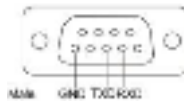


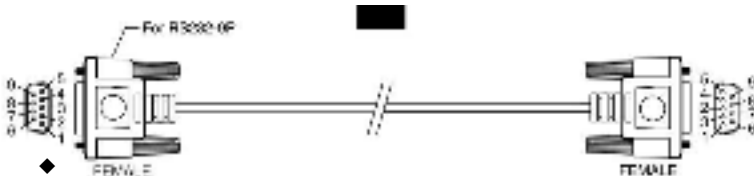


Dell™ P4317Q RS232 Protocol Document

- RS232 Projector Pin Assignment (Facing Monitor)



- RS232 Serial Communication Cable Pin Assignment (Facing Cable)



Pin Assignments

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

 **Note 1:** The RS232 cable is not provided by Dell.

- RS232 Protocol Communication Settings

Connection Settings	Value
Baud Rate	9600 bps
Data Bits	8 bits
Parity	None
Stop Bits	1 bit
Flow control	None

Command Types

To adjust the OSD settings.

Control Command Syntax (From PC to Monitor)

[H0][H1][Len][R/W][Cmd][Data0]...[DataN][CHK]

[H0] = 0x37

[H1] = 0x51

[Len] = Length

[R/W] = Read/Write

Read = 0xEB

Write = 0xEA

[Cmd] = Command

[Data0]...[DataN] = Data0~N

[CHK] = Check Sum

Reply Command Syntax (From Monitor to PC)

[H2][H3][Len][Reply][RC][Cmd][Data0]...[DataN][CHK]

[H2] = 0x6F

[H3] = 0x37

[Len] = Length

[Reply] = Reply (0x02)

[RC] = Result Code

0x00 = Success

0x01 = Timeout

0x02 = Parameters Error

0x03 = Not connected

0xFF = Other Failure

[Cmd] = Command

[Data0]...[DataN] = Data0~N

[CHK] = Check Sum

Example: Get Monitor Name

[From PC to Monitor] = 37, 51, 02, EB, 01, 8E

[From Monitor to PC] = 6F, 37, 0F, 02, 00, 01, 44, 65, 6C, 20, 50, 34, 33, 31, 37, 51, 00, 55

Control Commands List

Op Code Write (From PC)	7-0h	37-51 [Length]-4A [VCPCode] [SubCode] [Data0] [Data1] ... [DataN] CHK
Op Code Read (From PC)	7-0h	37-51 [Length]-4B [VCPCode] [SubCode] CHK
Op Code Reply (From Monitor)	02h	6F-37 [Length]-02 [ResultCode] [VCPCode] [SubCode] [Data0] [Data1] ... [DataN] CHK
Check sum Calculation (CHK)	00h	Start from first byte to the end (excluded CHK byte) and calculated with XOR.
Result Code (RC)	[RC]	00 Success 01 Timeout 02 Parameter error 03 Not connected FF Other failure

APIs	Cate Code (H4H5)	API Code (L4H5) / Size	VCP Code / Range	R/W	N bytes of sent Data	Param / Return / Comments	Command	N bytes of replied Data	Reply
M MONITOR MANAGEMENT *F									
GetMonitorName	00h	1	02h	R	0	ASCII string	37-51-02-EB-01-CHK	12	6F-37-0F-02 [RC] 01 [Data0] ... [Data8] CHK
GetMonitorSerialNumber	00h	2	02h	R	0	ASCII string	37-51-02-EB-02-CHK	13	6F-37-10-02 [RC] 02 [Data0] ... [Data1] CHK
GetBacklightHours	00h	4	04h	R	0	Monitor Backlight Hours (WORK) 0-65535	37-51-02-EB-04-CHK	2	6F-37-05-02 [RC] 04 [Data0] ... [Data1] CHK
P POWER MANAGEMENT *F									
GetPowerState	20h	0	20h-3Fh	R	0	Power State (BYTE) 0 - off 1 - on	37-51-02-EB-20-CHK	1	6F-37-04-02 [RC] 20 [Data0] CHK
SetPowerState	20h	0	20h	W	1	Power LED Setting (BYTE) 0 - off during Standby 1 - on during Active	37-51-03-FA-20 [Data0] CHK	0	6F-37-03-02 [RC] 20-CHK
GetPowerLED	20h	1	21h	R	0	Power LED Setting (BYTE) 0 - off during Standby 1 - on during Active	37-51-02-EB-21-CHK	1	6F-37-04-02 [RC] 21 [Data0] CHK
SetPowerLED	20h	1	21h	W	1	Power LED Setting (BYTE) 0 - off during Standby 1 - on during Active	37-51-03-FA-21 [Data0] CHK	0	6F-37-03-02 [RC] 21-CHK
GetPowerUSB	20h	2	22h	R	0	Power USB Setting (BYTE) 0 - off during Standby 1 - on during Standby	37-51-02-EB-22-CHK	1	6F-37-04-02 [RC] 22 [Data0] CHK
SetPowerUSB	20h	2	22h	W	1	Power USB Setting (BYTE) 0 - off during Standby 1 - on during Standby	37-51-03-FA-22 [Data0] CHK	0	6F-37-03-02 [RC] 22-CHK
ResetPower	20h	1	23h	W	0	None	37-51-02-FA-2F-CHK	0	6F-37-03-02 [RC] 2F-CHK
I IMAGE ADJUSTMENT *F									
GetBrightness	30h	0	30h	R	0	Brightness (BYTE) 0-100 values in increments of 1	37-51-02-EB-30-CHK	1	6F-37-04-02 [RC] 30 [Data0] CHK
SetBrightness	30h	0	30h	W	1	Brightness (BYTE) 0-100 values in increments of 1	37-51-03-FA-30 [Data0] CHK	0	6F-37-03-02 [RC] 30-CHK
GetContrast	30h	1	31h	R	0	Contrast (BYTE) 0-100 values in increments of 1	37-51-02-EB-31-CHK	1	6F-37-04-02 [RC] 31 [Data0] CHK
SetContrast	30h	1	31h	W	1	Contrast (BYTE) 0-100 values in increments of 1	37-51-03-FA-31 [Data0] CHK	0	6F-37-03-02 [RC] 31-CHK
GetAspectRatio	30h	3	33h	R	0	Aspect Ratio (BYTE) 0 - Wide 16:9 1 - Auto Detect 2 - 4:3 3 - 4:4 4 - 5:4	37-51-02-EB-33-CHK	1	6F-37-04-02 [RC] 33 [Data0] CHK
SetAspectRatio	30h	3	33h	W	1	Aspect Ratio (BYTE) 0 - Wide 16:9 1 - Auto Detect 2 - 4:3 3 - 4:4 4 - 5:4	37-51-03-FA-33 [Data0] CHK	0	6F-37-03-02 [RC] 33-CHK

GetSharpness	80h	4	34h	R	0	Sharpness (BYTE) 0 - 100 values in increments of 10	37-51-02-EB-34-CHK	1	6F-37-04-02-[RC]-34-[Data0]-CHK
SetSharpness	80h	4	34h	W	1		37-51-03-EB-34-[Data0]-CHK	0	6F-37-03-02-[RC]-34-CHK
/* COLOR MANAGEMENT */									
GetInputColorFormat	40h	6	46h	R	0	Input Color Format (BYTE) 0 - RGB 1 - YCbCr	37-51-02-EB-46-CHK	1	6F-37-04-02-[RC]-46-[Data0]-CHK
SetInputColorFormat	40h	6	46h	W	1		37-51-03-EB-46-[Data0]-CHK	0	6F-37-03-02-[RC]-46-CHK
GetColorPresetCaps	40h	7	47h	R	0	Bitwise representation of color presets (0x00000001 - Standard 0x00000002 - Multimedia 0x00000004 - Alternate 0x00000008 - Game 0x00000010 - Paper 0x00000020 - Color Temp 0x00000040 - Color Space 0x00000080 - Custom Color 0x00000100 - Warm 0x00000200 - Cool	37-51-02-EB-47-CHK	4	6F-37-07-02-[RC]-47-[Data0]-...[Data3]-CHK
GetColorPreset	40h	8	48h	R	0		37-51-02-EB-48-CHK	4	6F-37-07-02-[RC]-48-[Data0]-...[Data3]-CHK
SetColorPreset	40h	8	48h	W	4		37-51-06-EB-48-[Data0]-...[Data3]-CHK	0	6F-37-03-02-[RC]-48-CHK
GetCustomColor	40h	9	49h	R	1	Custom color type (BYTE) 0 - Gain 1 - Offset 2 - Hue 3 - Saturation 4 - Value (BYTE) - 0 - 100 5 - Value (BYTE) - 0 - 100 6 - Value (BYTE) - 0 - 100 7 - Value (BYTE) - 0 - 100 8 - Value (BYTE) - 0 - 100 9 - Value (BYTE) - 0 - 100 10 - Value (BYTE) - 0 - 100 11 - Value (BYTE) - 0 - 100 12 - Value (BYTE) - 0 - 100	37-51-03-EB-49-[Data0]-CHK	6	6F-37-09-02-[RC]-49-[Data0]-...[Data5]-CHK
SetCustomColor	40h	9	49h	W	7		37-51-09-EB-49-[Data0]-...[Data6]-CHK	0	6F-37-03-02-[RC]-49-CHK
ResetColor	40h	1	40h	W	0	NONE	37-51-02-EA-4F-CHK	0	6F-37-03-02-[RC]-4F-CHK
/* VIDEO INPUT MANAGEMENT */									
GetAutoSelect	60h	0	60h	R	0	Auto Select (BYTE) 0 - off 1 - on	37-51-02-EB-60-CHK	1	6F-37-04-02-[RC]-60-[Data0]-CHK
SetAutoSelect	60h	0	60h	W	1		37-51-03-EB-60-[Data0]-CHK	0	6F-37-03-02-[RC]-60-CHK
GetVideoInputCaps	60h	1	61h	R	0	Bitwise representation of video inputs (DWORD) (0x00000001 - HDMI1/MIH.1 0x00000002 - HDMI2/MIH.2 0x00000004 - HDMI3 0x00000008 - DVI1 0x00000010 - DVI2 0x00000020 - DVI3 0x00000040 - VGA1 0x00000080 - VGA2 0x00000100 - VGA3 0x00000200 - DSD 0x00000400 - DSD2	37-51-02-EB-61-CHK	4	6F-37-07-02-[RC]-61-[Data0]-...[Data3]-CHK
GetVideoInput	60h	2	62h	R	0		37-51-02-EB-62-CHK	4	6F-37-07-02-[RC]-62-[Data0]-...[Data3]-CHK
SetVideoInput	60h	2	62h	W	4		37-51-06-EB-62-[Data0]-...[Data3]-CHK	0	6F-37-03-02-[RC]-62-CHK
/* PIP/PIP MANAGEMENT */									
GetPiPMode	70h	0	70h	R	0	PIP/PIP Mode (BYTE) 0 - off 1 - PIP Small 2 - PIP Large 3 - PIP Aspect Ratio 4 - PIP Fit 5 - PIP 2 windows 6 - PIP 3 windows mode 1 7 - PIP 3 windows mode 2 8 - PIP 4 windows	37-51-02-EB-70-CHK	1	6F-37-04-02-[RC]-70-[Data0]-CHK
SetPiPMode	70h	0	70h	W	1		37-51-03-EB-70-[Data0]-CHK	0	6F-37-03-02-[RC]-70-CHK
GetPiPSubInput	70h	1	71h	R	1	SubInput (BYTE) 0 - window 1 1 - window 2 2 - window 3 3 - window 4	37-51-03-EB-71-[Data0]-CHK	4	6F-37-07-02-[RC]-71-[Data0]-...[Data3]-CHK
SetPiPSubInput	70h	1	71h	W	5	Bitwise representation of video inputs (DWORD) (0x00000001 - HDMI1/MIH.1 0x00000002 - HDMI2/MIH.2 0x00000004 - HDMI3 0x00000008 - DVI1 0x00000010 - DVI2 0x00000020 - DVI3 0x00000040 - VGA1 0x00000080 - VGA2 0x00000100 - VGA3 0x00000200 - DSD 0x00000400 - DSD2	37-51-07-EB-71-[Data0]-...[Data4]-CHK	0	6F-37-03-02-[RC]-71-CHK
GetPiPLocation	70h	2	72h	R	0	PIP Location (BYTE) 0 - Top-Right 1 - Top-Left 2 - Bottom-Right 3 - Bottom-Left	37-51-02-EB-72-CHK	1	6F-37-04-02-[RC]-72-[Data0]-CHK
SetPiPLocation	70h	2	72h	W	1		37-51-03-EB-72-[Data0]-CHK	0	6F-37-03-02-[RC]-72-CHK
/* OSD LUT MANAGEMENT */									
/* OSD MANAGEMENT */									
GetOSDTransparency	80h	0	80h	W	1	OSD Transparency (BYTE) 0 - 100 values in increments of 20	37-51-03-EB-80-[Data0]-CHK	0	6F-37-03-02-[RC]-80-CHK
SetOSDTransparency	80h	0	80h	R	0		37-51-02-EB-80-CHK	1	6F-37-04-02-[RC]-80-[Data0]-CHK
GetOSDLanguage	80h	1	81h	W	1	OSD Language (BYTE) 0 - English 1 - Spanish 2 - Français 3 - Deutsch 4 - Português (Brasil) 5 - Pycckий 6 - Italiano 7 - [] [] [] []	37-51-03-EB-81-[Data0]-CHK	0	6F-37-03-02-[RC]-81-CHK
SetOSDLanguage	80h	1	81h	R	0		37-51-02-EB-81-CHK	1	6F-37-04-02-[RC]-81-[Data0]-CHK
GetOSDTimer	80h	3	83h	W	1	OSD Timer (BYTE) 0 - 60 seconds values in increments of 1	37-51-03-EB-83-[Data0]-CHK	0	6F-37-03-02-[RC]-83-CHK
SetOSDTimer	80h	3	83h	R	0		37-51-02-EB-83-CHK	1	6F-37-04-02-[RC]-83-[Data0]-CHK
GetOSDButtonLock	80h	4	84h	W	1	OSD Button Lock (BYTE) 0 - Unlock 1 - Lock	37-51-03-EB-84-[Data0]-CHK	0	6F-37-03-02-[RC]-84-CHK
SetOSDButtonLock	80h	4	84h	R	0		37-51-02-EB-84-CHK	1	6F-37-04-02-[RC]-84-[Data0]-CHK
ResetOSD	80h	1	80h	W	0	NONE	37-51-02-EA-8F-CHK	0	6F-37-03-02-[RC]-8F-CHK
/* SYSTEM MANAGEMENT */									
GetVersionFirmware	A0h	0	A0h	R	0	ASCII string	37-51-02-EB-A0-CHK	7	6F-37-0A-02-[RC]-A0-[Data0]-...[Data6]-CHK
GetDOCCI	A0h	2	A2h	R	0	DOCCI (BYTE) 0 - Disabled 1 - Enabled	37-51-02-EB-A2-CHK	1	6F-37-04-02-[RC]-A2-[Data0]-CHK
SetDOCCI	A0h	2	A2h	W	1		37-51-03-EB-A2-[Data0]-CHK	0	6F-37-03-02-[RC]-A2-CHK
GetDOCCConditioning	A0h	3	A3h	R	0	DOCCI Conditioning (BYTE) 0 - Disabled 1 - Enabled	37-51-02-EB-A3-CHK	1	6F-37-04-02-[RC]-A3-[Data0]-CHK
SetDOCCConditioning	A0h	3	A3h	W	2		37-51-03-EB-A3-[Data0]-CHK	0	6F-37-03-02-[RC]-A3-CHK
FactoryReset	A0h	1	A0h	W	0	NONE	37-51-02-EA-8F-CHK	0	6F-37-03-02-[RC]-8F-CHK
/* RESERVED */									
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