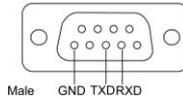


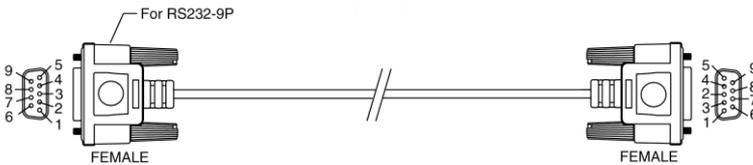


Dell 1550/1650 RS232 Protocol Document

- RS232 Projector Pin Assignment (Facing Projector)



- RS232 Serial Communication Cable Pin Assignment (Facing Cable)



◆ Pin Assignments

RS232	PIN DESCRIPTION	RS232
1		
2	TXD	3
3	RXD	2
4		
5	GROUND	5
6		
7	Not Used	7
8	Not Used	8
9		

Note 1: The RS232 (pin2-3 swap) cable is not provided by Dell.

- RS232 Protocol
Communication Settings

Connection Settings	Value
Baud Rate	19200 bps
Data Bits	8 bits
Parity	None
Stop Bits	1 bit
Flow control	None

Command Types

To display the OSD menu and adjust the settings.

Control Command Syntax (From PC to Projector)

[H][AC][SoP][CRC][ID][SoM][COMMAND]
[H][AC][SoP][CRC][ID][SoM][COMMAND][Value]

Example: Power On Command (Send Low Byte Firstly)

Enter the following code:

0xbe, 0xef, 0x10, 0x05, 0x00, 0xc6, 0xff, 0x11, 0x11, 0x01, 0x00, 0x01

Header [H] ==> Fixed, "be (Low Byte), ef (High Byte)"

Address Code [AC] ==> Fixed, "10"

Size of Payload [SoP] ==> Byte size from MsgID to Command Code, "05 (Low Byte), 00 (High Byte)" or Byte size from MsgID to Value, "06 (Low Byte), 00 (High Byte)".

CRC16 [CRC] ==> CRC value, "c6 (Low Byte), ff (High Byte)"

MsgID [ID] ==> Fixed, "11 11"

MsgSize [SoM] ==> Byte size of Command Code, "01 (Low Byte), 00 (High Byte)" or Byte size of Command Code and Value, "02 (Low Byte), 00 (High Byte)"

Command Code [COMMAND] ==> "Power On" Command, "01"

Projector Response Message Table

Byte0 value:

0x00: Success

0x01: Invalid Command (on the control command list but no valid)

0x02: Error Command (includes CRC error and unknown commands)

Projector Response System Status

Byte0, Byte1, Byte2

Byte0: 0x00 (Success)

Byte1: 0xff (the Command Code of System Status)

Byte2: Return status

Ex: When the projector is in standby mode, the return status will be 0x01.

Projector Response Lamp Hour

Byte0, Byte1, Byte2, Byte3

Byte0: 0x00 (Success)

Byte1: 0x2f (the Command Code of Lamp Hour)

Byte2: LSB (Hex)

Byte3: MSB (Hex)

Ex: 800 (3x256 + 2x16 = 800) hours --> 0x00, 0x2f, 0x20, 0x03

Firmware Version Response

Byte0, Byte1, Byte2, Byte3...Byte7

Byte0: 0x00 (Success)

Byte1: 0x30 (the Command Code of Firmware Version)

Byte2...Byte7

Firmware version: 6 Bytes ASCII Code: "M0RXXX"

XXX: 000-999

Ex: Version M0R001 → "M0R001" → 0x4d, 0x30, 0x52, 0x30, 0x30, 0x31

(Success, the Command Code of FW Version, 6 Bytes ASCII Code: "M0RXXX")

Control Commands List

Command Description	Header (WORD)	Address Code (BYTE)	Size Of The Payload (WORD)	CRC16 For The Entire Packet (WORD)	MSG ID (WORD)	MSG Size (WORD)	Command Code (BYTE)	Value (BYTE)	Comment
Power On	0xfeb	0x10	0x0005	0xffc6	0x1111	0x0001	0x01		See Note 2
Menu	0xfeb	0x10	0x0005	0xbf7	0x1111	0x0001	0x02		
Up	0xfeb	0x10	0x0005	0x7e07	0x1111	0x0001	0x03		
Down	0xfeb	0x10	0x0005	0x3fc5	0x1111	0x0001	0x04		
Left	0xfeb	0x10	0x0005	0xfe05	0x1111	0x0001	0x05		
Right	0xfeb	0x10	0x0005	0xbe04	0x1111	0x0001	0x06		
R-sync	0xfeb	0x10	0x0005	0x7fc4	0x1111	0x0001	0x07		
Source Search	0xfeb	0x10	0x0005	0x3fc0	0x1111	0x0001	0x08		
Volume +	0xfeb	0x10	0x0005	0xfe00	0x1111	0x0001	0x09		
Volume -	0xfeb	0x10	0x0005	0xbe01	0x1111	0x0001	0x0a		
Zoom In	0xfeb	0x10	0x0005	0x7fc1	0x1111	0x0001	0x0b		
Zoom Out	0xfeb	0x10	0x0005	0x3e03	0x1111	0x0001	0x0c		
Mute On	0xfeb	0x10	0x0005	0xffc3	0x1111	0x0001	0x0d		
Freeze	0xfeb	0x10	0x0005	0xbf2	0x1111	0x0001	0x0e		
Hide	0xfeb	0x10	0x0005	0x7e02	0x1111	0x0001	0x0f		
Video Mode	0xfeb	0x10	0x0005	0x3fca	0x1111	0x0001	0x10		Toggle
V. Keystone Up	0xfeb	0x10	0x0005	0x7fcb	0x1111	0x0001	0x13		
V. Keystone Down	0xfeb	0x10	0x0005	0x3e09	0x1111	0x0001	0x14		
Aspect Ratio (Original/4-3/16-9/16-10)	0xfeb	0x10	0x0005	0x7e08	0x1111	0x0001	0x17		Toggle
Power Off	0xfeb	0x10	0x0005	0x3e0c	0x1111	0x0001	0x18		
Source-VGA Analog-A	0xfeb	0x10	0x0005	0xffcc	0x1111	0x0001	0x19		
Source-Composite	0xfeb	0x10	0x0005	0x7fdf	0x1111	0x0001	0x23		
Key Pad Lock On	0xfeb	0x10	0x0005	0x3e1d	0x1111	0x0001	0x24		
Key Pad Lock Off	0xfeb	0x10	0x0005	0xffdd	0x1111	0x0001	0x25		
Current Source	0xfeb	0x10	0x0005	0xbfdc	0x1111	0x0001	0x26		0x00: No Source 0x01: VGA-A 0x03: HDMI 0x05: Composite 0x0c: HDMI2
V. Keystone Read	0xfeb	0x10	0x0005	0x3e18	0x1111	0x0001	0x28		
Auto Keystone Write	0xfeb	0x10	0x0006	0x1b28	0x1111	0x0001	0x29		0x00: No. Off 0x01: Yes. On
Lamp-Mode-ECO	0xfeb	0x10	0x0005	0xbf9	0x1111	0x0001	0x2a		
Lamp-Mode-Normal	0xfeb	0x10	0x0005	0x7e19	0x1111	0x0001	0x2b		
Auto Source On	0xfeb	0x10	0x0005	0x3fdb	0x1111	0x0001	0x2c		
Auto Source Off	0xfeb	0x10	0x0005	0xfe1b	0x1111	0x0001	0x2d		
Factory Reset	0xfeb	0x10	0x0005	0xbe1a	0x1111	0x0001	0x2e		
Lamp-Hours	0xfeb	0x10	0x0005	0x7fda	0x1111	0x0001	0x2f		
Firmware Version	0xfeb	0x10	0x0005	0x3e12	0x1111	0x0001	0x30		
Auto Keystone Read	0xfeb	0x10	0x0005	0xffd2	0x1111	0x0001	0x31		0x00: No. Off 0x01: Yes. On
Aspect Ratio Read	0xfeb	0x10	0x0005	0xbf3	0x1111	0x0001	0x32		Feedback: 0x00: Original(1:1) 0x01: 4:3 0x02: 16:9 0x03: 16:10 0x01: Front 0x02: Front, Ceiling 0x03: Rear 0x04: Rear, Ceiling
Projector Mode Write	0xfeb	0x10	0x0006	0x9ae3	0x1111	0x0002	0x33	0x01-0x04	0x01: Front 0x02: Front, Ceiling 0x03: Rear 0x04: Rear, Ceiling
Projector Mode Read	0xfeb	0x10	0x0005	0x3fd1	0x1111	0x0001	0x34	0x01-0x04	0x01: Front 0x02: Front, Ceiling 0x03: Rear 0x04: Rear, Ceiling
Brightness Write	0xfeb	0x10	0x0006	0x1ae1	0x1111	0x0002	0x35	0x00-0x64	Range (0x00-0x64)
Brightness Read	0xfeb	0x10	0x0005	0xbe10	0x1111	0x0001	0x36		Range (0x00-0x64)
Contrast Write	0xfeb	0x10	0x0006	0x9b20	0x1111	0x0002	0x37	0x00-0x64	Range (0x00-0x64)
Contrast Read	0xfeb	0x10	0x0005	0x3fd4	0x1111	0x0001	0x38		Range (0x00-0x64)
Color Temperature Write	0xfeb	0x10	0x0006	0x1ae4	0x1111	0x0002	0x39	0x01-0x04	0x01: Low 0x02: Mid 0x03: High 0x04: Custom
Color Temperature Read	0xfeb	0x10	0x0005	0xbe15	0x1111	0x0001	0x3a		0x01: Low 0x02: Mid 0x03: High 0x04: Custom

Saturation Write	0xfbe	0x10	0x0006	0x9b25	0x1111	0x0002	0x3b	0x00~0x64	Range (0x00~0x64)
Saturation Read	0xfbe	0x10	0x0005	0x3e17	0x1111	0x0001	0x3c		Range (0x00~0x64)
Sharpness Write	0xfbe	0x10	0x0006	0x1b27	0x1111	0x0002	0x3d	0x00~0x1f	Range (0x00~0x1f)
Sharpness Read	0xfbe	0x10	0x0005	0xbf66	0x1111	0x0001	0x3e		Range (0x00~0x1f)
Tint Write	0xfbe	0x10	0x0006	0x9ae6	0x1111	0x0002	0x3f	0x00~0x64	Range (0x00~0x64)
Enter	0xfbe	0x10	0x0005	0x3ff6	0x1111	0x0001	0x40		
Tint Read	0xfbe	0x10	0x0005	0xfe36	0x1111	0x0001	0x41		Range (0x00~0x64)
									0x00: Presentation Mode
									0x01: Bright Mode
									0x02: Movie Mode
									0x03: sRGB Mode
									0x04: Custom Mode
									0x01: RGB
Color Space Write	0xfbe	0x10	0x0006	0x9b07	0x1111	0x0002	0x43	0x01~0x03	0x02: YCbCr
									0x03: YPbPr
									0x01: RGB
Color Space Read	0xfbe	0x10	0x0005	0x3e35	0x1111	0x0001	0x44		0x02: YCbCr
									0x03: YPbPr
White Intensity Write	0xfbe	0x10	0x0006	0x1b05	0x1111	0x0002	0x45	0x00~0x0a	Range (0x00~0x0a)
White Intensity Read	0xfbe	0x10	0x0005	0xbff4	0x1111	0x0001	0x46		Range (0x00~0x0a)
H. Position Write	0xfbe	0x10	0x0006	0x1b00	0x1111	0x0002	0x49	0x00~0x64	Range(0x00~0x64) See Note 3
H. Position Read	0xfbe	0x10	0x0005	0xbff1	0x1111	0x0001	0x4a		Range(0x00~0x64) See Note 3
V. Position Write	0xfbe	0x10	0x0006	0x9ac1	0x1111	0x0002	0x4b	0x00~0x64	Range(0x00~0x64) See Note 3
V. Position Read	0xfbe	0x10	0x0005	0x3ff3	0x1111	0x0001	0x4c		Range(0x00~0x64) See Note 3
									0x01: English
									0x02: German
									0x03: French
									0x04: Italian
									0x05: Spanish
									0x06: Polish
									0x07: Swedish
									0x08: Dutch
Current Language Write	0xfbe	0x10	0x0006	0x1ac3	0x1111	0x0002	0x4d	0x01~0x12	0x09: Iberian Portuguese
									0x0a: Japanese
									0x0b: T_Chinese
									0x0c: S_Chinese
									0x0d: Korean
									0x0e: Russian
									0x0f: Arabic
									0x10: Turkish
									0x11: CC
									0x12: Indonesia
									0x01: English
									0x02: German
									0x03: French
									0x04: Italian
									0x05: Spanish
									0x06: Polish
									0x07: Swedish
									0x08: Dutch
									0x09: Iberian Portuguese
									0x0a: Japanese
									0x0b: T_Chinese
									0x0c: S_Chinese
									0x0d: Korean
									0x0e: Russian
									0x0f: Arabic
									0x10: Turkish
									0x11: CC
									0x12: Indonesia
Current Language Read	0xfbe	0x10	0x0005	0xbe32	0x1111	0x0001	0x4e		Range (0x00~0x14)
Volume Read	0xfbe	0x10	0x0005	0x7ff2	0x1111	0x0001	0x4f		Range (0x00~0x14)
Source-HDMI	0xfbe	0x10	0x0005	0x3e3a	0x1111	0x0001	0x50		
Audio Source Write	0xfbe	0x10	0x0006	0xdb09	0x1111	0x0002	0x54		0x01: Audio-A
									0x04: HDMI
Audio Source Read	0xfbe	0x10	0x0005	0xfe39	0x1111	0x0001	0x55		0x01: Audio-A
									0x04: HDMI
Password	0xfbe	0x10	0x0009	0xaa9f	0x1111	0x0005	0x56	0x30~0x39 0x41~0x5a	4byte: Original Password
Change Password	0xfbe	0x10	0x000d	0x99fa	0x1111	0x0009	0x57	0x30~0x39 0x41~0x5a	4byte: Original Password 4byte: New Password

H. Frequency	0xfebe	0x10	0x0005	0xfe3c	0x1111	0x0001	0x59		(KHz)
V. Frequency	0xfebe	0x10	0x0005	0xbe3d	0x1111	0x0001	0x5a		(Hz)
H. Sync Polarity	0xfebe	0x10	0x0005	0x7ffd	0x1111	0x0001	0x5b		0x01: Negative 0x02: Positive
V. Sync Polarity	0xfebe	0x10	0x0005	0x3e3f	0x1111	0x0001	0x5c		0x01: Negative 0x02: Positive
Key Pad Lock State	0xfebe	0x10	0x0005	0xffff	0x1111	0x0001	0x5d		0x01: Key Pad Lock On 0x02: Key Pad Lock Off
Mute Off	0xfebe	0x10	0x0005	0x7e3e	0x1111	0x0001	0x5f		
Get Mute State	0xfebe	0x10	0x0005	0xffee	0x1111	0x0001	0x61		0x00: Mute Off 0x01: Mute On
Freeze Off	0xfebe	0x10	0x0005	0xbfef	0x1111	0x0001	0x62		
Unhide	0xfebe	0x10	0x0005	0x3fed	0x1111	0x0001	0x64		
Get Hide State	0xfebe	0x10	0x0005	0xfe2d	0x1111	0x0001	0x65		0x00: Unhide 0x01: Hide
OSD Transparency Write	0xfebe	0x10	0x0006	0x5adc	0x1111	0x0002	0x66	0x00-0x0f	Range (0x00-0x0f)
OSD Transparency Read	0xfebe	0x10	0x0005	0x7fec	0x1111	0x0001	0x67		Range (0x00-0x0f)
Volume Write	0xfebe	0x10	0x0006	0xdb18	0x1111	0x0002	0x68	0x00-0x14	Range (0x00-0x14)
Temp Alert	0xfebe	0x10	0x0005	0xbe29	0x1111	0x0001	0x6a		0x00: Normal 0x01: Abnormal
Exit Lockup	0xfebe	0x10	0x0005	0xffeb	0x1111	0x0001	0x6d		
Closed Captions	0xfebe	0x10	0x0006	0x7e2a	0x1111	0x0002	0x6f	0x00-0x04	0x00: Off 0x01: CC1 0x02: CC2 0x03: CC3 0x04: CC4 0x00, 0x05, 0x0a, 0x0f, 0x14, 0x19, 0x1e, 0x23, 0x28, 0x2d, 0x32, 0x37, 0x3c, 0x41, 0x46, 0x4b, 0x50, 0x55, 0x5a, 0x5f, 0x64, 0x69, 0x6e, 0x73, 0x78
Power Saving	0xfebe	0x10	0x0006	0xfe66	0x1111	0x0002	0x81	0x00-0x78	0x00: No 0x01: Yes 0x00: Eco 0x01: Normal 0x02: Dynamic
Quick Shutdown	0xfebe	0x10	0x0006	0xbe67	0x1111	0x0002	0x82	0x00-0x01	0x00: No 0x01: Yes
Lamp-Mode Read	0xfebe	0x10	0x0005	0x7fa7	0x1111	0x0001	0x83		0x00: Eco 0x01: Normal 0x02: Dynamic
Operating Hours	0xfebe	0x10	0x0005	0x3e65	0x1111	0x0001	0x84		Hours (2 byte)
Password Off	0xfebe	0x10	0x0005	0xffa5	0x1111	0x0002	0x85		
Password Delete	0xfebe	0x10	0x0005	0xbfa4	0x1111	0x0002	0x86		
Speaker	0xfebe	0x10	0x0005	0x7e64	0x1111	0x0002	0x87		0x00: Off 0x01: On
Speaker Status	0xfebe	0x10	0x0005	0x3e60	0x1111	0x0001	0x88		0x00: Off 0x01: On
Zoom Status	0xfebe	0x10	0x0005	0xffa0	0x1111	0x0001	0x89		Range (0x01-0x0a) 0x00, 0x05, 0x0a, 0x0f, 0x14, 0x19, 0x1e, 0x23, 0x28, 0x2d, 0x32, 0x37, 0x3c, 0x41, 0x46, 0x4b, 0x50, 0x55, 0x5a, 0x5f, 0x64, 0x69, 0x6e, 0x73, 0x78
Get Power Saving status	0xfebe	0x10	0x0006	0xbfa1	0x1111	0x0002	0x8a		0x01: Standby 0x02: Warm Up 0x03: Power On 0x04: Cooling 0x05: Power Saving
System Status	0xfebe	0x10	0x0005	0x7e46	0x1111	0x0001	0xff		0x01: Standby 0x02: Warm Up 0x03: Power On 0x04: Cooling 0x05: Power Saving



Note 2: After power on the projector, wait for 5 seconds before sending next command.

Note 3: The range will depend on VGA input resolution.

Note 4: If sending multiple commands, check that a response has been received from the projector before sending next command.

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