313	Remote Code:AM(M-CR610 Only)	RCRC52106313<CR>
RC52106314	Remote Code:DAB(M-CR610 Only)	RCRC52106314<CR>
RC52106331	Remote Code:AUX1	RCRC52106331<CR>

RC52106332	Remote Code:AUX2(M-CR610 Only)	RCRC52106332<CR>
RC52106337	Remote Code:DIGITAL IN	RCRC52106337<CR>
RC52103501	Remote Code:Speaker A On(M-CR610 Only)	RCRC52103501<CR>
RC52103502	Remote Code:Speaker A Off(M-CR610 Only)	RCRC52103502<CR>
RC52103901	Remote Code:Speaker B On(M-CR610 Only)	RCRC52103901<CR>
RC52103902	Remote Code:Speaker B Off(M-CR610 Only)	RCRC52103902<CR>
RC52103560	Remote Code:Speaker A+B On(M-CR610 Only)	RCRC52103560<CR>
RC52104100	Remote Code:PROGRAM(M-CR610 Only)	RCRC52104100<CR>
RC52103220	Remote Code:CH+	RCRC52103220<CR>
RC52103320	Remote Code:CH-	RCRC52103320<CR>
RC52106355	Remote Code:PANDORA(M-CR610 Only)	RCRC52106355<CR>
RC52106356	Remote Code:LAST.FM	RCRC52106356<CR>
RC52106357	Remote Code:SIRIUSXM(M-CR610 Only)	RCRC52106357<CR>
RC52106358	Remote Code:SPOTIFY	RCRC52106358<CR>
RC51603500	Remote Code:Speaker A Select(M-CR610 Only)	RCRC51603500<CR>
RC51603900	Remote Code:Speaker B Select(M-CR610 Only)	RCRC51603900<CR>
RC51603560	Remote Code:Speaker A+B Select(M-CR610 Only)	RCRC51603560<CR>

## EVENT (or RESPONSE) and PARAMETER list

EVENT	PARAMETER	Function	example
PW	ON	POWER ON/STANDBY change	PWON<CR>
	STANDBY		PWSTANDBY<CR>
MV	**	MASTER VOLUME change , **:00 to 60 by ASCII	MV80<CR>
MU	ON	OUTPUT MUTE ON/OFF change	MUON<CR>
	OFF		MUOFF<CR>
SI	IRADIO	<b>EU</b> Only <b>NA</b> Only <b>NA</b> Only <b>EU/NA</b> Only  M-CR510:Analog In、M-CR610:Analog In1 Analog In2(M-CR610 Only) Digital In M-CR610 Only M-CR610 Only	SIIRADIO<CR>
	SERVER		SISERVER<CR>
	LASTFM		SILASTFM<CR>
	PANDORA		SIPANDORA<CR>
	SIRIUSXM		SISIRIUSXM<CR>
	SPOTIFY		SISPOTIFY<CR>
	USB		SIUSB<CR>
	REARUSB		SIREARUSB<CR>
	AUXB		SIAUXB<CR>
	AUXC		SIAUXC<CR>
	AUXD		SIAUXD<CR>
	CD		SICD<CR>
	TUNER		SITUNER<CR>
SLP	OFF	SLEEP TIMER setting change	SLPOFF<CR>
	***		SLP120<CR>

※timer

EVENT	PARAMETER	function	example
TS	ONCE	ONCE TIMER TIME SET	TSONCE A0730-FFFFF CD00 05 0<CR>
	@**##-@\$%%	@:A or P or 2 (A:AM, P:PM, 2:24hour by ASCII)	TSONCE P0630-FFFFF FA01 05 1<CR>
	[F] [N] VV [O]	**## :start time (**=00~23hours, ##=00~59minutes by ASCII)	TSONCE 21930-FFFFF US00 05 1<CR>
		(Not Set:FFFF)	
		\$\$% :stop time (\$\$=00~23hours, %=00~59minutes by ASCII)	
		(Not Use:FFFF)	
		[F]:Function (2bytes by ASCII)	
		FA Favorite	
		CD CD (M-CR610 Only)	

CLK		<table><tr><td>US</td><td>Front USB</td></tr><tr><td>RU</td><td>Rear USB</td></tr></table>	US	Front USB	RU	Rear USB	
	US	Front USB					
	RU	Rear USB					
		[N]:preset No.(2bytes by ASCII, except TU="00")					
		VV:VOLUME					
		[O]:ONCE TIMER ON/OFF(0:OFF,1:ON)					
	EVERY	EVERY TIMER TIME SET	TSEVERY P0630-FFFFFF CD00 05 0<CR>				
	@**##-@\$\$%%	@:A or P or 2(A:AM,P:PM,2:24hour by ASCII)	TSEVERY P0630-FFFFFF FV01 05 1<CR>				
	[F] [N] VV [O]	**## :start time(**=00~23hours,##=00~59minutes by ASCII)	TSEVERY 21830-FFFFFF US00 05 1<CR>				
		(Not Set:FFFF)					
		\$\$%% :stop time(\$\$=00~23hours,%%=00~59minutes by ASCII)					
		(Not Use:FFFF)					
		[F]:Function (2bytes by ASCII)					
		It is the same as that of ONCE TIMER TIME SET.					
		[N]:preset No.(2bytes by ASCII, except TU="00")					
	VV:VOLUME						
	[O]:EVERY TIMER ON/OFF(0:OFF,1:ON)						
	CLOCK	CLK<CR>					

EVENT	PARAMETER	Function	example
PS	BAS **	BASS change	PSBAS 50<CR>
	TRE **	TREBLE change	PSTRE 50<CR>
	BAL **	BALANCE change	PSBAL 50<CR>
	SDB ON	SDB ON/OFF	PSSDB ON<CR>
	SDB OFF		PSSDB OFF<CR>
	SDI ON	SOURCE DIRECT ON/OFF	PSSDI ON<CR>
	SDI OFF		PSSDI OFF<CR>
	FRONT SPA	Speaker Select(M-CR610 Only)	PSFRONT SPA<CR>
	FRONT SPB	Speaker A / Speaker B / Speaker A+B	PSFRONT SPB<CR>
	FRONT A+B		PSFRONT A+B<CR>
FV	**_XX_aaaa_???? ???	"FAVORITE NAME" Request *:FAVORITE No. XX:FUNCTION (0:Internet Radio,1:Music Server,2:TUNER) a:Character Length(MAX32byte) _:Null ?: Don't Care (The character after Null should be disregarded) **aaaa ?????:35byte Fixed	FV25 01 FM-87.50MHz<CR>



※ANALOG TUNER Control (M-CR610 Only)

EVENT	PARAMETER	function	example
TF	AN***** (6 digits)	TUNER Frequency change  --- ****.* kHz at AM band ****.* MHz at FM band	TFAN105000<CR>  (1050.00kHz at AM)
	ANNAME*****	RDS Station Name Request *:Station Name	TFANNAME123456878  (Station Name"12345678")
TM		TUNER BAND , MODE change	
	ANAM	---Band set to AM	TMANAM<CR>
	ANFM	---Band set to FM	TMANFM<CR>
	ANAUTO	---Tuning mode set to AUTO mode	TMANAUTO<CR>
	ANMANUAL	---Tuning mode set to MANUAL mode	TMANMANUAL<CR>

※DAB TUNER Control (M-CR610 Only)

EVENT	PARAMETER	function	example
TF	DA***_###.### (3 digits+ 6 digits)	TUNER STATION change  ***      Frequency Block at DAB band _          Space(0x20) ###.### Frequency(MHz) at DAB band	TFDA13F<CR> TFDA13F 239.200<CR>  ("13F"Frequency Block at DAB) ("239.200"Frequency(MHz) at DAB)
	DANAME*****	Program Service Name Request *:Program Service Name	TFDANAME123456878<CR>  (Program Service Name"12345678")
TM	DA	---Band set to DAB	TMDA<CR>

※Network/Rhapsody/Napster/USB/iPod Direct Extended Control

EVENT	PARAMETER	function	example
NSA		Onscreen Display Information(mServer/iRadio) is Answered By the NSA Command.	
	0	Display Line1 Information(Ascii)	NSA0***** _????<CR>
	1	Display Line2 Information(Ascii)	NSA1※***** _????<CR>
	2	Display Line3 Information(Ascii)	NSA2※***** _????<CR>
	3	Display Line4 Information(Ascii)	NSA3※***** _????<CR>
	4	Display Line5 Information(Ascii)	NSA4※***** _????<CR>

	5	Display Line6 Information(Ascii)	NSA5※***** _????<CR>
	6	Display Line7 Information(Ascii)	NSA6※***** _????<CR>
	7	Display Line8 Information(Ascii)	NSA7***** _????<CR>
	8	Display Line9 Information(Ascii)	NSA8***** _????<CR> *: Ascii CODE Character (MAX95byte) _:Null ?: Don't Care (The character after Null should be disregarded) ※:Cursor&Playable Music Information Data (1Byte) Bit1:Playable Music =1 Bit2,3:Don't Care Bit4:CURSOR SELECT=1 Bit5,6,7,8:Don't Care ***** ?????:96byte Fixed
		<example>	NSA0Now Playing USB_????<CR> NSA1※Come Away With Me_???<CR> NSA2※Norah Jones_????????<CR> NSA3※_????????????????<CR> NSA4※_????????????????<CR> NSA5※00:11 100%_???????<CR> NSA6※ ?????????????????<CR> NSA7_ ?????????????????<CR> NSA8 ?????????????????<CR>
NSE		Onscreen Display Information (mServer/iRadio) is Answered By the NSE Command.	
	0	Display Line1 Information	NSE0***** _????<CR>
	1	Display Line2 Information	NSE1※***** _????<CR>
	2	Display Line3 Information	NSE2※***** _????<CR>
	3	Display Line4 Information	NSE3※***** _????<CR>
	4	Display Line5 Information	NSE4※***** _????<CR>
	5	Display Line6 Information	NSE5※***** _????<CR>
	6	Display Line7 Information	NSE6※***** _????<CR>
	7	Display Line8 Information	NSE7***** _????<CR>
	8	Display Line9 Information	NSE8***** _????<CR> *:UTF-8 CODE Character (MAX95byte) :Null

			?: Don't Care (The character after Null should be disregarded) ✖:Cursor&Playable Music Information Data(1Byte) Bit1:Playable Music =1 Bit2,3:Don't Care Bit4:CURSOR SELECT=1 Bit5,6,7,8:Don't Care ***** ?????:96byte Fixed
		<example>	NSE0Now Playing USB_????<CR> NSE1✖Come Away With Me_???<CR> NSE2✖Norah Jones_????????<CR> NSE3✖_????????????????<CR> NSE4✖_????????????????<CR> NSE5✖00:11 100%_??????<CR> NSE6✖_????????????????<CR> NSE7_????????????????<CR> NSE8_????????????????<CR>

※CD Control (M-CR610 Only)

EVENT	PARAMETER	function	example
BD	STATUS *+-# /abcddeeee efhmmssM	Acquires system status (such as the entire player and transfer unit). (*A) *:"SP",0 to 3 by ASCII (Answer code) ( *1 ) +:1 to ? by ASCII (Disc type code) ( *2 ) -: (Audio format code) ( *3 ) #: (Audio channel code) ( 2ch:32h(2)固定 )  :"0" /:"0" a:"0" b: (Status code) ( *6 ) c: (Play mode code) ( *5 ) ddd:"0" eeee: (Track information) f: (Time mode) ( *4 ) hh: (Elapsed time hour) mm: (Elapsed time minutes) ss: (Elapsed time second) M: (Disc/USB mode) ( *7 )	BDSTATUS "SP"12345673100200081122 3300<CR>
	PLAY *	"Play" Control *:"SP", 0 to 3 by ASCII (Answer code) ( *1 )	BDPLAY "SP"<CR>
	PAUSE *	"Pause" Control (*B) *:"SP",0 to 3 by ASCII (Answer code) ( *1 )	BDPAUSE 1<CR>
	STOP *	"Stop" Control *:"SP",0 to 3 by ASCII (Answer code) ( *1 )	BDSTOP 2<CR>
	SKIP *-----	"Skip" Control (*C) *:"SP",0 to 3 by ASCII (Answer code) ( *1 ) +++:0 -----:0 to 9999 by ASCII (track number)	BDSKIP "SP"0000001<CR>
	MANUAL SEARCH *	Manual Search change (*D) *:"SP",0 to 3 by ASCII (Answer code) ( *1 )	BDMANUAL SEARCH "SP"<CR>
	DS TRACK *++++-----	Direct Select  *:"SP",0 to 3 by ASCII (Answer code) ( *1 ) +++:000 -----:0000 to 9999 by ASCII (track number)	BDDS TRACK "SP"0000020<CR>
	CURSOR *	"Cursor" Control	BDCURSOR "SP"<CR>

	*:"SP",0 to 3 by ASCII (Answer code) ( *1 )	
ENTER	"Enter" Control *:"SP",0 to 3 by ASCII (Answer code) ( *1 )	BDENTER "SP"<CR>
OPEN/CLOSE *	Disc tray open / closing *:"SP",0 to 3 by ASCII (Answer code) ( *1 )	BDOPEN/CLOSE "SP"<CR>
REPEAT *	"Repeat" Setting *:"SP",0 to 3 by ASCII (Answer code) ( *1 )	BDREPEAT "SP"<CR>
REPEAT ONE *	"Repeat One" Setting *:"SP",0 to 3 by ASCII (Answer code) ( *1 )	BDREPEAT ONE "SP"<CR>
REPEAT ALL *	"Repeat All" Setting *:"SP",0 to 3 by ASCII (Answer code) ( *1 )	BDREPEAT ALL "SP"<CR>
REPEAT OFF *	"Repeat Off" Setting *:"SP",0 to 3 by ASCII (Answer code) ( *1 )	BDREPEAT OFF "SP"<CR>
RANDOM *	"RANDOM" Setting *:"SP",0 to 3 by ASCII (Answer code) ( *1 )	BDRANDOM "SP"<CR>
RANDOM ON *	"RANDOM ON" Setting *:"SP",0 to 3 by ASCII (Answer code) ( *1 )	BDRANDOM ON "SP"<CR>
RANDOM OFF *	"RANDOM OFF" Setting *:"SP",0 to 3 by ASCII (Answer code) ( *1 )	BDRANDOM OFF "SP"<CR>
FOLDER MODE ON *	"FOLDER MODE ON" Setting *:"SP",0 to 3 by ASCII (Answer code) ( *1 )	BDFOLDER MODE ON "SP"<CR>
FOLDERMODE OFF *	"FOLDER MODE OFF" Setting *:"SP",0 to 3 by ASCII (Answer code) ( *1 )	BDFOLDER MODE OFF "SP"<CR>
FOLDER NAME *aaaaa_????	"FOLDER NAME" Request *:"SP",0 to 3 by ASCII (Answer code) ( *1 ) a:Character Length(MAX32byte) _:Null ?: Don't Care (The character after Null should be disregarded) *****_?????:33byte Fixed	BDFOLDER NAME "SP" Norah Jones_????????????<CR>
FILE NAME *aaaaa_????	"FILE NAME" Request *:"SP",0 to 3 by ASCII (Answer code) ( *1 ) a:Character Length(MAX32byte) _:Null ?: Don't Care (The character after Null should be disregarded) *****_?????:33byte Fixed	BDFILE NAME "SP" Come Away With Me.mp3_?<CR>
ARTIST NAME *aaaaa_????	"ARTIST NAME" Request *:"SP",0 to 3 by ASCII (Answer code) ( *1 ) a:Character Length(MAX32byte) _:Null	BDARTIST NAME "SP" Norah Jones_????????????<CR>

	?: Don't Care (The character after Null should be disregarded) ***** ?????:33byte Fixed	
ALBUM NAME *aaaaa_????	"ALBUM NAME" Request *:"SP",0 to 3 by ASCII(Answer code) ( *1 ) a:Character Length(MAX32byte) _:Null ?: Don't Care (The character after Null should be disregarded) ***** ?????:33byte Fixed	BDALBUM NAME "SP" Come Away With Me_?<CR>
SONG NAME *aaaaa_????	"SONG NAME" Request *:"SP",0 to 3 by ASCII(Answer code) ( *1 ) a:Character Length(MAX32byte) _:Null ?: Don't Care (The character after Null should be disregarded) ***** ?????:33byte Fixed	BDSONG NAME "SP" Come Away With Me_?<CR>
FOLDER +	"Folder Plus" Control *:"SP",0 to 3 by ASCII(Answer code) ( *1 ) a:Character Length(MAX32byte) _:Null ?: Don't Care (The character after Null should be disregarded) ***** ?????:33byte Fixed	BDFOLDER NAME *aaaaa_????<CR>
FOLDER -	"Folder Minus" Control *:"SP",0 to 3 by ASCII(Answer code) ( *1 ) a:Character Length(MAX32byte) _:Null ?: Don't Care (The character after Null should be disregarded) ***** ?????:33byte Fixed	BDFOLDER NAME *aaaaa_????<CR>

(\*1) answer codes

No.	Status	Code (ASCII)	Description
1	Command OK	20h (SP)	Accepts the command.
2	Invalid	30h (0)	Invalid command.
3	Order Track None	32h (2)	The track , the group ,the title or the chapter you specified does not exist.

(\*2) Disc type code

Code	Disc Type
34h (4)	CD-DA
35h (5)	CD-ROM
36h (6)	UNKNOWN
40h (A)	USB
41h (B)	iPod

(\*3) Audio format code

Code	Audio Format
34h (4)	LPCM
36h (6)	UNKNOWN
3Bh (;)	MP3
3Dh (=)	WMA

(\*4) Time Mode code

Code	Time Mode
34h (4)	TOTAL REMAIN
39h (9)	TRACK ELAPSED
3Ah (:)	TRACK REMAIN
3Bh (;)	FOLDER NAME

(\*5) Play mode code

Code	Play Mode
31h (1)	NORMAL
32h (2)	PROGRAM
33h (3)	RANDOM
34h (4)	REPEAT ONE
35h (5)	RANDOM + REPEAT ALL
36h (6)	REPEAT ALL
37h (7)	PROGRAM + REPEAT ALL
38h (8)	PROGRAM + RANDOM
39h (9)	PROGRAM + RANDOM + REPEAT ALL
3A (:)	REPEAT FOLDER
3B (;)	NORMAL + FOLDER

(\*6) status codes

Here is a list of answer code types.

3Xh : Status of the entire system

4Xh : Status of each action mode

No.	Status	Code (ASCII)	Description
1	Stand-by	30h (0)	Stand-by
2	Disc Loading	31h (1)	Under disc loading.
3	Disc Loading Complete	32h (2)	Disc Loading complete.
4	Tray Opening	33h (3)	Disc tray open.
5	Tray Closing	34h (4)	Disc tray close.
6	No Disc	41h (A)	Disc not present
7	Stop	42h (B)	Stop
8	Play	43h (C)	Under disc playing.
9	Pause	44h (D)	Playback in process.
10	Scan Play	45h (E)	Scanning in process.
11	Scan Play(forward)	46h (F)	Scanning in process.
12	Scan Play(reverse)	47h (G)	Scanning in process.

(\*7) DISC/USB MODE

No.	Status	Code (ASCII)	Description
1	Disc	30h (0)	
2	USB	31h (1)	

## Special conditions

### (\*A) BDSTATUS

- When the disc does not set to DVD mechanism and disc loading process does not finish, group number, title number, track number, and chapter number are set ('0').
- When the disc does not set to DVD mechanism and disc loading process does not finish, elapsed time information are set ('0').
- When power condition is "STANDBY", can accept "REQUEST SYSTEM STATUS", "POWER ON KEY", "REQUEST CPU VERSION", and "REQUEST ERROR STATUS". In case of another command, returns "COMMAND FORMAT ERROR ('1')" in the "ANSWER CODE"

Note : When you need these data, you should send this command.

### (\*C) BDSKIP

- This command is valid only , when mode status data is Play (E) or Pause (F).
- The unit can skip to a maximum track with Forward (+) and to a minimum track with Reverse (-).

### (\*D) BDMANUAL SEARCH

- This command is valid only when the mode status is Play (E) or Pause (F).