



 Updated on August 4, 2014

This file contains information about projector control commands.

| Model Name | |
|------------|---|
| GT60 | GT5000/GT6000 Series |
| GT50 | GT1150/GT2150 Series |
| HT | HT1000/HT1100 Series |
| HT10 | HT410/HT510 Series |
| LT180 | LT180 |
| LT30 | LT25/LT30/LT35 Series |
| LT | LT220/LT240/LT240K/LT260/LT260K/LT245/LT265 Series |
| LT80 | LT280/LT380 Series |
| MT70 | MT860/MT1060/MT1065/MT1075 Series |
| NP60 | NP40/NP50/NP60 Series |
| NP62 | NP41/NP61/NP62 Series |
| NP1000 | NP1000/NP2000 Series |
| NP3150 | NP1150/NP2150/NP3150/NP3151W Series |
| NP4000 | NP4000/NP4001 Series |
| NP905 | NP905/NP901W/VT800 Series |
| NP600 | NP300/NP400/NP500/NP500W/NP500WS/NP600/NP600S Series |
| VT | VT770 Series |
| VT70 | VT37/VT47/VT480/VT57/VT570/VT575/VT670/VT676 Series |
| VT80 | VT48/VT480/VT580 Series |
| VT90 | VT49/VT490/VT590/VT595/VT695 Series |
| VT700 | VT700 |
| WT | WT600/WT610/WT615 Series |
| NP4100 | NP4100/NP4100W Series |
| NP3250 | NP1250/NP2250/NP3250/NP3250W Series |
| NP610 | NP310/NP410/NP410W/NP510/NP510W/NP510WS/NP610/NP610S Series |
| NP2200 | NP1200/NP2200 Series |
| NP216 | NP110/NP115/NP215/NP216 Series |
| NP64 | NP43/NP64 Series |
| M300 | M260X/M260W/M300X/M300W Series |
| M361 | M271X/M311X/M311W/M361X Series |
| M402 | M282X/M322X/M322W/M402X/M332XS/M352WS |
| P420 | P350X/P350W/P420X Series |
| P501 | P401W/P451X/P451W/P501X Series |
| PE401 | PE401H |
| UM330 | UM330X/UM330W Series |
| U300 | U300X/U310W Series |
| V300 | V260/V260X/V300X/V300W Series |
| VE281 | VE281/VE281X/VE282B/VE282XB |
| PA600 | PA600X/PA550W/PA500U/PA500X Series |
| PX750U | PX700W/PX750U/PX800X Series |
| PH1000U | PH1000U Series |
| PH1400U | PH1400U Series |

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1. Projector Control

NEC projectors make use of control commands that control the functions of the projector via connection with a personal computer or another device.

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2. Connection Method

The following 3 kinds of connection methods are available for sending and receiving control commands.

- 1. Serial connection using the serial port on the projector
A serial cable is required.
- 2. USB connection using the USB port on the projector
A USB cable is required.
- 3. LAN connection
 - 3-1. LAN connection using a wired LAN card
A wired LAN card and LAN cable are required.
 - 3-2. LAN connection using a wireless LAN card
A wireless LAN card is required.
 - 3-3. LAN connection using the LAN port on the projector
A LAN cable is required.
 - 3-4. LAN connection using a wireless LAN unit
A wireless LAN unit is required

Status of supported connection

Note: The Dukane models described in this document are manufactured by NEC and use the same firmware, software programs, control code, and accessory parts. The equivalent Dukane to NEC models are shown in the following table.

| DUKANE | NEC |
|---------|---------------------------------------|
| 6752WU | PA521U 1920x1200 (WUXGA) 5,200 lumens |
| 6752WUA | PA522U 1920x1200 (WUXGA) 5,200 lumens |
| 6757W | PA571W 1280x800 (WXGA) 5,700 lumens |
| 6757WA | PA572W 1280x800 (WXGA) 5,700 lumens |
| 6762 | PA621X 1024x768 (XGA) 6,200 lumens |
| 6762A | PA622X 1024x768 (XGA) 6,200 lumens |
| 6762WU | PA621U 1920x1200 (WUXGA) 6,200 lumens |
| 6762WUA | PA622U 1920x1200 (WUXGA) 6,200 lumens |
| 6767W | PA671W 1280x800 (WXGA) 6,700 lumens |
| 6767WA | PA672W 1280x800 (WXGA) 6,700 lumens |
| 6772 | PA721X 1024x768 (XGA) 7,200 lumens |
| 6772A | PA722X 1024x768 (XGA) 7,200 lumens |

| | (1) | (2) | (3-1) | (3-2) | (3-3) | (3-4) |
|--|-------------|----------|----------------|-------------------|----------------|-------------------|
| | Serial Port | USB Port | Wired LAN Card | Wireless LAN Card | Wired LAN Port | Wireless LAN Port |
| GT5000/GT6000 | Yes | Yes | Yes | Yes | Yes | No |
| GT1150/GT2150 | Yes | No | Yes | Yes | Yes | No |
| HT410/HT510 | Yes | No | No | No | No | No |
| HT1000/HT1100 | Yes | No | No | No | No | No |
| LT180 | Yes | No | No | No | No | No |
| LT25/LT30/LT35 | Yes | No | No | No | No | No |
| LT220/LT240/LT260 | Yes | No | Yes | Yes | No | No |
| LT240K/LT260K | Yes | Yes | Yes | Yes | No | No |
| LT245/LT265/LT280/LT380 | Yes | No | No | Yes | Yes | No |
| MT860/MT1060/MT1065/MT1075 | Yes | Yes | Yes | Yes | No | No |
| NP40/NP50/NP60 | Yes | No | No | No | No | No |
| NP41/NP61/NP62 | Yes | No | No | No | No | No |
| NP43/NP64 | Yes | No | No | No | No | No |
| NP1000/NP2000 | Yes | No | No | Yes | Yes | No |
| NP1150/NP2150/NP3150/NP3151W | Yes | No | No | No | Yes | Yes |
| NP4000/NP4001 | Yes | No | No | No | Yes | No |
| NP905/NP901W | Yes | No | No | No | Yes | Yes |
| NP300/NP400/NP500/NP500W/NP500WS/NP600/NP600S | Yes | No | No | No | Yes | No |
| VT770 | Yes | No | No | No | No | No |
| VT37/V T47/V T470/V T57/V T570/V T575V/T/670/V T676 | Yes | No | No | No | No | No |
| VT48/V T480/V T580 | Yes | No | No | No | No | No |
| VT49/V T490/V T590/V T595/V T695/V T700 | Yes | No | No | No | No | No |
| VT700 | Yes | No | No | No | No | No |
| VT800 | Yes | No | No | No | Yes | No |
| WT600WT/610/WT615 | Yes | Yes | Yes | Yes | No | No |
| NP4000/NP4001 | Yes | No | No | No | Yes | No |
| NP1250/NP2250/NP3250/NP3250W | Yes | No | No | No | Yes | Yes |
| NP310/NP410/NP410W/NP510/NP510W/NP510WS/NP610/NP610S | Yes | No | No | No | Yes | No |
| NP1200/NP2200 | Yes | No | No | No | Yes | No |
| NP4100/NP4100W | Yes | No | No | No | Yes | No |
| NP110/NP115/NP215/NP216 | Yes | No | No | No | Yes | No |
| M260X/M260W/M300X/M300W | Yes | No | No | No | Yes | Yes |
| M271X/M311X/M311W/M361X | Yes | No | No | No | Yes | Yes |
| M282X/M322X/M322W/M402X?M332XS?M352WS | Yes | No | No | No | Yes | Yes |
| P350X/P350W/P420X | Yes | No | No | No | Yes | Yes |
| P401W/P451X/P451W/P501X | Yes | No | No | No | Yes | Yes |
| PE401H | Yes | No | No | No | No | No |
| UM330X/UM330W | Yes | No | No | No | Yes | Yes |
| U300X/U310W | Yes | No | No | No | Yes | No |
| V260X/V300X/V300W | Yes | No | No | No | Yes | No |
| VE281/V E281X/V E282B/V E282XB | Yes | No | No | No | No | No |
| PA500X/PA550W/PA500U/PA600X | Yes | No | No | No | Yes | Yes |
| PX700W/PX750U/PX800X | Yes | No | No | No | Yes | Yes |
| PH1000U | Yes | No | No | No | Yes | Yes |
| PH1400U | Yes | No | No | No | Yes | Yes |
| Yes: Supported | | | | | | |
| No: Not Supported | | | | | | |

- * A USB cable is supplied as standard with the MT860/1060/1065/1075.
- * The GT5000/6000 does not come with a USB cable.
- * Note that a connection method using the supplied USB cable is not supported for the LT220/240/260.
- * The serial cable, LAN card and LAN cable are separately sold.
- * The WT610 replaced the WT610 and uses the same command set.

(CAUTION)

Before making connections, be sure to invalidate the standby mode of the projector and set the "idle mode". The projector cannot use the control commands in the standby mode.

Setting method: Under projector [Projector Options] --> [Setup], enter a check for [Idle Mode] on Page 4.

(CAUTION) (!1)

Before making connections, be sure to select [NORMAL] for [STANDBY MODE].

Setting method : From the projector's menu, select [SETUP] --> [OPTIONS(2)] -->[STANDBY MODE]--> [NORMAL].

(CAUTION) (!2)

The projector accept the "POWER ON" command during [POWER-SAVING] mode for[STANDBY MODE].

Supplement:

(!1) Only the NP600/NP610/NP3200 series is compatible.

(!2) Only the M300 series is compatible.

[P350X/P350W/P420X Series]

STANDBY MODE: "POWER-SAVING"

| Control Command | Serial port | Wired LAN port | Wireless LAN unit |
|-----------------|-------------|----------------|-------------------|
| POWER ON | Yes | No | No |

Yes: Supported

No: Not supported

[P401W/P451W/P451W/P501X Series]

[PA600X/PA550W/PA500U/PA500X Series]

[PX700W/PX750U/PX800X Series]

[PH1000U Series]

STANDBY MODE: "POWER-SAVING"

| Control Command | Serial port | Wired LAN port | Wireless LAN unit |
|-----------------|-------------|----------------|-------------------|
| POWER ON | Yes | No | No |

STANDBY MODE: "NETWORK STANDBY"

| Control Command | Serial port | Wired LAN port | Wireless LAN unit |
|-----------------|-------------|----------------|-------------------|
| POWER ON | Yes | Yes | Yes |

Yes: Supported

No: Not supported

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3. Interface Conditions

Serial connection

The communications method conforms to the RS-232C standard.

- * A USB cable is supplied as standard with the MT860/1060/1065/1075.
- * The GT5000/6000 does not come with a USB cable.
- * Note that a connection method using the supplied USB cable is not supported for the LT220/240/260.
- * The serial cable, LAN card and LAN cable are separately sold.

(CAUTION)

Before making connections, set the standby mode of the projector to "NORMAL" or "Idle mode".
The projector cannot use the control commands in the power-saving condition, but the following model can use some control commands.

| | |
|----------------------|--|
| Baud rate: | 38400 bps (NP600 series, NP610 Series, VT60/VT70/VT80/VT90 series, VT700: 19200bps) |
| Data length: | 8 bits |
| Parity bit: | No parity |
| Stop bits: | 1 bit |
| Communications mode: | Full duplex |

The control connector is described below.

[HT/LT/NP40/VT70/VT80/VT90/WT]

The PC CONTROL connector is a mini DIN 8-pin connector.

- 1 To TxD of PC
- 2
- 3
- 4 To GND of PC
- 5
- 6
- 7 To RxD of PC
- 8

* 2, 3, 5, 6, and 8 are used inside the projector.

[GT/LT80/MT/NP1000/VT (except VT70/VT80/VT90)/NP3150/NP905/NP600/NP4000/NP3250/NP610/NP2200/NP216/M300/P420/U300/V300]

The PC CONTROL connector is a D-SUB 9-pin connector.

- 1
- 2 To TxD of PC
- 3 To RxD of PC
- 4
- 5 To GND of PC
- 6
- 7 To CTS of PC
- 8 To RTS of PC
- 9

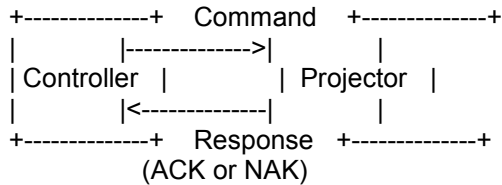
=====

4. Communication Frame

On the LT/MT/SX/GT series projectors communication is done in a frame composed of header, data, and checksum.

The frame sent from the controller to the projector is referred to as a command, and the one sent from the projector to the command as a reply is referred to as a response.

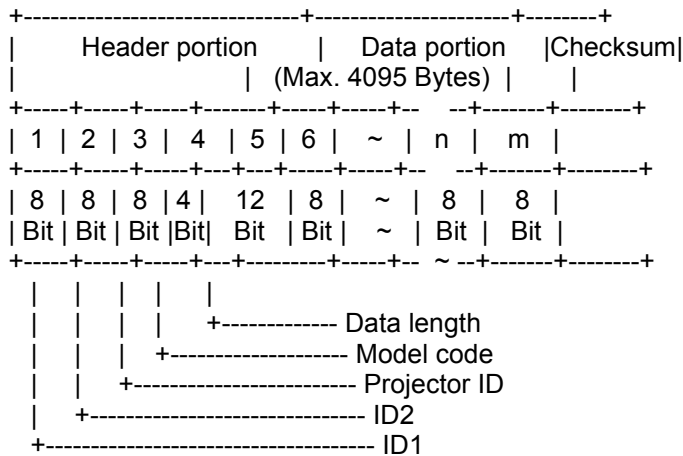
The response has two types; Acknowledge (hereafter referred to as ACK) that recognizes a command and Negative Acknowledge (hereafter referred to as NAK) that fails to recognize a command.



4-1. Frame Format

One frame comprises a header, a data portion, and a checksum.

Frame Format:



* ID1: (8 Bit)

This is an identification data assigned to each command.

Command :

This sets an identification data assigned to each command to send it.
(See each command description.)

Response :

This returns the 6th bit of received ID1 as HIGH.
For ACK it sends the 8th bit back as LOW (recognized); for NAK it sends the 8th bit back as HIGH (not recognized).

* ID2: (8 Bit)

This is an identification data assigned to each command.

Command :

This sets an identification data assigned to each command to send it.

(See each command description.)

Response :

This returns the value of received ID2 as is.

* Projector ID : (8 Bit)

This is a projector ID for the projector that sends and receives frames.

Command :

This specifies a projector ID for the projector that sends and receives commands. (individual notification)

Entering 00H or FFH becomes a common command for all the projectors. (broadcast notification)

This is convenient for controlling multiple projectors at the same time.

* When the controller is connected with the projector on a one-to-one basis Broadcast notification is recommended.

* When the controller is connected with multiple projectors
To control a certain projector, use "individual notification".
For all others "broadcast notification" is recommended.

Response :

This returns the projector ID for a projector received regardless of individual notification or broadcast notification.

CAUTION :

To notify individually, specifying a model code from the following model codes is required.

* Model code: (4 Bit)

This is a model code for the projector that sends and receives frames.

Command :

This specifies a model code for the projector that sends commands. (individual notification)

Entering 0000B or 1111B becomes a common command for all the projectors. (broadcast notification)

This is convenient for controlling multiple projectors at the same time.

* When the controller is connected with the projector on a one-to-one basis Broadcast notification is recommended.

* When the controller is connected with multiple projectors
To control a certain projector, use "individual notification".
For all others "broadcast notification" is recommended.

Response :

This returns the model code for a projector received regardless of individual notification or broadcast notification.

Table of Model codes

0000B : (broadcast notification)
0001B : MT Series
0010B : LT Series
0011B : SX Series
0101B : GT Series

1111B : (broadcast notification)

CAUTION :

- * When the model code is set to "broadcast notification", the command becomes broadcast notification command, regardless of values of the projector ID.
- * Model code is specified using upper ranking 4 bits of data length. The lower ranking 4 bits becomes the upper bits of data length.

- * Data length : (12 Bit)
This is data length of data portion (unit:: byte).

Command :
This sets data length of data added to a command to send it.
(See each command description.)

Response :
This sets data length of data added to a response to send it.
(See each command description.)

CAUTION :
Data length is specified using total of 12 bits (0 - 4095) of 4 bits of the 4th byte and 8 bits of the 5th byte.* The upper ranking 4 bits of the 4th byte is model code.

- * Data portion
This becomes data of data length specified in the data length portion.

Command :
This sets data added to a command to send it.
(See each command description.)

Response :
This sets data added to a response to send it.
(See each command description.)

- * Checksum
This is lower ranking 8 bits of the sum total of the header and data portions of one transmit and receive data frame.

4-2. Data portion of response

For ACK

This returns ACK without adding data portion to the command that does not request data.
This returns ACK with adding data to the data portion for the command that requests data.

For NAK

This adds a cause of not accepting the command to data portion to return it.

(Example) Power On

Command:

02H 00H FFH F0H 00H CKS

NAK:

A2H 00H 01H 20H 02H DATA01 DATA02 CKS

Data Contents

DATA01 Error types

- 00H : Not supported
- 01H : Parameter error
- 02H : Operation mode error
- 03H : Gain-related error
- 04H : Logo transfer error

DATA02 Error description

- * When not supported
 - 00H : Unknown command
 - 01H : The current model does not support this function.
 - 02H : This model is not compatible with the Switcher.
 - 03H : This model is not compatible with the PC Viewer.
- * When a parameter error occurs
 - 00H : Unvalid values specified.
 - 01H : Specified terminal is unavailable or cannot be selected
 - 02H : Selected language is not available.
- * When an operation mode error occurs
 - 00H : Available memory reservation error
 - 01H : External control working
 - 02H : Operating memory
 - 03H : Standby
 - 04H : On Forced on-screen mute mode
 - 05H : Link mode working
 - 06H : Displaying a signal other than PC Viewer
 - 07H : -No signal-
 - 08H : Displaying a test pattern or PC Card Files screen.
 - 09H : No PC card is inserted-
 - 0AH : Memory operation failed
 - 0BH : Switcher mode working
 - 0CH : Displaying the Entry List
- * When a gain adjustment error occurs
 - 00H : Group number / sub category number is not correct.
 - 01H : Selected gain is not available.
 - 02H : Adjustment failed
- * When a logo transfer error occurs
 - 00H : Start is not requested
 - 01H : Cannot process due to storing
 - 02H : Exceeds the total number of blocks required
at the time of start
 - 03H : The block number of transferred data is not consecutive.

USB connection

This conforms to the USB1.1 standard.

Transfer speed: All speeds (supported)
Endpoint: Control transfer Endpoint 0
Device class: HID class (Ver1.1)

USB1.1 Standard: Universal Serial Bus Specification Revision 1.1

HID : Human Interface Device

Connector Specifications

- 1 VBUS (Power supply)
- 2 D- (- Signal)
- 3 D+ (+ Signal)
- 4 GND (Ground)

* Depending on the USB host controller in the personal computer, the USB connection may fail to operate. When using a USB hub, please use a self-powered type, not a bus-powered type. When using a USB hub, connection to the first stage of the USB hub is recommended.

LAN connection

[Wired LAN port]

LAN interface

Communication speed: Auto setting (10/100Mbps)
 Certified standard: IEEE802.3 (10BASE-T)
 IEEE802.3u (100BASE-TX, Auto-Negotiation)

A LAN connector (8 male RJ-45 connector)

- 1 TD+ Transmit data (+)
- 2 TD- Transmit data (-)
- 3 RD+ Receive data (+)
- 4 Not used
- 5 Not used
- 6 RD- Receive data (-)
- 7 Not used
- 8 Not used

[Wired/wireless LAN card]

The LAN connections will differ depending on the commercial LAN card that is used.

- For information on supported LAN cards, visit:

Global: <http://www.nec-pj.com/>

[Port Number]

The TCP port number used is "7142".

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4. List of Commands

* Example for command

| Command name | Example |
|---------------------------|--------------------------------|
| 006. RUNNING SENSE | 00H 81H 00H 00H 00H 81H |
| 007. COMMON DATA REQUEST | 00H C0H 00H 00H 00H C0H |
| 009. ERROR STATUS REQUEST | 00H 88H 00H 00H 00H 88H |
| 015. POWER ON | 02H 00H 00H 00H 00H 02H |
| 016. POWER OFF | 02H 01H 00H 00H 00H 03H |
| 018. INPUT SW CHANGE | 02H 03H 00H 00H 02H <DATA> CKS |
| 020. PICTURE MUTE ON | 02H 10H 00H 00H 00H 12H |
| 021. PICTURE MUTE OFF | 02H 11H 00H 00H 00H 13H |

| | |
|---|-------------------------------------|
| 022. SOUND MUTE ON | 02H 12H 00H 00H 00H 14H |
| 023. SOUND MUTE OFF | 02H 13H 00H 00H 00H 15H |
| 024. ONSCREEN MUTE ON | 02H 14H 00H 00H 00H 16H |
| 025. ONSCREEN MUTE OFF | 02H 15H 00H 00H 00H 17H |
| 030. GAIN ADJUST | 03H 10H 00H 00H 05H <DATA> CKS |
| 030-2. VOLUME ADJUST | 03H 10H 00H 00H 05H 05H <DATA> CKS |
| 030-12. IMAGE MODE ADJUST | 03H 10H 00H 00H 05H <DATA> CKS |
| 037. INFORMATION REQUEST | 03H 8AH 00H 00H 00H 8DH |
| 037-1. LAMP INFORMATION REQUEST | 03H 8CH 00H 00H 00H 8FH |
| 037-2. LAMP INFORMATION REQUEST 2 | 03H 94H 00H 00H 00H 97H |
| 037-4. LAMP INFORMATION REQUEST 3 | 03H 96H 00H 00H 02H <DATA> CKS |
| 037-6. CARBON SAVINGS INFORMATION REQUEST | 03H 9AH 00H 00H 01H <DATA> CKS |
| 037-7. LAMP INFORMATION REQUEST 4 | 03H 9BH 00H 00H 03H <DATA> CKS |
| 038. LAMP MODE REQUEST | 03H B0H 00H 00H 01H 07H BBH |
| 039. LAMP MODE SET | 03H B1H 00H 00H 02H 07H 00H BDH |
| 046. WXGA MODE SETTING REQUEST | 03H B0H 00H 00H 01H DATA1 CKS |
| 049. WXGA MODE SETTING SET | 03H B1H 00H 00H 02H DATA1 DATA2 CKS |
| 050. REMOTE KEY CODE | 02H 0FH 00H 00H 02H 00H 00H 13H |
| 053. LENS CONTROL | 02H 18H 00H 00H 02H <DATA> CKS |
| 053-1. LENS CONTROL REQUEST | 02H 1CH 00H 00H 02H <DATA> CKS |
| 053-2. LENS CONTROL 2 | 02H 1DH 00H 00H 04H <DATA> CKS |
| 053-3. LENS MEMORY CUSTOM SET | 02H 1EH 00H 00H 01H <DATA> CKS |
| 053-4. LENS MEMORY REFERENCE SET | 02H 1FH 00H 00H 01H <DATA> CKS |
| 053-5. LENS MEMORY CONTROL REQUEST | 02H 20H 00H 00H 01H <DATA> CKS |
| 053-6. LENS MEMORY CONTROL | 02H 21H 00H 00H 02H <DATA> CKS |
| 053-7. LENS INFORMATION REQUEST | 02H 22H 00H 00H 01H <DATA> CKS |
| 060. GAIN PARAMETER REQUEST 2 | 03H 04H 00H 00H 03H <DATA> CKS |
| 077. MUTE CONTROL | 02H 1AH 00H 00H 02H <DATA> CKS |
| 078-1. SETTING REQUEST | 00H 85H 00H 00H 01H 00H CKS |
| 078-2. RUNNING STATUS REQUEST | 00H 85H 00H 00H 01H 01H CKS |
| 078-3. INPUT STATUS REQUEST | 00H 85H 00H 00H 01H 02H CKS |
| 078-4. MUTE STATUS REQUEST | 00H 85H 00H 00H 01H 03H CKS |
| 078-5. MODEL NAME REQUEST | 00H 85H 00H 00H 01H 04H CKS |
| 078-6. MIRROR COVER STATUS REQUEST | 00H 85H 00H 00H 01H 05H CKS |
| 079. FREEZE CONROL | 01H 98H 00H 00H 01H DATA01 CKS |
| 097-198. PIP/SIDE BY SIDE REQUEST | 03H B0H 00H 00H 02H C5H DATA CKS |
| 098-196. WXGA MODE SETTING SET | 03H B1H 00H 00H 02H DATA1 DATA2 CKS |
| 098-198. PIP/SIDE BY SIDE SET | 03H B1H 00H 00H 03H C5H <DATA> CKS |
| 110. AUTO FUNCTIONS EXECUTE | 03H B6H 00H 00H 01H <DATA> CKS |
| 111. AUTO ADJUST EXECUTE2 | 03H BAH 00H 00H 01H <DATA> CKS |
| 305-1. BASE MODEL TYPE REQUEST | 00H BFH 00H 00H 01H <DATA> CKS |
| 305-3. PROJECTOR INFORMATION REQUEST | 00H BFH 00H 00H 01H <DATA> CKS |

* Availability by Model

Model No.

01 : LT240/LT260
02 : MT1060/MT1065/MT1075
03 : HT1000
04 : LT220
05 : MT860
06 : WT600/WT610/WT615
07 : GT5000
08 : LT240K/LT260K
09 : GT6000
10 : HT1100
11 : VT770
12: HT410/HT510 (HT10 Series)
13 : LT245/LT265
14 : LT280/LT380

15 : LT180
16 : VT37/VT47/VT470/VT57/VT570/VT575/VT670/VT676 (VT70 series)
17 : VT48/VT480/VT580 (VT80 Series)
18 : NP1000/NP2000 (NP1000 Series)
19 : NP1150/NP2150/NP3150/NP3151W (3150 Series)
20 : LT25/LT30/LT35 (LT30 Series)
21 : NP40/NP50/NP60 (NP60 Series)
22 : VT49/VT490/VT590/VT595/VT695 (VT90 Series)
23 : VT700
24 : NP4000/NP4001 (NP4000 Series)
25 : NP905/NP901W/VT800 (NP900 Series)
26 : NP41/NP61/NP62 (NP62 Series)
27 : NP300/NP400/NP500/NP500W/NP500WS/NP600/NP600S (NP600 Series)
28 : GT1150/GT2150 (GT50 Series)
29 : NP4100/NP4100W (NP4100 Series)
30 : NP1250/NP2250/NP3250/NP3250W (NP3250 Series)
31 : NP310/NP410W/NP510/NP510W/NP510WS/NP610/NP610S (NP610 Series)
32 : NP1200/NP2200 (NP2200 Series)
33 : NP110/NP115/NP215/NP216 (NP216 Series)
34 : NP43/NP64 (NP64 Series)
35 : M260X/M260W/M300X/M300W (M300 Series)
36 : P350X/P350X/P420X (P420 Series)
37 : U300X/U310W (U300 Series)
38 : V260/V260X/V300X (V300 Series)
39 : PA600X/PA550W/PA500U/PA500X (PA600 Series)
40 : PX700W/PX750U/PX800X (PX750 Series)
41 : PH1000U (PH1000 Series)
42 : VE281/VE281X/VE282B/VE282XB (VE281 Series)
43 : P401W/P451X/P451W/P501X (P501 Series)
44 : UM330X/UM330W (UM330 Series)
45 : M271X/M311X/M311W (M311 Series)
46 : PE401H (P401 Series)
47 : P401W/P451X/P451W/P501X (P501 Series)
48 : M282X/M322X/M322W/M402X/M332XS/M352WS (M402 Series)

| Availability by Model (LEGACY MODELS) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|
| Command Name | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | |
| 006. RUNNING SENSE | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 007. COMMON DATA REQUEST | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 009. ERROR STATUS REQUEST | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 015. POWER ON | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| 016. POWER OFF | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| 018. INPUT SW CHANGE | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| 020. PICTURE MUTE ON | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| 021. PICTURE MUTE OFF | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| 022. SOUND MUTE ON | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| 023. SOUND MUTE OFF | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| 024. ONSCREEN MUTE ON | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| 025. ONSCREEN MUTE OFF | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| 030. GAIN ADJUST | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| 030-2. VOLUME ADJUST | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| Volume | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| Bass | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | |
| Treble | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Balance | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 030-12. IMAGE MODE ADJUST | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| Aspect Ratio Input Signal | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 037. INFORMATION REQUEST | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 037-1. LAMP INFORMATION REQUEST | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 037-2. LAMP INFORMATION REQUEST 2 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 037-4. LAMP INFORMATION REQUEST 3 | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! | ! |
| 037-6. CARBON SAVINGS INFORMATION REQUEST | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 037-7. LAMP INFORMATION REQUEST 4 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 038. LAMP MODE REQUEST | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 039. LAMP MODE SET | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 046. WXGA MODE SETTING REQUEST | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 049. WXGA MODE SETTING SET | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 050. REMOTE KEY CODE | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 053. LENS CONTROL | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 053-1. LENS CONTROL REQUEST | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 053-2. LENS CONTROL 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 053-3. LENS MEMORY CUSTOM SET | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 053-4. LENS MEMORY REFERENCE SET | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 053-5. LENS MEMORY CONTROL REQUEST | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 053-6. LENS MEMORY CONTROL | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 053-7. LENS INFORMATION REQUEST | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 060. GAIN PARAMETER REQUEST 2 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 077. MUTE CONTROL | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 078-1. SETTING REQUEST | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 078-2. RUNNING STATUS REQUEST | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 078-3. INPUT STATUS REQUEST | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 078-4. MUTE STATUS REQUEST | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 078-5. MODEL NAME REQUEST | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 078-6. MIRROR COVER STATUS REQUEST | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 079. FREEZE CONTROL | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 110. AUTO FUNCTIONS EXECUTE | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 111. AUTO ADJUST EXECUTE2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 097-198. PIP/SIDE BY SIDE REQUEST | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 098-196. WXGA MODE SETTING SET | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 098-198. PIP/SIDE BY SIDE SET | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 305.1 BASE MODEL TYPE REQUEST | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 305.3 PROJECTOR INFORMATION REQUEST | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

- (!)
- LT30 : firmware version 1.03 or later
 - NP4000: firmware version 1.04 or later
 - NP4001: firmware version 1.01 or later
 - NP62 : firmware version 1.02 or later

5. Command Descriptions

Precautions with Inscriptions:

(*1) Projector ID

It is the value when forwarding a factory.
This reflects the "Projector ID" that has been set to the projector.

(*2) Model code: "xxH" inscription

This will differ depending on the projector.

- In case of MT/NP1000 series 10H
- In case of MT/NP3150 series 10H
- In case of MT/NP3250 series 10H
- In case of PA600 series 10H
- In case of PX750 series 10H

| | |
|--------------------------------|-----|
| In case of PH1000 series | 10H |
| In case of LT/LT80 series | 20H |
| In case of NP61, NP62 series | 20H |
| In case of NP216 series | 20H |
| In case of M402 series | 20H |
| In case of V300 series | 20H |
| In case of VT series | 40H |
| In case of NP600 series | 40H |
| In case of NP610 series | 40H |
| In case of NP2200 series | 40H |
| In case of M300 series | 40H |
| In case of M311 series | 40H |
| In case of P420 series | 40H |
| In case of P501 series | 40H |
| In case of GT series | 50H |
| In case of HT series | 60H |
| In case of WT series | 70H |
| In case of UM330 series | 70H |
| In case of PE401 series | 80H |
| In case of HT10 series | D0H |
| In case of LT180 series | D0H |
| In case of LT30 series | D0H |
| In case of NP60 series | D0H |
| In case of NP4000, 4100 series | 80H |
| In case of U300 series | 80H |
| In case of NP905/NP901W/VT800 | 90H |

(*3) Checksum: "CKS" inscription

This is the value of the lower 8 bits of the results calculated in byte units from all of the data up to the immediately preceding data.

Example:

20H 81H 01H 60H 01H 00H 03H
+ + + + + = CKS

(*4) Response error number

This is the value of the error number at the time of an error.

See "NAK" of "6-2. Data portion of response".

(*5) Term "RGB" and "COMPUTER"

On the HT1100, VT770, LT245/ LT265/ LT280/ LT380, NP1000/NP2000, NP1150/NP2150/NP3150/NP3151W, NP1250/NP2250/NP3250/NP3250W, NP1200/NP2200, NP4000/NP4001, NP4100/NP4100W, NP905/NP901W/VT800, LT25/LT30/LT35, VT48/VT480/VT580, VT49/VT490/VT590/VT595/VT695/VT700, NP300/NP400/NP500/NP500W/NP500WS/NP600/NP600S, NP310/NP410/MP410W/NP510/NP510W/NP610WS/NP610/NP610S, NP40/NP50/NP60/NP41/NP61/NP62/NP43/NP64, P350X/350W/420X, P401W/P451X/P451W/P501X, PA500X/500U/550W/600X, PX700W/750U/800X and PH1000U the term "RGB connector" has been changed to "COMPUTER".

(*6) Term "DVI" and "COMPUTER"

On the LT380, NP1000/NP2000, NP1150/NP2150/NP3150/NP3151W, NP1250/NP2250/NP3250/NP3250W, NP1200/NP2200, NP4000/NP4001, NP4100/NP4100W, NP300/NP400/NP500/NP500W/NP500WS/NP600/NP600S, NP310/NP410/MP410W/NP510/NP510W/NP610WS/NP610/NP610S and VT595/VT695/VT700, the term "DVI connector" has been changed to "COMPUTER".

006. RUNNING SENSE

Function:

This command acquires the operation mode of the projector.

Command:

00H 81H 00H 00H 00H 81H

Response: At the time of a success

20H 81H 01H xxH 01H DATA01 CKS
(*1) (*2) (*3)

Data Portion Contents

DATA01 Status of operation

 Bit 7: Power On/Off processing
 0 = No execution (Normal condition)
 1 = During execution

 Bit 6: Selecting signal processing
 0 = No execution (Normal condition)
 1 = During execution

 Bit 5: Cooling processing
 0 = No execution (Normal condition)
 1 = During execution

 Bit 4: External control mode
 0 = OFF
 1 = ON

 Bit 3: No Power-Off period
 0 = Power-Off Possible (Normal condition)
 1 = Power-Off Impossible

 Bit 2: Reserved

 Bit 1: Projector status
 0 = Idling
 1 = Power On

 Bit 0: Reserved

Response: At the time of a failure

A0H 81H 01H xxH 02H DATA1H DATA02 CKS
(*1) (*2) (*4) (*3)

007. COMMON DATA REQUEST

Function:

This command acquires all of the detailed conditions of the projector.

Command:

00H C0H 00H 00H 00H C0H

Response: At the time of a success

20H C0H 01H xxH 80H DATA01 .. DATA128 CKS
(*1) (*2) (*3)

Data Portion Contents

DATA01 Projector type
 See DATA70..71
 08H : NP4000 Projector
 11H : NP62 Projector

DATA02 Projector ID

| | |
|----------|-----------|
| DATA02 | |
| 1 .. 64 | NP4000 |
| 1 .. 254 | NP62/NP64 |
| 1 .. 254 | NP216 |

DATA03 Reserved

DATA04 Projector status

00H: Idling
01H: Power On

DATA05 Cooling processing

00H: No execution (Normal condition)
01H: During execution

DATA06 Indication signal number (Entry list number - 1)

0 .. 199

DATA07 Type 1 of input terminal to be selected (!)

01H : 1
02H : 2
03H : 3
04H : 4
05H : 5

DATA08 Type 2 of input terminal to be selected (!1) (!) (!!)

01H : RGB (*5)
02H : VIDEO
03H : S-VIDEO
04H : COMPONENT
05H : Reserved
06H : DIGITAL (*6)
07H : VIEWER
08H : SLOT1
09H : SLOT2

DATA09 Indication signal type

* Valid only when Type 2 of input terminal is 02H or 03H

x0H : NTSC3.58
x1H : NTSC4.43
x2H : PAL
x3H : PAL60
x4H : SECAM
x5H : B/W60
x6H : B/W50
x7H : PALNM
x8H : NTSC3.58 LBX
x9H : NTSC3.58 SQZ
xDH : NTSC
xEH : PAL-M
xFH : PAL-N
* x: undefined

DATA10 .. 12 Reserved (undefined)

DATA13 .. 20 Horizontal frequency of the indication signal(string)

("000.00" kHz + NULL(0)+ NULL(0))

DATA21 .. 28 Vertical frequency of the indication signal(string)

("000.00" Hz + NULL(0)+ NULL(0))

DATA29 Picture mute

00H : OFF

01H : ON

DATA30 Sound mute

00H : OFF

01H : ON

DATA31 .. Reserved

DATA32 Freeze Status (!2)

00H : OFF

01H : ON

FFH : Not Supported

DATA33 Test pattern display 1

00H : No display (Normal condition)

00H Other : Displaying (Pattern ID)

| Pattern ID | Pattern Name | MT | LT | LT180 | LT80 | HT | GT | WT | VT | NP1000 | NP3150 | NP905 | NP4000 | NP4100 | NP62 | NP64 | NP3250 | NP216 | P420 | V300 | VE281 | P501 | M402 | |
|------------|----------------|----|----|-------|------|----|----|----|----|--------|--------|-------|--------|--------|------|------|--------|-------|------|------|-------|------|------|---|
| 02H | Cross Hatch | - | * | * | - | * | - | - | - | - | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03H | Gray Bars | * | * | * | * | * | * | * | * | * | * | * | - | - | - | - | * | - | * | - | - | * | - | |
| 04H | Raster(0%) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| 05H | Raster(25%) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| 06H | Raster(50%) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| 07H | Raster(100%) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| 08H | Focus | * | * | * | * | * | * | * | * | * | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 09H | Raster Blue | * | - | - | * | - | * | - | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| 0AH | Gray Raster 30 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| 17H | Gray Raster 10 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| 18H | RAMP WBRG | - | * | * | - | * | - | * | - | - | - | - | - | - | * | * | - | * | - | * | * | - | * | |
| 19H | Blue Raster 60 | - | * | * | - | * | - | * | - | - | - | - | * | * | * | * | - | * | * | * | * | * | * | |
| 1DH | Cross Hatch 3 | * | *1 | * | * | * | - | * | * | * | - | - | - | - | - | - | - | - | - | - | - | - | - | |

* : Supported
 - : Not supported
 *1: Only LT240K/260K

| Pattern ID | Pattern Name | PA600 | PX750 | PH1000 |
|------------|--------------|-------|-------|--------|
| 01H | Cross Hatch | * | * | * |
| 02H | Gray Bars | * | * | * |
| 03H | Raster(0%) | * | * | * |
| 04H | Raster(25%) | * | * | * |
| 05H | Raster(50%) | * | * | * |
| 06H | Raster(100%) | * | * | * |
| 07H | Color Bar | * | * | * |

DATA34 Test pattern display 2

FFH: No display (Normal condition)

FFH Other: Displaying

Bit 2: BLUE pattern

0 = OFF

1 = ON

Bit 1: GREEN pattern

0 = OFF

1 = ON

Bit 0: RED pattern

0 = OFF

1 = ON

DATA35 .. 50 Reserved

DATA51 .. 65 User registration name (14 characters + NULL)

DATA66 Forced On-screen mute

00H : OFF
01H : ON

DATA67 On-screen display
00H : No display
01H : Displaying

DATA68 Selecting signal processing
00H : No execution (Normal condition)
01H : During execution

DATA69 Status of operation
00H : Idling
04H : Power On
05H : Cooling
06H : Idling (Error occurrence)
Other than above: (nondisclosure)
Internal use of code during a state transition period

DATA70 .. 71 Projector type

| Data01 | Data70 | Data71 | |
|--------|--------|--------|----------------------|
| 01H | 00H | 03H | MT1060/MT1065 |
| 01H | 01H | 03H | MT860 |
| 01H | 02H | 03H | MT1075 |
| 01H | 00H | 06H | NP1000/NP2000 |
| 02H | 00H | 03H | LT240/LT260 |
| 02H | 01H | 03H | LT220 |
| 02H | 02H | 03H | LT240K/LT260K |
| 02H | 00H | 05H | LT245/LT265 |
| 02H | 00H | 06H | LT380 |
| 02H | 01H | 06H | LT280 |
| 03H | 00H | 04H | VT770 |
| 03H | 00H | 06H | VT80 Series |
| 03H | 00H | 07H | VT90 Series |
| 04H | 00H | 01H | GT1150 |
| 04H | 01H | 01H | GT2150 |
| 04H | 00H | 03H | GT5000 |
| 04H | 01H | 03H | GT6000 |
| 05H | 00H | 03H | HT1000 |
| 05H | 00H | 04H | HT1100 |
| 06H | 00H | 03H | WT600 |
| 06H | 00H | 05H | WT610/WT615 |
| 08H | 00H | 07H | NP4000/NP4001 |
| 08H | 00H | 10H | NP4100 |
| 08H | 01H | 10H | NP4100W |
| 10H | 00H | 08H | VT700 |
| 10H | 00H | 09H | NP600 |
| 10H | 01H | 09H | NP500 |
| 10H | 02H | 09H | NP500 W |
| 10H | 03H | 09H | NP400 |
| 10H | 04H | 09H | NP300 |
| 10H | 00H | 10H | NP610 |
| 10H | 01H | 10H | NP510 |
| 10H | 02H | 10H | NP510W |
| 10H | 03H | 10H | NP410 |
| 10H | 05H | 10H | NP310 |
| 10H | 07H | 10H | NP610S |
| 10H | 08H | 10H | NP510WS |
| 10H | 09H | 10H | NP410 |
| 10H | 01H | 11H | NP2200 |
| 10H | 02H | 11H | NP1200 |
| 11H | 00H | 00H | NP41/61 |
| 11H | 01H | 00H | NP62 |
| 11H | 00H | 11H | NP215 |
| 11H | 02H | 11H | NP115 |
| 11H | 03H | 11H | NP110 |
| 11H | 04H | 11H | NP216 |
| 11H | 00H | 12H | NP64 |
| 11H | 03H | 12H | NP43 |
| 12H | 00H | 08H | NP1150/NP2150/NP3150 |
| 12H | 01H | 08H | NP3151W |
| 12H | 00H | 09H | NP905 |
| 12H | 01H | 09H | NP901W |
| 12H | 02H | 09H | VT800 |
| 12H | 00H | 10H | NP1250/NP2250/NP3250 |
| 12H | 01H | 10H | NP3250W |
| 13H | 01H | 10H | M300X |
| 13H | 02H | 10H | M300W |
| 13H | 05H | 10H | M260X |
| 13H | 06H | 10H | M260W |
| 13H | 00H | 11H | P420X |
| 13H | 01H | 11H | P350X |
| 13H | 02H | 11H | P350W |
| 13H | 00H | 12H | UM330X |
| 13H | 01H | 12H | UM330W |
| 13H | 00H | 13H | M361X |
| 13H | 01H | 13H | M311W |
| 13H | 02H | 13H | M271X |
| 13H | 03H | 13H | M311X |
| 14H | 00H | 11H | PE401H |
| 14H | 02H | 10H | U300X |
| 14H | 04H | 10H | U310W |
| 15H | 00H | 10H | PA600X |
| 15H | 01H | 10H | PA500X |
| 15H | 02H | 10H | PA550W |
| 15H | 03H | 10H | PA500U |
| 16H | 00H | 10H | V300X |
| 16H | 01H | 10H | V260X |
| 16H | 03H | 10H | V260 |
| 16H | 01H | 11H | VE281X/VE281XB |
| 16H | 04H | 11H | VE281/VE281B |
| 17H | 00H | 10H | PX750U |
| 17H | 01H | 10H | PX700W |
| 17H | 02H | 10H | PX800X |
| 19H | 00H | 10H | PH1000U |
| 20H | 00H | 10H | P501X |
| 20H | 01H | 10H | P451X |
| 20H | 02H | 10H | P451W |
| 20H | 03H | 10H | P401W |
| 22H | 00H | 10H | M401X |
| 22H | 02H | 10H | M322X |
| 22H | 03H | 10H | M282X |
| 22H | 06H | 10H | M322W |
| 22H | 07H | 10H | M332XS |
| 22H | 09H | 10H | M352WS |

DATA72 PC Card insertion
 00H : Not inserted
 01H : Inserted

DATA73 USB Mouse connection
 00H : Not connected
 01H : Connected

DATA74 Entry list type
 01H : Default
 02H : User

DATA75 .. 82 Reserved

DATA83 On-screen mute
 00H : OFF
 01H : ON

DATA84 Reserved

DATA85 Indicate Contents
 00H = Picture signal displaying
 01H = No signal
 02H = Viewer displaying
 03H = Test pattern displaying
 04H = LAN displaying

DATA86 .. 128 Reserved

Response: At the time of a failure

A0H C0H 01H xxH 02H DATA01 DATA02 CKS
 (*1) (*2) (*4) (*3)

(!)

| Selected input terminal | Data 07 | Data08 | |
|--------------------------|---------|-----------|-------|
| RGB or RGB1 (*5) | 1 (01H) | RGB | (01H) |
| RGB2 (*5) | 2 (02H) | RGB | (01H) |
| Video | 1 (01H) | VIDEO | (02H) |
| S-Video | 1 (01H) | S-VIDEO | (03H) |
| Component | 2 (02H) | COMPONENT | (04H) |
| Component | 3 (03H) | COMPONENT | (04H) |
| DVI or DVI(Digital) (*6) | 1 (01H) | DIGITAL | (06H) |
| HDMI | 1 (01H) | DIGITAL | (06H) |
| Viewer | 1 (01H) | VIEWER | (07H) |
| LAN | 2 (02H) | VIEWER | (07H) |
| Slot1-1 | 1 (01H) | SLOT1 | (08H) |
| Slot1-2 | 2 (02H) | SLOT1 | (08H) |
| Slot2-1 | 1 (01H) | SLOT2 | (09H) |
| Slot2-2 | 2 (02H) | SLOT2 | (09H) |
| RGB(Video) | 2 (02H) | VIDEO | (02H) |
| RGB(S-Video) | 2 (02H) | S-VIDEO | (03H) |
| USB Display | 4 (04H) | VIEWER | (07H) |

Supplement:

(!1) VT700/NP600 series

(!2) only the NP600 series is compatible.

(!!) On the U300 series, this parameter becomes F0H when non signal.

009. ERROR STATUS REQUEST

Function:

This command acquires the error information occurring with the projector.

Command:

00H 88H 00H 00H 00H 88H

Response: At the time of a success

20H 88H 01H xxH 0CH DATA01 .. DATA12 CKS
(*1) (*2) (*3)

Data Portion Contents

* The various bits are normal is "0" and error is "1".
* "None" is "0" fixation.

DATA01 Error Status (1)

bit0 : Lamp cover error
bit1 : Temperature error(Bimetal)
bit2 : None
bit3 : None
bit4 : Fan error
bit5 : Power error
bit6 : Lamp(or Lamp1) error
bit7 : Lamp(or Lamp1) has reached its end of life

DATA02 Error Status (2)

bit0 : Lamp(or Lamp1) has been used beyond its limit
bit1 : Formatter error
bit2 : Lamp2 error
bit3 : None
bit4 : None
bit5 : None
bit6 : None
bit7 : None

DATA03 Error Status (3)

bit0 : None
bit1 : FPGA error
bit2 : Temperature error(Sensor)
bit3 : Lamp(or Lamp1) housing error (!)
bit4 : Lamp(or Lamp1) data error (!)
bit5 : Mirror cover error
bit6 : Lamp2 has reached its end of life
bit7 : Lamp2 has been used beyond its limit

DATA03 Error Status (4)

bit0 : Lamp2 housing error
bit1 : Lamp2 data error
bit2 : High temperature due to dust pile-up
bit3 : A foreign object sensor error
bit4 : Pump error
bit5 : None
bit6 : None
bit7 : None

DATA05 .. 12 Reserved

Response: At the time of a failure

A0H 88H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

Supplement:
(!) LT/LT80/HT: "None"

015. POWER ON

Function:
This command switches on the main power of the projector.

Command:
02H 00H 00H 00H 00H 02H

Response: At the time of a success
22H 00H 01H xxH 00H CKS
 (*1) (*2) (*3)

Response: At the time of a failure
A2H 00H 01H xxH 02H DATA01 DATA02 CKS
 (*1) (*2) (*4) (*3)

Supplement:
The projector does not accept the other command during power on processing.

016. POWER OFF

Function:
This command switches off the main power of the projector.

Command:
02H 01H 00H 00H 00H 03H

Response: At the time of a success
22H 01H 01H xxH 00H CKS
 (*1) (*2) (*3)

Response: At the time of a failure
A2H 01H 01H xxH 02H DATA01 DATA02 CKS
 (*1) (*2) (*4) (*3)

Supplement:
The projector doesn't accept the other command during power off processing. (It contains a cooling period.)

018. INPUT SW CHANGE

Function:
This command switches the input terminal or the entry list.

Command:
02H 03H 00H 00H 02H DATA01 DATA02 CKS
 (*3)

Data Portion Contents

DATA01 Switching object
 00H : Entry List
 01H : Input terminal

DATA02 Switching number

When the switching object is the "Signal list", the signal list number is specified. (0...99)

When the switching object is the "Input connector", the input connector number is specified.

| Terminal Number | Terminal Name | CURRENT MODELS | | | | | | | | | | | | | |
|-----------------|------------------|----------------|------|-------|------|-------|------|-------|-------|-------|--------|-------|------|---|--|
| | | M361 | P501 | PE401 | U300 | UM330 | V311 | VE281 | PA600 | PX750 | PH1000 | PE401 | M402 | | |
| 01H | RGB1(RGB) | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| 02H | RGB2 (!1) | * | - | - | * | - | * | (14) | - | * | * | * | - | - | |
| 02H | DVI(ANALOG) (!2) | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 03H | RGB3 (*5) | - | - | - | - | - | - | - | - | * | * | * | - | - | |
| 06H | Video | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| 0BH | S-Video | * | * | * | * | * | * | * | - | * | * | * | * | - | |
| 10H | Component | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 11H | Component | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 12H | Component | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 1AH | DVI (*6) (!2) | - | - | - | - | - | - | - | * | - | - | - | - | - | |
| 1AH | DVI(DIGITAL)(*6) | - | - | - | - | - | - | - | - | * | * | * | - | - | |
| 1AH | HDMI / HDMI1 | * | * | * | * | * | * | (14) | (15) | * | * | * | * | * | |
| 1BH | DisplayPort | - | - | - | - | - | - | - | - | * | * | * | - | - | |
| 1BH | HDMI2 | - | * | * | - | * | - | - | - | - | - | - | * | * | |
| 1CH | SLOT | - | - | - | - | - | - | - | - | - | * | * | - | - | |
| 1FH | Viewer | * | * | - | - | * | - | - | - | * | * | * | * | * | |
| 20H | LAN / NETWORK | * | * | - | - | * | - | - | - | * | * | * | - | * | |
| 07H | RGB(Video) | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 0CH | RGB(S-Video) | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 22H | USB Display | * | * | - | - | * | - | - | - | - | - | - | - | - | |
| 24H | SLOT1-1 | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 25H | SLOT1-2 | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 29H | SLOT2-1 | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 2AH | SLOT2-2 | - | - | - | - | - | - | - | - | - | - | - | - | - | |

| Terminal Number | Terminal Name | LEGACY MODELS | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|------------------|---------------|----|------|----|-------|------|------|----|------|---------|------|-------|-------|-------|------|-------|-------|------|-------------|--------|--------|-------------|----|----|---|
| | | GT | HT | HT10 | LT | LT180 | LT80 | LT30 | MT | NP40 | NP62/64 | V300 | NP600 | NP610 | NP215 | M300 | NP216 | NP905 | P420 | NP1000/3150 | NP2200 | NP3250 | NP4000/4100 | VT | WT | |
| 01H | RGB1(RGB) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 02H | RGB2 (!1) | * | - | - | * | - | * | - | * | - | (14) | - | * | - | * | - | * | - | * | - | * | - | * | - | * | - |
| 02H | DVI(ANALOG) (!2) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 03H | RGB3 (*5) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 06H | Video | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 0BH | S-Video | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10H | Component | - | * | * | - | * | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 11H | Component | - | * | * | - | * | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 12H | Component | - | * | * | - | * | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 1AH | DVI (*6) (!2) | - | * | * | - | * | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | * | * | - | |
| 1AH | DVI(DIGITAL)(*6) | - | * | * | - | * | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | * | * | - | |
| 1AH | HDMI | - | - | - | - | - | - | - | - | - | (14) | - | - | - | * | - | * | - | * | - | * | - | * | - | * | |
| 1CH | SLOT | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 1FH | Viewer | * | * | - | * | - | * | - | * | - | (13) | - | * | - | * | - | * | - | * | - | * | - | * | - | * | - |
| 20H | LAN / NETWORK | * | - | - | * | - | * | - | * | - | - | - | - | - | * | - | - | - | - | - | * | - | - | - | * | |
| 07H | RGB(Video) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 0CH | RGB(S-Video) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 22H | USB Display | - | - | - | - | - | - | - | - | - | - | - | - | - | * | - | - | - | - | - | - | - | - | - | - | |
| 24H | SLOT1-1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 25H | SLOT1-2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 29H | SLOT2-1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 2AH | SLOT2-2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

* : Supported
 - : Not supported
 (!): The MT860/LT280 does not support a DVI connector.
 (!!) HT1000
 (!!!) HT410/HT510/HT1100
 (!!!!) VT770 support Component and Viewer
 (1) VT470/VT470JY/VT570/VT670/VT575/VT676/VT480/VT580
 (2) VT595/VT695/VT700/NP300/NP400/NP500/NP500W/NP600/NP500WS/NP600S
 (3) NP62/NP64 only (not available on NP41/NP43/NP61
 (4) Except V260
 (5) Except VE281/VE281B

Response: At the time of a success
 22H 03H 01H xxH 01H DATA01 CKS
 (*1) (*2) (*3)

DATA01 Results
00H : Normal
FFH : Error

Response: At the time of a failure
A2H 03H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

Command example:
* When switch to the Video connector
02H 03H 00H 00H 02H 01H 06H 0EH

020. PICTURE MUTE ON

Function:
This command blanks the picture.

Command:
02H 10H 00H 00H 00H 12H
Response: At the time of a success
22H 10H 01H xxH 00H CKS
(*1) (*2) (*3)

Response: At the time of a failure
A2H 10H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

Supplement:
* Picture mute is cancelled for the following:
Input connector switching
Video signal switching

021. PICTURE MUTE OFF

Function:
This command cancels the blank picture condition.

Command:
02H 11H 00H 00H 00H 13H
Response: At the time of a success
22H 11H 01H xxH 00H CKS
(*1) (*2) (*3)

Response: At the time of a failure
A2H 11H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

022. SOUND MUTE ON

Function:
This command mutes the sound.

Command:

02H 12H 00H 00H 00H 14H

Response: At the time of a success

22H 12H 01H xxH 00H CKS
(*1) (*2) (*3)

Response: At the time of a failure

A2H 12H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

Supplement:

* Sound mute is cancelled for the following:

Input connector switching

Video signal switching

Volume adjustment

023. SOUND MUTE OFF

Function:

This command cancels the sound muting.

Command:

02H 13H 00H 00H 00H 15H

Response: At the time of a success

22H 13H 01H xxH 00H CKS
(*1) (*2) (*3)

Response: At the time of a failure

A2H 13H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

024. ONSCREEN MUTE ON

Function:

This command blanks the on-screen display.

Command:

02H 14H 00H 00H 00H 16H

Response: At the time of a success

22H 14H 01H xxH 00H CKS
(*1) (*2) (*3)

Response: At the time of a failure

A2H 14H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

Supplement:

* Onscreen mute is cancelled for the following:

Input connector switching

Video signal switching

025. ONSCREEN MUTE OFF

Function:

This command cancels the blanking of the on-screen display.

Command:

02H 15H 00H 00H 00H 17H

Response: At the time of a success

22H 15H 01H xxH 00H CKS
(*1) (*2) (*3)

Response: At the time of a failure

A2H 15H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

[030. GAIN ADJUST]

- *direct setting of volume
- *volume increment/decrement
- *direct setting of brightness
- *brightness increment/decrement
- *direct setting of color
- *color increment/decrement
- *direct setting of contrast
- *contrast increment/decrement
- *direct setting of sharpness
- *sharpness increment/decrement
- *direct setting of tint
- *tint increment/decrement

brightness
contrast
color
tint<hue>
sharpness

Not supported "LT170", "VT60 series", "VT70 series", "VT80 series", "VT90 series"
Not supported "HT410/HT510", "LT180/LT25/LT30/LT35"

volume

Not supported "LT170", "VT60 series", "VT70 series" (except "VT80 series, VT90 series")
Not supported "HT410/HT510", "LT180/LT25/LT30/LT35"

Command:

03H 10H 00H 00H 05H DATA01 .. DATA05 CKS

DATA01 : 00H (Brightness)
01H (Contrast)
02H (Color)
03H (Tint<Hue>)
04H (Sharpness)
05H (Volume)

DATA02 : FFH (except "Volume")
00H ("Volume" only)

DATA03 : 00H (direct settings)
01H (increment/decrement)

DATA04 : lower data (8bit)
DATA05 : upper data (8bit)

ex.1) volume direct setting (value = 20)

DATA01 : 05H (Volume)
DATA02 : 00H ("Volume" only)
DATA03 : 00H (direct setting)
DATA04 : 14H (lower data : 20 = 0014<Hex>)
DATA05 : 00H (upper data : 20 = 0014<Hex>)

ex.2) brightness increment (value = +1)

DATA01 : 00H (Brightness)
DATA02 : FFH (except "Volume")
DATA03 : 01H (increment/decrement)
DATA04 : 01H (lower data : +1 = 0001<Hex>)
DATA05 : 00H (upper data : +1 = 0001<Hex>)

ex.3) contrast decrement (value = -1)

DATA01 : 01H (Contrast)
DATA02 : FFH (except "Volume")
DATA03 : 01H (increment/decrement)
DATA04 : FFH (lower data : -1 = FFFF<Hex>)
DATA05 : FFH (upper data : -1 = FFFF<Hex>)

030-2. VOLUME ADJUST

Function:

This command sets the volume.

Command:

03H 10H 00H 00H 05H DATA01 .. DATA05 CKS
(*3)

Data Portion Contents

DATA01 05H fixed

DATA02 Setting items
 00H : Volume
 01H : Bass
 02H : Treble
 03H : Balance

DATA03 Setting mode
 00H : Absolute value specification
 01H : Relative value specification

DATA04 Setting Value (Lower ranking 8 bits)
DATA05 Setting Value (Upper ranking 8 bits)

Response: At the time of a success

23H 10H 01H xxH 02H DATA01 DATA02 CKS
 (*1) (*2) (*3)

Data Portion Contents

DATA01 .. 02 Results
 0000H : Normal
 0000H Other : Error

Response: At the time of a failure

A3H 10H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

Command example:

* Setting Volume to "10"

03H 10H 00H 00H 05H 05H 00H 00H 0AH 00H 27H

030-12. IMAGE MODE ADJUST

Function:

This command adjusts the Image Mode.

Command:

03H 10H 00H 00H 05H DATA01 .. DATA05 CKS
(*3)

Data Portion Contents

DATA01 .. 02 Adjustment items

| DATA01 | DATA02 | Adjustment items |
|--------|--------|------------------------|
| 18H | 00H | Aspect Ratio Input (!) |

DATA03 Adjustment mode

00H : Absolute value specification

01H : Relative value specification

DATA04 Adjustment value (Lower ranking 8 bits)

DATA05 Adjustment value (Upper ranking 8 bits)

Response: At the time of a success

23H 10H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*3)

Data Portion Contents

DATA01 .. 02 Results

0000H : Normal

0000H Other : Error

Response: At the time of a failure

A3H 10H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

Command example:

* Setting the Aspect Ratio to Letter Box (Wide Zoom)

03H 10H 00H 00H 05H 18H 00H 00H 01H 00H 31H

(!) Method of Specifying the Absolute Value of Special Adjustment Values

| | DATA04 | DATA05 |
|---|--------|--------|
| Aspect Ratio 4:3 (Window) (PH1000 Series) | 00H | 00H |
| Aspect Ratio Normal / Auto (P420, P501, PA600, V311, V281, PE401, M402 Series) | 00H | 00H |
| Aspect Ratio 1.25:1(5:4) | 00H | 00H |
| Aspect Ratio Letter Box (PA600, PX750, PH1000 Series) | 01H | 00H |
| Aspect Ratio 1.33:1(4:3) | 01H | 00H |
| Aspect Ratio Wide Zoom (P420, P501, V311, VE281, M402 Series) | 01H | 00H |
| Aspect Ratio Wide Screen (PA600, PX750, PH1000 Series) | 02H | 00H |
| Aspect Ratio 1.78:1(16:9) | 02H | 00H |
| Aspect Ratio Cinema / 16:9 (P420, P501, PA600, V311, VE281, PE401, M402 Series) | 02H | 00H |
| Aspect Ratio Crop | 03H | 00H |
| Aspect Ratio Wide Zoom (NP4000, NP4100, PA600, PX750, PH1000 Series) | 03H | 00H |
| Aspect Ratio Native (P420, P501, PA600, V311, VE281, PE401, M402 Series) | 03H | 00H |
| Aspect Ratio 1.85:1 | 03H | 00H |
| Aspect Ratio Zoom | 03H | 00H |
| Aspect Ratio 4:3 Fill (PA600, PX750, PH1000 Series) | 04H | 00H |
| Aspect Ratio 4:3 (P420, P501, PA600, V311, VE281, PE401, M402 Series) | 04H | 00H |
| Aspect Ratio 2.35:1 | 04H | 00H |
| Aspect Ratio Normal | 05H | 00H |
| Aspect Ratio Auto (NP4000, NP4100 Series) | 05H | 00H |
| Aspect Ratio 15:9 (P420, P501, PA600, V311, VE281, PE401, M402 Series) | 05H | 00H |
| Aspect Ratio Full | 06H | 00H |
| Aspect Ratio 16:10 (P420, P501, PA600, V311, VE281, PE401, M402 Series) | 06H | 00H |
| Aspect Ratio Zoom | 07H | 00H |
| Aspect Ratio Letter Box (P420, P501, PA600, V311, VE281, PE401, M402 Series) | 07H | 00H |
| Aspect Ratio Cinema | 08H | 00H |
| Aspect Ratio V-Zoom | 09H | 00H |
| Aspect Ratio Stadium | 0AH | 00H |
| Aspect Ratio 5:4 (P420, P501, PA600, V311, VE281, M402 Series) | 0BH | 00H |
| Aspect Ratio 16:10 (PA600, PX750, PH1000 Series) | 0CH | 00H |
| Aspect Ratio 15:9 (PA600, PX750, PH1000 Series) | 0DH | 00H |
| Aspect Ratio Native (NP4000, NP4100, PA600 Series) | 0EH | 00H |
| | | |
| | | |
| Legacy models | | |
| | DATA04 | DATA05 |
| Aspect Ratio 4:3 (Window) | 00H | 00H |
| Aspect Ratio Normal / Auto (NP600, NP610, NP2200, NP62, NP64, NP216, P420, U300, V300 Series) | 00H | 00H |
| Aspect Ratio 1.25:1(5:4) | 00H | 00H |
| Aspect Ratio Letter Box | 01H | 00H |
| Aspect Ratio 1.33:1(4:3) | 01H | 00H |
| Aspect Ratio Wide Zoom (NP600, NP610, NP2200, NP62, NP64, NP216, V300 Series) | 01H | 00H |
| Aspect Ratio Wide Screen | 02H | 00H |
| Aspect Ratio 1.78:1(16:9) | 02H | 00H |
| Aspect Ratio Cinema / 16:9 (NP600, NP610, NP2200, NP62, NP64, NP216, U300, V300 Series) | 02H | 00H |
| Aspect Ratio Crop | 03H | 00H |
| Aspect Ratio Wide Zoom (NP4000, NP4100 Series) | 03H | 00H |
| Aspect Ratio Native (NP600, NP610, NP2200, NP62, NP64, NP216, U300, V300 Series) | 03H | 00H |
| Aspect Ratio 1.85:1 | 03H | 00H |
| Aspect Ratio Zoom | 03H | 00H |
| Aspect Ratio 4:3 Fill | 04H | 00H |
| Aspect Ratio 4:3 (NP600, P420, U300, V300, VE281 Series) | 04H | 00H |
| Aspect Ratio 2.35:1 | 04H | 00H |
| Aspect Ratio Normal | 05H | 00H |
| Aspect Ratio Auto (NP4000, NP4100 Series) | 05H | 00H |
| Aspect Ratio 15:9 (NP600, NP610, NP2200, NP216, U300, V300 Series) | 05H | 00H |
| Aspect Ratio Full | 06H | 00H |
| Aspect Ratio 16:10 (NP600, NP610, NP2200, NP216, U300, V300 Series) | 06H | 00H |
| Aspect Ratio Zoom | 07H | 00H |
| Aspect Ratio Letter Box (NP600, NP610, NP2200, NP216 Series) | 07H | 00H |
| Aspect Ratio Cinema | 08H | 00H |
| Aspect Ratio V-Zoom | 09H | 00H |
| Aspect Ratio Stadium | 0AH | 00H |
| Aspect Ratio 5:4 (NP61, NP64, NP216, U300, V300, VE281 Series) | 0BH | 00H |
| Aspect Ratio 16:10 | 0CH | 00H |
| Aspect Ratio 15:9 | 0DH | 00H |
| Aspect Ratio Native (NP4000, NP4100 Series) | 0EH | 00H |

Data Portion Contents

DATA01 .. 04 : Lamp Hour Meter(Normal mode) (second)
DATA05 .. 08 : Reserved
DATA09 .. 12 : Lamp Use Warning Starting Time(Normal mode) (second)
DATA13 .. 16 : Lamp Use Prohibited Time(Normal mode) (second)

Response: At the time of a failure

A3H 8CH 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

Supplement:

Example for acquiring remaining lamp time (in terms of Normal mode values)

: Lamp Hour Meter (Normal mode)
DATA01 DATA02 DATA03 DATA04
30H 2AH 00H 00H : 10800 seconds

Calculator Procedure

- 1) Set calculator to HEX
- 2) Punch in DATA04 DATA03 DATA02 DATA01 (00002A30)
- 3) Change from HEX to Decimal - value will change to 10800 seconds

: Starting time for lamp usage warning message (in terms of Normal mode values)

DATA09 DATA10 DATA11 DATA12
00H DDH 6DH 00H : 7200000 second

Calculator Procedure

- 1) Set calculator to HEX
- 2) Punch in DATA12 DATA11 DATA10 DATA09 (006DDD00)
- 3) Change from HEX to Decimal - value will change to 7200000 seconds

Lamp remaining time (in terms of Normal mode values)
= (7200000 - 10800) / 3600 = 1997 hour

037-2. LAMP INFORMATION REQUEST 2

Function:

This command acquires lamp remaining amount.

Command:

03H 94H 00H 00H 00H 97H

Response: At the time of a success

23H 94H 01H xxH 05H DATA01 .. DATA05 CKS
(*1) (*2) (*3)

Data Portion Contents

DATA01 .. 04 Reserved
DATA05 lamp remaining amount (100% to -10%)

Response: At the time of a failure

A3H 94H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

037-4. LAMP INFORMATION REQUEST 3

Function:

This command acquires the information on the projector lamp in Eco mode.

Command:

03H 96H 00H 00H 02H DATA01 DATA02 CKS
(*3)

Data Portion Contents

DATA01 Target

00H : Lamp1

01H : Lamp2

DATA02 item

00H : Lamp Hour Meter (second) (!)

01H : Lamp usage time (second) (!!)

04H : lamp remaining amount until lamp warning message
(100% to -10%)

05H : Lamp counter (Normal mode) (second) (!!!)

06H : Lamp counter (Eco mode) (second) (!!!)

08H : Remaining time until lamp warning message starts
to appear (in terms of specified values)

09H : Remaining time until lamp warning message starts
to appear (in terms of Normal mode values)

0AH : Remaining time until lamp warning message starts
to appear (in terms of Eco mode values)

10H : Remaining time until inhibition of lamp usage
(in terms of specified values)

11H : Remaining time until inhibition of lamp usage
(in terms of Normal mode values)

12H : Remaining time until inhibition of lamp usage
(in terms of Eco mode values)

Response: At the time of a success

23H 96H 01H xxH 06H DATA01 .. DATA06 CKS
(*1) (*2) (*3)

Data Portion Contents

DATA01 same values as DATA01 of the command

DATA02 same values as DATA02 of the command

DATA03 .. 06 Acquired information

Response: At the time of a failure

A3H 96H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

Supplement:

* In case of acquiring lamp's use of hours

03H 96H 00H 00H 02H 00H 01H 9CH

Example of acquisition

DATA03 DATA04 DATA05 DATA06: lamp's use of hours

50H 46H 00H 00H: 18000 seconds

Calculator Procedure

1) Set calculator to HEX

- 2) Punch in DATA06 DATA05 DATA04 DATA03 (00004650)
- 3) Change from HEX to Decimal - value will change to 18000 seconds

Lamp's use of hours = 18000/3600 = 5 hours

* In case of acquiring the remaining time until lamp warning message starts to appear (in terms of specified values)

03H 96H 00H 00H 02H 00H 08H A3H

Example of acquisition

DATA03 DATA04 DATA05 DATA06: Remaining time
40H 7EH 05H 00H: 360000 seconds

Calculator Procedure

- 1) Set calculator to HEX
- 2) Punch in DATA06 DATA05 DATA04 DATA03 (00057E40)
- 3) Change from HEX to Decimal - value will change to 360000 seconds

Remaining time until lamp warning message starts to appear
= 360000/ 3600= 100 hours

(!) Lamp Hour Meter

This is the timer for normal lamp mode conversion.

(!!) Lamp usage time

This is the lamp total usage. It is displayed in the projector's menu.

(!!!) NP4000/4001, NP4100/4100W : This function is not supported.

037.6. CARBON SAVINGS INFORMATION REQUEST

Function:

This command acquires the Carbon Saving values on the projector.

Command:

03H 9AH 00H 00H 01H DATA01 CKS
(*3)

Data Portion Contents

DATA01 Acquirement items
 00H : Total Carbon Savings
 01H : Carbon Savings during operation

Response: At the time of a success

23H 9AH 01H xxH 09H DATA01 to DATA09 CKS
 (*1) (*2) (*3)

Data Portion Contents

DATA01 Same as DATA01 of the transmit data
DATA02 to 05 Carbon Savings (Kilogram Maximum: 99999[kg])
DATA06 to 09 Carbon Savings (Milligram Maximum:999999[mg])

Response: At the time of a failure

A3H 9AH 01H xxH 02H DATA01 DATA02 CKS
 (*1) (*2) (*4) (*3)

Supplement:

Example for Total Carbon Savings

DATA02 DATA03 DATA04 DATA05 : Kilogram
9CH 09H 00H 00H : 2460 [kg]

DATA06 DATA07 DATA08 DATA09 : Milligram
06H F9H 00H 00H : 63750 [mg]

Total Carbon Savings
= (2460 * 1000) + (63750 / 1000) = 2460063.75 [g]
= 2460 + (63750 / 1000 / 1000) = 2460.06375 [kg]

037-7. LAMP INFORMATION REQUEST 4

Function:

This command acquires the information on the projector lamp.

Command:

03H 9BH 00H 00H 03H DATA01 DATA02 DATA03 CKS
(*3)

Data Portion Contents

DATA01 Target
00H : Lamp1
01H : Lamp2
DATA02 Unit(!4)
00H : Second
01H : Reserved
02H : Hour
DATA03 Item
00H : Lamp Hour Meter (second)(!2)
01H : Lamp usage time (second)(!3)
04H : lamp remaining amount until lamp warning message
(100% to -X%(!1))
05H : Lamp usage time (Normal mode)(second) (!5)
06H : Lamp usage time (Eco mode)(second) (!5)
08H : Remaining time until lamp warning message starts
to appear (in terms of specified values)
09H : Remaining time until lamp warning message starts
to appear (in terms of Normal mode values)
0AH : Remaining time until lamp warning message starts
to appear (in terms of Eco mode values)
10H : Remaining time until inhibition of lamp usage
(in terms of specified values)
11H : Remaining time until inhibition of lamp usage
(in terms of Normal mode values)
12H : Remaining time until inhibition of lamp usage
(in terms of Eco mode values)

Response: At the time of a success

23H 9BH 01H xxH 07H DATA01 to DATA07 CKS
(*1) (*2) (*3)

Data Portion Contents

DATA01 same values as DATA01 of the command
DATA02 same values as DATA02 of the command
DATA03 same values as DATA03 of the command
DATA04 to 07 Acquired information

Response: At the time of a failure

A3H 9BH 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

Supplement:

* In case of acquiring lamp's use of hours
03H 9BH 00H 00H 03H 00H 00H 01H CKS

Example of acquisition

DATA04 DATA05 DATA06 DATA07 : lamp's use of hours
50H 46H 00H 00H : 18000 seconds

Lamp Usage = 18000 / 3600 = 5 hour

(!1) $X = 100 - ((\text{Lamp Use Prohibited Time} * 100) / \text{Lamp Use Warning Starting Time})$

Example) The case of Lamp Use Prohibited Time 2100[H] □ A

Lamp Use Warning Starting Time 2000[H] Model.

$X = 100 - ((2100 * 100) / 2000) = -5[\%]$

(!2) Lamp Hour Meter

This is the timer for normal lamp mode conversion.

(!3) Lamp usage time

This is the lamp total usage. It is displayed in the projector's menu.

(!4) This setting is ignored, if the Item's unit is not time.

(!5) NP4000/4001, NP4100/4100W : This function is not supported.

038. LAMP MODE REQUEST

Function:

This command acquires the setting of the lamp mode of projector.

Command:

03H B0H 00H 00H 01H 07H BBH

Response: At the time of a success

23H B0H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*3)

Data Portion Contents

DATA01 07H fixed
DATA02 Setting Value

| Setting Value | (1) | (2) | (3) | (4) |
|---------------|--------|------|------|----------|
| 00H | Normal | Off | Off | Off |
| 01H | Eco | Auto | Auto | Auto Eco |
| 02H | x | Eco1 | Eco1 | Normal |
| 03H | x | x | Eco2 | Eco |

Response: At the time of a failure

A3H B0H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

039. LAMP MODE SET

Function:

This command sets the lamp mode of projector.

Command:

03H B1H 00H 00H 02H DATA01 DATA02 CKS

(*3)

Data Portion Contents

DATA01 07H fixed
DATA02 Setting Value

| Setting Value | (1) | (2) | (3) | (4) |
|---------------|--------|------|------|----------|
| 00H | Normal | Off | Off | Off |
| 01H | Eco | Auto | Auto | Auto Eco |
| 02H | x | Eco1 | Eco1 | Normal |
| 03H | x | x | Eco2 | Eco |

Response: At the time of a success

23H B1H 01H xxH 02H DATA01 DATA02 CKS
 (*1) (*2) (*3)

Data Portion Contents

DATA01 07H fixed
DATA02 Results
 00H : Normal
 01H : Error

Response: At the time of a failure

A3H B1H 01H xxH 02H DATA01 DATA02 CKS
 (*1) (*2) (*4) (*3)

046. WXGA MODE SETTING REQUEST

Function:

This command acquires the setting of the WXGA Mode of projector.

Command:

03H B0H 00H 00H 01H C3H 77H

Response: At the time of a success

23H B0H 01H xxH 02H DATA01 DATA02 CKS
 (*1) (*2) (*3)

Data Portion Contents

DATA01 C3H fixed
DATA02 Setting Value
 00H : OFF
 01H : ON

Response: At the time of a failure

A3H B0H 01H xxH 02H DATA01 DATA02 CKS
 (*1) (*2) (*4) (*3)

049. WXGA MODE SETTING SET

Function:

This command sets the WXGA Mode of projector.

Command:

03H B1H 00H 00H 02H DATA01 DATA02 CKS
(*3)

Data Portion Contents

DATA01 C3H fixed
DATA02 Setting Value
 00H : OFF
 01H : ON

Response: At the time of a success

23H B1H 01H xxH 02H DATA01 DATA02 CKS
 (*1) (*2) (*3)

Data Portion Contents

DATA01 C3H fixed
DATA02 Results
 00H : Normal
 01H : Error

Response: At the time of a failure

A3H B1H 01H xxH 02H DATA01 DATA02 CKS
 (*1) (*2) (*4) (*3)

=====

6. Response

* At the time of a success(ACK)

This returns ACK without adding data portion to the command that does not request data.

This returns ACK with adding data to the data portion for the command that requests data.

* At the time of a failure(NAK)

This adds a cause of not accepting the command to data portion to return it.

(Example) Power On

Command:

02H 00H 00H 00H 00H CKS

Response:

A2H 00H 01H 40H 02H DATA01 DATA02 CKS

=====

7. Table of Response Error Codes

| DATA01 | DATA2 | |
|-------------|-------------------|--|
| Error Types | Error description | Error contents |
| 00H | 00H | Unknown command. |
| 00H | 01H | This current model does not support this function. |
| 01H | 00H | Invalid values specified. |
| 01H | 01H | Specified terminal is unavailable or cannot be selected. |
| 02H | 03H | Setting not possible. |
| 02H | 0DH | Power Off inhibited. |

050. REMOTE KEY CODE

Function:

This command sends remote control key codes of projector.

Command:

02H 0FH 00H 00H 02H DATA01 DATA02 CKS
(*3)

Data Portion Contents

DATA01 .. 02 : Remote control key code (Word type)

Key number DATA01 DATA02 Key name

| | | | |
|----|-----|-----|--------------------|
| 1 | 01H | 00H | POWER |
| 2 | 02H | 00H | POWER ON (!!) |
| 3 | 03H | 00H | POWER OFF (!!) |
| 4 | 04H | 00H | SOURCE (AUTO) (!!) |
| 5 | 05H | 00H | AUTO (!) (!!) |
| 6 | 06H | 00H | MENU (!!)(!!!) |
| 7 | 07H | 00H | UP (!!)(!!!) |
| 8 | 08H | 00H | DOWN (!!)(!!!) |
| 9 | 09H | 00H | RIGHT (!!)(!!!) |
| 10 | 0AH | 00H | LEFT (!!)(!!!) |
| 11 | 0BH | 00H | ENTER (!!)(!!!) |
| 12 | 0CH | 00H | CANCEL (!!)(!!!) |
| 13 | 0DH | 00H | HELP (!!)(!!!) |
| 14 | 0EH | 00H | POINTER |
| 15 | 0FH | 00H | MAGNIFY UP |
| 16 | 10H | 00H | MAGNIFY DOWN |
| 17 | 11H | 00H | PICTURE MUTE |
| 18 | 12H | 00H | SOUND MUTE |
| 19 | 13H | 00H | MUTE (!!) |
| 20 | 14H | 00H | FOCUS UP |
| 21 | 15H | 00H | FOCUS DOWN |
| 22 | 16H | 00H | ZOOM UP |
| 23 | 17H | 00H | ZOOM DOWN |
| 30 | 1EH | 00H | STORE |
| 31 | 1FH | 00H | MUTE ALL OFF |
| 37 | 25H | 00H | R |
| 38 | 26H | 00H | G |
| 39 | 27H | 00H | B |
| 40 | 28H | 00H | OSD MUTE |
| 41 | 29H | 00H | PICTURE |
| 42 | 2AH | 00H | WHITE BAL |
| 43 | 2BH | 00H | IMAGE |
| 44 | 2CH | 00H | TEST |

| | | | |
|-----|-----|-----|-----------------------------|
| 45 | 2DH | 00H | UNDO |
| 46 | 2EH | 00H | 1 |
| 47 | 2FH | 00H | 2 |
| 48 | 30H | 00H | 3 |
| 49 | 31H | 00H | 4 |
| 50 | 32H | 00H | 5 |
| 51 | 33H | 00H | 6 |
| 52 | 34H | 00H | 7 |
| 53 | 35H | 00H | 8 |
| 54 | 36H | 00H | 9 |
| 55 | 37H | 00H | 0 |
| 56 | 38H | 00H | POSITION |
| 57 | 39H | 00H | INFO. |
| 58 | 3AH | 00H | PIXEL |
| 59 | 3BH | 00H | KEYSTONE |
| 60 | 3CH | 00H | AMPLITUDE |
| 61 | 3DH | 00H | INPUT LIST |
| 71 | 47H | 00H | PICMUTE ON (!!) |
| 72 | 48H | 00H | PICMUTE OFF (!!) |
| 73 | 49H | 00H | SNDMUTE ON (!!) |
| 74 | 4AH | 00H | SNDMUTE OFF (!!) |
| 75 | 4BH | 00H | RGB1(*5) (!!) |
| 76 | 4CH | 00H | RGB2(*5) |
| 77 | 4DH | 00H | RGB3 |
| 78 | 4EH | 00H | YCBCR |
| 79 | 4FH | 00H | VIDEO1 (!!) |
| 80 | 50H | 00H | VIDEO2 |
| 81 | 51H | 00H | S-VIDEO1 (!!) |
| 82 | 52H | 00H | S-VIDEO2 |
| 83 | 53H | 00H | DIGITAL1 |
| 84 | 54H | 00H | DIGITAL2 |
| 85 | 55H | 00H | PC CARD |
| 96 | 60H | 00H | BS |
| 132 | 84H | 00H | VOLUME UP (!!) |
| 133 | 85H | 00H | VOLUME DOWN (!!) |
| 134 | 86H | 00H | KEYSTONE UP (!!) |
| 135 | 87H | 00H | KEYSTONE DOWN (!!) |
| 136 | 88H | 00H | SLIDE UP |
| 137 | 89H | 00H | SLIDE DOWN |
| 138 | 8AH | 00H | FREEZE (!!) |
| 158 | 9EH | 00H | FILE |
| 159 | 9FH | 00H | PAGE |
| 163 | A3H | 00H | ASPECT (!!) |
| 164 | A4H | 00H | VIDEO3 |
| 165 | A5H | 00H | VIDEO4 |
| 166 | A6H | 00H | S-VIDEO3 |
| 167 | A7H | 00H | S-VIDEO4 |
| 200 | C8H | 00H | ZOOM |
| 201 | C9H | 00H | FOCUS |
| 214 | D6H | 00H | 3D REFORM |
| 215 | D7H | 00H | SOURCE (!!) |
| 216 | D8H | 00H | RGB(*5) Toggle (!!) |
| 217 | D9H | 00H | VIDEO Toggle (!!) |
| 218 | DAH | 00H | 3D REFORM RESET |
| 221 | DDH | 00H | AUTO (SHORT) |
| 222 | DEH | 00H | AUTO (LONG) |
| 223 | DFH | 00H | PICTURE MANAGEMENT (!!) |
| 225 | E1H | 00H | COMPONENT (!!) |
| 226 | E2H | 00H | ZOOM POS UP (HT) |
| 227 | E3H | 00H | ZOOM POS DOWN (HT) |
| 228 | E4H | 00H | DVI/DVI (DIGITAL) (*6) (!!) |
| 229 | E5H | 00H | LAN |

| | | | |
|-----|-----|-----|---|
| 232 | E8H | 00H | D ZOOM UP (WT) |
| 233 | E9H | 00H | D ZOOM DOWN (WT) |
| 237 | EDH | 00H | PSCODE(Passcode screen will be displayed at once) |
| 238 | EEH | 00H | LAMP MODE (!!!) |

Response: At the time of a success

```

22H 0FH 01H xxH 01H DATA01 CKS
      (*1) (*2)                (*3)

```

Data Portion Contents

```

-----
DATA01  Results
      00H : Normal
      FFH : Error

```

Response: At the time of a failure

```

A2H 0FH 01H xxH 02H DATA01 DATA02 CKS
      (*1) (*2)                (*4)  (*3)

```

(!) About AUTO key

The MT series model with the built-in image sensor does not support the AUTO key. Use the AUTO (SHORT) key.

(!!) HT10 series, LT180, LT30 series, NP40 series and NP4000 series

(!!!) VT60 series, VT70 series, VT80 series, and VT90 series

Command example:

* Sending the AUTO key code

```
02H 0FH 00H 00H 02H 05H 00H 18H
```

* Sending the AUTO (SHORT) key code

```
02H 0FH 00H 00H 02H DDH 00H F0H
```

```
-----
* cycle/toggle volume mute
```

```
* cycle/toggle picture mute
```

```
* cycle/toggle picture freeze
```

```
02H 0FH 00H 00H 02H DATA01 DATA02 CKS
```

Data Portion Contents

```

-----
DATA01/DATA02 12H/00H : Volume mute
DATA01/DATA02 11H/00H : Picture mute
DATA01/DATA02 8AH/00H : Picture freeze

```

```
-----
* cycle aspect ratio
```

```
02H 0FH 00H 00H 02H DATA01 DATA02 CKS
```

Data Portion Contents

```

-----
DATA01/DATA02 A3H/00H : Aspect Ratio

```

```
-----
* all menu functionality (digits 0-9, cursor movement, enter, select, return, back, clear, etc)
```

```
02H 0FH 00H 00H 02H DATA01 DATA02 CKS
```

053. LENS CONTROL

Function:

This command controls the lens. (Time specification)

Command:

02H 18H 00H 00H 02H DATA01 DATA02 CKS
(*3)

Data Portion Contents

DATA01 Target

00H : Zoom
01H : Focus

DATA02 Contents

00H : Stops
01H : Drives for 1 second in the direction of plus
02H : Drives for 0.5 second in the direction of plus
03H : Drives for 0.25 second in the direction of plus
7FH : Drives in the direction of plus
81H : Drives in the direction of minus
FDH : Drives for 0.25 second in the direction of minus
FEH : Drives for 0.5 second in the direction of minus
FFH : Drives for 1 second in the direction of minus

Response: At the time of a success

22H 18H 01H xxH 01H DATA01 CKS
(*1) (*2) (*3)

Data Portion Contents

DATA01 Results

00H : Normal
01H : Error

Response: At the time of a failure

A2H 18H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

Supplement:

While the lens is being driven, the same command can be issued for control purposes without causing a stop.

053-1. LENS CONTROL REQUEST

Function:

This command acquires the information on the lens control.

Command:

02H 1CH 00H 00H 02H DATA01 DATA02 CKS
(*3)

Data Portion Contents

DATA01 Target
00H : Zoom
01H : Focus
02H : Lens Shift (H)
03H : Lens Shift (V)

DATA02 00H fixed

Response: At the time of a success

22H 1CH 01H xxH 08H DATA01 .. DATA08 CKS
(*1) (*2) (*3)

Data Portion Contents

DATA01 same values as DATA01 of the command
DATA02 same values as DATA02 of the command
DATA03 Maximum adjustable range (Lower ranking 8 bits)
DATA04 Maximum adjustable range (Upper ranking 8 bits)
DATA05 Minimum adjustable range (Lower ranking 8 bits)
DATA06 Minimum adjustable range (Upper ranking 8 bits)
DATA07 Current values (Lower ranking 8 bits)
DATA08 Current values (Upper ranking 8 bits)

Response: At the time of a failure

A2H 1CH 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

053-2. LENS CONTROL 2

Function:

This command controls the lens.

Command:

02H 1DH 00H 00H 04H DATA01 .. DATA04 CKS
(*3)

Data Portion Contents

DATA01 Target
00H : Zoom
01H : Focus
02H : Lens Shift (H)
03H : Lens Shift (V)
FFH : Stop (!)

DATA02 Setting mode
00H : Absolute value specification
02H : Relative value specification

DATA04 Adjustment value (Lower ranking 8 bits)
DATA05 Adjustment value (Upper ranking 8 bits)

Response: At the time of a success

22H 1DH 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*3)

Data Portion Contents

DATA01 same values as DATA01 of the command
DATA02 same values as DATA02 of the command

Response: At the time of a failure
A2H 1DH 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

(!)
If specifying gStoph, Setting mode and adjustment values are not referenced

053-3. LENS MEMORY CUSTOM SET

Function:
This command executes the "Use Custom Point" or "Set Custom Point".

Command:
02H 1EH 00H 00H 01H DATA01 CKS
(*3)

Data Portion Contents

DATA01 Target
00H : Use Custom Point
01H : Set Custom Point

Response: At the time of a success
22H 1EH 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*3)

Data Portion Contents

DATA01 same values as DATA01 of the command
DATA02 Results
00H : Normal
01H : Error

Response: At the time of a failure
A2H 1EH 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

053-4. LENS MEMORY REFERENCE SET

Function:
This command executes the "Use Reference Point" or "Set Reference Point".

Command:
02H 1FH 00H 00H 01H DATA01 CKS
(*3)

Data Portion Contents

DATA01 Target
00H : Use Reference Point
01H : Set Reference Point
02H : Return to Factory Default(Reset)

Response: At the time of a success

22H 1FH 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*3)

Data Portion Contents

DATA01 same values as DATA01 of the command
DATA02 Results
00H : Normal
01H : Error

Response: At the time of a failure

A2H 1FH 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

053-5. LENS MEMORY CONTROL REQUEST

Function:

This command acquires the information on the lens memory function.

Command:

02H 20H 00H 00H 01H DATA01 CKS
(*3)

Data Portion Contents

DATA01 Target
00H : Use Point on Signal Change
01H : Picture mute during lens shift

Response: At the time of a success

22H 20H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*3)

Data Portion Contents

DATA01 same values as DATA01 of the command
DATA02 Setting Value
00H : Inactive
01H : Active

Response: At the time of a failure

A2H 20H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

053-6. LENS MEMORY CONTROL

Function:

This command controls the lens memory function.

Command:

02H 21H 00H 00H 02H DATA01 DATA02 CKS
(*3)

Data Portion Contents

DATA01 Target

| (I) Acquirement items | | |
|-----------------------|--------|--------------------------------------|
| DATA01 | DATA02 | Acquirement name |
| 00H | 00H | Picture / Brightness |
| 01H | 00H | Picture / Contrast |
| 02H | 00H | Picture / Color |
| 03H | 00H | Picture / Hue |
| 04H | 00H | Picture / Sharpness |
| 05H | 00H | Volume |
| 05H | 01H | Sound / Bass |
| 05H | 02H | Sound / Treble |
| 06H | 00H | Blanking / Top |
| 06H | 01H | Blanking / Bottom |
| 06H | 02H | Blanking / Left |
| 06H | 03H | Blanking / Right |
| 06H | 04H | Blanking / On/Off |
| 07H | 00H | Image / Auto Adjust |
| 08H | 00H | Image / Position H |
| 08H | 01H | Image / Position V |
| 09H | 00H | Image / Pixel Adjust Clock |
| 09H | 01H | Image / Pixel Adjust Phase |
| 0AH | 00H | Image / Video Filter |
| 0BH | 00H | Image / Resolution |
| 0CH | 00H | Image / Amplitude H |
| 0CH | 01H | Image / Amplitude V |
| 0DH | 00H | Image / Input Signal Size H |
| 0DH | 01H | Image / Input Signal Size V |
| 0EH | 00H | Image / Output Signal Size H |
| 0EH | 01H | Image / Output Signal Size V |
| 0FH | 00H | Image / Output Position H |
| 0FH | 01H | Image / Output Position V |
| 10H | 00H | Image / Sync Protection Upper |
| 10H | 01H | Image / Sync Protection Lower |
| 13H | 00H | Color Temperature |
| 14H | 00H | White Balance / Brightness R |
| 14H | 01H | White Balance / Brightness G |
| 14H | 02H | White Balance / Brightness B |
| 14H | 03H | White Balance / Contrast R |
| 14H | 04H | White Balance / Contrast G |
| 14H | 05H | White Balance / Contrast B |
| 15H | 00H | Keystone H |
| 15H | 01H | Keystone V |
| 16H | 00H | Video Mode Gamma |
| 18H | 00H | Aspect Ratio / Input Signal |
| 18H | 01H | Aspect Ratio / Display Area |
| 19H | 00H | Motion Level |
| 1AH | 00H | Noise Reduction / Luminance |
| 1BH | 00H | Noise Reduction / Chrominance |
| 1CH | 00H | Select Color Matrix |
| 1DH | 00H | V-Aperture / Vertical Detail |
| 21H | 00H | W/B Compress White |
| 21H | 01H | W/B Compress Black / Black Expansion |
| 22H | 00H | Telecine |
| 23H | 00H | Y/C Delay |
| 24H | 00H | Dithering |
| 25H | 00H | VD Delay / Adjustment |
| 25H | 01H | VD Delay / Field Invert |
| 25H | 02H | VD Delay / Offset |
| 26H | 00H | Motion Select |
| 27H | 00H | Select Color Matrix Type |
| 28H | 00H | YTR Adjustment / Gain |
| 28H | 01H | YTR Adjustment / Tap |
| 28H | 02H | YTR Adjustment / Gain2 |
| 28H | 03H | YTR Adjustment / Tap2 |
| 29H | 00H | CTR Adjustment / Gain |
| 29H | 01H | CTR Adjustment / Tap |
| 29H | 02H | CTR Adjustment / Gain2 |
| 29H | 03H | CTR Adjustment / Tap2 |
| 2AH | 00H | Sharpness Tap |
| 2BH | 00H | White Correct / Position |
| 2BH | 01H | White Correct / Gain |
| 2CH | 00H | Black Correct / Position |
| 2CH | 01H | Black Correct / Gain |

| | | |
|-----|-----|--------------------------------|
| 2CH | 02H | Black Correct / Inv Gain |
| 2DH | 00H | Lamp Output |
| 2EH | 00H | Signal Level / Auto Control |
| 2FH | 00H | Signal Level / R/G/B Gain R |
| 2FH | 01H | Signal Level / R/G/B Gain G |
| 2FH | 02H | Signal Level / R/G/B Gain B |
| 30H | 00H | Signal Level / Y/Cb/Cr Gain Y |
| 30H | 01H | Signal Level / Y/Cb/Cr Gain Cb |
| 30H | 02H | Signal Level / Y/Cb/Cr Gain Cr |
| 31H | 00H | Signal Level / Y/Pb/Pr Gain Y |
| 31H | 01H | Signal Level / Y/Pb/Pr Gain Pb |
| 31H | 02H | Signal Level / Y/Pb/Pr Gain Pr |
| 33H | 00H | Clamp Timing |
| 33H | 01H | Clamp Timing / Adjust |
| 34H | 00H | Convergence / Red H |
| 34H | 01H | Convergence / Red V |
| 34H | 02H | Convergence / Green H |
| 34H | 03H | Convergence / Green V |
| 34H | 04H | Convergence / Blue H |
| 34H | 05H | Convergence / Blue V |
| 35H | 00H | Switcher Gain / R |
| 35H | 01H | Switcher Gain / G |
| 35H | 02H | Switcher Gain / B |
| 36H | 00H | Switcher Gain / Volume |
| 37H | 00H | Panel Size / H |
| 37H | 01H | Panel Size / V |
| 38H | 00H | Panel Position / H |
| 38H | 01H | Panel Position / V |
| 39H | 00H | Signal Level / White Gain |
| 3AH | 00H | Ref. White Bal. / Brightness R |
| 3AH | 01H | Ref. White Bal. / Brightness G |
| 3AH | 02H | Ref. White Bal. / Brightness B |
| 3AH | 03H | Ref. White Bal. / Contrast R |
| 3AH | 04H | Ref. White Bal. / Contrast G |
| 3AH | 05H | Ref. White Bal. / Contrast B |
| 3BH | 00H | Overscan |
| 3CH | 00H | Edge |
| 3DH | 00H | Synchronize / Off/On |
| 3DH | 01H | Synchronize / Adjust |
| 3EH | 00H | Input Signal Position / H |
| 3EH | 01H | Input Signal Position / V |
| 3FH | 00H | Signal Type |
| 40H | 00H | Color Correct / On/Off |
| 40H | 01H | Color Correct / G-R Gain |
| 40H | 02H | Color Correct / G-B Gain |
| 40H | 03H | Color Correct / B-R Gain |
| 40H | 04H | Color Correct / B-G Gain |
| 40H | 05H | Color Correct / R-G Gain |
| 40H | 06H | Color Correct / R-B Gain |
| 40H | 07H | Color Correct / U Gain |
| 40H | 08H | Color Correct / V Gain |
| 41H | 00H | HD Delay |
| 42H | 00H | Ref. Pedestal Level / U Level |
| 42H | 01H | Ref. Pedestal Level / V Level |
| 43H | 00H | Stack Clock |
| 44H | 00H | Sub Brightness / R |
| 44H | 01H | Sub Brightness / G |
| 44H | 02H | Sub Brightness / B |
| 45H | 00H | Y Contrast |
| 46H | 00H | Y Gamma Correction |
| 47H | 00H | Setup Level |
| 47H | 01H | Setup Level / Adjust |
| 47H | 02H | Setup Level / Correction |
| 48H | 00H | DCL |
| 49H | 00H | Color Space |
| 4AH | 00H | RGB Sharpness |
| 4BH | 00H | F-CLK Phase |
| 4CH | 00H | Color Correction / Mode |
| 4CH | 01H | Color Correction / Color Tune |
| 4CH | 02H | Color Correction / Yellow |
| 4CH | 03H | Color Correction / Magenta |
| 4CH | 04H | Color Correction / Cyan |
| 4CH | 05H | Color Correction / White |
| 4CH | 06H | Color Correction / Color Tune |

| | | |
|-----|-----|------------------------------------|
| 4CH | 07H | Color Correction / Yellow |
| 4CH | 08H | Color Correction / Magenta |
| 4CH | 09H | Color Correction / Cyan |
| 4CH | 0AH | Color Correction / White |
| 4DH | 00H | Through |
| 4EH | 00H | Ref. Auto White / Color Temp R |
| 4EH | 01H | Ref. Auto White / Color Temp G |
| 4EH | 02H | Ref. Auto White / Color Temp B |
| 4FH | 00H | Position |
| 50H | 00H | Screen Position |
| 51H | 00H | Sweet Vision |
| 51H | 01H | Sweet Vision / Split |
| 52H | 00H | Sub Color / R |
| 52H | 01H | Sub Color / G |
| 52H | 02H | Sub Color / B |
| 53H | 00H | Picture Management |
| 54H | 00H | Color Correction 2 Red |
| 54H | 01H | Color Correction 2 Green |
| 54H | 02H | Color Correction 2 Blue |
| 54H | 03H | Color Correction 2 Yellow |
| 54H | 04H | Color Correction 2 Magenta |
| 54H | 05H | Color Correction 2 Cyan |
| 54H | 06H | Color Correction 2 Color Gain |
| 55H | 00H | Color Temperature(Enable) |
| 56H | 00H | White Peaking |
| 57H | 00H | 3D Y/C Separation |
| 58H | 00H | Deinterlace |
| 59H | 00H | Base Setting |
| 5AH | 00H | Cornerstone T-Left H |
| 5AH | 01H | Cornerstone T-Left V |
| 5AH | 02H | Cornerstone T-Right H |
| 5AH | 03H | Cornerstone T-Right V |
| 5AH | 04H | Cornerstone B-Right H |
| 5AH | 05H | Cornerstone B-Right V |
| 5AH | 06H | Cornerstone B-Left H |
| 5AH | 07H | Cornerstone B-Left V |
| 5AH | 08H | Cornerstone Execute |
| 5BH | 00H | Contrast Enhancement |
| 5CH | 00H | Variable Y/C Delay |
| 5DH | 00H | Tint Correction |
| 5EH | 00H | Y Gamma |
| 5FH | 00H | Ref. Color Cor. / Red |
| 5FH | 01H | Ref. Color Cor. / Green |
| 5FH | 02H | Ref. Color Cor. / Blue |
| 5FH | 03H | Ref. Color Cor. / Yellow |
| 5FH | 04H | Ref. Color Cor. / Magenta |
| 5FH | 05H | Ref. Color Cor. / Cyan |
| 5FH | 06H | Ref. Color Cor. / Color Gain |
| 60H | 00H | Saturation |
| 61H | 00H | Pincushion / Horizontal |
| 61H | 01H | Pincushion / Vertical |
| 61H | 02H | Pincushion / Balance |
| 62H | 00H | Digital Zoom / Zoom |
| 62H | 01H | Digital Zoom / Horizontal Position |
| 62H | 02H | Digital Zoom / Vertical Position |
| 63H | 00H | White Bal. Dual / Brightness R |
| 63H | 01H | White Bal. Dual / Brightness G |
| 63H | 02H | White Bal. Dual / Brightness B |
| 63H | 03H | White Bal. Dual / Contrast R |
| 63H | 04H | White Bal. Dual / Contrast G |
| 63H | 05H | White Bal. Dual / Contrast B |
| 64H | 00H | White Bal. Lamp1 / Brightness R |
| 64H | 01H | White Bal. Lamp1 / Brightness G |
| 64H | 02H | White Bal. Lamp1 / Brightness B |
| 64H | 03H | White Bal. Lamp1 / Contrast R |
| 64H | 04H | White Bal. Lamp1 / Contrast G |
| 64H | 05H | White Bal. Lamp1 / Contrast B |
| 65H | 00H | White Bal. Lamp2 / Brightness R |
| 65H | 01H | White Bal. Lamp2 / Brightness G |
| 65H | 02H | White Bal. Lamp2 / Brightness B |
| 65H | 03H | White Bal. Lamp2 / Contrast R |
| 65H | 04H | White Bal. Lamp2 / Contrast G |
| 65H | 05H | White Bal. Lamp2 / Contrast B |
| 66H | 00H | Color Cor. Dual / Red |

| | | |
|---|-----|-------------------------------|
| 66H | 01H | Color Cor. Dual / Green |
| 66H | 02H | Color Cor. Dual / Blue |
| 66H | 03H | Color Cor. Dual / Yellow |
| 66H | 04H | Color Cor. Dual / Magenta |
| 66H | 05H | Color Cor. Dual / Cyan |
| 66H | 06H | Color Cor. Dual / Color Gain |
| 67H | 00H | Color Cor. Lamp1 / Red |
| 67H | 01H | Color Cor. Lamp1 / Green |
| 67H | 02H | Color Cor. Lamp1 / Blue |
| 67H | 03H | Color Cor. Lamp1 / Yellow |
| 67H | 04H | Color Cor. Lamp1 / Magenta |
| 67H | 05H | Color Cor. Lamp1 / Cyan |
| 67H | 06H | Color Cor. Lamp1 / Color Gain |
| 68H | 00H | Color Cor. Lamp2 / Red |
| 68H | 01H | Color Cor. Lamp2 / Green |
| 68H | 02H | Color Cor. Lamp2 / Blue |
| 68H | 03H | Color Cor. Lamp2 / Yellow |
| 68H | 04H | Color Cor. Lamp2 / Magenta |
| 68H | 05H | Color Cor. Lamp2 / Cyan |
| 68H | 06H | Color Cor. Lamp2 / Color Gain |
| 90H | 00H | Picture Preset |
| 91H | 00H | SweetVision Mode |
| 92H | 00H | SweetVision Level |
| 94H | 00H | Vertical Enhancer |
| 95H | 00H | I/P Converter |
| 96H | 00H | Lamp Mode Adjust |
| 97H | 00H | Wall Color |
| | | |
| | | |
| Command example: | | |
| * In case of acquiring Picture Brightness | | |
| 03H 04H 00H 00H 03H 00H 00H 00H 0AH | | |

077. MUTE CONTROL

Function:

This command controls the mute of picture, sound and on-screen.

Command:

02H 1AH 00H 00H 02H DATA01 DATA02 CKS
(*3)

Data Portion Contents

DATA01 Setting items
 00H : Picture
 01H : Sound
 02H : On-Screen

DATA02 Setting Value
 00H : OFF
 01H : ON

Response: At the time of a success

22H 1AH 01H xxH 01H DATA01 CKS
 (*1) (*2) (*3)

Data Portion Contents

DATA01 Results
 00H : Normal
 01H : Error

Response: At the time of a failure

A2H 1AH 01H xxH 02H DATA01 DATA02 CKS
 (*1) (*2) (*4) (*3)

Supplement:

* Sound mute is cancelled in the following cases:
 Input connector switching
 Video signal switching
 Volume adjustment

078-1. SETTING REQUEST

Function:

This command acquires the function information of projector.

Command:

00H 85H 00H 00H 01H 00H 86H

Response: At the time of a success

20H 85H 01H xxH 20H DATA01 .. DATA32 CKS
 (*1) (*2) (*3)

Data Portion Contents

DATA01 .. 03 Projector type

| DATA01 | DATA02 | DATA03 | Current Models |
|--------|--------|--------|----------------|
| 13H | 00H | 12H | UM330X |
| 13H | 01H | 12H | UM330W |
| 13H | 00H | 13H | M361X |
| 14H | 00H | 11H | PE401H |
| 15H | 00H | 10H | PA600X |
| 15H | 01H | 10H | PA500X |
| 15H | 02H | 10H | PA550W |
| 15H | 03H | 10H | PA500U |
| 16H | 01H | 11H | VE281X/VE281XB |
| 16H | 04H | 11H | VE281/VE281B |
| 17H | 00H | 10H | PX750U |
| 17H | 01H | 10H | PX700W |
| 17H | 02H | 10H | PX800X |
| 19H | 00H | 10H | PH1000U |
| 19H | 00H | 10H | P501X |
| 19H | 01H | 10H | P451X |
| 19H | 02H | 10H | P451W |
| 19H | 03H | 10H | P401W |
| 22H | 00H | 10H | M402X |
| 22H | 02H | 10H | M322X |
| 22H | 03H | 10H | M282X |
| 22H | 06H | 10H | M332W |
| 22H | 07H | 10H | M332XS |
| 22H | 09H | 10H | M352WS |

| | | | Legacy Models |
|-----|-----|-----|----------------------|
| 01H | 00H | 03H | MT1060/MT1065 |
| 01H | 01H | 03H | MT860 |
| 01H | 02H | 03H | MT1075 |
| 01H | 00H | 06H | NP1000/NP2000 |
| 02H | 00H | 03H | LT240/LT260 |
| 02H | 01H | 03H | LT220 |
| 02H | 02H | 03H | LT240K/LT260K |
| 02H | 00H | 05H | LT245/LT265 |
| 02H | 00H | 06H | LT380 |
| 02H | 01H | 06H | LT280 |
| 03H | 00H | 06H | VT80 Series |
| 03H | 00H | 07H | VT90 Series |
| 04H | 00H | 01H | GT1150 |
| 04H | 01H | 01H | GT2150 |
| 04H | 00H | 03H | GT5000 |
| 04H | 01H | 03H | GT6000 |
| 05H | 00H | 03H | HT1000 |
| 06H | 00H | 03H | WT600 |
| 06H | 00H | 05H | WT610/WT615 |
| 08H | 00H | 07H | NP4000/NP4001 |
| 08H | 00H | 10H | NP4100 |
| 08H | 01H | 10H | NP4100W |
| 10H | 00H | 08H | VT700 |
| 10H | 00H | 09H | NP600 |
| 10H | 01H | 09H | NP500 |
| 10H | 02H | 09H | NP500 W |
| 10H | 03H | 09H | NP400 |
| 10H | 04H | 09H | NP300 |
| 10H | 00H | 10H | NP610 |
| 10H | 01H | 10H | NP510 |
| 10H | 02H | 10H | NP510W |
| 10H | 03H | 10H | NP410 |
| 10H | 05H | 10H | NP310 |
| 10H | 07H | 10H | NP610S |
| 10H | 08H | 10H | NP510WS |
| 10H | 09H | 10H | NP410 |
| 10H | 01H | 11H | NP2200 |
| 10H | 02H | 11H | NP1200 |
| 11H | 00H | 00H | NP41/61 |
| 11H | 01H | 00H | NP62 |
| 11H | 00H | 11H | NP215 |
| 11H | 02H | 11H | NP1150/NP2150/NP3150 |
| 11H | 02H | 11H | NP115 |
| 11H | 03H | 11H | NP110 |
| 11H | 00H | 12H | NP64 |
| 11H | 03H | 12H | NP43 |
| 11H | 04H | 11H | NP216 |
| 12H | 00H | 08H | NP1150/NP2150/NP3150 |
| 12H | 01H | 08H | NP3151W |
| 12H | 00H | 09H | NP905 |
| 12H | 01H | 09H | NP901W |
| 12H | 02H | 09H | VT800 |
| 12H | 00H | 10H | NP1250/NP2250/NP3250 |
| 13H | 01H | 10H | M300X |
| 13H | 02H | 10H | M300W |
| 13H | 05H | 10H | M260X |
| 13H | 06H | 10H | M260W |
| 13H | 00H | 11H | P420X |
| 13H | 01H | 11H | P350X |
| 13H | 02H | 11H | P350W |
| 13H | 00H | 13H | M361X |
| 13H | 01H | 13H | M311W |
| 13H | 02H | 13H | M271X |
| 13H | 03H | 13H | M311W |
| 14H | 02H | 10H | U300X |
| 14H | 04H | 10H | U310W |
| 16H | 00H | 10H | V300X |
| 16H | 01H | 10H | V260X |
| 16H | 03H | 10H | V260 |

DATA04 Sound function
00H : Not available
01H : Available

DATA05 Calendar function
00H : No function
01H or 03H : Timer function, sleep timer function
02H : Sleep timer function

DATA06 .. 32 Reserved

Response: At the time of a failure

A0H 85H 01H xxH 02H DATA01 DATA02 CKS
 (*1) (*2) (*4) (*3)

078-2. RUNNING STATUS REQUEST

Function:

This command acquires the status of the projector operation.

Command:

00H 85H 00H 00H 01H 01H 87H

Response: At the time of a success

20H 85H 01H xxH 10H DATA01 .. DATA16 CKS
 (*1) (*2) (*3)

Data Portion Contents

DATA01 .. 02 Reserved

DATA03 Projector status
00H : Idling
01H : Power On

DATA04 Cooling processing
00H : No execution(Normal condition)
01H : During execution

DATA05 Power On/Off processing
00H : No execution(Normal condition)
01H : During execution

DATA06 Status of operation
00H : Idling
04H : Power On
05H : Cooling
06H : Idling(Error occurrence)
Other than above : (nondisclosure)
Internal use of code during a state transition period

DATA07 PC Card insertion
00H : Not inserted
01H : Inserted

DATA08 USB Mouse connection
00H : Not connected
01H : Connected

DATA09 .. 16 Reserved

Response: At the time of a failure

A0H 85H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

078-3. INPUT STATUS REQUEST

Function:

This command acquires the status of input signal of the projector.

Command:

00H 85H 00H 00H 01H 02H 88H

Response: At the time of a success

20H 85H 01H xxH 10H DATA01 .. DATA16 CKS
(*1) (*2) (*3)

Data Portion Contents

DATA01 Selecting signal processing
00H : No execution(Normal condition)
01H : During execution

DATA02 Signal number(Entry list number - 1)
0 .. 199

DATA03 .. 04 Selected input terminal

| Terminal name | DATA03 | DATA04 |
|------------------|--------|--------|
| RGB1(RGB)(*5) | 01H | 01H |
| RGB2(*5) | 02H | 01H |
| DVI(Analog) | 02H | 01H |
| Video | 01H | 02H |
| S-Video | 01H | 03H |
| Component | 01H | 04H |
| Component | 02H | 04H |
| Component | 03H | 04H |
| DVI(*6) | 01H | 06H |
| DVI(DIGITAL)(*6) | 01H | 06H |
| HDMI | 01H | 06H |
| DisplayPort | 02H | 06H |
| Slot | 03H | 06H |
| Viewer | 01H | 07H |
| LAN | 02H | 07H |
| USB Display | 04H | 07H |
| Slot1-1 | 01H | 08H |
| Slot1-2 | 02H | 08H |
| Slot2-1 | 01H | 09H |
| Slot2-2 | 02H | 09H |
| RGB(Video) | 02H | 02H |
| RGB(S-Video) | 02H | 03H |

DATA05 Entry list type
01H : Default
02H : User

DATA06 Test pattern display
00H : No display(Normal condition)
01H : Displaying
DATA07 ..08 Reserved

DATA09 Indicate Contents
00H = Picture signal displaying
01H = No signal
02H = Viewer displaying
03H = Test pattern displaying
04H = LAN displaying

DATA10 .. 16 Reserved

Response: At the time of a failure

A0H 85H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

078-4. MUTE STATUS REQUEST

Function:

This command acquires the status of the mute of projector.

Command:

00H 85H 00H 00H 01H 03H 89H

Response: At the time of a success

20H 85H 01H xxH 10H DATA01 .. DATA16 CKS
(*1) (*2) (*3)

Data Portion Contents

DATA01 Picture mute
00H : OFF
01H : ON

DATA02 Sound mute
00H : OFF
01H : ON

DATA03 On-screen mute
00H : OFF
01H : ON

DATA04 Forced on-screen mute
00H : OFF
01H : ON

DATA05 On-screen display
00H : No display
01H : Displaying

DATA06 .. 16 Reserved

Response: At the time of a failure

A0H 85H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

078-5. MODEL NAME REQUEST

Function:

This command acquires the model name of the projector.

Command:

00H 85H 00H 00H 01H 04H 8AH

Response: At the time of a success

20H 85H 01H xxH 20H DATA01 .. DATA32 CKS
 (*1) (*2) (*3)

Data Portion Contents

 DATA01 .. 32 Model name (NULL termination character string)

Response: At the time of a failure

A0H 85H 01H xxH 02H DATA01 DATA02 CKS
 (*1) (*2) (*4) (*3)

=====

6. Table of Response Error Codes

| DATA01 | DATA02 | |
|-------------|------------------|--|
| Error types | Error descriptio | Error contents |
| 00H | 00H | Unknown command |
| 00H | 01H | The current model does not support this function. |
| 01H | 00H | |
| 01H | 01H | Invalid values specified. |
| 01H | 01H | Specified terminal is unavailable or cannot be selected. |
| 01H | 02H | Selected language is not available. |
| 02H | 00H | Available memory reservation error |
| 02H | 02H | Operating memory |
| 02H | 03H | Setting not possible |
| 02H | 04H | On Forced on-screen mute mode |
| 02H | 06H | Displaying a signal other than PC Viewer |
| 02H | 07H | -No signal- |
| 02H | 08H | Displaying a test pattern or PC Card files screen. |
| 02H | 09H | No PC card is inserted |
| 02H | 0AH | Memory operation failed |
| 02H | 0CH | Displaying the Entry List |
| 02H | 0DH | Power Off inhibited |
| 02H | 0EH | Execution error |
| 02H | 0FH | No operation authority |
| 03H | 00H | Specified gain number is wrong |
| 03H | 01H | Selected gain is not available. |
| 03H | 02H | Adjustment failed |

[079. FREEZE CONTROL]

Function:

This command controls the freeze.

Command:

01H 98H 00H 00H 01H DATA01 CKS

Operation types

DATA01: 00H : Reserved

01H : Freeze start

02H : Freeze cancel

Response: At the time of a success

21H 98H ID *0H 01H DATA01 CKS

Data Portion Contents

| | |
|--------|--------------|
| DATA01 | Results |
| | 00H : Normal |
| | 01H : Error |

Response: At the time of a failure

| | | | | | | | |
|-----|------|------|-----|-----|--------|--------|------|
| A1H | 98H | 01H | xxH | 02H | DATA01 | DATA02 | CKS |
| | (*1) | (*2) | | | (*4) | | (*3) |

097-196.WXGA MODE SETTING REQUEST

Function:

This command acquires the setting of the WXGA Mode of projector.

Command:

03H B0H 00H 00H 01H C3H 77H

Response: At the time of a success

| | | | | | | | |
|-----|------|------|-----|-----|--------|--------|-----|
| 23H | B0H | 01H | xxH | 02H | DATA01 | DATA02 | CKS |
| | (*1) | (*2) | | | (*3) | | |

Data Portion Contents

| | |
|--------|---------------|
| DATA01 | C3H fixed |
| DATA02 | Setting Value |
| | 00H : OFF |
| | 01H : ON |

Response: At the time of a failure

| | | | | | | | |
|-----|------|------|-----|-----|--------|--------|------|
| A3H | B0H | 01H | xxH | 02H | DATA01 | DATA02 | CKS |
| | (*1) | (*2) | | | (*4) | | (*3) |

097-198. PIP/SIDE BY SIDE REQUEST

Function:

This command acquires the setting of the PIP/SIDE BY SIDE of projector.

Command:

03H B0H 00H 00H 02H DATA01 DATA02 CKS

Data Portion Contents

```

-----
DATA01    C5H fixed
DATA02    Acquisition Object
          00H : MODE
          01H : POSITION
          02H : SOURCE

```

Response: At the time of a success

```

23H B0H 01H xxH 03H DATA01 DATA02 DATA03 CKS
      (*1) (*2)                               (*3)

```

Data Portion Contents

```

-----
DATA01    C5H fixed
DATA02    Acquisition item(Same as DATA02 of the transmit data)
DATA03    Setting Value
          if DATA02 is MODE(00H)
          00H : PIP
          01H : SIDE BY SIDE
          if DATA02 is POSITION(01H)
          00H : TOP-LEFT
          01H : TOP-RIGHT
          02H : BOTTOM-LEFT
          03H : BOTTOM-RIGHT
          if DATA02 is SOURCE(02H)
          00H : OFF
          01H : VIDEO
          02H : S-VIDEO

```

Response: At the time of a failure

```

A3H B0H 01H xxH 02H DATA01 DATA02 CKS
      (*1) (*2)           (*4)   (*3)

```

098-193. HDMI AUDIO SELECT SET

Function:

This command sets the HDMI Audio Select of the projector.

Command:

03H B1H ID *0H 02H DATA01 DATA02 CKS

Data Portion Contents

```

-----
DATA01    Setting Items
          C0H : HDMI Audio Select
DATA02    Setting Value
          00H : HDMI
          01H : COMPUTER

```

Response (ACK):

23H B1H ID *0H 02H DATA01 DATA02 CKS

Data Portion Contents

```

-----
DATA01      Setting Items
            ( Same as DATA01 of the transmit data )
DATA02      Results
            00H : Normal
            01H : Error

```

Response (NAK):

A3H B1H ID *0H 02H DATA01 DATA02 CKS

Data Portion Contents

```

-----
DATA01:     Error types
DATA02:     Error description
See "NAK" of "6-2. Data portion of response".

```

098-198. PIP/SIDE BY SIDE SET

Function:

This command sets the PIP/SIDE BY SIDE of projector.

Command:

03H B1H 00H 00H 03H DATA01 DATA02 DATA03 CKS

Data Portion Contents

```

-----
DATA01      C5H fixed
DATA02      Update target
            00H : MODE
            01H : POSITION
            02H : SOURCE
DATA03      Setting Value
            if DATA02 is MODE(00H)
            00H : PIP
            01H : SIDE BY SIDE
            if DATA02 is POSITION(01H)
            00H : TOP-LEFT
            01H : TOP-RIGHT
            02H : BOTTOM-LEFT
            03H : BOTTOM-RIGHT
            if DATA02 is SOURCE(02H)
            00H : OFF
            01H : VIDEO
            02H : S-VIDEO

```

Response: At the time of a success

23H B1H 01H xxH 03H DATA01 DATA02 DATA03 CKS
 (*1) (*2) (*3)

Data Portion Contents

```

-----
DATA01      00H fixed
DATA02      Update target
            ( Same as DATA02 of the transmit data )
DATA03      Results

```

00H : Normal
01H : Error

Response: At the time of a failure

A3H B1H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

110. AUTO FUNCTIONS EXECUTE

Function:

This command executes the auto functions.

Command:

03H B6H 00H 00H 01H DATA01 CKS
(*3)

Data Portion Contents

DATA01 Execution items

| | Focus |
|-----|-------|
| 00H | ! |
| 01H | * |

!: According to projector setting

*: Executing

Response: At the time of a success

23H B6H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*3)

Data Portion Contents

DATA01 Execution items (Same as DATA01 of the transmit data)

DATA02 Results

00H : Normal

01H : Error

Response: At the time of a failure

A3H B6H 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

111. AUTO ADJUST EXECUTE2

Function:

This command executes the Auto Adjust.

Command:

03H BAH 00H 00H 01H 00H BEH

Response: At the time of a success

23H BAH 01H xxH 01H 00H CKS
(*1) (*2) (*3)

Response: At the time of a failure

A3H BAH 01H xxH 02H DATA01 DATA02 CKS

(*1) (*2) (*4) (*3)

305-1. BASE MODEL TYPE REQUEST

Function:

This command acquires the projector type.

Command:

00H BFH 00H 00H 01H 00H C0H

Response: At the time of a success

20H BFH 01H xxH 10H DATA01 ... DATA16 CKS

(*1) (*2) (*3)

Data Portion Contents

DATA01 00H fixed
DATA02 ... 03 Projector type
See DATA13...14
DATA04 ... 12 Model name (NULL termination character string)
DATA13 ... 14 Projector type

| DATA02 | DATA03 | DATA13 | DATA14 | Current Models |
|--------|--------|--------|--------|----------------|
| FFH | 13H | 00H | 13H | M361X |
| FFH | 13H | 00H | 12H | UM330X |
| FFH | 13H | 03H | 12H | UM330W |
| FFH | 14H | 00H | 11H | PE401H |
| FFH | 15H | 00H | 10H | PA600X |
| FFH | 15H | 01H | 10H | PA500X |
| FFH | 15H | 02H | 10H | PA550W |
| FFH | 15H | 03H | 10H | PA500U |
| FFH | 16H | 01H | 11H | VE281X/VE281XB |
| FFH | 16H | 04H | 11H | VE281/VE281B |
| FFH | 17H | 00H | 10H | PX750U |
| FFH | 17H | 01H | 10H | PX700W |
| FFH | 17H | 02H | 10H | PX800X |
| FFH | 19H | 00H | 10H | PH1000 |
| FFH | 20H | 00H | 10H | P501X |
| FFH | 20H | 01H | 10H | P451X |
| FFH | 20H | 02H | 10H | P451W |
| FFH | 20H | 03H | 10H | P401W |
| FFH | 22H | 00H | 10H | M402X |
| FFH | 22H | 02H | 10H | M322X |
| FFH | 22H | 03H | 10H | M282X |
| FFH | 22H | 06H | 10H | M322W |
| FFH | 22H | 07H | 10H | M332XS |
| FFH | 22H | 09H | 10H | M352WS |

| | | | | Legacy Models |
|-----|-----|-----|-----|----------------------|
| 00H | 01H | 00H | 03H | MT1060/1065 |
| 00H | 01H | 02H | 03H | MT860 |
| 00H | 01H | 02H | 03H | MT1075 |
| 00H | 01H | 00H | 06H | NP1000/NP2000 |
| 00H | 02H | 00H | 03H | LT240/LT260 |
| 00H | 02H | 01H | 03H | LT220 |
| 00H | 02H | 02H | 03H | LT260K |
| 00H | 02H | 00H | 05H | LT245/LT265 |
| 00H | 02H | 00H | 06H | LT380 |
| 00H | 02H | 01H | 06H | LT280 |
| 02H | 02H | 00H | 05H | LT180 |
| 02H | 02H | 00H | 06H | LT25/LT30/LT35 |
| 02H | 02H | 00H | 07H | NP40/NP50/NP60 |
| 00H | 03H | 00H | 04H | VT770 |
| 01H | 03H | 00H | 06H | VT80 Series |
| 01H | 03H | 00H | 07H | VT90 Series |
| 00H | 04H | 00H | 03H | GT5000 |
| 00H | 04H | 01H | 03H | GT6000 |
| 00H | 04H | 02H | 03H | GT6000R |
| 00H | 05H | 00H | 03H | HT1000 |
| 00H | 05H | 00H | 04H | HT1100 |
| 02H | 05H | 00H | 05H | HT410 |
| 02H | 05H | 00H | 05H | HT510 |
| 00H | 06H | 00H | 03H | WT600 |
| 00H | 06H | 00H | 05H | WT610/WT615 |
| 03H | 08H | 00H | 07H | NP4000/NP4001 |
| 03H | 08H | 00H | 10H | NP4100 |
| 03H | 08H | 01H | 10H | NP4100W |
| 01H | 10H | 00H | 08H | VT700 |
| FFH | 10H | 00H | 09H | NP600 |
| FFH | 10H | 01H | 09H | NP500 |
| FFH | 10H | 02H | 09H | NP500W |
| FFH | 10H | 03H | 09H | NP400 |
| FFH | 10H | 04H | 09H | NP300 |
| FFH | 10H | 00H | 10H | NP610 |
| FFH | 10H | 01H | 10H | NP510 |
| FFH | 10H | 02H | 10H | NP510W |
| FFH | 10H | 03H | 10H | NP410 |
| FFH | 10H | 05H | 10H | NP310 |
| FFH | 10H | 07H | 10H | NP610S |
| FFH | 10H | 08H | 10H | NP510WS |
| FFH | 10H | 09H | 10H | NP410 |
| FFH | 10H | 01H | 11H | NP2200 |
| FFH | 10H | 02H | 11H | NP1200 |
| FFH | 11H | 00H | 00H | NP41/61 |
| FFH | 11H | 00H | 12H | NP64 |
| FFH | 11H | 01H | 00H | NP62 |
| FFH | 11H | 00H | 11H | NP215 |
| FFH | 11H | 02H | 11H | NP115 |
| FFH | 11H | 03H | 11H | NP110 |
| FFH | 11H | 03H | 12H | NP43 |
| FFH | 11H | 04H | 11H | NP216 |
| FFH | 12H | 00H | 08H | NP1150/NP2150/NP3150 |
| FFH | 12H | 01H | 08H | NP3151W |
| FFH | 12H | 00H | 09H | NP905 |
| FFH | 12H | 01H | 09H | NP901W |
| FFH | 12H | 02H | 09H | VT800 |
| FFH | 12H | 00H | 10H | NP1250/NP2250/NP3250 |
| FFH | 12H | 01H | 10H | NP3250W |
| FFH | 13H | 01H | 10H | M300X |
| FFH | 13H | 02H | 10H | M300W |
| FFH | 13H | 05H | 10H | M260X |
| FFH | 13H | 06H | 10H | M260W |
| FFH | 13H | 00H | 11H | P420X |
| FFH | 13H | 01H | 11H | P350X |
| FFH | 13H | 02H | 11H | P350W |
| FFH | 13H | 01H | 13H | M311W |
| FFH | 13H | 02H | 13H | M271X |
| FFH | 13H | 03H | 13H | M311X |
| FFH | 14H | 02H | 10H | U300X |
| FFH | 14H | 04H | 10H | U310W |
| FFH | 16H | 00H | 10H | V300X |
| FFH | 16H | 01H | 10H | V260X |
| FFH | 16H | 03H | 10H | V260 |

Response: At the time of a failure

A0H BFH 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)

305-3. PROJECTOR INFORMATION REQUEST

Function:

This command acquires basic operation states of projector.

Command:

00H BFH 00H 00H 01H 02H C2H

Response: At the time of a success

20H BFH 01H xxH 10H DATA01 ... DATA16 CKS
(*1) (*2) (*3)

Data Portion Contents

```

-----
DATA01      02H fixed
DATA02      Projector Processing Status
            00H : Idle
            04H : Power On
            05H : Cooling
            06H : Idle(Error Standby)
            Other : Not Support
            Other than above : (nondisclosure)
            Internal use of code during a state transition period
DATA03      Indicate Contents
            00H : Picture signal displaying
            01H : No Signal
            02H : Viewer displaying
            03H : Test Pattern displaying
            04H : LAN displaying
            05H : Test Pattern (User) displaying
            10H : Signal selection in progress
            Other : Not Support
DATA04      Select source input type 1
            01H : 1
            02H : 2
            03H : 3
            04H : 4
            05H : 5
            Other : Not Support
DATA05      Select source input type 2
            01H : COMPUTER (RGB)
            02H : VIDEO
            03H : S-VIDEO
            04H : COMPONENT
            05H : Reserved
            06H : DIGITAL
            07H : VIEWER
            08H : SLOT1
            09H : SLOT2
            0AH : SLOT3
            0BH : SLOT4
            0CH : DIGITAL2

```

0DH : SCART
10H : AUTO
FFH : Not Source Input
Other : Not Support

DATA06 Indication signal type
(Effective only when Select source input type 2 is 02H or 03H)

x0H : NTSC3.58
x1H : NTSC4.43
x2H : PAL
x3H : PAL60
x4H : SECAM
x5H : B/W60
x6H : B/W50
x7H : PALNM
x8H : NTSC3.58 LBX
x9H : NTSC3.58 SQZ
xAH : COMPONENT(60Hz)
xBH : COMPONENT(50Hz)
xCH : Un known
xDH : NTSC
xEH : PAL-M
xFH : PAL-N
FFH : Not Video Input
Other : Not Support

DATA07 Picture Mute
00H : OFF
01H : ON

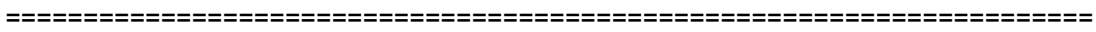
DATA08 Sound Mute
00H : OFF
01H : ON

DATA09 On-screen mute
00H : OFF
01H : ON

DATA10...DATA16 Reserved

Response: At the time of a failure

A0H BFH 01H xxH 02H DATA01 DATA02 CKS
(*1) (*2) (*4) (*3)



6.1. Response

* At the time of a success (ACK)

This returns ACK without adding data portion to the command that does not request data.
 This returns ACK with adding data to the data portion for the command that requests data.

* At the time of a failure (NAK)

This adds a cause of not accepting the command to data portion to return it.

(Example) Power On

Command:

02H 00H FFH F0H 00H CKS

NAK:

A2H 00H 01H 20H 02H DATA01 DATA02 CKS

6. Data Portion of Response

| DATA01 | DATA02 | |
|-------------|-------------------|--|
| Error types | Error description | Error contents |
| 00H | 00H | Unknown command |
| 00H | 01H | The current model does not support this function. |
| 01H | 00H | Invalid values specified. |
| 01H | 01H | Specified terminal is unavailable or cannot be selected. |
| 01H | 02H | Selected language is not available. |
| 02H | 00H | Available memory reservation error |
| 02H | 02H | Operating memory |
| 02H | 03H | Setting not possible |
| 02H | 04H | On Forced on-screen mute mode |
| 02H | 07H | -No signal- |
| 02H | 08H | Displaying a test pattern or PC Card Fills screen. |
| 02H | 0AH | Memory operation failed |
| 02H | 0DH | Power Off inhibited |
| 02H | 0EH | Execution error |
| 02H | 0FH | No operation authority |
| 03H | 00H | Specified gain number is wrong |
| 03H | 01H | Selected gain is not available. |
| 03H | 02H | Adjustment failed |