

BASIC SERIAL COMMAND

FUNCTIONAL SPECIFICATIONS

PLV-Z2000

Ver.1.00

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1. Overview

- 1.1 These specifications define projector control commands for PLV-Z2000.
- 1.2 The projector control commands are used to control a projector through RS-232C from a computer.

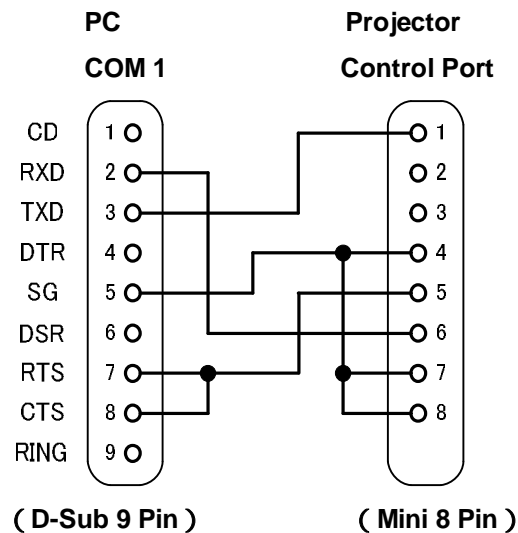
2. Serial Interface Specification

| Items | Specification |
|--------------------|---------------|
| Synchronous system | Asynchronous |
| Transmission Speed | 9600 / 19200 |
| Data Length | 8 bit |
| Parity | N/A |
| Stop Bit | 1 |
| Flow Control | N/A |



- 1) Transmission speed: initial setting value is 19200.
- 2) Transmission speed can be changed in service mode.

3. Connection

Dedicated serial cable must be used for a connection to a computer and a projector.



4. Notes for Communication

- 4.1 The projector command is defined as one command/one line that starts with "C" and ends with carriage return (0x0D).
- 4.2 When the projector receives carriage return, it starts decoding.
- 4.3 There are two types of commands: Functional Execution Commands and Status Read Commands.
 - Example of Functional Execution Command: "C05" [CR]
 - Example of Status Read Command: "CR0" [CR]
- 4.4 It clears the information of buffer as below.
 - 4.4.1 The projector receives LF (0x0A) or EOF (0x1A).
 - 4.4.2 When it takes more than one second to receive one command.
 - (Until the projector returns carriage return since it has received the first data.)
- 4.5 When control command pipelining, wait the interval of time after the response as below.
 - 4.5.1 [VOLUME +/-] Commands  100ms
 - 4.5.2 Other Commands  500ms
- 4.6 When Status Read command pipelining, wait at least 500ms after the response.
- 4.7 Do not issue any command before receiving the response except there is no response for 5 seconds.
- 4.8 It takes about 7 seconds for the internal initialization after plugging in AC. During this time, it cannot process commands. Do not issue any command.
- 4.9 For 7 seconds after Power ON from Standby, the projector receives a command and returns the response but does not execute it because of the internal initialization or Lamp processing. However, Status Read Commands are carried out after 500 ms when receiving the response to Power ON command.
- 4.10 About Count Down and the performance during Cooling Down:
 - When receiving a command during Count Down after Power ON or Cooling Down after Power OFF, the projector returns the response but does not carry it out. However, Status Read Commands are carried out.
- 4.11 The performance for switching Input:
 - It takes 5 seconds to switch Input after receiving the command. When receiving the command during this time, it is not executed. However, Status Read Commands are carried out after 500ms since it receives the response to switching Input command.
- 4.12 The number of character of response to Status Read Commands depends on commands. Please see [8. Status Read Commands].
- 4.13 Characters for commands must be Capital (A - Z).

5. Functional Execution Command Table

| Command | Item | Command | Item |
|---------|----------------------------------|---------|-----------------------|
| C00 | POWER ON | C28 | ----- |
| C01 | POWER OFF (QUICK POWER OFF) | C29 | ----- |
| C02 | POWER OFF | C2A | Power Management ON |
| C03 | ----- | C2B | Power Management OFF |
| C04 | ----- | C2C | Screen Zoom size |
| C05 | ----- | C2D | Screen Natural wide 1 |
| C06 | ----- | C2E | Screen Natural wide 2 |
| C07 | ----- | C2F | ----- |
| C08 | ----- | C30 | ----- |
| C09 | ----- | C31 | ----- |
| C0A | ----- | C32 | ----- |
| C0B | ----- | C33 | ----- |
| C0C | ----- | C34 | ----- |
| C0D | VIDEO MUTE ON | C35 | ----- |
| C0E | VIDEO MUTE OFF | C36 | Image 5 |
| C0F | Screen Normal size | C37 | Image 6 |
| C10 | Screen Full size | C38 | Image 7 |
| C11 | Image Living | C39 | ----- |
| C12 | Image Creative Cinema | C3A | Point Right |
| C13 | Image Pure Cinema | C3B | Point Left |
| C14 | Image 1 | C3C | Point Up |
| C15 | Image 2 | C3D | Point Down |
| C16 | Image 3 | C3E | ----- |
| C17 | Image 4 | C3F | ENTER |
| C18 | Image Vivid | C40 | RESET |
| C19 | Image Brilliant cinema | C41 | BACK |
| C1A | Image Dynamic | C42 | ----- |
| C1B | Image Natural | C43 | FREEZE ON |
| C1C | MENU ON | C44 | FREEZE OFF |
| C1D | MENU OFF | C45 | ----- |
| C1E | DISPLAY CLEAR | C46 | ----- |
| C1F | ----- | C47 | ----- |
| C20 | ----- | C48 | ----- |
| C21 | ----- | C49 | ----- |
| C22 | ----- | C4A | ----- |
| C23 | Video Source Video | C4B | ----- |
| C24 | Video Source S-Video | C4C | Factory default |
| C25 | Video Source Component 1 | C4D | ----- |
| C26 | Video Source Component 2 | C4E | ----- |
| C27 | ----- | C4F | ----- |

“-----” means “No Function”.

| Command | Item | Command | Item |
|---------|----------------------------|---------|----------------|
| C50 | Computer (Analog RGB) | C78 | Rear ON |
| C51 | Computer (Scart) | C79 | Rear OFF |
| C52 | ----- | C7A | Logo OFF |
| C53 | HDMI 1 | C7B | Logo Default |
| C54 | HDMI 2 | C7C | Logo User |
| C55 | ----- | C7D | Logo Capture |
| C56 | ----- | C7E | My Picture ON |
| C57 | ----- | C7F | My Picture OFF |
| C58 | ----- | C80 | ----- |
| C59 | ----- | C81 | ----- |
| C5A | ----- | C82 | ----- |
| C5B | ----- | C83 | ----- |
| C5C | ----- | C84 | ----- |
| C5D | ----- | C85 | ----- |
| C5E | ----- | C86 | ----- |
| C5F | ----- | C87 | ----- |
| C60 | ----- | C88 | ----- |
| C61 | ----- | C89 | Auto PC Adj. |
| C62 | ----- | C8A | ----- |
| C63 | Screen Caption IN size | C8B | ----- |
| C64 | ----- | C8C | ----- |
| C65 | Screen Full through size | C8D | ----- |
| C66 | Screen Normal through size | C8E | ----- |
| C67 | D5 control ON | C8F | ----- |
| C68 | D5 control OFF | C90 | ----- |
| C69 | ----- | | |
| C6A | ----- | | |
| C6B | ----- | | |
| C6C | ----- | | |
| C6D | ----- | | |
| C6E | ----- | | |
| C6F | ----- | | |
| C70 | ----- | | |
| C71 | ----- | | |
| C72 | Lamp mode Auto 1 | | |
| C73 | Lamp mode Auto 2 | | |
| C74 | Lamp mode Normal | | |
| C75 | Lamp mode Eco | | |
| C76 | Ceiling ON | | |
| C77 | Ceiling OFF | | |

“-----” means “No Function”.

6. Status Read Command Table

| Command | Item | Memo |
|---------|-----------------|------|
| CR0 | Status Read | |
| CR1 | Input Mode Read | |
| CR2 | ----- | |
| CR3 | Lamp Time Read | |
| CR4 | Setting Read | |
| CR5 | ----- | |
| CR6 | Temp Read | |
| CR7 | ----- | |
| CR8 | ----- | |
| CR9 | ----- | |
| CRA | ----- | |
| CRB | ----- | |

“-----” means “No Function”.

7. Functional Execution Command

7.1. Format

7.1.1 PC issues a command in format as below.

"C" COMMAND [CR]

Command: two characters (See Basic Functional Execution Command Table)

7.1.2 A projector changes received data to decode and returns a result after being ready to receive next command.

[ACK] [CR]: (0x06, 0x0D) When received Functional Execution Commands.

"?" [CR]: When the received data cannot be decoded.

7.2. Command Pipelining

When some functions need the command pipelining, the performance is the same as that of the remote control.

7.2.1. System: issue any command every 100 ms.

7.2.2. When receiving the appropriate command, the function is executed for 120 ms from the moment.

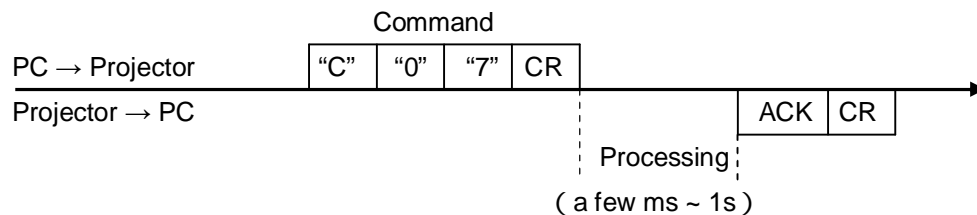
7.2.3. When receiving the same command continuously within 120 ms, the function is executed for another 120 ms from the moment.

7.2.4. When there is no incoming command after 120 ms, the execution of pipelining is stopped.

7.2.5. When the projector receives other incoming commands within 120ms, the execution of pipelining is stopped.

7.3. Transfer Example

Switch input mode for the projector to Video Mode with Basic Command.



7.4. Operation Requirements

The projector cannot return any response for about two seconds after AC power ON because of the initialization.

When the projector's status is as below, Functional Execution Commands are limited.

(Status Read Commands are available in this status except Standby Mode)

| Projector Mode | Available Functional Execution Commands |
|--|--|
| Super Standby Mode | Impossible to respond |
| Normal Standby Mode | CR6 : Temperature information read command is unavailable (Commands related to S5V series are also unavailable) |
| Processing Cooling Down | C00 : POWER ON (Countdown is terminated) |
| Cooling Down due to Abnormal Temperature | NONE |
| Abnormal Temperature Status | NONE |
| Abnormal Power Status | NONE |
| Switching Mode | NONE |
| Processing Power Save / Cooling Down | NONE |
| Processing Logo Capture / Displaying Captured Logo | NONE |
| Power Save Status | Only key operation commands are available |

Note) When the status is above, even if the projector receives other commands, it returns

[ACK] [CR].

7.5. POWER ON Command

| | | |
|----------|---|------------|
| COMMAND | "C00" [CR] | |
| Details | Power ON When already Power is ON, no need to do When sending this command during processing Countdown, Countdown is terminated | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | " ? "[CR] |

7.6. POWER OFF Command (QUICK POWER OFF)

| | | |
|----------|--|------------|
| Command | "C01" [CR] | |
| Details | Power OFF (Standby) When Power is OFF with ON/Stand-by button of the projector and remote control, "Power Off?" is displayed. However, as soon as this command is sent, Quick Power OFF is executed | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.7. POWER OFF Command

| | | |
|----------|---|------------|
| Command | "C02"[CR] | |
| Details | Power OFF (Standby) When Power is OFF with ON/Stand-by button of the projector and remote control, "Power OFF" is displayed (When sending this command, "Power OFF?" is displayed. When resending this command during this time, Power OFF is executed) | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.8. VIDEO MUTE ON Command

| | | |
|----------|---|------------|
| Command | "C0D"[CR] | |
| Details | Black out an image The same operation as "NO SHOW" button of the remote control for No Show On, but it does not work for No Show OFF | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.9. VIDEO MUTE OFF Command

| | | |
|----------|--|------------|
| Command | "C0E"[CR] | |
| Details | Restore an image The same operation as "No Show " button of the remote control for No Show Off, but it does not work for No Show On | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.10. Screen Normal size Command

| | | |
|----------|--|------------|
| Command | "C0F"[CR] | |
| Details | Set Computer / Video screen size to Normal | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.11. Screen Full size Command

| | | |
|----------|---|------------|
| Command | "C10"[CR] | |
| Details | Set Computer / Video screen size to Full screen | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.12. Image Living Command

| | | |
|----------|--------------------------|------------|
| Command | "C11"[CR] | |
| Details | Set Image to Living Mode | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.13. Image Creative Cinema Command

| | | |
|----------|-----------------------------------|------------|
| Command | "C12"[CR] | |
| Details | Set Image to Creative Cinema Mode | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.14. Image Pure Cinema Command

| | | |
|----------|-------------------------------|------------|
| Command | "C13"[CR] | |
| Details | Set Image to Pure Cinema Mode | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.15. Image 1 Command

| | | |
|----------|--------------------------------|------------|
| Command | "C14"[CR] | |
| Details | Set Image to User Image 1 Mode | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.16. Image 2 Command

| | | |
|----------|--------------------------------|------------|
| Command | "C15"[CR] | |
| Details | Set Image to User Image 2 Mode | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.17. Image 3 Command

| | | |
|----------|--------------------------------|------------|
| Command | "C16"[CR] | |
| Details | Set Image to User Image 3 Mode | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.18. Image 4 Command

| | | |
|----------|--------------------------------|------------|
| Command | "C17"[CR] | |
| Details | Set Image to User Image 4 Mode | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.19. Image Vivid Command

| | | |
|----------|-------------------------|------------|
| Command | "C18"[CR] | |
| Details | Set Image to Vivid Mode | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.20. Image Brilliant cinema Command

| | | |
|----------|------------------------------------|------------|
| Command | "C19"[CR] | |
| Details | Set Image to Brilliant cinema Mode | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.21. Image Dynamic Command

| | | |
|----------|---------------------------|------------|
| Command | "C1A"[CR] | |
| Details | Set Image to Dynamic Mode | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.22. Image Natural Command

| | | |
|----------|---------------------------|------------|
| Command | "C1B"[CR] | |
| Details | Set Image to Natural Mode | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.23. MENU ON Command

| | | |
|----------|-----------------------------------|------------|
| Command | "C1C"[CR] | |
| Details | Display Menu of On Screen Display | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.24. MENU OFF Command

| | | |
|----------|---------------------------------|------------|
| Command | "C1D"[CR] | |
| Details | Clear Menu of On Screen Display | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.25. DISPLAY CLEAR Command

| | | |
|----------|---|------------|
| Command | "C1E"[CR] | |
| Details | Clear On Screen Display. Clear all On Screen Display unconditionally | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.26. Video Source VIDEO Command

| | | |
|----------|---------------------------|------------|
| Command | "C23"[CR] | |
| Details | Set Input Source to Video | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.27. Video Source S-VIDEO Command

| | | |
|----------|-----------------------------|------------|
| Command | "C24"[CR] | |
| Details | Set Input Source to S-Video | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.28. Video Source COMPONENT 1 Command

| | | |
|----------|---------------------------------|------------|
| Command | "C25"[CR] | |
| Details | Set Input Source to Component 1 | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.29. Video Source COMPONENT 2 Command

| | | |
|----------|---------------------------------|------------|
| Command | "C26"[CR] | |
| Details | Set Input Source to Component 2 | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.30. Power Management ON Command

| | | |
|----------|---|------------|
| Command | "C2A"[CR] | |
| Details | Set Power Management to ON The status by this command is stored in EEPROM and its setting is effective even after POWER ON/OFF | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.31. Power Management OFF Command

| | | |
|----------|--|------------|
| Command | "C2B"[CR] | |
| Details | Set Power Management to OFF The status by this command is stored in EEPROM and its setting is effective even after POWER ON/OFF | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.32. Screen Zoom size Command

| | | |
|----------|--|------------|
| Command | "C2C"[CR] | |
| Details | Set Computer / Video screen size to Zoom | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.33. Screen Natural wide size 1 Command

| | | |
|----------|--|------------|
| Command | "C2D"[CR] | |
| Details | Set Computer / Video screen size to Natural wide 1 | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.34. Screen Natural wide size 2 Command

| | | |
|----------|--|------------|
| Command | "C2E"[CR] | |
| Details | Set Computer / Video screen size to Natural wide 2 | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.35. Image 5 Command

| | | |
|----------|--------------------------------|------------|
| Command | "C36"[CR] | |
| Details | Set Image to User Image 5 Mode | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.36. Image 6 Command

| | | |
|----------|--------------------------------|------------|
| Command | "C37"[CR] | |
| Details | Set Image to User Image 6 Mode | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.37. Image 7 Command

| | | |
|----------|--------------------------------|------------|
| Command | "C38"[CR] | |
| Details | Set Image to User Image 7 Mode | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.38. Point Right Command

| | | |
|----------|---|------------|
| Command | "C3A"[CR] | |
| Details | Move Pointer of On Screen Display Menu to the right This command performs the same operation as the right-pointing button (">") of the projector | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.39. Point Left Command

| | | |
|----------|--|------------|
| Command | "C3B"[CR] | |
| Details | Move Pointer of On Screen Display to the left This command performs the same operation as the left-pointing button ("<") of the projector | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.40. Point Up Command

| | | |
|----------|---|------------|
| Command | "C3C"[CR] | |
| Details | Move Up Pointer of On Screen Display This command performs the same operation as the upward pointer of the projector | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.41. Point Down Command

| | | |
|----------|---|------------|
| Command | "C3D"[CR] | |
| Details | Move Down Pointer of On Screen Display This command performs the same operation as the downward pointer of the projector | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.42. ENTER Command

| | | |
|----------|---|------------|
| Command | "C3F"[CR] | |
| Details | The same operation as "SELECT" button of the projector and remote control | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.43. RESET Command

| | | |
|----------|--|------------|
| Command | "C40"[CR] | |
| Details | The same operation as "RESET" button of the remote control | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.44. BACK Command

| | | |
|----------|---|------------|
| Command | "C41"[CR] | |
| Details | The same operation as "BACK" button of the remote control | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.45. FREEZE ON Command

| | | |
|----------|---|------------|
| Command | "C43"[CR] | |
| Details | Freeze the screen. This command works the same as "FREEZE" button of the remote control for Freeze ON, but does not work for Freeze OFF. | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.46. FREEZE OFF Command

| | | |
|----------|--|------------|
| Command | "C44"[CR] | |
| Details | Cancel Freeze function. This command works the same as "FREEZE" button of the remote control for Freeze OFF, but does not work for Freeze ON. | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.47. Factory default Command

| | | |
|----------|--|------------|
| Command | "C4C"[CR] | |
| Details | Reset status to Factory default value. | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.48. Computer Source Analog RGB Command

| | | |
|----------|---|------------|
| Command | "C50"[CR] | |
| Details | Set Input Source to Computer (Analog RGB) | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.49. Computer Source Scart Command

| | | |
|----------|--|------------|
| Command | "C51"[CR] | |
| Details | Set Input Source to Computer (Scart) Available only for international models. | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.50. HDMI 1 Command

| | | |
|----------|---------------------------|------------|
| Command | "C53"[CR] | |
| Details | Set Input Source to HDMI1 | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.51. HDMI 2 Command

| | | |
|----------|---------------------------|------------|
| Command | "C54"[CR] | |
| Details | Set Input Source to HDMI2 | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.52. Screen Caption IN Command

| | | |
|----------|--|------------|
| Command | "C63"[CR] | |
| Details | Set Computer / Video screen size to Caption IN | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.53. Screen Full through size Command

| | | |
|----------|--|------------|
| Command | "C65"[CR] | |
| Details | Set Computer / Video screen size to Full through | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.54. Screen Normal through size Command

| | | |
|----------|--|------------|
| Command | "C66"[CR] | |
| Details | Set Computer / Video screen size to Normal through | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.55. D5 control ON Command

| | | |
|----------|--|------------|
| Command | "C67"[CR] | |
| Details | Set D5 terminal control function (controlling image identifying signal) to ON This command does not turn OFF D5 control, but only turns ON. Although projector returns ACK, the command is not executed on international models. | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.56. D5 control OFF Command

| | | |
|----------|---|------------|
| Command | "C68"(CR) | |
| Details | Set D5 terminal control function (controlling image identifying signal) to OFF This command does not turn ON D5 control, but only turns OFF. Although projector returns ACK, the command is not executed on international models. | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"(CR) |

7.57. Lamp mode AUTO 1 Command

| | | |
|----------|------------------------------|------------|
| Command | "C72" [CR] | |
| Details | Set Lamp Mode to Auto 1 Mode | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"(CR) |

7.58. Lamp mode AUTO 2 Command

| | | |
|----------|------------------------------|------------|
| Command | "C73" [CR] | |
| Details | Set Lamp Mode to Auto 2 Mode | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"(CR) |

7.59. Lamp mode NORMAL Command

| | | |
|----------|-------------------------|------------|
| Command | "C74" [CR] | |
| Details | Set Lamp Mode to Normal | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | " ? "(CR) |

7.60. Lamp mode ECO Command

| | | |
|----------|----------------------|------------|
| Command | "C75" [CR] | |
| Details | Set Lamp Mode to Eco | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.61. Ceiling ON Command

| | | |
|----------|----------------------------------|------------|
| Command | "C76"[CR] | |
| Details | Set screen setting to Ceiling ON | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.62. Ceiling OFF Command

| | | |
|----------|-----------------------------------|------------|
| Command | "C77"[CR] | |
| Details | Set screen setting to Ceiling OFF | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.63. Rear ON Command

| | | |
|----------|-------------------------------|------------|
| Command | "C78"(CR) | |
| Details | Set screen setting to Rear ON | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"(CR) |

7.64. Rear OFF Command

| | | |
|----------|--------------------------------|------------|
| Command | "C79"(CR) | |
| Details | Set screen setting to Rear OFF | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"(CR) |

7.65. Logo OFF Command

| | | |
|----------|-----------------|------------|
| Command | "C7A"(CR) | |
| Details | Set Logo to OFF | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.66. Logo Default Command

| | | |
|----------|---------------------|------------|
| Command | "C7B"[CR] | |
| Details | Set Logo to Default | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.67. Logo User Command

| | | |
|----------|--|------------|
| Command | "C7C"[CR] | |
| Details | Set Logo to User Although projector returns ACK, the command is not executed when no image is captured. | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.68. Logo Capture Command

| | | |
|----------|-------------------------------------|------------|
| Command | "C7D"[CR] | |
| Details | Capture current image as Logo image | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.69. My Picture ON Command

| | | |
|----------|---|------------|
| Command | "C7E"[CR] | |
| Details | Display captured image for Logo function. This command does NOT stop displaying image, but only STARTS displaying. | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.70. My Picture OFF Command

| | | |
|----------|---|------------|
| Command | "C7F"[CR] | |
| Details | Stop displaying captured image for Logo function, which is displayed by My Picture ON command. This command is not for quitting Logo display at Opening Count down, and it does NOT start displaying captured image, but only STOP displaying. | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

7.71. AUTO PC Adjust Command

| | | |
|----------|---|------------|
| Command | "C89"[CR] | |
| Details | Execute Auto PC Adj. operation This command performs the same operation as "Auto Adj." of Menu. When this command is sent during Auto PC Adj. operation, Auto PC Adj. is suspended. | |
| Response | Acceptable | [ACK] [CR] |
| | Unacceptable | "?"[CR] |

8. Status Read Command

8.1. Format

8.1.1. PC issue commands in format as below.

"CR"Command[CR]

Command: 1 character (See Status Read Command Table)

8.1.2. When a projector receives the appropriate command, it returns a character line as the required data.

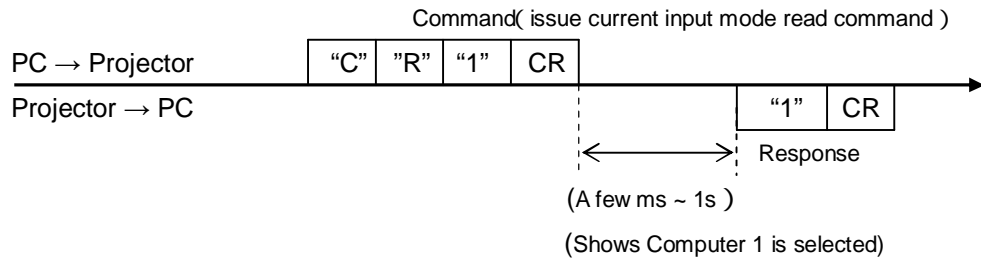
Required Data[CR]

Required data : A character line (See Status Read Command Table)

8.1.3. When the received data cannot be decoded, the projector returns "?"[CR]

8.2. Transfer Example

Get input mode for projector by basic command



8.3. Status Read Command

| | | |
|----------|--------------------------|--|
| Command | "CR0"[CR] | |
| Details | Get the projector status | |
| Response | Acceptable | "%1"[CR] |
| | %1 | "00" = Power ON "80" = Standby (Normal Standby) Impossible to respond during Super Standby "40" = Processing Countdown "20" = Processing Cooling down "10" = Power Failure "28" = Processing cooling down due to abnormal temperature "88" = Standby after cooling down due to abnormal temperature Standby due to door failure "24" = Processing Power Save / Cooling down "04" = Power Save "21" = Processing Cooling down after OFF due to lamp failure "81" = Standby after Cooling down due to lamp failure |
| | Unacceptable | "?"[CR] |

【Details for Response】**“00”[CR]**

Status: Power ON

Normal image is on-screen.

“80”[CR]

Status: Standby

(Z2000: This status can be read in only Normal Standby mode, not in Super standby mode)

When the status is normal Standby, Status Read Commands are always available, but Functional Execution Commands are not available except Power ON Command.

“40”[CR]

Status: Processing Countdown

When “Display” in Setting menu is ON and POWER ON is executed, it starts processing Countdown.

When “Display” in Setting menu is OFF, Countdown is canceled and the status moves to Quick Power ON.

“20”[CR]

Status: Processing Cooling down

When the status is Power ON and Power OFF Command (“C01”[CR], “C02”[CR]) is executed, it moves to Cooling down. This status automatically moves to Standby when lamp is turned off and the fan spin finishes after 60 seconds. The fan spin time depends on models.

This function is used to cool down lamps and other optical parts, and is quite important to projector’s reliability. During this time, Control Commands are invalid.

“10”[CR]

Status: Power Failure

When the power supply voltage inside the projector reaches abnormal status, the projector is automatically turned off. The projector returns “10”[CR], which shows it moves to Power OFF status due to power failure.

“28”[CR]

Status: Processing cooling down due to abnormal temperature

When the inside temperature becomes abnormally high, it automatically starts Cooling down. Response for this status is “28”[CR].

Even if the temperature decreases during this process, Cooling down is executed.

“88”[CR]

Status: Standby after Cooling Down due to abnormal temperature

The projector status is restored from abnormal temperature.

When the status moves to Standby after Cooling Down due to abnormal temperature, it returns “88”[CR].

This shows the status turns to Standby because of abnormal temperature and door

failure.

This status maintains until next operation is done, When Power On is executed, the information of abnormal temperature is canceled and normal operation is executed.

“24”[CR]

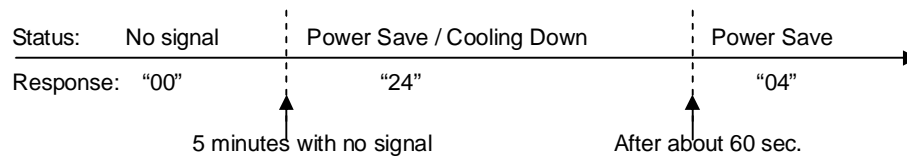
Status: Processing Power Save / Cooling Down

When Power Management function in the Setting menu works and no signal is received for 5 minutes, lamps are turned off and the status goes to Power Save / Cooling Down.

(During this time, the green LED of the projector is off)

During this time, Functional Execution Commands are invalid. (Not executed)

The status moves to Power Save at set hours after the operation of Cooling Down.



“04”[CR]

Status: Power Save

This shows it moves to Power Save status by Power management function in the Setting menu

“21”[CR]

Status: Processing Cooling Down after OFF due to lamp failure

When a projector is turned off because of lamp failure, it starts Cooling Down automatically. It returns “21”[CR].

The response command “21”[CR] maintains during Cooling Down.

“81”[CR]

Status: Standby after Cooling Down due to lamp failure

When the status moves to Standby after Cooling Down due to lamp failure, it returns “81” [CR]. This shows the status turns to Standby because of lamp failure. This status stays until next operation is executed.

When Power ON is executed, the information of lamp failure is canceled and normal operation is executed.

8.4. Input Mode Read Command

| | | |
|----------|-------------------------|---|
| Command | "CR1"[CR] | |
| Details | Get the selected Input. | |
| Response | Acceptable | "%1"[CR] |
| | %1 | "0" = Video is selected "1" = S-Video is selected "2" = Component1 is selected "3" = Component2(D5-Video) is selected "4" = HDMI1 is selected "5" = HDMI2 is selected "6" = Computer(Analog) is selected "7" = Computer(Scart) is selected |
| | Unacceptable | "?"[CR] |

8.5. Lamp Time Read Command

| | | |
|----------|---------------------------------|---|
| Command | "CR3"[CR] | |
| Details | Get the total lamp running time | |
| Response | Acceptable | "%1"[CR] |
| | %1 | 5-digit character shows the time. Example: "00410"[CR] = 410Hours |
| | Unacceptable | "?"[CR] |

8.6. Setting Read Command

| | | |
|----------|--|---|
| Command | "CR4"[CR] | |
| Details | Get the screen setting status such as Ceiling / Rear | |
| Response | Acceptable | "%1"[CR] |
| | %1 | "11"[CR] = Normal Screen Setting "10"[CR] = Picture is top/bottom reversed (Status : Ceiling & Rear On) "01"[CR] = Picture is left/right reversed (Status : Rear) "00"[CR] = Picture is top/bottom and left/right reversed (Status : Ceiling ON) |
| | Unacceptable | "?"[CR] |

8.7.Temp Read Command

| | | |
|----------|---|--|
| Command | "CR6"[CR] | |
| Details | Get the temperature data inside a projector. With some temperature sensors installed in the projector, it is possible to get all the temperature at once | |
| Response | Acceptable | "%1_%2_%3"[CR] |
| | %1 %2 %3 | <p>%1 = Temperature of Sensor 1 %2 = Temperature of Sensor 2 %3 = Temperature of Sensor 3</p> <p>Temperature data is shown as "00.0" When the temperature sinks to "-", the first character is "-" like "-05.5"[CR] When the temperature data returns due to hardware problems, the first character is "E" like "E00.0"[CR]</p> <p>When the status is Standby or it is 10 seconds after Power On, temperature may approach the abnormal status due to ballast lamp's residual heat depending on projectors. So, when the status is Standby or it is 10 seconds after Power On, the process for the abnormal temperature is not executed. The temperature data is "□----". When some temperature sensors are installed, the projector sends commands continuously.</p> <p>"□31.5 □□35.2 □□32.8"[CR] There is the sensor 1 data, one space, and the sensor 2 data...</p> |
| | Unacceptable | "?"[CR] |