

RS-232C PROTOCOL MANUAL

(Revised, 12/August/2015)

For BRAVIA 2015 Android TV models

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# 1. Serial communication protocol

Serial communication protocol is designed to work in conjunction with external host by RS-232C

## 1.1 Sub microcomputer settings

The port used for RS-232C communication is the following terminal. Level is changed by RS-232C transceiver IC on small board for service. Hence communication to external host is achieved

Table 1-1 Hotel specification control pin

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Item | Pin | Use | Function Description | Note |
| rs232\_rxd | \* | UART | Receiving data |  |
| rs232\_txd | \* | UART | Sending data |  |

\* Pin must be referred to Pin assign spec.

## 1.2 RS-232C communication specification

## 1.2.1 Communication parameter

Communication related specification is defined as follows

Table 1-2-1 Communication parameter

|  |  |
| --- | --- |
| Item | Specification |
| Communication Method | RS-232C |
| Synchronous Method | Asynchronous Communication |
| Bit Rate | 9600bps |
| No. of character | 8bits |
| parity | n/a |
| Start bit | 1bit |
| Stop bit | 1bit |
| Flow control | n/a |

## 1.2.2 Pin Configuration





## 1.2.3 Communication basis

1. Send control command after 20 seconds or more of power on.

2. Strictly keep to send next command after receiving answer response from Display.

3. Set the command interval to 500ms or more. (When you use CBX-H10/H11, please set it to 700ms or more)

4. Value range for direct command is same as user can change by menu.

5. When set is at standby mode, only receives Power ON or Power Enquiry command.

6. To turn on the set, first set standby command as Enable. After this, the set can receive Power ON command.

## 1.2.4 Communication data format

Communication data format related specification is defined as follows.

TV can support Enquiry Command for corresponding command.

1. Control (write request from host to display)

Table 1-2-2 Write request for Control (host to display)

|  |  |  |
| --- | --- | --- |
| No. | Item | Value |
| 1 | Header | 0x8C：Control |
| 2 | Category | 0x00 (fixed) |
| 3 | Function | 0xXX |
| 4 | Length | 0xXX (= X + 1 byte) |
| 5 | Data1 | 0xXX |
| ： | ： | 0xXX |
| ： | ： | 0xXX |
| X+4 | Data X | 0xXX |
| X+5 | Check Sum | 0xXX |

\* Length： Total Length from Data1 to Check Sum.

\* Check Sum： Total sum from #1 to #X+4. If it is over 255(1 byte), last 1 byte of data is used.

1. Read request for Enquiry (host to display)

Table 1-2-3 Read request for Enquiry（host to display）

|  |  |  |
| --- | --- | --- |
| No. | Item | Value |
| 1 | Header | 0x83：Enquiry |
| 2 | Category | 0x00 (fixed) |
| 3 | Function | 0xXX |
| 4 | Data1 | 0xFF (fixed) |
| 5 | Data2 | 0xFF (fixed) |
| 6 | Check Sum | 0xXX |

\* Check Sum： Total sum from #1 to #5. If it is over 255(1 byte), last 1 byte of data is used

1. Reply to Answer (display to host)

(3)-1. Answer on control request

Table 1-2-4 Answer on Control request

|  |  |  |
| --- | --- | --- |
| No. | Item | Value |
| 1 | Header | 0x70：Answer |
| 2 | Answer\* | 0x00：Completed (Normal End)  0x01：Limit Over (Abnormal End – over max value)  0x02：Limit Over (Abnormal End – under min value)  0x03：Command Canceled (Abnormal End)  0x04：Parse Error (Data Format Error) |
| 3 | Check Sum | 0Xxx |

\* 0x00：Completed packet is received normally and process is completed normally

0x01：Limit Over packet is received normally but the data value exceeds the upper limit

0x02：Limit Over packet is received normally but the data value exceeds the lower limit

0x03：Command Canceled packet is received normally but either the data is incorrect or   
request is not acceptable in current host value

0x04：Parse Error Packet is not received properly (undefined format data) or Check sum error.

But it will be returned “Limit over”(0x01 or 0x02) in the case.

\* Check Sum： Total sum from #1 to #2. If it is over of 255(1 byte), last 1 byte of data is used

(3)-2. Answer on Enquiry request (Normal End)

Table 1-2-5 Answer on Enquiry request（Normal End）

|  |  |  |
| --- | --- | --- |
| No. | Item | Value |
| 1 | Header | 0x70：Answer |
| 2 | Answer | 0x00：Completed  0x01: Reserved  0x02: Reserved  (0x03: Command Canceled)  (0x04: Parse Error (Data Format Error) ) |
| 3 | Return Data Size | 0xXX (= X + 1 byte) |
| 4 | Return Data1 | 0xXX |
| ： | ： | 0xXX |
| ： | ： | 0xXX |
| X+3 | Return Data X | 0xXX |
| X+4 | Check Sum | 0xXX |

\* 0x00：Completed packet is received normally and processing is completed normally

\* 0x03：Command Canceled

The demand has not been permitted in a present host though the packet was normally received. (See (3)-3)

\* 0x04：Parse Error

The packet cannot be normally received or the data not defined is received or the CheckSum error. (See (3)-3)

\*Return Data Size： Total Length between Return Data1 to Check Sum.

\* Return Data returns the read value

\* Check Sum：Total sum from #1 to #X+3. If it is over 255(1 byte), last 1 byte of data is used.

(3)-3. Answer on Enquiry (Abnormal End)

Table 1-2-6 Answer on Enquiry request (Abnormal End)

|  |  |  |
| --- | --- | --- |
| No. | Item | Value |
| 1 | Header | 0x70：Answer |
| 2 | Answer\* | 0x03：Command Canceled  0x04：Parse Error (Data Format Error) |
| 3 | Check Sum | 0xXX |

\* 0x03: Command Canceled Packet is received normally but request is not allowed at current host status.

\* Check Sum: Total sum of #1 and #2. If it exceeds the value of 255(1 byte), last 1 byte of data is used.

# 2. Corresponding command

For corresponding commands, refer to the command list.







**BRAVIA SIRCS code list**

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**Language list**

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**Appendix**

Following commands that past models support are not supported in FY15 BRAVIA.

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**FAQ**

* **RS232C command is not sometimes accepted.**
  + BRAVIA doesn’t occasionally accept RS232C command. BRAVIA cannot accept it after about 20 seconds or more on power on.
  + BRAVIA cannot accept it while stand-by, if status of “Stand by Command” is not enable. The status can be changed by RS232C command. Please refer to Stand-by Command.
* **Some mode (e.g. Animation) cannot be selected at Picture Mode / Sound Mode Command.**
  + Only modes described in the command list can be selected. Please refer to Picture Mode Command and Sound Mode Command.

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