



Dell™ C7520QT External Control

1. Application

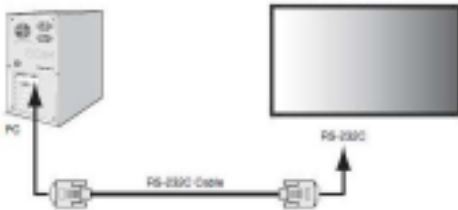
This document defines the communication method for control of the Dell LCD display C7520QT when using an external controller.

2. Connectors and wiring

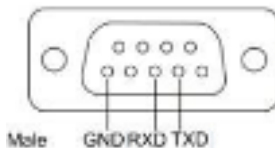
2.1 RS-232C Remote Access

Connector: 9-pin D-Sub

Cable: Straight cable or null modem cable



RS232 Pin Assignment (Facing Display)



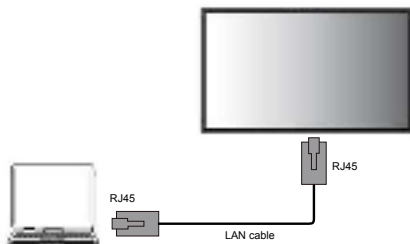
This display uses RXD, TXD and GND lines for RS-232 control.

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

2.2 LAN control

Connector: RJ-45 10/100 BASE-T

Cable: Category 5 or higher LAN cable



 **Note 2: The LAN cable is not provided by Dell**

3. Communication Parameter

3.1 RS-232C Remote access

(1) Interface	RS-232C
(2) Baud rate	9600bps
(3) Data length	8bits
(4) Parity	None
(5) Stop bit	1 bit

3.2 LAN control

(1) Communication system	TCP/IP (Internet protocol suite)
(2) Interface	Ethernet
(3) Communication layer	Transport layer (TCP) Using the payload of TCP segment.
(4) IP address	If you need to change, Default: 10.0.50.100 Please refer “Dell Web Management for Displays” section on User’s manual.
(5) Port No.	4661 (Fixed)

4. Communication Format

Control Command Syntax

[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

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

[H2] = 0x6F

[H3] = 0x37

[Len] = Length

[Reply] = Reply (0x02)

[RC] = Result Code

- 0 = Success
- 1 = Timeout
- 2 = Parameters Error
- 3 = Not connected
- 4 = Other Failure

[Cmd] = Command

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

[Chk] = Check Sum

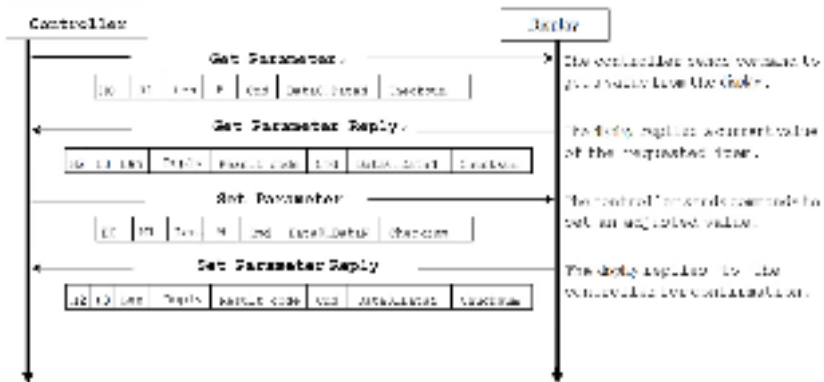
Example: Get Display Name

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

[From Display to PC] = 6F, 37, 0F, 02, 00, 01, 44, 65, 6C, 6C, 20, 43, 37, 35, 32, 30, 51, 54, 13

Checksum calculation

Xor byte by byte from first byte to the end of the command data stream.



5. Control Commands List

APIs	Parm / Retuen / Comments	Command					LSB								MSB					Reply																					CHK
		HEAD_0	HEAD_1	LEN	R/W	CMD	D0	D1	D2	D3	D4	D5	D6	D7	CHK	HEAD_0	HEAD_1	LEN	Reply	Result	CMD	D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16			
/* DISPLAY MANAGEMENT */																																									
GetPanelName	Max 10 chars (in ASCII)	37	51	02	EB	01									8E	6F	37	0F	02	00	01																				
GetPanelSerialNumber	Max 10 chars (in ASCII)	37	51	02	EB	02									8D	6F	37	10	02	00	02																				
GetBacklightHours	Display Backlight Hours (WORD) 0 - 65535	37	51	02	EB	04									8B	6F	37	05	02	00	04																				
/* POWER MANAGEMENT */																																									
GetPowerState	Power State (BYTE)	37	51	02	EB	20									AF	6F	37	04	02	00	20																				
SetPowerState - off	0 - off	37	51	03	EA	20	00								AF	6F	37	03	02	00	20																		79		
SetPowerState - on	1 - on	37	51	03	EA	20	01								AE	6F	37	03	02	00	20																		79		
SetPowerState - standby	2 - standby	37	51	03	EA	20	02								AD	6F	37	03	02	00	20																		79		
GetPowerLED	Power LED Setting (BYTE)	37	51	02	EB	21									AE	6F	37	04	02	00	21																				
SetPowerLED - off during active	0 - off during Active	37	51	03	EA	21	00								AE	6F	37	03	02	00	21																		78		
SetPowerLED - on during active	1 - on during Active	37	51	03	EA	21	01								AF	6F	37	03	02	00	21																		78		
GetPowerUSB	Power USB Setting (BYTE)	37	51	02	EB	22									AD	6F	37	04	02	00	22																				
SetPowerUSB - off during standby	0 - off during Standby	37	51	03	EA	22	00								AD	6F	37	03	02	00	22																		7B		
SetPowerUSB - on during standby	1 - on during Standby	37	51	03	EA	22	01								AC	6F	37	03	02	00	22																		7B		
ResetPower	NONE	37	51	02	EA	2F									A1	6F	37	03	02	00	2F																		76		
/* IMAGE ADJUSTMENT */																																									
GetBrightness	Brightness (BYTE)	37	51	02	EB	30									BF	6F	37	04	02	00	30																				
SetBrightness - 75	0 - 100	37	51	03	EA	30	4B								F4	6F	37	03	02	00	30																		69		
SetBrightness - 100	values in increments of 1	37	51	03	EA	30	64								DB	6F	37	03	02	00	30																		69		
SetBrightness - 0		37	51	03	EA	30	00								BF	6F	37	03	02	00	30																		69		
SetBrightnessStep - Decrease	Brightness Step 0 - Decrease (-)	37	51	03	EA	35	00								BA	6F	37	03	02	00	35																		6C		
SetBrightnessStep - Increase	1 - Increase (+)	37	51	03	EA	35	01								BB	6F	37	03	02	00	35																		6C		
GetContrast	Contrast (BYTE)	37	51	02	EB	31									BE	6F	37	04	02	00	31																				
SetContrast - 75	0 - 100	37	51	03	EA	31	4B								F5	6F	37	03	02	00	31																		68		
SetContrast - 100	values in increments of 1	37	51	03	EA	31	64								DA	6F	37	03	02	00	31																		68		
SetContrast - 0		37	51	03	EA	31	00								BE	6F	37	03	02	00	31																		68		
StepContrastStep - Decrease	Contrast Step 0 - Decrease (-)	37	51	03	EA	36	00								B9	6F	37	03	02	00	36																		6F		
StepContrastStep - Increase	1 - Increase (+)	37	51	03	EA	36	01								B8	6F	37	03	02	00	36																		6F		
GetAspectRatio	Aspect Ratio (BYTE)	37	51	02	EB	33									BC	6F	37	04	02	00	33																				
SetAspectRatio - Wide 16:9	0 - Wide 16:9	37	51	03	EA	33	00								BC	6F	37	03	02	00	33																		6A		
SetAspectRatio - 4:3	1 - Auto Resize	37	51	03	EA	33	02								BE	6F	37	03	02	00	33																		6A		
SetAspectRatio - 5:4	2 - 4:3 3 - 1:1 4 - 5:4	37	51	03	EA	33	04								B8	6F	37	03	02	00	33																		6A		
GetSharpness	Sharpness (BYTE)	37	51	02	EB	34									BB	6F	37	04	02	00	34																				
SetSharpness - 50	0 - 100	37	51	03	EA	34	32								89	6F	37	03	02	00	34																		6D		
SetSharpness - 100	values in increments of 10	37	51	03	EA	34	64								DF	6F	37	03	02	00	34																		6D		
SetSharpness - 0		37	51	03	EA	34	00								BB	6F	37	03	02	00	34																	6D			
SetSharpnessStep - Decrease	Sharpness Step 0 - Decrease (-)	37	51	03	EA	37	00								B8	6F	37	03	02	00	37																		6E		
SetSharpnessStep - Increase	1 - Increase (+)	37	51	03	EA	37	01								B9	6F	37	03	02	00	37																		6E		
/* COLOR MANAGEMENT */																																									
GetColorTempCaps	Bitwise representation of color temperatures (DWORD)	37	51	02	EB	42									CD	6F	37	07	02	00	42																				
GetColorTemp		37	51	02	EB	43									CC	6F	37	07	02	00	43																				
SetColorTemp - 5000K	0x00000001 - 5000K	37	51	06	EA	43	01	00	00	00					C8	6F	37	03	02	00	43																		1A		
SetColorTemp - 5700K	0x00000002 - 5700K	37	51	06	EA	43	02	00	00	00					CB	6F	37	03	02	00	43																		1A		
SetColorTemp - 6500K	0x00000004 - 6500K	37	51	06	EA	43	04	00	00	00					CD	6F	37	03	02	00	43																	1A			
SetColorTemp - 7500K	0x00000008 - 7500K	37	51	06	EA	43	08	00	00	00					C1	6F	37	03	02	00	43																	1A			
SetColorTemp - 9300K	0x00000010 - 9300K	37	51	06	EA	43	10	00	00	00					D9	6F	37	03	02	00	43																	1A			
SetColorTemp - 10000K	0x00000020 - 10000K	37	51	06	EA	43	20	00	00	00					E9	6F	37	03	02	00	43																	1A			
GetInputColorFormat	Input Color Format (BYTE)	37	51	02	EB	46									C9	6F	37	04	02	00	46																				
SetInputColorFormat - RGB	0 - RGB	37	51	03	EA	46	00								C9	6F	37	03	02	00	46																				
SetInputColorFormat - YPbPr	1 - YPbPr	37	51	03	EA	46	01								C8	6F	37	03	02	00	46																				

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