Contents

Dell™ C5522QT/C6522QT RS232 External Control

1. Application

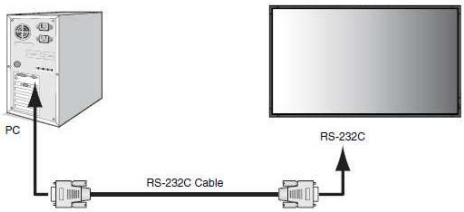
This document defines the communication method for control of the Dell LCD display C5522QT / C6522QT when using an external controller.

2. Connectors and wiring

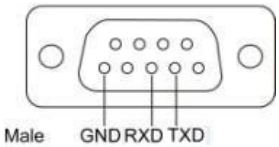
2.1 RS-232C Remote Access

Connector: 9-pin D-Sub

Cable: Straight cable or null modem cable



RS232 Pin Assignment (Facing Display)



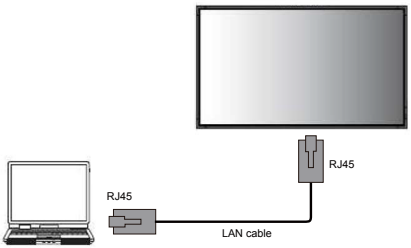
This display uses RXD, TXD and GND lines for RS-232 control.

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

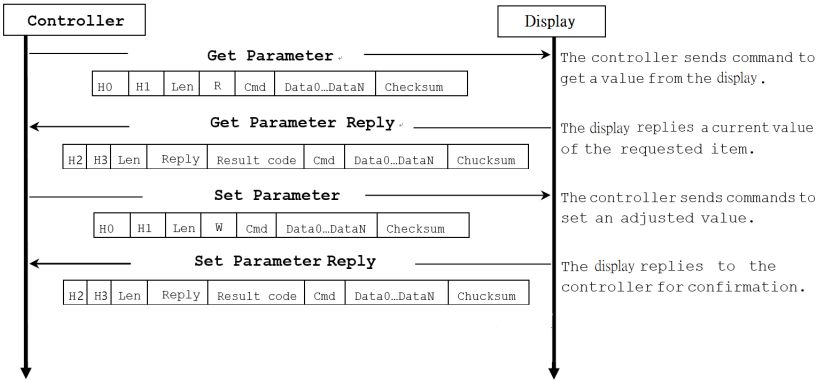
Example: Get Display Name

[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

		Command					LSB							MSB		Reply																							
APIs	**Parm / Retuen / Comments**	**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**	**CHK**
/* MONITOR MANAGEMENT */																																							
GetMonitorName	Max 10 chars (in ASCII)	37	51	02	EB	01									8E	6F	37	0F	02	00	01																		
GetMonitorSerialNumber	Max 10 chars (in ASCII)	37	51	02	EB	02									8D	6F	37	10	02	00	02																		
GetBacklightHours	Monitor 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) 0 - 100 values in increments of 1	37	51	02	EB	30									BF	6F	37	04	02	00	30																		
SetBrightness - 75		37	51	03	EA	30	4B								F4	6F	37	03	02	00	30																		69
SetBrightness - 100		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 (-) 1 - Increase (+)	37	51	03	EA	35	00								BA	6F	37	03	02	00	35																		6C
SetBrightnessStep - Increase		37	51	03	EA	35	01								BB	6F	37	03	02	00	35																		6C
GetContrast	Contrast (BYTE) 0 - 100 values in increments of 1	37	51	02	EB	31									BE	6F	37	04	02	00	31																		
SetContrast - 75		37	51	03	EA	31	4B								F5	6F	37	03	02	00	31																		68
SetContrast - 100		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 (-) 1 - Increase (+)	37	51	03	EA	36	00								B9	6F	37	03	02	00	36																		6F
StepContrastStep - 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) 0 - 100 values in increments of 10	37	51	02	EB	34									BB	6F	37	04	02	00	34																		
SetSharpness - 50		37	51	03	EA	34	32								89	6F	37	03	02	00	34																		6D
SetSharpness - 100		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 (-) 1 - Increase (+)	37	51	03	EA	37	00								B8	6F	37	03	02	00	37																		6E
SetSharpnessStep - Increase		37	51	03	EA	37	01								B9	6F	37	03	02	00	37																		6E
/* COLOR MANAGEMENT */																																							
GetColorTempCaps	Bitwise representation of color temperatures	37	51	02	EB	42									CD	6F	37	07	02	00	42																		
GetColorTemp	(DWORD)	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																		1F
SetInputColorFormat - YPbPr	1 - YPbPr	37	51	03	EA	46	01								C8	6F	37	03	02	00	46																		1F

GetColorPresetCaps	Bitwise representation of color presets	37	51	02	EB	47					C8	6F	37	07	02	00	47	
GetColorPreset	0x00000001 - Standard	37	51	02	EB	48					C7	6F	37	07	02	00	48	
SetColorPreset - Standard	0x00000020 - Color Temp	37	51	06	EA	48	01	00	00	00	C3	6F	37	03	02	00	48	11
SetColorPreset - ComfortView	0x00000080 - Custom Color	37	51	06	EA	48	00	04	00	00	C6	6F	37	03	02	00	48	11
SetColorPreset - Custom	0x00000400 - ComfortView	37	51	06	EA	48	80	00	00	00	42	6F	37	03	02	00	48	11
SetColorPreset - Color Temp		37	51	06	EA	48	20	00	00	00	E2	6F	37	03	02	00	48	11
GetCustomColor	Custom color type (BYTE)	37	51	03	EB	49					C7	6F	37	06	02	00	49	
SetCustomColor - Gain_RGB (100,100,10	0 - Gain R value (BYTE) - 0 - 100	37	51	06	EA	49	00	64	64	64	A7	6F	37	03	02	00	49	10
SetCustomColor - Gain_RGB (50,50,50)	G value (BYTE) - 0 - 100 B value (BYTE) - 0 - 100	37	51	06	EA	49	00	32	32	32	F1	6F	37	03	02	00	49	10
SetCustomColor - Gain_RGB (0,0,0)		37	51	06	EA	49	00	00	00	00	C3	6F	37	03	02	00	49	10
ResetColor	NONE	37	51	02	EA	4F					C1	6F	37	03	02	00	4F	16
/* VIDEO INPUT MANAGEMENT */																		
GetAutoSelect	Auto Select (BYTE)	37	51	02	EB	60					EF	6F	37	04	02	00	60	
SetAutoSelect - off	0 - off	37	51	03	EA	60	00				EF	6F	37	03	02	00	60	39
SetAutoSelect - on	1 - on	37	51	03	EA	60	01				EE	6F	37	03	02	00	60	39
GetVideoInputCaps	Bitwise representation of video inputs (DWORD)	37	51	02	EB	61					EE	6F	37	07	02	00	61	
GetVideoInput	0x00000001 - HDMI1 0x00000002 - HDMI2	37	51	02	EB	62					ED	6F	37	07	02	00	62	
SetVideoInput - HDMI1	0x00000004 - HDMI3 0x00000400 - HDMI4	37	51	06	EA	62	01	00	00	00	E9	6F	37	03	02	00	62	3B
SetVideoInput - HDMI2	0x00000008 - DP1 0x00001000 - USB-C	37	51	06	EA	62	02	00	00	00	EA	6F	37	03	02	00	62	3B
SetVideoInput - HDMI3		37	51	06	EA	62	04	00	00	00	EC	6F	37	03	02	00	62	3B
SetVideoInput - HDMI4		37	51	06	EA	62	00	04	00	00	EC	6F	37	03	02	00	62	3B
SetVideoInput - DP1		37	51	06	EA	62	08	00	00	00	E0	6F	37	03	02	00	62	3B
SetVideoInput - USB-C		37	51	06	EA	62	00	10	00	00	F8	6F	37	03	02	00	62	3B
/* OSD MANAGEMENT */																		
GetOSDTransparency	OSD Transparency (BYTE)	37	51	02	EB	80					0F	6F	37	04	02	00	80	
SetOSDTransparency - 20	0 - 100	37	51	03	EA	80	14				1B	6F	37	03	02	00	80	D9
SetOSDTransparency - 100	values in increments of 20	37	51	03	EA	80	64				6B	6F	37	03	02	00	80	D9
SetOSDTransparency - 0		37	51	03	EA	80	00				0F	6F	37	03	02	00	80	D9
GetOSDLanguage	OSD Language (BYTE)	37	51	02	EB	81					0E	6F	37	04	02	00	81	
SetOSDLanguage - English	0 - English	37	51	03	EA	81	00				0E	6F	37	03	02	00	81	D8
SetOSDLanguage - Español	1 - Español	37	51	03	EA	81	01				0F	6F	37	03	02	00	81	D8
SetOSDLanguage - Français	2 - Français	37	51	03	EA	81	02				0C	6F	37	03	02	00	81	D8
SetOSDLanguage - Deutsch	3 - Deutsch	37	51	03	EA	81	03				0D	6F	37	03	02	00	81	D8
SetOSDLanguage - Português (Brasil)	4 - Português (Brasil)	37	51	03	EA	81	04				0A	6F	37	03	02	00	81	D8
SetOSDLanguage - Русский	5 - Русский	37	51	03	EA	81	05				0B	6F	37	03	02	00	81	D8
SetOSDLanguage - 简体中文	6 - 简体中文	37	51	03	EA	81	06				08	6F	37	03	02	00	81	D8
SetOSDLanguage - 日本語	7 - 日本語	37	51	03	EA	81	07				09	6F	37	03	02	00	81	D8
GetOSDTimer	OSD Timer (BYTE)	37	51	02	EB	83					0C	6F	37	04	02	00	83	
SetOSDTimer - 20	5 - 60 seconds	37	51	03	EA	83	14				18	6F	37	03	02	00	83	DA
SetOSDTimer - 60	values in increments of 1	37	51	03	EA	83	3C				30	6F	37	03	02	00	83	DA
SetOSDTimer - 5		37	51	03	EA	83	05				09	6F	37	03	02	00	83	DA
GetOSDButtonLock	OSD Button Lock (BYTE)	37	51	02	EB	84					0B	6F	37	04	02	00	84	
SetOSDButtonLock - Unlock	0 - Unlock	37	51	03	EA	84	00				0B	6F	37	03	02	00	84	DD
SetOSDButtonLock - Lock	1 - Lock	37	51	03	EA	84	01				0A	6F	37	03	02	00	84	DD
ResetOSD	NONE	37	51	03	EA	8F	01				01	6F	37	03	02	00	8F	D6
/* SYSTEM MANAGEMENT */																		
GetVersionFirmware	Max 10 chars (in ASCII)	37	51	02	EB	A0					2F	6F	37	0A	02	00	A0	
GetDDCCI	DDCCI (BYTE)	37	51	02	EB	A2					2D	6F	37	04	02	00	A2	
SetDDCCI - Enable	0 - Disabled	37	51	03	EA	A2	01				2C	6F	37	03	02	00	A2	FB
SetDDCCI - Disable	1 - Enabled	37	51	03	EA	A2	00				2D	6F	37	03	02	00	A2	FB
GetLCDConditioning	LCD Conditioning (BYTE)	37	51	02	EB	A3					2C	6F	37	04	02	00	A3	
SetLCDConditioning - Disable	0 - Disabled	37	51	03	EA	A3	00				2C	6F	37	03	02	00	A3	FA
SetLCDConditioning - Enable	1 - Enabled	37	51	03	EA	A3	01				2D	6F	37	03	02	00	A3	FA
FactoryReset	NONE	37	51	02	EA	AF					21	6F	37	03	02	00	AF	F6
/* AUDIO MANAGEMENT */																		
GetVolumeInput	Volume (BYTE)	37	51	02	EB	B0					3F	6F	37	04	02	00	B0	
SetVolumeInput - 0	0 - 100	37	51	03	EA	B0	00				3F							
SetVolumeInput - 50	values in increments of 1	37	51	03	EA	B0	32				0D							
SetVolumeInput - 100		37	51	03	EA	B0	64				5B	6F	37	03	02	00	B0	E9
SetVolumeStep -Decrease	Volume Step 0 - Decrease (-)	37	51	03	EA	B3	00				3C	6F	37	03	02	00	B3	EA
SetVolumeStep -Increase	1 - Increase (+)	37	51	03	EA	B3	01				3D	6F	37	03	02	00	B3	EA
GetSpeakerMute	Mute (BYTE)	37	51	02	EB	B1					3E	6F	37	04	02	00	B1	
SetSpeakerMute - Unmute	0 - Disabled	37	51	03	EA	B1	00				3E	6F	37	03	02	00	B1	E8
SetSpeakerMute - Mute	1 - Enabled	37	51	03	EA	B1	01				3F	6F	37	03	02	00	B1	E8
AudioReset	NONE	37	51	02	EA	BF					31	6F	37	03	02	00	BF	E6

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