TASCAM
TEAC Professional Division

TASCAM MD-CD1

CONTROL I/O Terminals
RS-232C Protocol Specifications

Ver.1.00
December, 2004

TEAC

1. Overview

MD-CD1 can be controlled from an external device, such as computer, using REMOTE terminals equipped in MD-CD1. In this case, MD-CD1 is the controlled device. Also, the device externally control it is the controlling device.

2. Specifications

2.1. Electrical Specifications

Standard to conform	JIS X-5101 (Former JIS C-6361, equivalent to EIA RS-232C) (Not compatible with RS-422A for commercial VTR, etc.)	
Impedance at receiver side	DC resistance of 3K ohm to 7K ohm measured with impressed voltage of +/-3 – 15V. Total effective load capacitance is 2500pF or lower.	
Open circuit voltage at transmitter side	25V or lower	
Open circuit voltage at receiver side	2V or lower	
Signal voltage	+/-5V – +/-15V for load resistance of 3K-7K ohm when open circuit voltage at receiver side is 0V.	
Distinction of signal	Logical “1”	-3V or lower
	Logical “0”	+3V or higher

2.2. Communication Specifications

Circuit form	3-wire, Half-duplex
Transmission form	Digital binary serial transmission
Data signal rate	4800/9600/19200/38400 bit/sec
Character length	7/8 bit
Parity bit	Odd/Even/None
Stop bit	1/2 bit

* Data signal rate, character length, parity bit, and stop bit are set by MD-CD1.

2.3. Pin-out

Connector D-sub 9pin female (Millimeter screw)

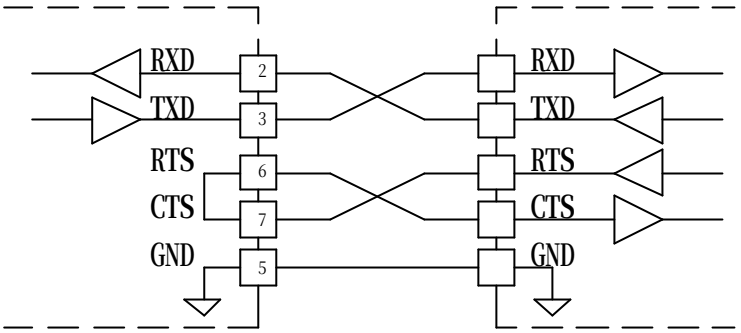


Terminal pin-out and input/output signals

Pin No.	In/Out	Signal name	Description
1	-	NC	Not used
2	In	Rx Data	Received data *1
3	Out	Tx Data	Sent data
4	Out	(Reserved)	Reserved
5	-	GND	Ground
6	In	(Reserved)	Reserved
7	Out	RTS	Request To Send (Output to request sending) *2
8	In	CTS	Clear To Send *2 (Input of ready to receive)
9	-	NC	Not used

*1: Impress voltage complied with RS-232C standard to Rx Data.

*2: RTS/CTS is connected for loop-back inside the controlled device. For RTS/CTS control, consider that point for design of the controlling device.



The controlled device (this device) side The controlling device side

3. Command Format

3.1. Overview of Command Format

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 is based on ASCII format, starting from “Line feed (LF)” and ending with “Carriage return (CR).”
Next byte of LF is a machine ID. Machine ID is described later.
A command is represented with ASCII 2 bytes.
A series of bytes following the command represents data, 0 byte (no data) or more up to 98 bytes. For detail of data, refer to the detail of each command. For a command which uses 0-9 and A-F for data value, upper cases of A-F are used.

A sample command:
Sample 1: To send PLAY command to the controlled device with ID=1.
This command starts the controlled device to play when is stopped or ready.
PLAY command is [12], and sent as follows:

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

Sample 2:To order the controlled device with ID=1 to perform direct search to 123rd track.
In order to perform this operation, send the command “DIRECT TRACK SEARCH PRESET [23].”
The data bytes are composed of 2-byte unit ASCII characters.
Specification of Track No. in “DIRECT TRACK SEARCH PRESET” command is as follows:
Data 1 Number at ten’s place of the track number to be specified.
Data 2 Number at unit’s place of the track number to be specified.
Data 3 Number at thousand’s place of the track number to be specified.
Data 4 Number at hundred’s place of the track number to be specified.
Then, the command to be sent is as follows:

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

Sample 3: To write a title into 123rd track of the controlled device with ID=2.
In order to perform this operation, send the command “TITLE PRESET [29].”
Using this command, up to 96 characters can be sent.
For example, the command to be sent to write a title “Test” is as follows:

		ID	Command		123 rd track				Title: Test				
ASCII	LF	2	2	9	2	3	0	1	T	e	s	t	CR
HEX	0Ah	32h	32h	39h	32h	33h	30h	31h	54h	65h	73h	74h	0Dh

3.2. Machine ID

For this device, Machine ID=1 for commands and returns on MD and Machine ID=2 for commands and returns on CD are assigned.
Commands and returns with Machine ID=0 exist, and theses operations are described in context.
If a command with Machine ID=3 or more is received, it is ignored.
If a command with illegal Machine ID is received (MD receives a command with CD’s ID, or other cases), this device sends ILLEGAL [F2].

3.3. List of Commands

List of commands is as follows:

MD	CD	Control/Preset/Sense Command		Return Command	
v	v	0F	INFORMATION REQUEST	8F	INFORMATION RETURN
v	v	10	STOP		
v	v	12	PLAY		
v		13	RECORD		
v	v	14	READY		
v	v	16	SHUTTLE		
v	v	18	TRAY/EJECT		
v	v	1A	TRACK/INDEX SKIP		
v	v	20	AUTO CUE LEVEL PRESET	A0	AUTO CUE LEVEL RETURN
v		21	AUTO TRACK LEVEL PRESET	A1	AUTO TRACK LEVEL RETURN
v	v	23	DIRECT TRACK SEARCH PRESET		
v	v	25	PITCH DATA PRESET	A5	PITCH DATA RETURN
v		28	SYNC REC LEVEL PRESET	A8	SYNC REC LEVEL RETURN
v		29	TITLE PRESET	A9	TITLE PRESET ACKNOWLEDGE
v	v	2C	TIME SEARCH PRESET		
	v	2D	KEY CONTROL DATA PRESET	AD	KEY CONTROL DATA RETURN
v	v	2F	DIGITAL VOLUME DATA PRESET	AF	DIGITAL VOLUE DATA RETURN
v	v	30	AUTO CUE SELECT	B0	AUTO CUE SELECT RETURN
v		31	AUTO TRACK SELECT	B1	AUTO TRACK RETURN
v	v	32	EOM TRACK TIME SELECT	B2	EOM TRACK TIME RETURN
v	v	33	EOM DISC TIME SELECT	B3	EOM DISC TIME RETURN
v	v	34	RESUME/TIMER PLAY SELECT	B4	RESUME/TIMER PLAY SELECT RETURN
v	v	35	PITCH CONTROL SELECT	B5	PITCH CONTROL SELECT RETURN
v	v	36	AUTO READY SELECT	B6	AUTO READY SELECT RETURN
v	v	37	REPEAT SELECT	B7	REPEAT SELECT RETURN
v		38	SYNC REC SELECT	B8	SYNC REC SELECT RETURN
	v	3D	KEY CONTROL SELECT	BD	KEY CONTROL SELECT RETURN
v	v	4C	REMOTE/LOCAL SELECT	CC	REMOTE/LOCAL SELECT RETURN
v	v	4E	PLAY MODE SENSE	CE	PLAY MODE RETURN
v	v	50	MECHA STATUS SENSE	D0	MECHA STATUS RETURN
v	v	55	TRACK No. STATUS SENSE	D5	TRACK No. STATUS RETURN
v	v	56	DISC STATUS SENSE	D6	DISC STATUS RETURN
v	v	57	CURRENT TRACK INFORMATION SENSE	D7	CURRENT TRACK INFORMATION RETURN
v	v	58	CURRENT TRACK TIME SENSE	D8	CURRENT TRACK TIME RETURN
v	v	59	TITLE SENSE	D9	TITLE RETURN
v	v	5D	TOTAL TRACK No./TOTAL TIME SENSE	DD	TOTAL TRACK No./TOTAL TIME RETURN
v	v	5E	PGM TOTAL TRACK No./TOTAL TIME SENSE	DE	PGM TOTAL TRACK No./TOTAL TIME RETURN
v	v	5F	KEYBOARD TYPE SENSE	DF	KEYBOARD TYPE RETURN
v	v			F0	ERROR SENSE REQUEST
v	v			F1	CAUTION SENSE REQUEST
v	v			F2	ILLEGAL STATUS
v	v			F4	POWER ON STATUS
v	v			F6	CHANGE STATUS
v	v	78	ERROR SENSE	F8	ERROR SENSE RETURN
v	v	79	CAUTION SENSE	F9	CAUTION SENSE RETURN

3.4. Command Sequence

In most cases, ACK is not sent from the controlled device for transport control and data preset command sent from the controlling device.
For a data sense command which request to return a data value set in the controlled device, the controlled device returns a return command.
When the status of the controlled device is changed, such as changing from stop condition to play condition, or an error occurs, the controlled device sends a command to notify such change to the controlling device.
Some samples of command sequence are described below:
Place a time interval of 20ms or longer between successive commands.

Sample 1:To perform transport control of the controlled device.

A sample to play is described here.
The controlled device sends CHANGED STATUS command when it is brought into PLAY status after receiving PLAY command.
It does not send ACK for PLAY command.

Command			Status of the controlled device
Controlling device		Controlled device	
PLAY	->		STOP status
	<-	CHANGED STATUS	Sent after transition to PLAY status.

Sample 2:To preset a data.

A sample to preset AUTO CUE LEVEL is described here.
The controlled device sets AUTO CUE LEVEL when AUTO CUE LEVEL PRESET (Preset) command is received.
It does not send ACK for this command.

Command			Status of the controlled device
Controlling device		Controlled device	
AUTO CUE LEVEL PRESET (Preset –54dB)	->		Set AUTO CUE LEVEL to -54dB.

Sample 3:To get data already set.

A sample to get AUTO CUE LEVEL already set is described here.
The controlled device returns AUTO CUE LEVEL already set when AUTO CUE LEVEL PRESET (Sense) command is received.

Command			Status of the controlled device
Controlling device		Controlled device	
AUTO CUE LEVEL PRESET (Sense)	->		
	<-	AUTO CUE LEVEL RETURN	

Sample 4:Perform next operation after confirming status of the controlled device.

The controlled device sends CHANGED STATUS when its status is changed. Using CHANGED STATUS as a trigger, new operating status can be confirmed by sending MECHA STATUS SENSE.

A sample to start record after confirming the RECORD READY status of the controlled device is described here.

Command			Status of the controlled device
Controlling device		Controlled device	
			STOP status
RECORD (Record Ready)	->		
	<-	CHANGED STATUS	Sent when it becomes RECORD READY status.
MECHA STATUS SENSE	->		
	<-	MECHA STATUS RETURN	Returns RECORD READY status.
RECORD (Record)	->		
	<-	CHANGES STATUS	Sent when it becomes RECORDING status.

3.5. Command Detail

Commands, data, and machine IDs which are described here are represented in characters (ASCII). A command is a 2-byte character, a Machine ID is a 1-byte character, and each data is a 1-byte character.

Specifications of track numbers and group numbers which can be handled by this device are as follows. However, when a number which does not exist on the disc is specified, it is considered as a invalid command.

Track numbers (Audio CD)	Max. 99
Track numbers (MP3 CD)	Max. 999
Track numbers (MD)	Max. 255
Group numbers (MD)	Max. 99

INFORMATION REQUEST

It requests to return information, such as software version of the controlled device.

Command	0F
Machine ID	0 (Global) / 1 (MD) / 2 (CD) As the system controller of this device is common for MD and CD, the information which is returned is same for request with any Machine ID.
Data	None
Return	INFORMATION RETURN [8F]

STOP

It sets the controlled device to STOP mode. It also releases Input Monitor mode.

Command	10
Machine ID	0 (Global) / 1 (MD) / 2 (CD)
Data	None
Return	None

PLAY

It sets the controlled device to PLAY mode. Also, it changes the mode to RECORDING mode if the mode is RECORD READY mode.

Command 12
Machine ID 1 (MD) / 2 (CD)
Data None
Return None

RECORD

It sets the controlled device to RECORDING or RECORD READY mode. Also, it adds tracks during recording or sets Input Monitor mode when No Disc status.

Command 13
Machine ID 1 (MD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	1	Record Ready	Sets to RECORD READY mode.
0	2	Track Mark	Adds tracks during recording.
0	3	Input Monitor	Sets Input Monitor mode when stopped.

・When other data than data described above is received, this device sends ILLEGAL [F2].

Return None

READY

It sets the controlled device to PLAY READY or RECORD READY mode.

Command 14
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Invalid	This data is ignored. ILLEGAI is not sent.
0	1	Ready On	

・When other data than data described above is received, this device sends ILLEGAL [F2].

Return None

SHUTTLE

It sets the controlled device to SHUTTLE mode.
SHUTTLE mode is maintained until a command such as STOP, PLAY, or READY is received.

Command 16
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Shuttle Forward	Sets to forward SHUTTLE mode.
0	1	Shuttle Reverse	Sets to reverse SHUTTLE mode.

・When other data than data described above is received, this device sends ILLEGAL [F2].

Return None

TRAY/EJECT

It opens or closes the tray of the controlled device.

Command 18
Machine ID 1 (MD) / 2 (CD)
Data None
Return None

SKIP

It skips a track of the controlled device.
The mode at the skip start is maintained after skipping.
Command 1A
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Track Skip Next	Skips to the next track.
0	1	Track Skip Previous	If it is at start point of a track, it skips to the start point of the previous track. If it is not at start point of a track, it skips to the start point of the current track.
1	0	Invalid	This data is ignored. ILLEGAI is not sent.
1	1	Invalid	This data is ignored. ILLEGAI is not sent.

・When other data than data described above is received, this device sends ILLEGAL [F2].
Return None

AUTO CUE LEVEL PRESET

It sets Auto Cue Level of the controlled device.
Only when Sense [FF] is specified, a return command is returned.
Auto Cue Mode is set with the command "AUTO CUE SELECT [30]."
Command 20
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Invalid	This data is ignored. ILLEGAI is not sent.
0	1	Preset –30dB	
0	2	Preset –36dB	
0	3	Preset –42dB	
0	4	Preset –48dB	
0	5	Preset –54dB	
0	6	Preset –60dB	
0	7	Preset –66dB	
0	8	Preset –72dB	
F	F	Sense	Requests to return the preset level.

・When other data than data described above is received, this device sends ILLEGAL [F2].
Return AUTO CUE LEVEL RETURN [A0]

AUTO TRACK LEVEL PRESET

It sets Auto Track Level of the controlled device.
Only when Sense [FF] is specified, a return command is returned. Sense
Auto Track Mode is set with the command "AUTO TRACK SELECT [31]."
Command 21
Machine ID 1 (MD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Invalid	This data is ignored. ILLEGAI is not sent.
0	1	Preset –30dB	
0	2	Preset –36dB	
0	3	Preset –42dB	
0	4	Preset –48dB	
0	5	Preset –54dB	
0	6	Preset –60dB	
0	7	Preset –66dB	
0	8	Preset –72dB	
F	F	Sense	Requests to return the preset level.

・When other data than data described above is received, this device sends ILLEGAL [F2].

Return AUTO TRACK LEVEL RETURN [A1]

DIRECT TRACK SEARCH PRESET

It searches a track by specifying a track number.
When this command is received in STOP mode or PLAY mode, it is brought into PLAY mode after searching. When received in other modes than described above, the mode at search start is maintained.
Command 23
Machine ID 1 (MD) / 2 (CD)
Data 4 bytes

	Description	Remarks
Data 1	Number at ten's place of the track number	Track number Sample) Track 123
Data 2	Number at unit's place of the track number	
Data 3	Number at thousand's place of the track number	
Data 4	Number at hundred's place of the track number	

・When a track number which does not exist on the disc is specified, this device sends ILLEGAL [F2].

Return None

PITCH CONTROL DATA PRESET

Playing pitch of the controlled device is set using unit %.
Setting range is +/-12.5% for MD and+/-16.0% for CD.
It can be set regardless to the step set in PITCH STEP? item of this device.
Only when Sense [FF] is specified, a return command is returned.
When Sense [FF] is specified, a data is 2-byte.
Pitch Control mode is set with the command "PITCH CONTROL SELECT [35]."
Command 25
Machine ID 1 (MD) / 2 (CD)
Data 4 bytes or 2 bytes

Data 1	Data 2	Data 3	Data 4	Description	Remarks
N2	N3	0 1	N1	Preset %	Positive value Negative value N1: Ten's place, N2: Unit's place, N3: Tenth's place Sample) 2311: -12.3%
F	F	...		Sense	Requests to return the preset pitch.

・When a data out of the specified operation range is received, this device sends ILLEGAL [F2].
Return PITCH DATA RETURN [A5]

SYNC REC LEVEL PRESET

Its sets Sync Rec Level of the controlled device.
Only when Sense [FF] is specified, a return command is returned.
SYNC REC MODE is set with the command "SYNC REC SELECT [38]."
Command 28
Machine ID 1 (MD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Invalid	This data is ignored. ILLEGAI is not sent.
0	1	Preset –30dB	
0	2	Preset –36dB	
0	3	Preset –42dB	
0	4	Preset –48dB	
0	5	Preset –54dB	
0	6	Preset –60dB	
0	7	Preset –66dB	
0	8	Preset –72dB	
F	F	Sense	Requests to return the preset level.

・When other data than data described above is received, this device sends ILLEGAL [F2].
Return SYNC REC LEVEL RETURN [A8]

TITLE PRESET

It sets a title into the controlled device using alphanumeric or Katakana (Japanese) up to 96 characters.
Send the command "TITLE SENSE [59]" to get a title already set.

Command 29
Machine ID 1 (MD)
Data 4 bytes – 100 Bytes

	Description	Remarks
Data 1	Number at ten's place of the specified number	0000 To specify disc title. 0001 – 0999 To specify track title. 1001 - 1099 To specify group title.
Data 2	Number at unit's place of the specified number	
Data 3	Number at thousand's place of the specified number	
Data 4	Number at hundred's place of the specified number	
Data 5 – Data 100	Title	Alphanumeric or Katakana (Japanese)

- To specify a group number, add 1000.
- When a track number or a group number which does not exist on the disc is specified, this device sends ILLEGAL [F2].
- A title is composed of 0 byte to 96 bytes. Up to the character immediately before CR of a title to be specified is valid.

Return TITLE PRESET ACKNOWLEDGE [A9]

TIME SEARCH PRESET

Its searches by specifying a track number and a time.

When this command is received in STOP mode or PLAY mode, it is brought into PLAY mode after searching. When received in other modes than described above, the mode at search start is maintained.

Command 2C

Machine ID 1 (MD) / 2 (CD)

Data 12 bytes

	Description	Remarks
Data 1	Number at ten's place of the track number	
Data 2	Number at unit's place of the track number	
Data 3	Number at thousand's place of the track number	
Data 4	Number at hundred's place of the track number	
Data 5	Number at ten's place of minutes	
Data 6	Number at unit's place of minutes	
Data 7	Number at hundred's place of minutes	
Data 8	Number at thousand's place of minutes	
Data 9	Number at ten's place of seconds	
Data 10	Number at unit's place of seconds	
Data 11	0	Specify 0.
Data 12	0	Specify 0.

・When a track number which does not exist on the disc is specified, this device sends ILLEGAL [F2].

・When a data out of the specified operation range is received, this device sends ILLEGAL [F2].

Return None

KEY CONTROL DATA PRESET

It sets playing key tone of the controlled device.
The setting range is +/- 6 half tones.
Only when Sense [FF] is specified, a return command is returned.
KEY CONTROL MODE is set with the command "KEY CONTROL SELECT [3D]."
Command 2D
Machine ID 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0		Key Up	
1		Key Down	
	0 – 6	Key Change	By half tone unit.
F	F	Sense	Requests to return the preset content.

・When a data out of the specified operation range is received, this device sends ILLEGAL [F2].
Return KEY CONTROL DATA RETURN [AD]

DIGITAL VOLUME DATA PRESET

It sets digital volume of the controlled device.
It controls output volume for CD or input volume for MD.
Setting range is from -54dB to +18dB, and -∞dB.
It can be set by 6.0dB step for the range from -54.0dB to -24.0dB, 4.0dB step for the range -24.0dB to -12.0dB, 2.0dB step for the range from -12.0dB to -6.0dB, 0.5dB step for the range from -6.0dB to +6.0dB, and 1.0dB step for the range from +6.0dB to +18.0dB.
Only when Sense [FF] is specified, a return command is returned.
When Sense [FF] is specified, a data is 2-byte.
Command 2F
Machine ID 1 (MD) / 2 (CD)
Data 4 bytes or 2 bytes

Data 1	Data 2	Data 3	Data 4	Description	Remarks
N2	N3	0 1	N1	Preset Level	Positive value Negative value N1: Ten's place, N2: Unit's place, N3: Tenth's place Sample) 6011: -16.0dB
A	A	A	A	Preset -∞dB	
F	F	…		Sense	Requests to return the preset content.

・When a data out of the specified operation range is received, this device sends ILLEGAL [F2].
Return DIGITAL VOLUME DATA RETURN [AF]

AUTO CUE SELECT

It sets Auto Cue mode of the controlled device.
Only when Sense [FF] is specified, a return command is returned.
AUTO CUE LEVEL is set with the command "AUTO CUE LEVEL PRESET [20]."
Command 30
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Auto Cue Off	
0	1	Auto Cue On	
F	F	Sense	Requests to return the preset content.

・When other data than data described above is received, this device sends ILLEGAL [F2].
Return AUTO CUE SELECT RETURN [B0]

AUTO TRACK SELECT

It sets Auto Track mode of the controlled device.
Only when Sense [FF] is specified, a return command is returned.
Command 31
Machine ID 1 (MD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Auto Track Off	
0	1	Auto Track On (Level)	Performs auto track with AUTO TRACK LEVEL already set.
0	2	Auto Track On (Digital Direct)	Performs auto track with track information in the S/PDIF signal.
F	F	Sense	Requests to return the preset content.

・When other data than data described above is received, this device sends ILLEGAL [F2].
Return AUTO TRACK RETURN [B1]

EOM TRACK TIME PRESET

It sets expected end time in second for EOM (End Of Message) function to display expected end time of a track.
Setting range is from 1 to 99 sec., and OFF.
Only when data [FF] is specified, a return command is returned.
Command 32
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	EOM Track Off	
N1	N2	Number of seconds	N1: Ten's place of seconds, N2: Unit's place of seconds
F	F	Sense	Requests to return the preset content.

・When a data out of the specified operation range is received, this device sends ILLEGAL [F2].
Return EOM TRACK TIME RETURN [B2]

EOM DISC TIME PRESET

It sets expected end time in second for EOM (End Of Message) function to display expected end time of a disc.
Setting range is from 1 to 99 sec., and OFF.
Only when data [FF] is specified, a return command is returned.
Command 33
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	EOM Disc Off	
N1	N2	Number of seconds	N1: Ten's place of seconds, N2: Unit's place of seconds
F	F	Sense	Requests to return the preset content.

・When a data out of the specified operation range is received, this device sends ILLEGAL [F2].
Return EOM DISK TIME RETURN [B3]

TIMER/RESUME PLAY SELECT

It sets Timer Play mode of the controlled device.
Only when Sense [FF] is specified, a return command is returned.
Command 34
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Timer Play Off	
0	1	Timer Play On	
0	2	Invalid	This data is ignored. ILLEGAI is not sent.
0	3	Invalid	This data is ignored. ILLEGAI is not sent.
F	F	Sense	Requests to return the preset level.

・When other data than data described above is received, this device sends ILLEGAL [F2].
Return RESUME/TIMER PLAY SELECT RETURN [B4]

PITCH CONTROL SELECT

It sets Pitch Control mode of the controlled device.
Only when Sense [FF] is specified, a return command is returned.
Value of pitch control is set with the command “PITCH CONTROL DATA PRESET [25].”
Command 35
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Pitch Control Off	
0	1	Pitch Control On	
F	F	Sense	Requests to return the preset content.

・When other data than data described above is received, this device sends ILLEGAL [F2].
Return PITCH CONTROL SELECT RETURN [B5]

AUTO READY SELECT

It sets Auto Ready mode of the controlled device.
Only when Sense [FF] is specified, a return command is returned.
Command 36
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Auto Ready Off	
0	1	Auto Ready On	
F	F	Sense	Requests to return the preset content.

・When other data than data described above is received, this device sends ILLEGAL [F2].
Return AUTO READY SELECT RETURN [B6]

REPEAT SELECT

It sets Repeat mode of the controlled device.
Only when Sense [FF] is specified, a return command is returned.
Command 37
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Repeat Off	
0	1	Repeat On	
F	F	Sense	Requests to return the preset content.

・When other data than data described above is received, this device sends ILLEGAL [F2].
Return REPEAT SELECT RETURN [B7]

SYNC REC SELECT

It sets Sync Rec mode of the controlled device.
Only when Sense [FF] is specified, a return command is returned.
Sync Rec level is set with the command "SYNC REC LEVEL PRESET [28]."
Command 38
Machine ID 1 (MD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Sync Rec Off	
0	1	Sync Rec On	
F	F	Sense	Requests to return the preset content.

・When other data than data described above is received, this device sends ILLEGAL [F2].
Return SYNC REC SELECT RETURN [B8]

KEY CONTROL SELECT

It sets Key Control mode of the controlled device.
Only when Sense [FF] is specified, a return command is returned.
Value of key control is set with the command "KEY CONTROL DATA PRESET [2D]."
Command 3D
Machine ID 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Key Control Off	
0	1	Key Control On	
F	F	Sense	Requests to return the preset content.

・When other data than data described above is received, this device sends ILLEGAL [F2].
Return KEY CONTROL SELECT RETURN [BD]

REMOTE/LOCAL SELECT

It enables or disables key operation on the controlled device.

Only when Sense [FF] is specified, a return command is returned.

Command 4C

Machine ID 0 (Global) / 1 (MD) / 2 (CD)

Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Remote	Enables only remote operation through RS-232C and with wireless remote controller. Key operation on the controlled device is disabled.
0	1	Local	Enables remote operation and key operation on the controlled device.
F	F	Sense	Requests to return the preset content.

・When other data than data described above is received, this device sends ILLEGAL [F2].

Return REMOTE/LOCAL SELECT RETURN [CC]

PLAY MODE SENSE

It requests to return status information in PLAY mode of the controlled device.

Command 4E

Machine ID 1 (MD) / 2 (CD)

Data None

Return PLAY MODE RETURN [CE]

MECHA STATUS SENSE

It requests to return status information related to mechanism of the controlled device.

Command 50

Machine ID 1 (MD) / 2 (CD)

Data None

Return MECHA STATSU RETURN [D0]

TRACK No. SENSE

It requests to return the track number currently positioned.

Command 55

Machine ID 1 (MD) / 2 (CD)

Data None

Return TRACK No. STATUS RETURN [D5]

DISC STATUS SENSE

It requests to return information such as existence of a disc, disc type, etc.

Command 56

Machine ID 1 (MD) / 2 (CD)

Data None

Return DISC STATUS RETURN [D6]

CURRENT TRACK INFORMATION SENSE

It requests to return information on the track currently positioned.

Command 57

Machine ID 1 (MD) / 2 (CD)

Data None

Return CURRENT TRACK INFORMATION RETURN [D7]

CURRENT TRACK TIME SENSE

It requests to return time information of the track currently positioned in specified form.

Command 58
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Elapsed Time	Elapsed time of the track
0	1	Remain Time	Remained time of the track
0	2	Total Elapsed Time	Elapsed time of the disc
0	3	Total Remain Time	Remained time of the disc

・When other data than data described above is received, this device sends ILLEGAL [F2].

Return CURRENT TRACK TIME RETURN [D8]

TITLE SENSE

It requests to return title of disc or specified track or group.

Command 59
Machine ID 1 (MD) / 2 (CD)
Data 4 bytes

	Description	Remarks
Data 1	Number at ten's place of the specified number	0000 To specify disc title. 0001 – 0999 To specify track title. 1001 - 1099 To specify group title.
Data 2	Number at unit's place of the specified number	
Data 3	Number at thousand's place of the specified number	
Data 4	Number at hundred's place of the specified number	
Data 5 – Data 100	Title	Alphanumeric or Katakana (Japanese)

・To specify a group number, add 1000.
・When a track number or a group number which does not exist on the disc is specified, this device sends ILLEGAL [F2].

Return TITLE RETURN [D9]

TOTAL TRACK No./TOTAL TIME SENSE

It requests to return the total number of tracks and total time of a disc.

Command 5D
Machine ID 1 (MD) / 2 (CD)
Data None
Return TOTAL TRACK No./TOTAL TIME RETURN [DD]

PGM TOTAL TRACK No./TOTAL TIME SENSE

It requests to return the total number of tracks and total time for programmed play.

Command	5E
Machine ID	1 (MD) / 2 (CD)
Data	None
Return	PGM TOTAL TRACK No./TOTAL TIME RETURN [DE]

KEYBOARD TYPE SENSE

It requests to return type of PS/2 keyboard connected to the controlled device.

Command	5F
Machine ID	0 (Global) / 1 (MD) / 2 (CD)
Data	None
Return	KEYBOARD TYPE RETURN [DF]

ERROR SENSE

It requests to return error information of the controlled device.

When “ERROR SENSE REQUEST [F0]” is issued from the controlled device, check the description of the error using this command.

Command	78
Machine ID	1 (MD) / 2 (CD)
Data	None
Return	ERROR SENSE RETURN [F8]

CAUTION SENSE

It requests to return warning information of the controlled device.

When “CAUTION SENSE REQUEST [F1]” is issued from the controlled device, check the description of the error using this command.

Command	79
Machine ID	1 (MD) / 2 (CD)
Data	None
Return	CAUTION SENSE RETURN [F9]

INFORMATION RETURN

It is the return command for "INFORMATION REQUEST [0F]."
It returns software version of the controlled device.
Command 8F
Machine ID 0 (Global) / 1 (MD) / 2 (CD)
Data 4 bytes

Data 1	Ten's place of the software version.	Sample data for Data 1 – Data 4
Data 2	Unit's place of the software version.	0100 Version 1.00
Data 3	Tenth's place of the software version.	
Data 4	Hundredth's place of the software version.	

Request INFORMATION REQUEST [0F]

AUTO CUE LEVEL RETURN

It is the return command for "AUTO CUE LEVEL PRESET [20]."
It returns Auto Cue Level already set.
Command A0
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	1	–30dB	
0	2	–36dB	
0	3	–42dB	
0	4	–48dB	
0	5	54dB	
0	6	–60dB	
0	7	–66dB	
0	8	–72dB	

Request/Preset AUTO CUE LEVEL PRESET [20]

AUTO TRACK LEVEL RETURN

It is the return command for "AUTO TRACK LEVEL PRESET [21]."
It returns Auto Track Level already set.
Command A1
Machine ID 1 (MD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	1	–30dB	
0	2	–36dB	
0	3	–42dB	
0	4	–48dB	
0	5	–54dB	
0	6	–60dB	
0	7	–66dB	
0	8	–72dB	

Request/Preset AUTO TRACK LEVEL PRESET [21]

PITCH CONTROL DATA RETURN

It is the return command for "PITCH CONTROL DATA PRESET [25]."
It returns Pitch Control value already set.
Command A5
Machine ID 1 (MD) / 2 (CD)
Data 4 bytes

Data 1	Data 2	Data 3	Data 4	Description	Remarks
N2	N3	0 1	N1	Preset %	Positive value Negative value N1: Ten's place, N2: Unit's place, N3: Tenth's place Sample) 2311: -12.3%

Request/Preset PITCH CONTROL DATA PRESET [25]

SYNC REC LEVEL RETURN

It is the return command for "SYNC REC LEVEL PRESET [28]."
It returns Sync Rec level already set.
Command A8
Machine ID 1 (MD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	1	Preset –30dB	
0	2	Preset –36dB	
0	3	Preset –42dB	
0	4	Preset –48dB	
0	5	Preset –54dB	
0	6	Preset –60dB	
0	7	Preset –66dB	
0	8	Preset –72dB	

Request/Preset SYNC REC LEVEL PRESET [28]

TITLE PRESET ACKNOWLEDGE

It is the return command for "TITLE PRESET [29]."
It returns when the set title has been successfully written.
Command A9
Machine ID 1 (MD)
Data None
Request/Preset TITLE PRESET [29]

KEY CONTROL DATA RETURN

It is the return command for "KEY CONTROL DATA PRESET [2D]."
It returns Key Control value already set.
Command AD
Machine ID 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0		Key Up	
1		Key Down	
	0 – 6	Key Change	By half tone unit.

Request/Preset KEY CONTROL DATA PRESET [2D]

DIGITAL VOLUME DATA RETURN

It is the return command for "DIGITAL VOLUME DATA PRESET [2F]."
It returns Digital Volume value already set.
Command AF
Machine ID 1 (MD) / 2 (CD)
Data 4 bytes

Data 1	Data 2	Data 3	Data 4	Description	Remarks
N2	N3	0 1	N1	Preset Level	Positive value Negative value N1: Ten's place, N2: Unit's place, N3: Tenth's place Sample) 6011: -16.0dB
A	A	A	A	Preset -□□dB	

Request/Preset DIGITAL VOLUME DATA PRESET [2F]

AUTO CUE SELECT RETURN

It is the return command for "AUTO CUE SELECT [30]."
It returns ON/OFF status of Auto Cue.
Command B0
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Auto Cue Off	
0	1	Auto Cue On	

Request/Preset AUTO CUE SELECT [30]

AUTO TRACK SELECT RETURN

It is the return command for "AUTO TRACK SELECT [31]."
It returns ON/OFF status of Auto Track.
Command B1
Machine ID 1 (MD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Auto Track Off	
0	1	Auto Track On (Level)	Performs auto track with AUTO TRACK LEVEL already set.
0	2	Auto Track On (Digital Direct)	Performs auto track with track information in the S/PDIF signal.

Request/Preset AUTO TRACK SELECT [31]

EOM TRACK TIME RETURN

It is the return command for "EOM TRACK TIME PRESET [32]."
It returns expected end time in second for EOM (End Of Message) function to display expected end time of a track.
Command B2
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	EOM Track Off	
N1	N2	Number of seconds	N1: Ten's place of seconds, N2: Unit's place of seconds
F	F	Sense	Requests to return the preset content.

Request/Preset EOM TRACK TIME PRESET [32]

EOM DISC TIME RETURN

It is the return command for "EOM DISC TIME PRESET [33]."
It returns expected end time in second for EOM (End Of Message) function to display expected end time of a disc.
Command B3
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	EOM Disc Off	
N1	N2	Number of seconds	N1: Ten's place of seconds, N2: Unit's place of seconds

Request/Preset EOM DISC TIME PRESET [33]

TIMER/RESUME PLAY SELECT RETURN

It is the return command for "TIMER/RESUME PLAY SELECT [34]."
It returns ON/OFF status of Timer Play.
Command B4
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Timer Play Off	
0	1	Timer Play On	

Request/Preset TIMER/RESUME PLAY SELECT [34]

PITCH CONTROL SELECT RETURN

It is the return command for "PITCH CONTROL SELECT [35]."
It returns ON/OFF status of Pitch Control.
Command B5
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Pitch Control Off	
0	1	Pitch Control On	

Request/Preset PITCH CONTROL SELECT [35]

AUTO READY SELECT RETURN

It is the return command for "AUTO READY SELECT [36]."
It returns ON/OFF status of Auto Ready.
Command B6
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Auto Ready Off	
0	1	Auto Ready On	

Request/Preset AUTO READY SELECT [36]

REPEAT SELECT RETURN

It is the return command for “REPEAT SELECT [37].”
It returns ON/OFF status of Repeat Mode.
Command B7
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Repeat Off	
0	1	Repeat On	

Request/Preset REPEAT SELECT [37]

SYNC REC SELECT RETURN

It is the return command for “SYNC REC SELECT [38].”
It returns ON/OFF status of Sync Rec.
Command B8
Machine ID 1 (MD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Sync Rec Off	
0	1	Sync Rec On	Sync

Request/Preset SYNC REC SELECT [38]

KEY CONTROL SELECT RETURN

It is the return command for “KEY CONTROL SELECT [3D].”
It returns ON/OFF status of Key Control.
Command BD
Machine ID 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Key Control Off	
0	1	Key Control On	

Request/Preset KEY CONTROL SELECT [3D]

REMOTE/LOCAL SELECT RETURN

It is the return command for “REMOTE/LOCAL SELECT [4C].”
It returns enabled or disabled status of key operation on the controlled device.
Command CC
Machine ID 0 (Global) / 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Remote	Only remote operation through RS-232C and with wireless remote controller is enabled. Key operation on the controlled device is disabled.
0	1	Local	Remote operation and key operation on the controlled device are enabled.

Request/Preset REMOTE/LOCAL SELECT [4C]

PLAY MODE RETURN

It is the return command for “PLAY MODE SENSE [4E].”
It returns current Play mode.
Command CE
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Continue	Play mode to play all in a disc.
0	1	Single	Single play mode.
0	2	A-B	A-B repeat play mode.
0	4	Program (Data Empty)	Programmed play mode (no track is programmed).
0	5	Program	Programmed play mode.
0	6	Random	Random play mode.

Request/Preset PLAY MODE SENSE [4E]

MECHA STATUS RETURN

It is the return command for “MECHA STATUS SENSE [50].”
It returns current mechanism status.
Command D0
Machine ID 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	No Disc	No disc inserted.
0	1	Eject/Tray	Ejecting disc/Tray opening or closing.
0	2	Open	Tray opened.
1	0	Stop	Stopped.
1	1	Play	Playing.
1	2	Ready On	Ready to play.
8	0	Monitor	Input monitoring (no disc inserted).
8	1	Record	Recording.
8	2	Record Ready	Ready to record.
8	3	TOC Writing	TOC writing.

Request/Preset MECHA STATUS SENSE [50]

TRACK No. RETURN

It is the return command for “TRACK No. SENSE [55].”
It returns the track number currently positioned and whether EOM is displayed or not.
When Group mode is ON, it returns group number.
Command D5
Machine ID 1 (MD) / 2 (CD)
Data 6 bytes

	Description	Remarks	
Data 1	EOM Status	00: Out of range of EOM display.	
Data 2		01: EOM is displayed.	
Data 3	Ten’s place	0000	Stopped and track not re-wound.
Data 4	Unit’s place	0001 - 0999	Track number.
Data 5	Thousand’s place	1000	Group mode is ON, but no group is created.
Data 6	Hundred’s place	1001 - 1099	Group number

・A group number is returned with “1000” added.

Request/Preset TRACK No. SENSE [55]

DISC STATUS RETURN

It is the return command for "DISC STATUS SENSE [56]."
It returns disc existence and disc type.
Command D6
Machine ID 1 (MD) / 2 (CD)
Data 4 bytes

Data 1	Disc Status	00: Without Disc 01: With Disc
Data 2		
Data 3	Disc Type	00: CD-DA 10: CD-Data (MP3 CD) 80: MD Premaster (Play only disc) 81: MD Recordable
Data 4		

Request/Preset DISC STATUS SENSE [56]

CURRENT TRACK INFORMATION RETURN

It is the return command for "CURRENT TRACK INFORMATION SENSE [57]."
It returns program No. when the play mode is Program mode. For other play modes, it returns track number.
Command D7
Machine ID 1 (MD) / 2 (CD)
Data 12 bytes

	Description	Remarks
Data 1	Number at ten's place of the track number	
Data 2	Number at unit's place of the track number	
Data 3	Number at thousand's place of the track number	
Data 4	Number at hundred's place of the track number	
Data 5	Number at ten's place of minutes	
Data 6	Number at unit's place of minutes	
Data 7	Number at hundred's place of minutes	
Data 8	Number at thousand's place of minutes	
Data 9	Number at ten's place of seconds	
Data 10	Number at unit's place of seconds	
Data 11	0	0 is returned.
Data 12	0	0 is returned.

Request/Preset CURRENT TRACK INFORMATION SENSE [57]

CURRENT TRACK TIME RETURN

It is the return command for “CURRENT TRACK TIME SENSE [58].”
It returns time of a track currently positioned or disc.
Command D8
Machine ID 1 (MD) / 2 (CD)
Data 10 bytes

	Description	Remarks
Data 1	Time Mode	00: Elapsed time of the track 01: Remained time of the track 02: Elapsed time of the disc 03: Remained time of the disc
Data 2		
Data 3	Number at ten’s place of minutes	
Data 4	Number at unit’s place of minutes	
Data 5	Number at hundred’s place of minutes	
Data 6	Number at thousand’s place of minutes	
Data 7	Number at ten’s place of seconds	
Data 8	Number at unit’s place of seconds	
Data 9	0	0 is returned.
Data 10	0	0 is returned.

Request/Preset CURRENT TRACK TIME SENSE [58]

TITLE RETURN

It is the return command for "TITLE SENSE [59]."
It returns a title of track, disc, or group.
When the specified title is not written in track, disc, or group, it returns the command "ILLEGAL SENSE REQUEST [F2]."

Command D9
Machine ID 1 (MD) / 2 (CD)
Data None
Data 5 bytes – 100 bytes

	Description	Remarks
Data 1	Number at ten's place of the specified number	0000 Disc title 0001 – 0999 Track title 1001 – 1099 Group title
Data 2	Number at unit's place of the specified number	
Data 3	Number at thousand's place of the specified number	
Data 4	Number at hundred's place of the specified number	
Data 5 - Data 100	Title	Alphanumeric or Katakana (Japanese)

・A group number is returned with "1000" added.
・A title is composed of 0 byte to 96 bytes characters.

Request/Preset TITLE SENSE [59]

TOTAL TRACK No./TOTAL TIME RETURN

It is the return command for “TOTAL TRACK No./TOTAL TIME SENSE [5D].”
It returns the total number of tracks and total time of a disc.
Command DD
Machine ID 1 (MD) / 2 (CD)
Data 12 bytes

	Description	Remarks
Data 1	Number at ten’s place of total tracks	When Data 1 - Data 4 is “0000”, it indicates that the MD disc is blank or no disc is inserted.
Data 2	Number at unit’s place of total tracks	
Data 3	Number at thousand’s place of total tracks	
Data 4	Number at hundred’s place of total tracks	
Data 5	Number at ten’s place of minutes	
Data 6	Number at unit’s place of minutes	
Data 7	Number at hundred’s place of minutes	
Data 8	Number at thousand’s place of minutes	
Data 9	Number at ten’s place of seconds	
Data 10	Number at unit’s place of seconds	
Data 11	0	0 is returned.
Data 12	0	0 is returned.

Request/Preset TOTAL TRACK No./TOTAL TIME SENSE [5D]

PGM TOTAL TRACK No./TOTAL TIME RETURN

It is the return command for "PGM TOTAL TRACK No./TOTAL TIME SENSE [5E]."
It returns the total number of tracks and total time in programmed play mode.
Command DE
Machine ID 1 (MD) / 2 (CD)
Data 12 bytes

	Description	Remarks
Data 1	Number at ten's place of total tracks	When Data 1 - Data 4 is "0000", it indicates that none is programmed.
Data 2	Number at unit's place of total tracks	
Data 3	Number at thousand's place of total tracks	
Data 4	Number at hundred's place of total tracks	
Data 5	Number at ten's place of minutes	
Data 6	Number at unit's place of minutes	
Data 7	Number at hundred's place of minutes	
Data 8	Number at thousand's place of minutes	
Data 9	Number at ten's place of seconds	
Data 10	Number at unit's place of seconds	
Data 11	0	0 is returned.
Data 12	0	0 is returned.

Request/Preset PGM TOTAL TRACK No./TOTAL TIME SENSE [5E]

KEYBOARD TYPE RETURN

It is the return command for "KEYBOARD TYPE SENSE [5F]."
It returns type of PS/2 keyboard.
Command DF
Machine ID 0 (Global) / 1 (MD) / 2 (CD)
Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Japanese Keyboard	Setting for Japanese keyboard.
0	1	US Keyboard	Setting for US keyboard.

Request/Preset KEYBOARD TYPE SENSE [5F]

ERROR SENSE REQUEST

Sent when the controlled device is in error condition.
When this command is sent from the controlled device, the controlling device should send the command "ERROR SENSE [78]" to check the description of the error.
Command F0
Machine ID 1 (MD) / 2 (CD)
Data None
Request/Preset None

CAUTION SENSE REQUEST

Sent when the controlled device is in warning condition.
When this command is sent from the controlled device, the controlling device should send the command "CAUTION SENSE [79]" to check the description of the warning.

Command	F1
Machine ID	1 (MD) / 2 (CD)
Data	None
Request/Preset	None

ILLEGAL STATUS

Returned when invalid command or data is sent to the controlled device.
When this command is sent from the controlled device, the controlling device should retry to send valid command or data met to the specification.

Command	F2
Machine ID	0 (Global) / 1 (MD) / 2 (CD)
Data	None
Request/Preset	None

POWER ON STATUS

Command to notify that the power of the controlled device is turned ON.

Command	F4
Machine ID	0 (Global)
Data	None
Request/Preset	None

CHANGED STATUS

Command to notify that operation or mode of the controlled device is changed.

Command F6

Machine ID 1 (MD) / 2 (CD)

Data 2 bytes

Data 1	Data 2	Description	Remarks
0	0	Changed Mechanical Status	Mechanism status changed.
0	3	Changed Track/EOM Status	Track number changed. Display/not display status of EOM changed.

Request/Preset None

ERROR SENSE RETURN

It is the return command for “ERROR SENSE [78].”

It returns error code.

Command F8

Machine ID 1 (MD) / 2 (CD)

Data 4 bytes

Data 1	N2	Error Code (N1-N2N3)
Data 2	N3	1-01 Rec Error
Data 3	0	1-02 Drive Error
Data 4	N1	

Request/Preset ERROR SENSE [78]

CAUTION SENSE RETURN

It is the return command for “CAUTION SENSE [79].”

It returns warning code.

Command F9

Machine ID 1 (MD) / 2 (CD)

Data 4 bytes

Data 1	N2	Warning Code(N1-N2N3)
Data 2	N3	1-02 Disc Error
Data 3	0	1-03 Can’t Undo
Data 4	N1	1-06 Disc Full
		1-07 Track Full
		1-08 TOC Error
		1-09 D-In Unlock
		1-0B Can’t REC
		1-0C Write Protected
		1-0D Not Execute
		1-0F Can’t Edit
		1-13 Can’t Select
		1-16 Title Full
		1-19 PGM Full
		1-1A PGM Empty
		1-1C New Disc
		1-1D Not Audio
		1-1E Decode Error

Request/Preset None