

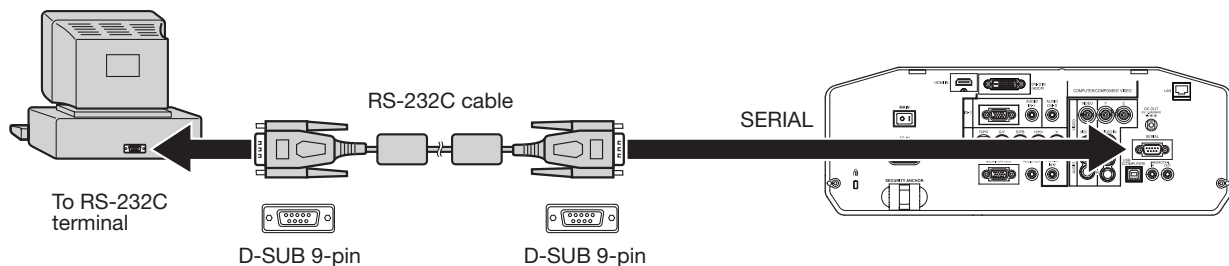
Controlling the projector using a personal computer

This projector can be controlled by connecting a personal computer with RS-232C terminal.

PC-controllable functions:

- Turning the power ON or OFF
- Changing input signals
- Inputting commands by pressing the buttons on the control panel and remote control
- Menu setting

Connection



Important:

- Connect the computer with the projector on a one-to-one basis.
- Make sure that your computer and projector are turned off before connection.
- Boot up the computer first, and then plug the power cord of the projector.
(If you do not follow this instruction, the Com port may not function.)
- Adapters may be necessary depending on the PC connected to this projector. Contact your dealer for details.

1. Interface

1.1 Pin assignment of SERIAL terminal (D-SUB 9-pin)

| Pin No. | Name | I/O |
|---------|------|-----|
| 1 | OPEN | |
| 2 | RXD | IN |
| 3 | TXD | OUT |
| 4 | OPEN | |
| 5 | GND | |
| 6 | OPEN | |
| 7 | OPEN | |
| 8 | OPEN | |
| 9 | OPEN | |

1.2 Communications format

| | |
|--------------|------------|
| PROTOCOL | RS-232C |
| BAUD RATE | 9600 [bps] |
| DATA LENGTH | 8 [bits] |
| PARITY BIT | NONE |
| STOP BIT | 1 [bit] |
| FLOW CONTROL | NONE |

This projector uses RXD, TXD and GND lines for RS-232C control.
For RS-232C cable, the supplied cable (crossover cable) should be used.

2. Control command configuration

The command consists of the address code, function code, data code, ACK/NAK, and end code. The length of the command varies among the functions.

| | Address code | Function code | Data code | ACK/NAK | End code |
|-----------|--------------|---------------|-----------|-------------|----------|
| ASCII | '30h' '30h' | Function | Data | '3Ah' '4Eh' | '0Dh' |
| Character | 00 | Function | Data | :N | ↵ |

[Address code] Fixed to 00. ('30h' '30h' in the ASCII code)

[Function code] Code unique to each control operation.

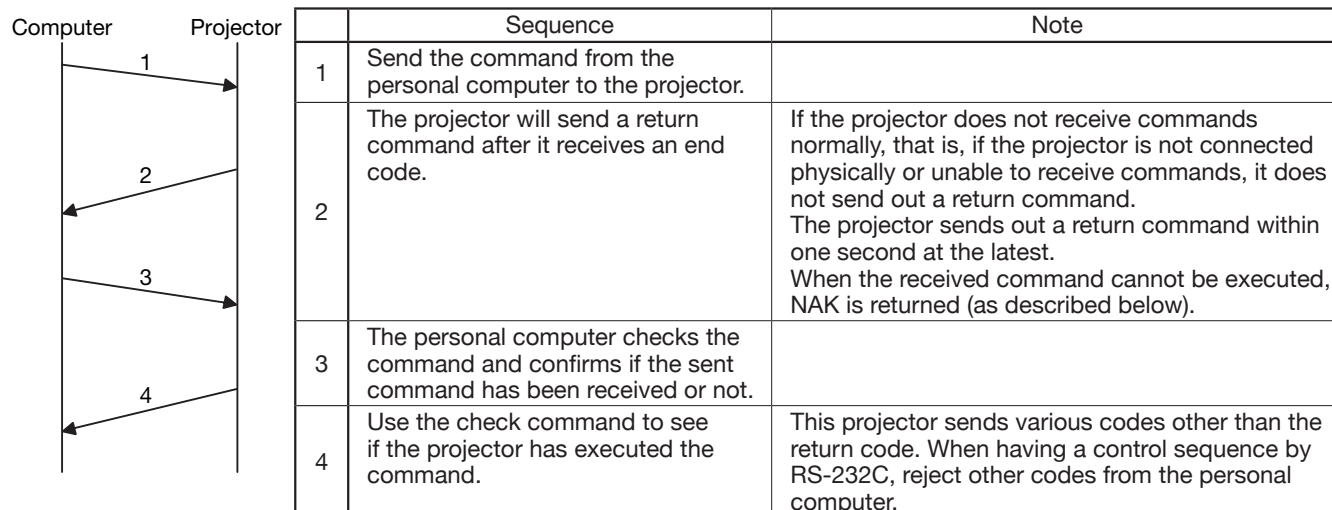
[Data code] Data (value) unique to each control operation (Not always indicated.)

[ACK/NAK] Code indicating the NAK return as described below

Fixed to :N ('3Ah' '3Eh' in the ASCII code. Not added to ACK.)

[End code] Fixed to ↵. ('0Dh' in the ASCII code)

3. Control sequence



- NAK return

In the following cases, the projector returns the command with “:N” added.

(1) Though the command sent from the computer is received by the projector successfully, it cannot be executed because the projector is in the operation prohibition state.

(2) The data length of the sent command is incorrect or the command is invalid.

- When a command is sent out during the following operations, it may not be executed.

(1) During signal switching

(2) In the process of the auto position

(3) After the power is turned on.

The projector receives no commands for about 20 seconds (or for 2 minutes at the longest if the lamp does not light up promptly as the life is expiring). In this case, the projector returns the received command with NAK added.

- The return command is sent out within 1 second at the latest.

- When sending commands successively, wait to receive the return command of the current command before sending a next command.

- The projector may not receive a command when the splash screen is being displayed immediately after turning on the power. Use command “00r10” to cancel the splash screen.

- While using the LAN terminals, the LAN functions take precedence.

- For the LAN terminals, the same commands as those for connecting with the TCP/IP (port number 63007) are available. Note, however, that the response becomes slightly slower than when using the RS-232C terminals.

[Example 1] Turning ON the power. (Values enclosed in quotation marks are ASCII codes.):

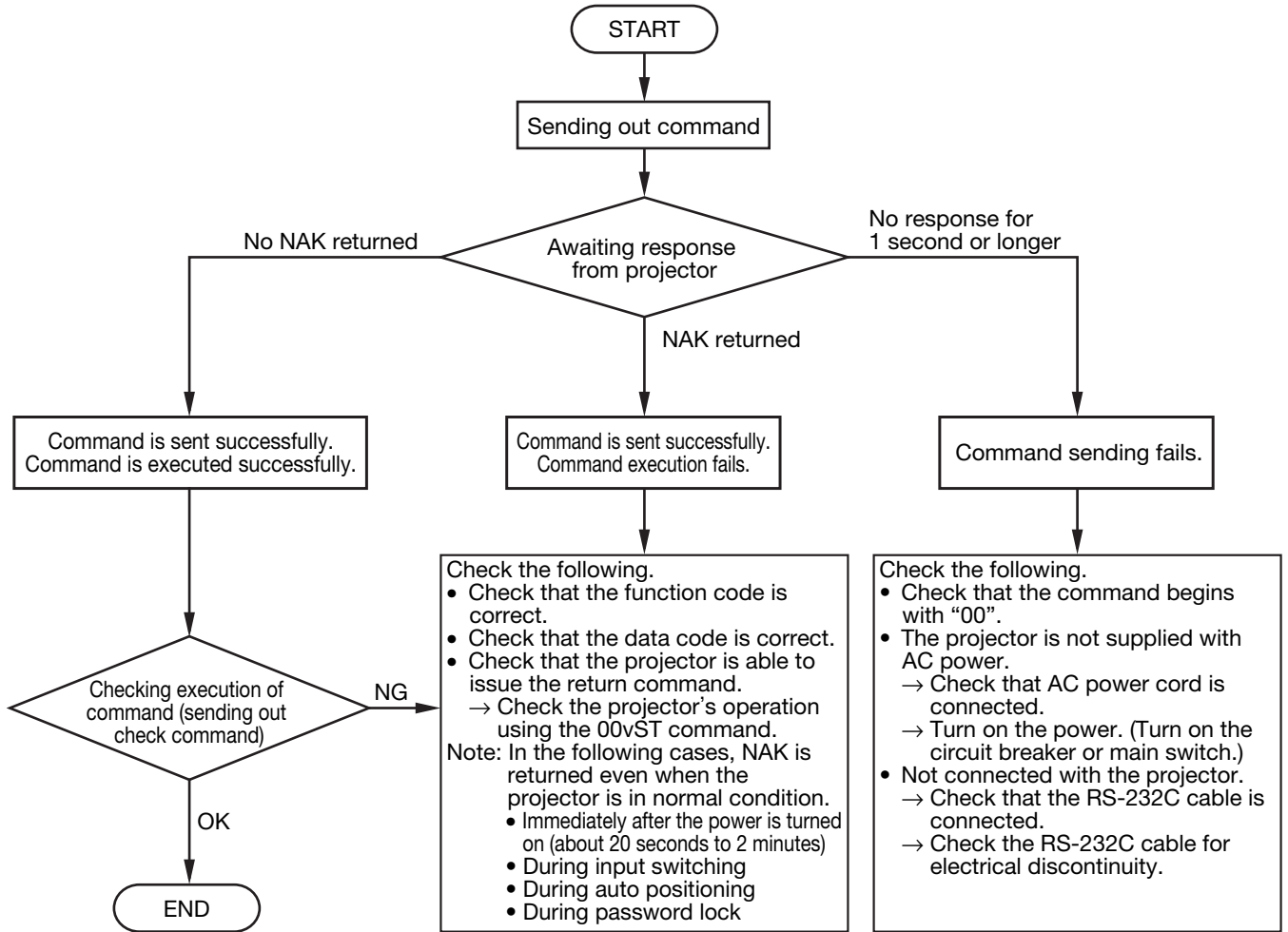
| Command sent from the PC | Status code returned from the projector | Description |
|---|---|---|
| '30' '30' '21' '0D' 00! <input type="checkbox"/> | | Command for POWER ON |
| | '30' '30' '21' '0D' 00! <input type="checkbox"/> | Command receipt confirmation (Command echo back) |

[Example 2] Selecting VIDEO as the input signal during auto positioning (Values enclosed in quotation marks are ASCII codes.):

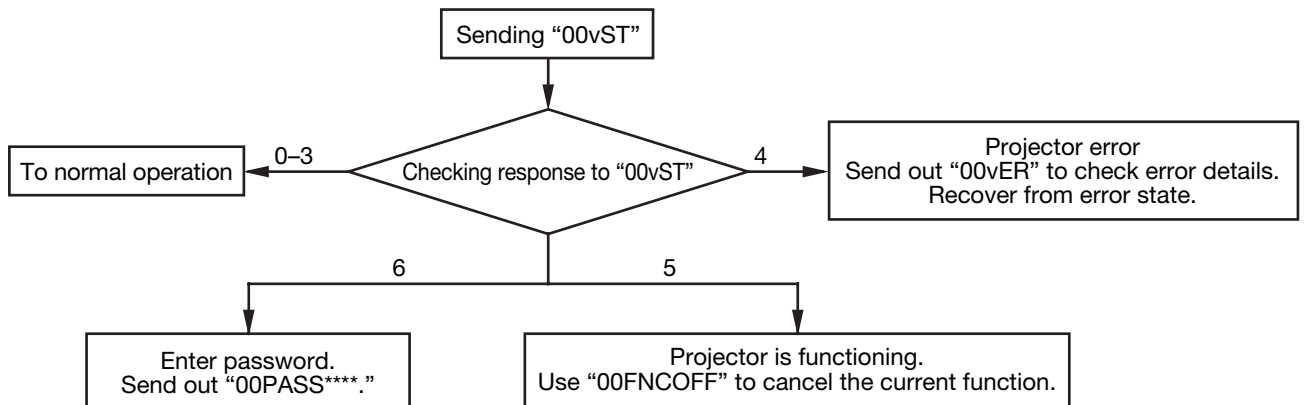
| Command sent from the PC | Status code returned from the projector | Description |
|--|--|--|
| '30' '30' '5F' '76' '31' 00_v1 <input type="checkbox"/> | | (During auto positioning) Command for selecting VIDEO as the input signal is sent out. |
| | '30' '30' '5F' '76' '31' '3A' '4E' 00_v1:N <input type="checkbox"/> | The command is received by the projector but cannot be executed. (NAK return) |

- The flowchart on the next page shows the recommended operating sequence for your reference to create a program.

[RS-232C control flowchart]



[Method of checking state of projector]



[Compatibility with the former models]

To use the RS-232C commands designed for the former models of Mitsubishi projector, by inputting "00COMMAND0", the projector responds in the same way as the former models. (No NAK is returned.)

(For the recommended procedure to use the former command systems, see "Controlling the projector using a personal computer" for FL7000U.)

| ITEM | Function | | Data |
|-------------------------------------|-----------|-----------------------------|---|
| | Character | ASCII | |
| Changing the RS-232C command system | COMMAND | 43h 4Fh 4Dh 4Dh 41h 4Eh 44h | 0 (Former command system), 1 (New command system) |

4. Command list

4.1 Operation commands

The operation commands are used for the basic operation setting of this projector. They may not be executed while the signals are changed. The operation commands have no data codes. (When the commands for input select are sent while the splash screen is being displayed, the splash screen is only canceled.)

| ITEM | Function | | Note |
|------------------|-----------|-------------|--|
| | Character | ASCII | |
| POWER ON | ! | 21h | This command is invalid for 1 minute after the power is turned off. |
| POWER OFF | " | 22h | This command is invalid for 1 minute after the power is turned on. |
| INPUT COMPUTER 1 | _r1 | 5Fh 72h 31h | This command will not be executed in Stand-by mode or when the MUTE is executed. |
| INPUT COMPUTER 2 | _r2 | 5Fh 72h 32h | This command will not be executed in Stand-by mode or when the MUTE is executed. |
| INPUT HDMI | _d1 | 5Fh 64h 31h | This command will not be executed in Stand-by mode or when the MUTE is executed. |
| INPUT DVI | _d2 | 5Fh 64h 32h | This command will not be executed in Stand-by mode or when the MUTE is executed. |
| INPUT VIDEO | _v1 | 5Fh 76h 31h | This command will not be executed in Stand-by mode or when the MUTE is executed. |
| INPUT S-VIDEO | _v2 | 5Fh 76h 32h | This command will not be executed in Stand-by mode or when the MUTE is executed. |

[Example] When setting the input signal to COMPUTER 1. (Values enclosed in quotation marks are ASCII codes.):

| Command sent from the PC, etc. | Status code returned from the projector | Description |
|--|---|--|
| '30' '30' '5F' '72' '31' '0D' 00_r1 | | Command for setting the input signal to COMPUTER 1 |
| | '30' '30' '5F' '72' '31' '0D' 00_r1 | Command receipt confirmation (Command echo back) |

4.2 Reading command diagram

The projectors operating status, such as POWER-ON/OFF and the currently selected input terminal, etc. can be monitored.

| ITEM | Character | | ASCII | |
|-------------------------|-----------|----------------|-------------|----------------|
| | Function | Data (Receive) | Function | Data (Receive) |
| POWER ON | vP | 1 | 76h 50h | 31h |
| POWER OFF | vP | 0 | 76h 50h | 30h |
| INPUT COMPUTER 1 | vl | r1 | 76h 49h | 72h 31h |
| INPUT COMPUTER 2 | vl | r2 | 76h 49h | 72h 32h |
| INPUT HDMI | vl | d1 | 76h 49h | 64h 31h |
| INPUT DVI | vl | d2 | 76h 49h | 64h 32h |
| INPUT VIDEO | vl | v1 | 76h 49h | 76h 31h |
| INPUT S-VIDEO | vl | v2 | 76h 49h | 76h 32h |
| POWER ON/OFF IMPOSSIBLE | vPK | 0 | 76h 50h 4Bh | 30h |
| POWER ON/OFF POSSIBLE | vPK | 1 | 76h 50h 4Bh | 31h |
| NO SIGNAL SUPPLIED | vSM | 0 | 76h 53h 4Dh | 30h |
| SIGNAL SUPPLIED | vSM | 1 | 76h 53h 4Dh | 31h |

Use the following commands to obtain the values of the items in the INFORMATION menu.

| ITEM | Function | | Data (Receive) |
|----------------------|-----------|-------------------------|--|
| | Character | ASCII | |
| LAMP TIME (LOW) | vLE | 76h 4Ch 45h | hhhhmm |
| RESOLUTION | vRESO | 76h 52h 45h 53h 4Fh | HHHHxVVV |
| VERTICAL FREQUENCY | vVFREQ | 76h 56h 46h 52h 45h 51h | ***.** |
| HORIZONTAL FREQUENCY | vHFREQ | 76h 48h 46h 52h 45h 51h | ***.** |
| SYNC. TYPE | vSYNCT | 76h 53h 59h 4Eh 43h 54h | 0 (NO SIGNAL), 1 (Invalid), 3 (3wire), 4 (4wire), 5 (5wire), 6 (SCART) |

“hhhh” and “mm” represent hours and minutes respectively.

“HHHH” and “VVV” represent the horizontal and vertical resolutions respectively.

“***.**” represents the vertical frequency (in Hz) or the horizontal frequency (in kHz).

Use the following commands to obtain other information.

| ITEM | Function | | Data (Receive) |
|---------------|-----------|-------------------------|------------------------------|
| | Character | ASCII | |
| Model name | vMDL | 76h 4Dh 44h 4Ch | ***** (within 16 characters) |
| Serial number | vS/N | 76h 53h 2Fh 4Eh | ***** (within 7 characters) |
| Input source | vSOURCE | 76h 53h 4Fh 55h 43h 45h | r1 r2 v1 v2 d1 d2 |

| ITEM | Function | | Data (Receive) |
|------------------|-----------|-------------|---|
| | Character | ASCII | |
| Projector status | vST | 76h 53h 54h | 0 (Stand-by mode), 1 (Within 1 minute after POWER-ON (warm-up mode)), 2 (POWER-ON mode (including state of warning)), 3 (Cooling mode), 4 (Abnormal state (including shutdown due to an error)), 5 (State of functioning (menu display, dialog display, AV MUTE, FREEZE, etc.)), 6 (Awaiting password entry) |
| Error status | vER | 76h 45h 52h | Reading out error data (3 digits, hexadecimal numbers, total 9 bits) (MSB) xb1, xb2... xb8, xb9, 0, 0, 0 (LSB) xb1: Fan error xb2: Lamp error (The lamp goes out or does not light.) xb3: Lamp warning 1 (The lamp life has expired.) xb4: Lamp warning 2 (The lamp life is expiring.) xb5: Temperature error xb6: The temperature warning is being indicated. xb7: Fixed to 0. xb8: Fixed to 0. xb9: States of other component abnormality |

The PC sends the command without attaching the data code to it. On the other hand, the projector attaches to the received command its current operating status as the data code and send it back to the PC.

[Example] When checking the currently selected input terminal (when the INPUT VIDEO is being selected). (Values enclosed in quotation marks are ASCII codes.):

| Command sent from the PC, etc. | Status code returned from the projector | Description |
|----------------------------------|--|---|
| '30' '30' '76' '49' '0D' 00vl | | Command for checking the input terminal |
| | '30' '30' '76' '49' '76' '31' '0D' 00vlv1 | Check result (VIDEO) |

4.3 Remote commands (Not executable in stand-by mode. When the remote commands are sent while the splash screen is being displayed, the splash screen is only canceled.)

The remote commands allow the computer to control the projector in the same way as by the remote control. (Some operations cannot be controlled.) The remote commands have no data codes.

| Button's name on remote | Function | |
|-------------------------|-----------|-------------|
| | Character | ASCII |
| +/VOLUME | r06 | 72h 30h 36h |
| -/VOLUME | r07 | 72h 30h 37h |
| ZOOM/FOCUS | r0f | 72h 30h 66h |
| LENS SHIFT | r47 | 72h 34h 37h |
| KEystone | r43 | 72h 34h 33h |
| AV MUTE | ra6 | 72h 61h 36h |
| ▲ | r53 | 72h 35h 33h |
| ▼ | r2b | 72h 32h 62h |
| ← | r4f | 72h 34h 66h |
| → | r59 | 72h 35h 39h |
| MENU | r54 | 72h 35h 34h |
| ENTER | r10 | 72h 31h 30h |
| AUTO POSITION | r09 | 72h 30h 39h |
| FREEZE | ra4 | 72h 61h 34h |
| ASPECT | re2 | 72h 65h 32h |
| CE | re7 | 72h 65h 37h |

[Example] When displaying the MENU selection bar. (Values enclosed in quotation marks are ASCII codes.):

| Command sent from the PC, etc. | Status code returned from the projector | Description |
|--|---|--|
| '30' '30' '72' '35' '34' '0D' 00r54 | | Command operating the same as the MENU button |
| | '30' '30' '72' '35' '34' '0D' 00r54 | Command receipt confirmation (Command echo back) |

4.4 Direct commands (Not executable in stand-by mode. Possible only to read during muting.)

The direct commands are used to numerically adjust the volume and keystone.

When the computer sends the command without adding the setting value, the projector returns the received command with the current setting value added as a data code.

| ITEM | Function | | Data |
|-----------------------|-----------|-------------|-------|
| | Character | ASCII | |
| VOLUME | VL | 56h 4Ch | 00-31 |
| KEystone (vertical) | KS | 4Bh 53h | ±35 |
| KEystone (horizontal) | KSH | 4Bh 53h 48h | ±25 |

How to set the value

Use the character or ASCII code as shown below to set the value.

| Character | + | - | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| ASCII | '2Bh' | '2Dh' | '30h' | '31h' | '32h' | '33h' | '34h' | '35h' | '36h' | '37h' | '38h' | '39h' |

[Example] When setting the volume to 15. (Values enclosed in quotation marks are ASCII codes.):

| Command sent from the PC, etc. | Status code returned from the projector | Description |
|--|--|---|
| '30' '30' '56' '4C' '31' '35' '0D' 00VL15 | | Command for setting the volume |
| | '30' '30' '56' '4C' '31' '35' '0D' 00VL15 | Command receipt confirmation (Command echo back) |

4.5 Function commands (Not executable in stand-by mode. When the mute commands are sent while the splash screen is being displayed, the splash screen is only canceled.)

The mute commands are used for the mute setting of this projector with the 0 (HEX: 30h) and 1 (HEX: 31h).

| ITEM | Function | | Data |
|--------------------|-----------|-------------------------|-----------------|
| | Character | ASCII | |
| AV MUTE | MUTE | 4Dh 55h 54h 45h | 0 (OFF), 1 (ON) |
| FREEZE | FRZ | 46h 52h 5Ah | 0 (OFF), 1 (ON) |
| Function canceling | FNCOFF | 46h 4Eh 43h 4Fh 46h 46h | |

4.6 Menu setting commands (Not executable in stand-by mode. Possible only to read during muting.)

The menu setting commands are used for the menu setting of this projector. If the personal computer sends the command without attaching the data code, the projector attaches to the received command its current setting value as the data code and send it back to the PC.

| ITEM | Function | | Data |
|-------------------------------------|-----------|-------------------------|---|
| | Character | ASCII | |
| COLOR ENHANCER | CE | 43h 45h | 0 (AUTO), 1 (PRESENTATION), 2 (STANDARD), 3 (THEATER), 4 (sRGB), 5 (USER) |
| COLOR ENHANCER-USER-GAMMA MODE | CEU1GS | 43h 45h 55h 31h 47h 53h | 0 (DYNAMIC), 1 (NATURAL), 2 (DETAIL) |
| COLOR ENHANCER-USER-BrilliantColor™ | CEU1B | 43h 45h 55h 31h 42h | 00-10 |
| COLOR ENHANCER-USER-RGB-COLOR | CEU1C | 43h 45h 55h 31h 43h | ±10 |
| COLOR ENHANCER-USER-RGB-TINT | CEU1T | 43h 45h 55h 31h 54h | ±10 |
| CONTRAST | PP | 50h 50h | ±30 |
| BRIGHTNESS | QQ | 51h 51h | ±30 |
| COLOR TEMP. | A | 41h | 1 (STANDARD), 2 (HIGH), 3 (LOW), 4 (USER) |
| COLOR TEMP.-USER-CONTRAST | P | 50h | ±30 ±30 ±30 (R, G, B) |
| COLOR TEMP.-USER-BRIGHTNESS | Q | 51h | ±30 ±30 ±30 (R, G, B) |
| COLOR | T | 54h | ±10 |
| TINT | S | 53h | ±10 |
| SHARPNESS | R | 52h | ±05 |
| NOISE REDUCTION | NR | 4Eh 52h | 0 (OFF), 1 (ON) |
| CTI | CTI | 43h 54h 49h | 0 (OFF), 1 (ON) |
| INPUT LEVEL | IPL | 49h 50h 4Ch | ±5, For DVI and HDMI input: +0 (NORMAL), +1 (ENHANCED) |

| ITEM | Function | | Data |
|---------------------------|-----------|-------------------------|--|
| | Character | ASCII | |
| LAMP MODE | LM | 4Ch 4Dh | 0 (STANDARD), 1 (LOW) |
| STANDBY MODE | STBY | 53h 54h 42h 59h | 0 (STANDARD), 1 (LOW) |
| AUTO POWER ON | APON | 41h 50h 4Fh 4Eh | 0 (OFF), 1 (ON) |
| AUTO POWER OFF | APOF | 41h 50h 4Fh 46h | 00 (OFF), 05, 10, 15, 30, 60 |
| SPLASH SCREEN | SS | 53h 53h | 0 (OFF), 1 (ON) |
| BACK COLOR | BB | 42h 42h | 0 (BLACK), 1 (BLUE) |
| AV MUTE MODE | MM | 4Dh 4Dh | 0 (BLACK), 1 (IMAGE) |
| IMAGE REVERSE | IR | 49h 52h | 0 (OFF), 1 (MIRROR), 2 (INVERT), 3 (MIRROR INVERT) |
| ZOOM/FOCUS LOCK | FZL | 46h 5Ah 4Ch | 0 (OFF), 1 (ON) |
| LENS SHIFT LOCK | LSL | 4Ch 53h 4Ch | 0 (OFF), 1 (ON) |
| LENS SHIFT RESET | LSRST | 4Ch 53h 52h 53h 54h | |
| ASPECT | SC | 53h 43h | 0 (NORMAL (FULL)), 1 (NORMAL (16:9)), 2 (NORMAL (4:3)), 3 (16:9), 4 (REAL), 5 (FULL) |
| ASPECT-16:9-MODE | SCM | 53h 43h 4Dh | 0 (ALL SIGNAL), 1 (VIDEO ONLY) |
| PASSWORD FUNCTION | PSLOCK | 50h 53h 4Ch 4Fh 43h 4Bh | 0**** (UNLOCK), 1**** (DISPLAY INPUT), 2**** (MENU ACCESS), 3**** (SPLASH ID SCREEN) **** is a 4 to 8-digit password comprised of any figures 1 to 4. |
| MENU POSITION | MP | 4Dh 50h | 0 (Upper left), 1 (Lower right) |
| CINEMA MODE | CINE | 43h 49h 4Eh 45h | 0 (VIDEO), 1 (AUTO), 2 (FILM) |
| VIDEO SIGNAL (VIDEO only) | VS | 56h 53h | 0 (AUTO), 1 (NTSC), 2 (PAL), 3 (SECAM), 4 (4.43NTSC), 5 (PAL-M), 6 (PAL-N), 7 (PAL-60) |
| SET UP | STU | 53h 54h 55h | 0 (AUTO), 1 (OFF), 2 (3.75%), 3 (7.5%) |
| SCART INPUT | SRT | 53h 52h 54h | 0 (OFF), 1 (ON) |
| LANGUAGE | LG | 4Ch 47h | 00 (日本語), 01 (English), 02 (Español), 03 (Deutsch), 04 (Français), 05 (Italiano), 06 (中文), 07 (한국어), 08 (русский), 09 (PORTUGUÊS), 11 (SVENSKA), 12 (POLSKI) |
| RESET ALL | RSTALL | 52h 53h 54h 41h 4Ch 4Ch | |
| MEMORY CALL | MMC | 4Dh 4Dh 43h | 0 (AUTO), 1 (MEMORY1), 2 (MEMORY2) |
| HORIZ.POSITION | HP | 48h 50h | + (increment), - (decrement) ^{*1} |
| VERT. POSITION | VP | 56h 50h | + (increment), - (decrement) ^{*1} |
| FINE SYNC. | FN | 46h 4Eh | 00-31 |
| TRACKING | TRK | 54h 52h 4Bh | + (increment), - (decrement) ^{*1} |
| COMPUTER INPUT | CIN | 43h 49h 4Eh | 0 (RGB), 1 (YCbCr/YPbPr), 2 (AUTO) |
| OVER SCAN | VOS | 56h 4Fh 53h | 00 (90%) - 10 (100%) |
| HOLD | HLD | 48h 4Ch 44h | 0 (OFF), 1 (ON) |
| HOLD BEGIN | HLB | 48h 4Ch 42h | 00-99 |
| HOLD END | HLE | 48h 4Ch 45h | 00-99 |
| CLAMP POSITION | CLP | 43h 4Ch 50h | 001-255 |
| CLAMP WIDTH | CLW | 43h 4Ch 57h | 01-63 |
| VERT. SYNC | VSC | 56h 53h 43h | 0 (AUTO), 1 (OFF) |
| LPF | LPF | 4Ch 50h 46h | 0 (OFF), 1 (ON) |
| SHUTTER(U) | SHU | 53h 48h 55h | 00-38 |
| SHUTTER(L) | SHL | 53h 48h 4Ch | 00-38 |
| SHUTTER(LS) | SHLS | 53h 48h 4Ch 53h | 00-63 |
| SHUTTER(RS) | SHRS | 53h 48h 52h 53h | 00-63 |

*1) Setting range differs depending on the input signals.

- Some commands are not executed depending on the input signal. The operational restrictions same as those on the menu setting are applied. Refer to "Menu operation" in the User Manual for more details.

How to set the value

Use the character or ASCII code as shown below to set the value.

| Character | + | - | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| ASCII | '2Bh' | '2Dh' | '30h' | '31h' | '32h' | '33h' | '34h' | '35h' | '36h' | '37h' | '38h' | '39h' |

[Example 1] When setting the AUTO POWER ON to ON. (Values enclosed in quotation marks are ASCII codes.):

| Command sent from the PC, etc. | Status code returned from the projector | Description |
|--|--|--|
| '30' '30' '41' '50' '4F' '4E' '31' '0D' 00APON1 | | Command for setting the AUTO POWER ON to ON |
| | '30' '30' '41' '50' '4F' '4E' '31' '0D' 00APON1 | Command receipt confirmation (Command echo back) |

[Example 2] When setting the CONTRAST R of the COLOR TEMP.-USER to +10, the CONTRAST G to 0, and the CONTRAST B to -5. (Values enclosed in quotation marks are ASCII codes.):

| Command sent from the PC, etc. | Status code returned from the projector | Description |
|--|--|--|
| '30' '30' '50' '2B' '31' '30' '2B' '30' '30' '2D' '30' '35' '0D' 00P+10+00-05 | | Command for setting the picture control |
| | '30' '30' '50' '2B' '31' '30' '2B' '30' '30' '2D' '30' '35' '0D' 00P+10+00-05 | Command receipt confirmation (Command echo back) |

[Example 3] When checking the TINT setting (when the TINT is set to +10). (Values enclosed in quotation marks are ASCII codes.):

| Command sent from the PC, etc. | Status code returned from the projector | Description |
|--------------------------------|--|---------------------------------------|
| '30' '30' '53' '0D' 00S | | Command for checking the TINT setting |
| | '30' '30' '53' '2B' '31' '30' '0D' 00S+10 | Check result (+10) |

[Example 4] When setting the GAMMA MODE of the COLOR ENHANCER-USER to DETAIL. (Values enclosed in quotation marks are ASCII codes.):

| Command sent from the PC, etc. | Status code returned from the projector | Description |
|--|--|--|
| '30' '30' '43' '45' '55' '31' '47' '53' '32' '0D' 00CEU1GS2 | | Command for setting the picture control |
| | '30' '30' '43' '45' '55' '31' '47' '53' '32' '0D' 00CEU1GS2 | Command receipt confirmation (Command echo back) |

4.7 Password lock commands

The password lock commands control the password lock. The password lock enabling or disabling command is sent with a 4 to 8-digit password comprised of any figures 1 to 4 added to the end of the data code. When the password lock is enabled or disabled successfully, the projector sends a return command comprising the data code, password, and "1" at the end. When enabling or disabling the password lock fails, it sends a return command with "0" at the end. There is no reconfirmation of the password. The password input command is for enabling projection of image when password lock has been set to DISPLAY INPUT. The password input command is sent with a 4 to 8-digit password comprised of any figures 1 to 4 at the end.

| ITEM | Function | | Data |
|----------------------------------|-----------|-------------------------|---|
| | Character | ASCII | |
| Password lock enabling/disabling | PSLOCK | 50h 53h 4Ch 4Fh 43h 4Bh | 0**** (Disabling), 1**** (DISPLAY INPUT), 2**** (MENU ACCESS), 3**** (SPLASH ID SCREEN) |
| Password input | PASS | 50h 41h 53h 53h | **** |

**** is a 4 to 8-digit password comprised of any figures 1 to 4.

[Example] When enabling the password lock of DISPLAY INPUT (in the case that the password is 123412):

| Command sent from the PC, etc. | Status code returned from the projector | Description |
|--|--|--|
| '30' '30' '50' '53' '4C' '4F' '43' '4B' '31' '31' '32' '33' '34' '31' '32' '0D' 00PSLOCK1123412 | | Command for enabling the password lock of DISPLAY INPUT |
| | '30' '30' '50' '53' '4C' '4F' '43' '4B' '31' '31' '32' '33' '34' '31' '32' '31' '0D' 00PSLOCK11234121 | Response informing that the projector succeeded in enabling the password lock of DISPLAY INPUT |