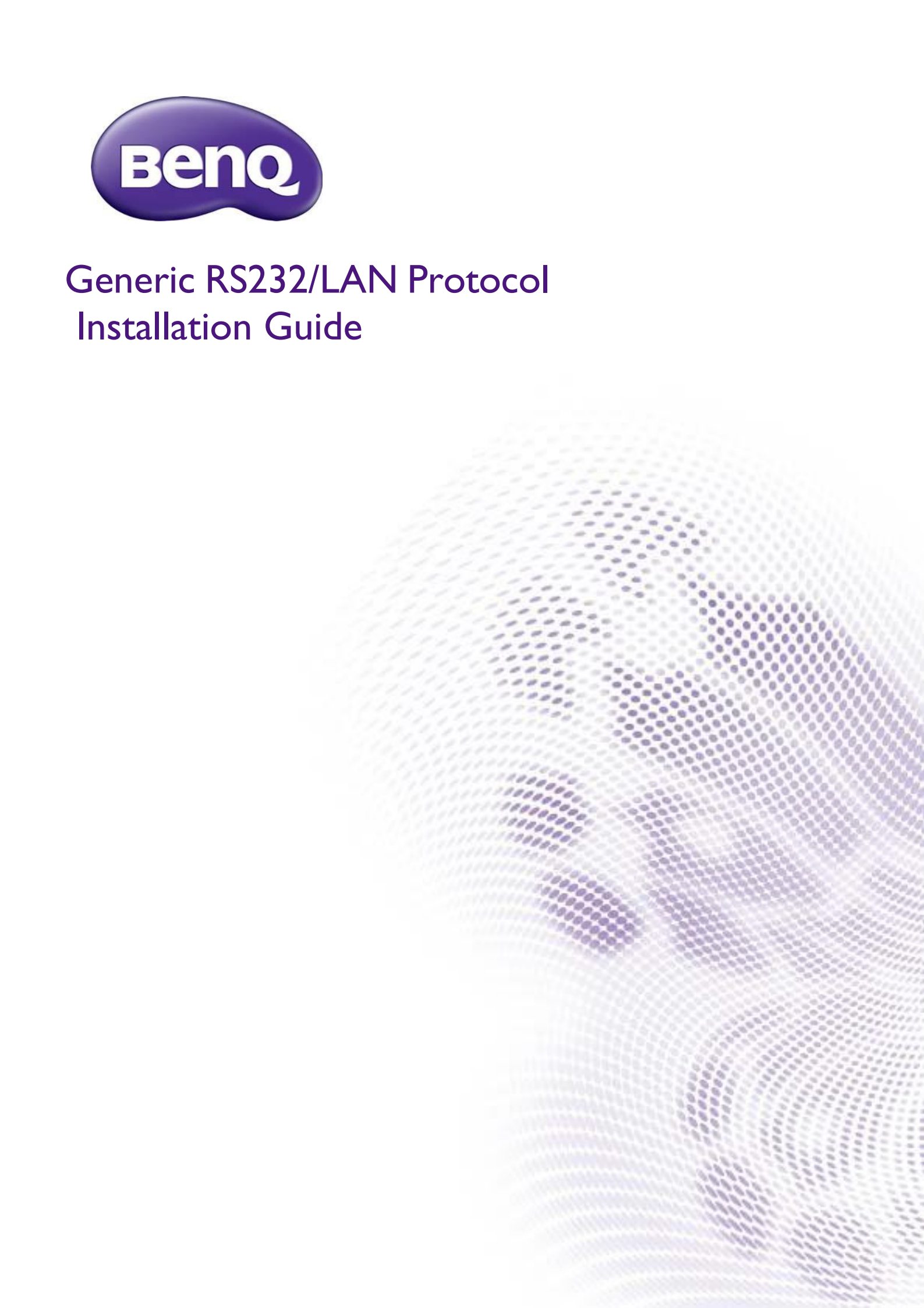
Generic RS232/LAN Protocol Installation Guide



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Introduction

This document describes the hardware interface spec and software protocols of RS232 interface communication between Commercial Display and PC or other control unit with RS232 protocol. This set protocol allow users to assign the ID in the command to control the specify ID monitor. The set protocol contains two sections command: Set-Function and Get-Function

In this document, "PC" represents all the control units that can send or receive the RS232 protocol command.

Wire arrangement

Wire Arrangement		
P1	Color	P2
1	Black	1
2	Brown	3
3	Red	2
4	Orange	4
5	Yellow	5
6	Green	6
7	Blue	7
8	Purple	8
9	Gray	9
Case	Drain wire	Case

RS232 pin assignment

Pin	Description	Pin	Description
1	NC	2	RXD
3	TXD	4	NC
5	GND	6	NC
7	RTS	8	CTS
9	NC		

Use of direct cable requires use with PC.

Communication setting

Baud rate select: 9600bps (fixed)/ Data bits: 8 bits (fixed)

Parity: None (fixed)/ Stop Bits: 1(fixed)

Command message reference

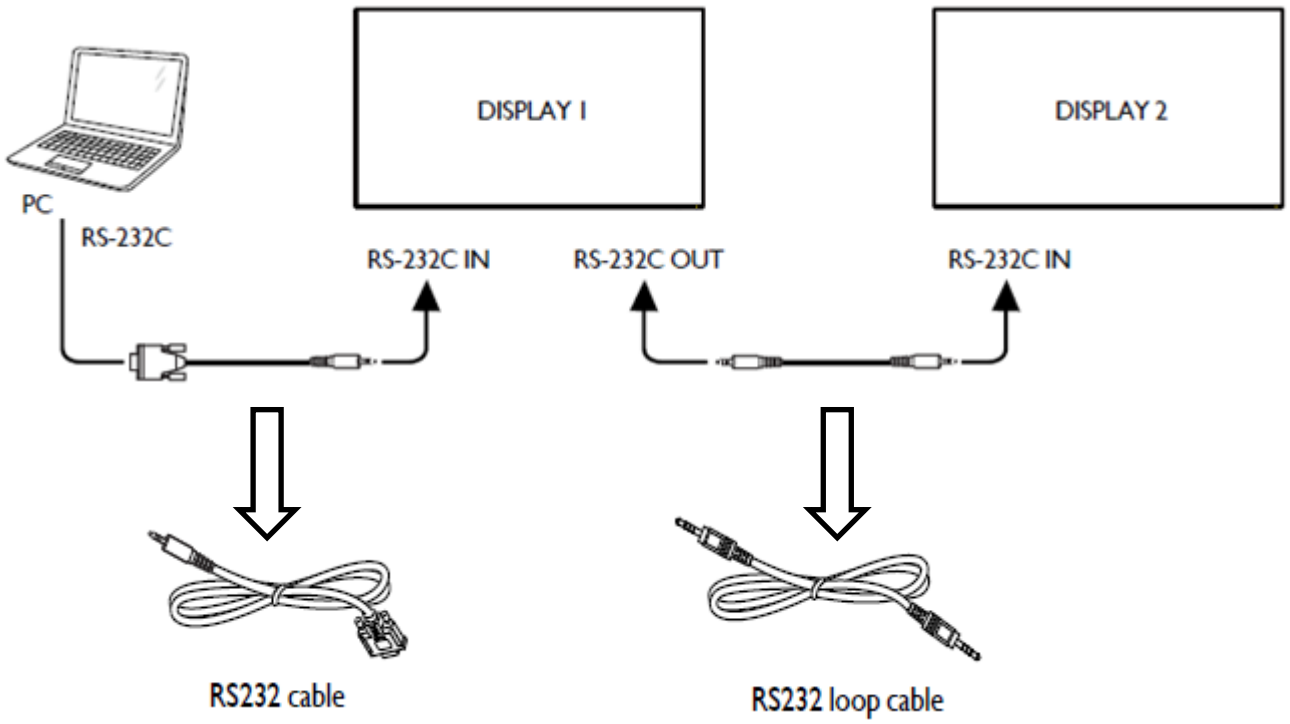
PC sends to Monitor command packet followed by "CR". Every time PC sends control command to the Monitor, the Monitor shall response as follows:

1. If the message is received correctly, it will send "+" (02Bh) followed by "CR" (00Dh).
2. If the message is received incorrectly, it will send "-" (02Dh) followed by "CR" (00Dh).

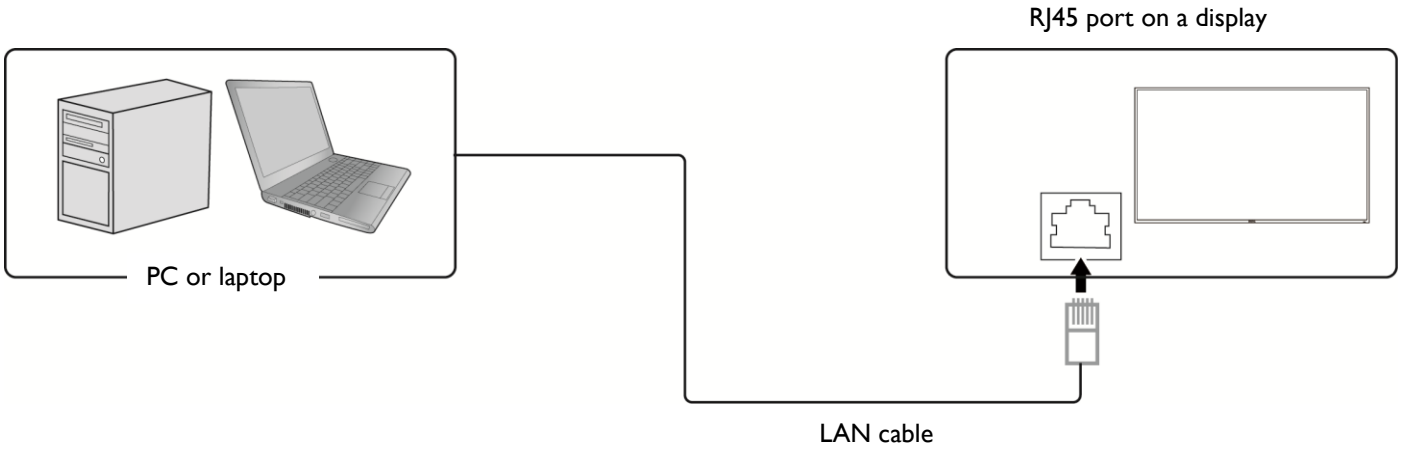
Connections and communication settings

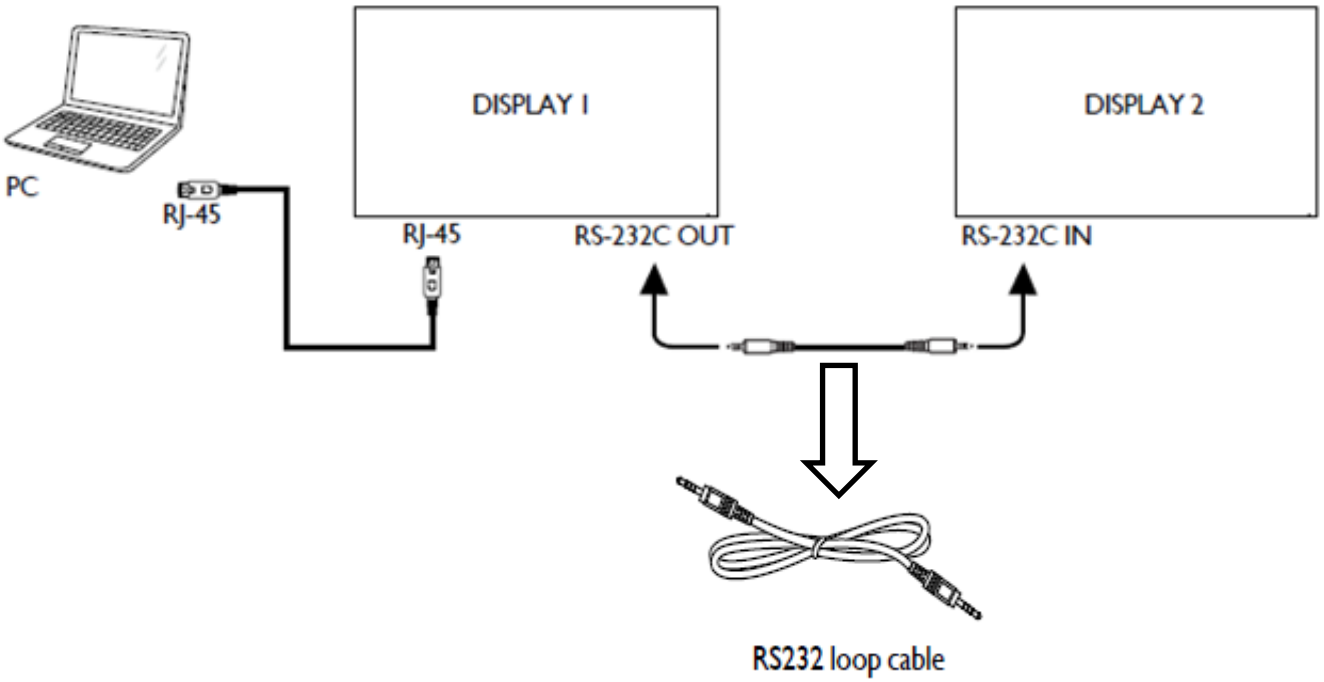
Choose one of the connections and set up properly before RS232 control.

RS232 serial port connection



RS232 via LAN

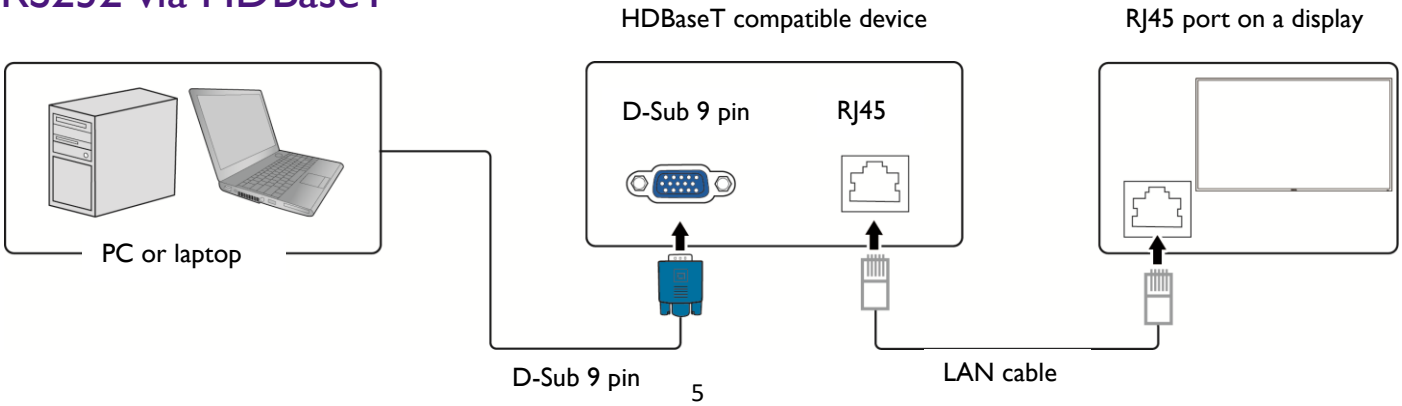




Find the Wired LAN IP address of the connected display from the OSD menu and make sure the display and the computer are within the same network.

IP Protocol Port: 4660

RS232 via HDBaseT



Protocol Command Description

Item	Description
Length	Total Bytes of Message excluding "CR"
TV ID	Identification for each of TV
Command Type	Identify command type, "s" (0x73h): Set Command "g" (0x67h): Get Command "r" (0x72h): Reply Command "+" (0x2Bh): Valid command Reply "-" (0x2Dh): Invalid command Reply
Command	Function command code: One byte ASCII code
Value [1~3]	Three bytes ASCII that defines the value
CR	0x0D

Set-function listing

The PC can control the LCD Monitor for specific actions. The Set-Function command allows you to control the LCD monitor behavior in a remote sit through the RS232 port. The Set-Function packet format consists of 11 bytes.

Set-function description

Item	Description
Length	Total Bytes of Message excluding "CR"
TV ID	Identification for each of TV TV ID is “01” for LAN control
Command Type	Identify command type, "s" (0x73h): Set Command
Command	Function command code: One byte ASCII code
Value [1~3]	Three bytes ASCII that defines the value
CR	0x0D

Set-function format

Send: (Command Type="s")

Name	Length	ID	Command type	Command	Value1	Value2	Value3	CR
Byte count	1 Byte	2 Byte	1 Byte	1 Byte	1 Byte	1 Byte	1 Byte	1 Byte

Bytes order	1	2~3	4	5	6	7	8	9

Reply: (Command Type="+" or "-")

Name	Length	ID	Command type	CR
Byte count	1 Byte	2 Byte	1 Byte	1 Byte
Bytes order	1	2~3	4	5

Example 1: Set Brightness as 76 for TV-02 and this command is valid.

Send (Hex Format)

Name	Length	ID	Command type	Command	Value1	Value2	Value3	CR
Hex	0x38	0x30 0x32	0x73	0x24	0x30	0x37	0x36	0x0D

Reply (Hex Format)

Name	Length	ID	Command type	CR
Hex	0x34	0x30 0x31	0x2B	0x0D

Example 2: Set Brightness as 176 for TV-02 and this command is NOT valid.

Send (Hex Format)

Name	Length	ID	Command type	Command	Value1	Value2	Value3	CR
Hex	0x38	0x30 0x32	0x73	0x24	0x31	0x37	0x36	0x0D

Reply (Hex Format)

Name	Length	ID	Command type	CR
Hex	0x34	0x30 0x31	0x2D	0x0D

Example 3: Set Tint as 32 for TV-03 and this command is valid.

Send (Hex Format)

Name	Length	ID	Command type	Command	Value1	Value2	Value3	CR
Hex	0x38	0x30 0x33	0x73	0x27	0x30	0x33	0x32	0x0D

Reply (Hex Format)

Name	Length	ID	Command type	CR
Hex	0x34	0x30 0x31	0x2B	0x0D

Example 4: Set Tint as 75 for TV-03 and this command is NOT valid.

Send (Hex Format)

Name	Length	ID	Command type	Command	Value1	Value2	Value3	CR
Hex	0x38	0x30 0x33	0x73	0x27	0x30	0x37	0x35	0x0D

Reply (Hex Format)

Name	Length	ID	Command type	CR
Hex	0x34	0x30 0x31	0x2D	0x0D

Example 5: Set Brightness as 76 for all TV and this command is valid.

Send (Hex Format)

Name	Length	ID	Command type	Command	Value1	Value2	Value3	CR
Hex	0x38	0x39 0x39	0x73	0x24	0x30	0x37	0x36	0x0D

No Reply.

Set-function table

Set Function	Len	Monitor ID	Cmd Type	Cmd Code (Hex)	RS232/LAN	Remark
Power	8		s	21	000 : Monitor Off	for Android LAN control is Screen Blank & system mute
					001 : Monitor On	for Android LAN control is Screen Blank & system mute
					002 : System Standby (or android off)	
					003 : System On	
Video Source	8		s	22	000 :VGA	
					001 : HDMI1	
					002 : HDMI2	
					006 : DVI-D	
					007 : DisplayPort	
					009 : Media Player	
					101: Android	
					102: Custom	switch to app assigned by user
					104 : Browser	
					105 : PDF Reader	
					106 : X-Sign	
Contrast	8		s	23	000 ~ 100	
Brightness	8		s	24	000 ~ 100	
Sharpness	8		s	25	000 ~ 100	
Picture Reset	8		s	26	000	Value does not matter
Aspect Ratio	8		s	31	000 : Full	
					001 : 4:3	
					002 : 1:1	
					003 : 16:9	
					004 : 21:9	
					005 : Custom	
Language	8		s	32	000: English	
					001: Français	
					002: Español	
					003: 繁中	

					004: 简中	
					006: German	
					007: Dutch	
					008: Polish	
					009: Russia	
					010:Czech	
					011:Danish	
					012:Swedish	
					013:Italian	
					014:Romanian	
					015:Norwegian	
					016:Finnish	
					017:Greek	
					019:Arabic	
					020:Japanse	
					021:Thailand	
					022:Korean	
Volume	8		s	35	000 ~ 100	
Mute	8		s	36	000: Off	
					001: On	
Treble	8		s	37	000~100	
Bass	8		s	38	000~100	
Balance	8		s	39	000~100	
Sound Reset	8		s	3B	000	
Monitor ID	8		s	3D	001 ~ 098	
Remote control	8		s	40	000 : Vol+ (right)	
					001 : Vol- (left)	
					002 : mute key (Mute)	
					010 : Remote (up)	
					011 : Remote (down)	
					020 : Remote Menu	
					021 : Remote Source	
IR Control	8		s	42	000: Lock All	
					001:UnLock All	
					002:Primary (Master)	
					003:Secondary (Daisy Chain PD)	

					004:Lock All but Power	
					005:Lock All but Volume	
					006:IR_LOCK_ALL_BUT_VOLUME_AND_POWER	
Button&IR Control	8		s	43	000: Disable	All the buttons at both keypad board and remote controller have no function.
					001: Enable	
Button Control	8		s	45	000 :Lock All	
					001:Unlock All	
					002: Lock all but Power	
					003: Lock all but Volume	
					004:KEY_LOCK_ALL_BUT_VOLUME_AND_POWER	
Image Retention / Pixel Shift	8		s	47	000: Off	
					001~091: (10~900s, 91:Auto)	
					100 : on (auto)	
All Reset	8		s	7E	000	Value does not matter
Picture Mode	8		s	81	000 : Standard	
					001 : Highbright	
					002 : Cinema	
					003 : sRGB	
Chroma / Color	8		s	82	000 ~ 100	
Phase / Tint	8		s	83	000 ~ 100	
Color Temp	8		s	86	000 : 3000K	
					001 : 4000K	
					002 : 5000K	
					003 : 6500K	
					004 : 7500K	
					005 : 9300K	
					006 : 10000K	
					007 : Native	
					008 : User1	
					009 : User2	

Audio Source	8		s	88	000 :Analog	
					002 : Digital	
					004 :Displayport	
PAP Enable	8		s	8A	000: Off	
					001: PIP	
					002: PBP	
					003: SUB_QUICK_SWAP	
PAP Size	8		s	8D	000 : Small 001 : Medium 002 : Large	
PIP Position	8		s	8E	000: Upper Left	
					001: Upper Right	For VGA only, execute auto adjustment.
					002: Lower Left	
					003: Lower Right	
Auto Adjustment Execute	8		s	8F	000	
VGA Clock frequency	8		s	90	000 ~ 100	
VGA Phase	8		s	91	000 ~ 100	
VGA H.Position	8		s	92	000 ~ 100	
VGA V.Position	8		s	93	000 ~ 100	
Over Scan	8		s	97	000: Off	
					001: On	
RTC Year	8		s	98	000 ~ 099	Ex: value=012 means Year 2012 If the setting is illegal (Ex: Year 2013 doesn't have the date Feb/29), return "Invalid Command Reply".
RTC Month	8		s	99	001 ~ 012	Ex: value=001 means January If the setting is illegal (Ex: February doesn't have the date Feb/31), return "Invalid Command Reply".
RTC Day	8		s	9A	001 ~ 031	If the setting is illegal (Ex: Day31 doesn't exist in April), return "Invalid Command Reply".
RTC Hour	8		s	9B	000 ~ 023	For touch model only.

RTC Minute	8		s	9C	000 ~ 059	
OSD Rotation	8		s	9F	000: Landscape	
					001: Portrait	
H Monitor	8		s	A4	001 ~ 015	
V Monitor	8		s	A5	001 ~ 010	
Tiling Position	8		s	A6	1~150	
Frame Comp.	8		s	A8	000: Off	
					001: On	
Power Save	8		s	A9	000: Mode 1	APM_ON ECO_LOW_POWER
					001: Mode 2	APM_OFF ECO_LOW_POWER
					002: Mode 3	APM_ON ECO_NORMAL
					003: Mode 4	APM_OFF ECO_NORMAL
Switch on Status	8		s	AB	000 : Power Off	
					001 : Force On	
					002 : Last Status	
Display Wall LED	8		s	AE	000: Off	
					001: On	
Display Wall Power On Delay	8		s	AF	000: Off	
					001: Auto	
					002 ~ 255 : 2 ~255 sec	
On/Off Timer	14		s	E0	Byte1~Byte9 (1) Byte1: Decide which Timer is selected, and its enable/disable setting. Byte1[3:0]=0x1~0x07. There are totally 7 Timers, this value is used to decide which Timer is selected. Byte1[7]: Reserved, should be 0. Byte1[6]: The Timer is enable or not. Byte1[6]=1	Modified the value of Select Video Source Note: Some of the Video Sources are not supported if the model doesn't have this feature.. Ex: Byte1=0x01 means the Timer no.1 is selected and disable. Ex: Byte1=0x41 means the Timer no.1 is select and enable, and its both On and Off Timers are disable. Ex: Byte1=0x61 means the Timer no.1 is select and enable, and its On Timer is

					means enable. Byte1[5]: The On Timer is enable or not. Byte1[5]=1 means enable. Byte1[4]: The Off Timer is enable or not. Byte1[4]=1 means enable. (2) Byte2: The Day of the On/Off Timer. bit0 for Sunday, bit1 for Monday, bit2 for Tuesday, bit3 for Wednesday, bit4 for Thursday, bit5 for Friday, bit6 for Saturday, bit7 for Everyday. (3) Byte3: The Hour of the On Timer. Byte3=0x00~**0x18**. (4) Byte4: The Minute of the On Timer. Byte4=0x00~**0x3C**. (5) Byte5: The Hour of the Off Timer. Byte5=0x00~0x**18**. (6) Byte6: The Minute of the Off Timer. Byte6=0x00~0x**3B**. (7) Byte7: Select the Video Source. 0x00=VGA, 0x01=HDMI1, 0x02=HDMI2, 0x06=DVI, 0x07=DisplayPort, 0x09=Multi-Media. 0x65=Android, 0x68=Browser, 0x69=PDF Reader, 6A=X-Sign, 0xFF=Default (Last Channel)	enable, Off Timer is disable. Ex: Byte1=0x71 means the Timer no.1 is select and enable, and its both On and Off Timers are enable. Ex: Byte1=0x53 means the Timer no.3 is select and enable, and its On Timer is disable, Off Timer is enable. Ex: Byte2=0x02 means the Timer is on Monday. Ex: Byte3=0x08, Byte4=0x1E means the On Timer is at 8:30. Ex: Byte5=0x17, Byte6=0x00 means the Off Timer is at 23:00. Ex: Byte7=0x00 means the selected Video Source is VGA.

					(8) Byte8~9 are reserved, and should be 0x00.	
WoL	8		s	F0	000: Off	For Wake on Lan feature
					001: On	

Get-function listing

The PC can interrogate the LCD Monitor for specific information. The Get-Function packet format consists of 5 bytes which are similar to the Set-Function packet structure. Note that the "Value" byte is always = 00.

Get-function description

Item	Description
Length	Total Bytes of messages excluding "CR"
TV ID	Identification for each of TV
Command Type	Identify command type, "g" (0x67h): Get Command
Command	Function command code: One byte ASCII code
Value [1~3]	Three bytes ASCII that defines the value NOTE: To get backlight senor, thermal sensor, and ambient sensor, you need four bytes ASCII that defines the value and the length is 9.
CR	0x0D

Get-function format

Send: (Command Type="g")

Name	Length	ID	Command type	Command	Value1	Value2	Value3	CR
Byte count	1 Byte	2 Byte	1 Byte	1 Byte	1 Byte	1 Byte	1 Byte	1 Byte
Bytes order	1	2~3	4	5	6	7	8	9

Reply: (Command Type="r" or "-")

If the Command is valid, Command Type ="r"

Name	Length	ID	Command type	Command	Value1	Value2	Value3	CR
Byte count	1 Byte	2 Byte	1 Byte	1 Byte	1 Byte	1 Byte	1 Byte	1 Byte
Bytes order	1	2~3	4	5	6	7	8	9

If the Command is Not valid, Command Type="-"

Name	Length	ID	Command type	CR
Byte count	1 Byte	2 Byte	1 Byte	1 Byte
Bytes order	1	2~3	4	5

Example 1: Get Brightness from TV-05 and this command is valid.

The Brightness value is 67.

Send (Hex Format)

Name	Length	ID	Command type	Command	Value1	Value2	Value3	CR
Hex	0x38	0x30 0x35	0x67	0x62	0x30	0x30	0x30	0x0D

Reply (Hex Format)

Name	Length	ID	Command type	Command	Value1	Value2	Value3	CR
Hex	0x38	0x30 0x35	0x72	0x62	0x30	0x36	0x37	0x0D

Example 3: Get Tint from TV-0007 and this command is valid.

The Tint value is 32.

Send (Hex Format)

Name	Length	ID	Command type	Command	Value1	Value2	Value3	CR
Hex	0x38	0x30 0x37	0x67	0X65	0x30	0x30	0x30	0x0D

Reply (Hex Format)

Name	Length	ID	Command type	Command	Value1	Value2	Value3	CR
Hex	0x38	0x30 0x37	0x72	0x65	0x30	0x33	0x32	0x0D

Example 4: Get Tint from TV-07, but the Brightness command ID is error and it is NOT in the command table.

Send (Hex Format)

Name	Length	ID	Command type	Command	Value1	Value2	Value3	CR
Hex	0x38	0x30 0x37	0x67	0XD7	0x30	0x30	0x30	0x0D

Reply (Hex Format)

Name	Length	ID	Command type	CR
Hex	0x34	0x30 0x31	0x2D	0x0D

Example 5: Get backlight sensor from TV-0007 and this command is valid.
The lux value is 1786 (ASCII code).
Send (Hex Format)

Name	Length	ID	Command type	Command	Value1	Value2	Value3	Value4	CR
Hex	0x39	0x30 0x37	0x67	0X6F	0x30	0x30	0x30	0x30	0x0D

Reply (Hex Format)

Name	Length	ID	Command type	Command	Value1	Value2	Value3	Value4	CR
Hex	0x39	0x30 0x37	0x72	0X6F	0x31	0x37	0x38	0x36	0x0D

Example 6: Get ambient sensor from TV-0007 and this command is valid.
The lux value is 1568 (ASCII code).
Send (Hex Format)

Name	Length	ID	Command type	Command	Value1	Value2	Value3	Value4	CR
Hex	0x39	0x30 0x37	0x67	0X70	0x30	0x30	0x30	0x30	0x0D

Reply (Hex Format)

Name	Length	ID	Command type	Command	Value1	Value2	Value3	Value4	CR
Hex	0x39	0x30 0x37	0x72	0X70	0x31	0x35	0x36	0x38	0x0D

Example 7: Get thermal sensor from TV-0007 and this command is valid.
The value is +075 degree (ASCII code).
NOTE: Positive degree is "+"ASCII code and negative degree is "-"ASCII code.
Send (Hex Format)

Name	Length	ID	Command type	Command	Value1	Value2	Value3	Value4	CR
Hex	0x39	0x30 0x37	0x67	0X71	0x30	0x30	0x30	0x30	0x0D

Reply (Hex Format)

Name	Length	ID	Command type	Command	Value1	Value2	Value3	Value4	CR
Hex	0x39	0x30 0x37	0x72	0X71	0x2B	0x30	0x37	0x35	0x0D

Example 8: Get Running Hours from TV-0007 and this command is valid. The value is 21,356 hours (ASCII code).
Send (Hex Format)

Name	Length	ID	Command type	Command	Value1	Value2	Value3	Value4	Value5	CR
Hex	0x3A	0x30 0x37	0x67	0X76	0x30	0x30	0x30	0x30	0x30	0x0D

Reply (Hex Format)

Name	Length	ID	Command type	Command	Value1	Value2	Value3	Value4	Value5	CR
Hex	0x3A	0x30 0x37	0x72	0X76	0x32	0x31	0x33	0x35	0x36	0x0D

PC Get-function command to LCD Monitor

Get Function	Len	ID	Cmd Type	Cmd Code (Hex)		Remark
Model Info	20		g	20	(1) Input value: Byte1 - Byte2 - Byte3…Byte15 Byte2~Byte11=0x00 Byte1=0x01: Get Customer Name Byte1=0x02: Get Customer Model Name Byte1=0x04: Get Scaler Firmware Version Byte1=0x05: Get LAN Firmware Version Byte1=0x06: Get Serial Number (2) Return value: Byte1 - Byte2 - Byte3…Byte15 The Byte1 value at the return value should be the same as the value of Byte1 at input value. Byte2~Byte15 should be ASCII format. Ex: If Customer=Generic, Byte1=0x01, Byte2='G', Byte3='e',...Byte8='c', Byte9~Byte11=0x00. Ex: If the Scaler Firmware Version=1.02, Byte1=0x03, Byte2='1', Byte3='.', Byte4='0', Byte5='2', Byte6~Byte11=0x00.	MDA : Byte1=0x01: Get Customer Name -> BENQ Byte1=0x02: Get Customer Model Name -> by project Byte1=0x04: Get Scaler Firmware Version Byte1=0x05: Get LAN Firmware Version Byte1=0x06: Get Serial Number
Signal Status	8		g	22	000: Signal unstable	
					001: Signal stable (Active Sync exists)	
Treble	8		g	37	000~100	OSD value=RS232 value-50
Bass	8		g	38	000~100	OSD value=RS232 value-50
Balance	8		g	39	000~100	OSD value=RS232 value-50
Contrast	8		g	61	000 ~ 100	

Brightness	8		g	62	000 ~ 100	
Sharpness	8		g	63	000 ~ 100	
Volume	8		g	66	000 ~ 100	
Mute	8		g	67	000: Off	
					001: On	
IR Control	8		g	68	000 : Lock All	
					001: Unlock All	
					002 : Primary (Master)	
					003 : Secondary (Daisy Chain PD)	
					004:Lock All but Power	
					005:Lock All but Volume	
					006:IR_LOCK_ALL_BUT_VOLUME_AND_POWER	
Button&IR Control	8		g	69	000: Disable	All the buttons at both keypad board and remote controller have no function.
					001: Enable	
Video Source	8		g	6A	000 :VGA	
					001 : HDMI1	
					002 : HDMI2	
					006 : DVI-D	
					007 : DisplayPort	
					009 : Media Player	
					101 : Android	
					102 : Custom	
					104 : Browser	
					105 : PDF Reader	
					106 : X-Sign	
Power	8		g	6C	002 : System Standby (or android off)	
					003 : System On	
Thermal Sensor Value	10		g	71	(1) Input value: Byte1-Byte2-...Byte5 (a) Byte1=0x01: Get the thermal sensor value from main board (b) Byte2~Byte5 are reserved, should b 0x00 (2) Return value: Byte1-	Ex: If the temperature 5℃is from main board, the return value should be: Byte1=0x01, Byte2=0x2B, Byte3=0x30, Byte4=0x30, Byte5=0x35. Ex: If the temperature -15℃is from keypad board, the return value should be: Byte1=0x02, Byte2=0x2D, Byte3=0x30, Byte4=0x31, Byte5=0x35.

					Byte2-...Byte5 (a) Byte1=0x01: The thermal sensor value is from main board 0x02: The thermal sensor value is rom keypad board (b) Byte2: If the thermal value is >=0, Byte2='+' (0x2B) If the thermal value is <0, Byte2='-' (0x2D) (c) Byte3~Byte5: The absolute value of the temperature, in ASCII format.	
Image Retention / Pixel Shift	8		g	72	000: Off	
					001~091 (1~90:10~900s, 91:Auto)	
Button Control	8		g	73	000 : Lock All	All the buttons at the keypad board have no function
					001 : Unlock All	
					002: Lock all but Power	
					003: Lock all but Volume	
					004:KEY_LOCK_ALL_BUT_VOLUME_AND_POWER	
Monitor ID	8		g	75	001 ~ 098	
Operation Time	10		g	76	00000 ~ 99999	unit is hour
Aspect Ratio	8		g	77	000 : Full	
					001 : 4:3	
					002 : 1:1	
					003 : 16:9	
					004 : 21:9	
					005 : Custom	
Language	8		g	78	000: English	
					001: Français	
					002: Español	
					003: 繁中	
					004: 简中	
					006: German	

					007: Dutch	
					008: Polish	
					009: Russia	
					010:Czech	
					011:Danish	
					012:Swedish	
					013:Italian	
					014:Romanian	
					015:Norwegian	
					016:Finnish	
					017:Greek	
					019:Arabic	
					020:Japanse	
					021:Thailand	
					022:Korean	
Display Wall LED	8		g	AE	000: OFF	
					001: ON	
Display Wall Power On Delay	8		g	AF	000 ~ 255 000: Off 001: Auto 002 ~ 255 : Sec.	
Picture Mode	8		g	B1	000 : Standard	
					001 : Highbright	
					002 : Cinema	
					003 : sRGB	
Chroma (Color)	8		g	B2	000 ~ 050	
Phase (Tint)	8		g	B3	000 ~ 050	
Backlight	8		g	B4	000 ~ 100	
Color Temp	8		g	B6	000 : 3000K	
					001 : 4000K	
					002 : 5000K	
					003 : 6500K	
					004 : 7500K	
					005 : 9300K	
					006 : 10000K	
					007 : Native	

					008 : User1	
					009 : User2	
Audio Source	8		g	88	000 :Analog	
					002 : Digital	
					004 :Displayport	
PAP Enable	8		g	BA	000: Off	
					001: PIP	
					002: PBP	
					003: Quick Swap	
PIP Position	8		g	BF	000: Upper Left	
					001: Upper Right	
					002: Lower Left	For VGA only.
					003: Lower Right	For VGA only.
VGA Clock frequency	8		g	C0	000 ~ 100	
VGA Phase	8		g	C1	000 ~ 100	
VGA H.Position	8		g	C2	000 ~ 100	
VGA V.Position	8		g	C3	000 ~ 100	
Over Scan	8		g	C7	000: Off	
					001: On	
RTC Year	8		g	C8	000 ~ 099	Ex: value=012 means Year 2012 If the RTC is not enable, return "Invalid Command Reply"
RTC Month	8		g	C9	001 ~ 012	If the RTC is not enable, return "Invalid Command Reply"
RTC Day	8		g	CA	001 ~ 031	If the RTC is not enable, return "Invalid Command Reply"
RTC Hour	8		g	CB	000 ~ 023	
RTC Minute	8		g	CC	000 ~ 059	
OSD Rotation	8		s	CF	000: Landscape	
					001: Portrait	
H Monitor	8		g	D4	001 ~ 015	

V Monitor	8		g	D5	001 ~ 010	
Tiling Position				D6	000 ~ 150	
Frame Comp.	8		g	D8	000: Off	
					001: On	
Power Save	8		g	D9	000: Mode 1	APM_ON ECO_LOW_POWER
					001: Mode 2	APM_OFF ECO_LOW_POWER
					002: Mode 3	APM_ON ECO_NORMAL
					003: Mode 4	APM_OFF ECO_NORMAL
Switch on Status	8		g	DA	000 : Power Off	
					001 : Force On	
					002 : Last Status	
On/Off Timer	14		g	E0	Input value: Byte1 - Byte2 - Byte3…Byte9 (1) Byte1[3:0]: The Number of the On/Off Timer. There are totally 7 On/Off Timers, and this byte is used to select which timer is going to be accessed. (2) Byte1[7:4] is reserved, should be 0. (3) Byte2~9 are reserved, should be 0x00. Return value: Byte1 - Byte2 - Byte3…Byte9 (1) Byte1[3:0]: Should return the same value as Byte1 at Input value. Byte1[7]: Reserved, should be 0. Byte1[6]: The Timer is enable or not. Byte1[6]=1 means enable. Byte1[5]: The On Timer is enable or not. Byte1[5]=1 means enable. Byte1[4]: The Off Timer is enable or not. Byte1[4]=1 means enable. (2) Byte2: The Day of the On/Off	Modified Video Source Value See the return value examples below: Ex: Byte1=0x01 means the Timer no.1 is selected and disable. Ex: Byte1=0x41 means the Timer no.1 is select and enable, and its both On and Off Timers are disable. Ex: Byte1=0x61 means the Timer no.1 is select and enable, and its On Timer is enable, Off Timer is disable. Ex: Byte1=0x71 means the Timer no.1 is select and enable, and its both On and Off Timers are enable. Ex: Byte1=0x53 means the Timer no.3 is select and enable, and its On Timer is disable, Off Timer is enable. Ex: Byte2=0x02 means the Timer is on Monday. Ex: Byte3=0x08, Byte4=0x1E means the On Timer is at 8:30. Ex: Byte5=0x17, Byte6=0x00 means the Off Timer is at 23:00. Ex: Byte7=0x00 means the selected Video

					Timer. bit0 for Sunday, bit1 for Monday, bit2 for Tuesday, bit3 for Wednesday, bit4 for Thursday, bit5 for Friday, bit6 for Saturday, bit7 for Everyday. (3) Byte3: The Hour of the On Timer. Byte3=0x00~0x17. (4) Byte4: The Minute of the On Timer. Byte4=0x00~0x3B. (5) Byte5: The Hour of the Off Timer. Byte5=0x00~0x17. (6) Byte6: The Minute of the Off Timer. Byte6=0x00~0x3B. (7) Byte7: Select the Video Source. 0x00=VGA, 0x01=HDMI1, 0x02=HDMI2, 0x06=DVI, 0x07=DisplayPort, 0x09=Multi-Media. 0x65=Android , 0x68=Browser, 0x69=PDF Reader, 6A=X-Sign, 0xFF=Default (Last Channel) 0xFF=Default. Other values are reserved. (8) Byte8~9 are reserved, and should be 0x00.	Source is VGA. 3/3 TPV:OK

Network Setting	14		g	E1	Input Value: Byte1 - Byte2 - Byte3…Byte9 (1) Byte1=0x00: IP Setup Mode Byte1=0x01: IP Address Byte1=0x02: Get Subnet Mask Byte1=0x03: Default Gateway Byte1=0x04: Primary DNS Byte1=0x05: Secondary DNS Byte1=0x06: MAC Address Byte1=0x07: Ethernet (RJ45) MAC Address (2) Byte2~9 are reserved, should be 0x00. Return value: Byte1 - Byte2 - Byte3…Byte9 The Byte1 at the return value should be the same as the value of Byte1 at Input value. Byte2~Byte15 should be hex value format (1) If Byte1=0x00(IP Setup Mode) at Input value, the return value should be Byte1=0x00 Byte2=0x00: Manual 0x01: DHCP Byte3~9 are reserved, should be 0x00. (2) If Byte1=0x01(IP Address) at Input value, the return value should be Ex: IP address=169.254.81.38 Byte1=0x01 (same as Byte1 at Input value) Byte2=0xA9 (=169), Byte3=0xFE (=254),	

					Byte4=0x51(=81), Byte5=0x26 (=38) Byte6~9 are reserved, should be 0x00. (3) If Byte1=0x02~0x05 at Input value, refer to (2) (4) If Byte1=0x06(MAC Address) at Input value, the return value should be Ex: MAC address=00:22:64:7E:2C:82 Byte1=0x06 (same as Byte1 at Input value) Byte2=0x00, Byte3=0x22, Byte4=0x64, Byte5=0x7E, Byte6=0x2C, Byte7=0x82 Byte8~9 are reserved, should be 0x00.	
WoL	8		g	F0	000: Off	For Wake on Lan feature
					001: On	