

PRE32 RS232 protocol

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v1.21

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Description

This document describes the RS232 protocol used to control the PRE32 device.

Command structure

Commands are sent to the device using the following format, where each field is one byte sent to the device:

<STX> <command> <variable> [<value>] <DLE> <ETX>

The <command> can be either 'W' for write or 'R' for read. The variable table that follows specifies which variables supports which <command> types.

If verbose is active, the device will send replies on the following format either when a command is received or when the variable in question is changed on the device.

<STX> <variable> [<value>] <DLE> <ETX>

Note that the <value> field can contain several bytes of data for certain commands.

Command special chars

<STX> = 0x02

<DLE> = 0x10

<ETX> = 0x03

Write = 0x57 (ASCII: W)

Read = 0x52 (ASCII: R)

Escape sequence

If any variable or value byte is equal to <DLE>, this byte must be sent twice to avoid confusing this with end of message.

Protocol settings

Baud rate: 4800

Bits: 8

Stop bits: 1

Parity: None

Example

The specific variables and commands will be defined later, here are examples on what the commands looks like in bytes.

Command to toggle verbose setting. Command is write, variable is 13 (0x0d) and value is 0.

0x02 0x57 0x0xd 0x00 0x10 0x03

Variables

Commands sent to device

| Function | Cmd | Variable | Values | Description | Command sequence |
|-----------------|-----|----------|---|---|---|
| Operate/Standby | W | 1 | 0 = Toggle | Toggles standby mode for device. | 0x02 0x57 0x01 0x00 0x10 0x03 |
| Operate/Standby | W | 1 + 128 | 0 = Standby, 1 = Operate | Sets device in standby or operate state. | Standby: 0x02 0x57 0x81 0x00 0x10 0x03 Operate: 0x02 0x57 0x81 0x01 0x10 0x03 |
| Main input | W | 2 | -1 (0xff) = previous, 1 (0x01) = next | Selects next or previous input on device. | Previous: 0x02 0x57 0x02 0xff 0x10 0x03 Next: 0x02 0x57 0x02 0x01 0x10 0x03 |
| Main input | W | 2 + 128 | 1 = IN1 2 = IN2 3 = IN3 4 = IN4 5 = IN5 6 = IN6 7 = MEDIA 8 = DIG1 9 = DIG2 10 = DIG3 11 = DIG4 12 = PC 13 = BT | Selects specific input on device. | 0x02 0x57 0x82 0x0X 0x10 0x03 X = 1,2,3,4,5,6,7,8,9,a,b,c,d |
| Volume control | W | 3 | -1 (0xff) = Decrease, 1 (0x01) = Increase | Either increases or decreases volume by one step. | Decrease: 0x02 0x57 0x03 0xff 0x10 0x03 Increase: 0x02 0x57 0x03 0x01 0x10 0x03 |
| Volume control | W | 3 + 128 | 0 to 79 | Sets volume on device. | 0x02 0x57 0x83 0xXX 0x10 0x03, XX = 00 to 4f |
| Balance | W | 4 | -1 (0xff) = step left, 1 (0x01) = step right | Modifies volume balance settings | Step left: 0x02 0x57 0x04 0xff 0x10 0x03 Step right: 0x02 0x57 0x04 0x01 0x10 0x03 |
| Balance | W | 4 + 128 | 1 to 19 | Sets specific balance setting. Value 10 means centered. Lower values adjusts balance to the left. | 0x02 0x57 0x84 0xXX 0x10 0x03 XX = 01 to 13 |
| Mute control | W | 9 | 0 = Toggle | Toggles mute on device. | 0x02 0x57 0x09 0x00 0x10 0x03 |
| Mute control | W | 9 + 128 | 0 = Disable, 1 = Enable | Enabled or disables mute on device. | Disable: 0x02 0x57 0x89 0x00 0x10 0x03 Enable: 0x02 0x57 0x89 0x01 0x10 0x03 |

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|-------------------------|---|----------|---|--|--|
| Dim | W | 10 | 0 = Cycle | Cycles through the different dim levels on device. | 0x02 0x57 0x0a 0x00 0x10 0x03 |
| Dim | W | 10 + 128 | 0 = Off 1 = Low 2 = Mid 3 = High | Selects a specific dim level on device. | 0x02 0x57 0x8a 0x0X 0x10 0x03 X = 0,1,2,3 |
| Verbose | W | 13 | 0 = Toggle | Toggles verbose mode on device. When verbose is active, device will respond to commands and inform about changes to variables. | 0x02 0x57 0x0d 0x00 0x10 0x03 |
| Verbose | W | 13 + 128 | 0 = Disable, 1 = Enable | Enables or disables verbose mode on device. | Disable: 0x02 0x57 0x8d 0x00 0x10 0x03 Enable: 0x02 0x57 0x8d 0x01 0x10 0x03 |
| Menu | W | 14 | 0 = Toggle menu | Enters or leaves menu of device. | 0x02 0x57 0x0e 0x00 0x10 0x03 |
| Menu | W | 14 + 128 | 0 = Exit, 1 = Back, 2 = Enter | Allows closing of the menu or stepping into or out of a submenu if the menu is active. | Exit: 0x02 0x57 0x8e 0x00 0x10 0x03 Back: 0x02 0x57 0x8e 0x01 0x10 0x03 Enter: 0x02 0x57 0x8e 0x02 0x10 0x03 |
| Remote command | W | 15 | See table of IR commands. | Sends an IR command to the device, which will be treated as if the IR remote control has been used to send the command. | 0x02 0x57 0x0f 0xXX 0x10 0x03 |
| IR input select | W | 18 | 0 = Toggle | Toggles IR input source on device between front and back. | 0x02 0x57 0x12 0x00 0x10 0x03 |
| IR input select | W | 18 + 128 | 0 = Front, 1 = Back | Selects either front or back as current IR input source on device. | Front: 0x02 0x57 0x92 0x00 0x10 0x03 Back: 0x02 0x57 0x92 0x01 0x10 0x03 |
| Recall factory settings | W | 19 | 0 = Factory reset | Performs a factory reset, restoring default values and restarting the device. | 0x02 0x57 0x13 0x00 0x10 0x03 |
| Name of productline | R | 21 | 0 | Reads manufacturer name from the device. | 0x02 0x52 0x15 0x00 0x10 0x03 |
| Name of model | R | 22 | 0 | Reads model name from device. | 0x02 0x52 0x16 0x00 0x10 0x03 |
| Version | R | 23 | 0 | Reads current software version from device | 0x02 0x52 0x17 0x00 0x10 0x03 |
| Input name | R | 20 | 0 | Reads current input name from device. | 0x02 0x52 0x14 0x00 0x10 0x03 |
| Input name | R | 20 + 128 | See "Main input" for values | Reads specified input name from device. | 0x02 0x52 0x94 0x0X 0x10 0x03 |
| BT visible | W | 24 | 0 = Toggle | Toggles bluetooth visibility setting. | 0x02 0x57 0x18 0x00 0x10 0x03 |

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|-----------------|---|----------|----------------------------|--|---|
| BT visible | W | 24 + 128 | 0 = Disable, 1 = Enable | Sets bluetooth visibility setting. | Disable: 0x02 0x57 0x98 0x00 0x10 0x03 Enable: 0x02 0x57 0x98 0x01 0x10 0x03 |
| BT auto-connect | W | 25 | 0 = Toggle | Toggles bluetooth auto-connect setting. | 0x02 0x57 0x19 0x00 0x10 0x03 |
| BT auto-connect | W | 25 + 128 | 0 = Disable, 1 = Enable | Sets bluetooth auto-connect setting. | Disable: 0x02 0x57 0x99 0x00 0x10 0x03 Enable: 0x02 0x57 0x99 0x01 0x10 0x03 |
| BT unpair | W | 27 | 0 = Unpair | Makes the bluetooth device unpair and forget all previously connected devices. | 0x02 0x57 0x1b 0x00 0x10 0x03 |
| BT name | R | 28 | 0 | Reads current bluetooth name from device. | 0x02 0x52 0x1c 0x00 0x10 0x03 |

Replies received from device

Note that these replies are only sent if verbose is set on the device.

| Function | Variable | Values | Description | Reply sequence |
|-----------------|----------|---|--|---|
| Operate/Standby | 1 | 0 = Standby, 1 = Operate | Standby state of the device. | Standby: 0x02 0x01 0x00 0x10 0x03 Operate: 0x02 0x01 0x01 0x10 0x03 |
| Main input | 2 | 1 = IN1 2 = IN2 3 = IN3 4 = IN4 5 = IN5 6 = IN6 7 = MEDIA 8 = DIG1 9 = DIG2 10 = DIG3 11 = DIG4 12 = PC 13 = BT | Active input. | 0x02 0x02 0x0X 0x10 0x03 X = 1,2,3,4,5,6,7,8,9,a,b,c,d |
| Volume control | 3 | 0 to 79 | Active volume. | 0x02 0x03 0xXX 0x10 0x03, XX = 00 to 4f |
| Balance | 4 | 1 to 19 | Current volume balance | 0x02 0x04 0xXX 0x10 0x03, XX = 01 to 13 |
| Mute control | 9 | 0 = Disable, 1 = Enable | Mute state | Disable: 0x02 0x09 0x00 0x10 0x03 Enable: 0x02 0x09 0x01 0x10 0x03 |
| Dim | 10 | 0 = Off 1 = Low 2 = Mid 3 = High | Active dim mode. | 0x02 0x0a 0x0X 0x10 0x03 X = 0,1,2,3 |
| Verbose | 13 | 0 = Disable, 1 = Enable | Verbose state. Note that if verbose is disabled no reply will be sent, even if verbose was just disabled by a command. | Disable: 0x02 0x0d 0x00 0x10 0x03 Enable: 0x02 0x0d 0x01 0x10 0x03 |
| Menu | 14 | 0 = Exit, 1 = Back, 2 = Enter | Describes change to menu status. | Exit: 0x02 0x0e 0x00 0x10 0x03 Back: 0x02 0x0e 0x01 0x10 0x03 Enter: 0x02 0x0e 0x02 0x10 0x03 |

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|---------------------|----|-----------------------------|---|---|
| Remote command | 15 | 0 | Generic response to actions from buttons or IR commands that doesn't have specific RS232 reply. | 0x02 0x0f 0x00 0x10 0x03 |
| IR input | 18 | 0 = Front, 1 = Back | Active IR input source. | Front: 0x02 0x12 0x00 0x10 0x03 Back: 0x02 0x12 0x01 0x10 0x03 |
| Name of productline | 21 | Name as string | Manufacturer name as response to read command. | 0x02 0x15 [0xXX ... 0xXX] 0x10 0x03 |
| Name of model | 22 | Name as string | Model name as response to read command. | 0x02 0x16 [0xXX ... 0xXX] 0x10 0x03 |
| Version | 23 | Version and date as strings | Software version and date as response to read command. | 0x02 0x17 [0xXX ... 0xXX] 0x10 0x03 |
| Input name | 20 | Name as string | Name of input requested in read command. | 0x02 0x14 [0xXX ... 0xXX] 0x10 0x03 |
| BT visible | 24 | 0 = Disable, 1 = Enable | Active bluetooth visibility setting. | Disable: 0x02 0x18 0x00 0x10 0x03 Enable: 0x02 0x18 0x01 0x10 0x03 |
| BT auto-connect | 25 | 0 = Disable, 1 = Enable | Active bluetooth auto-connect setting. | Disable: 0x02 0x19 0x00 0x10 0x03 Enable: 0x02 0x19 0x01 0x10 0x03 |
| BT unpair | 27 | 0 | Response to BT unpair command. | 0x02 0x1b 0x00 0x10 0x03 |
| BT name | 28 | Name as string | The name identifier for the bluetooth module as response to a read command. | 0x02 0x1c [0xXX ... 0xXX] 0x10 0x03 |

IR commands available for RS232

| IR Function | Value (dec) | Value (hex) | Description |
|--------------------|--------------------|--------------------|---|
| Toggle standby | 50 | 32 | Toggles standby |
| Standby | 1 | 01 | Sets standby |
| Operate | 2 | 02 | Clears standby |
| Arrow up | 30 | 1E | Next input |
| Arrow down | 31 | 1F | Previous input |
| Arrow left | 9 | 09 | Volume down |
| Arrow right | 8 | 08 | Volume up |
| Mute | 49 | 31 | Toggle mute |
| Dim | 10 | 0A | Cycle dim mode |
| Balance | 26 | 1A | Enter balance mode |
| Menu | 0 | 00 | Toggle menu |
| Setup | 11 | 0B | Toggle menu |
| Select | 43 | 2B | Selects item in menu |
| Return | 46 | 2E | Leaves currently active submenu in menu |
| Input 1 | 13 | 0D | Selects IN1 |
| Input 2 | 14 | 0E | Selects IN2 |
| Input 3 | 15 | 0F | Selects IN3 |
| Input 4 | 18 | 12 | Selects IN4 |
| Input 5 | 19 | 13 | Selects IN5 |
| Input 6 | 20 | 14 | Selects IN6 |
| Input +10, Input 0 | 47, 24 | 2F, 18 | Selects MEDIA |
| Input +10, Input 1 | 47, 13 | 2F, 0D | Selects DIG1 |
| Input +10, Input 2 | 47, 14 | 2F, 0E | Selects DIG2 |
| Input +10, Input 3 | 47, 15 | 2F, 0F | Selects DIG3 |
| Input +10, Input 4 | 47, 18 | 2F, 12 | Selects DIG4 |
| Input +10, Input 5 | 47, 19 | 2F, 13 | Selects PC |
| Input +10, Input 6 | 47, 20 | 2F, 14 | Selects BT |