

# EXPAND SERIAL COMMAND FUNCTIONAL SPECIFICATIONS

PLC-WTC500L

Ver.1.00

SANYO Electric Co., Ltd  
DS Company  
Projector Division

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## 1 . Overview

- This Functional Specification defines communication with PJ-Net organizer for PLC-WTC500L.
- Supporting Firmware Ver. 1.x of the projector.
- Commands in this document are to communicate with PJ-Net organizer, but most commands are used to control a projector remotely from a computer with RS-232C. Therefore commands in this document are defined as Expand Serial Commands.

## 2 . Serial Interface Specification

### 2.1 Transfer Specification

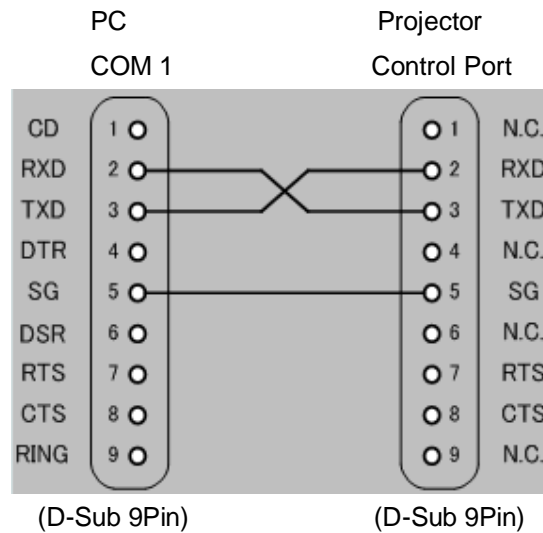
Item	Specification
Synchronous System	Asynchronous
Transmission Speed	9600 / 19200
Data Length	8 bits
Parity	N/A
Stop Bit	1
Flow Control	N/A

Note1) Transmission Speed: initial setting value is 19200

Note2) Transmission Speed can be changed in Service mode.

### 2.2 Connection

Dedicated serial cables must be used for the connection between a computer and a projector.

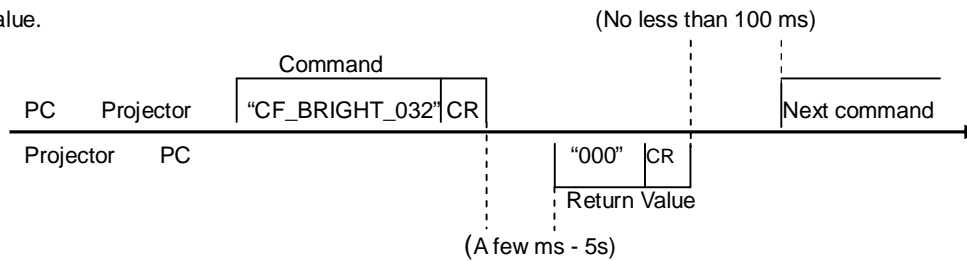


### 3 . Notes for communication

- Expand Serial Command is defined as a single command per line that starts with “C” and ends with carriage return (0x0D).
- There are two types of commands; Functional Execution Commands and Status Read Command.
  - Example of Functional Execution Command: “CF\_BRIG<sup>H</sup>T\_032” [CR]
  - Example of Status Read Command: “CR\_BRIG<sup>H</sup>T” [CR]

Note) “\_” means a space

- When it takes more than a second to receive a single command, it is not executed.  
When it takes more than a second to receive carriage return (0x0D) since the reception of the first data “C”, it clears the information of the receive buffer.
- When the command pipelining, allow the interval time of no less than 100ms after receiving return value.



- Do not send another command before the reception of the return value; the operation by the command is not ensured.  
However this is not the case when no response is returned after more than 5 seconds.
- It takes about 5 seconds for internal initialization after plugging in AC power. During this time, it cannot process commands. Do not issue any command.

### 4 . Notation Convention

- Data from a controller to a projector is represented as COMMAND, and data from a projector to a controller in response to the incoming command is represented as RESPONSE.
- [CR]: Carriage Return Code  
Carriage Return code is added to the end of the command.  
Response is also followed by carriage return code.
- \_ : Space Code  
Space Code is represented as (\_).
- %1: Parameter included in Command  
When there are more than one parameter, they are defined as %2, %3...
- %%: Error Code returned from a projector  
Acceptable: “000”.  
Unacceptable: See [7. Error Code Table].

## 5 . Functional Execution Command Table

### 5.1 Image Command Table

Execute command	Item
<b>CF_BRIGHT_%1 [CR]</b>	Set value of Brightness
<b>CF_CONT_%1 [CR]</b>	Set value of Contrast
<b>CF_COLOR_%1 [CR]</b>	Set value of Color
<b>CF_TINT_%1 [CR]</b>	Set value of Tint
<b>CF_SHARP_%1 [CR]</b>	Set value of Sharpness
<b>CF_GAMMA_%1 [CR]</b>	Set value of Gamma
<b>CF_WBAL-R_%1 [CR]</b>	Set Red value of White Balance
<b>CF_WBAL-G_%1 [CR]</b>	Set Green value of White Balance
<b>CF_WBAL-B_%1 [CR]</b>	Set Blue value of White Balance
<b>CF_COLTEMP_%1 [CR]</b>	Set level of Color Temperature
<b>CF_NZRED_%1 [CR]</b>	Set ON/OFF of Noise reduction
<b>CF_PROGV_%1 [CR]</b>	Set mode of Progressive scan
<b>CF_IMAGE_%1 [CR]</b>	Set Image mode
<b>CF_IMAGEADJ_%1 [CR]</b>	Set Store/Reset of values in Image Adjustment

### 5.2 PC Adjust Control Command Table

Execute command	Item
<b>CF_FSYNC_%1 [CR]</b>	Set value of Fine Sync
<b>CF_TDOTS_%1 [CR]</b>	Set value of Total Dots
<b>CF_CLPPHASE_%1 [CR]</b>	Set value of Clamp Phase
<b>CF_H-POS_%1 [CR]</b>	Set value of Horizontal Position
<b>CF_V-POS_%1 [CR]</b>	Set value of Vertical Position
<b>CF_DDOTS_%1 [CR]</b>	Set value of Display Dots
<b>CF_DLIN_%1 [CR]</b>	Set value of Display Line
<b>CF_SETPCADJ_%1 [CR]</b>	Apply values set in PC Adjust menu to screen image
<b>CF_ORGMODE_%1 [CR]</b>	Specify the original signal for PC mode
<b>CF_PCSTORE_%1 [CR]</b>	Store current setting values in PC Adjust menu to Mode %1
<b>CF_PCMODEFREE_%1 [CR]</b>	Delete the values registered in Mode %1 and return it to Free status.

### 5.3 Input Control Command Table

Execute command	Item
<b>CF_INPUT_%1 [CR]</b>	Select Input
<b>CF_SOURCE_%1 [CR]</b>	Select Source of selected Input
<b>CF_INPUT1_%1 [CR]</b>	Select Input1 and also set input source to %1
<b>CF_INPUT2_%1 [CR]</b>	Select Input2 and also set input source to %1
<b>CF_INPUT3_%1 [CR]</b>	Select Input3 and also set input source to %1
<b>CF_INPUT4_%1 [CR]</b>	Select Input4 and also set input source to %1
<b>CF_SYSTEM_%1 [CR]</b>	Select System of currently selected Input

#### 5.4 Screen Control Command Table

Execute command	Item
<b>CF_SCREEN_%1 [CR]</b>	Select Screen size
<b>CF_DZCENT_%1 [CR]</b>	Cancel Digital Zoom mode
<b>CF_CEIL_%1 [CR]</b>	Set ON/OFF of Ceiling
<b>CF_REAR_%1 [CR]</b>	Set ON/OFF of Rear
<b>CF_KEYSTONE_%1 [CR]</b>	Set Keystone correction
<b>CF_KYSTNMODE_%1 [CR]</b>	Set Keystone store mode
<b>CF_VSCALE_%1[CR]</b>	Set V Scale
<b>CF_VPOS_%1[CR]</b>	Set V Position
<b>CF_HSCALE_%1[CR]</b>	Set H Scale
<b>CF_HPOS_%1[CR]</b>	Set H Position

#### 5.5 Lamp Command Table

Execute command	Item
<b>CF_LAMPMODE_%1 [CR]</b>	Select Lamp control
<b>CF_LAMPCONTROL_%1 [CR]</b>	Select Lamp mode
<b>CF_LAMPLIFECONTROL_%1[CR]</b>	Select Lamp life control
<b>CF_LAMPCHGTIM_%1[CR]</b>	Select Timer for Lamp 1/2 of Lamp mode
<b>CF_LAMPCHGSTA_%1[CR]</b>	Set Start time of Timer
<b>CF_LAMPINTERVAL_%1[CR]</b>	Set Start time of Interval

#### 5.6 Sound Command Table

Execute command	Item
<b>CF_VOLUME_%1[CR]</b>	Set Volume value
<b>CF_MUTE_%1[CR]</b>	Control ON/OFF of Sound Mute

#### 5.7 Setting Command Table

Execute command	Item
<b>CF_LANG_%1 [CR]</b>	Select language for OSD
<b>CF_LOGO_%1 [CR]</b>	Set PIN code and mode for Logo
<b>CF_PIP_%1[CR]</b>	Set Picture in Picture
<b>CF_PIPSIZE_%1[CR]</b>	Set Screen size of Picture in Picture
<b>CF_PIPPOSITION_%1[CR]</b>	Set position of Picture in Picture
<b>CF_BACKGND_%1[CR]</b>	Select screen for no signal
<b>CF_FILCONTROL</b>	Execute operation of scroll of filter
<b>CF_POINTER</b>	Set Pointer function
<b>CF_RCODE_%1 [CR]</b>	Select Remote Control Code
<b>CF_RCSENSOR_%1 [CR]</b>	Select location of infrared remote receiver of remote control
<b>CF_DISP_%1 [CR]</b>	Set ON/OFF of On Screen Display
<b>CF_STANDBYMODE_%1</b>	Set Standby-Mode
<b>CF_P-MANE_%1 [CR]</b>	Set Power Management function
<b>CF_P-MANETIME_%1 [CR]</b>	Set time of Power Management
<b>CF_ON-STA_%1 [CR]</b>	Set ON/OFF of Power ON Start
<b>CF_FANSPEED_%1 [CR]</b>	Set level of Fan Speed
<b>CF_SLANT_%1[CR]</b>	Set slant of projector installed
<b>CF_SHUTRCPROT_%1[CR]</b>	Set valid / invalid of RC use on Shutter control function
<b>CF_SHUTKEYPROT_%1[CR]</b>	Set valid / invalid use of key on the top panel on Shutter control function
<b>CF_SHUTH_%1[CR]</b>	Set time of operating shutter management function
<b>CF_HDMISETUP_%1[CR]</b>	Set Image of HDMI setup
<b>CF_HDMISOUND_%1[CR]</b>	Set Sound of HDMI setup
<b>CF_PJPINCODE_%1[CR]</b>	Enter PJ PIN code to cancel PJ lock
<b>CF_KEYDIS_%1 [CR]</b>	Prohibit RC/KEY control
<b>CF_TESTPAT_%1[CR]</b>	Set Test pattern display function

<b>CF_FILH_%1[CR]</b>	Reset Filter used time
<b>CF_FILTIMER_%1[CR]</b>	Set time to display Filter cleaning / replacement warning on screen
<b>CF_FILSCRL_%1[CR]</b>	Reset Filter scroll counter
<b>CF_FDEFAULT_%1 [CR]</b>	Reset to Factory Default settings

**5.8 Other Command Table**

Execute command	Item
<b>CF_KEYEMU_%1 [CR]</b>	The same operation as RC/Control Key
<b>CF_MENU_%1 [CR]</b>	Set ON/OFF of Menu
<b>CF_POWER_%1 [CR]</b>	Set ON/OFF of Power
<b>CF_FREEZE_%1 [CR]</b>	Set ON/OFF of Freeze
<b>CF_VMUTE_%1 [CR]</b>	Set Video Mute

## 6 . Status Read Command Table

### 6.1 Image Status Read Command Table

Status Read command	Item
CR_BRIGHT [CR]	Get value of Brightness
CR_CONT [CR]	Get value of Contrast
CR_COLOR [CR]	Get value of Color
CR_TINT [CR]	Get value of Tint
CR_SHARP [CR]	Get value of Sharpness
CR_GAMMA [CR]	Get value of Gamma
CR_WBAL-R [CR]	Get Red value of White Balance
CR_WBAL-G [CR]	Get Green value of White Balance
CR_WBAL-B [CR]	Get Blue value of White Balance
CR_COLTEMP [CR]	Get value of Color temperature
CR_NZRED [CR]	Get setting status of Noise reduction
CR_PROGV [CR]	Get setting status of Progressive scan
CR_IMAGE [CR]	Get Selected Image status
CR_IMGGMD [CR]	Get setting value of Image Gamma

### 6.2 PC Adjust Status Read Command Table

Status Read command	Item
CR_FSYNC [CR]	Get setting value of Fine Sync
CR_TDOTS [CR]	Get setting value of Total Dots
CR_CLPPHASE [CR]	Get setting value of Clamp phase
CR_H-POS [CR]	Get setting value of Horizontal Position
CR_V-POS [CR]	Get setting value of Vertical Position
CR_DDOTS [CR]	Get setting value of Display Dots
CR_DLINE [CR]	Get setting value of Display Line
CR_ORGMODE [CR]	Get the original signal for PC-Adjusted mode
CR_PCSTORE [CR]	Get status Free/ Stored for PC Adj. mode 1-10
CR_SETPCADJ [CR]	Get currently displayed PC signal in system

### 6.3 Video Status Read Command Table

Status Read command	Item
CR_SERSYS [CR]	Get currently selected signal. In Auto mode, it returns a result by Auto detection.

### 6.4 Input Status Read Command Table

Status Read command	Item
CR_INPUT [CR]	Get selected Input
CR_SOURCE [CR]	Get selected Source
CR_SRCINP1 [CR]	Get selected source for Input 1
CR_SRCINP2 [CR]	Get selected source for Input 2
CR_SRCINP3 [CR]	Get selected source for Input 3
CR_SRCINP4 [CR]	Get selected source for Input 4
CR_SYSTEM [CR]	Get selected system in current Input mode
CR_SYSLIST [CR]	Get possible system list
CR_MODELIST [CR]	Get possible mode list
CR_HMSLOT [CR]	Get total number of Inputs
CR_NMSLOT1 [CR]	Get terminal information of Input1.
CR_NMSLOT2[CR]	Get terminal information of Input2.
CR_NMSLOT3[CR]	Get terminal information of Input3
CR_NMSLOT4[CR]	Get terminal information of Input4.
CR_IDSLOT1[CR]	Get ID information of Input1
CR_IDSLOT2[CR]	Get ID information of Input2

CR_IDSLOT3[CR]	Get ID information of Input3
CR_IDSLOT4[CR]	Get ID information of Input4

**6.5 Screen Status Read Command Table**

Status Read command	Item
CR_SCREEN [CR]	Get selected screen size
CR_CEIL [CR]	Get setting status of Ceiling
CR_REAR [CR]	Get setting status of Rear
CR_KYSTNMODE[CR]	Get selected Keystone store mode
CR_VSCALE[CR]	Get setting status of V Scale
CR_VPOS[CR]	Get setting status of V Position
CR_HSCALE[CR]	Get setting status of H Scale
CR_HPOS[CR]	Get setting status of H Position

**6.6 Lamp Status Read Command Table**

Status Read command	Item
CR_LAMPREPL [CR]	Get information of Lamp replacement time
CR_LAMPH [CR]	Get information of actual Lamp running time
CR_LAMPCORRESPH [CR]	Get lamp running time multiplied by a coefficient
CR_LAMPMODE [CR]	Get selected Lamp control
CR_PROJH [CR]	Get total running time of projector
CR_HMLAMP[CR]	Get the number of lamps
CR_LAMPCTRL [CR]	Get setting status of Lamp mode
CR_LAMPLIFECNTRL [CR]	Get setting status of Lamp life control
CR_LAMPCHGTIM[CR]	Get setting status of Timer for Lamp1/2 of Lamp mode
CR_LAMPCHGSTA[CR]	Get setting status of Timer start for Lamp1/2 of Lamp mode
CR_LAMPINTERVAL [CR]	Get setting status of Lamp interval

**6.7 Sound Status Read Command Table**

Status Read command	Item
CR_VOLUME[CR]	Get Volume value
CR_MUTE[CR]	Get Sound Mute setting status

**6.8 Setting Status Read Command Table**

Status Read command	Item
CR_LANG [CR]	Get selected language
CR_LOGO [CR]	Get setting status of Logo
CR_LOGOLOCK[CR]	Get setting status of Logo Lock
CR_PIP[CR]	Get setting status of "Picture in Picture"
CR_PIPSIZE[CR]	Get setting status of Screen size of "Picture in Picture"
CR_PIPPOSITION[CR]	Get setting status of position of "Picture in Picture"
CR_BACKGND [CR]	Get setting status of Screen for no signal
CR_POINTER[CR]	Get setting status of Pointer
CR_RCODE [CR]	Get selected Remote Control code
CR_RCSENSOR [CR]	Get setting status of Remote Control Sensor(Enable/Disable)
CR_RTYPE [CR]	Get supported Remote Control type (IR/RF)
CR_DISP [CR]	Get setting status of Display
CR_STANDBYMODE[CR]	Get setting status of Standby-mode
CR_P-MANE [CR]	Get Power management setting status
CR_P-MANETIME [CR]	Get setting time for Power Management
CR_ON-STA [CR]	Get ON Start setting status
CR_FANSPEED [CR]	Get selected Fan Control Speed
CR_SLANT[CR]	Get setting status of Slant
CR_SHUTRCPROT[CR]	Get remote controller disability status of the shutter

<b>CR_SHUTKEYPROT[CR]</b>	Get Key controller disability state of the shutter
<b>CR_SHUTH[CR]</b>	Get time setting to begin the shutter management
<b>CR_HDMISSETUP [CR]</b>	Get setting status of Image of "HDMI setup"
<b>CR_HDMISOUND [CR]</b>	Get setting status of Sound of "HDMI setup"
<b>CR_SECURITY [CR]</b>	Get setting status of Security
<b>CR_PJLOCKNOW [CR]</b>	Get setting status of current PJ Lock
<b>CR_PJLOCKMENU [CR]</b>	Get PJ Lock setting status on the menu
<b>CR_KEYDIS [CR]</b>	Get RC/KEY prohibited status
<b>CR_TESTPAT[CR]</b>	Get setting status of Test pattern
<b>CR_FILH[CR]</b>	Get Filter used time
<b>CR_FILCOND[CR]</b>	Get status of filter clog
<b>CR_FILREPL[CR]</b>	Get status of Filter cleaning / replacement time
<b>CR_FILTIMER[CR]</b>	Get time to display Filter cleaning / replacement warning on screen
<b>CR_FILREMAIN[CR]</b>	Get remaining number of usable Filter scroll

### 6.9 Other Status Read Command Table

Status Read command	Item
<b>CR_STATUS [CR]</b>	Get operating status of Projector
<b>CR_SIGNAL [CR]</b>	Get status of signal existence
<b>CR_VMUTE [CR]</b>	Get setting status of No show
<b>CR_FREEZE [CR]</b>	Get setting status of Freeze
<b>CR_TEMPFAIL [CR]</b>	Get temperature when sensors approach abnormal temperature
<b>CR_TEMP [CR]</b>	Get current temperature
<b>CR_SHUTCOND [CR]</b>	Get setting status of Shutter
<b>CR_SERIALNO [CR]</b>	Get value of Serial number

### 7 . Error Code Table

Error Code	Contents
?	-When the received data cannot be decoded -Parameter designation error (wrong digit number, including invalid value, etc.)
000	Normal reception (This is "Not" error)
102	Directly specified value or values are out of range. (Not reflected)
103	Command mismatched to Hardware (the command is for Optional function which is not implemented)
201	Incremented or decremented value or values are beyond upper or lower limits.
301	Not executable due to screen capturing in process. Prompting reissue of the command after a while.
402	Not executable due to PIN code in operation. Prompting reissue of the command after a while.
101	Error not applicable to above errors

## 8 . Functional Execution Command

### 8.1 Format

1) PC issues commands in format as below:

**Pattern1:** “CF\_ **COMMAND**” [CR]

**Pattern2:** “CF\_ **COMMAND** \_” %1 [CR]

CF\_: Header

**COMMAND**: String

%1: Parameter (String)

\_: Space (To separate COMMAND and Parameter)

2) The projector decodes the received command and when it is ready to receive the next command, it returns the response.

“000” [CR]: ( 0x06,0x0D ) When receiving Functional Execution Command

“nnn” [CR]: Except “000”, when it is unable to execute command for any specific reason.

See Error Code Table for details

3) When the received data cannot be decoded, the projector returns “?” [CR]

### 8.2 Transfer Example

When setting projector’s total dots to 1344 by Expand Serial command

PC PJ: “CF\_TDOTS\_1344” [CR]

PC PJ: “000” [CR] ----- Acceptable

### 8.3 Operation Requirements

1) Functional Execution Command is limited when the projector status is as below.

However, Status Read Command is still effective under following conditions.

Projector Status	Available Functional Execution Command
Standby Mode	C00: Power ON CF POWER ON
Countdown in process	C00: Power ON CF POWER ON (Terminates Count Down)
Cooling Down in process	N/A
Cooling Down due to Abnormal Temperature	N/A
Abnormal Temperature	N/A
Power Failure (60 seconds after Power failure occurred)	N/A
Power-Save Cooling Down in process	N/A
Cooling Down in process due to Shutter management	N/A
Power Save in process	C00: Power ON C01: Power OFF CF POWER ON CF POWER OFF

Note) When projector receives another command in the above status, it returns error code which shows the status. And when projector receives Functional execution commands, OSD menu disappears except pop-up menu.

2) When Standby mode of Setting menu is set to Eco and Projector status is Standby mode, Functional execution commands are invalid

**8.4 Image Command**

**8.4.1 CF\_BRIGHT Command**

Command	"CF_BRIGHT_%1" [CR]	
%1	"000-063"----- Directly specify setting value of Brightness "UP"----- Increment setting value of Brightness by 1 "DN"----- Decrement setting value of Brightness by 1	
Details	Set user controlled value of Brightness (Available only in the normal Power ON status) The value set by this command will not be stored in the projector's memory. Therefore, when the power is turned to ALL OFF status, the value returns to the original setting. (It is stored in Suspend mode.)	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.4.2 CF\_CONT Command**

Command	"CF_CONT_%1" [CR]	
%1	"000-063"----- Directly specify setting value of Contrast "UP"----- Increment setting value of Contrast by 1 "DN"----- Decrement setting value of Contrast by 1	
Details	Set user controlled value of Contrast (Available only in the normal Power ON status) The value set by this command will not be stored in the projector. Therefore, when the power is turned to ALL OFF status, the value returns to the original setting. (It is stored in Suspend mode.)	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.4.3 CF\_COLOR Command**

Command	"CF_COLOR_%1" [CR]	
%1	"000-063"----- Directly specify setting value of Color "UP"----- Increment setting value of Color by 1 "DN"----- Decrement setting value of Color by 1	
Details	Set user controlled value of Colors (Available only in the normal Power ON status) The value set by this command will not be stored in the projector's memory. Therefore, when the power is turned to ALL OFF status, the value returns to the original setting. (It is stored in Suspend mode.)	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.4.4 CF\_TINT Command**

Command	"CF_TINT_%1" [CR]	
%1	"000-063"----- Directly specify setting value of Tint "UP"----- Increment setting value of Tint by 1 "DN"----- Decrement setting value of Tint by 1	
Details	Set Tint value (Available only in the normal Power ON status) The value set by this command will not be saved to the projector's memory. Therefore, when the power is turned to ALL OFF status, the value returns to the original setting. (It is stored in Suspend mode.)	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

### 8.4.5 CF\_SHARP Command

Command	"CF_SHARP_%1" [CR]	
%1	"000-015"----- Directly specify setting value of Sharpness "UP"----- Increment setting value of Sharpness by 1 "DN"----- Decrement setting value of Sharpness by 1	
Details	Set user controlled value of Sharpness (Available only in the normal Power ON status) The value set by this command will not be stored in the projector's memory. Therefore, when the power is turned to ALL OFF status, the value returns to the original setting. (It is stored in Suspend mode.)	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

### 8.4.6 CF\_GAMMA Command

Command	"CF_GAMMA_%1" [CR]	
%1	"000-015"----- Directly specify setting value of Gamma "UP"----- Increment setting value of Gamma by 1 "DN"----- Decrement setting value of Gamma by 1	
Details	Set user controlled value of Gamma (Available only in the normal Power ON status) The value set by this command will not be stored in the projector's memory. Therefore, when the power is turned to ALL OFF status, the value returns to the original setting. (It is stored in Suspend mode.)	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

### 8.4.7 CF\_WBAL- Command

Command	"CF_WBAL-%1_%2" [CR]	
%1	"R" ----- RED "G" ----- GREEN "B" ----- BLUE	
%2	"000-063"----- Directly specify value of Color selected in %1 of White Balance. "UP"-----Increment setting value of Color specified in %1 of White Balance by 1. "DN"----- Decrement setting value of Color specified in %1 of White Balance by 1.	
Details	Set value of Color specified in %1 of White Balance (Available only in the normal Power ON status) The value set by this command will not be stored in the projector's memory. Therefore, when the power is turned to ALL OFF status, the value returns to the original setting. (It is stored in Suspend mode.)	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code"[CR]

**8.4.8 CF\_COLTEMP Command**

Command	"CF_COLTEMP_%1" [CR]	
%1	"000" ----- Xlow "001" ----- Low "002" ----- Mid "003" ----- High	
Details	Set Color Temperature (Available only in the normal Power ON status) The value set by this command will not be stored in the projector's memory. Therefore, when the power is turned to ALL OFF status, the value returns to the original setting. (It is stored in Suspend mode.)	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.4.9 CF\_NZRED Command**

Command	"CF_NZRED_%1" [CR]	
%1	"OFF" ----- Cancel Noise Reduction "L1" ----- Set Noise Reduction L1 "L2" ----- Set Noise Reduction L2 "UP" ----- Toggle between ON and OFF. (OFF→L1→L2→OFF...) "DN" ----- Toggle between ON and OFF. (OFF→L2→L1→OFF...)	
Details	Set Noise Reduction level (Available only in the normal Power ON status) The value set by this command will not be stored in the projector's memory. Therefore, when the power is turned to ALL OFF status, the value returns to the original setting. (It returns to the original setting in Suspend mode as well.)	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.4.10 CF\_PROGV Command**

Command	"CF_PROGV_%1" [CR]	
%1	"OFF" ----- Set Progressive scan to OFF. "L1" ----- Set Progressive scan to L1 (for movie image). "L2" ----- Set Progressive scan to L2 (for still image). "FILM" ----- Set Progressive scan to Film. "UP" ----- Switch setting forward direction (OFF→L1→L2→FILM→OFF) "DN" ----- Switch setting backward direction (OFF→FILM→L2→L1→OFF)	
Details	Set Progressive scan mode. (Available only in the normal Power ON status) The value set by this command will not be stored in the projector's memory. Therefore, when the power is turned to ALL OFF status, the value returns to the original setting. (It is stored in Suspend mode.)	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.4.11 CF\_IMAGE Command**

Command	"CF_IMAGE_%1" [CR]	
%1	"DYNAMIC" ---Dynamic (Fixed value to enable projection with a sharp, powerful picture tone) "STAND" -----Standard(Image adjust value is set to factory default for Still Image) "REAL"----- Real (Fixed value to display graphic image with natural tone) "CINEMA"----- Cinema (Fixed value to focus on tone reproduction for movie) "CUSTOM1" ----- Image1 (the value adjusted and stored by user) "CUSTOM2" ----- Image2 (the value adjusted and stored by user) "CUSTOM3" ----- Image3 (the value adjusted and stored by user)	

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	"CUSTOM4" ----- Image4 (the value adjusted and stored by user)	
Details	Select Image Mode (Available only in the normal Power ON status) Parameter "CUSTOM1" to "CUSTOM4" corresponds to "Image1" to "Image4" displayed in projector OSD menu on selecting Image. The value set by this command is stored in EEPROM so that the setting can remain effective even after the power is turned to ALL OFF status.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.4.12 CF\_IMAGEADJ Command**

Command	"CF_IMAGEADJ_%1"[CR]	
%1	"RST"----- Reset adjusted value for the Image "STR1"---- Store current adjusted value to Image 1 "STR2"---- Store current adjusted value to Image 2 "STR3"---- Store current adjusted value to Image 3 "STR4"---- Store current adjusted value to Image 4	
Details	Reset or Store adjusted value for Image. (Available only in the normal Power ON status) "STR1"-"STR4" corresponds to "Image1"-"Image4" displayed in projector OSD menu on selecting "Store" for adjusted value of Image. The setting value set in "Image1" to "Image4" is stored and can be retrieved when turning on the projector again after the power is turned to ALL OFF status.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

## 8.5 PC Adjust Control Command

### 8.5.1 CF\_FSYNC Command

Command	"CF_FSYNC_%1" [CR]	
%1	"0000-0031" ----- Directly specify setting value of Fine Sync "UP" ----- Increment setting value of Fine Sync by 1 "DN" ----- Decrement setting value of Fine Sync by 1	
Details	Set value of Fine Sync in PC signal (Available only in the normal Power ON status) The value set by this command will not be stored in the projector's memory. Therefore, when the power is turned to ALL OFF status, the value returns to the original setting. (It is stored in Suspend mode.)	
Response	Acceptable	"000" [CR]
	Unacceptable	"101" [CR] --- When input is Video signal / No signal

### 8.5.2 CF\_TDOTS Command

Command	"CF_TDOTS_%1" [CR]	
%1	"mmmm - nnnn" ----- Directly specify setting value of Total Dots "mmmm" indicates minimum value, which is current (Display area H + Position H) value "nnnn" indicates maximum value, which is <i>less than 140 MHz in Dot Clocks</i> "UP" ----- Increment setting value of Total Dots by 1 "DN" ----- Decrement setting value of Total Dots by 1	
Details	Set value of Total Dots in PC signal (Available only in the normal Power ON status) The value set by this command will not be stored in the projector's memory. Therefore, when the power is turned to ALL OFF status, the value returns to the original setting. (It is stored in Suspend mode.)	
Response	Acceptable	"000" [CR]
	Unacceptable	"101" [CR] --- When input is Video signal / No signal

### 8.5.3 CF\_CLPPHASE Command

Command	"CF_CLPPHASE_%1"[CR]	
%1	"mmmm~nnnn" --- Directly select Clamp phase setting value "mmmm" shows minimum value, the fixed-value "0001". "nnnn" shows maximum value, it depends on input signal. "UP" ----- Current Clamp setting value + 1 "DN" ----- Current Clamp setting value - 1	
Details	Set Clamp value of PC signal (Available only in the normal Power ON status) The value set by this command will not be saved to the projector. Therefore, when ALL is OFF, the value returns to the original setting (The value is held in Suspend mode)	
Response	Acceptable	"000"[CR]
	Unacceptable	"101"[CR] ---- When input is Video signal / No signal

### 8.5.4 CF\_H-POS Command

Command	"CF_H-POS_%1" [CR]	
%1	"0000-nnnn" ----- Directly specify setting value of Horizontal Position "nnnn" indicates maximum value, which is current value of (Total dots - Display area H) "UP" ----- Increment setting value of Horizontal Position by 1 "DN" ----- Decrement setting value of Horizontal Position by 1	
Details	Set value of Horizontal Position in PC signal (Available only in the normal Power ON status) The value set by this command will not be stored in the projector's memory.	

	Therefore, when the power is turned to ALL OFF status, the value returns to the original setting.	
Response	Acceptable	"000" [CR]
	Unacceptable	"101" [CR] --- When input is Video signal / No signal

**8.5.5 CF\_V-POS Command**

Command	"CF_V-POS_%1" [CR]	
%1	"0000-nnnn" ----- Directly specify setting value of Vertical Position "nnnn" indicates maximum value, which is current (Total Line – Display Area V) value "UP" ----- Increment setting value of Vertical Position by 1 "DN" ----- Decrement setting value of Vertical Position by 1	
Details	Set Vertical Position value (Available only in the normal Power ON status) The value set by this command will not be stored in the projector's memory. Therefore, when the power is turned to ALL OFF status, the value returns to the original setting.	
Response	Acceptable	"000" [CR]
	Unacceptable	"101" [CR] ---- When input is Video signal / No signal

**8.5.6 CF\_DDOTS Command**

Command	"CF_DDOTS_%1" [CR]	
%1	"0100-nnnn" ----- Directly specify setting value of Display Dots "nnnn" indicates maximum value, which is current value of (Total Dots - Position H). In this projector, the value should be "even number" and if "odd number" is specified, it adds 1 to make the value even number. "UP" ----- Increment setting value of Display Dots by 2 "DN" ----- Decrement setting value of Display Dots by 2	
Details	Set setting value of Display Dots in PC signal (Available only in the normal Power ON status) The value set by this command will not be stored in the projector's memory. Therefore, when the power is turned to ALL OFF status, the value returns to the original setting.	
Response	Acceptable	"000" [CR]
	Unacceptable	"101" [CR] --- When input is Video signal / No signal

**8.5.7 CF\_DLINE Command**

Command	"CF_DLINE_%1" [CR]	
%1	"0100-nnnn" ----- Directly specify setting value of Display Line "nnnn" indicates maximum value, which is current value of (Total Line - Position V). "UP" ----- Increment setting value of Display Line by 1 "DN" ----- Decrement setting value of Display line by 1	
Details	Set setting value of Display Line in PC signal (Available only in the normal Power ON status) The value set by this command will not be stored in the projector's memory. Therefore, when the power is turned to ALL OFF status, the value returns to the original setting. (It is stored in Suspend mode.)	
Response	Acceptable	"000" [CR]
	Unacceptable	"101" [CR] --- When input is Video signal / No signal

**8.5.8 CF\_SETPCADJ Command**

Command	"CF_SETPCADJ_%1" [CR]	
%1	None "EXT11-60"	
Details	<p>1. Apply value set in PC Adjust Menu to projected image. Specifying setting value directly in the following PC Adjust related commands immediately reflects them on projected image, while issuing this command after these commands also triggers the reflection. (Available only in the normal Power ON status)</p> <ul style="list-style-type: none"> <li>• CF_FSYNC</li> <li>• CF_TDOTS</li> <li>• CF_CLAMPPAHSE</li> <li>• CF_H - POS</li> <li>• CF_V - POS</li> <li>• CF_DDOTS</li> <li>• CF_DLINE</li> </ul> <p>2. When "EXT11"~"EXT60" is specified in %1, "Ex Mode" (not like XGA1) is displayed in "SYSTEM" menu.</p>	
Response	Acceptable	"000" [CR]
	Unacceptable	"101" [CR] --- When input is Video signal / No signal

**8.5.9 CF\_ORGMODE Command**

Command	"CF_ORGMODE_%1" [CR]	
%1	<p>When input signal is PC Analog;</p> <p>"VGA1" ----- Specify VGA1                  "VGA2" ----- Specify VGA2                  :                  :                  "XGA1" ----- Specify XGA1                  :                  :                  "WXGA3" ----- Specify WXGA3                  "1080i60" ----- Specify 1080i60                  "1080i50" ----- Specify 1080i50                  "1035i" ----- Specify 10350i                  "720p60" ----- Specify 720p60                  "720p50" ----- Specify 720p50                  "575p" ----- Specify 575p                  "480p" ----- Specify 480p                  "575i" ----- Specify 575i                  "480i" ----- Specify 480i</p> <p>* When input signal is not PC Analog, error code "101" is returned.</p>	
Details	<p>After "EXT n" is set by PC control command such as CF_FSYNC/CF_TDOTS and CF_SETPCADJ command, specify the signal originated with by issuing this command.                  This command is used to specify projector internal settings such as whether or not to get PC signal through IP (Available only in the normal Power ON status)                  Note; To differentiate between 60Hz and 50Hz in 1080i and 720p, "60" or "50" is necessary to add to the parameter in this command.</p>	
Response	Acceptable	"000" [CR]
	Unacceptable	"101" [CR] --- When Input is other than PC Analog

**8.5.10 CF\_PCSTORE Command**

Command	"CF_PCSTORE_%1" [CR]	
%1	"1" ----- Store current value of PC Adjust to Mode1 "2" ----- Store current value of PC Adjust to Mode2 "3" ----- Store current value of PC Adjust to Mode3 "4" ----- Store current value of PC Adjust to Mode4 "5" ----- Store current value of PC Adjust to Mode5 "6" ----- Store current value of PC Adjust to Mode6 "7" ----- Store current value of PC Adjust to Mode7 "8" ----- Store current value of PC Adjust to Mode8 "9" ----- Store current value of PC Adjust to Mode9 "10" ----- Store current value of PC Adjust to Mode10	
Details	Store current value of PC Adjust (each parameter status such as Total dots) to Mode1-10. This command operates the same way as storing to Mode1-10 in PC Adjust Menu. (Available only in the normal Power ON status)	
Response	Acceptable	"000" [CR]
	Unacceptable	"101" [CR] --- When input is Video signal / No signal

**8.5.11 CF\_PCMODEFREE Command**

Command	"CF_PCMODEFREE_%1" [CR]	
%1	"1" ----- Set Mode1 to Free status "2" ----- Set Mode2 to Free status "3" ----- Set Mode3 to Free status "4" ----- Set Mode4 to Free status "5" ----- Set Mode5 to Free status "6" ----- Set Mode6 to Free status "7" ----- Set Mode7 to Free status "8" ----- Set Mode8 to Free status "9" ----- Set Mode9 to Free status "10" ----- Set Mode10 to Free status	
Details	Delete the data registered in Custom Mode1-10 and returns it to Free status. This command operates the same way as storing to Mode1-10 in PC Adjust Menu. (Available only in the normal Power ON status)	
Response	Acceptable	"000" [CR]
	Unacceptable	"101" [CR] --- When input is Video signal / No signal

## 8.6 Input Control Command

### 8.6.1 CF\_INPUT Command

Command	"CF_INPUT_%1" [CR]	
%1	"1"----- Select Input 1 (not switching Source) "2"----- Select Input 2 (not switching Source) "3"----- Select Input 3 (not switching Source) "4"----- Select Input 4 (Network viewer) "UP"----- Increment Input No. by 1 <with PJ-Net attached>Input1→Input2→Input3→Input4→Input1→ - - - <with PJ-Net unattached>Input1→Input2→Input3→Input1→ - - - "DN"----- Decrement Input No. by 1 <with PJ-Net attached>Input1→Input2→Input3→Input4→Input1→ - - - <with PJ-Net unattached>Input1→Input2→Input3→Input1→ - - -	
Details	Select Input (Available only in the normal Power ON status) This command switches only Input No, not Source. For instance, when Input 1 has been selected, receiving the command to select Input 1 does not invoke source-switching operation. That means it operates differently from "INPUT" button of Projector or Remote Control. *When selecting Input4 on a projector with PJ-Net unattached, it comes to "103". *When selecting Input4 on a projector with PJ-Net attached and power OFF, It comes to "101".	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

### 8.6.2 CF\_SOURCE Command

Command	"CF_SOURCE_%1" [CR]	
%1	Input 1	"HDMI" ----- Select HDMI Input "ANALOG" ----- Select Analog Input "SCART" ----- Select Scart Input "UP" ----- Select in Analog -> Scart -> HDMI -> Analog order "DN" ----- Select in Analog -> HDMI -> Scart -> Analog order
	Input 2	"VIDEO" ----- Select Composite Video Input "YPBPR" ----- Select Y,Pb/Cb,Pr/Cr Input "YCBCR" ----- Select Y,Pb/Cb,Pr/Cr Input "ANALOG" ----- Select RGB "UP" --- Select in Analog -> Video -> Y,Pb/Cb,Pr/Cr -> Analog order "DN" --- Select in Analog -> Y,Pb/Cb,Pr/Cr -> Video -> Analog order
	Input 3	"VIDEO" -----Select Composite Video input "S-VIDEO" ----- Select S-Video input "UP" ----- Select in Video -> S-Video ->Video order "DN" ----- Select in S-Video -> Video -> S-Video order
	Input 4	"NETWORK", "UP", "DN" *Input can not be selected, but above parameter is processed as Acceptable.
Details	Select Source of currently selected Input (Available only in the normal Power ON status) When selected input does not include specified %1, error code "101" is returned and it is not executed. When Input No is 4 and PJ-Net power is OFF, error code "101" is returned.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

### 8.6.3 CF\_INPUT 1 Command

Command	"CF_INPUT1_%1" [CR]	
%1	"HDMI" ----- Select HDMI Input "ANALOG" ----- Select PC Analog Input "SCART" ----- Select SCART Input	
Details	Select Input 1 as well as Source specified in %1 (Available only in the normal Power ON status)	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

### 8.6.4 CF\_INPUT 2 Command

Command	"CF_INPUT2_%1" [CR]	
%1	"VIDEO" ----- Select Composite Video Input "YPBPR" ----- Select Y,Pb/Cb,Pr/Cr Input "YCBCR" ----- Select Y,Pb/Cb,Pr/Cr Input "ANALOG" ----- Select RGB Input	
Details	Select Input 2 as well as Source specified in %1. (Available only in the normal Power ON status)	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

### 8.6.5 CF\_INPUT 3 Command

Command	"CF_INPUT3_%1" [CR]	
%1	"VIDEO" ----- Select Composite Video Input "S-VIDEO" ----- Select S-Video Input	
Details	Select Input 3 as well as Source specified in %1. (Available only in the normal Power ON status)	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

### 8.6.6 CF\_INPUT 4 Command

Command	"CF_INPUT4_%1" [CR]	
%1	"NETWORK" ----- Select input from PJ-Net	
Details	Select Input 4 as well as Source specified in %1. (Available only in the normal Power ON status) *With PJ-Net unattached, this command is invalid and error code "103" is returned. *With PJ-Net attached and the power OFF, error code "101" is returned.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

8.6.7 CF\_SYSTEM Command

Command	"CF_SYSTEM_%1" [CR]	
%1	Input is PC Analog	"VGA1" ----- Select VGA1 "VGA2" ----- Select VGA2 : : "XGA1" ----- Select XGA1 : : "WXGA3" ----- Select WXGA3 "1080I" ----- Select 1080i "1035I" ----- Select 1035i "720p" ----- Select 720p "575p" ----- Select 575p "480p" ----- Select 480p "575I" ----- Select 575i "480I" ----- Select 480i "MODE1 - 10" ----- Select MODE1 – MODE10 "EXT11 - 60" ----- Select Ex Mode11-60 * EXT1-10 is not set.
	Input is HDMI	"D-XGA1" ----- Select D-XGA1 : : "D-WXGA3" ----- Select D-WXGA3 "D-1080I" ----- Select D-1080i "D-1035I" ----- Select D-1035i "D-720p" ----- Select D-720p "D-575p" ----- Select D-575p "D-480p" ----- Select D-480p "D-1080psf/25" ----- Select D-1080psf/25 "D-1080psf/30" ----- Select D-1080psf/30
	Input is Y,Pb/Cb,Pr/Cr	"AUTO" ----- Select System "Auto" "1080I" ----- Select 1080i "1035I" ----- Select 1035i "720P" ----- Select 720p "575P" ----- Select 575p "480P" ----- Select 480p "575I" ----- Select 575i "480I" ----- Select 480i
	Input is Video / S-Video	"AUTO" ----- Select System "Auto" "NTSC" ----- Select NTSC "NTSC443" ----- Select NTSC4.43 "PAL" ----- Select PAL "SECAM" ----- Select SECAM "PAL-M" ----- Select PAL-M "PAL-N" ----- Select PAL-N
Details	Select System of currently selected Input (Available only in the normal Power ON status) When selected input does not include specified %1, error code "101" [CR] is returned and it is not executed. When Input No is 4, error code "101" [CR] is returned and it is not executed.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.7 Screen Control Command**

**8.7.1 CF\_SCREEN Command**

Command	"CF_SCREEN_%1" [CR]	
%1	Input is Computer	"NORMAL" ----- Select Normal mode "TRUE" ----- Select True mode "FULL" ----- Select Full mode "CUSTOM" ----- Select Custom mode "DZOOM_UP" ----- Scale up with Digital zoom "DZOOM_DN" ----- Scale down with Digital zoom "UP" ----- Select screen size with forward switching in possible range "DN" ----- Select screen size with backward switching in possible range
	Input is Video	"NORMAL" ----- Select Normal mode "ZOOM" ----- Select Zoom mode "NATURAL" ----- Select Natural wide mode "WIDE" ----- Select Wide mode "FULL" ----- Select Full mode "CUSTOM" ----- Select Custom mode "UP" ----- Select screen size with forward switching in possible range "DN" ----- Select screen size with backward switching in possible range
Details	Select screen size (Available only in the normal Power ON status) When selected input does not include specified %1, error code "101" [CR] is returned and it is not executed. Receiving "DZOOM_UP" or "DZOOM_DN" command immediately executes the function.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.7.2 CF\_DZCENT Command**

Command	"CF_DZCENT_%1"[CR]	
%1	"CENT" ---- Cancel Digital Zoom (CENT : "CENTER")	
Details	Cancel Digital Zoom (Available only in the normal Power ON status and Input for Computer is selected)	
Response	Acceptable	"000"[CR]
	Unacceptable	"101"[CR] ----- when Input for Video is selected

**8.7.3 CF\_CEIL Command**

Command	"CF_CEIL_%1" [CR]	
%1	"ON" ----- Set Ceiling to ON. "OFF" ----- Set Ceiling to OFF.	
Details	Set/Cancel Ceiling mode.(Available only in the normal Power ON status) The status set by this command is stored in EEPROM and setting remains effective even after the power is turned to ALL OFF status.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.7.4 CF\_REAR Command**

Command	"CF_REAR_%1" [CR]	
%1	"ON" ----- Set Rear to ON. "OFF" ----- Set Rear to OFF.	
Details	Set/Cancel Rear mode (Available only in the normal Power ON status) When Rear is ON, projected image is left/right reversed. The status set by this command is stored in EEPROM and setting remains effective even after the power is turned to ALL OFF status.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.7.5 CF\_KEYSTONE Command**

Command	"CF_KEYSTONE_%1"[CR]	
%1	"UP" ----- Correct Keystone distortion to reduce upper part of image "FUP" ----- Correct Keystone distortion to reduce upper part largely "DN" ----- Correct Keystone distortion to reduce lower part of image "FDN" ----- Correct Keystone distortion to reduce lower part largely "LEFT" ----- Correct Keystone distortion to reduce left part of image "FLFT" ----- Correct Keystone distortion to reduce left part largely "RIGHT" ----- Correct Keystone distortion to reduce right part of image "FRGT" ----- Correct Keystone distortion to reduce right part largely "RST" ----- <b>Reset Keystone to default status</b>	
Details	Change Keystone distortion correction (Available only in the normal Power ON status) When reached the limit of the correction level, projector accepts the command but does not execute it. Receiving this command immediately invokes the operation. When trying to set the value beyond available range, error code "201" is returned and the operation is not executed. Example 1: When the correction level of the upper part has reached its upper limit and then the command "UP" is received. Example 2: When the upper part correction allows only another step, and then the command "FUP" is received.	
Response	Acceptable	"000"[CR]
	Unacceptable	"Error Code"[CR]

**8.7.6 CF\_KYSTNMODE Command**

Command	"CF_KYSTNMODE_%1"[CR]	
%1	"STR" ----- Set Keystone store mode to Store "RST" ----- Set Keystone store mode to Reset	
Details	Set Keystone store mode (Available only in the normal Power ON status)	
Response	Acceptable	"000"[CR]
	Unacceptable	"Error Code"[CR]

### 8.7.7 CF\_VSCALE Command

Command	"CF_VSCALE_%1" [CR]	
%1	"032" ----- +32 "031" ----- +31 : "002" ----- +2 "001" ----- +1 "000" ----- ±0 " 01" ----- 1 " 02" ----- 2 : " 31" ----- 31 " 32" ----- 32 "UP" ----- Increment setting value of Vscale by 1 "DN" ----- Decrement setting value of Vscale by 1	
Details	Set Vscale (Available only in the normal Power ON status) * When selected screen mode is not "Custom", error code "101" [CR] is returned and it is not executed. * Error Code "101" [CR] is returned for no signal.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

### 8.7.8 CF\_VPOS Command

Command	"CF_VPOS_%1" [CR]	
%1	"015" ----- +15 "014" ----- +14 : "002" ----- +2 "001" ----- +1 "000" ----- ±0 " 01" ----- 1 " 02" ----- 2 : " 14" ----- 14 " 15" ----- 15 "UP" ----- Increment setting value of Vposition by 1 "DN" ----- Decrement setting value of Vposition by 1	
Details	Set V Position (Available only in the normal Power ON status) * When selected screen mode is not "Custom", error code "101" [CR] is returned and it is not executed. * Error Code "101" [CR] is returned for no signal.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

### 8.7.9 CF\_HSCALE Command

Command	"CF_HSCALE_%1" [CR]	
%1	"032" ----- +32 "031" ----- +31 : "002" ----- +2 "001" ----- +1 "000" ----- ±0 " 01" ----- 1 " 02" ----- 2 : " 31" ----- 31 " 32" ----- 32 "UP" ----- Increment setting value of Hscale by 1 "DN" ----- Decrement setting value of Hscale by 1	
Details	Set Hscale (Available only in the normal Power ON status) * When selected screen mode is not "Custom", error code "101" [CR] is returned and it is not executed. * Error Code "101" [CR] is returned for no signal.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

### 8.7.10 CF\_HPOS Command

Command	"CF_HPOS_%1" [CR]	
%1	"015" ----- +15 "014" ----- +14 : "002" ----- +2 "001" ----- +1 "000" ----- ±0 " 01" ----- 1 " 02" ----- 2 : " 14" ----- 14 " 15" ----- 15 "UP" ----- Increment setting value of Hposition by 1 "DN" ----- Decrement setting value of Hposition by 1	
Details	Set H Position (Available only in the normal Power ON status) * When selected screen mode is not "Custom", error code "101" [CR] is returned and it is not executed. * Error Code "101" [CR] is returned for no signal.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

## 8.8 Lamp Command

### 8.8.1 CF\_LAMPMODE Command

Command	"CF_LAMPMODE_%1" [CR]	
%1	"AUTO1" ----- Set lamp status to Auto1 mode "AUTO2" ----- Set lamp status to Auto2 mode "HIGH" ----- Set lamp status to High mode "NORMAL" ----- Set Lamp status to Normal mode "ECO1" ----- Set Lamp status to Eco1 mode "ECO2" ----- Set Lamp status to Eco2 mode "UP" ----- Select lamp control forward direction "DN" ----- Select lamp control backward direction	
Details	Select Lamp control (Available only in the normal Power ON status) The value set by this command is stored in EEPROM and the setting remains effective after the power is turned to ALL OFF status.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

### 8.8.2 CF\_LAMPCTRL Command

Command	"CF_LAMPCONTROL_%1" [CR]	
%1	"LAMP1" ----- Set lamp mode to Lamp1 "LAMP2" ----- Set lamp mode to Lamp2 "CHANGE"----- Set lamp mode to Lamp1/2	
Details	Select Lamp mode. (Valid only when in the normal Power ON status.) The value set by this command is stored in EEPROM and the setting remains effective after the power is turned to ALL OFF status.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

### 8.8.3 CF\_LAMPLIFECNTRL Command

Command	"CF_LAMPLIFECNTRL_%1" [CR]	
%1	"MODE1" ----- Set lamp life control to Mode1 "MODE2" ----- Set lamp life control to Mode2	
Details	Select Lamp life control (Valid only when in the normal Power ON status.) The value set by this command is stored in EEPROM and the setting remains effective after the power is turned to ALL OFF status.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

### 8.8.4 CF\_LAMPCHGTIM Command

Command	"CF_LAMPCHGTIM_%1" [CR]	
%1	"ON" ----- Set Timer to On "OFF" ----- Set Timer to Off	
Details	Select Timer for Lamp1/2 of Lamp mode. (Valid only when in the normal Power ON status.) *When Lamp mode is not set to Lamp1/2, error code "101" is returned.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.8.5 CF\_LAMPCHGSTA Command**

Command	"CF_LAMPCHGSTA_%1" [CR]	
%1	"00"- "24" ----- Set Start time of Timer	
Details	Set Start time of Timer for Lamp1/2 of Lamp mode. (Valid only when in the normal Power ON status.) *When Lamp mode is not set to Lamp1/2, error code "101" is returned.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.8.6 CF\_LAMPINTERVAL Command**

Command	"CF_LAMPINTERVAL_%1" [CR]	
%1	"01"- "24" ----- Set Start time of Interval	
Details	Select Lamp interval. (Valid only when in the normal Power ON status.) *When Lamp mode is not set to Lamp1/2, error code "101" is returned.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

## 8.9 Sound Command

### 8.9.1 CF\_VOLUME Command

Command	"CF_VOLUME_%1"[CR]	
%1	"000-063" ----- Directly select Volume setting value "UP" ----- Current Volume setting value +1 "DN" ----- Current Volume setting value -1	
Details	Control level of volume. (Available only in the normal Power ON status) Set Volume Up/Down the same way as remote control and also directly select Volume setting value. When setting Volume value, the Sound Mute ON status is canceled just like RC operation. The value set by this command is stored in Projector.	
Response	Acceptable	"000"[CR]
	Unacceptable	"Error Code"[CR]

### 8.9.2 CF\_MUTE Command

Command	"CF_MUTE_%1"[CR]	
%1	"ON" ----- Set Sound Mute ON "OFF" ----- Set Sound Mute OFF	
Details	Control Sound Mute ON/OFF (Available only in the normal Power ON status)	
Response	Acceptable	"000"[CR]
	Unacceptable	"Error Code"[CR]

**8.10 Setting Command**

**8.10.1 CF\_LANG Command**

Command	"CF_LANG_%1" [CR]	
%1	"ENG" ----- Select ENGLISH "DEU" ----- Select German "FRA" ----- Select French "ITA" ----- Select Italian "ESP" ----- Select Spanish "POR" ----- Select Portuguese "NED" ----- Select Dutch "SVE" ----- Select Swedish "JPN" ----- Select Japanese "CHI" ----- Select Chinese "KOR" ----- Select Korean "RUS" ----- Select Russian	
Details	Set language for OSD (Available only in the normal Power ON status) The language set by this command is stored in EEPROM and setting remains effective even after the power is turned to ALL OFF status.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.10.2 CF\_LOGO Command**

Command	"CF_LOGO_%1_%2" [CR]	
%1	"0000 – 9999" ----- Directly set Logo PIN code	
%2	"OFF" -----Cancel Logo display "DFLT" ----- Select Logo of Factory Default "USER" ----- Select User "UP" -----Select functions to choose forward (OFF→DFLT→USER→OFF→ --) "DN" -----Select functions to choose backward(OFF→USER→DFLT→OFF→ --)	
Details	Set Logo mode.(Available only in the normal Power ON status) The status set by this command is stored in EEPROM and setting remains effective even after the power is turned to ALL OFF status. Set Logo PIN code in %1. When Logo Lock is enabled: PIN code is matched ----- Command is valid (Acceptable) PIN code is mismatched----- Command is invalid (Error code "102") PIN code is beyond %1 available range ----- Command is invalid (Error code"?)") When Logo Lock is disabled: PIN code is within %1 available range ----- Command is valid (Acceptable) PIN code is out of %1 available range ----- Command is invalid (Error code "?") Note: When Logo Lock is enabled, matching Logo PIN code switches Logo but Logo Lock is not cancelled (Lock status is kept). *When %2="USER" is received, error code "101" is returned, in the case of Capture non-practice.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.10.3 CF\_PIP Command**

Command	"CF_PIP_%1" [CR]	
%1	"OFF" -----Select Off "PINP" ----- Select P in P mode "PBYP" ----- Select P by P mode "UP" -----Select functions to choose forward (OFF→P in P→P by P→OFF→ --) "DN" -----Select functions to choose backward(P by P→P in P→OFF→P by P→ --)	
Details	Set status of Picture in Picture.(Available only in the normal Power ON status)	



**8.10.7 CF\_FILCTL Command**

Command	"CF_FILCTL_%1" [CR]	
%1	"ROLL" ----- Execute operation of scroll of filter	
Details	Execute operation of scroll of filter	
Response	Acceptable	Acceptable
	Unacceptable	Unacceptable

**8.10.8 CF\_POINTER Command**

Command	"CF_POINTER_%1_%2"[CR]	
%1	"SPOTLIGHT" ----- Select Spotlight "ARROW" ----- Select Arrow "FINGER" ----- Select Finger "LASER" ----- Select Laser mark	
	%2	"MAX" ----- Spotlight Large "MID" ----- Spotlight Medium "MIN" ----- Spotlight Small
Details	Select Pointer display. (Available only in the normal Power ON status) Note1) %2 is valid only when "SPOTLIGHT" is specified in %1. When "ARROW"/"FINGER"/"LASER" is specified in %1, the command should be "CF_POINTER_%1" [CR]. Note2) When "SPOTLIGHT" is specified in %1, %2 cannot be omitted.	
Response	Acceptable	"000"[CR]
	Unacceptable	"Error Code"[CR]

**8.10.9 CF\_RCODE Command**

Command	"CF_RCODE_%1" [CR]	
%1	"001" ----- Select Code 1 "002" ----- Select Code 2 "003" ----- Select Code 3 "004" ----- Select Code 4 "005" ----- Select Code 5 "006" ----- Select Code 6 "007" ----- Select Code 7 "008" ----- Select Code 8 "UP" ----- Switch forward (Code1→Code2→Code3 - - - →Code8→Code1) "DN" ----- Switch backward (Code8→Code7→Code6 - - - →Code1→Code8)	
Details	Select Code of Remote Control (Available only in the normal Power ON status) The status set by this command is stored in EEPROM and setting remains effective even after the power is turned to ALL OFF status.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.10.10 CF\_RCSENSOR Command**

Command	"CF_RCSENSOR_%1" [CR]	
%1	"ALL" ----- Select all receiver of projector "FRONTTOP" ----- Select both front and top receiver of projector "BACKTOP" ----- Select both back and top receiver of projector "FRONTBACK" ----- Select both front and back receiver of projector "FRONT" ----- Select only front receiver of projector "TOP" ----- Select only top receiver of projector "BACK" ----- Select only back receiver of projector "UP" ----- Switch forward (ALL → FRONTTOP→BACKTOP→ FRONTBACK→ FRONT →TOP → BACK→ALL) "DN" ----- Switch backward (BACK →TOP→FRONT→FRONTBACK →BACKTOP →FRONTTOP→ ALL→BACK)	
Details	Select location of infrared remote receiver of remote control (Available only in the normal Power ON status) The status set by this command is stored in EEPROM and setting remains effective even after the power is turned to ALL OFF status.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.10.11 CF\_DISP Command**

Command	"CF_DISP_%1" [CR]	
%1	"ON" ----- Set Display to ON "CNTDWNOFF" ----- Set Display to Count down Off "OFF" ----- Set Display to OFF "UP" ----- Switch forward (On → Count down Off → Off → On → ---) "DN" ----- Switch backward (On → Off → Count down Off → On → ---)	
Details	Set/Cancel Display. (Valid only when in the normal Power ON status.) The value set by this command is stored in EEPROM and the setting remains effective after the power is turned to ALL OFF status.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.10.12 CF\_STANDBYMODE Command**

Command	"CF_STANDBYMODE_%1"[CR]	
%1	"ECO" ----- Less standby electricity "NORMAL" ----- Normal standby electricity	
Details	Switch Standby Mode setting. This command is available in normal Power ON status.	
Response	Acceptable	"000"[CR]
	Unacceptable	"Error Code"[CR]

**8.10.13 CF\_P-MANE Command**

Command	"CF_P-MANE_%1" [CR]	
%1	"OFF" ----- Set Power Management to Off "READY" ----- Set Power Management to Ready "SHUTDOWN" ----- Set Power Management to Shut Down mode "UP" ----- Switch forward (Off→Ready→Shut down→Off) "DN" ----- Switch backward (Off→Shut down→Ready→Off)	
Details	Set/Cancel Power Management (Available only in the normal Power ON status) The status set by this command is stored in EEPROM and setting remains effective even after the power is turned to ALL OFF status.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.10.14 CF\_P-MANETIME Command**

Command	"CF_P-MANETIME_%1" [CR]	
%1	"01" - "30" ----- Directly specify setting time by the minute "UP" ----- Increment value by 1 (Switched in 01→02→ --- → 30 → 01 order) "DN" ----- Decrement value by 1(Switched in 30→29→ --- → 01 → 30 order)	
Details	Set time of Power Management time (Available only in the normal Power ON status) The status set by this command is stored in EEPROM and setting remains effective even after the power is turned to ALL OFF status.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.10.15 CF\_ON-STA Command**

Command	"CF_ON-STA_%1" [CR]	
%1	"ON" ----- Set Power On Start to ON. "OFF" ----- Set Power On Start to OFF. "UP" ----- Toggle between ON and OFF.(On→Off→On → - - -) "DN" ----- Toggle between ON and OFF.(On→Off→On → - - -) *)"UP" and "DN" are exactly same operation.	
Details	Set/Cancel Power ON Start (Available only in the normal Power ON status) The status set by this command is stored in EEPROM and setting value remains effective even after the power is turned to ALL OFF status.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.10.16 CF\_FANSPEED Command**

Command	"CF_FANSPEED_%1" [CR]	
%1	"MAX" ----- Select maximum fan speed "NOR" ----- Select normal fan speed	
Details	Switch Fan Control Speed mode.(Available only in the normal Power ON status) The status set by this command is stored in EEPROM and setting remains effective even after the power is turned to ALL OFF status.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]



**8.10.21 CF\_HDMI SETUP Command**

Command	"CF_HDMISETUP_%1"[CR]	
%1	"NORMAL"-----Select Normal "ENHANCED" -----Select Enhanced	
Details	Set status of HDMI setup - Image. (Valid only when in the normal Power ON status) The status set by this command is stored in EEPROM and setting remains effective even after the power is turned to ALL OFF status.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.10.22 CF\_HDMI SOUND Command**

Command	"CF_HDMISETUP_%1"[CR]	
%1	"HDMI"-----Set PCM Input(Digital sound) "EXTARNAL" -----Set external sound input	
Details	Set status of HDMI setup – Sound. (Valid only when in the normal Power ON status) The status set by this command is stored in EEPROM and setting remains effective even after the power is turned to ALL OFF status.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.10.23 CF\_PJPINCODE Command**

Command	"CF_PJPINCODE_%1" [CR]	
%1	"0000 – 9999" ----- Directly specify PJ PIN code	
Details	<p>Enter PIN code to cancel PIN code lock (Available only in the normal Power ON status) PIN code can not be changed. (Only PIN code lock is canceled.)</p> <p>*When PIN code Lock is enabled:                  PIN code is matched ----- Command is valid (Acceptable)                  PIN code is mismatched ----- Command is invalid (Error code "102")                  PIN code is beyond %1 available range ----Command is invalid (Error code "?")</p> <p>When PIN code lock is canceled:                  PIN code is within %1 range ----- Command is valid (Acceptable)                  PIN code is out of %1 range ----- Command is invalid (Error code is 102)</p> <p>This command is only valid when "PJ PIN code" dialog is displayed to enter PIN code after Power is ON and Countdown is completed.                  When PIN code lock is set to "On1", it needs to send this command every time the projector is turned on.</p>	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.10.24 CF\_KEYDIS Command**

Command	"CF_KEYDIS_%1" [CR]	
%1	"NONE" ----- RC & Projector keys are valid (All are valid) "RCALL" ----- All RC keys are invalid "RCPART" ----- Specific RC keys are invalid "KEYALL" ----- All projector keys are invalid "KEYPART" ----- Specific projector keys are invalid	
Details	Set a ban on the use of RC keys/ projector keys (Available only in the normal Power ON status)	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.10.25 CF\_TESTPAT Command**

Command	"CF_TESTPAT_%1" [CR]	
%1	"COLOR" ----- Display Color bar "GRAD1" ----- Display 16step(white→black) "GRAD2" ----- Display 16step(white←black) "GRAD3" ----- Display 16step(white↓black) "GRAD4" ----- Display 16step(white↑black) "WHITE" ----- Display all white "BALCK" ----- Display all black "CROSS" ----- Display Cross "OFF" ----- Do not show test pattern display "UP" ----- Switch forward "DN" ----- Switch backward	
Details	Execute test pattern display.(Available only in the normal Power ON status)	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.10.26 CF\_FILH Command**

Command	"CF_FILH_%1" [CR]	
%1	"RST" ----- Reset Filter used time	
Details	Reset used time for filter of projector	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.10.27 CF\_FILTIMER Command**

Command	"CF_FILTIMER_%1" [CR]	
%1	"0400" ----- Set 400 hours "0700" ----- Set 700 hours "1000" ----- Set 1000 hours "OFF" ----- Set Off(Do not warning display)	
Details	Set time to display Filter cleaning / replacement warning on screen	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.10.28 CF\_FILSCRL Command**

Command	"CF_FILSCRL_%1" [CR]	
%1	"RST" ----- Reset Filter scroll counter	
Details	Reset Filter scroll counter	
Response	Acceptable	Acceptable
	Unacceptable	"Error Code" [CR]

**8.10.29 CF\_FDEFAULT Command**

Command	"CF_FDEFAULT_%1" [CR]	
%1	"RST"	
Details	Reset to Factory Default setting (Available only in the normal Power ON status)	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.11 Other Commands**

**8.11.1 CF\_KEYEMU Command**

Command	"CF_KEYEMU_%1" [CR]	
%1	"RIGHT" ----- Move Pointer rightward in On-Screen Display Menu "LEFT" ----- Move Pointer leftward in On-Screen Display Menu "UP" ----- Move Pointer to upward On-Screen Display Menu "DN" ----- Move Pointer to downward in On-Screen Display Menu "SELECT" ----- The same operation as "SELECT" button of RC "AUTOPC" ----- Execute Auto PC Adj. operation	
Details	The same operation as Control Key. Auto PC Adj. operation is not stopped before getting back a return value during this Auto PC Adj. operation even if this command is received again.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.11.2 CF\_MENU Command**

Command	"CF_MENU_%1" [CR]	
%1	"ON" ----- Display On-Screen Display Menu "OFF" ----- Hide On-Screen Display Menu	
Details	Set On-Screen Display mode. (Available only in the normal Power ON status)	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.11.3 CF\_POWER Command**

Command	"CF_POWER_%1" [CR]	
%1	"ON" ----- Power ON "OFF" ----- Power OFF * Issuing another command during countdown process forced countdown operation to be terminated. * Error Code is returned in some projector statuses, which indicates the command is impossible to be executed. (See [8.3] for details) * Returning the response "000" [CR] (acceptable) does not always mean that the status has already changed to Power ON. Example: When the temperature approaches abnormal status after returning "000" [CR] to the command CF_POWER ON. Therefore, to get the projector status requires using Status Read command.	
Details	Set Power to ON/OFF	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.11.4 CF\_FREEZE Command**

Command	"CF_FREEZE_%1" [CR]	
%1	"ON" ----- Set Freeze to ON. "OFF" ----- Set Freeze to OFF. "UP" ----- Switch forward (On→Off→On→---) "DN" ----- Switch backward (On→Off→On→---) * The same operation for "UP" and "DN" as this model has only "ON" / "OFF".	
Details	Set / Cancel Freeze function. (Available only in the normal Power ON status) Receiving FREEZE_ON command when the projector is Freeze enabled, Freeze status is kept.	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

**8.11.5 CF\_VMUTE Command**

Command	"CF_VMUTE_%1" [CR]	
%1	"ON" ----- Set Video Mute to ON (Shutter Close). "OFF" ----- Set Video Mute to OFF (Shutter Open).	
Details	ON / OFF Video Mute function. (Available only in the normal Power ON status)	
Response	Acceptable	"000" [CR]
	Unacceptable	"Error Code" [CR]

## 9 . Status Read Command

### 9.1 Format

- 1) PC issues commands in format as below:  
 “CR\_ **COMMAND**” [CR]  
 Command: String
- 2) When projector receives the appropriate command, it returns the required data as a string.  
 “000\_” %1 [CR]  
 %1: Required Data (String)
- 3) When the received data cannot be decoded, the projector returns “?” [CR]

### 9.2 Transfer Example

Get total dots of projector by Expand Serial Commands

PC → PJ: “CR\_TDOTS” [CR]

PC ← PJ: “000\_1344” [CR]

### 9.3 Operation Condition

- 1) Basically it should be always operated.
- 2) When Standby mode of Setting menu is set to Eco and Projector status is Standby mode, Status Read Commands are invalid.

## 9.4 Image Status Read Command

### 9.4.1 CR\_BRIGHT Command

Command	“CR_BRIGHT” [CR]	
Details	Get user controlled value of Brightness	
	Acceptable	“000_%1” [CR]
	%1	“000 – 063”
	Unacceptable	“Error code” [CR]

### 9.4.2 CR\_CONT Command

Command	“CR_CONT” [CR]	
Details	Get user controlled value of Contrast	
	Acceptable	“000_%1” [CR]
	%1	“000 – 063”
	Unacceptable	“Error code” [CR]

### 9.4.3 CR\_COLOR Command

Command	“CR_COLOR” [CR]	
Details	Get user controlled value of Color	
	Acceptable	“000_%1” [CR]
	%1	“000 – 063”
	Unacceptable	“Error code” [CR]

#### 9.4.4 CR\_TINT Command

Command	"CR_TINT" [CR]	
Details	Get user controlled value of Tint	
Response	Acceptable	"000_%1" [CR]
	%1	"000 – 063"
	Unacceptable	"Error Code" [CR] --- When command is not available in the given condition (such as being selected input). "?" [CR] --- When unknown command is received

#### 9.4.5 CR\_SHARP Command

Command	"CR_SHARP" [CR]	
Details	Get user controlled value of Sharpness	
Response	Acceptable	"000_%1" [CR]
	%1	"000 – 015"
	Unacceptable	"Error code" [CR]

#### 9.4.6 CR\_GAMMA Command

Command	"CR_GAMMA" [CR]	
Details	Get user controlled value of Gamma	
Response	Acceptable	"000_%1" [CR]
	%1	"000 – 015"
	Unacceptable	"Error code" [CR]

#### 9.4.7 CR\_WBAL-R Command

Command	"CR_WBAL-R" [CR]	
Details	Get user controlled Red value of White Balance	
Response	Acceptable	"000_%1" [CR]
	%1	"000 – 063"
	Unacceptable	"Error code" [CR]

#### 9.4.8 CR\_WBAL-G Command

Command	"CR_WBAL-G" [CR]	
Details	Get user controlled Green value of White Balance	
Response	Acceptable	"000_%1" [CR]
	%1	"000 – 063"
	Unacceptable	"Error code" [CR]

#### 9.4.9 CR\_WBAL-B Command

Command	"CR_WBAL-B" [CR]	
Details	Get user controlled Blue value of White Balance	
Response	Acceptable	"000_%1" [CR]
	%1	"000 – 063"
	Unacceptable	"Error code" [CR]

**9.4.10 CR\_COLTEMP Command**

Command	"CR_COLTEMP" [CR]	
Details	Get Color Temperature setting status	
Response	Acceptable	"000_%1" [CR]
	%1	"000" ----- Xlow "001" ----- Low "002" ----- Mid "003" ----- High "BLANK" ---- Processing adjusting White Balance (Neither of Xlow / Low / Mid / High)
	Unacceptable	"Error code" [CR]

**9.4.11 CR\_NZRED Command**

Command	"CR_NZRED" [CR]	
Details	Get Noise Reduction setting status	
Response	Acceptable	"000_%1" [CR]
	%1	"OFF" ----- Noise Reduction OFF "L1" ----- Noise Reduction L1 "L2" ----- Noise Reduction L2
	Unacceptable	"Error code" [CR]

**9.4.12 CR\_PROGV Command**

Command	"CR_PROGV" [CR]	
Details	Get Progressive scan setting status	
Response	Acceptable	"000_%1" [CR]
	%1	"OFF" ----- Progressive scan OFF "L1" ----- Progressive Mode L1 (for moving image) "L2" ----- Progressive Mode L2 (for still image) "FILM" ----- Progressive Model FILM
	Unacceptable	"Error code" [CR]

**9.4.13 CR\_IMAGE Command**

Command	"CR_IMAGE" [CR]	
Details	Get image setting status	
Response	Acceptable	"000_%1" [CR]
	%1	"DYNAMIC" ----- Dynamic "STAND" ----- Standard "REAL" ----- Real "CINEMA" ----- Cinema "CUSTOM1"~"CUSTOM4" ----- Image1~4
	Unacceptable	"Error Code"[CR] ---- When the command is invalid due to condition such as Input source "?"[CR] ----- When unclear command is received

**9.4.14 CR\_IMGGMD Command**

Command	"CR_IMGGMD" [CR]	
Details	Get setting status of Dynamic/Standard/Real/Cinema in Image Gamma	
Response	Acceptable	"000_%1" [CR]
	%1	"DYN" ----- Dynamic "STD" ----- Standard "REL" ----- Real "CNM" ----- Cinema
	Unacceptable	"Error code" [CR]

**9.5 PC Adjust Status Read Command**

**9.5.1 CR\_FSYNC Command**

Command	"CR_FSYNC" [CR]	
Details	Get value of Fine Sync	
Response	Acceptable	"000_%1" [CR]
	%1	"0000 – 0031"
	Unacceptable	"Error Code" [CR] --- When command is not available in the given condition (such as being selected input) "?" [CR] --- When unknown command is received

**9.5.2 CR\_TDOTS Command**

Command	"CR_TDOTS" [CR]	
Details	Get value of Total Dots	
Response	Acceptable	"000_%1" [CR]
	%1	"mmmm" – "nnnn" (mmmm = Display area H + Position H) (nnnn = Maximum value less than 140 MHz of Dot Clock)
	Unacceptable	"Error Code" [CR] ----- When command is not available in the given condition (such as being selected input "?" [CR] ----- When unknown command is received

**9.5.3 CR\_CLPPHASE Command**

Command	"CR_CLPPHASE" [CR]	
Details	Get value of Clamp Phase value	
Response	Acceptable	"000_%1" [CR]
	%1	"0001"~"nnnn" ("nnnn" depends on input signal)
	Unacceptable	"Error Code" [CR]

**9.5.4 CR\_H-POS Command**

Command	"CR_H-POS" [CR]	
Details	Get value of Horizontal Position	
Response	Acceptable	"000_%1" [CR]
	%1	"0000 – nnnn" (nnnn = Total Dots – Display area H)
	Unacceptable	"Error Code" [CR] ----- When command is not available in the given condition (such as being selected input "?" [CR] ----- When unknown command is received

**9.5.5 CR\_V-POS Command**

Command	"CR_V-POS" [CR]	
Details	Get value of Vertical Position	
Response	Acceptable	"000_%1" [CR]
	%1	"0000 – nnnn" (nnnn = Total Line – Display area V)
	Unacceptable	"Error Code" [CR] ----- When command is not available in the given condition (such as being selected input "?" [CR] ----- When unknown command is received

**9.5.6 CR\_DDOTS Command**

Command	"CR_DDOTS" [CR]	
Details	Get value of Display Dots	
Response	Acceptable	"000_%1" [CR]
	%1	"0100 – nnnn" (nnnn = Total Dots – Position H)
	Unacceptable	"Error Code" [CR] ---- When command is not available in the given condition (such as being selected input "?" [CR] ----- When unknown command is received

**9.5.7 CR\_DLINE Command**

Command	"CR_DLINE" [CR]	
Details	Get value of Display Line	
Response	Acceptable	"000_%1" [CR]
	%1	"0100 – nnnn" (nnnn = Total Line – Position V)
	Unacceptable	"Error Code" [CR] ---- When command is not available in the given condition (such as being selected input "?" [CR] ----- When unknown command is received

**9.5.8 CR\_ORGMODE Command**

Command	"CR_ORGMODE" [CR]	
Details	Get the original signal of current selected Mode that is set in PC Adj. When MODE1- 10 or EXT11-60 is not selected, get the current signal.	
Response	Acceptable	"000_%1" [CR]
	%1	<p>When input signal is PC Analog;</p> <p>"VGA1" ----- Indicates signal is VGA1                      "VGA2" ----- Indicates signal is VGA2                      :                      :                      "XGA1" ----- Indicates signal is XGA1                      :                      :                      "WXGA3" ----- Indicates signal is WXGA3                      "1080i60" ----- Indicates signal is 1080i60                      "1080i50" ----- Indicates signal is 1080i50                      "1035i" ----- Indicates signal is 1035i                      "720p60" ----- Indicates signal is 720p60                      "720p50" ----- Indicates signal is 720p50                      "575p" ----- Indicates signal is 575p                      "480p" ----- Indicates signal is 480p                      "575i" ----- Indicates signal is 575i                      "480i" ----- Indicates signal is 480i</p> <p>Note; To differentiate between 60Hz and 50Hz in 1080i and 720p,                      "60" or "50" is necessary to add to the parameter in this command                      * When input signal is not PC Analog, error code "101" is returned.</p>
	Unacceptable	"Error code" [CR]

**9.5.9 CR\_PCSTORE Command**

Command	"CR_PCSTORE" [CR]	
Details	Get Free or Stored status of MODE1 -10 in PC Adjust. Data consists of 10 bytes and each byte represents MODE1-10. (F:Free, S:Stored)	
Response	Acceptable	"000_%1" [CR]
	%1	<p>"FFFFFFFF" ----- ALL Free                      "SFFFFFFFF" ----- Mode1 is Stored, others are Free                      :                      "FFFFFFFFFS" ----- Mode10 is Stored, others are Free                      "SSSSSSSSSS" ----- ALL Stored</p>
	Unacceptable	"Error code" [CR]

**9.5.10 CR\_SETPCADJ Command**

Command	"CR_SETPCADJ" [CR]	
Details	Get PC signal for current system	
Response	Acceptable	"000_%1" [CR]
	%1	<p>When input signal is PC Analog;</p> <p>"VGA1" ----- Indicates VGA1 is selected</p> <p>"VGA2" ----- Indicates VGA2 is selected</p> <p>⋮</p> <p>"XGA1" ----- Indicates XGA1 is selected</p> <p>⋮</p> <p>"WXGA3" ----- Indicates WXGA3 is selected</p> <p>"1080I" ----- Indicates 1080i is selected</p> <p>"1035I" ----- Indicates 10350i is selected</p> <p>"720p" ----- Indicates 720p is selected</p> <p>"575p" ----- Indicates 575p is selected</p> <p>"480p" ----- Indicates 480p is selected</p> <p>"575I" ----- Indicates 575i is selected</p> <p>"480I" ----- Indicates 480i is selected</p> <p>"MODE1" ----- Indicates Mode1 is selected</p> <p>⋮</p> <p>"MODE10" ----- Indicates Mode10 is selected</p> <p>"EXT11" ----- EXT11 is selected</p> <p>⋮</p> <p>"EXT60" ----- EXT60 is selected</p> <p>* Error Code "101" [CR] is returned for no signal.</p> <p>* When input signal is not PC Analog, error code "101" is returned.</p>
	Unacceptable	"Error code" [CR]

**9.6 Video Status Read Command**

**9.6.1 CR\_SERSYS Command**

Command	"CR_SERSYS" [CR]	
Details	<p>Get selected current signal.</p> <p>Auto detected signal is returned in Auto mode</p> <p>Only available when Input is Y,Pb/Cb,Pr/Cr, S-Video or Video. (This is not the case for PC-Analog/PC-Digital/AV HDCP signals)</p>	
Response	Acceptable	"000_%1" [CR]
	%1	<p>"1080I60" ----- 1080i 60Hz</p> <p>"1080I50" ----- 1080i 50Hz</p> <p>"1035I" ----- 1035i</p> <p>"720P60" ----- 720p60Hz</p> <p>"720P50" ----- 720p50Hz</p> <p>"575P" ----- 575p</p> <p>"480P" ----- 480p</p> <p>"575I" ----- 575i (includes Composite signal such as PAL)</p> <p>"480I" ----- 480i (includes Composite signal such as NTSC)</p> <p>"NO_SIGNAL" ----- No signal</p>
	Unacceptable	<p>"101" [CR] --- When input signal is PC-Analog, PC-Digital or PC signals in AV HDCP</p> <p>"?" [CR] ----- When unknown command is received</p>

**9.7 Input Read Command**

**9.7.1 CR\_INPUT Command**

Command	"CR_INPUT" [CR]	
Details	Get selected INPUT No.	
Response	Acceptable	"000_%1" [CR]
	%1	"1 – 4"
	Unacceptable	"Error code" [CR]

**9.7.2 CR\_SOURCE Command**

Command	"CR_SOURCE" [CR]	
Details	Get selected source	
Response	Acceptable	"000_%1" [CR]
	%1	<p>"HDMI" ----- HDMI is selected</p> <p>"ANALOG" ----- RGB (PC Analog) is selected</p> <p>"SCART" ----- RGB (Scart) is selected</p> <p>"VIDEO" ----- Video is selected</p> <p>"S-VIDEO" ----- S-Video is selected</p> <p>"YPBPR" ----- Y,Pb/Cb,Pr/Cr is selected</p> <p>"NETWORK" ----- Network is selected</p>
	Unacceptable	<p>"Error Code" [CR] --- When command is not available in the given condition (such as being selected input)</p> <p>"?" [CR] ----- When unknown command is received</p>

**9.7.3 CR\_SRCINP1 Command**

Command	"CR_SRCINP1" [CR]	
Details	Get Source of INPUT1	
Response	Acceptable	"000_%1" [CR]
	%1	<p>"ANALOG" ----- in PC Analog mode</p> <p>"SCART" ----- in Scart mode</p> <p>"HDMI" ----- in HDMI mode</p>
	Unacceptable	"Error code" [CR]

**9.7.4 CR\_SRCINP2 Command**

Command	"CR_SRCINP2" [CR]	
Details	Get Source of INPUT2	
Response	Acceptable	"000_%1" [CR]
	%1	<p>"VIDEO" ----- in Video mode</p> <p>"YPBPR" ----- in Y,Pb/Cb,Pr/Cr mode</p> <p>"ANALOG" ----- in RGB mode</p>
	Unacceptable	"Error code" [CR]

**9.7.5 CR\_SRCINP3 Command**

Command	"CR_SRCINP3" [CR]	
Details	Get Source of INPUT3	
Response	Acceptable	"000_%1" [CR]
	%1	"VIDEO" ----- in Video mode "S-VIDEO" ----- in S-Video mode
	Unacceptable	"Error code" [CR]

**9.7.6 CR\_SRCINP4 Command**

Command	"CR_SRCINP4" [CR]	
Details	Get Source of INPUT4	
Response	Acceptable	"000_%1" [CR]
	%1	"NETWORK" ----- With PJ-Net attached and the power ON
	Unacceptable	"101" [CR] ----- With PJ-Net attached and the power ON "103" [CR] ----- With PJ-Net unattached "?" [CR] ----- When unknown command is received.

9.7.7 CR\_SYSTEM Command

Command	"CR_SYSTEM" [CR]		
Details	Get selected System		
Response	Acceptable	"000_%1" [CR]	
	%1	Input is PC Analog	"VGA1" ----- indicates VGA1 is selected "VGA2" ----- indicates VGA2 is selected : : : "XGA1" ----- indicates XGA1 is selected : "WXGA3" ----- indicates WXGA3 is selected "1080I" ----- indicates 1080i is selected "1035I" ----- indicates 1035i is selected "720p" ----- indicates 720p is selected "575p" ----- indicates 575p is selected "480p" ----- indicates 480p is selected "575I" ----- indicates 575i is selected "480I" ----- indicates 480i is selected "MODE1" ----- indicates Mode1 is selected : : "MODE10" ----- indicates Mode10 is selected "EXT11" ----- indicates EXT11 is selected : : "EXT60" ----- indicates EXT60 is selected * Error Code "101" [CR] is returned for no signal
		Input is HDMI	"D-XGA1" ----- indicates D-XGA1 is selected : "D-WXGA3" ----- indicates D-WXGA3 is selected "D-1080I" ----- indicates D-1080i is selected "D-1035I" ----- indicates D-1035i is selected "D-720P" ----- indicates D-720p is selected "D-575P" ----- indicates D-575p is selected "D-480P" ----- indicates D-480p is selected "D-1080PSF/25" ----- indicates D-1080psf/25 is selected "D-1080PSF/30" ----- indicates D-1080psf/30 is selected * Error Code "101" [CR] is returned for no signal
		Input is Y,Pb/Cb,Pr/Cr	"AUTO" ----- indicates Auto is selected "1080I" ----- indicates 1080i is selected "1035I" ----- indicates 1035i is selected "720P" ----- indicates 720p is selected "575P" ----- indicates 575p is selected "480P" ----- indicates 480p is selected "575I" ----- indicates 575i is selected "480I" ----- indicates 480i is selected * Selected System is returned, whether or not signal is coming.
		Input is Video or S-video	"AUTO" ----- indicates Auto is selected "NTSC" ----- indicates NTSC is selected "NTSC443" ----- indicates NTSC4.43 is selected "PAL" ----- indicates PAL is selected "SECAM" ----- indicates SECAM is selected "PAL-M" ----- indicates PAL-M is selected "PAL-N" ----- indicates PAL-N is selected * Selected System is returned, whether or not signal is coming.
Unacceptable	"Error Code" [CR]		

**9.7.8 CR\_SYSLIST Command**

Command	"CR_SYSLIST" [CR]	
Details	Get possible systems for System list	
Response	Acceptable	"000_%1_%2_---_%x" [CR]
	%1	<p>When Input is PC Analog:                      "XGA" ----- XGA is in the list                      "1080I" ----- 1080i is in the list                      *Auto, Mode1-10 shall not be returned.                      *When no signal is coming, error code "101" is returned.</p> <p>When Input is <b>HDMI</b> / AV-HDCP:                      "D-XGA" ----- D-XGA is in the list                      "D-720P" ----- D-720p is in the list                      *When no signal is coming, error code "101" is returned.</p> <p>When Input is Y,Pb/Cb,Pr/Cr:                      All possible systems in Menu, including Auto, are returned.                      "AUTO" ----- Auto is in the list                      "1080I" ----- 1080i is in the list                      "1035I" ----- 1035i is in the list                      :                      :                      "575I" ----- 575i is in the list                      "480I" ----- 480i is in the list                      *When no signal is coming, error code "101" is not returned.</p> <p>When Input is Video/S-Video:                      All possible systems in Menu, including Auto, are returned.                      "AUTO" ----- Auto is in the list                      "PAL" ----- PAL is in the list                      "SECAM" ----- SECAM is in the list                      :                      :                      "PAL-N" ----- PAL-N is in the list                      *When no signal is coming, error code "101" is not returned.</p>
	Unacceptable	"Error Code" [CR]

**9.7.9 CR\_MODELIST Command**

Command	"CR_MODELIST" [CR]	
Details	Get possible modes for Mode list	
Response	Acceptable	"000_%1_%2_---_%x" [CR]
	%1	<p>Error Code "101" is returned except for PC-Analog and for no signal with PC-Analog                      Possible modes in Mode1-10 are returned when PC-Analog signal is coming.</p> <p>"MODE1"                      "MODE2"                      "MODE3"                      :                      :                      "MODE8"                      "MODE9"                      "MODE10"</p>
	Unacceptable	"Error Code" [CR]

**9.7.10 CR\_HMSLOT Command**

Command	"CR_HMSLOT" [CR]	
Details	Get the total number of Input.	
Response	Acceptable	"000_%1" [CR]
	%1	"004" ----- When PJ-Net is attached. "003" ----- When PJ-Net is not attached.
	Unacceptable	"Error Code" [CR]

**9.7.11 CR\_NMSLOT1 Command**

Command	"CR_NMSLOT1" [CR]	
Details	Get terminal information of Input1	
Response	Acceptable	"000_%1" [CR]
	%1	"RGB"
	Unacceptable	"Error Code" [CR]

**9.7.12 CR\_NMSLOT2 Command**

Command	"CR_NMSLOT2" [CR]	
Details	Get terminal information of Input2	
Response	Acceptable	"000_%1" [CR]
	%1	"5BNC"
	Unacceptable	"Error Code" [CR]

**9.7.13 CR\_NMSLOT3 Command**

Command	"CR_NMSLOT3" [CR]	
Details	Get terminal information of Input3	
Response	Acceptable	"000_%1" [CR]
	%1	"VIDEO"
	Unacceptable	"Error Code" [CR]

**9.7.14 CR\_NMSLOT4 Command**

Command	"CR_NMSLOT4" [CR]	
Details	Get terminal information of Input4	
Response	Acceptable	"000_%1" [CR]
	%1	"NETWORK" ----- When PJ-Net is attached. *With PJ-Net unattached, this command is invalid and error code "103" is returned. *With PJ-Net attached and the power OFF, error code "101" is returned. *In models not supporting PJ-Net, error code "103" is returned.
	Unacceptable	"Error Code" [CR]

**9.7.15 CR\_IDSLOT1 Command**

Command	"CR_IDSLOT1" [CR]	
Details	Get ID information of Input1. This command is to determine sources possible to input.	
Response	Acceptable	"000_%1" [CR]
	%1	"33" ----- On-board (D-Sub + <b>HDMI</b> ) Available source: ANALOG, SCART, <b>HDMI</b>
	Unacceptable	"Error Code" [CR]

**9.7.16 CR\_IDSLOT2 Command**

Command	"CR_IDSLOT2" [CR]	
Details	Get ID information of Input2. This command is to determine sources possible to input.	
Response	Acceptable	"000_%1" [CR]
	%1	"41" ----- On-board (5BNC) Available source: ANALOG, VIDEO, YPBPR
	Unacceptable	"Error Code" [CR]

**9.7.17 CR\_IDSLOT3 Command**

Command	"CR_IDSLOT3" [CR]	
Details	Get ID information of Input3. This command is to determine sources possible to input.	
Response	Acceptable	"000_%1" [CR]
	%1	"53" ----- On-board (3BNC and S-VIDEO) Available source: VIDEO, S-VIDEO
	Unacceptable	"Error Code" [CR]

**9.7.18 CR\_IDSLOT4 Command**

Command	"CR_IDSLOT4" [CR]	
Details	Get ID information of Input4. This command is to determine sources possible to input.	
Response	Acceptable	"000_%1" [CR]
	%1	"13" ----- PJ-Net (Viewer capable) Available source: Network *With PJ-Net unattached, this command is invalid and error code "103" is returned. *With PJ-Net attached and the power OFF, error code "101" is returned. *In models not supporting PJ-Net, error code "103" is returned.
	Unacceptable	"Error Code" [CR]

## 9.8 Screen Status Read Command

### 9.8.1 CR\_SCREEN Command

Command	"CR_SCREEN" [CR]	
Details	Get selected screen image size	
Response	Acceptable	"000_%1" [CR]
	%1	"NORMAL" ----- Normal mode "ZOOM" ----- Zoom mode "NATURAL" ----- Natural wide mode "WIDE" ----- Wide mode "FULL" ----- Full mode "TRUE" ----- True mode "CUSTOM" ----- Custom mode
	Unacceptable	"Error Code" [CR] --- When command is not available in the given condition (such as being selected input). "?" [CR] --- When unknown command is received

### 9.8.2 CR\_CEIL Command

Command	"CR_CEIL" [CR]	
Details	Get setting status of Ceiling	
Response	Acceptable	"000_%1" [CR]
	%1	"ON" ----- Ceiling projection is enabled "OFF" ----- Ceiling projection is disabled
	Unacceptable	"Error Code" [CR]

### 9.8.3 CR\_REAR Command

Command	"CR_REAR" [CR]	
Details	Get setting status of Rear function	
Response	Acceptable	"000_%1" [CR]
	%1	"ON" ----- Rear projection is enabled "OFF" ----- Rear projection is disabled
	Unacceptable	"Error Code" [CR]

### 9.8.4 CR\_KYSTNMODE Command

Command	"CR_KYSTNMODE" [CR]	
Details	Get setting status of Keystone Store Mode	
Response	Acceptable	"000_%1" [CR]
	%1	"STR" ----- Store mode is "Store" "RST" ----- Store mode is "Reset"
	Unacceptable	"Error Code" [CR]

### 9.8.5 CR\_VSCALE Command

Command	"CR_VSCALE" [CR]	
Details	Get setting status of V scale	
Response	Acceptable	"000_%1" [CR]
	%1	"-32" - "032"
	Unacceptable	"Error Code" [CR]

**9.8.6 CR\_VPOS Command**

Command	"CR_VPOS" [CR]	
Details	Get setting status of V Position	
Response	Acceptable	"000_%1" [CR]
	%1	"-15" - "015"
	Unacceptable	"Error Code" [CR]

**9.8.7 CR\_HSCALE Command**

Command	"CR_HSCALE" [CR]	
Details	Get setting status of H scale	
Response	Acceptable	"000_%1" [CR]
	%1	"-32" - "032"
	Unacceptable	"Error Code" [CR]

**9.8.8 CR\_HPOS Command**

Command	"CR_HPOS" [CR]	
Details	Get setting status of H Position	
Response	Acceptable	"000_%1" [CR]
	%1	"-15" - "015"
	Unacceptable	"Error Code" [CR]

## 9.9 Lamp Status Read Command

### 9.9.1 CR\_LAMPREPL Command

Command	"CR_LAMPREPL" [CR]	
Details	Get information of Lamp Replacement time	
Response	Acceptable	"000_%1" [CR]
	%1	<p>"2Y" ----- indicates over lamp replacement time                      "2N" ----- indicates under lamp replacement time</p> <p>"2" means the number of lamps                      (2 lamp is used→ "2")                      "Y"/"N" means if it is time to replace lamp or not.                      Example:                      "2Y" ----- 2 lamps is used and it is over lamp replacement time</p>
	Unacceptable	"Error Code" [CR]

### 9.9.2 CR\_LAMPH Command

Command	"CR_LAMPH" [CR]	
Details	Get Lamp running time (in hours) * return actual lamp running time	
Response	Acceptable	"000_%1_%2" [CR]
	%1_%2	<p>Lamp 1 data comes first, and then one space, after that lamp 2 data is followed.                      %1 = lamp No.1                      %2 = lamp No.2</p> <p>eg; "00410_00410" [CR]                      .... → Lamp No.1 = 410 Hours                      Lamp No.2 = 410 Hours</p> <p>Note;                      -each data shall be 5 digits.</p>
	Unacceptable	"Error Code" [CR]

### 9.9.3 CR\_LAMPCORRESPH Command

Command	"CR_LAMPCORRESPH" [CR]	
Details	Get Lamp running time (in hours) *return lamp running time multiplied by a coefficient (not actual running time)	
Response	Acceptable	"000_%1_%2" [CR]
	%1_%2	<p>Lamp 1 data comes first, and then one space, after that lamp 2 data is followed.</p> <p>"00000 – 99999" .... %1= Lamp No.1                      "00000 – 99999" .... %2= Lamp No.2</p>
	Unacceptable	"Error Code" [CR]

**9.9.4 CR\_LAMPMODE Command**

Command	"CR_LAMPMODE" [CR]	
Details	Get setting status of Lamp control	
Response	Acceptable	"000_%1" [CR]
	%1	"AUTO1" ----- Lamp control is Auto1 "AUTO2" ----- Lamp control is Auto2 "HIGH" ----- Lamp control is High "NORMAL" ----- Lamp control is Normal "ECO1" ----- Lamp control is Eco1 "ECO2" ----- Lamp control is Eco2
	Unacceptable	"Error Code" [CR]

**9.9.5 CR\_LAMPSTS Command**

Command	"CR_LAMPSTS" [CR]	
Details	Get the information of Lamp lighting status	
Response	Acceptable	"000_%1" [CR]
	%1	"2**" The first character indicates 2 lamps are used in this model. The following characters indicate each lamp status in lamp number order as showed below. "1" ----- Lamp is ON "0" ----- Lamp is OFF "X" ----- Lamp Failure e.g. "210" ----- This indicates it is 2-lamps system, Lamp #1 is ON, and #2 is OFF.
	Unacceptable	"Error Code" [CR]

**9.9.6 CR\_PROJH Command**

Command	"CR_PROJH" [CR]	
Details	Get total running time of Projector (in hours)	
Response	Acceptable	"000_%1" [CR]
	%1	"0000000 – 0099999"
	Unacceptable	"?" [CR]

**9.9.7 CR\_HMLAMP Command**

Command	"CR_HMLAMP" [CR]	
Details	Get total lamp number	
Response	Acceptable	"000_%1" [CR]
	%1	"002"
	Unacceptable	"Error Code" [CR]

**9.9.8 CR\_LAMPCONTRL Command**

Command	"CR_LAMPCONTRL" [CR]	
Details	Get setting status of Lamp mode	
Response	Acceptable	"000_%1" [CR]
	%1	"LAMP1" ----- Lamp mode is Lamp1 "LAMP2" ----- Lamp mode is Lamp2 "CHANGE" ----- Lamp control is Lamp1/2
	Unacceptable	"Error Code" [CR]

**9.9.9 CR\_LAMPLIFECONTRL Command**

Command	"CR_LAMPLIFECONTRL" [CR]	
Details	Get setting status of Lamp life control	
Response	Acceptable	"000_%1" [CR]
	%1	"MODE1" ----- Lamp life control is Mode1 "MODE2" ----- Lamp life control is Mode2
	Unacceptable	"Error Code" [CR]

**9.9.10 CR\_LAMPCHGTIM Command**

Command	"CR_LAMPCHGTIM" [CR]	
Details	Get setting status of Timer for Lamp1/2 of Lamp mode	
Response	Acceptable	"000_%1" [CR]
	%1	"ON" ----- ON is selected "OFF" ----- OFF is selected
	Unacceptable	"Error Code" [CR]

**9.9.11 CR\_LAMPCHGSTA Command**

Command	"CR_LAMPCHGSTA" [CR]	
Details	Get setting status of Timer Start for Lamp1/2 of Lamp mode	
Response	Acceptable	"000_%1" [CR]
	%1	"00"- "24" ----- 0-24 hours
	Unacceptable	"Error Code" [CR]

**9.9.12 CR\_LAMPINTERVAL Command**

Command	"CR_LAMPINTERVAL" [CR]	
Details	Get setting status of Lamp interval	
Response	Acceptable	"000_%1" [CR]
	%1	"01"- "24" ----- Start time of Interval is selected
	Unacceptable	"Error Code" [CR]

**9.10 Sound Status Read Command**

**9.10.1 CR\_VOLUME Command**

Command	"CR_VOLUME"[CR]	
Details	Get Volume value of user control	
Response	Acceptable	"000_%1"[CR]
	%1	"000"~"063"
	Unacceptable	"Error Code" [CR]

**9.10.2 CR\_MUTE Command**

Command	"CR_MUTE"[CR]	
Details	Get sound mute setting status	
Response	Acceptable	"000_%1"[CR]
	%1	"ON" ----- Set Sound Mute ON "OFF" ----- Cancel Sound Mute
	Unacceptable	"Error Code" [CR]

**9.11 Setting Status Read Command**

**9.11.1 CR\_LANG Command**

Command	"CR_LANG" [CR]	
Details	Get selected language	
Response	Acceptable	"000_%1" [CR]
	%1	"ENG" ----- English is selected "DEU" ----- German is selected "FRA" ----- French is selected "ITA" ----- Italian is selected "ESP" ----- Spanish is selected "POR" ----- Portuguese is selected "NED" ----- Dutch is selected "SVE" ----- Swedish is selected "JPN" ----- Japanese is selected "CHI" ----- Chinese is selected "KOR" ----- Korean is selected "RUS" ----- Russian is selected
	Unacceptable	"Error Code" [CR]

**9.11.2 CR\_LOGO Command**

Command	"CR_LOGO" [CR]	
Details	Get setting status of Logo	
Response	Acceptable	"000_%1" [CR]
	%1	"DFLT" ----- Default Logo is enabled "USER" ----- User is enabled "OFF" ----- Logo is disabled
	Unacceptable	"Error Code" [CR]

**9.11.3 CR\_LOGOLOCK Command**

Command	"CR_LOGOLOCK" [CR]	
Details	Get setting status of Logo Lock function	
Response	Acceptable	"000_%1" [CR]
	%1	"ON" ----- Logo Lock is ON "OFF" ----- Logo Lock is OFF
	Unacceptable	"Error Code" [CR]

**9.11.4 CR\_PIP Command**

Command	"CR_PIP" [CR]	
Details	Get setting status of Picture in Picture	
Response	Acceptable	"000_%1" [CR]
	%1	"OFF" ----- Off is selected "PINP" ----- P in P is selected "PBYP" ----- P by P is selected
	Unacceptable	"Error Code" [CR]

**9.11.5 CR\_PIPSIZE Command**

Command	"CR_PIPSIZE" [CR]	
Details	Get screen size of Picture in Picture	
Response	Acceptable	"000_%1" [CR]
	%1	"SMALL" ----- Small is selected "MIDDLE" ----- Middle is selected "LARGE" ----- Large is selected
	Unacceptable	"Error Code" [CR]

**9.11.6 CR\_PIPPOSITION Command**

Command	"CR_PIPPOSITION" [CR]	
Details	Get position of Picture in Picture	
Response	Acceptable	"000_%1" [CR]
	%1	"BTMRIGHT" ----- Bottom Right is selected "BTMLEFT" ----- Bottom Left is selected "TOPRIGHT" ----- Top Right is selected "TOPLEFT" ----- Top Left is selected
	Unacceptable	"Error Code" [CR]

**9.11.7 CR\_BACKGND Command**

Command	"CR_BACKGND" [CR]	
Details	Get setting status of Screen for no signal	
Response	Acceptable	"000_%1" [CR]
	%1	"BLUE" ----- Blue Back is selected "USER" ----- User is selected "BLACK" ----- Black Back is selected
	Unacceptable	"Error Code" [CR]

**9.11.8 CR\_POINTER Command**

Command	"CR_POINTER"[CR]	
Details	Get setting status of Pointer	
Response	Acceptable	"000_%1_%2"[CR]
	%1	"SPOTLIGHT" ----- Spotlight mode "ARROW" ----- Arrow mode "FINGER" ----- Finger mode "LASER" ----- Laser mark mode
	%2	When %1 is "SPOTLIGHT": "MAX" ----- Spotlight Large "MID" ----- Spotlight Medium "MIN" ----- Spotlight Small
	Unacceptable	"Error Code" [CR]

**9.11.9 CR\_RCODE Command**

Command	"CR_RCODE" [CR]	
Details	Get selected Remote Control Code	
Response	Acceptable	"000_%1" [CR]
	%1	"001" ----- Code 1 is selected "002" ----- Code 2 is selected "003" ----- Code 3 is selected "004" ----- Code 4 is selected "005" ----- Code 5 is selected "006" ----- Code 6 is selected "007" ----- Code 7 is selected "008" ----- Code 8 is selected
	Unacceptable	"Error Code" [CR]

**9.11.10 CR\_RCSENSOR Command**

Command	"CR_RCSENSOR"[CR]	
Details	Get selected location of infrared remote receiver of remote control	
Response	Acceptable	"000_%1" [CR]
	%1	"ALL" ----- Front and back and top parts are valid "FRONTTOP" ----- Both front and top parts are valid "BACKTOP" ----- Both back and top parts are valid "FRONTBACK" ----- Both front and back parts are valid "FRONT" ----- Only front part is valid "TOP" ----- Only top part is valid "BACK" ----- Only back part is valid
	Unacceptable	"Error Code" [CR]

**9.11.11 CR\_RTYPE Command**

Command	"CR_RTYPE" [CR]	
Details	Get status of supported Remote Control (IR/RF).	
Response	Acceptable	"000_%1" [CR]
	%1	"IR" ----- IR "RF" ----- RF (cannot be returned as this model supports only IR remote control)
	Unacceptable	"Error Code" [CR]

**9.11.12 CR\_DISP Command**

Command	"CR_DISP" [CR]	
Details	Get setting status of Display	
Response	Acceptable	"000_%1" [CR]
	%1	"ON" ----- Display is ON "CNTDWN OFF" ----- Count down is OFF "OFF" ----- Display is OFF
	Unacceptable	"Error Code" [CR]

**9.11.13 CR\_STANDBYMODE Command**

Command	"CR_STANDBYMODE" [CR]	
Details	Get setting status of Standby mode	
Response	Acceptable	"000_%1" [CR]
	%1	"ECO" ----- Eco mode is selected "NORMAL" ----- Normal mode is selected
	Unacceptable	"Error Code" [CR]

**9.11.14 CR\_P-MANE Command**

Command	"CR_P-MANE" [CR]	
Details	Get setting status of Power management	
Response	Acceptable	"000_%1" [CR]
	%1	"OFF" ----- Power Management is disabled "READY" ----- Power Management is set to Ready "SHUTDOWN" ----- Power Management is set to Shut Down mode
	Unacceptable	"Error Code" [CR]

**9.11.15 CR\_P-MANETIME Command**

Command	"CR_P-MAETIME" [CR]	
Details	Get setting time for starting Power Management function	
Response	Acceptable	"000_%1" [CR]
	%1	"001 – 030" ----- 1 to 30 minutes
	Unacceptable	"Error Code" [CR]

**9.11.16 CR\_ON-STA Command**

Command	"CR_ON-STA" [CR]	
Details	Get setting status of Power ON Start	
Response	Acceptable	"000_%1" [CR]
	%1	"ON" ----- Power ON Start is ON "OFF" ----- Power ON Start is OFF
	Unacceptable	"Error Code" [CR]

**9.11.17 CR\_FANSPEED Command**

Command	"CR_FANSPEED" [CR]	
Details	Get selected Fan Control Speed mode.	
Response	Acceptable	"000_%1" [CR]
	%1	"MAX" ----- Max mode is selected "NOR" ----- Normal mode is selected
	Unacceptable	"Error Code" [CR]

**9.11.18 CR\_SLANT Command**

Command	"CR_SLANT"[CR]	
Details	Get setting status of Slant setting	
Response	Acceptable	"000_%1"[CR]
	%1	"OFF" ----- Slant is Off "L1" ----- L1 mode is selected "L2" ----- L2 mode is selected "L3" ----- L3 mode is selected "L4" ----- L4 mode is selected
	Unacceptable	"Error Code" [CR]

**9.11.19 CR\_SHUTRCPROT Command**

Command	"CR_SHUTRCPROT" [CR]	
Details	Get status if Shutter can be controlled by R/C	
Response	Acceptable	"000_%1" [CR]
	%1	"ON" ----- Shutter is not controllable by R/C "OFF" ----- Shutter is controllable by R/C
	Unacceptable	"Error Code" [CR]

**9.11.20 CR\_SHUTKEYPROT Command**

Command	"CR_SHUTKEYPROT" [CR]	
Details	Get status if Shutter can be controlled by key on the top panel	
Response	Acceptable	"000_%1" [CR]
	%1	"ON" ----- Shutter is not controllable by key on the top panel "OFF" ----- Shutter is controllable by key on the top panel
	Unacceptable	"Error Code" [CR]

**9.11.21 CR\_SHUTH Command**

Command	"CR_SHUTH" [CR]	
Details	Get time setting to start the shutter management	
Response	Acceptable	"000_%1" [CR]
	%1	"005" ----- 5 minutes "006" ----- 6 minutes : "179" ----- 179 minutes "180" ----- 180 minutes
	Unacceptable	"Error Code" [CR]

**9.11.22 CR\_HDMISETUP Command**

Command	"CR_HDMISETUP" [CR]	
Details	Get setting status of HDMI setup – Image.	
Response	Acceptable	"000_%1" [CR]
	%1	"NORMAL" ----- Normal is selected "ENHANCED" ----- Enhanced is selected
	Unacceptable	"Error Code" [CR]

**9.11.23 CR\_HDMISOUND Command**

Command	"CR_HDMISOUND" [CR]	
Details	Get setting status of HDMI setup – Sound.	
Response	Acceptable	"000_%1" [CR]
	%1	"HDMI" ----- PCM input(Digital sound) is selected "EXTERNAL" ----- External sound input is selected
	Unacceptable	"Error Code" [CR]

**9.11.24 CR\_SECURITY Command**

Command	"CR_SECURITY" [CR]	
Details	Get ON/OFF setting status of Security on menu.	
Response	Acceptable	"000_%1" [CR]
	%1	"ON" ----- PJ Lock is set to On1/ On2 on the menu "OFF" ----- PJ Lock is set to OFF on the menu
	Unacceptable	"Error Code" [CR]

**9.11.25 CR\_PJLOCKNOW Command**

Command	"CR_PJLOCKNOW" [CR]	
Details	Get actual setting status of PIN code lock	
Response	Acceptable	"000_%1" [CR]
	%1	"LOCK" ----- PJ is locked PIN code lock is set to ON1/ON2 on the menu and PJ PIN code is not entered, therefore PJ is actually locked. "FREE" ----- PJ is unlocked (either A or B) A) PJ lock is set to OFF on the menu B) PJ lock is set to ON1/ON2 on the menu, but PIN code Lock mode is canceled because PJ PIN code is entered.
	Unacceptable	"Error Code" [CR]

**9.11.26 CR\_PJLOCKMENU Command**

Command	"CR_PJLOCKMENU" [CR]	
Details	Get ON/OFF setting status of PIN code lock on menu	
Response	Acceptable	"000_%1" [CR]
	%1	"ON1" ----- PIN code lock ON 1 is set on the menu "ON2" ----- PIN code lock ON 2 is set on the menu "OFF" ----- PIN code lock OFF is set on the menu
	Unacceptable	"Error Code" [CR]

**9.11.27 CR\_KEYDIS Command**

Command	"CR_KEYDIS" [CR]	
Details	Get RC/Control key prohibit status (valid or invalid)	
Response	Acceptable	"000_%1" [CR]
	%1	"NONE" ----- RC&Control keys are valid "RCALL" ----- All RC keys are invalid "RCPART" ----- Specific RC keys are invalid "KEYALL" ----- All Projector Keys are invalid "KEYPART" ----- Specific Projector Keys are invalid
	Unacceptable	"Error Code" [CR]

**9.11.28 CR\_TESTPAT Command**

Command	"CR_TESTPAT" [CR]	
Details	Get setting status of Test pattern	
Response	Acceptable	"000_%1" [CR]
	%1	"COLOR" ----- Color bar is displayed "GRAD1" ----- 16step(white→black) is displayed "GRAD2" ----- 16step(white←black) is displayed "GRAD3" ----- 16step(white↓black) is displayed "GRAD4" ----- 16step(white↑black) is displayed "WHITE" ----- All white is displayed "BLACK" ----- All black is displayed "CROSS" ----- Cross is displayed "OFF" ----- Test pattern display is not displayed
	Unacceptable	"Error Code" [CR]

**9.11.29 CR\_FILH Command**

Command	"CR_FILH" [CR]	
Details	Get Filter used time	
Response	Acceptable	"000_%1" [CR]
	%1	"00000 - 99999"
	Unacceptable	"Error Code" [CR]

**9.11.30 CR\_FILCOND Command**

Command	"CR_FILCOND" [CR]	
Details	Get status of filter clog	
Response	Acceptable	"000_%1" [CR]
	%1	"CLOG" = Filter is clogged "WARN" = Filter is nearly clogged(Warning status) "CLEAN" = Filter is not clogged
	Unacceptable	"Error Code" [CR]

**9.11.31 CR\_FILREPL Command**

Command	"CR_FILREPL" [CR]	
Details	Get status of Filter cleaning / replacement time	
Response	Acceptable	"000_%1" [CR]
	%1	"1Y"-----Filter Exchange time is over value of Filter Message. "1N"--Filter Exchange time is not over value of Filter Message.
	Unacceptable	"Error Code" [CR]

**9.11.32 CR\_FILTIMER Command**

Command	"CR_FILTIMER" [CR]	
Details	Get Filter used time	
Response	Acceptable	"000_%1" [CR]
	%1	"400" ----- 400 hours "700" ----- 700 hours "1000" ----- 1000 hours "OFF" ----- Warning OSD is not displayed
	Unacceptable	"Error Code" [CR]

**9.11.33 CR\_FILREMAIN Command**

Command	"CR_FILREMAIN" [CR]	
Details	Get remaining number of usable Filter scroll	
Response	Acceptable	"000_%1" [CR]
	%1	"09" = Remaining number of usable Filter scroll : 9 times : "00" = Remaining number of usable Filter scroll : 0 time
	Unacceptable	"Error Code" [CR]

## 9.12 Other Status Read Commands

### 9.12.1 CR\_STATUS Command

COMMAND	"CR_STATUS" [CR]	
Detail	Get operating status of Projector Same as "CR0" in basic command except error code follows it.	
Response	Acceptable	"000_%1" [CR]
	%1	"00" = Power ON "80" = Standby "40" = Countdown in process "20" = Cooling Down in process "10" = Power Failure "28" = Cooling Down in process due to abnormal temperature "88" = Standby after Cooling Down due to abnormal temperature "24" = Power Save/Cooling Down in process "04" = Power Save "21" = Cooling Down in process after turned Off due to lamp failure "81" = Standby after Cooling Down due to lamp failure "2C" = Cooling Down in process after Power Off due to Shutter management "8C" = Standby after Cooling Down due to Shutter management
	Unacceptable	"Error Code" [CR]

### 9.12.2 CR\_SIGNAL Command

Command	"CR_SIGNAL" [CR]	
Details	Get status whether there is any signal or not.	
Response	Acceptable	"000_%1" [CR]
	%1	"ON" ----- There is signal "OFF" ----- There is no signal
	Unacceptable	"Error Code" [CR]

### 9.12.3 CR\_VMUTE Command

Command	"CR_VMUTE" [CR]	
Details	Get setting status of Shutter.	
Response	Acceptable	"000_%1" [CR]
	%1	"ON" ----- Video mute is ON(Shutter close) "OFF" ----- Video mute is OFF(Shutter open)
	Unacceptable	"Error Code" [CR]

### 9.12.4 CR\_FREEZE Command

Command	"CR_FREEZE" [CR]	
Details	Get setting status of Freeze.	
Response	Acceptable	"000_%1" [CR]
	%1	"ON" ----- Freeze is ON "OFF" ----- Freeze is OFF
	Unacceptable	"Error Code" [CR]

9.12.5 CR\_TEMPFAIL Command

Command	"CR_TEMPFAIL" [CR]	
Details	Get the temperature inside a projector when abnormal temperature status occurs. It is possible to get the temperatures all at once when several sensors installed.	
Response	Acceptable	"000_%1_%2_%3" [CR]
	%1,%2,%3	<p>%1 ----- Sensor 1 temp.                      %2 ----- Sensor 2 temp.                      %3 ----- Sensor 3 temp.                      e.g. "_31.5F"                      "_" indicates a space. When the temperature goes under 0, the first character is "-", not a space, as in "-05.5F".                      With more than one temperature sensors installed, projector returns responses in a row.                      e.g. "_31.5F _35.2S _38.0W" [CR]                      The first data indicates sensor 1 data, then one space, and sensor 2 data.                      Last character in each data indicates the sensor's status.                      "F" ----- Exceeding critical temp. (Abnormal temp.)                      "W" ----- Approaching critical temp. (Warning temp.)                      "S" ----- Sensor temp. is safe (Safe temp.)                      "N" ----- Sensor detects no critical temp.                      "E" ----- Unable to return the temp. data</p> <p>The example 1 shows that sensor 1 indicates 31.5 degrees and the temperature is abnormal, sensor 2 indicates 35.2 degrees and the temperature is safe, sensor 3 indicates 38.0 degrees and the temperature is approaching critical state.                      When the temperature is safe, all data is represented as "_00.0S".                      When the projector is reset, "_00.0S" is set, and every time abnormal temperature occurs, it renews the data and returns it.                      In short, it only returns the renewed data of the latest abnormal temperature and the previous data is deleted.</p>
	Unacceptable	"Error Code" [CR]

**9.12.6 CR\_TEMP Command**

Command	"CR_TEMP" [CR]	
Details	Get the current temperature information inside a projector. It is possible to get the temperatures all at once when several sensors installed.	
Response	Acceptable	"000_%1_%2_%3" [CR]
	%1, %2, %3	<p>%1 ----- Sensor 1 temp. (External temp.)                      %2 ----- Sensor 2 temp. (Internal temp.1)                      %3 ----- Sensor 3 temp. (Internal temp.2)                      %1, %2 are fixed 6 characters                      There is one space between %1 and %2                      There is one space between %2 and %3                      e.g. "_31.5F"]                      "_" indicates a space. When the temperature goes under 0,                      the first character is "-", not a space, as in "-05.5F".                      Last character in each data indicates the sensor's status.                      "F" ----- Exceeding critical temp. (Abnormal temp.)                      "W" ----- Approaching critical temp. (Warning temp.)                      "S" ----- Sensor temp. is safe (Safe temp.)                      "N" ----- Sensor detects no critical temp.                      "E" ----- Unable to return the temp. data</p> <p>With more than one temperature sensors installed, projector returns responses in a row.                      e.g. "_31.5F __35.2S __38.0W " [CR]                      The first data indicates sensor 1 data, then one space, and sensor 2 data.                      The example 1 shows that sensor 1 indicates 31.5 degrees and the temperature is abnormal, sensor 2 indicates 35.2 degrees and the temperature is safe, sensor 3 indicates 38.0 degrees and the temperature is approaching critical state.                      When it cannot return the temperature data due to hardware error, the last character is "E" as in "_00.0E"                      It might happen for some projectors that the temperature continues to go up to abnormal status as long as lamp ballasts are hot. Therefore when in Standby mode or for several tens of seconds after Power is ON, any treatment of Power Failure is not processed. In that case, the temperature data is represented as "_ - - - N".</p>
	Unacceptable	"Error Code" [CR]

**9.12.7 CR\_SHUTCOND Command**

Command	"CR_SHUTCOND" [CR]	
Details	Get setting status of Shutter	
Response	Acceptable	"000_%1" [CR]
	%1	<p>"SAFE" ----- Shutter operation is normal.                      "FAIL" ----- Shutter operation is abnormal.</p>
	Unacceptable	"Error Code" [CR]

**9.12.8 CR\_SERIALNO Command**

Command	"CR_SERIALNO" [CR]	
Details	Get value of the serial number.	
Response	Acceptable	"000_%1" [CR]
	%1	Eight digits of alphanumeric characters
	Unacceptable	"Error Code" [CR]