TASCAM

TEAC PROFESSIONAL

TASCAM HS-2/HS-20/HS-2000

CONTROL I/O connector

RS-232C Protocol Specification

Ver. 1.21

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TEAC Corporation

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1. Overview

The CONTROL I/O connector (RS-232C) on the HS-2/HS-20/HS-2000 enables you to control the HS-2/HS-20/HS-2000 from a computer or other external devices. In this document, the HS-2/HS-20/HS-2000 is referred to as the "controlled device," and the external device that controls it is referred to as the "external controller."

2. Specifications

Electrical specifications

Standard	Conforms to JIS X-5101 (equivalent to former JIS C-6361 and EIA RS-232C) (Not compatible with the RS-422A used in professional VTR units)
Impedance at receiver	When measured with an applied voltage of between ±3-15 V, the DC resistance is between 3 KΩ and 7 KΩ Total load capacitance is 2500 pF or less.
Open circuit voltage at transmitter	25 V 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 ±15 V for a load impedance of between 3 KΩ and 7 KΩ
Signal discrimination	Logic "1" −3 V or less Logic "0" +3 V or more

Communication format

Circuit type	3-wire, half-duplex
Transmission type	Digital binary serial
Data speed (baud rate)	4800/9600/19200/38400 bit/sec
Character length	7/8 bit
Parity bit	Odd/Even/None
Stop bit	1/2 bit

(Data speed, character length, parity bit, and stop bit settings are made on the HS-2/HS-20/HS-2000.)

Pin assignments

Connector	D-sub 9-pin female (inch thread)
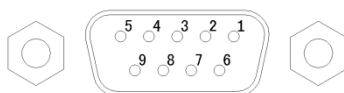
Terminal pin assignments and input/output signals

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	Out	(Reserved)	Reserved
5	–	GND	Ground
6	In	(Reserved)	Reserved
7	In	RTS	Request To Send (input "request to transmit") [2]
8	Out	CTS	Clear To Send (output "ready to receive") [2]
9	–	NC	Not connected

[1]   A voltage that satisfies the RS-232C specification must be applied to Rx Data.

[2]   RTS/CTS is loopback-connected within the controlled device. If RTS/CTS control is used, consider the design of the external controller.

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Controlled device (the unit)   External controller
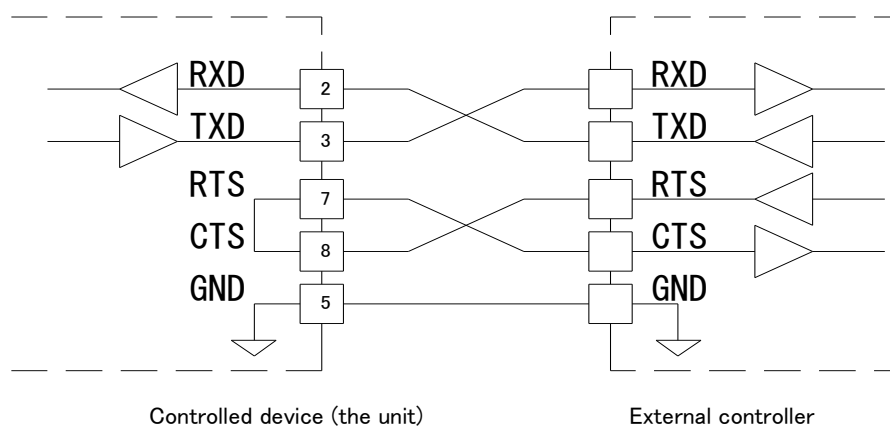
3. Command format

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

Commands begin with a line feed (LF), end with a carriage return (CR), and are based on the ASCII format. UTF-8 is used, however, for character strings in product names, for example.
The byte after the LF is the machine ID. The machine ID is described later.
Commands are expressed using two ASCII bytes.
The byte string following the command expresses the data, and is between 0 bytes (for a command that has no data) and a maximum of 123 bytes. For details on the data, refer to the detailed explanation for each command.
For commands that use 0-9 and A-F as data values, uppercase characters are used for A-F.

Example commands
Example 1:   Transmitting a PLAY command to a controlled device with ID=0
    When the controlled device is stopped or in playback standby, this command will initiate playback on the controlled device.
    The PLAY command is [12], and is transmitted as follows.

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

Example 2:   Telling a controlled device with ID=0 to perform a direct search for take 123
    The command "DIRECT TRACK (TAKE) SEARCH PRESET [23]" is transmitted to perform this action.
    The data bytes consist of ASCII in two-byte units.
    For the command "DIRECT TRACK (TAKE) SEARCH PRESET," the take number is specified as follows.
        Data 1   Tens digit of the specified take number
        Data 2   Ones digit of the specified take number
        Data 3   Thousands digit of the specified take number
        Data 4   Hundreds digit of the specified take number
    Thus, the transmitted command is as follows.

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

Machine ID
The unit uses Machine ID=0 to receive commands and transmit returns.
If a command with an ID other than Machine ID=0 is received, that command is ignored.
If an unsupported command is received, the unit will transmit ILLEGAL [F2].

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List of commands
The list of commands is as follows.

Control/Preset/Sense Command		Return Command		Adapted F/W Ver	
				2 2000	20
0F	INFORMATION REQUEST	8F	INFORMATION RETURN		
10	STOP				
12	PLAY				
13	RECORD				
14	PAUSE				
16	SEARCH				
19	FLASH START				
1A	SKIP				
1B	JOG	9B	JOG RETURN		
1C	SHUTTLE	9C	SHUTTLE RETURN		
1D	CALL				
20	AUTO CUE LEVEL PRESET	A0	AUTO CUE LEVEL RETURN		
23	DIRECT TRACK SEARCH PRESET				
27	CLOCK DATA PRESET	A7	CLOCK DATA RETURN		
2C	TIME SEARCH PRESET				
2F	DIGITAL VOLUME DATA PRESET	AF	DIGITAL VOLUME DATA RETURN		
30	AUTO CUE SELECT	B0	AUTO CUE SELECT RETURN		
36	AUTO READY SELECT	B6	AUTO READY SELECT RETURN		
37	REPEAT SELECT	B7	REPEAT SELECT RETURN		
3A	INCR PLAY SELECT	BA	INCR PLAY SELECT RETURN		
4C	REMOTE/LOCAL SELECT	CC	REMOTE/LOCAL SELECT RETURN		
4D	PLAY MODE SELECT				
4E	PLAY MODE SENSE	CE	PLAY MODE RETURN		
50	MECHA STATUS SENSE	D0	MECHA STATUS RETURN		
55	TRACK No. STATUS SENSE	D5	TRACK No. STATUS RETURN		
57	CURRENT TRACK INFORMATION SENSE	D7	CURRENT TRACK INFORMATION RETURN		
58	CURRENT TRACK TIME SENSE	D8	CURRENT TRACK TIME RETURN		
59	TITLE SENSE	D9	TITLE RETURN		
5D	TOTAL TRACK No./TOTAL TIME SENSE	DD	TOTAL TRACK No./TOTAL TIME RETURN		
5F	KEYBOARD TYPE SENSE	DF	KEYBOARD TYPE RETURN		
		F0	ERROR SENSE REQUEST		
		F1	CAUTION SENSE REQUEST		
		F2	ILLEGAL STATUS		
		F4	POWER ON STATUS		
		F6	CHANGE STATUS		
78	ERROR SENSE	F8	ERROR SENSE RETURN		
79	CAUTION SENSE	F9	CAUTION SENSE RETURN		
7F	VENDOR COMMAND	FF	VENDOR COMMAND RETURN		

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List of vendor commands
The list of vendor commands (7F/FF commands) is as follows.
Command codes are a combination of command (2 bytes), category code (2 bytes) and sub command (2 bytes).
For detailed information, see page 32 and following.

Control/Sense Command		Return Command		Adapted F/W Ver	
				2 2000	20
7F01	DEVICE SELECT	FF01	DEVICE SELECT RETURN		
7F021A	SESSION SKIP				
7F0223	DIRECT SESSION SEARCH PRESET				
7F0240	CREATE PROJECT	FF02C0	PROJECT CREATE RETURN		
7F0241	MAKE SESSION				
7F0242	REBUILD PROJECT	FF02C2	REBUILD PROJECT RETURN	1.21	
7F0244	DELETE SESSION/PROJECT	FF02C4	DELETE SESSION/PROJECT ACK		
7F0255	SESSION No STATUS SENSE	FF02D5	SESSION No RETURN		
7F0259	SESSION NAME SENSE	FF02D9	SESSION NAME RETURN		
7F025A	PROJECT NAME SENSE	FF02DA	PROJECT NAME RETURN		
7F025D	TOTAL SESSION No SENSE	FF02DD	TOTAL SESSION No RETURN		
7F025E	TOTAL PROJECT No SENSE	FF02DE	TOTAL PROJECT No RETURN		
		FF02F6	SESSION CHANGE STATUS		
7F0310	MARK SET				
7F0323	DIRECT MARK SKIP PRESET				
7F0344	DELETE MARK				
7F0355	MARK No. STATUS SENSE	FF03D5	MARK No. RETURN		
7F0358	MARK TIME SENSE	FF03D8	MARK TIME RETURN		
7F035D	TOTAL MARK No SENSE	FF03DD	TOTAL MARK No RETURN		
7F0400	FLASH PAGE SELECT	FF0480	FLASH PAGE RETURN		
7F041A	FLASH PAGE SKIP				
7F0457	CURRENT ENTRY INFORMATION SENSE	FF04D7	CURRENT ENTRY INFORMATION RETURN		
7F045D	FLASH READY ENTRY SENSE	FF04DD	FLASH READY ENTRY RETURN		
7F0511	ONLINE SELECT	FF0511	ONLINE SELECT RETURN		
7F0600	CHASE SELECT	FF0680	CHASE SELECT RETURN		
7F0900	OPERATION MODE SELECT	FF0980	OPERATION MODE SELECT RETURN		
7F1001	MEDIA REMAIN SENSE	FF1081	MEDIA REMAIN RETURN		
7F1044	MEDIA FORMAT				
7F1510	RETAKE	FF1590	RETAKE ACK	1.20	
7F151A	REGION SKIP			1.20	
7F4010	SET POINT	FF4090	POINT RETURN		
7F4020	BOUNCE	FF40A0	BOUNCE ACK/RETURN		
7F4120	TIME LINE CUT	FF41A0	TIME LINE CUT ACK		
7F4121	TIME LINE COPY	FF41A1	TIME LINE COPY ACK		
7F4122	TIME LINE INSERT	FF41A2	TIME LINE INSERT ACK		
7F4123	TIME LINE PASTE	FF41A3	TIME LINE PASTE ACK		
7F4130	TIME LINE ERASE	FF41B0	TIME LINE ERASE ACK		
7F4160	TIME LINE EDIT UNDO	FF41E0	TIME LINE EDIT UNDO ACK		
7F4161	TIME LINE EDIT REDO	FF41E1	TIME LINE EDIT REDO ACK		

7F4170	TIME LINE EDIT SAVE	FF41F0	TIME LINE EDIT SAVE ACK		
7F4230	TAKE ERASE	FF42B0	TAKE ERASE ACK		
7F4231	TAKE DIVIDE	FF42B1	TAKE DIVIDE ACK		
7F4232	TAKE COMBINE	FF42B2	TAKE COMBINE ACK		
7F4260	TAKE EDIT UNDO	FF42E0	TAKE EDIT UNDO ACK		
7F4261	TAKE EDIT REDO	FF42E1	TAKE EDIT REDO ACK		

Note: Commands with no version indicated under "Adopted F/W Ver." are supported by all firmware versions.

Command sequence

In most cases, the controlled device will not send an ACK in response to transport control or data preset commands sent from the external controller.

The controlled device will send back a return command in response to data sense commands that request a data value specified on the controlled device.

When the status of the controlled device changes, such as from stopped to playing, or when an error occurs, for example, the controlled device will send a command indicating this to the external controller.

Examples of the command sequence are given below.

You must leave an interval of at least 20 ms between commands.

Example 1: Controlling the transport of the controlled device
This example describes the Play operation.
When the controlled device receives the PLAY command and starts to play, it will transmit a CHANGED STATUS command. ACK is not transmitted for the PLAY command.

Command		State of controlled device
External controller	Controlled device	
PLAY　　　　　　　　　　　　　　→		Stopped
	←　CHANGED STATUS	Transmit when starting to play

Example 2: Presetting data
This example describes setting the auto cue level.
When the controlled device receives the AUTO CUE LEVEL PRESET (Preset) command, it will set its auto cue level. ACK is not transmitted for this command.

Command		State of controlled device
External controller	Controlled device	
AUTO CUE LEVEL PRESET (Preset −54dB)　　→		AUTO CUE LEVEL set to −54dB

Example 3: Obtaining set data
This example describes obtaining the current AUTO CUE LEVEL setting.
When the controlled device receives the AUTO CUE LEVEL PRESET (Sense) command, it will return the current AUTO CUE LEVEL setting.

Command		State of controlled device
External controller	Controlled device	
AUTO CUE LEVEL PRESET (Sense)　→		
	←　AUTO CUE LEVEL RETURN	

Example 4: Checking the status of the controlled device, and performing the next operation
When the operating status of the controlled device changes, it will transmit CHANGED STATUS. By using CHANGED STATUS as a trigger for sending MECHA STATUS SENSE, the new operating status can be checked.
This example shows how to check the record-ready (record standby) status of the controlled device and then initiate recording.

Command		State of controlled device
External controller	Controlled device	
RECORD (Record Ready)　→		Stopped
	←　CHANGED STATUS	Transmitted when entering record-ready state
MECHA STATUS SENSE　→		
	←　MECHA STATUS RETURN	Returns record-ready state
RECORD (Record)　→		
	←　CHANGES STATUS	Transmitted when entering record state

Command details

The commands, data, and machine IDs described here are characters (ASCII).

A command is two character bytes, a machine ID is one character byte, and each item of data is an individual character byte.

The unit can use the following take, session and project numbers. However, if a number that does not exist is specified, it will be considered an invalid command.

Take number	999 maximum
Session number	999 maximum
Project number	99 maximum

INFORMATION REQUEST

Requests the controlled device to return information such as the software version.

Command	0F
Machine ID	0
Data	none
Return	INFORMATION RETURN [8F]

STOP

Stops the controlled device.

Command	10
Machine ID	0
Data	none
Return	none

PLAY

Starts playback on the controlled device.

To start recording when in a record-ready state, use RECORD.

Command	12
Machine ID	0
Data	none
Return	none

RECORD

Starts recording on the controlled device or puts it into a record-ready state.

Command	13
Machine ID	0
Data	2 bytes

Data 1	Data 2	Description	Remarks
0	0	Record	Starts recording from a record-ready state.
0	1	Record Pause	Puts the controlled device into a record-ready state.
2	0	Over Write Record	Starts overwrite recording (timeline mode only.)

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

Return	none

PAUSE

Puts the controlled device into playback standby.

To pause recording, use RECORD (Record Pause).

Command	14
Machine ID	0
Data	2 bytes

Data 1	Data 2	Description	Remarks
0	1	Pause On	Puts the device into playback standby.

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

Return	none

SEARCH

Starts search playback on the controlled device.

Search playback will continue until a command such as STOP, PLAY or PAUSE is received.

Command   16

Machine ID   0

Data   2 bytes

Data 1	Data 2	Description	Remarks
0	0	Search forward (normal)	Search (playback) in the forward direction. (Normal speed)
0	1	Search backward (normal)	Search (playback) in the backward direction. (Normal speed)
1	0	Search Forward (fast)	Search (playback) in the forward direction. (High speed)
1	1	Search backward (fast)	Search (playback) in the backward direction. (High speed)

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

Return   none

FLASH START

Causes the controlled device to flash-start the specified take/entry.

If the operation mode is timeline, the unit will transmit ILLEGAL [F2].

Command   19

Machine ID   0

Data   4 bytes

	Description	Remarks
Data 1	Tens digit of the take number	
Data 2	Ones digit of the take number	Take/entry number
Data 3	Thousands digit of the take number	Example: "1400" indicates take/entry 14
Data 4	Hundreds digit of the take number	

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

Return   none

SKIP

Causes the controlled device to skip between playback points.

If the operation mode is timeline, the controlled device will skip regions.

If the operation mode is playlist, the controlled device will skip entries. In other operation modes, the controlled device will skip takes.

In all operation modes, the controlled device will skip marks.

After skipping, the device will maintain the state in which it was right before the operation was performed.

Command   1A

Machine ID   0

Data   2 bytes

Data 1	Data 2	Description	Remarks
0	0	Track Skip Next	Skips to the next take/entry/region.
0	1	Track Skip Previous	If the current position is within one second of the beginning of a take/entry/region, it skips to the beginning of the previous one. Otherwise, it skips to the beginning of the current take.
2	0	Mark Skip Next	Moves to the next mark.
2	1	Mark Skip Previous	Moves to the previous mark.

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

Return   none

JOG

Enables JOG playback of the controlled device.

The data value adjusts the speed of JOG playback.

Command   1B

Machine ID   0

Data   2 bytes

Data 1	Data 2	Description	Remarks
0	0	OFF	Disables JOG playback.
0	1	ON	Enables JOG playback.
1	0	FWD x0.0	PAUSE
1	1	FWD x0.1	Plays forward at 0.1x speed.
1	2	FWD x0.2	Plays forward at 0.2x speed.
1	3	FWD x0.3	Plays forward at 0.3x speed.
1	4	FWD x0.4	Plays forward at 0.4x speed.
1	5	FWD x0.5	Plays forward at 0.5x speed.
1	6	FWD x0.6	Plays forward at 0.6x speed.
1	7	FWD x0.7	Plays forward at 0.7x speed.
1	8	FWD x0.8	Plays forward at 0.8x speed.
1	9	FWD x0.9	Plays forward at 0.9x speed.
1	A	FWD x1.0	Plays forward at 1.0x speed.
2	0	RWD x0.0	PAUSE
2	1	RWD x0.1	Plays backward at 0.1x speed.
2	2	RWD x0.2	Plays backward at 0.2x speed.
2	3	RWD x0.3	Plays backward at 0.3x speed.
2	4	RWD x0.4	Plays backward at 0.4x speed.
2	5	RWD x0.5	Plays backward at 0.5x speed.
2	6	RWD x0.6	Plays backward at 0.6x speed.
2	7	RWD x0.7	Plays backward at 0.7x speed.
2	8	RWD x0.8	Plays backward at 0.8x speed.
2	9	RWD x0.9	Plays backward at 0.9x speed.
2	A	RWD x1.0	Plays backward at 1.0x speed.
F	F	Sense	Requests that the JOG on/off state be returned.

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

Return   JOG RETURN [9B]

SHUTTLE

Enables SHUTTLE playback of the controlled device.

The data value adjusts the speed of SHUTTLE playback.

Command   1C

Machine ID   0

Data   2 bytes

Data 1	Data 2	Description	Remarks
0	0	OFF	Disables SHUTTLE mode.
0	1	ON	Enables SHUTTLE mode.
1	0	FWD x0.0	PAUSE
1	1	FWD x2.0	Plays forward at 2x speed.
1	2	FWD x4.0	Plays forward at 4x speed.
1	3	FWD x8.0	Plays forward at 8x speed.
1	4	FWD x16.0	Plays forward at 16x speed.
1	5	FWD x32.0	Plays forward at 32x speed.
2	0	RWD x0.0	PAUSE
2	1	RWD x2.0	Plays backward at 2x speed.
2	2	RWD x4.0	Plays backward at 4x speed.
2	3	RWD x8.0	Plays backward at 8x speed.
2	4	RWD x16.0	Plays backward at 16x speed.
2	5	RWD x32.0	Plays backward at 32x speed.
F	F	Sense	Requests that the SHUTTLE on/off state be returned.

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

Return   SHUTTLE RETURN [9C]

CALL

Locates to the call point and puts the controlled device into playback standby.

Command   1D

Machine ID   0

Data   none

Return   none

AUTO CUE LEVEL PRESET

Sets the Auto Cue Level of the controlled device.

A return command is returned only if Sense [FF] is specified.

The Auto Cue function is turned on or off using the "AUTO CUE SELECT [30]" command.

Command   20

Machine ID   0

Data   2 bytes

Data 1	Data 2	Description	Remarks
0	0	Preset −24dB	
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 that the current preset level be returned.

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

Return   AUTO CUE LEVEL RETURN [A0]

DIRECT TRACK SEARCH PRESET

Conducts a direct search for the specified take/entry number.

The operation of the controlled device after a direct search depends on the data format (data length) of this command.

[4-byte data length]

Maintains mode even after a direct search.

[6-byte data length]

The operation of the controlled device after a direct search is determined by Data 5 and 6.

Command   23

Machine ID   0

Data   4 bytes or 6 bytes

	Description	Remarks
Data 1	Tens digit of the take/entry number	
Data 2	Ones digit of the take/entry number	Take/entry number
Data 3	Thousands digit of the take/entry number	Example: "2301" indicates take 123
Data 4	Hundreds digit of the take/entry number	

If the data length is 6 bytes, the following data will be added as the the operation specification code.

Data 5	Data 6	Operation	Remarks
1	2	PLAY	
1	4	PAUSE	

- If a take number that does not exist or an entry that has no assignment is specified, the unit will transmit ILLEGAL [F2].
- If a Data 5/6 operation specification code that is not in the table above is specified, the unit will transmit ILLEGAL [F2].

Return   none

CLOCK DATA PRESET

Sets the date and time of the controlled device.

A return command is returned only if Sense [FF] is specified for Data 1 and Data 2.

Command   27

Machine ID   0

Data   10 bytes or 2 bytes

	Description	Remarks
Data 1	Tens digit of the year	
Data 2	Ones digit of year	
Data 3	Tens digit of month	
Data 4	Ones digit of month	
Data 5	Tens digit of day	
Data 6	Ones digit of day	Example: "0802231234" indicates 12:34 PM on February 23, 2008
Data 7	Tens digit of hours	
Data 8	Ones digit of hours	
Data 9	Tens digit of minutes	
Data 10	Ones digit of minutes	

- If a date or time outside the possible range is set, the unit will transmit ILLEGAL [F2].

Return   CLOCK DATA PRESET RETURN [A7]

TIME SEARCH PRESET

Searches the specified take/entry number and time.

The operation of the controlled device after a search depends on the data format (data length) of this command.

When data length is 12-byte

Maintains mode even after a search.

When data length is 14-byte

The operation of the controlled device after a search is determined by Data 13 and 14.

Command   2C

Machine ID   0

Data   12 bytes or 14 bytes

	Description	Remarks
Data 1	Tens digit of the take/entry number	In timeline mode, this is fixed to 1 (0100) because there are no takes/entries.
Data 2	Ones digit of the take/entry number	
Data 3	Thousands digit of the take/entry number	
Data 4	Hundreds digit of the take/entry number	
Data 5	Tens digit of hours	
Data 6	Ones digit of hours	
Data 7	Tens digit of minutes	
Data 8	Ones digit of 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	

If the data length is 14 bytes, the following data will be added as the the operation specification code.

Data 13	Data 14	Operation	Remarks
1	2	PLAY	
1	4	PAUSE	

- If a take number that does not exist or an entry that has no assignment is specified, the unit will transmit ILLEGAL [F2].
- If data outside the operating range is received, the unit will transmit ILLEGAL [F2].
- If a Data 13/14 operation specification code that is not in the table above is specified, the unit will transmit ILLEGAL [F2].

Return   none

DIGITAL VOLUME DATA PRESET

Sets the digital volume of a connected device in decibels (dB).

A return command is returned only if Sense [FF] is specified for Data 1 and Data 2.

Command   2F

Machine ID   0

Data   4 bytes

	Description	Remarks
Data 1	Ones digit of the setting	
Data 2	First decimal place of the setting	Example: "0512" is −20.5 dB
Data 3	0: +; 1: −	
Data 4	Tens digit of the setting	

・ If data outside the specification range is received, the connected device will transmit ILLEGAL (F2H).

・ To set the volume to −∞ (minus infinity) dB, specify "AAAA" for Data 1 to Data 4.

Return   DIGITAL VOLUME DATA RETURN [AF]

AUTO CUE SELECT

Turns on or off the Auto Cue function of the controlled device.

A return command is returned only if Sense [FF] is specified.

The Auto Cue Level setting is made using the "AUTO CUE LEVEL PRESET [20]" command.

This command will be ignored if the operation mode is timeline.

Command   30

Machine ID   0

Data   2 bytes

Data 1	Data 2	Description	Remarks
0	0	Auto Cue Off	
0	1	Auto Cue On	
F	F	Sense	Requests that the current setting be returned.

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

Return   AUTO CUE SELECT RETURN [B0]

AUTO READY SELECT

Turns on or off the Auto Ready function of the controlled device.

A return command is returned only if Sense [FF] is specified.

This command will be ignored if the operation mode is timeline.

Command   36

Machine ID   0

Data   2 bytes

Data 1	Data 2	Description	Remarks
0	0	Auto Ready Off	
0	1	Auto Ready On	
F	F	Sense	Requests that the current setting be returned.

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

Return   AUTO READY SELECT RETURN [B6]

REPEAT SELECT

Turns on or off Repeat Playback of the controlled device.

A return command is returned only if Sense [FF] is specified.

Command   37

Machine ID 0

Data   2 bytes

Data 1	Data 2	Description	Remarks
0	0	Repeat Off	
0	1	Repeat On	
F	F	Sense	Requests that the current setting be returned.

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

Return   REPEAT SELECT RETURN [B7]

INCR PLAY SELECT

Turns on or off the Incremental Play function of the controlled device.

A return command is returned only if Sense [FF] is specified.

This command will be ignored if the operation mode is timeline.

Command   3A

Machine ID 0

Data   2 bytes

Data 1	Data 2	Description	Remarks
0	0	INCR Play Off	
0	1	INCR Play On	
F	F	Sense	Requests that the current setting be returned.

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

Return   INCR PLAY SELECT RETURN [BA]

REMOTE/LOCAL SELECT

Enables or disables operation on the controlled device.

A return command is returned only if Sense [FF] is specified.

Command   4C

Machine ID 0

Data   2 bytes

Data 1	Data 2	Description	Remarks
0	0	Remote	Only remote operation via CONTROL I/O (RS-232C, RS-422, PARALLEL) will be enabled. Key operations on the device's panel will be disabled.
0	1	Local	Remote operation and key operation on the device's panel will be enabled.
F	F	Sense	Requests that the current setting be returned.

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

Return   REMOTE/LOCAL SELECT RETURN [CC]

PLAY MODE SELECT

Sets the play mode for the controlled device.

To check the play mode setting, use the "PLAY MODE SENSE [4E]" command.

This command will be ignored if the operation mode is timeline.

Command   4D

Machine ID 0

Data   2 bytes

Data 1	Data 2	Description	Remarks
0	0	All Take	Plays all takes in the current session
0	1	One Take	Plays the current take only

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

Return   none

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PLAY MODE SENSE

Requests that the play mode of the controlled device be returned.

Command   4E
Machine ID   0
Data   none
Return   PLAY MODE RETURN [CE]

MECHA STATUS SENSE

Requests that the operation status of the controlled device be returned.

Command   50
Machine ID   0
Data   none
Return   MECHA STATUS RETURN [D0]

TRACK No. STATUS SENSE

Requests that the current take/entry number be returned.

Command   55
Machine ID   0
Data   none
Return   TRACK No. STATUS RETURN [D5]

CURRENT TRACK INFORMATION SENSE

Requests that information about the current take/entry be returned.
If recording, the unit will transmit ILLEGAL [F2].

Command   57
Machine ID   0
Data   none
Return   CURRENT TRACK INFORMATION RETURN [D7]

CURRENT TRACK TIME SENSE

Requests the information about the play time for the current take/entry (or take being recorded in record mode) in the following format. (MSF format = Minutes, Seconds, Frame; HMSF format = Hours, Minutes, Seconds, Frames)

When requesting MSF Format and the minutes is more than 9999, or in HMSF Format and the hours is greater than 100, then the entire time response contains "--".

If Total Elapsed Time is requested when the operation mode is timeline, the unit will return the Elapsed Time. If Remain Time or Total Remain Time is requested when not recording or in recording standby, the unit will return ILLEGAL [F2].

(The HS-2 and HS-20 do not support request commands in MSF format.)

Command   58
Machine ID   0
Data   2 bytes

Data 1	Data 2	Description	Remarks
0	0	Elapsed Time	Take/entry elapsed time in MSF format or timeline ABS time
0	1	Remain Time	Take/entry remaining time (when recording, remaining recording time until max file size) in MSF format or timeline remaining time when recording (remaining capacity until 24:00 ABS or max file size)
0	2	Total Elapsed Time	Session elapsed time in MSF format or timeline ABS time
0	3	Total Remain Time	Session remaining time (when recording, remaining recording time on media) in MSF format or, when recording in timeline mode, timeline remaining time (remaining capacity until 24:00 ABS or on media)
0	4	Timecode Time	Timecode time in MSF Format
1	0	Elapsed Time	Take/entry elapsed time in HMSF format or timeline ABS time
1	1	Remain Time	Take/entry remaining time (when recording, remaining recording time until max file size) in MSF format or timeline remaining time when recording (remaining capacity until 24:00 ABS or max file size)
1	2	Total Elapsed Time	Session elapsed time in HMSF format or timeline ABS time
1	3	Total Remain Time	Session remaining time (when recording, remaining recording time on media) in HMSF format or, when recording in timeline mode, timeline remaining time (remaining capacity until 24:00 ABS or on media)
1	4	Timecode Time	Timecode time in HMSF Format

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

Return   CURRENT TRACK TIME RETURN [D8]

TITLE SENSE

Requests that the name of the specified take/entry be returned.

If the operation mode is timeline, the unit will transmit ILLEGAL [F2].

Command   59

Machine ID   0

Data   4 bytes

	Description	Remarks
Data 1	Tens digit of the take/entry number	
Data 2	Ones digit of the take/entry number	Take/entry number
Data 3	Thousands digit of the take/entry number	Example: "2301" indicates take 123
Data 4	Hundreds digit of the take/entry number	

・ If a take number that does not exist or an entry that has no assignment is specified, the unit will transmit ILLEGAL [F2].

Return   TITLE RETURN [D9]

TOTAL TRACK No./TOTAL TIME SENSE

Requests that the current total number and total time of takes/entries be returned.

If the operation mode is timeline, the unit will transmit ILLEGAL [F2].

Command   5D

Machine ID   0

Data   none

Return   TOTAL TRACK No. / TOTAL TIME RETURN [DD]

KEYBOARD TYPE SENSE

Requests that the type of keyboard connected to the controlled device be returned.

Command   5F

Machine ID   0

Data   none

Return   KEYBOARD TYPE RETURN [DF]

ERROR SENSE

Requests that the current error status be returned.

Command   78

Machine ID   0

Data   none

Return   ERROR SENSE RETURN [F8]

CAUTION SENSE

Requests that the current caution status be returned.

Command   79

Machine ID   0

Data   none

Return   CAUTION SENSE RETURN [F9]

VENDOR COMMAND

This command controls the unit's unique functions. See "Detailed Information about Vendor Commands" on page 31.

INFORMATION RETURN

This is the return command in response to the "INFORMATION REQUEST [0F]" command.

It returns the software version of the controlled device.

Command   8F

Machine ID   0

Data   4 bytes

Data 1	Tens digit of the software version	Example of Data 1 – Data 4
Data 2	Ones digit of the software version	0100 Version 1.00
Data 3	First decimal place of the software version	
Data 4	Second decimal place of the software version	

Request   INFORMATION REQUEST [0F]

JOG RETURN

This is the return command in response to the "JOG [1B]" command.

Command   9B

Machine ID   0

Data   2 bytes

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

Request/Preset   JOG [1B]

SHUTTLE RETURN

This is the return command in response to the "SHUTTLE [1C]" command.

Command   9C

Machine ID   0

Data   2 bytes

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

Request/Preset   SHUTTLE [1C]

AUTO CUE LEVEL RETURN

This is the return command in response to the "AUTO CUE LEVEL PRESET [20]" command.

It returns the set auto cue level.

Command   A0

Machine ID   0

Data   2 bytes

Data 1	Data 2	Description	Remarks
0	0	−24dB	
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]

CLOCK DATA RETURN

This is the return command in response to the "CLOCK DATA PRESET [27]" command.

It returns the set date and time values.

Command   A7

Machine ID   0

Data   12 bytes

	Description	Remarks
Data 1	Tens digit of the year	
Data 2	Ones digit of year	
Data 3	Tens digit of month	
Data 4	Ones digit of month	
Data 5	Tens digit of day	
Data 6	Ones digit of day	
Data 7	Tens digit of hours	
Data 8	Ones digit of hours	
Data 9	Tens digit of minutes	
Data 10	Ones digit of minutes	
Data 11	Tens digit of the seconds	
Data 12	Ones digit of the seconds	

Request/Preset   CLOCK DATA PRESET [27]

DIGITAL VOLUME DATA RETURN

This is the return command in response to the "DIGITAL VOLUME DATA PRESET [2F]" command.

It returns the specified digital volume in decibels (dB).

Command   AF

Machine ID   0

Data   4 bytes

	Description	Remarks
Data 1	Ones digit of the setting	Example: "0512" is −20.5 dB
Data 2	First decimal place of the setting	
Data 3	0: +; 1: −	
Data 4	Tens digit of the setting	

・ If the volume is set to −∞ (minus infinity) dB, "AAAA" is transmitted as Data 1 to Data 4.

Request/Preset   DIGITAL VOLUME DATA PRESET [2F]

AUTO CUE SELECT RETURN

This is the return command in response to the "AUTO CUE SELECT [30]" command.

It returns the On/Off status of the auto cue function.

Command   B0

Machine ID   0

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 READY SELECT RETURN

This is the return command in response to the "AUTO READY SELECT [36]" command.

It returns the On/Off status of the auto-ready function.

Command   B6

Machine ID   0

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

This is the return command in response to the "REPEAT SELECT [37]" command.

It returns the On/Off status of the repeat playback.

Command   B7

Machine ID   0

Data   2 bytes

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

Request/Preset   REPEAT SELECT [37]

INCR PLAY SELECT RETURN

This is the return command in response to the "INCR PLAY SELECT [3A]" command.

It returns the On/Off status of the incremental play function.

Command   AF

Machine ID   0

Data   2 bytes

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

Request/Preset   INCR PLAY SELECT [3A]

REMOTE/LOCAL SELECT RETURN

This is the return command in response to the "REMOTE/LOCAL SELECT [4C]" command.

It returns the enabled or disabled status for key operation on the device's panel.

Command   CC

Machine ID   0

Data   2 bytes

Data 1	Data 2	Description	Remarks
0	0	Remote	Only remote operation via CONTROL I/O (RS-232C, RS-422, PARALLEL) will be enabled. Key operations on the device's panel will be disabled.
0	1	Local	Remote operation and key operation on the device's panel will be enabled.

Request/Preset   REMOTE/LOCAL SELECT [4C]

PLAY MODE RETURN

This is the return command in response to the "PLAY MODE SENSE [4E]" command.

It returns the current Play mode.

Command   CE

Machine ID   0

Data   2 bytes

Data 1	Data 2	Description	Remarks
0	0	All Take	Plays all takes/entries in the current session
0	1	One Take	Plays the current take/entry only

Request/Preset   PLAY MODE SENSE [4E]

MECHA STATUS RETURN

This is the return command in response to the "MECHA STATUS SENSE [50]" command.

It returns the current operation status of the controlled d device.

Command   D0

Machine ID   0

Data   2 bytes

Data 1	Data 2	Description	Remarks
0	0	No Media	No media is inserted
1	0	Stop	Stopped
1	1	Play	Playing
1	2	Ready On	In playback standby
8	1	Record	Recording
8	2	Record Ready	In recording standby
8	3	Information Writing	Currently writing various information
F	F	Other	In another state

Request/Preset   MECHA STATUS SENSE [50]

TRACK No. STATUS RETURN

This is the return command in response to the "TRACK No. STATUS SENSE [55]" command.

It returns the take/entry number where currently located.

If the operation mode is timeline, the unit will always transmit "1".

Command   D5

Machine ID   0

Data   6 bytes

	Description	Remarks
Data 1	00	Always returns the fixed value "00."
Data 2		
Data 3	Tens digit of the take/entry number	
Data 4	Ones digit of the take/entry number	
Data 5	Thousands digit of the take/entry number	
Data 6	Hundreds digit of the take/entry number	

Request/Preset   TRACK No. SENSE [55]

CURRENT TRACK INFORMATION RETURN

This is the return command in response to the "CURRENT TRACK INFORMATION SENSE [57]" command.

If Machine ID=1 is designated and the operation mode is any other than dual playlist or mix playlist modes, the unit will return ″0″.

Command   D7

Machine ID   0/1

Data   12 bytes

	Description	Remarks
Data 1	Tens digit of the take/entry number	
Data 2	Ones digit of the take/entry number	
Data 3	Thousands digit of the take/entry number	
Data 4	Hundreds digit of the take/entry number	
Data 5	Tens digit of hours	
Data 6	Ones digit of hours	
Data 7	Tens digit of minutes	
Data 8	Ones digit of 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	

Request/Preset   CURRENT TRACK INFORMATION SENSE [57]

CURRENT TRACK TIME RETURN

This is the return command in response to the "CURRENT TRACK TIME SENSE [58]" command.

It returns information about the play time for the current take/entry (or take being recorded in record mode) in the specified format.

(MSF format = Minutes, Seconds, Frame; HMSF format = Hours, Minutes, Seconds, Frames)

If the time exceeds 9999 minutes when requesting MSF format or exceeds 100 hours when requesting HMSF format, "--" will be returned for Data 3-10.

If Total Elapsed Time is requested when the operation mode is timeline, the unit will return the Elapsed Time. If Remain Time or Total Remain Time is requested when not recording or in recording standby, the unit will return ILLEGAL [F2].

(The HS-2 and HS-20 do not support request commands in MSF format.)

Command   D8
Machine ID   0/1
Data   10 bytes

	Description	Remarks
Data 1	Time Mode	00: Take/entry elapsed time in MSF format or timeline ABS time 01: Take/entry remaining time (when recording, remaining recording time until max file size) in MSF format or timeline remaining time when recording (remaining capacity until 24:00 ABS or max file size) 02: Session elapsed time in MSF format or timeline ABS time 03: Session remaining time (when recording, remaining recording time on media) in MSF format or timeline remaining time when recording (remaining capacity until 24:00 ABS or on media) 04: Timecode time in MSF Format
Data 2		10: Take/entry elapsed time in HMSF format or timeline ABS time 11: Take/entry remaining time (when recording, remaining recording time until max file size) in HMSF format or timeline remaining time when recording (remaining capacity until 24:00 ABS or max file size) 12: Session elapsed time in HMSF format or timeline ABS time 13: Session remaining time (when recording, remaining recording time on media) in HMSF format or timeline remaining time when recording (remaining capacity until 24:00 ABS or on media) 14: Timecode time in HMSF Format
Data 3	Tens digit of the minutes	For 00-04, the tens and ones digits of the minute value (MSF format) For 10-14, the tens and ones digits of the hour value (HMSF format)
Data 4	Ones digit of the minutes	
Data 5	Thousands/tens digit of the minutes	For mode 00-04, the thousands and hundreds digits of the minute value (MSF format)
Data 6	Hundreds digit of the minutes	For mode 10-14, the tens and ones digit of the minute value (HMSF format)
Data 7	Tens digit of the seconds	
Data 8	Ones digit of the seconds	
Data 9	Tens digit of the frames	
Data 10	Ones digit of the frames	

Request/Preset   CURRENT TRACK TIME SENSE [58]

TITLE RETURN

This is the return command in response to the "TITLE SENSE [59]" command.

It returns the specified take/entry name in UTF-8 format.

If the operation mode is timeline, the unit will transmit ILLEGAL [F2].

Command   D9

Machine ID   0

Data   none

Data   5-123 bytes

	Description	Remarks
Data 1	Tens digit of the take/entry number	
Data 2	Ones digit of the take/entry number	
Data 3	Thousands digit of the take/entry number	
Data 4	Hundreds digit of the take/entry number	
Data 5 – Data123	Title text	UTF-8

・ The title is between 1 and 119 bytes.

Request/Preset   TITLE SENSE [59]

TOTAL TRACK No./TOTAL TIME RETURN

This is the return command in response to the "TOTAL TRACK No. / TOTAL TIME SENSE [5D]" command.

It returns the total number of takes and the total time of the selected playback area.

If the operation mode is timeline, the unit will transmit ILLEGAL [F2].

Command   DD

Machine ID   0

Data   12 bytes

	Description	Remarks
Data 1	Tens digit of the total number of takes/entries	If Data 1 to Data 4 is 0000, this means the session contains no takes/entries or no media is inserted.
Data 2	Ones digit of the total number of takes/entries	
Data 3	Thousands digit of the total number of takes/entries	
Data 4	Hundreds digit of the total number of takes/entries	
Data 5	Tens digit of hours	
Data 6	Ones digit of hours	
Data 7	Tens digit of minutes	
Data 8	Ones digit of minutes	
Data 9	Tens digit of seconds	
Data 10	Ones digit of seconds	
Data 11	Tens digit of frames	
Data 12	Ones digit of frames	

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

KEYBOARD TYPE RETURN

This is the returned command in response to the "KEYBOARD TYPE SENSE [5F]" command.

It returns the type of keyboard connected.

Command   DF

Machine ID   0

Data   2 bytes

Data 1	Data 2	Description	Remarks
0	0	Japanese Keyboard	Japanese language keyboard
0	1	US Keyboard	US English keyboard

Request/Preset   KEYBOARD TYPE SENSE [5F]

ERROR SENSE REQUEST

This command is returned if the error status changes.

Send an ERROR SENSE [78] command from the controlling device to check the error contents.

Command   F0

Machine ID   0

Data   none

Request/Preset   none

CAUTION SENSE REQUEST

This command is returned if the caution status changes.

Send a CAUTION SENSE [79] command from the controlling device to check the caution contents.

Command   F1

Machine ID   0

Data   none

Request/Preset   none

ILLEGAL STATUS

This command is returned when an invalid command or data is sent to the controlled device.

If this command is transmitted from the controlled device, use the external controller device to re-transmit a command or data that meets the specifications.

Command   F2

Machine ID   0

Data   none

Request/Preset   none

POWER ON STATUS

This command notifies that the controlled device has been turned on.

Command   F4

Machine ID   0

Data   none

Request/Preset   none

CHANGE STATUS

This command notifies that the operation or mode of the controlled device has changed.

Command   F6

Machine ID   0

Data   2 bytes

Data 1	Data 2	Description	Remarks
0	0	Changed Mechanical Status	The operation status has changed.
0	3	Changed Track	The take/entry number has changed.
1	0	Changed Online Status	The online status has changed.

Request/Preset   none

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ERROR SENSE RETURN

This is the return command in response to the "ERROR SENSE [78]" command.

It returns the last error status.

Command   F8

Machine ID   0

Data   2 bytes

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

Request/Preset   ERROR SENSE [78]

CAUTION SENSE RETURN

This is the return command in response to the "CAUTION SENSE [79]" command.

It returns the last caution status.

Command   F9

Machine ID   0

Data   2 bytes

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

Request/Preset   CAUTION SENSE [79]

VENDOR COMMAND RETURN

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

Detailed information about Vendor Commands

Vendor commands for the HS-2/HS-20/HS-2000 have the following format.

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

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

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

DEVICE SELECT (01) is the only category that has no sub command, so its Data 3 and higher are parameters.

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

Below is the list of category codes.

Category Code	Category classification	Description
01	DEVICE SELECT	Selects the device to be used (Slot 1/2)
02	SESSION/PROJECT SELECT	Performs an operation related to a session or project
03	MARK	Performs an operation related to a mark
04	FLASH START	Performs an operation related to flash starting
05	ONLINE	Online selection
06	Timecode settings	Settings related to timecode
07	Playback settings	Operations related to playback
09	Operation mode	Operation mode selection
10	Media formatting	Operations related to media
40	Bounce	Bounce
41	Timeline editing	Timeline editing operations (nondestructive editing)
42	Take editing	Editing a take (destructive editing)

DEVICE SELECT

Selects the current slot.

A return command is returned as the selection result.

(On the HS-2/HS-20, SLOT 1 is the SD card slot and SLOT 2 is the CF card slot.)

Command   7F
Category Code   01
Machine ID   0
Data   2 bytes

Data 3	Data 4	Description	Remarks
0	0	SLOT 1	Selects SLOT 1 as the current slot.
0	1	SLOT 2	Selects SLOT 2 as the current slot.
F	F	Sense	Requests that the current slot be returned.

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

Return   DEVICE SELECT RETURN [FF01]

SESSION SKIP

Changes the session.

If the current session is the last session, specifying "00" will move to the first session.

If the current session is the first session, specifying "01" will move to the last session.

Command   7F

Category Code   02

Sub Command   1A

Machine ID   0

Data   2 bytes

Data 5	6	Description	Remarks
0	0	Session next	Moves to the next session.
0	1	Session previous	Moves to the previous session.

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

Return   none

DIRECT SESSION SEARCH PRESET

Moves to a session by specifying the project number and session number.

After skipping, the device will maintain the mode in which it was when the operation began.

If "0000" is specified for Data 5 to 8 (session number), this becomes the "PROJECT SELECT" command (explained later).

Command   7F

Category Code   02

Sub Command   23

Machine ID   0

Data   4 bytes

	Description	Remarks
Data 5	Tens digit of the session number	
Data 6	Ones digit of the session number	Session number
Data 7	Thousands digit of the session number	Example: "2301" indicates session 123
Data 8	Hundreds digit of the session number	

・ If a session number not existing in the project is specified, the connected device will transmit ILLEGAL [F2].

・ If the current session is specified for the session number, the connected device will transmit ILLEGAL [F2].

Return   none

PROJECT SELECT

Changes the current project to another project by specifying a project number.

Command   7F
Category Code   02
Sub Command   23
Machine ID   0
Data   8 bytes

	Description	Remarks
Data 5	0000	Specify the fixed value "0000" for PROJECT SELECT.
Data 6		
Data 7		
Data 8		
Data 9	Tens digit of the project number	Project number
Data 10	Ones digit of the project number	Example: "400" indicates project 54
Data 11	Thousands digit of the project number	
Data 12	Hundreds digit of the project number	

- If a project number that does not exist on the media is specified, the connected device will transmit ILLEGAL [F2].
- If the current project number is specified for the project number, the connected device will transmit ILLEGAL [F2].

Return   none

CREATE PROJECT

This creates a new project.

When a new project is created, the "1st Session Name Preset [7F024002]" and "Sampling Frequency Preset [7F024003]" settings, which are explained below, are used for the corresponding values.

The current projects settings will be used for other values.

When execution starts and completes, the controlled device returns "CREATE PROJECT ACKNOWLEDGE [FF02C000]".

Command   7F
Category Code   02
Sub Command   4000
Machine ID   0
Data   none
Return   CREATE PROJECT ACKNOWLEDGE [FF02C000]

1st SESSION NAME PRESET

This sets the first session name used when creating a new project.

Use this command before executing "PROJECT CREATE [7F024000]".

If FF is transmitted for Data 7/8, the controlled device will return "1st SESSION NAME RETURN [FF02C002]". In other cases, up to 117 bytes in UTF-8 format can be transmitted starting from Data 7. (Only half-width alphanumeric characters can be used with the HS-8, however, due to its specifications. If characters other than half-width alphanumeric characters are specified, the unit will transmit ILLEGAL [F2].)

Command   7F
Category Code   02
Sub Command   4002
Machine ID   0
Data   2-117 bytes
Return   1st SESSION NAME RETURN [FF02C002]

SAMPLING FREQUENCY PRESET

This sets the sampling frequency when creating a new project.

Use this command before executing "PROJECT CREATE [7F024000]".

If FF is transmitted for Data 7/8, the controlled device will return "SAMPLING FREQUENCY RETURN [FF02C003]".

Command	7F
Category Code	02
Sub Command	4003
Machine ID	0
Data	4 bytes

Data 7/8	Data 9/10	Data 11/12	Description	Remarks
44	00	00	44.1 kHz	Set the sampling frequency to 44.1 kHz.
48	00	00	48 kHz	Set the sampling frequency to 48 kHz.
48	00	10	48kHz−0.1%	Set the sampling frequency to 48 kHz − 0.1%. *
48	00	11	48kHz+0.1%	Set the sampling frequency to 48 kHz + 0.1%. *
88	00	00	88.2 kHz	Set the sampling frequency to 88.2 kHz.
6	00	00	96 kHz	Set the sampling frequency to 96 kHz.
76	01	00	176.4 kHz	Set the sampling frequency to 176.4 kHz.
92	01	00	192 kHz	Set the sampling frequency to 192 kHz.
FF			Sense	This requests the set sampling frequency.

＊ The HS-2 and HS-20 do not support commands to set 48kHz±0.1%.

Return　　　　SAMPLING FREQUENCY RETURN [FF02C003]

MAKE SESSION

This creates a new session.

The name of the session created is set by the "SESSION NAME PRESET [7F024101]" command explained below.

When execution starts and completes, "MAKE SESSION ACKNOWLEDGE [FF02C100]" is returned.

Command	7F
Category Code	02
Sub Command	4100
Machine ID	0
Data	none
Return	MAKE SESSION ACKNOWLEDGE [FF02C100]

SESSION NAME PRESET

This sets the session name when creating a new session.

Use this command before executing "MAKE SESSION [7F024100]".

If FF is transmitted for Data 7/8, the controlled device will return "SESSION NAME PRESET RETURN [FF02C101]".

In other cases, up to 117 bytes in UTF-8 format can be transmitted starting from Data 7. (Only half-width alphanumeric characters can be used with the HS-8, however, due to its specifications. If characters other than half-width alphanumeric characters are specified, the unit will transmit ILLEGAL [F2].)

Command	7F
Category Code	02
Sub Command	4101
Machine ID	0
Data	2-117 bytes
Return	SESSION NAME PRESET RETURN [FF02C101]

REBUILD PROJECT

Execute REBUILD of the current project and session.

A "REBUILD PROJECT ACKNOWLEDGE [7F02C2]" is returned when the REBUILD starts and ends.

Command	7F
Category Code	02
Sub Command	42
Machine ID	0
Data	none
Return	REBUILD PROJECT ACKNOWLEDGE [7F02C2]

DELETE SESSION/PROJECT

Deletes a project or session.

When deleting a project, specify "0000" for the session number and specify the project number in Data 9/10 and 11/12.

When execution starts and completes, "DELETE SESSION/PROJECT ACKNOWLEDGE [7F02C4]" is returned.

Command	7F
Category Code	02
Sub Command	44
Machine ID	0
Data	4 bytes (Delete Session) or 8 bytes (Delete Project)

When data length is 4 bytes (Delete Session)

	Description	Remarks
Data 5	Tens digit of the session number	Session number Example: "2301" indicates session 123
Data 6	Ones digit of the session number	
Data 7	Thousands digit of the session number	
Data 8	Hundreds digit of the session number	

When data length is 8 bytes (Delete Project)

	Description	Remarks
Data 5	0000	Specify the fixed value "0000"
Data 6		
Data 7		
Data 8		
Data 9	Tens digit of the project number	Project number Example: "5400" indicates project 54
Data 10	Ones digit of the project number	
Data 11	Thousands digit of the project number	
Data 12	Hundreds digit of the project number	

Return	DELETE SESSION/PROJECT ACKNOWLEDGE [7F02C4]

SESSION No. STATUS SENSE

Requests that the current project/session number be returned.

Command   7F
Category Code   02
Sub Command   55
Machine ID   0
Data   none
Return   SESSION No. RETURN [FF02D5]

SESSION NAME SENSE

Requests the name of the specified session within the current project.

Command   7F
Category Code   02
Sub Command   59
Machine ID   0
Data   4 bytes

	Description	Remarks
Data 5	Tens digit of the session number	
Data 6	Ones digit of the session number	Session number
Data 7	Thousands digit of the session number	Example: "2301" indicates session 123
Data 8	Hundreds digit of the session number	

・ If a session number that does not exist in the current project is specified, the connected device will transmit ILLEGAL [F2].

Return   SESSION NAME RETURN [FF02D9]

PROJECT NAME SENSE

Requests that the name of specified project be returned.

Command   7F
Category Code   02
Sub Command   5A
Machine ID   0
Data   4 bytes

	Description	Remarks
Data 5	Tens digit of the project number	
Data 6	Ones digit of the project number	Project number
Data 7	Thousands digit of the project number	Example: "5400" indicates project 54
Data 8	Hundreds digit of the project number	

・ If a project number that does not exist on the media is specified, the connected device will transmit ILLEGAL [F2].

Return   PROJECT NAME RETURN [FF02DA]

TOTAL SESSION No. SENSE

Requests that the total number of sessions in the specified project be returned.

Data 5 to 8 (project number) can be omitted. If they are omitted, the number of folders within the current project will be requested.

Command   7F
Category Code   02
Sub Command   5D
Machine ID   0
Data   none or 4 bytes

When the data length is 4 bytes, add the following Data

	Description	Remarks
Data 5	Tens digit of the project number	
Data 6	Ones digit of the project number	Project number
Data 7	Thousands digit of the project number	Example: "2301" indicates project 123
Data 8	Hundreds digit of the project number	

Return   TOTAL SESSION No. RETURN [FF02DD]

TOTAL PROJECT No. SENSE

Requests that the total number of projects on the current media be returned.

Command   7F
Category Code   02
Sub Command   5E
Machine ID   0
Data   none
Return   TOTAL PROJECT No. RETURN [FF02DE]

MARK SET

Sets a mark on the controlled device.

The mark will be set at the current time counter position.

Command	7F
Category Code	03
Sub Command	10
Machine ID	0
Data	none

DIRECT MARK SKIP PRESET

Causes the controlled device to skip marks by specifying the mark number.

Marks are numbered in chronological order from the beginning.

After skipping, the device will maintain the mode in which it was when the operation began.

Command	7F
Category Code	03
Sub Command	23
Machine ID	0
Data	4 bytes

	Description	Remarks
Data 5	Tens digit of the mark number	
Data 6	Ones digit of the mark number	Mark number
Data 7	Thousands digit of the mark number	Example: "9900" indicates mark 99
Data 8	Hundreds digit of the mark number	

・ If a mark number that does not exist in the current take/entry is specified, the device will transmit ILLEGAL [F2].

Return	none

DELETE MARK

Deletes a mark on the controlled device.

Marks can be designated by number and deleted. If no mark number is designated, the nearest mark before the current position will be deleted.

Marks are numbered in chronological order from the beginning.

Command	7F
Category Code	03
Sub Command	44
Machine ID	0
Data	none or 4 bytes

When the data is 4 bytes

	Description	Remarks
Data 5	Tens digit of the mark number	
Data 6	Ones digit of the mark number	Mark number
Data 7	Thousands digit of the mark number	Example: "9900" indicates mark 99
Data 8	Hundreds digit of the mark number	

・ If a mark number not existing in the current take is specified, the connected device will transmit ILLEGAL [F2].

Return	none

MARK No. STATUS SENSE

Requests that the number of the nearest mark before the current position be returned.

Marks are numbered in chronological order from the beginning.

Command	7F
Category Code	03
Sub Command	55
Machine ID	0
Data	none
Return	MARK No. RETURN [FF03D5]

MARK TIME SENSE

Requests that the specified mark time be returned.

Marks are numbered in chronological order from the beginning.

Command	7F
Category Code	03
Sub Command	58
Machine ID	0
Data	4 bytes

	Description	Remarks
Data 5	Tens digit of the specified number	
Data 6	Ones digit of the specified number	Mark number
Data 7	Thousands digit of the specified number	Example: "9900" indicates mark 99
Data 8	Hundreds digit of the specified number	

・ If a mark number not existing in the current take is specified, the connected device will transmit ILLEGAL [F2].

Return	MARK TIME RETURN [FF03D8]

TOTAL MARK No. SENSE

Requests that the total number of marks in the current take be returned.

Command	7F
Category Code	03
Sub Command	5D
Machine ID	0
Data	none
Return	TOTAL MARK No. RETURN [FF03DD]

FLASH PAGE SELECT

Selects a flash page of the controlled device.

A return command is returned only if Sense [FF] is specified for Data 5 and Data 6.

If the operation mode is timeline, the unit will transmit ILLEGAL [F2].

Command   7F

Category Code   04

Sub Command   00

Machine ID   0

Data   2 bytes

	Description	Remarks
Data 5	Tens digit of the page number	Flash page number
Data 6	Ones digit of the page number	Example: "02" is page 2

· If a page number that does not exist on the controlled device is specified, the connected device will transmit ILLEGAL [F2].

Return   FLASH PAGE RETURN [FF0480]

FLASH PAGE SKIP

Skips a flash page on the controlled device.

Command   7F

Category Code   04

Sub Command   1A

Machine ID   0

Data   2 bytes

Data 5	Data 6	Description	Remarks
0	0	Flash Page Skip Next	Moves to the next page.
0	1	Page Skip Next	Moves to the previous page

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

Return   none

CURRENT ENTRY INFORMATION SENSE

Requests that the current slot number be returned.

If the operation mode is not a playlist mode, the unit will transmit ILLEGAL [F2].

Command   7F

Category Code   04

Sub Command   57

Machine ID   0

Data   none

Return   CURRENT ENTRY INFORMATION RETURN [FF04D7]

FLASH READY ENTRY SENSE

Requests that the information about slot/take that currently can be flash started be returned.

It returns the information of the current flash page. Use FLASH PAGE SELECT [7F0400] or FLASH PAGE SKIP [7F041A] beforehand to designate the flash page from which to retrieve information.

Command   7F

Category Code   04

Sub Command   5D

Machine ID   0

Data   none

Return   FLASH READY ENTRY RETURN [FF04DD]

ONLINE SELECT

Turns on or off the Online mode of the controlled device.

A return command is returned only if Sense [FF] is specified.

(The HS-2 and HS-20 do not support this command.)

Command　　　　7F

Category Code　　05

Sub Command　　11

Machine ID　　　0

Data　　　　　　2 bytes

Data 5	Data 6	Description	Remarks
0	0	ONLINE OFF	Online mode off
0	1	ONLINE ON	Online mode on
F	F	Sense	Requests that the current setting be returned.

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

Return　　　　　ONLINE SELECT RETURN [FF0511]

CHASE SELECT

Turns on or off the Chase mode of the controlled device.

A return command is returned only if Sense [FF] is specified.

Command　　　　7F

Category Code　　06

Sub Command　　00

Machine ID　　　0

Data　　　　　　2 bytes

Data 5	Data 6	Description	Remarks
0	0	Chase OFF	Chase mode off
0	1	Chase ON	Chase mode on
F	F	Sense	Requests that the current setting be returned.

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

Return　　　　　CHASE RETURN [FF0680]

OPEREATION MODE SELECT

Changes the operation mode of the controlled device.

A return command is returned only if Sense [FF] is specified.

Command　　　　7F

Category Code　　09

Sub Command　　00

Machine ID　　　0

Data　　　　　　2 bytes

Data 5	Data 6	Description	Remarks
0	0	TC Mode	Timeline mode
0	1	Take Mode	
0	2	Playlist Mode	
1	0	On Air Mode	On air mode*
F	F	Sense	Requests that the current operation mode be returned.

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

＊The HS-2 and HS-20 do not support on air mode switching.

Return　　　　　OPERATION MODE RETURN [FF0980]

MEDIA REMAIN SENSE

Requests that the remaining capacity of the selected media in the controlled device be returned.
"MEDIA REMAIN RETURN [FF1081]" will be returned.

Command	7F
Category Code	10
Sub Command	01
Machine ID	0
Data	none
Return	MEDIA REMAIN RETURN [FF1081]

MEDIA FORMAT

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

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

Data 5	Data 6	Description	Remarks
0	0	Quick Format	
0	1	Full Format	
0	2	Quick & Create Project	Quick format and create project

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

Return	MEDIA FORMAT ACKNOWLEDGE [FF10C4]

RETAKE

Performs the retake operation on the controlled device.
When execution completes, the controlled device returns "RETAKE ACKNOWLEDGE [FF1590]".

Command	7F
Category Code	15
Sub Command	10
Machine ID	0
Data	none
Return	RETAKE ACKNOWLEDGE [FF1590]

REGION SKIP

Causes the controlled device to skip to the beginning or end of all regions.
If the operation mode is not timeline, the unit will transmit ILLEGAL [F2].

Command	7F
Category Code	15
Sub Command	1A
Machine ID	0
Data	2 bytes

Data 5	Data 6	Description	Remarks
0	0	Region End	Skip to the end of the last region
0	1	Region Top	Skip to the beginning of the first region

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

Return	none

SET POINT

Set points used for bouncing and timeline editing.

If FF is transmitted for Data 5/6, the controlled device will return the set point value according to the Data 7/8 that follows.

Command   7F
Category Code   40
Sub Command   10
Machine ID   0
Data   4 bytes

Data 5	Data 6	Data 7	Data 8	Description	Remarks
0	0			Clear Point	Clear IN/OUT points
0	1			Point IN	Set the current point as the IN point
0	2			Point OUT	Set the current point as the OUT point
0	1	F	F	Sense Point IN	Request the set IN point value
0	2	F	F	Sense Point OUT	Request the set OUT point value

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

Return   POINT RETURN [FF4090]

BOUNCE

Execute a bounce.

This bounces the interval between the IN and OUT points set using SET POINT IN [7F401001] and SET POINT OUT [7F401002] described above.

The name of the take bounced is set by the "BOUNCE TAKE NAME PRESET [7F402001]" command explained below. The session name is used by default. Beware, however, that if a take exists that already has the same name, it will be overwritten.

Data 7/8 designates the current session as the bounce destination.

When execution starts and completes, the controlled device returns "BOUNCE ACKNOWLEDGE [FF40A000]".

Command   7F
Category Code   40
Sub Command   2000
Machine ID   0
Data   2 bytes

Data 7	Data 8	Description	Remarks
0	0	Current Session	Bounce destination is current session

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

Return   BOUNCE ACKNOWLEDGE [FF409000]

BOUNCE TAKE NAME PRESET

Set the bounce take name.

Use this command before executing "BOUNCE [7F402000]".

If FF is transmitted for Data 7/8, the controlled device will return "BOUNCE TAKE NAME PRESET RETURN [FF40A001]" with the current setting.

In other cases, up to 117 bytes in UTF-8 format can be transmitted starting from Data 7. (Only half-width alphanumeric characters can be used with the HS-8, however, due to its specifications. If characters other than half-width alphanumeric characters are specified, the unit will transmit ILLEGAL [F2].)

Command   7F
Category Code   40
Sub Command   2001
Machine ID   0
Data   1-117 bytes

Data 7	Data 8	—	Data 123	Description	Remarks
				Name Set	Bounce take name setting
F	F			Name Sense	Bounce take name confirmation

Return   BOUNCE TAKE NAME PRESET RETURN [FF409001]

TIME LINE CUT

Execute a timeline cut operation.

This cuts the interval between the IN and OUT points set using SET POINT IN [7F401001] and SET POINT OUT [7F401002] described above.

When execution starts and completes, the controlled device returns "TIME LINE CUT ACKNOWLEDGE [FF41A0]".

Command   7F
Category Code   41
Sub Command   20
Machine ID   0
Data   none
Return   TIME LINE CUT ACKNOWLEDGE [FF41A0]

TIME LINE COPY

Execute a timeline copy operation.

This copies to the buffer the interval between the IN and OUT points set using SET POINT IN [7F401001] and SET POINT OUT [7F401002] described above.

When execution starts and completes, the controlled device returns "TIME LINE COPY ACKNOWLEDGE [FF41A1]".

Command   7F
Category Code   41
Sub Command   21
Machine ID   0
Data   none
Return   TIME LINE COPY ACKNOWLEDGE [FF41A1]

TEAC Corporation

TIME LINE INSERT

Execute a timeline insertion operation.

This inserts silence or the copy buffer data at the current point.

When execution starts and completes, the controlled device returns "TIME LINE INSERT ACKNOWLEDGE [FF41A2]".

Command	7F
Category Code	41
Sub Command	22
Machine ID	0
Data	2 bytes

Data 5	Data 6	Description	Remarks
0	0	Silence	Insert silence
0	1	Buf	Insert audio from the copy buffer

Return   TIME LINE INSERT ACKNOWLEDGE [FF41A2]

TIME LINE PASTE

Execute a timeline paste operation.

This overwrites from the current point the interval copied using TIME LINE COPY [7F4121] described above.

When execution starts and completes, the controlled device returns "TIME LINE PASTE ACKNOWLEDGE [FF41A3]".

Command	7F
Category Code	41
Sub Command	23
Machine ID	0
Data	none
Return	TIME LINE PASTE ACKNOWLEDGE [FF41A3]

TIME LINE ERASE

Execute a timeline erase operation.

This erases the interval between the IN and OUT points set using SET POINT IN [7F401001] and SET POINT OUT [7F401002] described above.

When execution starts and completes, the controlled device returns "TIME LINE ERASE ACKNOWLEDGE [FF41B0]".

Command	7F
Category Code	41
Sub Command	30
Machine ID	0
Data	none
Return	TIME LINE ERASE ACKNOWLEDGE [FF41B0]

TIME LINE UNDO

Execute a timeline undo operation.

When execution starts and completes, the controlled device returns "TIME LINE UNDO ACKNOWLEDGE [FF41E0]".

Command	7F
Category Code	41
Sub Command	60
Machine ID	0
Data	none
Return	TIME LINE UNDO ACKNOWLEDGE [FF41E0]

TIME LINE REDO

Execute a timeline redo operation.

When execution starts and completes, the controlled device returns "TIME LINE REDO ACKNOWLEDGE [FF41E1]".

Command   7F
Category Code   41
Sub Command   61
Machine ID   0
Data   none
Return   TIME LINE REDO ACKNOWLEDGE [FF41E1]

TIME LINE EDIT SAVE

Save timeline edits.

Command   7F
Category Code   41
Sub Command   70
Machine ID   0
Data   none
Return   none

TAKE ERASE

Erase the current take.

When execution starts and completes, the controlled device returns "TAKE ERASE ACKNOWLEDGE [FF42B0]".

Command   7F
Category Code   42
Sub Command   30
Machine ID   0
Data   none
Return   TAKE ERASE ACKNOWLEDGE [FF42B0]

TAKE DIVIDE

Execute a take divide operation.

This divides the current take at the rehearsal point. Please rehearse at the current position before executing.

When execution starts and completes, the controlled device returns "TAKE DIVIDE ACKNOWLEDGE [FF42B1]".

Command   7F
Category Code   42
Sub Command   31
Machine ID   0
Data   none or 4bytes

Data 5	Data 6	Data 7	Data 8	Description	Remarks
				Execute	Execute DIVID
1	0	0	0	Rehearsal Stop	Stop rehearsal
1	0	0	1	Rehearsal Start	Start rehearsal

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

Return   TAKE DIVIDE ACKNOWLEDGE [FF42B1]

TAKE COMBINE

Execute a take combine operation.

This places the designated take after the current take and combines them.

When execution starts and completes, the controlled device returns "TAKE COMBINE ACKNOWLEDGE [FF42B2]".

Command	7F
Category Code	42
Sub Command	32
Machine ID	0
Data	4 bytes

	Description	Remarks
Data 5	Tens digit of the take number	
Data 6	Ones digit of the take number	Take number
Data 7	Thousands digit of the take number	Example: "1400" indicates take 14
Data 8	Hundreds digit of the take number	

Return   TAKE COMBINE ACKNOWLEDGE [FF42B2]

TAKE UNDO

Execute a take undo operation.

When execution starts and completes, the controlled device returns "TAKE UNDO ACKNOWLEDGE [FF42E0]".

Command	7F
Category Code	42
Sub Command	60
Machine ID	0
Data	none
Return	TAKE UNDO ACKNOWLEDGE [FF42E0]

TAKE REDO

Execute a take redo operation.

When execution starts and completes, the controlled device returns "TAKE REDO ACKNOWLEDGE [FF42E1]".

Command	7F
Category Code	42
Sub Command	61
Machine ID	0
Data	none
Return	TAKE REDO ACKNOWLEDGE [FF42E1]

DEVICE SELECT RETURN

This is the return command in response to the "DEVICE SELECT [7F01]" command.

It returns the current slot.

This is also automatically returned when the slot is changed.

Command	FF
Category Code	01
Machine ID	0
Data	2 bytes

Data 3	Data 4	Description	Remarks
0	0	SLOT 1	SLOT 1
0	1	SLOT 2	SLOT 2

Request/Preset   DEVICE SELECT [7F01]

CREATE PROJECT ACKNOWLEDGE

This is the return command in response to the "CREATE PROJECT [7F024000]" command.

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

Command FF

Category Code 02

Sub Command C000

Machine ID 0

Data 2 bytes

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

Request/Preset CREATE PROJECT [7F024000]

1st SESSION NAME RETURN

This is the return command in response to the "1st SESSION NAME PRESET [7F024002]" command.

It returns the 1st session name when CREATE PROJECT is executed.

It returns from Data 7 in UTF-8 format.

Command FF

Category Code 02

Sub Command C002

Machine ID 0

Data 1-117 bytes

Request/Preset 1st SESSION NAME PRESET [7F024002]

SAMPLING FREQUENCY RETURN

This is the return command in response to the "SAMPLING FREQUENCY PRESET [7F024003]" command.

This returns the sampling frequency used when CREATE PROJECT is executed.

Command FF

Category Code 02

Sub Command C003

Machine ID 0

Data 4 bytes

Data 7/8	Data 9/10	Data 11/12	Description	Remarks
44	00	00	44.1kHz	Sampling frequency set to 44.1 kHz.
48	00	00	48kHz	Sampling frequency set to 48 kHz.
48	00	10	48kHz−0.1%	Sampling frequency set to 48 kHz − 0.1%. *
48	00	11	48kHz+0.1%	Sampling frequency set to 48 kHz + 0.1%. *
88	00	00	88.2kHz	Sampling frequency set to 88.2 kHz.
96	00	00	96kHz	Sampling frequency set to 96 kHz.
76	01	00	176.4kHz	Sampling frequency set to 176.4 kHz.
92	01	00	192kHz	Sampling frequency set to 192 kHz.

* The HS-2 and HS-20 do not support 48kHz±0.1% settings.

Request/Preset SAMPLING FREQUENCY PRESET [7F024003]

MAKE SESSION ACKNOWLEDGE

This is the return command in response to the "MAKE SESSION [7F024100]" command.

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

Command   FF
Category Code   02
Sub Command   C100
Machine ID   0
Data   2 bytes

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

Request/Preset   MAKE SESSION [7F024100]

SESSION NAME PRESET RETURN

This is the return command in response to the "SESSION NAME PRESET [7F024101]" command.

It returns the session name when MAKE SESSION is executed.

It returns from Data 7 in UTF-8 format.

Command   FF
Category Code   02
Sub Command   C101
Machine ID   0
Data   1-117 bytes
Request/Preset   SESSION NAME PRESET [7F024101]

REBUILD PROJECT ACKNOWLEDGE

This is the return command in response to the "REBUILD PROJECT [7F0242]" command.

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

Command   FF
Category Code   02
Sub Command   C2
Machine ID   0
Data   2 bytes

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

Request/Preset   DELETE SESSION/PROJECT [7F0244]

DELETE SESSION/PROJECT ACKNOWLEDGE

This is the return command in response to the "DELETE SESSION/PROJECT [7F0244]" command.

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

Command   FF
Category Code   02
Sub Command   C4
Machine ID   0
Data   2 bytes

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

Request/Preset   DELETE SESSION/PROJECT [7F0244]

SESSION No. RETURN

This is the return command in response to the "SESSION No. STATUS SENSE [7F0255]" command.

It returns the current session number.

Command   FF

Category Code   02

Sub Command   D5

Machine ID   0

Data   8 bytes

	Description	Remarks
Data 5	Tens digit of the session number	Session number Example: "2301" indicates session 123
Data 6	Ones digit of the session number	
Data 7	Thousands digit of the session number	
Data 8	Hundreds digit of the session number	
Data 9	Tens digit of the project number	Project number Example: "5400" indicates project 54
Data 10	Ones digit of the project number	
Data 11	Thousands digit of the project number	
Data 12	Hundreds digit of the project number	

Request/Preset   SESSION No. STATUS SENSE [7F0255]

SESSION NAME RETURN

This is the return command in response to the command "SESSION NAME SENSE [7F0259]."

It returns the session name.

The session name is returned from Data 9 in UTF-8 format.

Command   FF

Category Code   02

Sub Command   D9

Machine ID   0

Data   5 bytes to 119 bytes

	Description	Remarks
Data 5	Tens digit of the session number	Session number Example: "2301" indicates session 123
Data 6	Ones digit of the session number	
Data 7	Thousands digit of the session number	
Data 8	Hundreds digit of the session number	
Data 9 – Data 123	Title	Session name (UTF-8)

・ The title is between 2 and 115 bytes.

Request/Preset   SESSION NAME SENSE [7F0259]

PROJECT NAME RETURN

This is the return command in response to the command "PROJECT NAME SENSE [7F025A]."

It returns the project name.

The session name is returned from Data 9 in UTF-8 format.

Command FF

Category Code 02

Sub Command DA

Machine ID 0

Data none

Data 5 to 119 bytes

	Description	Remarks
Data 5	Tens digit of the project number	Project number Example: "5400" indicates project 54
Data 6	Ones digit of the project number	
Data 7	Thousands digit of the project number	
Data 8	Hundreds digit of the project number	
Data 9 – Data 123	Title	Project name (UTF-8)

・ The title is between 2 and 115 bytes.

Request/Preset PROJECT NAME SENSE [7F025A]

TOTAL SESSION No. RETURN

This is the return command in response to the "TOTAL SESSION No. SENSE [7F025D]" command.

It returns the total number of sessions.

Command FF

Category Code 02

Sub Command DD

Machine ID 0

Data 4 bytes

	Description	Remarks
Data 5	Tens digit of the total number of sessions	If Data 5 to Data 8 is 0000, no session is contained in the project or no media is inserted.
Data 6	Ones digit of the total number of sessions	
Data 7	Thousands digit of the total number of sessions	
Data 8	Hundreds digit of the total number of sessions	

Request/Preset TOTAL SESSION No. SENSE [7F025D]

TOTAL PROJECT No. RETURN

This is the return command in response to the "TOTAL PROJECT No. SENSE [7F025E]" command.

It returns the total number of projects.

Command FF

Category Code 02

Sub Command DE

Machine ID 0

Data 4 bytes

	Description	Remarks
Data 5	Tens digit of the total number of projects	If Data 1 to Data 4 is 0000, no project is contained or no media is inserted.
Data 6	Ones digit of the total number of projects	
Data 7	Thousands digit of the total number of projects	
Data 8	Hundreds digit of the total number of projects	

Request/Preset TOTAL PROJECT No. SENSE [7F025E]

SESSION/PROJECT CHANGE STATUS

This is also automatically returned when the session/project is changed.

It returns the number of the session/project active after changing.

Command   FF

Category Code   02

Sub Command   F6

Machine ID   0

Data   8 bytes

	Description	Remarks
Data 5	Tens digit of the session number	Session number Example: "2301" indicates session 123
Data 6	Ones digit of the session number	
Data 7	Thousands digit of the session number	
Data 8	Hundreds digit of the session number	
Data 9	Tens digit of the project number	Project number Example: "5400" indicates project 54
Data 10	Ones digit of the project number	
Data 11	Thousands digit of the project number	
Data 12	Hundreds digit of the project number	

Request/Preset   none

MARK No. RETURN

This is the return command in response to the "MARK No. STATUS SENSE [7F0355]" command.

It returns the current mark number.

Command   FF

Category Code   03

Sub Command   D5

Machine ID   0

Data   4 bytes

	Description	Remarks
Data 5	Tens digit of the mark number	
Data 6	Ones digit of the mark number	Mark number
Data 7	Thousands digit of the mark number	Example: "9900" indicates mark 99
Data 8	Hundreds digit of the mark number	

Request/Preset   MARK No. STATUS SENSE [7F0355]

MARK TIME RETURN

This is the return command in response to the "MARK TIME SENSE [7F0358]" command.

Command   FF

Category Code   03

Sub Command   D8

Machine ID   0

Data   12 bytes

	Description	Remarks
Data 5	Tens digit of the mark number	
Data 6	Ones digit of the mark number	Mark number
Data 7	Thousands digit of the mark number	Example: "9900" indicates mark 99
Data 8	Hundreds digit of the mark number	
Data 9	Tens digit of hours	
Data 10	Ones digit of hours	
Data 11	Tens digit of minutes	
Data 12	Ones digit of minutes	
Data 13	Tens digit of the seconds	
Data 14	Ones digit of the seconds	
Data 15	Tens digit of the frames	
Data 16	Ones digit of the frames	

Request/Preset   MARK TIME SENSE [7F0358]

TOTAL MARK No RETURN

This is the return command in response to the "TOTAL MARK No. SENSE [7F035D]" command.

It returns the total number of marks.

Command   FF

Category Code   03

Sub Command   DD

Machine ID   0

Data   4 bytes

	Description	Remarks
Data 5	Tens digit of the total number of marks	If Data 5 to Data 8 is 0000, the take contains
Data 6	Ones digit of the total number of marks	no marks or no media is inserted.
Data 7	Thousands digit of the total number of marks	
Data 8	Hundreds digit of the total number of marks	

Request/Preset   TOTAL MARK No. SENSE [7F035D]

FLASH PAGE RETURN

This is the return command in response to the "FLASH PAGE SELECT [7F035D]" command.

It returns the current flash page number.

Command   FF

Category Code   04

Sub Command   80

Machine ID   0

Data   2 bytes

	Description	Remarks
Data 5	Tens digit of the page number	Flash page number
Data 6	Ones digit of the page number	Example: "02" is page 2

Request/Preset   FLASH PAGE SELECT [7F0400]

CURRENT ENTRY INFORMATION RETURN

This is the return command in response to the "CURRENT SLOT INFORMATION SENSE [7F0457]" command.

It returns the take/entry number where currently located.

Command   FF

Category Code   04

Sub Command   D7

Machine ID   0

Data   4 bytes

	Description	Remarks
Data 5	Tens digit of entry (take) number	If Data 1 to Data 4 is 0000, no media is inserted.
Data 6	Ones digit of entry (take) number	
Data 7	Thousands digit of entry (take) number	
Data 8	Hundreds digit of entry (take) number	

Request/Preset   CURRENT ENTRY INFORMATION SENSE [7F0457]

FLASH READY ENTRY RETURN

This is the return command in response to the "FLASH READY SLOT SENSE [7F045D]" command.

It returns information about takes/entries that have been loaded.

Command   FF

Category Code   04

Sub Command   DD

Machine ID   0

Data   4 bytes to 119 bytes

	Description	Remarks
Data 5	Tens digit of the take/entry number	Number of first take/entry for which information is discovered
Data 6	Ones digit of the take/entry number	
Data 7	Thousands digit of the take/entry number	Example: "2100" indicates take 21
Data 8	Hundreds digit of the take/entry number	
Data 9 – Data 123	Take/entry data	One byte of data (1 character) shows the loading status of a take/entry. "0" (30h): not loaded "1" (31h): loaded Example: 20 bytes (20 characters) of data set to "0" or "1" are included to show the statuses of 20 entries.

· Take/entry data is between 0 and 115 bytes.

· Takes/entries not on the current page are "not loaded".

Request/Preset   FLASH READY ENTRY SENSE [7F045D]

ONLINE SELECT RETURN

This is the return command in response to the "ONLINE SELECT [7F0511]" command.

It returns the Online On/Off state.

(The HS-2 and HS-20 do not support this command.)

Command   FF

Category Code   05

Sub Command   11

Machine ID   0/1

Data   2 bytes

Data 5	Data 6	Description	Remarks
0	0	ONLINE OFF	Online mode off
0	1	ONLINE ON	Online mode on

Request/Preset   ONLINE SELECT[7F0511]

CHASE SELECT RETURN

This is the return command in response to the "CHASE SELECT [7F0600]" command.

It returns the On/Off state of the Chase mode.

Command   FF

Category Code   06

Sub Command   80

Machine ID   0

Data   2 bytes

Data 5	Data 6	Description	Remarks
0	0	Chase OFF	Chase mode off
0	1	Chase ON	Chase mode on

Request/Preset   CHASE SELECT [7F0600]

OPERATION MODE RETURN

This is the return command in response to the "OPERATION MODE SELECT [7F0900]" command.

It returns the current operation mode.

This is also automatically returned when the operation mode is changed.

Command   FF

Category Code   09

Sub Command   80

Machine ID   0

Data   2 bytes

Data 5	Data 6	Description	Remarks
0	0	Time Line	Timeline mode
0	1	Take	Take mode
0	2	Playlist Mode	Playlist mode
1	0	On Air Mode	On air mode*

*The HS-2 and HS-20 do not support on air mode switching.

Request/Preset   OPERATION MODE SELECT [7F0900]

MEDIA REMAIN RETURN

This is the return command in response to the "MEDIA REMAIN SENSE [7F1001]" command.

It returns the remaining capacity of the selected media.

Command   FF
Category Code 10
Sub Command 01
Machine ID   0
Data   10 bytes

	Description	Remarks
Data 5	Tens digit of device number	Current device ID
Data 6	Ones digit of device number	
Data 7	Tens digit of remaining capacity GB	Remaining media capacity Example: 16000000 = 16 GB Example: 00001205 = 512 MB
Data 8	Ones digit of remaining capacity GB	
Data 9	Thousands digit of remaining capacity GB	
Data 10	Hundreds digit of remaining capacity GB	
Data 11	Tens digit of remaining capacity MB	
Data 12	Ones digit of remaining capacity MB	
Data 13	Thousands digit of remaining capacity MB	
Data 14	Hundreds digit of remaining capacity MB	

Request/Preset MEDIA REMAIN SENSE [7F1001]

MEDIA FORMAT ACKNOWLEDGE

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

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

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

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

Request/Preset MEDIA FORMAT [7F1044]

RETAKE ACKNOWLEDGE

This is the return command in response to the "RETAKE [7F1510]" command.

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

Command   FF
Category Code 15
Sub Command 90
Machine ID   0
Data   2 bytes

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

Request/Preset RETAKE [7F1510]

POINT RETURN

This is the return command in response to the "SET POINT [7F4010]" command.

This is also returned when a point is set and a SENSE request is received.

It returns time information about the point.

If no points are set, only reply commands with no time information will be replied.

Command   FF
Category Code   40
Sub Command   90
Machine ID   0
Data   8 bytes

	Description	Remarks
Data 5/6	IN/OUT	01: IN point; 02: OUT point
Data 7/8	Hour	
Data 9/10	Minute	Point OUT position
Data 11/12	Second	Example: 0201234511 = 1h 23m 45s 11f
Data 13/14	Frame	

Request/Preset   SET POINT [7F4010]

BOUNCE ACKNOWLEDGE

This is the return command in response to the "BOUNCE [7F402000]" command.

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

Command   FF
Category Code   40
Sub Command   A000
Machine ID   0
Data   2 bytes

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

Request/Preset   BOUNCE [7F402000]

BOUNCE TAKE NAME PRESET RETURN

This is the return command in response to the "BOUNCE TAKE NAME PRESET [7F402001]" command.

It returns the bounced take name.

It returns from Data 7 in UTF-8 format.

Command   FF
Category Code   40
Sub Command   A001
Machine ID   0
Data   2-117 bytes
Request/Preset   BOUNCE TAKE NAME PRESET [7F402001]

TIME LINE CUT ACKNOWLEDGE

This is the return command in response to the "TIME LINE CUT [7F4120]" command.

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

Command   FF

Category Code   41

Sub Command   A0

Machine ID   0

Data   2 bytes

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

Request/Preset   TIME LINE CUT [7F4120]

TIME LINE COPY ACKNOWLEDGE

This is the return command in response to the "TIME LINE COPY [7F4121]" command.

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

Command   FF

Category Code   41

Sub Command   A1

Machine ID   0

Data   2 bytes

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

Request/Preset   TIME LINE COPY [7F4121]

TIME LINE INSERT ACKNOWLEDGE

This is the return command in response to the "TIME LINE INSERT [7F4122]" command.

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

Command   FF

Category Code   41

Sub Command   A2

Machine ID   0

Data   2 bytes

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

Request/Preset   TIME LINE INSERT [7F4122]

TIME LINE PASTE ACKNOWLEDGE

This is the return command in response to the "TIME LINE PASTE [7F4123]" command.

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

Command   FF

Category Code   41

Sub Command   A3

Machine ID   0

Data   2 bytes

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

Request/Preset   TIME LINE PASTE [7F4123]

TIME LINE UNDO ACKNOWLEDGE

This is the return command in response to the "TIME LINE UNDO [7F4160]" command.

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

Command   FF
Category Code   41
Sub Command   E0
Machine ID   0
Data   2 bytes

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

Request/Preset   TIME LINE UNDO [7F4160]

TIME LINE REDO ACKNOWLEDGE

This is the return command in response to the "TIME LINE REDO [7F4161]" command.

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

Command   FF
Category Code   41
Sub Command   E1
Machine ID   0
Data   2 bytes

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

Request/Preset   TIME LINE REDO [7F4161]

TIME LINE EDIT SAVE ACKNOWLEDGE

This is the return command in response to the "TIME LINE EDIT SAVE [7F4170]" command.

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

Command   FF
Category Code   41
Sub Command   F0
Machine ID   0
Data   2 bytes

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

Request/Preset   TIME LINE EDIT SAVE [7F4170]

TAKE ERASE ACKNOWLEDGE

This is the return command in response to the "TAKE ERASE [7F4230]" command.

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

Command   FF
Category Code   42
Sub Command   B0
Machine ID   0
Data   2 bytes

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

Request/Preset   TAKE ERASE [7F4230]

TAKE DIVIDE ACKNOWLEDGE

This is the return command in response to the "TAKE DIVIDE [7F4231]" command.

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

Command   FF
Category Code   42
Sub Command   B1
Machine ID   0
Data   2 bytes

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

Request/Preset   TAKE DIVIDE [7F4231]

TAKE COMBINE ACKNOWLEDGE

This is the return command in response to the "TAKE COMBINE [7F4232]" command.

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

Command   FF
Category Code   42
Sub Command   B2
Machine ID   0
Data   2 bytes

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

Request/Preset   TAKE COMBINE [7F4232]

TAKE UNDO ACKNOWLEDGE

This is the return command in response to the "TAKE UNDO [7F4260]" command.

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

Command   FF

Category Code   42

Sub Command   E0

Machine ID   0

Data   2 bytes

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

Request/Preset   TAKE UNDO [7F4260]

TAKE REDO ACKNOWLEDGE

This is the return command in response to the "TAKE REDO [7F4261]" command.

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

Command   FF

Category Code   42

Sub Command   E1

Machine ID   0

Data   2 bytes

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

Request/Preset   TAKE REDO [7F4261]

DATE	DOC Ver.	CONTENTS
12/10/2014	1.20	Support for HS-20/HS-2000 commands 48kHz±0.1% setting added to SAMPLING FREQUENCY PRESET (7F024003) command Added the following commands. 7F1510 : RETAKE 7F151A : REGION SKIP

5/10/2016	1.21	Added REBUILD PROJECT (7F0242) command.
		
		Correct errors
		DIRECT TRACK SEARCH PRESET (23)
		    Corrected the behavior of the mode after searching when the data length is 4 bytes.
		TIME SEARCH PRESET (2C)
		    Corrected the behavior of the mode after searching when the data length is 12 bytes.
		RETAKE ACKNOWLEDGE (FF1590)
		    Was missing from the description.
		SET POINT (7F4010)
		    The return command was wrong. FF4190 -> FF4090
		TAKE DIVID (7F4231)
		    Command parameters were missing.