

marantz SYSTEM control protocol

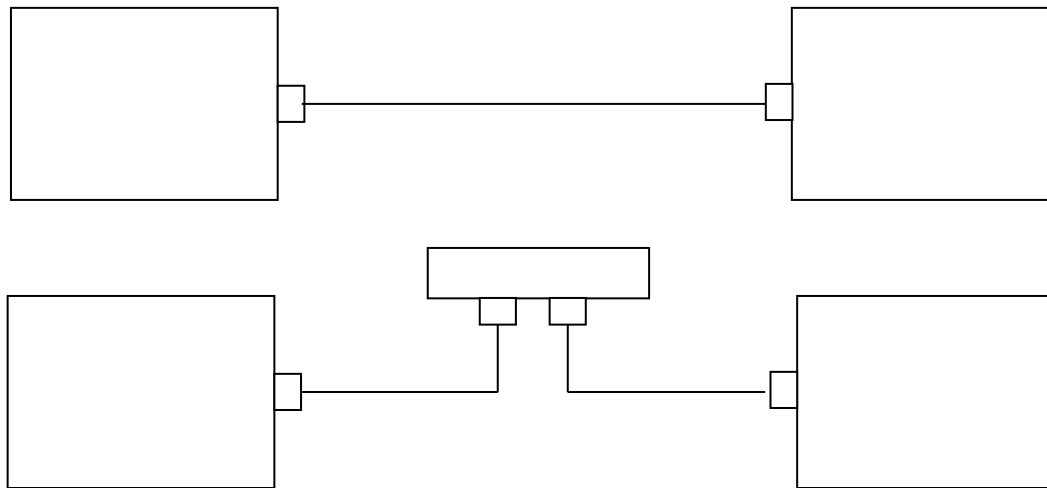
Ver. 1.0.0

Application model : M-CR511/611
Application terminal: Ethernet
Rev 13.4.0

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	2015/8/19	Original	ALL

NETWORK SETUP of M-CR511/611

>Procedure of Network Setup mode.

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

(2) Select "Network > Network Standby" .

(3) Set parameters described below.

"On" —Use this setting when using the M-CR511/611 Connected in a network.

"Off" — Use this setting when not using the M-CR511/611 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 come 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
PW : system PoWer setting

PARAMETER : ASCII CODE (up to 25 characters)

ex. IRADIO: function name

- *Special Parameter— ? : for request command

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

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).

Others

C) *COMMAND* is receivable also during transmission of *EVENT*.

D) 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).

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

COMMAND and PARAMETER list

※SYSTEM

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>
	**	** : 00 to 60 by ASCII	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	Internet Radio	SIIRADIO<CR>
	SERVER	Music Server	SISERVER<CR>
	PANDORA	Pandora (NA only)	SIPANDORA<CR>
	SIRIUSXM	SiriusXM (NA only)	SISIRIUSXM<CR>
	BLUETOOTH	Bluetooth	SIBLUETOOTH<CR>
	USB	USB	SIUSB<CR>
	REARUSB	Rear USB	SIREARUSB<CR>
	DIGITALIN1	Digital In 1	SIDIGITALIN1<CR>
	DIGITALIN2	Digital In 2	SIDIGITALIN2<CR>
	ANALOGIN	Analog In1	SIANALOGIN<CR>
	CD	CD	SICD<CR>
	TUNER	TUNER	SITUNER<CR>
	DAB	DAB	SIDAB<CR>
	FM	FM	SIFM<CR>
	AM	AM	SIAM<CR>
?	Return SI Status	SI?<CR>	
SLP	OFF	MAIN ZONE SLEEP TIMER setting	SLPOFF<CR>
	***	*** : 001 to 090 by ASCII , 010=10min	SLP***<CR>
	?	Return SLP Status	SLP?<CR>

※Volume A, B

COMMAND	PARAMETER	Function	example
MV	VOAUP	VOLUME A UP/DOWN , direct change to **dB	MVVOAUP<CR>
	VOADOWN		MVVOADOWN<CR>
	VOA**	** : 00 to 60 by ASCII	MVVOA45<CR>
	VOA?	Return VOA Status	MVVOA?<CR>
	VOBUP	VOLUME B UP/DOWN , direct change to **dB	MVVOBUP<CR>
	VOBDOWN		MVVOBDOWN<CR>
	VOB**	** : 00 to 60 by ASCII	MVVOB45<CR>
	VOB?	Return VOB Status	MVVOB?<CR>
MU	VOAON	OUTPUT MUTE ON/OFF change	MUVOAON<CR>
	VOAOFF		MUVOAOFF<CR>
	VOA?	Return MU Status	MUVOA?<CR>
	VOBON	OUTPUT MUTE ON/OFF change	MUVOBON<CR>
	VOBOFF		MUVOBOFF<CR>
	VOB?	Return MU Status	MUVOB?<CR>

※ALARM

COMMAND	PARAMETER	Function	example
TS	ONCE @**##-@\$% [F] [N] VV [O]	ONCE TIMER TIME SET	TSONCE A0730-AFFFF CD00 05 0<CR>
		@: A or P or 2 (A: AM, P: PM, 2: 24hour by ASCII)	TSONCE P0630-PFFFF FA01 05 1<CR>
		## : start time (=00~23hours, ##=00~59minutes by ASCII)	TSONCE 21930-2FFFF AA00 05 1<CR>
		\$\$% : stop time (\$\$=00~23hours, %=00~59minutes by ASCII)	
		(Not Use : FFFF)	
		[F] : Function (2bytes by ASCII)	
		FA Favorite	
		CD CD	
		AA AUX: Analog In	
		AD AUX: Digital In	
AI Analog In1			
A2 Analog In2			
D1 Digital In 1			

		D2 Digital In 2	
		IU iPod/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 @: 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") VV: VOLUME [O]: EVERY TIMER ON/OFF (0:OFF, 1:ON)	TSEVERY P0630-PFFFF CD00 05 0<CR> TSEVERY P0630-PFFFF FV01 05 1<CR> TSEVERY 21830-2FFFF AA00 05 1<CR>
	[F] [N] W [O]		
	?	TIMER Status	TS?<CR>
CLK	?	TIME CHECK	CLK?<CR>

※FAVORITE Control

COMMAND	PARAMETER	Function	example
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>

※Tone Control

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 :DBB 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	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>

※ANALOG TUNER Control

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 (EU 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>	

※DAB TUNER Control

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 (EU Only)	TFDANAME?<CR>
TM	DA	---Band set to DAB	TMDA<CR>

※Variable Output

COMMAND	PARAMETER	Function	example
SS	VAO	Variable Output (Audio Out Menu) :Fixed	SSVAO FIX
		Variable Output (Audio Out Menu) :variable	SSVAO VAR
		?	SSVAO ?
	VWL	Variable Output (Volume Limit) :0dB	SSVVL 000
		Variable Output (Volume Limit) :-10dB	SSVVL 010
		Variable Output (Volume Limit) :-20dB	SSVVL 020
		Volume Limit Direct	SSVVL *** (*** : Limit)
		?	SSVVL ?

※Auto Standby

COMMAND	PARAMETER	Function	example
SS	STB	Auto Standby : ON	SSSTB ON<CR>
		Auto Standby : OFF	SSSTB OFF<CR>
		Auto Standby : 1min	SSSTB 01<CR>
		Auto Standby : 5min	SSSTB 05<CR>
		Auto Standby : 15min	SSSTB 15<CR>
		Auto Standby Direct (** : TIME 01~99)	SSSTB **<CR>
		?	SSSTB ? <CR>

※Bi-Amp Setting

COMMAND	PARAMETER	Function	example
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SS	BIA	Bi-Amp : ON	SSBIA ON<CR>
		Bi-Amp : OFF	SSBIA OFF<CR>
		?	SSBIA ? <CR>

※Variable Output Volume

COMMAND	PARAMETER	Function	example
MV	UP	MASTER VOLUME UP/DOWN , direct change to **dB	MVUP<CR>
	DOWN		MVDOWN<CR>
	**	** : 99 to 00 by ASCII (99: -99dB, 00: 00dB, FF: MUTE)	MV45<CR>
	?	Return MV Status	MV?<CR>

※Language Setting

COMMAND	PARAMETER	Function	example
SS	LAN ENG	English	SSLAN ENG<CR>
	LAN DEU	German	SSLAN DEU<CR>
	LAN FRA	French	SSLAN FRA<CR>
	LAN ITA	Italian	SSLAN ITA<CR>
	LAN ESP	Spanish	SSLAN ESP<CR>
	LAN NER	Dutch	SSLAN NER<CR>
	LAN SVE	Swedish	SSLAN SVE<CR>
	LAN JPN	Japanese	SSLAN JPN<CR>
	LAN CHI	Chinese	SSLAN CHI<CR>
	LAN POL	Polish	SSLAN POL<CR>
	LAN RUS	Russian	SSLAN RUS<CR>
	?	Return Language Setting	SSLAN ? <CR>

※AUDIO Playback format

COMMAND	PARAMETER	Function	example
SS	FMT?	Request Kind of playback file	SSFMT?<CR>

※DIMMER Setting

COMMAND	PARAMETER	Function	example
SS	DIM00	DIMMER : 0%	SSDIM00<CR>

	DIM025	DIMMER : 25%	SSDIM025<CR>
	DIM050	DIMMER : 50%	SSDIM050<CR>
	DIM075	DIMMER : 75%	SSDIM075<CR>
	DIM100	DIMMER : 100%	SSDIM100<CR>
	DIM?	DIMMER Request	SSDIM?<CR>

※Network Information

<i>COMMAND</i>	<i>PARAMETER</i>	<i>Function</i>	<i>example</i>
NS	INF?	Network Information Request <ul style="list-style-type: none"> • FriendlyName • Wired/Wireless • SSID • DHCP • IP Address • MAC Address 	NSINF?

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

<i>COMMAND</i>	<i>PARAMETER</i>	<i>Function</i>	<i>example</i>
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)
NSE		Request Onscreen Display Information List (UTF-8 CODE Character)	NSE<CR> (Return NSE0-NSE8)

※CD Control

<i>COMMAND</i>	<i>PARAMETER</i>	<i>Function</i>	<i>example</i>
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 MODE	"Folder Mode On/Off" Toggle	BDFOLDER MODE<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>
1	1	BDKEY 1<CR>
2	2	BDKEY 2<CR>
3	3	BDKEY 3<CR>
4	4	BDKEY 4<CR>
5	5	BDKEY 5<CR>
6	6	BDKEY 6<CR>
7	7	BDKEY 7<CR>
8	8	BDKEY 8<CR>
9	9	BDKEY 9<CR>
0	0	BDKEY 0<CR>
+10	+10	BDKEY 10<CR>
CLEAR	CLEAR	BDCLEAR<CR>

EVENT (or RESPONSE) and PARAMETER list

※SYSTEM

<i>EVENT</i>	<i>PARAMETER</i>	<i>Function</i>	<i>example</i>
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	Internet Radio	SIRADIO<CR>
	SERVER	Music Server	SISERVER<CR>
	PANDORA	Pandora (NA only)	SIPANDORA<CR>
	SIRIUSXM	SiriusXM (NA only)	SISIRIUSXM<CR>
	BLUETOOTH	Bluetooth	SIBLUETOOTH<CR>
	USB	USB	SIUSB<CR>
	REARUSB	Rear USB	SIREARUSB<CR>
	DIGITALIN1	Digital In 1	SIDIGITALIN1<CR>
	DIGITALIN2	Digital In 2	SIDIGITALIN2<CR>
	ANALOGIN	Analog In1	SIANALOGIN<CR>
	CD	CD	SICD<CR>
	TUNER	TUNER	SITUNER<CR>
	DAB	DAB	SIDAB<CR>
	FM	FM	SIFM<CR>
AM	AM	SIAM<CR>	
SLP	***		SLP090<CR>
	OFF	MAIN ZONE SLEEP TIMER setting change	SLPOFF<CR>

※Volume A, B

<i>COMMAND</i>	<i>PARAMETER</i>	<i>Function</i>	<i>example</i>
MV	VOA**	** : 00 to 60 by ASCII	MVVOA45<CR>
	VOB**	** : 00 to 60 by ASCII	MVVOB45<CR>
MU	VOAON	OUTPUT MUTE ON/OFF change	MUVOAON<CR>

	VOAOFF		MUVOAOFF<CR>
	VOBON	OUTPUT MUTE ON/OFF change	MUVOBON<CR>
	VOBOFF		MUVOBOFF<CR>

※ALARM

EVENT	PARAMETER	Function	example																						
TS	ONCE @**##-\$\$\$% [F] [N] VV [O]	<p>ONCE TIMER TIME SET</p> <p>@: A or P or 2 (A:AM, P:PM, 2:24hour by ASCII)</p> <p>**## : start time (**=00~23hours, ##=00~59minutes by ASCII)</p> <p>(Not Set : FFFF)</p> <p>\$\$\$% : stop time (\$\$=00~23hours, %=00~59minutes by ASCII)</p> <p>(Not Use : FFFF)</p> <p>[F]: Function (2bytes by ASCII)</p> <table border="1" style="margin-left: 20px;"> <tr><td>FA</td><td>Favorite</td></tr> <tr><td>CD</td><td>CD</td></tr> <tr><td>AA</td><td>AUX:Analog In</td></tr> <tr><td>AD</td><td>AUX:Digital In</td></tr> <tr><td>AI</td><td>Analog In</td></tr> <tr><td>A2</td><td>Analog In2</td></tr> <tr><td>D1</td><td>Digital In 1</td></tr> <tr><td>D2</td><td>Digital In 2</td></tr> <tr><td>IU</td><td>iPod/USB</td></tr> <tr><td>FU</td><td>Front USB</td></tr> <tr><td>RU</td><td>Rear USB</td></tr> </table> <p>[N]: preset No. (2bytes by ASCII, except TU=" 00")</p> <p>VV: VOLUME</p> <p>[O]: ONCE TIMER ON/OFF (0:OFF, 1:ON)</p>	FA	Favorite	CD	CD	AA	AUX:Analog In	AD	AUX:Digital In	AI	Analog In	A2	Analog In2	D1	Digital In 1	D2	Digital In 2	IU	iPod/USB	FU	Front USB	RU	Rear USB	<p>TSONCE A0730-FFFF CD00 05 0<CR></p> <p>TSONCE P0630-FFFF FA01 05 1<CR></p> <p>TSONCE 21930-FFFF US00 05 1<CR></p>
	FA	Favorite																							
CD	CD																								
AA	AUX:Analog In																								
AD	AUX:Digital In																								
AI	Analog In																								
A2	Analog In2																								
D1	Digital In 1																								
D2	Digital In 2																								
IU	iPod/USB																								
FU	Front USB																								
RU	Rear USB																								
	EVERY @**##-\$\$\$% [F] [N] VV [O]	<p>EVERY TIMER TIME SET</p> <p>@: A or P or 2 (A:AM, P:PM, 2:24hour by ASCII)</p> <p>**## : start time (**=00~23hours, ##=00~59minutes by ASCII)</p> <p>(Not Set : FFFF)</p> <p>\$\$\$% : stop time (\$\$=00~23hours, %=00~59minutes by ASCII)</p> <p>(Not Use : FFFF)</p> <p>[F]: Function (2bytes by ASCII)</p>	<p>TSEVERY P0630-FFFF CD00 05 0<CR></p> <p>TSEVERY P0630-FFFF FV01 05 1<CR></p> <p>TSEVERY 21830-FFFF US00 05 1<CR></p>																						

		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)	
CLK		TIME CHECK	CLK<CR>

※FAVORITE Control

<i>EVENT</i>	<i>PARAMETER</i>	<i>Function</i>	<i>example</i>
FV	**_XX_aaaa	"FAVORITE NAME" Request *: FAVORITE No. XX: FUNCTION 00: Internet Radio 01: Music Server 02: TUNER 03: LASTFM 04: PANDORA 05: SIRIUSXM 06: Spotify 07: iPod (Front) 08: USB (Front) 09: iPod (Rear) 10: USB (Rear) a: Character Length (MAX32byte) _: Null **aaaa: 35byte Fixed	FV25 01 FM-87.50MHz<CR>

※Tone Control

<i>EVENT</i>	<i>PARAMETER</i>	<i>Function</i>	<i>example</i>
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	PSFRONT SPA<CR>
	FRONT SPB	Speaker A / Speaker B / Speaker A+B	PSFRONT SPB<CR>
	FRONT A+B		PSFRONT A+B<CR>

※ANALOG TUNER Control

<i>EVENT</i>	<i>PARAMETER</i>	<i>Function</i>	<i>example</i>
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	ANAM	TUNER BAND , MODE change —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

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

※Variable Output

<i>COMMAND</i>	<i>PARAMETER</i>	<i>Function</i>	<i>example</i>
SS	VAO	Variable Output (Audio Out Menu) :Fixed	SSVAO FIX
		Variable Output (Audio Out Menu) :variable	SSVAO VAR
	VVL	Variable Output (Volume Limit) :0dB	SSVVL 000
		Variable Output (Volume Limit) :-10dB	SSVVL 010
		Variable Output (Volume Limit) :-20dB	SSVVL 020

		Volume Limit Direct	SSVVL *** (*** : Limit)
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※Auto Standby

COMMAND	PARAMETER	Function	example
SS	STB	Auto Standby : ON	SSSTB ON
		Auto Standby : OFF	SSSTB OFF
		Auto Standby : 1min	SSSTB 01MIN
		Auto Standby : 5min	SSSTB 05MIN
		Auto Standby : 15min	SSSTB 15MIN
		Auto Standby Direct	SSSTB *** (*** : TIME)

※Bi-Amp 設定

COMMAND	PARAMETER	Function	example
SS	BIA	Bi-Amp : ON	SSBIA ON<CR>
		Bi-Amp : OFF	SSBIA OFF<CR>

※Variable Output Volume

COMMAND	PARAMETER	Function	example
MV	UP	MASTER VOLUME UP/DOWN , direct change to **dB	MVUP<CR>
	DOWN		MVDOWN<CR>
	**	** : 99 to 00 by ASCII (99 : -99dB, 00 : 00dB, FF : MUTE)	MV45<CR>

※Language Setting

COMMAND	PARAMETER	Function	example
SS	LAN ENG	English	SSLAN ENG<CR>
	LAN DEU	German	SSLAN DEU<CR>
	LAN FRA	French	SSLAN FRA<CR>
	LAN ITA	Italian	SSLAN ITA<CR>
	LAN ESP	Spanish	SSLAN ESP<CR>
	LAN NER	Dutch	SSLAN NER<CR>
	LAN SVE	Swedish	SSLAN SVE<CR>

	LAN JPN	Japanese	SSLAN JPN<CR>
	LAN CHI	Chinese	SSLAN CHI<CR>
	LAN POL	Polish	SSLAN POL<CR>
	LAN RUS	Russian	SSLAN RUS<CR>

※AUDIO Playback format

<i>COMMAND</i>	<i>PARAMETER1</i>	<i>PARAMETER2</i>	<i>Function</i>	<i>example</i>
SS	FMTLPC	032	Kind of playback file (LPCM:32kHz)	SSFMTLPC032<CR>
		044	Kind of playback file (LPCM:44.1kHz)	SSFMTLPC044<CR>
		048	Kind of playback file (LPCM:48kHz)	SSFMTLPC048<CR>
		088	Kind of playback file (LPCM:88.2kHz)	SSFMTLPC088<CR>
		096	Kind of playback file (LPCM:96kHz)	SSFMTLPC096<CR>
		176	Kind of playback file (LPCM:176.4kHz)	SSFMTLPC176<CR>
		192	Kind of playback file (LPCM:192kHz)	SSFMTLPC192<CR>
	FMTMP3	032	Kind of playback file (MP3:32kHz)	SSFMTMP3032<CR>
		044	Kind of playback file (MP3:44.1kHz)	SSFMTMP3044<CR>
		048	Kind of playback file (MP3:48kHz)	SSFMTMP3048<CR>
	FMTWMA	032	Kind of playback file (WMA:32kHz)	SSFMTWMA032<CR>
		044	Kind of playback file (WMA:44.1kHz)	SSFMTWMA044<CR>
		048	Kind of playback file (WMA:48kHz)	SSFMTWMA048<CR>
	FMTAAC	032	Kind of playback file (AAC:32kHz)	SSFMTAAC032<CR>
		044	Kind of playback file (AAC:44.1kHz)	SSFMTAAC044<CR>
		048	Kind of playback file (AAC:48kHz)	SSFMTAAC048<CR>
	FMTFLC	032	Kind of playback file (FLAC:32kHz)	SSFMTFLC032<CR>
		044	Kind of playback file (FLAC:44.1kHz)	SSFMTFLC044<CR>
		048	Kind of playback file (FLAC:48kHz)	SSFMTFLC048<CR>
		088	Kind of playback file (FLAC:88.2kHz)	SSFMTFLC088<CR>
		096	Kind of playback file (FLAC:96kHz)	SSFMTFLC096<CR>
		176	Kind of playback file (FLAC:176.4kHz)	SSFMTFLC176<CR>
		192	Kind of playback file (FLAC:192kHz)	SSFMTFLC192<CR>
	FMTALC	032	Kind of playback file (ALAC:32kHz)	SSFMTALC032<CR>
		044	Kind of playback file (ALAC:44.1kHz)	SSFMTALC044<CR>
		048	Kind of playback file (ALAC:48kHz)	SSFMTALC048<CR>

		088	Kind of playback file (ALAC:88.2kHz)	SSFMTALC088<CR>
		096	Kind of playback file (ALAC:96kHz)	SSFMTALC096<CR>
	FMTAIF	032	Kind of playback file (AIFF:32kHz)	SSFMTAIF032<CR>
		044	Kind of playback file (AIFF:44.1kHz)	SSFMTAIF044<CR>
		048	Kind of playback file (AIFF:48kHz)	SSFMTAIF048<CR>
		088	Kind of playback file (AIFF:88.2kHz)	SSFMTAIF088<CR>
		096	Kind of playback file (AIFF:96kHz)	SSFMTAIF096<CR>
		176	Kind of playback file (AIFF:176.4kHz)	SSFMTAIF176<CR>
		192	Kind of playback file (AIFF:192kHz)	SSFMTAIF192<CR>
	FMTDSD	064	Kind of playback file (DSD:64MHz)	SSFMTDSD064<CR>
		128	Kind of playback file (DSD:128MHz)	SSFMTDSD128<CR>
	FMTULC	Signal Unlock		SSFMTULC<CR>
FMTUSP	Unsupported		SSFMTUSP<CR>	

※DIMMER Setting

<i>COMMAND</i>	<i>PARAMETER</i>	<i>Function</i>	<i>example</i>
SS	DIM00	DIMMER : 0%	SSDIM00<CR>
	DIM25	DIMMER : 25%	SSDIM25<CR>
	DIM50	DIMMER : 50%	SSDIM50<CR>
	DIM75	DIMMER : 75%	SSDIM75<CR>
	DIM100	DIMMER : 100%	SSDIM100<CR>

※Network Information

<i>COMMAND</i>	<i>PARAMETER</i>	<i>Function</i>	<i>example</i>
NS	INFFRN *****	Friendly Name Information ***** (MAX 32 Character)	NSINFFRN *****<CR>
NS	INFAFF WIRD	Wired	NSINFAFF WIRD<CR>
	INFAFF WILS	Wireless	NSINFAFF WILS<CR>
NSINFSID	*****	SSID Information ***** (MAX 32 Character)	NSINFSID *****<CR>
NSINFDHC	ON	DHCP On	NSINFDHC ON<CR>
	OFF	DHCP Off	NSINFDHC OFF<CR>
NSINFIPA	XXX.XXX.XXX.XXX	XXXXXXXXXXXX : IP Address	NSINFIPA XXX.XXX.XXX.XXX<CR>

	(Example :192.168.100.100 。 MAX15 Character)	
NSINFMAC	MAC Address ***** (12 Character)	NSINFMAC:*****<CR>

※Network/USB/iPod Direct Extended Control

<i>EVENT</i>	<i>PARAMETER</i>	<i>Function</i>	<i>example</i>
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>

※CD Control

<i>EVENT</i>	<i>PARAMETER</i>	<i>Function</i>	<i>example</i>
BD	STATUS *+ # /abcddeeeefh hmmssM	Acquires system status (such as the entire player and transfer unit). (*A) *:" SP" (20h), 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)) :" 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" 123456731002000811223300<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	BDDS TRACK " SP" 0000020<CR>

	——:0000 to 9999 by ASCII (track number)	
CURSOR *	“Cursor” Control *:" SP" ,0 to 3 by ASCII (Answer code) (*1)	BDCURSOR " SP" <CR>
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>
FOLDER MODE OFF *	“FOLDER MODE OFF” Setting *:" SP" ,0 to 3 by ASCII (Answer code) (*1)	BDFOLDER MODE OFF " SP" <CR>
FOLDER NAME *aaaa_????	“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 *aaaa_????	“FILE NAME” Request *:" SP" ,0 to 3 by ASCII (Answer code) (*1) a:Character Length (MAX32byte)	BDFILE NAME " SP" Come Away With Me.mp3_?<CR>

	:Null ?: Don't Care (The character after Null should be disregarded) *****????:33byte Fixed	
ARTIST NAME *aaaaa_????	"ARTIST 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	BDARTIST NAME " SP" Norah Jones_?????????<CR>
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	1	BDKEY 1<CR>
2	2	BDKEY 2<CR>

	3	3	BDKEY 3<CR>
	4	4	BDKEY 4<CR>
	5	5	BDKEY 5<CR>
	6	6	BDKEY 6<CR>
	7	7	BDKEY 7<CR>
	8	8	BDKEY 8<CR>
	9	9	BDKEY 9<CR>
	0	0	BDKEY 0<CR>
	+10	+10	BDKEY 10<CR>
	CLEAR	CLEAR	BDCLEAR<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).