

**TASCAM SS-CDR200／SS-R200
CONTROL I/O Terminals
RS-232C Protocol Specifications**

TEAC Corporation

ATTENTION

TEAC Corporation ("TEAC") licenses you the protocol specified in this document, assuming that you agree to the following protocol license terms.

If you do not agree to the terms, you are not allowed to use the protocol and you must return this document to us.

Please note that your violation of the terms will result in infringement of TEAC's rights and therefore your use of the protocol after the violation will be suspended and you will be held liable for damages resulting from the violation.

Protocol license terms

1. This agreement takes effect on the first use of this protocol.
2. TEAC grants you a non-exclusive, non-transferable license to "use" the protocol for the purpose of developing devices (including software) compatible with applicable TASCAM products.
3. Your receipt of this document does not mean that you are given any right, authority or interests in relation to this protocol other than those specified in this document. Please note that this document is protected as a TEAC's copyright work under the copyright laws of a member state of the Universal Copyright Convention or the Berne Convention for the Protection of Literary and Artistic Works. All intellectual property rights relating to this protocol are the property of TEAC or its suppliers.
4.
 - (1) You may not duplicate this document.
 - (2) You may not transfer this document to any third party without TEAC's prior consent.
 - (3) This document contains proprietary information of TEAC and may not be disclosed to any third party without TEAC's prior consent.
5. This document and protocol are provided "as is." TEAC does not warrant that the contents of this document and this protocol are fit for a particular purpose or free of defects.
6. TEAC cannot respond to your inquiries about the contents of this document.
7. TEAC is not responsible for any loss or damages whatsoever arising from use or loss of use of this protocol, including business loss, business interruption, loss of sales information, or any other financial damages, even if the possibility of such damages has been disclosed to you in advance.

1. Overview

The SS-CDR200/SS-R200 ("controlled device") can be controlled from an external device ("external controller"), such as a computer, through a serial RS-232C connection.

2. Specifications

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

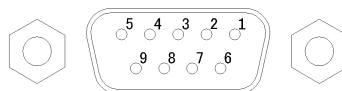
Circuit type	3-wire, Half-duplex
Transmission type	Digital binary serial
Data signal rate (baud rate)	4800/9600/19200/38400 bits/sec
Data bits	7/8 bits
Parity bits	None/ODD/EVEN
Stop bits	1/2 bit

*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)

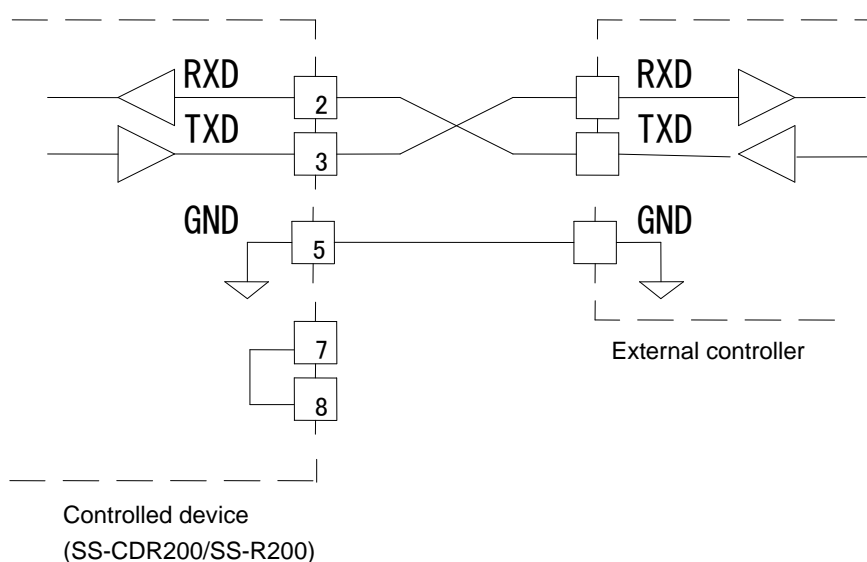


Terminal pin-out and input/output signals

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	-	NC	Not connected

*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.

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

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

3.4. List of Commands

Control/Preset/Sense Command		Return Command	
0F	INFORMATION REQUEST	8F	INFORMATION RETURN
10	STOP		
12	PLAY		
13	RECORD		
14	READY		
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
27	CLOCK DATA PRESET	A7	CLOCK DATE RETURN
28	SYNC REC LEVEL PRESET	A8	SYNC REC LEVEL RETURN
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 SELCT	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
34	TIMER/RESUME PLAY SELECT	B4	TIMER/RESUME PLAY SELECT 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
4E	PLAY MODE SENSE	CE	PLAY MODE RETURN
50	MECHA STATUS SENSE	D0	MECHA STATUS RETURN
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	KYBOARD TYPE RETURN
		F0	ERROR SENSE REQUEST
		F1	CAUTION SENSE REQUEST
		F2	ILLEGAL STATUS
		F4	POWER ON STATUS
		F6	CHANGE STATUS
78	ERROR SENSE	F8	ERROR SENSE RETURN
79	CAUTION SENSE	F9	CAUTION SENSE RETURN
7F	ERROR SENSE	FF	ERROR SENSE RETURN

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	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).

•READY

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	Ready 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).

•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 READY.

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-R200, 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.

·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			Positive (+) value Negative (-) value
N2	N3		N1	Preset %	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 time of the auto track (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.

Only when 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 rage, the controlled device sends ILLEGAL [F2].

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 06m 10s 30th frame
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	Set to 0	
Data 12	Set to 0	

·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].

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
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 connection and with a wired remote controller. 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 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 STATUS RETURN [D0]

•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	0001 - 0999
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]

•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 SENSE

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

VENDER COMMAND is a command which controls a function available only for SS-CDR200/SS-R200. The function is identified with the value of Data1 and Data2.

Command: 7F
Data: -- bytes
Return: VENDER COMMAND RETURN [FF]

Data 1	Data 2	Function	Remarks
0	1	Device Select	

•DEVICE SELECT

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

Data: 4 bytes

Data 3	Data 4	Function	Remarks
0	0	CF	Sets the device to CF.
0	1	CD	Sets the device to CD If the controlled device is SS-R200, it sends ILLEGAL [F2]
0	2	USB	Sets the device to USB
0	3	SD	Sets the device to SD
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).

•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
		0 1			Positive (+) value Negative (-) value
N2	N3		N1	Preset %	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

• 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 connection and with a wired remote controller. 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	Ready	In ready state
8	0	Monitor	In input monitoring state
8	1	Record	In recording state
8	2	Record ready	In record ready state
8	3	Information writing	In information writing state

•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 01: Shows that the controlled device is displaying the EOM time
Data 2		
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)
Data 4		10: CD-ROM (Data)
		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	

•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 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]

	内容	備考
Data 1	Tens digit of the track	0001 - 0999
Data 2	Ones digit of the track	
Data 3	Thousand digit of the track	
Data 4	Hundred digit of the track	
Data 5 - Data124	Track 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

•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		
Data 3	0		
Data 4	N1		
		1-01	Rec Error
		1-08	Stand-By Error
		1-09	Information Write Error
		1-20	Unapproved FAT format(in recording mode)

•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) 1-03 Can't Undo 1-04 Sure?Text 1-05 Eject Error 1-06 Media Full 1-07 Track Full 1-09 D-In Unlock 1-0A No Call Point 1-0B Can't REC 1-0C Write Protected 1-0D Not Execute 1-0F Can't Edit 1-13 Can't Select 1-14 Track Protected 1-15 Not Fs Unmatch 1-16 Name Full 1-18 Play List Error 1-19 PGM Full 1-1A PGM Empty 1-1B Ext CLK Err 1-1D Not Audio 1-1E Decode Error 1-1F Media Not Match 1-20 Unapproved FAT format
Data 2	N3	
Data 3	0	
Data 4	N1	

•VENDER COMMAND RETURN

VENDER COMMAND RETURN is sent in response to the VENDER COMMAND [7F].

The function is identified with the value of Data1 and Data2.

Command:

FF

Data:

-- bytes

Return:

VENDER COMMAND [7F]

Data 1	Data 2	Function	Remarks
0	1	Device Select Return	

•DEVICE SELECT RETURN

DEVICE SELECT RETURN returns the information about the selected device.

Data: 4 bytes

Data 3	Data 4	Function	Remarks
0	0	CF	CF is selected.
0	1	CD	CD is selected.
0	2	USB	USB is selected.
0	3	SD	SD is selected