

**TASCAM SS-CDR250N／SS-R250N
CONTROL I/O Terminals
RS-232C／TELNET Protocol Specifications**

Ver. 1.15

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TEAC Corporation

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1. Overview

The SS-CDR250N/SS-R250N ("controlled device") can be controlled from an external device ("external controller"), such as a computer, through a serial RS-232C and ETHERNET (TELNET) connection.

2. Specifications

Serial RS-232C

2.1. Electrical Specifications

Standard	JIS X-5101 (equivalent to the former JIS-C-6361 and EIA RS-232C standards) Note that this is not compatible with the RS-422 used in professional VTRs.
Impedance at receiver	When measured with an applied voltage between -3 V and +3 V or between -15 V and +15 V, the DC resistance is between 3 k ohms and 7 k ohms. Total load capacitance is 2500 pF or less.
Open circuit voltage at transmitter	25V or less
Open circuit voltage at receiver	2V or less
Signal voltage	When the open circuit voltage at the receiver is 0 V, the signal voltage is between -5 V and +5 V or between -15 V and +15V against a load impedance between 3 k ohms and 7 k ohms.
Signal discrimination	Logic "1": -3V or less Logic "0": +3V or more

2.2. Communication format

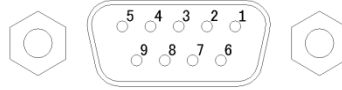
Circuit type	3-wire, Half-duplex
Transmission type	Digital binary serial
Data signal rate (baud rate)	4800/9600/19200/38400/57600 bits/sec
Data bits	7/8 bits
Parity bits	None/ODD/EVEN
Stop bits	1/2 bit

*Data signal rate, Data bits, Parity bits, and Stop bits can be set from the menu of the controlled device.

2.3. Connector pin-out

Connector

D-sub 9pin female (Inch screw thread)

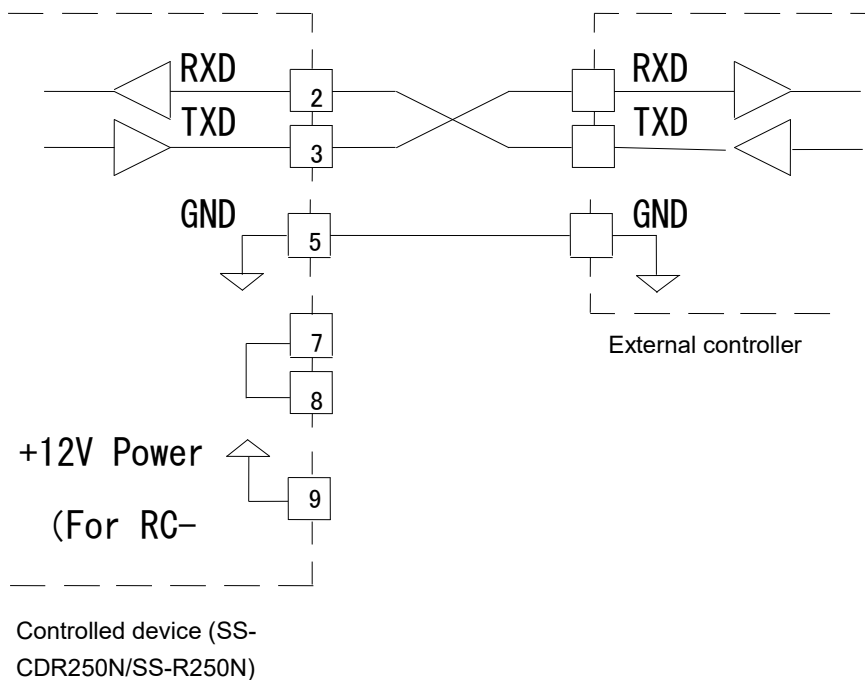


Terminal pin-out and input/output signals

Pin No.	In/Out	Signal name	Description
1	-	NC	Not connected
2	In	Rx DATA	Data received at this pin (*1)
3	Out	Tx DATA	Data transmitted from this pin
4	-	(Reserved)	Reserved
5	-	GND	Signal ground pin
6	-	(Reserved)	Reserved
7	Out	RTS	Short-circuit to Pin No. 8.
8	In	CTS	Short-circuit to Pin No. 7.
9	-	+12V Power	Power supply for separately sold dedicated remote control unit (RC-SS150). Maximum current 150mA

*1: Make sure that a voltage applied to Pin No. 2 for Rx DATA conforms to the RS-232C standard.

*2: Pins No. 7 and 8 are short-circuited to receive or transmit RTS/CTS signals.



3. Command Format

3.1. Command Format Overview

The command format is as follows.

Serial RS-232C

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8	...	Byte n
LF	ID	Command		Data 1	Data 2	Data 3	Data 4	...	CR

A command uses a 2-byte ASCII format, starting with Line Field (LF), which is followed by machine ID, and ending with Carriage Return (CR).

For information about machine ID, see the section 3-2 Machine ID.

A command is followed by a byte string, which consists of data ranging from 0 bytes (if the command includes no data) to 98 bytes, maximum.

For detailed information about data, see each of the sections explaining commands. Note that capital letters are used for "A to F" for commands that use 0 to 9 and A to F as data values.

Command examples

Example 1: Sending the PLAY command to the controlled device with the machine ID=0

When the controlled device is in the stop or ready state, the PLAY command starts playing the controlled device.

The PLAY command is [12] and sent in the following format.

		ID	Command			
ASCII	LF	0	1	2	CR	
HEX	0Ah	30h	31h	32h	0Dh	

Example 2: Performing a direct search for the track 12 on the controlled device with the machine ID=0

To do a direct search for the track 12, DIRECT TRACK SEARCH PRESET command [23] is sent.

Data bytes consist of 2-byte ASCII characters.

A track number is specified in the DIRECT TRACK SEARCH PRESET command as shown below.

Data 1 tens digit of the track number to be specified

Data 2 ones digit of the track number to be specified

Data 3 thousands digit of the track number to be specified

Data 4 hundreds digit of the track number to be specified

Based on the above rule, the send command is described as follows.

		ID	Command		Data: 12th track				
ASCII	LF	0	2	3	1	2	0	0	CR
HEX	0Ah	30h	32h	33h	31h	32h	30h	30h	0Dh

ETHERNET (TELNET)

Byte 1	2	3	4	5	6	7	...	n-1	n
ID	Command		Data 1	Data 2	Data 3	Data 4	...	CR	LF

Commands start with an "ID" and end with a carriage return (CR) and a linefeed (LF), and are based on ASCII format. Machine ID (ID) will be explained below.

Commands are expressed as two-byte ASCII.

For details about the data, see the explanation of each command. For commands that use data values from OII format. Machine ID (ID) will be explained-F.

Command examples

Example 1: Sending a PLAY command to a controlled device with Machine ID = 0

When stopped or in playback standby, this command will start playback on the controlled device.

The play command is "12" and is transmitted as follows.

	ID	Command			
ASCII	0	1	2	CR	LF
HEX	30h	31h	32h	0Dh	0Ah

Example 2: Specifying a direct search for track 123 on a controlled device with Machine ID = 0

This will send the "DIRECT TRACK SEARCH PRESET0follows.start playback on the con

Data bytes are formed of two-byte ASCII units.

The track number specification for the "DIRECT TRACK (TAKE) SEARCH PRESET this operation.trolled dData 1

Tens digit for specified track number

Data 2 Ones digit for specified track number

Data 3 Thousands digit for specified track number

Data 4 Hundreds digit for specified track number

Therefore, the transmitted command is as follows.

	ID	Command		Data: take 123					
ASCII	0	2	3	2	3	0	1	CR	LF
HEX	30h	32h	33h	32h	33h	30h	31h	0Dh	0Ah

3.2. Machine ID

The Machine ID is fixed at [0]. A command with the machine ID other than [0] is ignored.

3.3. Command Sequence

In most cases, the controlled device does not send an ACK command in response to a transport control command or data preset command that is sent from an external controller.

The controlled device sends a return command in response to a data sense command that requests the controlled device to return the controlled device's preset data values.

If the controlled device switches from one state to another - from stop state to playback state, for example, or if an error occurs, the controlled device sends a command to notify the external controller about the state transition.

Examples of command sequences are shown below.

Make sure that commands are sent at a minimum of 20-millisecond intervals.

Example 1: Using a transport control of the controlled device (e.g. playback)

When entering the playback state after receiving the playback command, the controlled device sends the CHANGE STATUS command.

The controlled device does not send an ACK command in response to this command.

Command			Status of the controlled device
External controller		Controlled device	
			STOP
PLAY	->		
	<-	CHANGED STATUS	Sent when the controlled device enters the playback state

Example 2: Presetting data (e.g. pitch control data)

When receiving the PITCH CONTROL DATA PRESET command, the controlled device sets the pitch control data. The controlled device does not send an ACK command in response to this command.

Command			Status of the controlled device
External controller		Controlled device	
PITCH CONTROL DATA PRESET (preset to -1.0 %)	->		Sets the pitch control data to -1.0%

Example 3: Requesting currently set data (e.g. pitch control data)

When receiving the PITCH CONTROL DATA PRESET (Sense) command, the controlled device sends the set pitch control data.

Command			Status of the controlled device
External controller		Controlled device	
PITCH CONTROL DATA PRESET (Sense)	->		
	<-	PITCH CONTROL DATA RETURN	

Example 4: Performing the next operation after checking the status of the controlled device

When switching from one mode to another, the controlled device sends the CHANGED STATUS command. Then, in response to the CHANGED STATUS command, the MECHA STATUS SENSE command is sent from the external controller so that the new operation mode can be checked.

The following table shows that recording is started on the external controller after the controlled device's record ready mode is confirmed.

Command			Status of the controlled device
External controller		Controlled device	
			STOP
RECORD (Record Ready)	->		
	<-	CHANGED STATUS	Sent when the controlled device enters record ready mode
MECHA STATUS SENSE	->		
	<-	MECHA STATUS RETURN	Returns the current status information (record ready)
RECORD (Record)	->		
	<-	CHANGES STATUS	Sent when the controlled device enters recording mode

Command details

The commands, data and Machine ID given here are ASCII characters.

Commands are 2-byte characters, the Machine ID is a 1-byte character and Data are each 1-byte characters.

The specifications for take and project numbers that this unit can handle are as follows. If a number is specified for an item that does not exist, however, the command will be treated as invalid.

Track number (MP3/WAV MEDIA)	999 maximum
Track number (Audio CD)	99 maximum

3.4. List of Commands

Control/Preset/Sense Command		Return Command		Adopted F/W Ver
0F	INFORMATION REQUEST	8F	INFORMATION RETURN	
10	STOP			
12	PLAY			
13	RECORD			
14	READY			
15	JOG			
16	SHUTTLE			
17	FLASH LOAD	97	FLASH LOAD ACKNOWLEDGE	
18	EJECT			
1A	TRACK SKIP			
1D	CALL			
20	AUTO CUE LEVEL PRESET	A0	AUTO CUE LEVEL RETURN	
21	AUTO TRACK LEVEL PRESET	A1	AUTO TRACK LEVEL RETURN	
23	DIRECT TRACK SEARCH PRESET			
25	PITCH CONTROL DATA PRESET	A5	PITCH CONTROL DATA RETURN	
26	AUTO TRACK TIME PRESET	A6	AUTO TRACK TIME RETURN	Ver1.10
27	CLOCK DATA PRESET	A7	CLOCK DATE RETURN	
28	SYNC REC LEVEL PRESET	A8	SYNC REC LEVEL RETURN	
29	TEXT PRESET			Ver1.10
2C	TIME SEARCH PRESET			
2D	KEY CONTROL DATA PRESET	AD	KEY CONTROL DATA RETURN	
30	AUTO CUE SELECT	B0	AUTO CUE SELECT RETURN	
31	AUTO TRACK SELECT	B1	AUTO TRACK SELECT RETURN	
32	EOM TRACK TIME PRESET	B2	EOM TRACK TIME RETURN	
33	EOM MEDIA TIME PRESET	B3	EOM MEDIA TIME RETURN	
35	PITCH CONTROL SELECT	B5	PITCH CONTROL SELECT RETURN	
36	AUTO READY SELECT	B6	AUTO READY SELECT RETURN	
37	REPEAT SELECT	B7	REPEAT SELECT RETURN	
38	SYNC REC SELECT	B8	SYNC REC SELECT RETURN	
3A	INCR PLAY SELECT	BA	INCR PLAY SELECT RETURN	
3D	KEY CONTROL SELECT	BD	KEY CONTROL SELECT RETURN	
4C	REMOTE/LOCAL SELECT	CC	REMOTE/LOCAL SELECT RETURN	
4D	PLAY MODE SELECT			
4E	PLAY MODE SENSE	CE	PLAY MODE RETURN	
50	MECHA STATUS SENSE	D0	MECHA STATUS RETURN	
51	SPECIFIED DEVICE STATUS SENSE	D1	SPECIFIED DEVICE STATUS RETURN	Ver2.00
55	TRACK NO. SENSE	D5	TRACK NO. RETURN	
56	MEDIA STATUS SENSE	D6	MEDIA STATUS RETURN	
57	CURRENT TRACK INFORMATION SENSE	D7	CURRENT TRACK INFORMATION RETURN	
58	CURRENT TRACK TIME SENSE	D8	CURRENT TRACK TIME RETURN	
59	NAME SENSE	D9	NAME RETURN	
5D	TOTAL TRACK NO./TOTAL TIME SENSE	DD	TOTAL TRACK NO./TOTAL TIME RETURN	
5E	PGM TOTAL TRACK NO./TOTAL TIME SENSE	DE	PGM TOTAL TRACK NO./TOTAL TIME RETURN	
5F	KEYBOARD TYPE SENSE	DF	KEYBOARD TYPE RETURN	
		F0	ERROR SENSE REQUEST	
		F1	CAUTION SENSE REQUEST	
		F2	ILLEGAL STATUS	
		F4	POWER ON STATUS	
		F6	CHANGE STATUS	

75	POWER CONTROL	F5	POWER CONTROL RETURN	Ver1.30
78	ERROR SENSE	F8	ERROR SENSE RETURN	
79	CAUTION SENSE	F9	CAUTION SENSE RETURN	
7F	VENDER COMMAND	FF	VENDER COMMAND RETURN	

Caution: If no supported version is indicated in the "Adopted F/W Ver." column, ver. 1.00 or later is supported.

3.5. Vender command list

The list of vender commands (Command 7F/FF) is as follows.

Their command codes are indicated as a combination of Command (2-byte), Category Code (2-byte) and Sub Command (2-byte). For details, see the section starting page 41.

Control/Sense Command		Return Command		Adopted F/W Ver
7F01	DEVICE SELECT	FF01	DEVICE SELECT RETURN	
7F02	DIVIDE			
7F03	DELETE			
7F0701	TIME SKIP PRESET			Ver1.30
7F0702	TIME SKIP SENSE	FF0702	TIME SKIP RETURN	Ver1.30
7F074F	PLAY AREA SELECT	FF07CF	PLAY AREA SELECT RETURN	
7F0823	AUTO TRACK SIZE PRESET	FF08A3	AUTO TRACK SIZE RETURN	
7F082A	USER WORD PRESET	FF082A	USER WORD PRESET RETURN	Ver1.42
7F085A	USER WORD SENSE	FF08DA	USER WORD SENSE RETURN	Ver1.42
7F0860	FILE NAME SELECT	FF08E0	FILE NAME SELECT RETURN	Ver1.42
7F1010	CURRENT MEDIA RECORDABLE TIME SENSE	FF1090	CURRENT MEDIA RECORDABLE TIME RETURN	Ver2.10
7F1044	MEDIA FORMAT	FF10C4	MEDIA FORMAT ACK	Ver2.00
7F1210	INPUT SELECT	FF1290	INPUT SELECT RETURN	Ver1.10
7F4200	FILE RENAME	FF4280	FILE RENAME ACK	Ver1.20
7F4A23	CURRENT FOLDER SELECT			Ver1.20
7F4A40	CREATE FOLDER	FF4AC0	CREATE FOLDER ACK	Ver1.20
7F4A42	RENAME FOLDER	FF4AC2	RENAME FOLDER ACK	Ver1.20
7F4A55	CURRENT FOLDER No. SENSE	FF4AD5	CURRENT FOLDER No. RETURN	Ver1.20
7F4A56	SEARCH FOLDER No.	FF4AD6	SEARCH FOLDER No. RETURN	Ver1.20
7F4A59	FOLDER NAME SENSE	FF4AD9	FOLDER NAME RETURN	Ver1.20
7F4A5A	FILE NAME SENSE	FF4ADA	FILE NAME RETURN	Ver1.20
7F4A5D	FOLDER COUNT SENSE	FF4ADD	FOLDER COUNT RETURN	Ver1.20
7F4A5E	FILE COUNT SENSE	FF4ADE	FILE COUNT RETURN	Ver1.20

Caution: If no supported version is indicated in the "Adopted F/W Ver." column, ver. 1.00 or later is supported.

4. Command Details

• INFORMATION REQUEST

INFORMATION REQUEST requests the controlled device to return information including the software version of the controlled device.

Command	0F
Data	None
Return	INFORMATION RETURN [8F]

• STOP

STOP puts the controlled device into the stop state and also takes the controlled device out of input monitor mode.

Command	10
Data	None
Return	None

• PLAY

PLAY puts the controlled device into playback mode and also brings the controlled device from record ready mode to recording mode.

Command	12
Data	None
Return	None

• RECORD

RECORD puts the controlled device into record ready mode. It also numbers tracks during recording and puts the controlled device into input monitoring mode when no media is in the controlled device.

Command	13
Data	2 bytes
Return	None

Data 1	Data 2	Description	Remarks
0	0	Record	This starts recording
0	1	Record ready	Switches to record ready mode.
0	2	Track mark	Numbers tracks during recording
1	0	Input Monitor	Switches to input monitoring mode when no media is in the controlled device.

- If the controlled device receives data other than the above data, it sends ILLEGAL (F2).
- To start recording, send PLAY command after Record Pause.

• PAUSE

READY puts the controlled device into playback standby mode or record ready mode.

Command 14
Data 2 bytes
Return None

Data 1	Data 2	Description	Remarks
0	1	Pause ON	Switches to playback standby mode or record ready mode.

· If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• JOG

Enables JOG playback of the controlled device.

Command 15
Data 2 bytes
Return None

Data 1	Data 2	Description	Remarks
0	0	OFF	Disables JOG playback.
0	1	ON	Enables JOG playback.
1	0	Jog forward	Frame accurate search in the forward direction
1	1	Jog reverse	Frame accurate search in the backward direction

· If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• SHUTTLE

SHUTTLE puts the controlled device into the shuttle mode. The controlled device remains in the shuttle mode until it receives a command such as STOP, PLAY, or PAUSE.

Command 16
Data 2 bytes
Return None

Data 1	Data 2	Description	Remarks
0	0	Shuttle forward	Switches to the forward shuttle mode
0	1	Shuttle reverse	Switches to the backward shuttle mode

· If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• FLASH LOAD

FLASH LOAD puts the controlled device into Flash Load mode.

Command 17
Data None
Return Flash Load Acknowledge [97]

• EJECT

EJECT ejects a CD Media from the controlled device.

(If the controlled device is SS-R250N, it returns ILLEGAL [F2].)

If the device selected on the controlled device is not CD, this command is ignored.

Command 18
Data None
Return None

• SKIP

SKIP allows the controlled device to skip a track.

Command 1A
Data 2 bytes
Return None

Data 1	Data 2	Description	Remarks
0	0	Track Skip Next	Skips to the next track
0	1	Track Skip Previous	If the current position is at the beginning of a track (or within one second of the beginning of a track), the controlled device skips to the beginning of the previous track. If the current position is not at the beginning of a track, the controlled device skips to the beginning of the current track.
2	0	Mark Skip Next	Moves to the next mark.
2	1	Mark Skip Previous	Moves to the previous mark.
3	0	Time Skip Next	When playing back or in playback standby, you can skip forward by the amount of time set using the time skip function.
3	1	Time Skip Previous	When playing back or in playback standby, you can skip backward by the amount of time set using the time skip function.

· If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• CALL

CALL locates the controlled device to a call point and puts the controlled device into the ready state.

Command 1D
Data None
Return None

• AUTO CUE LEVEL PRESET

AUTO CUE LEVEL PRESET sets the auto cue level of the controlled device.

Only when this command is sent with request data ([FF]), the controlled device sends the AUTO CUE LEVEL RETURN command [A0].

The auto cue mode can be turned on or off using the AUTO CUE SELECT command [30].

Command 20
Data 2 bytes
Return AUTO CUE LEVEL RETURN [A0]

Data 1	Data 2	Description	Remarks
0	0	-24dB	Sets the auto-cue level to -24dB
0	1	-30dB	Sets the auto-cue level to -30dB
0	2	-36dB	Sets the auto-cue level to -36dB
0	3	-42dB	Sets the auto-cue level to -42dB
0	4	-48dB	Sets the auto-cue level to -48dB
0	5	-54dB	Sets the auto-cue level to -54dB
0	6	-60dB	Sets the auto-cue level to -60dB
0	7	-66dB	Sets the auto-cue level to -66dB
0	8	-72dB	Sets the auto-cue level to -72dB
F	F	SENSE	Requests the controlled device to return the current auto-cue level setting

· If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• AUTO TRACK LEVEL PRESET

AUTO TRACK LEVEL PRESET sets the auto track level of the controlled device.

Only when this command is sent with request data ([FF]), the controlled device sends the AUTO TRACK LEVEL RETURN command [A1].

The auto track mode can be turned on or off using the AUTO TRACK SELECT command [31].

Command 21
Data 2 bytes
Return AUTO TRACK LEVEL RETURN [A1]

Data 1	Data 2	Description	Remarks
0	0	-24dB	Sets the auto-track level to -24dB
0	1	-30dB	Sets the auto-track level to -30dB
0	2	-36dB	Sets the auto-track level to -36dB
0	3	-42dB	Sets the auto-track level to -42dB
0	4	-48dB	Sets the auto-track level to -48dB
0	5	-54dB	Sets the auto-track level to -54dB
0	6	-60dB	Sets the auto-track level to -60dB
0	7	-66dB	Sets the auto-track level to -66dB
0	8	-72dB	Sets the auto-track level to -72dB
F	F	SENSE	Requests the controlled device to return the current auto-track level setting

· If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• DIRECT TRACK SEARCH PRESET

DIRECT TRACK SEARCH RESET performs a search for a track on the controlled device by specifying the track number. If a track search is performed while the controlled device is in a playback state or a stop state, the controlled device starts playing the selected track first.

If a track search is performed while the controlled device is in a state other than the above two states, the controlled device switches back to the state where it was before starting a search and remains in that state.

Command 23
Data 4 bytes
Return None

	Description	Remarks
Data 1	Tens digit of the track number	Track number Example) 2301: Track 123
Data 2	Ones digit of the track number	
Data 3	Thousands digit of the track number	
Data 4	Hundreds digit of the track number	

If the track number specified does not exist in the media, it sends ILLEGAL [F2].

• PITCH CONTROL DATA PRESET

PITCH CONTROL DATA PRESET sets the pitch of playback of the controlled device. (%)

The setting range is $\pm 16.0\%$.

Only when this command is sent with request data ([FF]), the controlled device sends the PITCH CONTROL DATA RETURN command [A5].

The pitch control mode can be turned on or off using the PITCH CONTROL SELECT command [35].

Command 25
Data 4 bytes or 2 bytes
Return Pitch Control Data Return [A5]

Data1	Data2	Data3	Data4	Description	Remarks
		0 1		Preset %	Positive (+) value Negative (-) value
N2	N3		N1		N1: Tens digit of the pitch control value N2: Ones digit of the pitch control value N3: First decimal place of the pitch control value Example) 2310: -2.3%
F	F	...		Sense	Requests the controlled device to return the current pitch control setting

If the specified data is out of range, the controlled device sends ILLEGAL [F2].

• AUTO TRACK TIME PRESET

AUTO TRACK TIME PRESET sets the duration time for the auto track increment (time mode) of the controlled device.

Setting ranges are 1 - 10 minutes (1 minute interval), 15 minutes, 30 minutes, 1 hour, 2 hours, 6 hours, 8 hours, 12 hours, and 24 hours.

If this command is sent with request data ([FF]), the controlled device sends the AUTO TRACK TIME RETURN command [A6].

The auto track mode can be turned on or off using the AUTO TRACK SELECT command [31].

Command 26
Data 4 bytes or 2 bytes
Return Auto Track Time Return [A6]

Data1	Data2	Data3	Data4	Description	Remarks
N1	N2	N3	N4	Times	N1: Tens digit of the auto track time value (hours). N2: Ones digit of the auto track time value (hours). N3: Tens digit of the auto track time value (minutes). N4: Ones digit of the auto track time value (minutes).
F	F	...		Sense	Requests the controlled device to return the current auto track time setting

·If the specified data is out of range, the controlled device sends ILLEGAL [F2].

• CLOCK DATA PRESET

CLOCK DATA PRESET sets the date and time information for the controlled device.

Only when this command is sent with request data ([FF]), the controlled device sends the CLOCK DATA RETURN command [A7].

Command 27
Data 10 bytes or 2 bytes
Return Clock Data Preset Return [A7]

	Description	Remarks
Data 1	Tens digit of the year (A.D.).	[Example] 0802231234: February 23, 2008 / 12:34 If data 1 and data 2 are both "F", the controlled device returns the current Clock Data setting.
Data 2	Ones digit of the year (A.D.).	
Data 3	Tens digit of the month.	
Data 4	Ones digit of the month.	
Data 5	Tens digit of the date	
Data 6	Ones digit of the date	
Data 7	Tens digit of the hour.	
Data 8	Ones digit of the hour	
Data 9	Tens digit of the minute	
Data 10	Ones digit of the minute	

·if the specified data does not exist, the controlled device sends ILLEGAL [F2].

• SYNC REC LEVEL PRESET

SYNC REC LEVEL PRESET sets the level of the sync recording of the controlled device.

Only when this command is sent with request data ([FF]), the controlled device sends the SYNC REC LEVEL RETURN command [A8].

The sync rec mode can be turned on or off using the SYNC REC SELECT command [38].

Command 28
Data 2 bytes
Return Sync Rec Level Return [A8]

Data 1	Data 2	Description	Remarks
0	0	-24dB	Sync Rec level setting is -24 dB.
0	1	-30dB	Sync Rec level setting is -30 dB.
0	2	-36dB	Sync Rec level setting is -36 dB.
0	3	-42dB	Sync Rec level setting is -42 dB.
0	4	-48dB	Sync Rec level setting is -48 dB.
0	5	-54dB	Sync Rec level setting is -54 dB.
0	6	-60dB	Sync Rec level setting is -60 dB.
0	7	-66dB	Sync Rec level setting is -66 dB.
0	8	-72dB	Sync Rec level setting is -72 dB.
F	F	Sense	Requests the controlled device to return the current Sync Rec Level setting.

•if the specified data is out of range, the controlled device sends ILLEGAL [F2].

• TEXT PRESET

Specifies a CD-TEXT title for the controlled device of up to 80 single-byte alphanumeric characters.

To obtain the assigned title, transmit the command "TITLE SENSE [59]."

Command 29
Data 4 bytes~84 Bytes
Return None

	Description	Remarks
Data 1	Tens digit of specified number	0000 Specify the disc title 0001 – 0099 Specify a track title
Data 2	Ones digit of specified number	
Data 3	Thousands digit of specified number	
Data 4	Hundreds digit of specified number	
Data 5 – Data 84	Title	Single-byte alphanumeric characters

•If a track number not existing on the disc is specified, the controlled device will transmit ILLEGAL [F2].

•The title is between 0 bytes and 80 bytes. The characters up to the last one before CR will be used as the specified title.

• TIME SEARCH PRESET

TIME SEARCH PRESET performs a search on the controlled device by specifying a track number and time. If the controlled device receives this command when in stop or playback mode, it enters a playback mode after having finished a search. If the controlled device receives this command when in a mode other than the above two modes, it switches back to the mode where it was before starting a search and remains in that mode.

Command 2C
Data 12 bytes
Return None

	Description	Remarks
Data 1	Tens digit of the track number	[Example] 050006002030: 05tr 06min10.30sec
Data 2	Ones digit of the track number	
Data 3	Thousands digit of the track number	
Data 4	Hundreds digit of the track number	
Data 5	Tens digit of the minutes	
Data 6	Ones digit of the minutes	
Data 7	Thousands digit of the minutes	
Data 8	Hundreds digit of the minutes	
Data 9	Tens digit of the seconds	
Data 10	Ones digit of the seconds	
Data 11	1/10 digit of the seconds	
Data 12	1/100 digit of the seconds	

·If the specified time does not exist in the media, the controlled device sends ILLEGAL [F2].

·If the specified data is out of range, the controlled device sends ILLEGAL [F2].

• KEY CONTROL DATA PRESET

KEY CONTROL DATA PRESET sets the key of playback of the controlled device. (semitone)

Setting ranges are ± 6 semitones.

Only when this command is sent with request data ([FF]), the controlled device sends the KEY CONTROL DATA RETURN command [AD].

The key control mode can be turned on or off using the KEY CONTROL SELECT command [3D].

Command 2D
Data 2 bytes
Return KEY CONTROL DATA RETURN [AD]

Data 1	Data 2	Description	Remarks
0	0 - 6	Key up	Set in semitones
1		Key down	
		Key change	
F	F	Sense	Requests the controlled device to return the current Key control data setting.

·If the specified data is out of range, the controlled device sends ILLEGAL [F2].

• AUTO CUE SELECT

AUTO CUE SELECT turns the Auto-cue mode of the controlled device on or off.

Only when this command is sent with request data ([FF]), the controlled device sends the AUTO-CUE SELECT RETURN command [B0].

The Auto-cue level can be set using the AUTO CUE LEVEL PRESET command [20].

Command 30
Data 2 bytes
Return AUTO CUE SELECT RETURN [B0]

Data1	Data2	Description	Remarks
0	0	Auto-cue mode OFF	Turns the Auto-cue mode off
0	1	Auto-cue mode ON	Turns the Auto-cue mode on
F	F	Sense	Requests the controlled device to return the Auto-cue mode status

·If the specified data is out of range, the controlled device sends ILLEGAL [F2].

• AUTO TRACK SELECT

AUTO TRACK SELECT turns the Auto-cue mode of the controlled device on or off.

Only when this command is sent with request data ([FF]), the controlled device sends the AUTO TRACK SELECT RETURN command [B1].

The auto track level can be set using the AUTO TRACK LEVEL PRESET command [21].

The auto track time can be set using the AUTO TRACK TIME PRESET command [26].

The auto track size can be set using the AUTO TRACK SIZE PRESET command [7F0823].

Command 31
Data 2 bytes
Return AUTO TRACK SELECT RETURN [B1]

Data1	Data2	Description	Remarks
0	0	Auto Track OFF	
0	1	Auto Track ON (LEVEL)	Level Mode
0	2	Auto Track ON (Digital Direct)	Digital Direct Mode
0	3	Auto Track ON (TIME)	Time Mode
0	4	Auto Track ON (SIZE)	File size Mode
F	F	Sense	Requests the controlled device to return the Auto Track mode status

·If the specified data is out of range, the controlled device sends ILLEGAL [F2].

• EOM TRACK TIME PRESET

EOM TRACK TIME PRESET sets the EOM (end-of-track-warning) time in seconds.

Only when this command is sent with request data ([FF]), the controlled device sends the EOM TRACK TIME RETURN command [B2].

Command 32
Data 2 bytes
Return EOM TRACK TIME RETURN [B2]

Data1	Data2	Description	Remarks
0	0	EOM Track OFF	
A	0	EOM Track ON (0sec)	
N1	N2	EOM Track ON	N1: Tens digit of the EOM Track Time. N2: Ones digit of the EOM Track Time.
F	F	Sense	Requests the controlled device to return the EOM Track Time setting.

· If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• EOM MEDIA TIME PRESET

EOM MEDIA TIME PRESET sets the EOM (end-of-track-warning) time in seconds.

The setting range is 1 to 99 seconds or the function can also be turned off using this command.

Only when this command is sent with request data ([FF]), the controlled device sends the EOM MEDIA TIME RETURN command [B3].

Command 33
Data 2 bytes
Return EOM MEDIA TIME RETURN [B3]

Data1	Data2	Description	Remarks
0	0	EOM Media OFF	
N1	N2	EOM Media ON	N1: Tens digit of the EOM Media Time. N2: Ones digit of the EOM Media Time.
F	F	Sense	Requests the controlled device to return the EOM Media Time setting.

· If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• PITCH CONTROL SELECT

PITCH CONTROL SELECT turns the pitch control mode of the controlled device on or off.

Only when this command is sent with request data [FF], the controlled device sends the PITCH CONTROL SELECT RETURN command [B5].

The pitch control data can be set using the PITCH CONTROL DATA PRESET command [25].

Command 35
Data 2 bytes
Return PITCH CONTROL SELECT RETURN [B5]

Data 1	Data 2	Description	Remarks
0	0	Pitch control OFF	
0	1	Pitch control ON	
F	F	Sense	Requests the controlled device to return the current pitch control mode setting

· If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• AUTO READY SELECT

AUTO READY SELECT turns the auto ready mode of the controlled device on or off.

Only when this command is sent with request data [FF], the controlled device sends the AUTO READY SELECT RETURN command [B6].

Command 36
Data 2 bytes
Return AUTO READY SELECT RETURN [B6]

Data 1	Data 2	Description	Remarks
0	0	Auto-ready OFF	
0	1	Auto-ready ON	
F	F	Sense	Requests the controlled device to return the current auto-ready mode setting

· If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• REPEAT SELECT

REPEAT SELECT turns the repeat mode of the controlled device on or off.

Only when this command is sent with request data [FF], the controlled device sends the REPEAT SELECT RETURN command [B7].

Command 37
Data 2 bytes
Return REPEAT SELECT RETURN [B7]

Data 1	Data 2	Description	Remarks
0	0	Repeat OFF	
0	1	Repeat ON	
F	F	Sense	Requests the controlled device to return the current repeat mode setting

· If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• SYNC REC SELECT

SYNC REC SELECT turns the sync rec mode of the controlled device on or off.

Only when this command is sent with request data [FF], the controlled device sends the SYNC REC SELECT RETURN command [B8].

The sync rec level can be set using the SYNC REC LEVEL PRESET command [28].

Command 38
Data 2 bytes
Return SYNC REC SELECT RETURN [B8]

Data 1	Data 2	Description	Remarks
0	0	sync rec OFF	
0	1	Sync rec ON	
F	F	Sense	Requests the controlled device to return the current sync rec mode setting

· If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• INCR PLAY SELECT

INCR PLAY SELECT turns the incremental playback mode of the controlled device on or off.

Only when this command is sent with request data [FF], the controlled device sends the INCR PLAY SELECT RETURN command [BA].

Command 3A
Data 2 bytes
Return INCR PLAY SELECT RETURN [BA]

Data 1	Data 2	Description	Remarks
0	0	Incremental playback OFF	
0	1	Incremental playback ON	
F	F	Sense	Requests the controlled device to return the current incremental playback mode setting

· If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• KEY CONTROL SELECT

KEY CONTROL SELECT turns the key control mode of the controlled device on or off.

Only when this command is sent with request data [FF], the controlled device sends the KEY CONTROL SELECT RETURN command [BD].

The key control data can be set using the KEY CONTROL DATA PRESET command [2D].

Command 3D
Data 2 bytes
Return KEY CONTROL SELECT RETURN [BD]

Data 1	Data 2	Description	Remarks
0	0	Key control mode OFF	
0	1	Key control mode ON	
F	F	Sense	Requests the controlled device to return the current key control mode setting

· If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• REMOTE/LOCAL SELECT

REMOTE/LOCAL SELECT enables or disables key operation on the controlled device.

Only when this command is sent with request data [FF], the controlled device sends the REMOTE/LOCAL RETURN command [CC].

Command 4C
Data 2 bytes
Return REMOTE LOACAL [CC]

Data 1	Data 2	Description	Remarks
0	0	Only remote	Enables only remote operation through an RS-232C, PARALLEL connector, ETHERNET and remote control connected to the REMOTE jack and a USB keyboard. Key operation on the controlled device is disabled
0	1	Remote and Front key	Enables remote operation and key operation on the controlled device
F	F	Sense	Requests the controlled device to return the current remote/local mode setting

· If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• PLAY MODE SELECT

PLAY MODE SELECT sets the playback mode of the controlled device.

The playback mode setting can be checked using the PLAY MODE SENSE command [4E].

Command 4D
Data 2 bytes
Return None

Data 1	Data 2	Description	Remarks
0	0	Continuous	Continuous playback
0	1	Single	Single playback
0	4	Program	Programmed playback
0	6	Random	Random playback

• PLAY MODE SENSE

PLAY MODE SENSE requests the controlled device to return the current playback mode setting of the controlled device.

Command 4E
Data None
Return PLAY MODE RETURN [CE]

• MECHA STATUS SENSE

MECHA STATUS SENSE requests the controlled device to return the status of the specified mechanism of the controlled device.

Command 50
Data None
Return MECHA STATSU RETURN [D0]

▪ SPECIFIED DEVICE STATUS SENSE

SPECIFIED DEVICE STATUS SENSE requests to return the status of the specified device of the controlled device.

Command: 51

Data: 2 Byte

Return SPECIFIED DEVICE STATUS RETURN [D1]

Data 1	Data 2	Description	Remarks
0	0	SD1	Request SD1 status
0	1	SD2	Request SD2 status
1	0	USB	Request USB status
1	1	CD	Request USB status If the controlled device is SS-R250N, it sends ILLEGAL [F2]

· If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

· If the current device is running, the controlled device sends ILLEGAL (F2).

▪ TRACK No. SENSE

TRACK No. SENSE requests the controlled device to return the current track number.

Command: 55

Data: None

Return: TRACK No. STATUS RETURN [D5]

▪ MEDIA STATUS SENSE

MEDIA STATUS SENSE requests the controlled device to return information about the presence or absence and the type of a media in the controlled device.

Command 56

Data None

Return MEDIA STATUS RETURN [D6]

▪ CURRENT TRACK INFORMATION SENSE

CURRENT TRACK INFORMATION SENSE requests the controlled device to return information about the current track.

Command 57

Data None

Return CURRENT TRACK INFORMATION RETURN [D7]

• CURRENT TRACK TIME SENSE

CURRENT TRACK TIME SENSE requests the controlled device to return the selected time information about the current track or the whole media, when in a playback or a ready state.

Command 58
Data 2 bytes
Return CURRENT TRACK TIME RETURN [D8]

Data 1	Data 2	Description	Remarks
0	0	Track elapsed time	
0	1	Track remaining time	
0	2	Total elapsed time on the media	
0	3	Total remaining time on the media	

· If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• NAME SENSE

NAME SENSE requests the controlled device to return the specified track name.

Command 59
Data 4 bytes
Return NAME RETURN [D9]

	Description	Remarks
Data 1	Tens digit of the track number	0000 Specifies the disc title(Only for CD-TEXT) 0001 – 0999 Specifies a track name (title)
Data 2	Ones digit of the track number	
Data 3	Thousands digit of the track number	
Data 4	Hundreds digit of the track number	

· If the specified track number does not exist in the media, it sends ILLEGAL [F2].

· If the name of specified track number contains a character that is not ASCII, it sends ILLEGAL [F2].

• TOTAL TRACK No./TOTAL TIME SENSE

TOTAL TRACK No./TOTAL TIME SENSE requests the controlled device to return the total number of tracks on the media and the total running time of the media in the controlled device.

Command 5D
Data None
Return TOTAL TRACK No./TOTAL TIME RETURN [DD]

• PGM TOTAL TRACK No./TOTAL TIME SENSE

PGM TOTAL TRACK No./TOTAL TIME SENSE requests the controlled device to return the total number and the total running time of the programmed tracks.

For MP3/WAV, only the total number of tracks is returned.

Command 5E
Data None
Return PGM TOTAL TRACK No./TOTAL TIME RETURN [DE]

• KEYBOARD TYPE SENSE

KEYBOARD TYPE SENSE requests the controlled device to return the current keyboard type setting of the controlled device.

Command 5F
Data None
Return KEYBOARD TYPE RETURN [DF]

• POWER CONTORL

POWER CONTROL turns ON / OFF (standby) the power of the controlled device.

When turning on from OFF, the REMOTE POWER CONTROL setting of the controlled device must be ON.

Command 75
Data None
Return POWER CONTROL RETURN [F5]

Data 1	Data 2	Description	Remarks
0	0	Power On	Power on from the standby state.
1	1	Power Off	The controlled device enters the standby state.
8	0	Reset	The controlled device restarts.

If the controlled device does not stop, it sends ILLEGAL [F2].

• ERROR SENSE

ERROR SENSE requests the controlled device to return information about an error that occurred on the controlled device. Be sure to determine the error by using this command if the ERROR SENSE REQUEST command [F0] is issued from the controlled device.

Command: 78
Data: None
Return: ERROR SENSE RETURN [F8]

• CAUTION SNESE

CAUTION SENSE requests the controlled device to return information about a caution that is shown on the controlled device. Be sure to check the caution by using this command if the CAUTION SENSE REQUEST command [F1] is issued from the controlled device.

Command: 79
Data: None
Return: CAUTION SENSE RETURN [F9]

• VENDER COMMAND

This command controls a function unique to this unit. For details, see "**Vender command details**" on page 39.

Command: 7F
Return: VENDER COMMAND RETURN [FF]

• INFORMATION RETURN

INFORMATION RETURN is sent in response to the INFORMATION REQUEST command [0F] to show the software version.

Command 8F
Data 4 bytes
Request command INFORMATION REQUEST [0F]

	Description	Remarks
Data 1	Tens digit of the software version	Example) 0123: Version 01.23
Data 2	Ones digit of the software version	
Data 3	First decimal place of the software version	
Data 4	Second decimal place of the software version	

• FLASH LOAD ACKNOWLEDGE

FLASH LOAD ACKNOWLEDGE is sent in response to the FLASH LOAD command [17] to show the data loading has been successful.

Command: 97
Data: None
Request command FLASH LOAD [17]

• AUTO CUE LEVEL RETURN

AUTO CUE LEVEL RETURN is sent in response to the AUTO CUE LEVEL PRESET command [20] to show the current Auto cue level setting.

Command A0
Data 2 bytes
Request command AUTO CUE LEVEL PRESET [20]

Data 1	Data 2	Description	Remarks
0	0	-24dB	Auto cue level setting is -24 dB.
0	1	-30dB	Auto cue level setting is -30 dB.
0	2	-36dB	Auto cue level setting is -36 dB.
0	3	-42dB	Auto cue level setting is -42 dB.
0	4	-48dB	Auto cue level setting is -48 dB.
0	5	-54dB	Auto cue level setting is -54 dB.
0	6	-60dB	Auto cue level setting is -60 dB.
0	7	-66dB	Auto cue level setting is -66 dB.
0	8	-72dB	Auto cue level setting is -72 dB.

• AUTO TRACK LEVEL RETURN

AUTO TRACK LEVEL RETURN is sent in response to the AUTO TRACK LEVEL PRESET command [21] to show the current Auto track level setting.

Command A1
 Data 2 bytes
 Request command AUTO TRACK LEVEL PRESET [21]

Data 1	Data 2	Description	Remarks
0	0	-24dB	Auto track level setting is -24 dB.
0	1	-30dB	Auto track level setting is -30 dB.
0	2	-36dB	Auto track level setting is -36 dB.
0	3	-42dB	Auto track level setting is -42 dB.
0	4	-48dB	Auto track level setting is -48 dB.
0	5	-54dB	Auto track level setting is -54 dB.
0	6	-60dB	Auto track level setting is -60 dB.
0	7	-66dB	Auto track level setting is -66 dB.
0	8	-72dB	Auto track level setting is -72 dB.

• PITCH CONTROL DATA RETURN

PITCH CONOTROL DATA RETURN is sent in response to the PITCH CONTROL DATA PRESET command [25] to show the current pitch control setting.

Command A5
 Data 4 bytes
 Request command PITCH CONTROL DATA PRESET [25]

Data 1	Data 2	Data 3	Data 4	Description	Remarks
N2	N3	0 1	N1	Preset %	Positive (+) value Negative (-) value N1: Tens digit of the pitch control value N2: Ones digit of the pitch control value N3: First decimal place of the pitch control value Example) 2310: -2.3 %

• AUTO TRACK TIME RETURN

AUTO TRACK TIME RETURN is sent in response to the AUTO TRACK TIME PRESET command [26] to show the current auto track time setting.

Command A6
 Data 4 bytes
 Request command AUTO TRACK TIME PRESET [26]

	Description	Remarks
Data 1	Tens digit of the hour	
Data 2	Ones digit of the hour	
Data 3	Tens digit of the minute	
Data 4	Ones digit of the minute	

• CLOCK DATA RETURN

CLOCK DATA RETURN is sent in response to the CLOCK DATA PRESET command [27] to show the current date and time setting.

Command A7
Data 12 bytes
Request command CLOCK DATA PRESET [27]

	Description	Remarks
Data 1	Tens digit of the year (A.D.).	[Example] 0802231234: February 23, 2008 / 12:34
Data 2	Ones digit of the year (A.D.).	
Data 3	Tens digit of the month.	
Data 4	Ones digit of the month.	
Data 5	Tens digit of the date	
Data 6	Ones digit of the date	
Data 7	Tens digit of the hour.	
Data 8	Ones digit of the hour	
Data 9	Tens digit of the minute	
Data 10	Ones digit of the minute	

• SYNC REC LEVEL RETURN

SYNC REC LEVEL RETURN is sent in response to the SYNC REC LEVEL PRESET command [28] to show the current sync rec level setting.

Command A8
Data 2 bytes
Request command SYNC REC LEVEL PRESET [28]

Data 1	Data 2	Description	Remarks
0	0	-24dB	Sync Rec level setting is -24 dB.
0	1	-30dB	Sync Rec level setting is -30 dB.
0	2	-36dB	Sync Rec level setting is -36 dB.
0	3	-42dB	Sync Rec level setting is -42 dB.
0	4	-48dB	Sync Rec level setting is -48 dB.
0	5	-54dB	Sync Rec level setting is -54 dB.
0	6	-60dB	Sync Rec level setting is -60 dB.
0	7	-66dB	Sync Rec level setting is -66 dB.
0	8	-72dB	Sync Rec level setting is -72 dB.

• KEY CONTROL DATA RETURN

KEY CONTROL DATA RETURN is sent in response to the KEY CONTROL DATA PRESET command [2D] to show the current key control data setting.

Command AD
Data 2 bytes
Request command KEY CONTROL DATA PRESET [2D]

Data 1	Data 2	Description	Remarks
0	0 - 6	Key up	Set in semitones
1		Key down	
		Key change	

• AUTO CUE SELECT RETURN

AUTO CUE SELECT RETURN is sent in response to the AUTO CUE SELECT command [30] to show the current Auto cue mode setting.

Command B0
Data 2 bytes
Request command AUTO CUE SELECT [30]

Data 1	Data 2	Description	Remarks
0	0	Auto cue mode OFF	
0	1	Auto cue mode ON	

• AUTO TRACK SELECT RETURN

AUTO TRACK SELECT RETURN is sent in response to the AUTO TRACK SELECT command [31] to show the current Auto track mode setting.

Command B1
Data 2 bytes
Request command AUTO TRACK SELECT [31]

Data 1	Data 2	Description	Remarks
0	0	Auto track mode OFF	
0	1	Auto track mode ON (LEVEL)	Level mode
0	2	Auto track mode ON (Digital Direct)	Digital Direct mode
0	3	Auto track mode ON (Time)	Time mode
0	4	Auto track mode ON (SIZE)	File size mode

• EOM TRACK TIME RETURN

EOM TRACK TIME RETURN is sent in response to the EOM TRACK TIME PRESET command [32] to show the current EOM track time setting.

Command B2
Data 2 bytes
Request command EOM TRACK TIME PRESET [32]

Data1	Data2	Description	Remarks
0	0	EOM Track OFF	
A	0	EOM Track ON (0 sec)	
N1	N2	EOM Track ON	N1: Tens digit of the EOM Track Time. N2: Ones digit of the EOM Track Time.

• EOM MEDIA TIME RETURN

EOM MEDIA TIME RETURN is sent in response to the EOM MEDIA TIME PRESET command [33] to show the current EOM media time setting.

Command B3
Data 2 bytes
Request command EOM MEDIA TIME PRESET [33]

Data1	Data2	Description	Remarks
0	0	EOM Media OFF	
N1	N2	EOM Media ON	N1: Tens digit of the EOM Media Time. N2: Ones digit of the EOM Media Time.

• PITCH CONTROL SELECT RETURN

PITCH CONTROL SELECT RETURN is sent in response to the PITCH CONTROL SELECT command [35] to show the current pitch control mode setting.

Command B5
Data 2 bytes
Request command PITCH CONTROL SELECT [35]

Data 1	Data 2	Description	Remarks
0	0	Pitch control OFF	
0	1	Pitch control ON	

• AUTO READY SELECT RETURN

AUTO READY SELECT RETURN is sent in response to the AUTO READY SELECT command [36] to show the current auto-ready mode setting.

Command B6
Data 2 bytes
Request command AUTO READY SELECT [36]

Data 1	Data 2	Description	Remarks
0	0	Auto-ready OFF	
0	1	Auto-ready ON	

• REPEAT SELECT RETURN

REPEAT SELECT RETURN is sent in response to the REPEAT SELECT command [37] to show the current repeat setting.

Command B7
Data 2 bytes
Request command REPEAT SELECT [37]

Data 1	Data 2	Description	Remarks
0	0	Repeat OFF	
0	1	Repeat ON	

• SYNC REC SELECT RETURN

SYNC REC SELECT RETURN is sent in response to the SYNC REC SELECT command [38] to show the current sync rec setting.

Command B8
Data 2 bytes
Request command SYNC REC SELECT [38]

Data 1	Data 2	Description	Remarks
0	0	Sync rec OFF	
0	1	Sync rec ON	

• INCR PLAY SELECT RETURN

INCR PLAY SELECT RETURN is sent in response to the INCR PLAY SELECT command [3A] to show the current incremental playback setting.

Command BA
Data 2 bytes
Request command INCR PLAY SELECT [3A]

Data 1	Data 2	Description	Remarks
0	0	INCR playback OFF	
0	1	INCR playback ON	

• KEY CONTROL SELECT RETURN

KEY CONTROL SELECT RETURN is sent in response to the KEY CONTROL SELECT command [3D] to show the current key control mode setting.

Command BD
Data 2 bytes
Request command KEY CONTROL SELECT [3D]

Data 1	Data 2	Description	Remarks
0	0	Key control OFF	
0	1	Key control ON	

• REMOTE/LOCAL SELECT RETURN

REMOTE/LOCAL SELECT RETURN is sent in response to the REMOTE/LOCAL SELECT command [4C] to show the current remote/local mode setting.

Command CC
Data 2 bytes
Request command REMOTE/LOCAL SELECT [4C]

Data 1	Data 2	Description	Remarks
0	0	Only remote	Enables only remote operation through an RS-232C, PARALLEL connector, ETHERNET and remote control connected to the REMOTE jack and a USB keyboard. Key operation on the controlled device is disabled
0	1	Remote and Front key	Enables remote operation and key operation on the controlled device

• PLAY MODE RETURN

PLAY MODE RETURN is sent in response to the PLAY MODE SENSE command [4E] to show the current playback mode setting.

Command CE
 Data 2 bytes
 Request command PLAY MODE SENSE [4E]

Data 1	Data 2	Description	Remarks
0	0	Continuous playback	
0	1	Single playback	
0	4	Programmed playback (data not available)	
0	5	Programmed playback (data available)	
0	6	Random playback	

• MECHA STATUS RETURN

MECHA STATUS RETURN is sent in response to the MECHA STATUS SENSE command [50] to show the current status of the specified mechanism of the controlled device.

Command D0
 Data 2 bytes
 Request command MECHA STATUS SENSE [50]

Data 1	Data 2	Description	Remarks
0	0	No Media	No Media
0	1	Preparing for disc ejection	In disc-ejecting state
1	0	Stop	In stop state
1	1	Play	In playback state
1	2	Pause	In pause state
2	8	Cue	Searching forward
2	9	Review	Searching backward
8	0	Monitor	In input monitoring state
8	1	Record	In recording state
8	2	Record pause	In record pause state
8	3	Information writing	In information writing state
F	F	Other	Some other status

SPECIFIED DEVICE STATUS RETURN

SPECIFIED DEVICE STATUS RETURN is sent in response to the SPECIFIED DEVICE STATUS SENSE command [51] to show the current status of the specified device of the controlled device.

Command 51
 Data 2 bytes
 Request command SPECIFIED DEVICE STATUS SENSE [51]

	Description	Remarks
Data 1	Device	00: SD1
Data 2		01: SD2
		10: USB
		11: CD
Data 3	Status	Same as "MECHA STATUS RETURN – Data 1"
Data 4		Same as "MECHA STATUS RETURN – Data 2"

• TRACK No. RETURN

TRACK No. RETURN is sent in response to the TRACK No. SENSE command [55] to show the current track number.

Command D5
 Data 6 bytes
 Request command TRACK No. SENSE [55]

	Description	Remarks
Data 1	EOM Status	00: Shows that the current track has yet to reach the set EOM time or EOM display mode is turned off
Data 2		01: Shows that the controlled device is displaying the EOM time
Data 3	Tens digit of the track number	
Data 4	Ones digit of the track number	
Data 5	Thousands digit of the track number	
Data 6	Hundreds digit of the track number	

• MEDIA STATUS RETURN

MEDIA STATUS RETURN is sent in response to the MEDIA STATUS SENSE command [56] to show the presence or absence of a media and the type of the media.

Command D6
 Data 4 bytes
 Request command MEDIA STATUS SENSE [56]

Data 1	Media status	00: No media
Data 2		01: Media loaded
Data 3	Media type	00: CD-DA
		01: CD-R(Audio)
		02: CD-RW(Audio)
		10: CD-ROM (Data)
Data 4		11: CD-R(Data)
		12: CD-RW(Data)

• CURRENT TRACK INFORMATION RETURN

CURRENT TRACK INFORMATION RETURN is sent in response to the CURRENT TRACK INFORMATION SENSE command [57] to show information about the program number when in program playback mode or current track when in another playback mode.

Command D7
Data 12 bytes
Request command CURRENT TRACK INFORMATION SENSE [57]

	Description	Remarks
Data 1	Tens digit of the track number or the program number	If the playback mode is set to program (PGM), the controlled device sends only the program number for data1 and data2.
Data 2	Ones digit of the track number or the program number	
Data 3	Thousands digit of the track number	
Data 4	Hundreds digit of the track number	
Data 5	Tens digit of the minutes	
Data 6	Ones digit of the minutes	
Data 7	Thousands digit of the minutes	
Data 8	Hundreds digit of the minutes	
Data 9	Tens digit of the seconds	
Data 10	Ones digit of the seconds	
Data 11	Tens digit of the frames	
Data 12	Ones digit of the frames	

• CURRENT TRACK TIME RETURN

CURRENT TRACK TIME RETURN is sent in response to the CURRENT TRACK TIME SENSE command [58] to show the selected time information about the current track.

Command D8
Data 10 bytes
Request command CURRENT TRACK TIME SENSE [58]

		Description	Remarks
(Data 1, Data 2)	00	Elapsed time	
	01	Track remaining time	
	02	Total elapsed time on the media	
	03	Total remaining time on the media	
Data 3	--	Tens digit of the minutes	
Data 4	--	Ones digit of the minutes	
Data 5	--	Thousands digit of the minutes	
Data 6	--	Hundreds digit of the minutes	
Data 7	--	Tens digit of the seconds	
Data 8	--	Ones digit of the seconds	
Data 9	--	Tens digit of the frame	
Data10	--	Ones digit of the frame	

If the reply time is 100 hours or more, reply 5999 minutes 59 seconds 99 frames.

• NAME RETURN

NAME RETURN is sent in response to the NAME SENSE command [59] to show the name of the specified track. If the specified track is a file, the reply includes the file extension.

If the specified track name does not exist or contains a character that is not ASCII, the controlled device sends ILLEGAL [F2]

Command D9
Data 5 - 124 bytes
Request command NAME SENSE [59]

	Description	Remarks
Data 1	Tens digit of the track	0000 Disc title(for CD-TEXT only) 0001 – 0999 Track name (title)
Data 2	Ones digit of the track	
Data 3	Thousand digit of the track	
Data 4	Hundred digit of the track	
Data 5 – Data124	Name(title)	ASCII characters

· The title is composed of 0 to 120 bytes.

• TOTAL TRACK No./TOTAL TIME RETURN

TOTAL TRACK No./TOTAL TIME RETURN is sent in response to the TOTAL TRACK No./TOTAL TIME SENSE command [5D] to show the total number of tracks on a media and the total running time of the media in the controlled device.

Command DD
Data 12 bytes
Request command TOTAL TRACK No./TOTAL TIME SENSE [5D]

	Description	Remarks
Data 1	Tens digit of the total number of tracks	
Data 2	Ones digit of the total number of tracks	
Data 3	Thousands digit of the total number of tracks	
Data 4	Hundreds digit of the total number of tracks	
Data 5	Tens digit of the minutes	
Data 6	Ones digit of the minutes	
Data 7	Thousands digit of the minutes	
Data 8	Hundreds digit of the minutes	
Data 9	Tens digit of the seconds	
Data10	Ones digit of the seconds	
Data11	Tens digit of the total number of frames of all tracks	
Data12	Ones digit of the total number of frames of all tracks	

• PGM TOTAL TRACK No./TOTAL TIME RETURN

PGM TOTAL TRACK No./TOTAL TIME RETURN is sent in response to the PGM TOTAL TRACK No./TOTAL TIME SENSE command [5E] to show the total number and the total running time of the programmed tracks.

Command DE
Data 12 bytes
Request command PGM TOTAL TRACK No./TOTAL TIME SENSE [5E]

	Description	Remarks
Data 1	Tens digit of the total number of tracks	
Data 2	Ones digit of the total number of tracks	
Data 3	Thousands digit of the total number of tracks	
Data 4	Hundreds digit of the total number of tracks	
Data 5	Tens digit of the minutes	
Data 6	Ones digit of the minutes	
Data 7	Thousands digit of the minutes	
Data 8	Hundreds digit of the minutes	
Data 9	Tens digit of the seconds	
Data10	Ones digit of the seconds	
Data11	Tens digit of the frame	
Data12	Ones digit of the frame	

• KEYBOARD TYPE RETURN

KEYBOARD TYPE RETURN is sent in response to the KEYBOARD TYPE SENSE command [5F] to show the current keyboard type setting.

Command DF
Data 2 bytes
Request command KEYBOARD TYPE SENSE [5F]

Data 1	Data 2	Description	Remarks
0	0	Japanese	
0	1	US	

• ERROR SENSE REQUEST

ERROR SENSE REQUEST is sent from the controlled device to the external controller to show that the controlled device is in an error state. If the command is sent, the external controller issues the ERROR SENSE command [78]. Be sure to determine the error by using the ERROR SENSE command.

Command F0
Data None
Request command None

• CAUTION SENSE REQUEST

CAUTION SENSE REQUEST is sent from the controlled device to the external controller to show that the controlled device is in a caution state. If the command is sent, the external controller issues the CAUTION SENSE command [79]. Be sure to check the caution by using the CAUTION SENSE command.

Command	F1
Data	None
Request command	None

• ILLEGAL STATUS

ILLEGAL STATUS is sent from the controlled device to the external controller to show that an invalid command or data has been sent to the controlled device. If the command is sent, send a command or data again, making sure that it is a valid command or data.

Command	F2
Data	None
Request command	None

• POWER ON STATUS

POWER ON STATUS is sent from the controlled device to the external controller to show that the controlled device has been turned on.

Command	F4
Data	None
Request command	None

• POWER CONTROL RETURN

STANDBY STATUS is sent in response to the POWER CONTROL command [75].

Command	F5
Data	None
Request command	None

• CHANGE STATUS

CHANGE STATUS is sent from the controlled device to the external controller to show that the controlled device has switched from one state to another.

Command	F6
Data	2 bytes
Request command	None

Data 1	Data 2	Description	Remarks
0	0	Mechanism status change	The status of the specified mechanism has been changed.
0	3	Track and EOM status changes	The controlled device has moved from one track to another or the EOM status has been changed.

• ERROR SENSE RETURN

ERROR SENSE RETURN is sent in response to the ERROR SENSE command [78].

Command F8
Data 4 bytes
Request command ERROR SENSE [78]

Data 1	N2	ERROR CODE (N1-N2N3)	
Data 2	N3	0-00	No Error
Data 3	0	1-01	Rec Error (error related to recording)
Data 4	N1	1-02	Device Error (error related to device)
		1-08	Stand-By Error (error during recording preparation)
		1-09	Information Write Error (error during final recording processing)
		1-FF	Other Error (An error other than those above occurred. Check the unit.)

• CAUTION SENSE RETURN

CAUTION SENSE RETURN is sent in response to the CAUTION SENSE command [79].

Command F9
Data 4 bytes
Request command CAUTION SENSE [79]

Data 1	N2	CAUTION CODE (N1-N2N3)	
Data 2	N3	0-00	No Caution
Data 3	0	1-02	Media Error (error related to media)
Data 4	N1	1-03	Can't Undo
		1-06	Media Full (media has no remaining capacity)
		1-07	Track Full (maximum track size has been reached)
		1-09	D-In Unlock (digital input is unlocked)
		1-0A	No Call Point
		1-0B	Can't REC (recording is not possible)
		1-0C	Write Protected (media is write-protected)
		1-0D	Not Execute (function cannot be executed in this state)
		1-0F	Can't Edit (editing is not possible in this state)
		1-13	Can't Select (selecting is not possible in this state)
		1-14	Track Protected
		1-16	Name Full (name setting character upper limit has been reached)
		1-18	Play List Error (error related to playlist)
		1-1D	Not Audio (digital input is not audio)
		1-1E	Decode Error (error related to playback)
		1-1F	Media Not Match (media is not suitable)
		1-FF	Other Caution (A caution other than those above occurred. Check the unit.)

• VENDOR COMMAND RETURN

This is the returned command in response to the command [7F].
See “**Detailed Information about Vendor Commands**” below.

Command	FF
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5. Detailed information about Vendor Commands

Vendor commands have the following format.

Serial RS-232C

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8	Byte 9	...	Byte n
LF	ID	Command		Data 1	Data 2	Data 3	Data 4	Data 5	...	CR
LF	'0'	'7F' or 'FF'		Category Code		Sub Command		Parameter	...	CR

ETHERNET (TELNET)

Byte 1	2	3	4	5	6	7	8	...	n-1	n
ID	Command		Data 1	Data 2	Data 3	Data 4	Data 5	...	LF	CR
'0'	'7F' or 'FF'		Category Code		Sub Command		Parameter	...	LF	CR

Category Code: The category code (2-byte ASCII) is used for classifying vendor commands according to function.

Sub Command: This is a unique sub-command code (2-byte ASCII) within the category.

DEVICE SELECT (01), DIVIDE(02) and DELETE(03) is the only category that has no sub command.

DEVICE SELECT (01) is Data 3 and higher are parameters.

Parameter: This is a parameter added to the command code (ASCII, length differs for each sub command.)

Below is the list of category codes.

Category Code	Category classification	Description
01	DEVICE SELECT	Selects the device to be used (SD1, SD2, USB,CD)
02	DIVIDE	Divide the track
03	DELETE	Delete the track
07	Play back	Settings related to play back
08	Recording	Setting related to recording
12	Inputs and outputs	Settings related to inputs and outputs
42	File	Editing individual files
4A	Folder	Edit or Operation related to folders

•DEVICE SELECT

DEVICE SELECT changes the device to be used on the controlled device.

Command 7F

Category Code 01

Parameter: 2 bytes

Return DEVICE SELECT RETURN [FF01] (only [7F01FF])

Data 3	Data 4	Function	Remarks
0	0	SD1	Sets the device to SD1
0	1	SD2	Sets the device to SD2.
1	0	USB	Sets the device to USB
1	1	CD	Sets the device to CD If the controlled device is SS-R250N, it sends ILLEGAL [F2]
F	F	Sense	Requests the controlled device to return the current device.

•If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

•DIVIDE

The File currently in playback standby mode on the controlled device is divided into two files at that point.

This command is not available when playback is stopped.

This command is not available for MP3 files.

This command is not available when the Play Area setting is PLAYLIST.

This command is only available when the playback mode is set to continuous.

Command 7F
Category Code 02
Return Non

•DELETE

The file(s) for the current track on the controlled device are deleted.

This command is only available when playback is stopped.

This command is not available when the Play Area setting is PLAYLIST.

This command is only available when the playback mode is set to continuous.

Command 7F
Category Code 03
Return Non

•TIME SKIP PRESET

Set the TIME SKIP time (unit: second) of the controlled device.

Command 7F
Category Code 07
Sub Command 01
Parameter 4 bytes
Return Non

	Description	Remarks	
Data 5	Ten digits of set time	0000	TIME SKIP : OFF
Data 6	One digit of the set time	0001 - 0059	1 – 59 sec
Data 7	Thousands of digits of set time	0060 – 0299	1 min
Data 8	One hundred digits of set time	0300 – 0599	5 min
		0600 -	10 min

•TIME SKIP SENSE

Request to return the set time of TIME SKIP of the controlled device.

Command 7F
Category Code 07
Sub Command 02
Return TIME SKIP RETURN [FF0702]

• PLAY AREA SELECT

PLAY AREA SELECT sets the playback area of the controlled device.

A return command is only sent when Sense [FF] is specified for Data 5 and Data 6 - the controlled device sends the PLAY AREA SELECT RETURN command [FF07CF].

Command 7F
 Category Code 07
 Sub Command 4F
 Parameter 2 bytes
 Return PLAY AREA SELECT RETURN [FF07CF].

Data 5	Data 6	Description	Remarks
0	0	All	Play all the files on the medium
0	1	Folder	Play all the files in the folder that contains the currently selected file
0	2	Playlist	Play all the files that have been assigned to the playlist
F	F	Sense	Requests the controlled device to return the current play area select setting

·If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• AUTO TRACK SIZE PRESET

AUTO TRACK SIZE PRESET sets the auto track size of the controlled device.

The setting is 640 Mbyte, 1 Gbyte (1024 Mbytes), 2 Gbyte (2048 Mbyte).

A return command is only sent when Sense [FF] is specified for Data 5 and Data 6 - the controlled device sends the AUTO TRACK SIZE RETURN command [FF08A3].

The auto track mode can be turned on or off using the AUTO TRACK SELECT command [31].

Command 7F
 Category Code 08
 Sub Command 23
 Parameter 6 bytes or 2 bytes
 Return AUTO TRACK SIZE RETURN [FF08A3].

Data 5/6	Data 7	Data 8	Data 9	Data10	Description	Remarks
00	4	0	0	6	640MB	File Size (MByte)
	2	4	1	0	1GB	
	4	8	2	0	2GB	
FF					Sense	Requests the controlled device to return the current auto track size setting

·If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• USER WORD PRESET

Set the USER WORD of the controlled device.

USER WORD name can be sent up to 8 bytes (USER01/02/03) or 12 bytes (USER04/05) after Data 7.

Command 7F
 Category Code 08
 Sub Command 2A
 Parameter 3 bytes - 10 bytes (USER01/02/03) , 3 bytes - 14 bytes (USER04/05)
 Return USER WORD PRESET RETURN [FF08AA].

Data5	Data6	Description	Remarks
1	0	USER01	User word number to set.
1	1	USER02	
1	2	USER03	
1	3	USER04	
1	4	USER05	
Data 7 – Data 14		USER WORD NAME(USER01/02/03)	Alphanumeric characters and symbols (ASCII character code [0x20 – 0x7E])
Data 7 – Data 18		USER WORD NAME(USER04/05)	

• USER WORD SENSE

Request to return the USER WORD of the controlled device.

Command 7F
 Category Code 08
 Sub Command 5A
 Parameter 2 bytes
 Return USER WORD SENSE RETURN [FF08DA].

Data5	Data6	Description	Remarks
1	0	USER01	USER WORD number to request.
1	1	USER02	
1	2	USER03	
1	3	USER04	
1	4	USER05	

• FILE NAME SELECT

Set the format of the recording file name of the controlled device.

Command 7F
 Category Code 08
 Sub Command 60
 Parameter 2 bytes
 Return FILE NAME SELECT RETURN [FF08E0].

Data5	Data6	Description	Remarks
0	0	DATE/TIME	Date & Time
1	0	USER01	USER01–USER05
1	1	USER02	
1	2	USER03	
1	3	USER04	
1	4	USER05	
F	F	Sense	Requests the controlled device to return the current auto track size setting

• If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• CURRENT MEDIA RECORDABLE TIME SENSE

Request to return the recordable time of the current media in the controlled device.

Command 7F
 Category Code 10
 Sub Command 10
 Machine ID 0
 Return CURRENT MEDIA RECORDABLE TIME RETURN [FF1090]

• MEDIA FORMAT

Formats the selected media in the controlled device.

When execution starts and completes, the controlled device returns "MEDIA FORMAT ACKNOWLEDGE [FF10C4]".

Command 7F
 Category Code 10
 Sub Command 44
 Machine ID 0
 Data 2 bytes

Data 5	Data 6	Description	Remarks
0	0	Quick Format	
0	1	Full Format	

·If data other than the above is received, the unit will transmit ILLEGAL [F2].

Return MEDIA FORMAT ACKNOWLEDGE [FF10C4]

• INPUT SELECT

INPUT SELECT sets the input source select of the controlled device.

Specify "00" for Data 5-6.

A return command is only sent when Sense [FF] is specified for Data 7 and Data 8 -, the controlled device sends the INPUT SELECT RETURN command [FF1290].

When DIGITAL XLR or DIGITAL COAXIAL is selected, the LINK PLAY playback mode setting is turned OFF.

Before switching to ANALOG BALANCED, please make sure that the phantom power supply state from this unit is correct for the connected device.

Command 7F
 Category Code 12
 Sub Command 10
 Parameter 6 bytes
 Return INPUT SELECT RETURN [FF1290].

Data 5/6	Data 7/8	Data 9/10	Description	Remarks
00	00	00	ANALOG BALANCED	Input from ANALOG MIC/LINE IN (BALANCED) L/R jacks
		01	ANALOG UNBALANCED	Input from ANALOG IN (UNBALANCED) L/R jacks
	01	00	DIGITAL XLR	Input from AES/EBU IN jack
		01	DIGITAL COAXIAL	Input from SPDIF IN jack
	02	00	IF-DA2(DANTE) (Available if IF-DA2 installed)	Input from IF-DA2 Dante interface card
	FF		Sense	Requests the controlled device to return the current input select setting

·If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• FILE RENAME

Change the name of a specified file in the current device on the controlled device.

The file name a maximum of 117 bytes in UTF-8 format can be sent from Data 9 on.

At the beginning and end of processing, the controlled device will return "FILE RENAME ACKNOWLEDGE [FF4280]".

Command 7F
 Category Code 42
 Sub Command 00
 Parameter 5-121 bytes
 Return FILE RENAME ACKNOWLEDGE [FF4280].

	Description	Remarks
Data 5	File number tens digit	Specified file number Example: "1400" is file No.14
Data 6	File number ones digit	
Data 7	File number thousands digit	
Data 8	File number hundreds digit	
Data 9 - 125	File name	UTF-8

·If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• CURRENT FOLDER SELECT

Specify folder number in the current device of the controlled device to change the current folder.

The target is only the folder directly under the root folder.

Command 7F
 Category Code 4A
 Sub Command 23
 Parameter 4 bytes
 Return None.

	Description	Remarks
Data 5	Folder number tens digit	Specified folder number Example: "2400" is folder No.24
Data 6	Folder number ones digit	
Data 7	Folder number thousands digit	
Data 8	Folder number hundreds digit	

·If the folder number that does not exist directly under the root folder is specified, it sends ILLEGAL (F2).

If it is specified the current folder to the folder number, it sends ILLEGAL (F2).

• CREATE FOLDER

Create a new folder with the name specified directly under the root folder in the current device for the controlled device.

The folder name is a maximum of 117 bytes in UTF-8 format can be sent from Data 5 on.

At the beginning and end of processing, the controlled device will return "CREATE FOLDER ACKNOWLEDGE [FF4AC0]".

Command 7F
 Category Code 4A
 Sub Command 40
 Parameter 1-117 bytes
 Return CREATE FOLDER ACKNOWLEDGE [FF4AC0].

	Description	Remarks
Data 5 - 121	Folder name	UTF-8

·If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• FOLDER RENAME

Change the name of a specified folder in the current device on the controlled device.

The folder name a maximum of 117 bytes in UTF-8 format can be sent from Data 9 on.

The target is only the folder directly under the root folder.

At the beginning and end of processing, the controlled device will return "FOLDER RENAME ACKNOWLEDGE [FF4AC2]".

Command 7F
 Category Code 4A
 Sub Command 42
 Parameter 5-121 bytes
 Return FOLDER RENAME ACKNOWLEDGE [FF4AC2].

	Description	Remarks
Data 5	Folder number tens digit	Specified folder number Example: "2400" is folder No.24
Data 6	Folder number ones digit	
Data 7	Folder number thousands digit	
Data 8	Folder number hundreds digit	
Data 9 – 125	Folder name	UTF-8

·If the folder number that does not exist directly under the root folder is specified, it sends ILLEGAL (F2).

·If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• CURRENT FOLDER No. SENSE

Requests to return the current folder number of the current device of the controlled device.

Command 7F
 Category Code 4A
 Sub Command 55
 Parameter None
 Return CURRENT FOLDER No. RETURN [FF4AD5].

• SEARCH FOLDER No.

Find a folder directly under the root folder in the current device of the controlled device,
Searches for the folder with the specified name and request to return the folder number.
The folder name is a maximum of 117 bytes in UTF-8 format sent in Data 5 onwards.

Command 7F
Category Code 4A
Sub Command 56
Parameter 1-117 bytes
Return SEARCH FOLDER No. RETURN [FF4AD6].

	Description	Remarks
Data 5 – 121	Folder name	UTF-8

·If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• FOLDER NAME SENSE

Requests to return the name of the specified folder in the current device of the controlled device.
Only the folder directly under the root folder are available.

Command 7F
Category Code 4A
Sub Command 59
Parameter 4 bytes
Return FOLDER NAME RETURN [FF4AD9].

	Description	Remarks
Data 5	Folder number tens digit	Specified folder number Example: "2400" is folder No.24
Data 6	Folder number ones digit	
Data 7	Folder number thousands digit	
Data 8	Folder number hundreds digit	

·If the folder number that does not exist directly under the root folder is specified, it sends ILLEGAL (F2).

·If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• FILE NAME SENSE

Requests to return the name of the specified file in the current device of the controlled device.

Command 7F
Category Code 4A
Sub Command 5A
Parameter 4 bytes
Return FILE NAME RETURN [FF4ADA].

	Description	Remarks
Data 5	File number tens digit	Specified file number Example: "1200" is file No.12
Data 6	File number ones digit	
Data 7	File number thousands digit	
Data 8	File number hundreds digit	

·If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• FOLDER COUNT SENSE

Requests to return the start folder number, the end folder number, and the number of folders in the root folder of the controlled device's current device.

Command 7F
 Category Code 4A
 Sub Command 5D
 Parameter None
 Return FOLDER COUNT RETURN [FF4ADD].

• FILE COUNT SENSE

Requests to return the start file number, end file number, and the number of files in the specified folder of the controlled device's current device.

The target is the folder directly under the root folder and the root folder (folder No.0).

Command 7F
 Category Code 4A
 Sub Command 5E
 Parameter 4 bytes
 Return FILE COUNT RETURN [FF4ADE].

	Description	Remarks
Data 5	Folder number tens digit	Specified folder number Example: "2400" is folder No.24
Data 6	Folder number ones digit	
Data 7	Folder number thousands digit	
Data 8	Folder number hundreds digit	

·If the folder number that does not exist directly under the root folder is specified, it sends ILLEGAL (F2).

·If the controlled device receives data other than the above data, it sends ILLEGAL (F2).

• DEVICE SELECT RETURN

DEVICE SELECT RETURN returns the information about the selected device.

Command FF
 Category Code 01
 Parameter 2 bytes
 Request command DEVICE SELECT [7F01FF]

Data 3	Data 4	Function	Remarks
0	0	SD1	SD1 is selected
0	1	SD2	SD2 is selected.
1	0	USB	USB is selected.
1	1	CD	CD is selected.

•TIME SKIP RETURN

TIME SKIP RETURN is a replay command for the TIME SKIP SENSE command [7F0702] to show the current TIME SKIP setting.

Command FF
 Category Code 07
 Sub Command 02
 Parameter 4 bytes
 Request command DEVICE SELECT [7F02]

	Description	Remarks	
Data 5	Ten digits of set time	0000	TIME SKIP : OFF
Data 6	One digit of the set time	0001 - 0059	1 – 59 sec
Data 7	Thousands of digits of set time	0060	1 min
Data 8	One hundred digits of set time	0300	5 min
		0600 -	10 min

•PLAY AREA SELECT RETURN

PLAY AREA SELECT RETURN is sent in response to the PLAY AREA SELECT command [7F074F] to show the current play area setting.

Command FF
 Category Code 07
 Sub Command CF
 Parameter 2 bytes
 Request command PLAY AREA SELECT [7F074F]

Data 5	Data 6	Description	Remarks
0	0	All	Play all the files on the medium
0	1	Folder	Play all the files in the folder that contains the currently selected file
0	2	Playlist	Play all the files that have been assigned to the playlist

•AUTO TRACK SIZE RETURN

AUTO TRACK SIZE RETURN is sent in response to the AUTO TRACK SIZE PRESET command [7F0823] to show the current auto track size setting.

Command FF
 Category Code 08
 Sub Command A3
 Parameter 6 bytes
 Request command AUTO TRACK SIZE PRESET [7F0823]

Data 5/6	Data 7	Data 8	Data 9	Data10	Description	Remarks
00	4	0	0	6	640MB	File Size (MByte)
	2	4	1	0	1GB	
	4	8	2	0	2GB	

•USER WORD PRESET RETURN

USER WORD RETURN is sent in response to the USER WORD PRESET command [7F082A] to show the current user word setting.

Command FF
 Category Code 08
 Sub Command AA
 Parameter 2 bytes
 Request command USER WORD PRESET [7F082A]

Data 5	Data 6	Description	Remarks
1	0	USER01	The set user word number.
1	1	USER02	
1	2	USER03	
1	3	USER04	
1	4	USER05	

•USER WORD SENSE RETURN

USER WORD RETURN is sent in response to the USER WORD SENSE command [7F085A] to show the current user word setting.

Command FF
 Category Code 08
 Sub Command DA
 Parameter 3 bytes – 10 bytes (USER01/02/03) , 3 bytes – 14 bytes(USER04/05)
 Request command USER WORD SENSE [7F085A]

Data 5	Data 6	Description	Remarks
1	0	USER01	User word number to set.
1	1	USER02	
1	2	USER03	
1	3	USER04	
1	4	USER05	
Data 7 – Data14		USER WORD NAME(USER01/02/03)	Alphanumeric characters and symbols (ASCII character code [0x20 – 0x7E])
Data 7 – Data18		USER WORD NAME(USER04/05)	

•FILE NAME SELECT RETURN

FILE NAME SELECT RETURN is sent in response to the FILE NAME SELECT command [7F08E0] to show the current file name select setting.

Command FF
 Category Code 08
 Sub Command E0
 Parameter 2 bytes
 Request command FILE NAME SELECT [7F0860]

Data5	Data6	Description	Remarks
0	0	DATE/TIME	Date & Time
1	0	USER01	USER01-USER05
1	1	USER02	
1	2	USER03	
1	3	USER04	
1	4	USER05	

·CURRENT MEDIA RECORDABLE TIME RETURN

This is the return command in response to the CURRENT MEDIA RECORDABLE TIME SENSE command [7F1010].

It is sent the recordable time of the current media.

Command FF
 Category Code 10
 Sub Command 90
 Machine ID 0
 Data 8 bytes

	Description	Remarks
Data 5	Tens digit of the minutes	Example: "34125678" is 1234 min 56 sec 78
Data 6	Ones digit of the minutes	
Data 7	Thousands digit of the minutes	
Data 8	Hundreds digit of the minutes	
Data 9	Tens digit of the seconds	
Data 10	Ones digit of the seconds	
Data 11	1/10 digit of the seconds	
Data 12	1/100 digit of the seconds	

Request/Preset CURRENT MEDIA RECORDABLE TIME SENSE [7F1010]

-If no media is inserted, it sends 0000 minutes 00 seconds 00.

-If the recordable time exceeds 100 hours (6000 minutes), it sends 5999 minutes 59 seconds 99.

-During the status transition from STOP to REC PAUSE or from RECORD to STOP, it sends "-----".

·MEDIA FORMAT ACKNOWLEDGE

This is the return command in response to the "MEDIA FORMAT [7F1044]" command.

It is sent when execution starts, and it returns the execution results.

Command FF
 Category Code 10
 Sub Command C4
 Machine ID 0
 Data 2 bytes

Data 7	Data 8	Description	Remarks
0	0	Start	Execution started
1	1	End (OK)	Execution completed successfully
1	2	End (NG)	Execution did not complete/failed

Request/Preset MEDIA FORMAT [7F1044]

•INPUT SELECT RETURN

INPUT SELECT RETURN is sent in response to the INPUT SELECT command [7F1210] to show the current input source select setting.

Command FF
 Category Code 12
 Sub Command 90
 Parameter 6 bytes
 Request command INPUT SELECT [7F1210]

Data 5/6	Data 7/8	Data 9/10	Description	Remarks
00	00	00	ANALOG BALANCED	Input from ANALOG MIC/LINE IN (BALANCED) L/R jacks
		01	ANALOG UNBALANCED	Input from ANALOG IN (UNBALANCED) L/R jacks
	01	00	DIGITAL XLR	Input from AES/EBU IN jack
		01	DIGITAL COAXIAL	Input from SPDIF IN jack
	02	00	IF-DA2(DANTE) (Available if IF-DA2 installed)	Input from IF-DA2 Dante interface card

•FILE RENAME ACKNOWLEDGE

FILE RENAME ACKNOWLEDGE is sent in response to the FILE RENAME command [7F4200].
 This is returned at the start of processing and with the final result.

Command FF
 Category Code 42
 Sub Command 80
 Parameter 2 bytes
 Request command FILE RENAME [7F4200]

Data 5	Data 6	Description	Remarks
0	0	Start	Processing started
1	1	End (OK)	Processing completed successfully
1	2	End (NG)	Processing was not possible or failed

•CREATE FOLDER ACKNOWLEDGE

CREATE FOLDER ACKNOWLEDGE is sent in response to the CREATE FOLDER command [7F4A40].

This is returned at the start of processing and with the final result. When processing has completed successfully, the folder number of the created folder is also returned.

Command FF
 Category Code 4A
 Sub Command C0
 Parameter 6 bytes or 2 bytes
 Request command CREATE FOLDER [7F4A40]

	Description	Remarks
Data 5	1	End (OK) processing completed successfully
Data 6	1	
Data 7	Folder number tens digit	Specified folder number Example: "2400" is folder No.24
Data 8	Folder number ones digit	
Data 9	Folder number thousands digit	
Data 10	Folder number hundreds digit	

Data 5	Data 6	Description	Remarks
0	0	Start	Processing started
1	2	End (NG)	Processing was not possible or failed

•RENAME FOLDER ACKNOWLEDGE

RENAME FOLDER ACKNOWLEDGE is sent in response to the RENAME FOLDER command [7F4A42].

This is returned at the start of processing and with the final result.

Command FF
 Category Code 4A
 Sub Command C2
 Parameter 2 bytes
 Request command RENAME FOLDER [7F4A42]

Data 5	Data 6	Description	Remarks
0	0	Start	Processing started
1	1	End (OK)	Processing completed successfully
1	2	End (NG)	Processing was not possible or failed

•CURRENT FOLDER No. RETURN

CURRENT FOLDER No. RETURN is sent in response to the CURRENT FOLDER No. SENSE command [7F4A55] to show the current folder number.

Command	FF
Category Code	4A
Sub Command	D5
Parameter	4 bytes
Request command	CURRENT FOLDER No. SENSE [7F4A55]

	Description	Remarks
Data 5	Folder number tens digit	Current folder number Example: "2400" is folder No.24
Data 6	Folder number ones digit	
Data 7	Folder number thousands digit	
Data 8	Folder number hundreds digit	

•SEARCH FOLDER No. RETURN

SERACH FOLDER No. RETURN is sent in response to the SEARCH FOLDER No. command [7F4A56] to show the searched folder number.

Command	FF
Category Code	4A
Sub Command	D6
Parameter	4 bytes
Request command	SEARCH FOLDER No. [7F4A56]

	Description	Remarks
Data 5	Folder number tens digit	Folder number Example: "2400" is folder No.24
Data 6	Folder number ones digit	
Data 7	Folder number thousands digit	
Data 8	Folder number hundreds digit	

•FOLDER NAME RETURN

FOLDER NAME RETURN is sent in response to the FOLDER NAME SENSE command [7F4A59] to show the folder name of specified folder number.

The folder name in UTF-8 format is sent from Data 9 on.

Command	FF
Category Code	4A
Sub Command	D9
Parameter	5-124 bytes
Request command	FOLDER NANE SENSE [7F4A59]

	Description	Remarks
Data 5	Folder number tens digit	Specified folder number Example: "2400" is folder No.24
Data 6	Folder number ones digit	
Data 7	Folder number thousands digit	
Data 8	Folder number hundreds digit	
Data 9 – Data 128	Folder name	UTF-8

•FILE NAME RETURN

FILE NAME RETURN is sent in response to the FILE NAME SENSE command [7F4A5A] to show the file name of specified file number.

The file name in UTF-8 format is sent from Data 9 on.

Command	FF
Category Code	4A
Sub Command	DA
Parameter	5-124 bytes
Request command	FILE NAME SENSE [7F4A5A]

	Description	Remarks
Data 5	File number tens digit	Specified file number Example: "1200" is file No.12
Data 6	File number ones digit	
Data 7	File number thousands digit	
Data 8	File number hundreds digit	
Data 9 – Data 128	File name	UTF-8

•FOLDER COUNT RETURN

FOLDER COUNT RETURN is sent in response to the FOLDER COUNT SENSE command [7F4A5D] to show the start folder number, the end folder number, and the number of folders in the root folder of the current device.

Command	FF
Category Code	4A
Sub Command	DD
Parameter	12 bytes
Request command	FOLDER COUNT SENSE [7F4A5D]

	Description	Remarks
Data 5	Start folder number tens digit	Start folder number Example: "0100" is folder No.1
Data 6	Start folder number ones digit	
Data 7	Start folder number thousands digit	
Data 8	Start folder number hundreds digit	
Data 9	End folder number tens digit	End folder number Example: "2400" is folder No.24
Data 10	End folder number ones digit	
Data 11	End folder number thousands digit	
Data 12	End folder number hundreds digit	
Data 13	Number of folders tens digit	Number of folders Example: "2400" is 24
Data 14	Number of folders ones digit	
Data 15	Number of folders thousands digit	
Data 16	Number of folders hundreds digit	

•FILE COUNT RETURN

FILE COUNT RETURN is sent in response to the FILE COUNT SENSE command [7F4A5E] to show the specified file number, the start file number, the end file number, and the number of files.

Command	FF
Category Code	4A
Sub Command	DE
Parameter	16 bytes
Request command	FILE COUNT SENSE [7F4A5E]

	Description	Remarks
Data 5	Folder number tens digit	Specified folder number Example: "0200" is folder No.2
Data 6	Folder number ones digit	
Data 7	Folder number thousands digit	
Data 8	Folder number hundreds digit	
Data 9	Start file number tens digit	Start file number Example: "0800" is file No.8
Data 10	Start file number ones digit	
Data 11	Start file number thousands digit	
Data 12	Start file number hundreds digit	
Data 13	End file number tens digit	End file number Example: "1600" is file No.16
Data 14	End file number ones digit	
Data 15	End file number thousands digit	
Data 16	End file number hundreds digit	
Data 17	Number of files tens digit	Number of files Example: "0900" is 9
Data 18	Number of files ones digit	
Data 19	Number of files thousands digit	
Data 20	Number of files hundreds digit	

DATE	DOC Ver.	CONTENTS
2017/07/31	1.10	Added AUTO TRACK TIME PRESET and AUTO TRACK TIME RETURN commands. Added description about filename extension to NAME RETURN command. Added the following vendor commands. PLAY AREA SELECT, PLAY AREA SELECT RETURN, INPUT SELECT, INPUT SELECT RETURN, FILE RENAME, FILE RENAME RETURN, CURRENT FOLDER No. SENSE, CURRENT FOLDER No. RETURN, CURRENT FOLDER SELECT, CREATE FOLDER, CREATE FOLDER ACK, RENAME FOLDER, RENAME FOLDER ACK, SEARCH FOLDER No., SEARCH FOLDER No. RETURN, FOLDER COUNT SENSE, FOLDER COUNT RETURN, FOLDER NAME SENSE, FOLDER NAME RETURN, FILE COUNT SENSE, FILE COUNT RETURN, FILE NAME SENSE, FILE NAME RETURN
2017/10/13	1.11	Added POWER CONTROL and STANDBY STATUS commands. Added the following vendor commands. TIME SKIP PRESET, TIME SKIP SENSE, TIME SKIP RETURN
2018/04/20	1.12	Added description to RECORD command.
2018/08/24	1.12	Added description of CURRENT TRACK TIME RETURN command when it exceeds 6000 minutes.
2019/11/29	1.13	Changed "READY" to "PAUSE".
2020/3/16	1.13	Added the following vendor commands. USER WORD PRESET, USER WORD SENSE, USER WORD PRESET RETURN, USER WORD SENSE RETURN, FILE NAME SELECT, FILE NAME SELECT RETURN
2020/5/26	1.14	Added new parameters USER04 and USER05 (maximum 12 bytes) to the following vendor commands. USER WORD PRESET, USER WORD SENSE, USER WORD PRESET RETURN, USER WORD SENSE RETURN, FILE NAME SELECT, FILE NAME SELECT RETURN
2020/6/24	1.14	Added description to DEVICE SELECT RETURN command. Added the following commands. SPECIFIED DEVICE STATUS SENSE, SPECIFIED DEVICE STATUS RETURN Added the following vendor commands. MEDIA FORMAT, MEDIA FORMAT ACKNOWLEDGE Renamed STANDBY STATUS to POWER CONTROL RETURN
2021/11/18	1.15	Added the following vendor commands. CURRENT MEDIA RECORDABLE TIME SENSE, CURRENT MEDIA RECORDABLE TIME RETURN