User Manual

Planar LookThru
Display Series RS232

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RoHS Compliance Statement

The Planar LookThru LO552 series is fully RoHS compliant.

Part Number: 020-1381-00

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RS232 Communication

RS232 control is not necessary for operation, but is a convenient way to control Planar® LookThru® Transparent OLED Series displays from a computer at a distance. Most things you can do with the remote, you can do with RS232 commands. Plus, you can send inquiries to the displays and find out the current settings and values. RS232 connections are made with standard straight-through cables.

Note: Serial communication can occur over RS232, USB-B or LAN.

1. Applicable Models

This RS-232 user manual applies to all LO552 models.

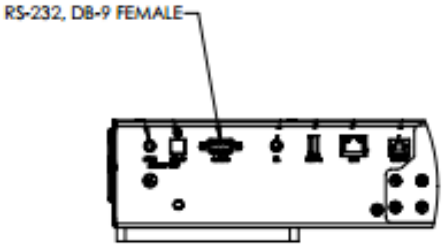
2. RS232 Setup

The RS232 connection must use the following settings:

- 19200 baud rate
- 8 data bits
- 1 stop bit
- No parity bit
- No HW (RTS/CTS) or SW (XON/XOFF) flow control

3. Connecting the RS232 Cable

The LO552 RS-232 DB-9 receptacle is on the left side of the display, as viewed from the front. The RS232 cable will connect to a PC or control system, depending on your setup.



RS232 Protocol

4. Command Structure

`[OPCODE](MODIFIERS)[OPERATOR][OPERANDS][TERM]`

- OPCODE is the command code (e.g. “GAIN”). This can be written either using the named command code (see the “Command Code” column in the table) or the numeric command code (see the “Numeric Command Code” column in the table).
- MODIFIERS are modifier values [e.g. “(ZONE.1, ALL)”]. There are zero or more modifiers for each command. The modifiers can be written either with their named value or their numeric value (see "Examples" on page 6). See the “Modifiers” column in the table.
- OPERATOR is the action to be performed. See the “Operators” column in the table.
  - ‘=’ writes the setting value.
  - ‘?’ reads the setting value in name form (see "Examples" on page 6).
  - ‘#’ reads the setting value in numeric form (see "Examples" on page 6).
  - ‘+’ increments the setting value.
  - ‘-‘ decrements the setting value.
  - ‘:’ indicates that the message is a response to one of the following operators: =?#+-
  - ‘!ERR’ indicates that the message is a failure response. An error code will be listed after the “ERR”, with a space before it. Error codes are as follows:
    - ERR 1: Invalid syntax
    - ERR 2: [Reserved for future use]
    - ERR 3: Command not recognized
    - ERR 4: Invalid modifier
    - ERR 5: Invalid operands
    - ERR 6: Invalid operator
  - ‘@ACK’ indicates that the message is an acknowledgment (ACK) to a command that has no operator.
  - ‘^NAK’ indicates that the message is a negative acknowledgment (NAK) to a command. This indicates that the command was received but cannot be processed at this time.
  - [No operator] denotes an action. In this case, there’s no operator and no operand.
- OPERAND indicates the data to be sent with the message. In some cases, there can be multiple operands. See the “Operands” column in the table.
  - Enumerated operands can be written either with their named value or their numeric value (see "Examples" on page 6).
  - String operands are written with quotation marks at the beginning and end. Example: “this is a string operand”. Special characters, [CR], [LF], “ and \ can be included in a string by escaping them with the \ character (see "Examples" on page 6).
  - Integer (or signed integer / unsigned integer) are always numeric values.
  - Fixed point operands are numeric values with fractional parts. They use decimal point notation.

- Note that enumerated and integer values can be written either in decimal or hexadecimal. For example, a decimal value of ‘50’ can be written in hexadecimal as ‘0x32’.

- TERM is the termination character for the command. This can either be the ASCII carriage return character (0x0D), the ASCII line feed character (0x0A) or a semicolon. The response will use the same termination character.

5. Protocol Encoding

- All parts of the command structure are case insensitive (e.g. “BRIGHTNESS”, “brightness” and BrIgHtNeSs” are all the same). Responses will always be in capital letters.
- Excessive white space is allowed (e.g. “BRIGHTNESS=50”, “BRIGHTNESS = 50” and “BRIGHTNESS = 50” are all the same).
- Modifiers and operands can be separated by commas, spaces or both (e.g. “GAIN=100,100,100”, “GAIN=100 100 100” and “GAIN=100, 100, 100” are all the same). Responses will always separate with one space between modifiers and operands).

6. Examples

Note: [CR] is the ASCII carriage return character (0x0D).

Command	Response	Notes
brightness = 100 [CR]	BRIGHTNESS:100 [CR]	Sets the Brightness value to 100
brightness = 100;	BRIGHTNESS:100;	Also sets the Brightness value to 100, but uses the ‘;’ termination character instead of [CR]. The response uses the same termination character.
200=100 [CR]	200:100 [CR]	“200” is the numeric command code for “BRIGHTNESS”
brightness+ [CR]	BRIGHTNESS:101 [CR]	Increments the current Brightness value
brightness- [CR]	BRIGHTNESS:100 [CR]	Decrements the current Brightness value
gain = 101 102 103 [CR]	GAIN:101 102 103 [CR]	Example command with multiple operators (sets Red Gain to 101, Green Gain to 102 and Blue Gain to 103, on the current zone)
gain(current red)+	GAIN(CURRENT RED):102	Increments the Red Gain on the current zone
gain(zone.1, all) = 104,105,106	GAIN(ZONE.1 ALL):104 105 106	Example command with multiple modifiers, multiple operators and different separators between the modifiers and operators (sets Red Gain to 104, Green Gain to 105 and Blue Gain to 106, on Zone 1)
ipv4.address(static)=”10.15.0.220” [CR]	IPV4.ADDRESS(STATIC)=”10.15.0.220” [CR]	Example command with a string operator
reset(user) [CR]	RESET(USER)@ACK [CR]	Example action command (no operator or operand)

Command	Response	Notes
reset(user) [CR]	RESET(USER)^NAK [CR]	Example action command that cannot be processed at this time
aspect? [CR]	ASPECT:AUTO [CR]	The name for the Aspect Ratio setting value is returned
aspect# [CR]	ASPECT:0 [CR]	The number for the Aspect Ratio setting value is returned
aspect=fill [CR]	ASPECT:FILL [CR]	Sets the Aspect Ratio to Fill
aspect=3 [CR]	ASPECT:3 [CR]	Also sets the Aspect Ratio to Fill
brightness @@ [CR]	BRIGHTNESS!ERR 1 [CR]	Example of an invalid syntax (“@@” isn’t a valid operator)
fake.command = 1 [CR]	FAKE.COMMAND:ERR 3 [CR]	Example of an invalid opcode (“FAKE.COMMAND” doesn’t exist)
brightness(zone.999) = 100 [CR]	BRIGHTNESS(ZONE.999)!ERR 4 [CR]	Example of an invalid modifier (“ZONE.999” isn’t a valid modifier for “BRIGHTNESS”)
brightness=”new value” [CR]	BRIGHTNESS!ERR 5 [CR]	Example of an invalid operand (the Brightness command doesn’t accept a string operand)
model.id = 1 [CR]	MODEL.ID!ERR 6 [CR]	Example of an invalid operator (cannot write to this command)
display.name = “Name containing \” and \\”	DISPLAY.NAME:”Name containing \” and \\”	The name will appear on the remote monitor as **Name containing “ and **
power.on.delay = .1	POWER.ON.DELAY:0.1	Example of a fixed point operand. Sets the Power On Delay to 0.1 seconds.

RS232 Codes

Notes:

- The examples are written with the command first and the *response in italics*. Example:
  - Command: ASPECT(ZONE.1)=AUTO
  - Response: *ASPECT(ZONE.1):AUTO*
- In many instances, a modifier may be omitted and the display will replace it with a default value. For example, the default modifier for the ASPECT command is CURRENT, so the following two commands are identical:
  - ASPECT(CURRENT)=AUTO
  - ASPECT=AUTO
- '!' in the Operators column indicates that the command accepts the execute operator, which uses no operator symbol. The '!' symbol is not included in the command.

Setting	Command Code	Numeric Command	Operators	Modifiers	Operands	Available in Standby	Example	Notes
Advanced Color	CMS	211	=?+-	Mod 1: Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 255 = CURRENT Mod 2: Gamut 0 = REC709 1 = SMPTEC 2 = EBU 5 = USER 6 = AUTO 255 = CURRENT Mod 3: Color Point 0 = RED.X 1 = RED.Y 2 = GREEN.X 3 = GREEN.Y 4 = BLUE.X 5 = BLUE.Y 6 = CYAN.X 7 = CYAN.Y 8 = MAGENTA.X 9 = MAGENTA.Y 10 = YELLOW.X 11 = YELLOW.Y 12 = WHITE.X 13 = WHITE.Y [None = Set all 14 values at once]	0-800	No	[Set REC709 red x color point in Zone 1 to 0.640] CMS(ZONE.1, REC709, RED.X)=640 *CMS(ZONE.1 REC709 RED.X):640* [Set all color points in the User gamut for Zone 2] CMS(ZONE.2, USER)=640 330 300 600 150 060 225 329 321 154 419 505 313 329 *CMS(ZONE.2 USER):640 330 300 600 150 060 225 329 321 154 419 505 313 329*	See Main -> Advanced Settings -> Advanced Color Note that the color point values for the Auto gamut cannot be written. When read, it returns the values for the auto-detected gamut.

Setting	Command Code	Numeric Command	Operators	Modifiers	Operands	Available in Standby	Example	Notes
Advanced Color Flag	CMSFLSAG	212	?	Mod 1: Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 255 = CURRENT Mod 2: Gamut 0 = REC709 1 = SMPTEC 2 = EBU 5 = USER 6 = AUTO 255 = CURRENT Mod 3: Color Point 0 = RED.X 1 = RED.Y 2 = GREEN.X 3 = GREEN.Y 4 = BLUE.X 5 = BLUE.Y 6 = CYAN.X 7 = CYAN.Y 8 = MAGENTA.X 9 = MAGENTA.Y 10 = YELLOW.X 11 = YELLOW.Y 12 = WHITE.X 13 = WHITE.Y	String	No	[Zone 1 REC709 red x coordinate is achievable] CMSFLAG(ZONE.1, REC709, RED.X)? *CMSFLAG(ZONE.1 REC709 RED.X):""* [Zone 2 EBU blue y coordinate is not achievable] CMSFLAG(ZONE.2, EBU, BLUE.Y)? *CMSFLAG(ZONE.2 EBU BLUE.Y):"*"*	See Main -> Advanced Settings -> Advanced Color In some cases, the target color coordinates may not be achievable. In this case, "*" will be returned by this command. Otherwise, an empty string will be returned.
Allow Pop Up Messages	OSD.ALLOW. POPUP	1300	=?+-		0 = NO 1 = YES	No	OSD.ALLOW.POPUP=YES *OSD.ALLOW.POPUP:YES*	See Main -> Advanced Settings -> Menus and Messages -> Allow Pop Up Messages
Aspect Ratio	ASPECT	500	=?+-	Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 253 = ALL.INPUT 254 = ALL 254 = ALL.ZONE 255 = CURRENT [None = CURRENT]	0 = AUTO 1 = 16X9 2 = 4X3 3 = FILL 4 = NATIVE 5 = LETTERBOX	No	[For Zone 1] ASPECT(ZONE.1)=AUTO *ASPECT(ZONE.1):AUTO* [For the current zone] ASPECT=16X9 *ASPECT:16X9*	See Main -> Image Adjust -> Aspect Ratio
Audio Input	AUDIO.INPUT	1003	?		Source 0 = OPS 1 = HDMI.1 2 = HDMI.2 3 = HDMI.3 4 = HDMI.4 5 = DP	No	AUDIO.INPUT? *AUDIO.INPUT:HDMI.1*	Returns the input source in the zone currently playing audio, as chosen by Audio Select
Audio Select	AUDIO.ZONE	1007	=?+-		Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4	No	AUDIO.ZONE=ZONE.1 *AUDIO.ZONE:ZONE.1*	See Main -> Audio -> Audio Select
Auto Power On	AUTO.ON	1407	=?+-		0 = OFF 1 = ON	Yes	AUTO.ON=ON *AUTO.ON:ON*	See Main -> Advanced Settings -> Power -> Auto Power On
Auto Scan Sources	SOURCE.SCAN	105	=?+-		0 = OFF 1 = ON	No	SOURCE.SCAN=ON *SOURCE.SCAN:ON*	See Main -> Inputs and Views -> Auto Scan Sources
Balance	AUDIO.BALANCE	1000	=?+-		0-100	No	AUDIO.BALANCE=50 *AUDIO.BALANCE:50*	See Main -> Audio -> Balance

Setting	Command Code	Numeric Command	Operators	Modifiers	Operands	Available in Standby	Example	Notes
Blank Screen Color	BLANK.COLOR	1306	=?+-		0 = RED 1 = GREEN 2 = BLUE 3 = CYAN 4 = MAGENTA 5 = YELLOW 6 = WHITE 7 = BLACK	No	BLANK.COLOR=BLUE *BLANK.COLOR:BLUE*	See Main -> Advanced Settings -> Menus and Messages -> Blank Screen Color
Brightness	BRIGHTNESS	200	=?+-	Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 253 = ALL.INPUT 254 = ALL 254 = ALL.ZONE 255 = CURRENT [None = CURRENT]	0-100	No	[For Zone 1] BRIGHTNESS(ZONE.1)=50 *BRIGHTNESS(ZONE.1):50* [For the current zone] BRIGHTNESS=55 *BRIGHTNESS:55*	See Main -> Image Adjust -> Brightness
Color	COLOR	202	=?+-	Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 253 = ALL.INPUT 254 = ALL 254 = ALL.ZONE 255 = CURRENT [None = CURRENT]	0-100	No	[For Zone 1] COLOR(ZONE.1)=50 *COLOR(ZONE.1):50* [For the current zone] COLOR=55 *COLOR:55*	See Main -> Image Adjust -> Color
Color Gamut	COLOR.GAMUT	214	=?+-	Mod 1: Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 255 = CURRENT [None = CURRENT] Mod 2: Type 0 = SETTING 1 = ACTUAL 2 = COPY 3 = REVERT [None = SETTING] Mod 3: Gamut 0 = REC709 1 = SMPTE.C 2 = EBU 5 = USER 6 = AUTO 255 = CURRENT	0 = REC709 1 = SMPTE.C 2 = EBU 5 = USER 6 = AUTO 7 = DISABLE	No	[Setting Color Gamut for Zone 1] COLOR.GAMUT(ZONE.1, SETTING)=REC709 *COLOR.GAMUT(ZONE.1 SETTING):REC709* [Setting Color Gamut for the current zone] COLOR.GAMUT(CURRENT, SETTING)=AUTO *COLOR.GAMUT(CURRENT SETTING):AUTO* [Reading the actual Color Gamut for the current zone] COLOR.GAMUT(CURRENT, ACTUAL)? *COLORSPACE(CURRENT ACTUAL):RGB* [Copy the Zone 2 REC709 gamut to all zones] COLOR.GAMUT(ZONE.2, COPY, REC709) *COLOR.GAMUT(ZONE.2 COPY REC709)@ACK*	"Setting" is the value that the color gamut is set to. This takes two modifiers and does not support the execute action. See Main -> Advanced Settings -> Advanced Color -> Color Gamut. "Actual" is the currently applied color gamut (cannot return AUTO). This is read only, takes two modifiers and does not support the execute action. See Main -> Information -> Image Information -> Color Gamut. "Copy" is an execute action that takes all three modifiers and no operands. See Main -> Advanced Settings -> Advanced Color -> Copy to All Zones. "Revert" is an execute action that takes all three modifiers and no operands. See Main -> Advanced Settings -> Advanced Color -> Revert to Defaults.

Setting	Command Code	Numeric Command	Operators	Modifiers	Operands	Available in Standby	Example	Notes
Color Space	COLORSPACE	207	=?+-	Mod 1: Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 253 = ALL.INPUT 254 = ALL 254 = ALL.ZONE 255 = CURRENT Mod 2: Value Type 0 = SETTING 1 = ACTUAL	0 = REC601 1 = REC709 2 = RGB 3 = RGB.VIDEO 4 = AUTO	No	[Setting Color Space for Zone 1] COLORSPACE(ZONE.1, SETTING)=REC709 *COLORSPACE(ZONE.1 SETTING):REC709* [Setting Color Space for the current zone] COLORSPACE(CURRENT, SETTING)=AUTO *COLORSPACE(CURRENT SETTING):AUTO* [Reading the actual Color Space for the current zone] COLORSPACE(CURRENT, ACTUAL)? *COLORSPACE(CURRENT ACTUAL):RGB*	"Setting" is the value that the color space is set to. See Main -> Image Adjust -> Color Space. "Actual" is the currently applied color space (cannot return AUTO). See Main -> Information -> Image Information -> Color Space.
Color Sub-sampling	COLOR. SUBSAMPLING	301	?	Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 255 = CURRENT	String	No	[For Zone 1] COLOR.SUBSAMPLING(ZONE.1)? *COLOR.SUBSAMPLING(ZONE.1):"4:4:4"* [For the current zone] COLOR.SUBSAMPLING? *COLOR.SUBSAMPLING:"4:2:0"*	See Main -> Information -> Image Information -> Color Subsampling
Color Temperature	COLOR. TEMPERATURE	208	=?+-	Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 253 = ALL.INPUT 254 = ALL 254 = ALL.ZONE 255 = CURRENT	0 = 3200K 1 = 5500K 2 = 6500K 3 = 7500K 4 = 9300K 5 = NATIVE	No	[For Zone 1] COLOR.TEMPERATURE(ZONE.1)= 6500K *COLOR.TEMPERATURE(ZONE.1):6500K* [For the current zone] COLOR.TEMPERATURE=NATIVE *COLOR.TEMPERATURE=NATIVE*	See Main -> Image Adjust -> Color Temperature
Content Rotation	ROTATE	504	=?+-	Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 253 = ALL.INPUT 254 = ALL 254 = ALL.ZONE 255 = CURRENT [None = CURRENT]	0 = NONE 90 = 90 180 = 180 270 = 270	No	[For Zone 1] ROTATE(ZONE.1)=90 *ROTATE(ZONE.1):90* [For the current zone] ROTATE=NONE *ROTATE:NONE*	See Main -> Image Adjust -> Content Rotation
Contrast	CONTRAST	201	=?+-	Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 253 = ALL.INPUT 254 = ALL 254 = ALL.ZONE 255 = CURRENT [None = CURRENT]	0-100	No	[For Zone 1] CONTRAST(ZONE.1)=50 *CONTRAST(ZONE.1):50* [For the current zone] CONTRAST=55 *CONTRAST:55*	See Main -> Image Adjust -> Contrast
Current Zone	CURRENT.ZONE	100	=?+-		Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4	No	CURRENT.ZONE=ZONE.1 *CURRENT.ZONE:ZONE.1*	See Main -> Image Adjust -> Current Zone

Setting	Command Code	Numeric Command	Operators	Modifiers	Operands	Available in Standby	Example	Notes
Current Zone Layout	CURRENT.ZONE. LAYOUT	108	?		0 = S.1 1 = P.UL.1 2 = P.UL.2 3 = P.UR.1 4 = P.UR.2 5 = P.LL.1 6 = P.LL.2 7 = P.LR.1 8 = P.LR.2 9 = D.L.1 10 = D.L.2 11 = D.T.1 12 = D.T.2 13 = T.L.1 14 = T.L.2 15 = T.L.3 16 = T.R.1 17 = T.R.2 18 = T.R.3 19 = T.T.1 20 = T.T.2 21 = T.T.3 22 = T.B.1 23 = T.B.2 24 = T.B.3 25 = T.M.1 26 = T.M.2 27 = T.M.3 28 = Q.1 29 = Q.2 30 = Q.3 31 = Q.4	No	CURRENT.ZONE.LAYOUT? *CURRENT.ZONE.LAYOUT:Q.1*	See separate table on page 24 for operands
Default Gateway	IPV4.GATEWAY	1206	=?	0 = STATIC [None = Current (for reads only] [None = STATIC (for writes only]	String	Yes	[Read the current default gateway value] IPV4.GATEWAY? *IPV4.NETMASK:"10.15.0.1"* [Write the default gateway for static IP] IPV4.NETMASK(STATIC)="192.168.12.1" *IPV4.NETMASK(STATIC):"192.168.12.1"*	See Main -> Advanced Settings -> Network -> Default Gateway
DHCP	NETWORK.DHCP	1207	=?		0 = OFF 1 = ON	Yes	NETWORK.DHCP=ON *NETWORK.DHCP:ON*	See Main -> Advanced Settings -> Network -> DHCP
Diagnostic Color	DIAGNOSTIC. COLOR	206	=?+-	Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 253 = ALL.INPUT 254 = ALL 254 = ALL.ZONE 255 = CURRENT [None = CURRENT]	0 = RED 1 = GREEN 2 = BLUE 255 = OFF	No	[For Zone 1] DIAGNOSTIC.COLOR(ZONE.1)=OFF *DIAGNOSTIC.COLOR(ZONE.1):OFF* [For the current zone] DIAGNOSTIC.COLOR=BLUE *DIAGNOSTIC.COLOR:BLUE*	See Main -> Image Adjust -> Diagnostic Color
Display Name	DISPLAY.NAME	2404	=?		String	Yes	DISPLAY.NAME="Conference Room 1" *DISPLAY.NAME:"Conference Room 1"*	Sets the name shown on the title of the Remote Monitoring Software pages
Display Power	DISPLAY.POWER	1408	=?+-		0 = OFF 1 = ON	Yes	DISPLAY.POWER=ON *DISPLAY.POWER:ON*	See the IR remote control keys ON and OFF
DisplayPort Type	DP.TYPE	1904	=?+-		0 = 1.1 1 = 1.2	No	DP.TYPE=1.2 *DP.TYPE:1.2*	See Main -> Advanced Settings -> System Settings -> DisplayPort Type
DNS Server 1	NETWORK.DNS1	1212	=?	0 = STATIC [None = Current (for reads only] [None = STATIC (for writes only]	String	Yes	[Read the current DNS server 1 value] NETWORK.DNS1? *NETWORK.DNS1:"172.16.0.140"* [Write the DNS server 1 for static IP] NETWORK.DNS1(STATIC)="8.8.8.8" *NETWORK.DNS1(STATIC):"8.8.8.8"*	See Main -> Advanced Settings -> Network -> DNS Server

Setting	Command Code	Numeric Command	Operators	Modifiers	Operands	Available in Standby	Example	Notes
DNS Server 2	NETWORK.DNS2	1213	=?	0 = STATIC [None = Current (for reads only] [None = STATIC (for writes only]	String	Yes	[Read the current DNS server 2 value] NETWORK.DNS2? *NETWORK.DNS2:"172.16.0.191"* [Write the DNS server 2 for static IP] NETWORK.DNS2(STATIC)="8.8.4.4" *NETWORK.DNS2(STATIC):"8.8.4.4"*	Selects a secondary DNS server
EDID Timing	EDID.TIMING	400	=?+-!	Mod 1: Input 0 = OPS 1 = HDMI.1 2 = HDMI.2 3 = HDMI.3 4 = HDMI.4 5 = DP 6 = ALL Mod 2: Param 0 = UPDATE 1 = HACTIVE 2 = VACTIVE 3 = VREFRESH 4 = FULL.SPEC 5 = PCLK 6 = HBLANK 7 = HFP 8 = HSYNC 9 = VBLANK 10 = VFP 11 = VSYNC 12 = FACTORY 13 = TYPE	Signed Integer -3 = 4K60 -2 = 4K30 -1 = 1080P	No	[Read the EDID type for HDMI 1] EDID.TIMING(HDMI.1, TYPE)? *EDID.TIMING(HDMI.1 TYPE):4K60* [Set the HDMI 2 EDID horizontal active to 3840] EDID.TIMING(HDMI.2, HACTIVE)=3840 *EDID.TIMING(HDMI.2 HACTIVE):3840* [Update the HDMI 2 EDID] EDID.TIMING(HDMI.2, UPDATE) *EDID.TIMING(HDMI.2 UPDATE)@ACK*	See Main -> Advanced Settings -> EDID UPDATE modifier is the only one that supports the action operator
EDID Zone	EDID.SELECTEDC O NNECTOR	401	=?+-		0 = OPS 1 = HDMI.1 2 = HDMI.2 3 = HDMI.3 4 = HDMI.4 5 = DP 6 = ALL	No	EDID.SELECTEDCONNECTOR=HDMI.1 *EDID.SELECTEDCONNECTOR:HDMI.1*	See Main -> Advanced Settings -> EDID -> Selected Connector
Enable Status LED	LED.ENABLE	1902	=?		0 = DISABLE 1 = ENABLE	Yes	LED.ENABLE=ENABLE *LED.ENABLE:ENABLE*	See Main -> Advanced Settings -> System Settings -> Enable Status LED
Error Log	ERROR.LOG	2311	?	Log Entry Number 1-65535		No	ERROR.LOG(1)? *ERROR.LOG(1):"Wed Sep 16 13:39:33 2015 - CRIT- Power supply 2 issue"*	Lists any faults that have occurred in the system. Entry #1 is the most recent. An empty string returned means that there are no more error log entries after that entry.
Factory Reset	RESET	2400	!	0 = USER 1 = FACTORY1		No	RESET(USER) *RESET(USER)@ACK*	USER is the same as Main -> Advanced Settings -> System Settings -> Factory Reset. FACTORY1 resets everything that USER resets plus EDID customizations, network settings and presets.
Firmware Update	FIRMWARE.UPDA TE	2200	=?!	Mod 1: Firmware 0 = AUTO 1 = VP.AP 2 = HDMI Mod 2: Type 0 = START 1 = PACKET 2 = FINISH 3 = URL	String	Yes	FIRMWARE.UPDATE *FIRMWARE.UPDATE(AUTO START)@ACK*	See Main -> Advanced Settings -> System Settings -> Firmware Update

Setting	Command Code	Numeric Command	Operators	Modifiers	Operands	Available in Standby	Example	Notes
Gain	GAIN	209	=?+-	Mod 1: Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 253 = ALL.INPUT 254 = ALL 254 = ALL.ZONE 255 = CURRENT [None = CURRENT] Mod 2: Color 0 = RED 1 = GREEN 2 = BLUE 255 = ALL [None = ALL]	For RED, GREEN and BLUE modifiers, one operand: 0-200 For ALL operand, three operands: Red Gain: 0-200 Green Gain: 0-200 Blue Gain: 0-200	No	[For red gain on Zone 1] GAIN(ZONE.1, RED)=100 *GAIN(ZONE.1 RED):100* [For all three gains on the current zone: Red Gain = 101, Green Gain = 102, Blue Gain = 103] GAIN=101 102 103 *GAIN=101 102 103*	See Main -> Image Adjust -> Red/Green/Blue Gain. ALL modifier adjusts all three gains at the same time. The first modifier can only be missing if both modifiers are missing.
Gamma	GAMMA	1504	=?+-	Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 253 = ALL.INPUT 254 = ALL 254 = ALL.ZONE 255 = CURRENT [None = CURRENT]	0 = 1.5 1 = 1.55 2 = 1.6 3 = 1.65 4 = 1.7 5 = 1.75 6 = 1.8 7 = 1.85 8 = 1.9 9 = 1.95 10 = 2.0 11 = 2.05 12 = 2.1 13 = 2.15 14 = 2.2 15 = 2.25 16 = 2.3 17 = 2.35 18 = 2.4 19 = 2.45 20 = 2.5 21 = 2.55 22 = 2.6 23 = 2.65 24 = 2.7 25 = 2.75 26 = 2.8	No	[For Zone 1] GAMMA(ZONE.1)=2.2 GAMMA*(ZONE.1):2.2* [For the current zone] GAMMA=2.5 *GAMMA:2.5*	See Main -> Image Adjust -> Gamma
Help	HELP	2300	=?	0 = FIRST 2147483647 = NEXT	String	Yes	[To get help on the OSD.STATUS command] HELP=OSD.STATUS *HELP:"OSD.STATUS* *Numeric Value: 1308* *Operators: ?* *No Modifiers* *1 Operand(s)* *Operand #1: Unsigned Integer* *DISABLE 0* *ENABLE 1* *OFF 0* *ON 1* *NO 0* *YES 1* *FALSE 0* *TRUE 1*	Displays information for each serial command. To get a list of all serial commands, first enter the following command: HELP(FIRST)? Then enter the following command continuously until it returns NAK: HELP(NEXT)?
Host Name	HOSTNAME	2403	=?		String	Yes	[Read the current hostname value] HOSTNAME? *HOSTNAME:"LO552"* [Set the hostname to "MyDisplay"] HOSTNAME="MyDisplay" *HOSTNAME:"My Display"* [Invalid host name - can't use spaces] *HOSTNAME="My Display"* *HOSTNAME!ERR 5*	Sets the network hostname for the display. Default string is “LO552”.

Setting	Command Code	Numeric Command	Operators	Modifiers	Operands	Available in Standby	Example	Notes
Image Information	SIGNAL.INFO	300	?	Mod 1: Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 255 = CURRENT [None = CURRENT] Mod 2: Parameter 0 = HACTIVE 1 = VACTIVE 2 = PCLK 3 = HTOTAL 4 = VTOTAL 5 = VREFRESH 6 = HREFRESH 7 = INTERLACE 8 = VFIELDRATE 9 = VREFRESH.X. 100 10 = COLORDEPTH 11 = TMDS [None = ALL]	Unsigned Integer	No	SIGNAL.INFO(CURRENT, HACTIVE)? *SIGNAL.INFO(CURRENT, HACTIVE):1920*	See Main -> Information -> Image Information
Image Position	PAN	502	=?+-	Mod 1: Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 253 = ALL.INPUT 254 = ALL 254 = ALL.ZONE 255 = CURRENT Mod 2: Direction 0 = X 1 = Y 255 = ALL [None = ALL]	-1000 ~ 1000	No	[For horizontal position on Zone 1] PAN(ZONE.1, X)=0 *PAN(ZONE.1 X):0* [For horizontal and vertical position on the current zone: Horizontal Position = 10, Vertical Position = 20] PAN(CURRENT)=10 20 *PAN(CURRENT):10 20*	For the 'X' modifier, see Main -> Image Adjust -> Image Position -> Move Horizontal. For the 'Y' modifier, see Main -> Image Adjust -> Image Position -> Move Vertical.
IP Address	IPV4.ADDRESS	1205	=?	0 = STATIC [None = Current (for reads only] [None = STATIC (for writes only]	String	Yes	[Read the current IP address value] NETWORK.DNS1? *NETWORK.DNS1:"10.15.0.60"* [Write the DNS server 1 for static IP] NETWORK.DNS1(STATIC)="192.168.12.12" *NETWORK.DNS1(STATIC):"192.168.12.12"*	See Main -> Advanced Settings -> Network -> IP Address
IR Code	IR.CODE	1210	=?+-		0-65535	Yes	IR.CODE=12345 *IR.CODE:12345*	See Menu -> Advanced Settings -> System Settings -> IR Remote ID Code
IR Remote Lock	IR.LOCK	1202	=?		0 = DISABLE 1 = ENABLE	Yes	IR.LOCK=ENABLE *IR.LOCK:ENABLE*	See Menu -> Advanced Settings -> System Settings -> IR Remote Lock
Key	KEY	1200	=		[See separate table]	Yes	[To send the MENU key] KEY=MENU *KEY:MENU*	See separate table on page 25 for key codes
Keypad Lock	KEY.LOCK	1201	=?		0 = DISABLE 1 = ENABLE	Yes	KEY.LOCK=ENABLE *KEY.LOCK:ENABLE*	See Menu -> Advanced Settings -> System Settings -> Keypad Lock

Setting	Command Code	Numeric Command	Operators	Modifiers	Operands	Available in Standby	Example	Notes
Layout	LAYOUT	103	=?+-	Multi-Source View 1 = DUAL 2 = TRIPLE 4 = PIP 5 = CURRENT [None = CURRENT]	0 = SINGLE 1 = PIP.UL 2 = PIP.UR 3 = PIP.LL 4 = PIP.LR 5 = DUAL.L 6 = DUAL.T 7 = TRIPLE.L 8 = TRIPLE.R 9 = TRIPLE.T 10 = TRIPLE.B 11 = TRIPLE.M 12 = QUAD	No	[To change the Dual layout to top-and-bottom] LAYOUT(DUAL)=DUAL.T *LAYOUT(DUAL):DUAL.T* [To change the PIP position to top left and immediately apply the Multi-Source View and layout] LAYOUT=PIP.UL *LAYOUT:PIP.UL*	See Main -> Inputs and Views -> Multi-Source View See Main -> Inputs and Views -> Multi-Source View -> Advanced Layouts
MAC Address	NETWORK.MAC	1203	?		String	Yes	NETWORK.MAC? *NETWORK.MAC="12:34:56:AB:CD:EF"*	See Main -> Advanced Settings -> Network -> MAC Address
Menu Position	OSD.POSITION	1301	=?+-		0 = CENTER 1 = UPPER. LEFT 2 = UPPER. RIGHT 3 = LOWER. LEFT 4 = LOWER. RIGHT	No	OSD.POSITION=CENTER *OSD.POSITION:CENTER*	See Main -> Advanced Settings -> Menus and Messages -> Menu Position
Model ID	MODEL.ID	2306	?		String	No	MODEL.ID? *MODEL.ID="UR8451"*	See Main -> Information -> System Information -> Model
Model Series	MODEL.SERIES	2316	?		String	No	MODEL.SERIES? *MODEL.SERIES:"LookThru"*	Always returns "LookThru" for this product. Other products using this protocol will have a different response for this command.
Multi-Source View	MULTI.VIEW	102	=?+-		0 = SINGLE 1 = DUAL 2 = TRIPLE 3 = QUAD 4 = PIP	No	MULTI.VIEW=QUAD *MULTI.VIEW:QUAD*	See Main -> Inputs and Views -> Multi-Source View
Mute	AUDIO.MUTE	1002	=?+-		0 = OFF 1 = ON	No	AUDIO.MUTE=ON *AUDIO.MUTE:ON*	See Main -> Audio -> Mute
Network Ping	NETWORK.PING	1211	=		String	Yes	NETWORK.PING="www.google.com" *NETWORK.PING:"SUCCESS"*	Attempts to ping the selected network address. Response string will either be “SUCCESS” or “FAILED”
Next Source	SOURCE.NEXT	104	!	Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 254 = ALL 255 = CURRENT		No	[For Zone 1] SOURCE.NEXT(ZONE.1) *SOURCE.NEXT(ZONE.1)@ACK* [For the current zone] SOURCE.NEXT *SOURCE.NEXT@ACK*	See IR remote control keys ZONE 1/2/3/4
Noise Reduction	NOISE.REDUCTION	205	=?+-	Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 253 = ALL.INPUT 254 = ALL 254 = ALL.ZONE 255 = CURRENT [None = CURRENT]	0 = OFF 1 = LOW 2 = MEDIUM 3 = HIGH	No	[For Zone 1] NOISE.REDUCTION(ZONE.1)=OFF *NOISE.REDUCTION(ZONE.1):OFF* [For the current zone] NOISE.REDUCTION=LOW *NOISE.REDUCTION:LOW*	See Main -> Image Adjust -> Noise Reduction

Setting	Command Code	Numeric Command	Operators	Modifiers	Operands	Available in Standby	Example	Notes
Notification Event	NOTIFICATION. EMAIL	1222	=?	Event 0 = POWER. STATE. CHANGED 1 = ERROR. OCCURRED 2 = SOURCE. DETECTED 3 = SOURCE. LOST 4 = SOURCE. SELECTED	Op 1: Enable 0 = DISABLE 1 = ENABLE Op 2: Recipients List String Op 3: User Message String	Yes	NOTIFICATION.EMAIL(SOURCE.DETECTED)= ENABLE, "test@planar.com", "Your custom message here" *NOTIFICATION.EMAIL(SOURCE.DETECTED):EN ABLE "test@planar.com" "Your custom message here"*	See Remote Monitoring Software -> Notifications -> Notification Events
NTP Server	NETWORK.NTPSER VER	1214	=?		String	Yes	NETWORK.NTPSERVER="pool.ntp.org" *NETWORK.NTPSERVER:"pool.ntp.org"*	Selects the NTP server to be used with the Use Network Time setting. Default = "0.pool.ntp.org"
Offset	OFFSET	210	=?+-	Mod 1: Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 253 = ALL.INPUT 254 = ALL 254 = ALL.ZONE 255 = CURRENT [None = CURRENT] Mod 2: Color 0 = RED 1 = GREEN 2 = BLUE 255 = ALL [None = ALL]	For RED, GREEN and BLUE modifiers, one operand: 0-100 For ALL operand, three operands: Red Offset: 0-100 Green Offset: 0-100 Blue Offset: 0-100	No	[For red offset on Zone 1] OFFSET(ZONE.1, RED)=50 *OFFSET(ZONE.1 RED):50* [For all three offsets on the current zone: Red Gain = 51, Green Gain = 52, Blue Gain = 53] OFFSET=51 52 53 *OFFSET=51 52 53*	See Main -> Image Adjust -> Red/Green/Blue Offset. ALL modifier adjusts all three offsets at the same time. The first modifier can only be missing if both modifiers are missing.
OSD Close	OSD.CLOSE	1310	!			No	OSD.CLOSE *OSD.CLOSE@ACK*	Forces any menus or message boxes that are currently on screen to close
OSD Rotation	ORIENTATION	1302	=?+-		0 = LANDSCAPE 1 = PORTRAIT	No	ORIENTATION=LANDSCAPE *ORIENTATION:LANDSCAPE*	See Main -> Advanced Settings -> Menus and Messages -> OSD Rotation
OSD Status	OSD.STATUS	1308	?		0 = DISABLE 1 = ENABLE	No	OSD.STATUS? *OSD.STATUS=ENABLE*	Indicates whether the OSD (menu, message box or confirmation dialog) is currently being shown on the display
OSD Timeout	OSD.TIMEOUT	1304	=?+-		0 = OFF 10 =10. SECONDS 30 =30. SECONDS 60 =60. SECONDS 120 =120. SECONDS 240 =240. SECONDS	No	OSD.TIMEOUT=60.SECONDS *OSD.TIMEOUT:60.SECONDS*	See Main -> Advanced Settings -> Menus and Messages -> OSD Timeout. Numeric value is in seconds and can be used to program any delay value.
OSD Transpar-ency	OSD. TRANSPARENCY	1303	=?+-		0-5	No	OSD.TRANSPARENCY=3 *OSD.TRANSPARENCY:3*	See Main -> Advanced Settings -> Menus and Messages -> OSD Transparency

Setting	Command Code	Numeric Command	Operators	Modifiers	Operands	Available in Standby	Example	Notes
Overscan	OVERSCAN	501	=?+-	Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 253 = ALL.INPUT 254 = ALL 254 = ALL.ZONE 255 = CURRENT [None = CURRENT]	0-20	No	[For Zone 1] OVERSCAN(ZONE.1)=0 *OVERSCAN(ZONE.1):0* [For the current zone] OVERSCAN=5 *OVERSCAN:5*	See Main -> Image Adjust -> Overscan
PIP Size	PIP.SIZE	107	=?+-		0 = SMALL 1 = MEDIUM 2 = LARGE	No	PIP.SIZE=MEDIUM *PIP.SIZE:MEDIUM*	See Main -> Inputs and Views -> Multi-Source View -> Advanced Layouts -> PIP Size
PIP Swap	PIP.SWAP	106	!			No	PIP.SWAP *PIP.SWAP@ACK*	See IR remote control key PIP SWAP
Pixel Orbit	PIXEL.ORBIT	1906	=?+-		0 = OFF 1 = ON	No	PIXEL.ORBIT=ON *PIXEL.ORBIT:ON*	See Main -> Advanced Settings -> System Settings -> Pixel Orbit
Power On Delay	POWER.ON.DELAY	1420	=?+-		Unsigned fixed point 0.0-10.0	Yes	POWER.ON.DELAY=1.4 *POWER.ON.DELAY:1.4*	See Main -> Advanced Settings -> Power -> Power On Delay
Power Saving Delay	POWER.SAVE.DELAY	1406	=?+-		60 =1.MINUTE 300 =5.MINUTES 900 =15.MINUTES 1800 =30.MINUTES 3600 =60.MINUTES	Yes	POWER.SAVE.DELAY=5.MINUTES *POWER.SAVE.DELAY:5.MINUTES*	See Main -> Advanced Settings -> Power -> Power Saving Delay. Numeric value is in seconds and can be used to program any delay value.
Power Saving Mode	POWER.SAVE.MODE	1405	=?+-		0 = DISABLED 1 = LOW.POWER 2 = WAKE.ON.SIGNAL	Yes	POWER.SAVE.MODE=LOW.POWER *POWER.SAVE.MODE:LOW.POWER*	See Main -> Advanced Settings -> Power -> Power Saving Mode
Preset Count	PRESET.COUNT	2006	?		Unsigned Integer	Yes	PRESET.COUNT? *PRESET.COUNT:6*	Displays the number of presets that are not empty
Preset Delete	PRESET.DELETE	2000	!	Preset Number 1-1000		Yes	[Save to Preset 4] PRESET.DELETE(4) *PRESET.DELETE(4)@ACK*	See Main -> Presets -> Delete
Preset Full	PRESET.FULL	2004	?	Preset Number 1-1000	0 = NO 1 = YES	Yes	PRESET.FULL(4)? *PRESET.FULL(4)=YES*	Indicates whether data has been saved in the selected preset

Setting	Command Code	Numeric Command	Operators	Modifiers	Operands	Available in Standby	Example	Notes
Preset List	PRESET.LIST	2008	?	0 = FIRST 2147483647 = NEXT	A list of unsigned integers	Yes	PRESET.LIST(FIRST)? *PRESET.LIST(FIRST):1 2 3 5 7 34*	To get a list of all the filled presets, start by entering the following command: PRESET.LIST(FIRST) Use the following command to read additional filled presets: PRESET.LIST(NEXT)? Continue sending the second command above until the last number shown matches the value returned by the Preset Max command, or until the number of presets listed equals the number returned by the Preset Count command. Note: Unless you have more than 64 presets saved, sending this command one time will return a full list of all presets.
Preset Max	PRESET.MAX	2007	?		Unsigned Integer	Yes	PRESET.MAX? *PRESET.MAX:34*	Displays the number of the highest saved preset
Preset Name	PRESET.NAME	2003	=?	Preset Number 1-1000	String	Yes	[Set Preset 4 name to "Hello"] PRESET.NAME(4)="Hello" *PRESET.NAME(4):"Hello"*	Sets the name listed for the preset in the Delete, Recall and Save menus. Default = "Preset n", where 'n' is the preset number (e.g. "Preset 4")
Preset Recall	PRESET.RECALL	2001	!	Preset Number 1-1000		No	[Save to Preset 4] PRESET.RECALL(4) *PRESET.RECALL(4)@ACK*	See Main -> Presets -> Recall
Preset Save	PRESET.SAVE	2002	!	Preset Number 1-1000		No	[Save to Preset 4] PRESET.SAVE(4) *PRESET.SAVE(4)@ACK*	See Main -> Presets -> Save. A maximum of 100 presets may be saved. The preset numbers used do not have to be contiguous and may be greater than 100.
Reboot	SYSTEM.REBOOT	2402	!			No	SYSTEM.REBOOT *SYSTEM.REBOOT@ACK*	Forces the system to restart
Revert Image Settings	REVERT.IMAGE. SETTINGS	215	!	Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 255 = CURRENT [None = CURRENT]		No	[For Zone 1] REVERT.IMAGE.SETTINGS(ZONE.1) *REVERT.IMAGE.SETTINGS(ZONE.1) @ACK* [For the current zone] REVERT.IMAGE.SETTINGS *REVERT.IMAGE.SETTINGS@ACK*	See Main -> Image Adjust -> Revert to Defaults
Save and Restore Settings	CLONE.SETTINGS	2315	!	Mod 1: Operation 0 = COPY 1 = PASTE Mod 2: Location 0 = USB		No	CLONE.SETTINGS(COPY, USB) *CLONE.SETTINGS(COPY, USB)@ACK*	See Main -> Advanced Settings -> System Settings -> Save All Settings to USB See Main -> Advanced Settings -> System Settings -> Restore All Settings from USB
Save Diagnostics	SAVE. DIAGNOSTICS	2314	!	Location 0 = USB		No	SAVE.DIAGNOSTICS(USB) *SAVE.DIAGNOSTICS(USB)@ACK*	See Main -> Advanced Settings -> System Settings -> Save Diagnostics to USB

Setting	Command Code	Numeric Command	Operators	Modifiers	Operands	Available in Standby	Example	Notes
Schedule	SCHEDULE	2100	=?	Mod 1: Slot 1-20 Mod 2: Parameter 0 = FREQ 1 = MINUTE 2 = HOUR 3 = DAY 4 = ACTION 5 = DATA 6 = ENABLE [None = ALL]	Unsigned int	Yes	[Change the action for event 3 to Turn On] SCHEDULE(3, ACTION)=0 *SCHEDULE(3, ACTION):0*	See Main -> Advanced Settings -> Schedule -> Set Event 1-20 Reference the Schedule Action, Schedule Day and Schedule Frequency settings for operand values.
Schedule Action	SCHEDULE. ACTION	2102	=?	Slot 1-20	0 = TURN.ON 1 = TURN. OFF 2 = RECALL 3 = PANEL. BRIGHTNESS	Yes	[Change the action for event 3 to Turn On] SCHEDULE.ACTION(3)=TURN.ON *SCHEDULE.ACTION(3):TURN.ON*	See Main -> Advanced Settings -> Schedule -> Set Event 1-20 -> Action
Schedule Day	SCHEDULE.DAY	2101	=?	Slot 1-20	0 = MON 1 = TUE 2 = WED 3 = THU 4 = FRI 5 = SAT 6 = SUN	Yes	[Change the day for event 3 to Monday] SCHEDULE.DAY(3)=MON *SCHEDULE.DAY(3):MON*	See Main -> Advanced Settings -> Schedule -> Set Event 1-20 -> Day
Schedule Description	SCHEDULE. DESCRIPTION	2104	?	Slot 1-20	String	Yes	[Read the schedule description string for event 3] SCHEDULE.DESCRIPTION(3)? *SCHEDULE.DESCRIPTION(3):"Daily 08:15 Backlight 25"*	This is the string used for the schedule slots in the Main -> Advanced Settings -> Schedule menu.
Schedule Frequency	SCHEDULE. FREQUENCY	2103	=?	Slot 1-20	0 = DAILY 1 = WEEKLY 2 = WEEKDAYS 3 = WEEKENDS	Yes	[Change the frequency for event 3 to Daily] SCHEDULE.FREQUENCY(3)=DAILY *SCHEDULE.FREQUENCY(3):DAILY*	See Main -> Advanced Settings -> Schedule -> Set Event 1-20 -> Frequency
Serial Device	SERIAL.DEVICE	1220	=?	Mod 1: Port 0 = DB9 1 = USB 2 = OPS Mod 2: Setting 0 = BAUD	String	No	SERIAL.DEVICE(DB9, BAUD)="19200" *SERIAL.DEVICE(DB9 BAUD):"19200"*	Changes the serial parameters for the various serial connections: - "DB9" is the RS232 connector - "USB" is the USB-B connector - "OPS" is the serial connection on the OPS connector
Serial Number	SERIAL.NUMBER	2303	?		String	No	SERIAL.NUMBER? *SERIAL.NUMBER="ABCD1234"*	See Main -> Information -> System Information -> Serial Number
Sharpness	SHARPNESS	204	=?+-	Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 253 = ALL.INPUT 254 = ALL 254 = ALL.ZONE 255 = CURRENT [None = CURRENT]	0-100	No	[For Zone 1] SHARPNESS(ZONE.1)=5 *SHARPNESS(ZONE.1):5* [For the current zone] SHARPNESS=10 *SHARPNESS:10*	See Main -> Image Adjust -> Sharpness
SMTP Authentica-tion	NETWORK.SMTP. AUTHENTICATION	1227	=?		0 = NONE 1 = AUTO 2 = PLAIN 3 = SCRAM_ SHA1 4 = CRAM_ MD5 5 = DIGEST_ MD5 6 = LOGIN 7 = NTLM	Yes	NETWORK.SMTP.AUTHENTICATION= AUTO *NETWORK.SMTP.AUTHENTICATION: AUTO*	See Remote Monitoring Software -> Notifications -> Authentication

Setting	Command Code	Numeric Command	Operators	Modifiers	Operands	Available in Standby	Example	Notes
SMTP Connection Encryption	NETWORK.SMTP. ENCRYPTION	1226	=?		0 = NONE 1 = TLS 2 = START. TLS	Yes	NETWORK.SMTP.ENCRYPTION=TLS *NETWORK.SMTP.ENCRYPTION:TLS*	See Remote Monitoring Software -> Notifications -> Connection Encryption
SMTP Email From Address	NETWORK.SMTP. FROM	1228	=?		String	Yes	NETWORK.SMTP.FROM="myemailaddress @ comcast.net" *NETWORK.SMTP.FROM:"myemailaddres s@ comcast.net"*	See Remote Monitoring Software -> Notifications -> Email From Address
SMTP Password	NETWORK.SMTP. PASSWORD	1225	=?		String	Yes	NETWORK.SMTP.PASSWORD="mypass word " *NETWORK.SMTP.PASSWORD:"mypass word"*	See Remote Monitoring Software -> Notifications -> Password
SMTP Port	NETWORK.SMTP. PORT	1223	=?		Unsigned Integer	Yes	NETWORK.SMTP.PORT=465 *NETWORK.SMTP.PORT:465*	See Remote Monitoring Software -> Notifications -> Port
SMTP Server	NETWORK.SMTP. SERVER	1215	=?		String	Yes	NETWORK.SMTP.SERVER="smtp.comca st. net" *NETWORK.SMTP.SERVER:"smtp.comcas t.net"*	See Remote Monitoring Software -> Notifications -> SMTP Server
SMTP Username	NETWORK.SMTP. USERNAME	1224	=?		String	Yes	NETWORK.SMTP.USERNAME="myuserna me " *NETWORK.SMTP.USERNAME:"myusern ame"*	See Remote Monitoring Software -> Notifications -> User Name
Source Message	SOURCE.MESSAG E	111	?	Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 255 = CURRENT [None = CURRENT]	String	No	[For Zone 1] SOURCE.MESSAGE(ZONE.1)? *SOURCE.MESSAGE(ZONE.1):"1920x108 0I 60Hz"* [For the current zone] SOURCE.MESSAGE? *SOURCE.MESSAGE:"Searching"*	Returns a string with the input resolution and frame rate for the selected zone. If no signal is detected in that zone, the string will read “Searching” or “No Signal”.
Source Select	SOURCE.SELECT	101	=?+-	Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 254 = ALL 255 = CURRENT [None = CURRENT]	Source 0 = OPS 1 = HDMI.1 2 = HDMI.2 3 = HDMI.3 4 = HDMI.4 5 = DP	No	[For Zone 1] SOURCE.SELECT(ZONE.1)=HDMI.1 *SOURCE.SELECT(ZONE.1):HDMI.1* [For the current zone] SOURCE.SELECT=HDMI.2 *SOURCE.SELECT:HDMI.2*	See Main -> Inputs and Views -> Zone 1/2/3/4
Splash Screen	SPLASH.SCREEN	1305	=?+-		0 = DISABLE 1 = ENABLE	No	SPLASH.SCREEN=ENABLE *SPLASH.SCREEN:ENABLE*	See Main -> Advanced Settings -> Menus and Messages -> Allow Splash Screen
Subnet Mask	IPV4.NETMASK	1205	=?	0 = STATIC [None = Current (for reads only] [None = STATIC (for writes only]	String	Yes	[Read the current subnet mask value] IPV4.NETMASK? *IPV4.NETMASK:"255.255.254.0"* [Write the subnet mask for static IP] IPV4.NETMASK(STATIC)="255.255.255.0 " *IPV4.NETMASK(STATIC):"255.255.255.0"*	See Main -> Advanced Settings -> Network -> Subnet Mask

Setting	Command Code	Numeric Command	Operators	Modifiers	Operands	Available in Standby	Example	Notes
System State	SYSTEM.STATE	2310	?		0 = STANDBY 1 = POWERING. ON 2 = ON 3 = POWERING. DOWN 4 = BACKLIGHT. OFF 5 = FAULT	No	SYSTEM.STATE? *SYSTEM.STATE:STANDBY*	Indicates the current state of the system: - STANDBY: The system is in its lowest power mode. Not all functions are available. - POWERING.ON: The system is transitioning from the STANDBY state to the ON state. - ON: The system is on with the backlight on. - POWERING.DOWN: The system is transitioning from the ON state to the STANDBY state. - FAULT: A system failure has occurred. Use the Error Log command to get more information.
Test Email	NETWORK.SMTP. TEST	1229	!	Event 0 = POWER. STATE. CHANGED 1 = ERROR. OCCURRED 2 = SOURCE. DETECTED 3 = SOURCE. LOST 4 = SOURCE. SELECTED		Yes	NETWORK.SMTP.TEST(SOURCE.LOST) *NETWORK.SMTP.TEST(SOURCE.LOST) @ACK*	See Remote Monitoring Software -> Notifications -> Test Email
Test Pattern	PATTERN	1307	!	Pattern 0 = NONE 1 = BLACK 2 = WHITE 3 = GRAY 4 = RED 5 = GREEN 6 = BLUE 7 = CYAN 8 = MAGENTA 9 = YELLOW 11 = GRAYBAR 12 = REDBAR 13 = GREENBAR 14 = BLUEBAR 16 = CHECKER-BOARD 18 = COLORBAR		No	PATTERN(GRAYBAR) *PATTERN(GRAYBAR)@ACK*	See Main -> Advanced Settings -> Test Pattern
Time	TIME	1100	=?	0 = YEAR 1 = MONTH 2 = DATE 3 = HOUR 4 = MINUTE [None = ALL]	Unsigned int	Yes	[Set the month to March] TIME(MONTH)=3 *TIME(MONTH):3*	See Main -> Advanced Settings -> Schedule -> Set Date and Time
Time - Day	TIME.DAY	1101	?		0 = MON 1 = TUE 2 = WED 3 = THU 4 = FRI 5 = SAT 6 = SUN	Yes	TIME.DAY? *TIME.DAY:TUE*	See Main -> Advanced Settings -> Schedule -> Set Date and Time -> Day

Setting	Command Code	Numeric Command	Operators	Modifiers	Operands	Available in Standby	Example	Notes
Time - Month	TIME.MONTH	1102	=?		1 = JANUARY 2 = FEBRUARY 3 = MARCH 4 = APRIL 5 = MAY 6 = JUNE 7 = JULY 8 = AUGUST 9 = SEPTEMBER 10 = OCTOBER 11 = NOVEMBER 12 = DECEMBER	Yes	TIME.MONTH=MARCH *TIME.MONTH:MARCH*	See Main -> Advanced Settings -> Schedule -> Set Date and Time -> Month
Time - String	TIME.STRING	1103	?		String	Yes	TIME.STRING? *TIME.STRING:"2015-09-01 13:21"*	See Main -> Advanced Settings -> Schedule -> Date / Time
Time Zone	TIMEZONE	1208	=?+-		[See separate table]	Yes	TIMEZONE=UTCM0800.PACIFIC.TIME.US.CANADA *TIMEZONE:UTCM0800.PACIFIC.TIME.US.CANADA*	See Main -> Advanced Settings -> Schedule -> Set Date and Time -> Time Zone. See table on page 27 for valid values
Tint	TINT	203	=?+-	Zone 0 = ZONE.1 1 = ZONE.2 2 = ZONE.3 3 = ZONE.4 253 = ALL.INPUT 254 = ALL 254 = ALL.ZONE 255 = CURRENT [None = CURRENT]	0-100	No	[For Zone 1] TINT(ZONE.1)=50 *TINT(ZONE.1):50* [For the current zone] TINT=55 *TINT:55*	See Main -> Image Adjust -> Tint
Use Network Time	NETWORK.NTP	1209	=?		0 = OFF 1 = ON	Yes	NETWORK.NTP=ON *NETWORK.NTP:ON*	See Main -> Advanced Settings -> Schedule -> Set Date and Time -> Use Network Time
Version Info	BUILD.INFO	2302	?	0 = DATE.SCP 1 = VERSION.SCP 3 = DATE.VP 4 = VERSION.VP 5 = SRC.INFO.VP 6 = VERSION.HDMI 7 = VERSION.FRC 8 = PKG.DATE 9 = PKG.VERSION	String	Yes	BUILD.INFO(PKG.VERSION)? *BUILD.INFO(PKG.VERSION):"1.0.600"*	See Main -> Information -> System Information
Volume	AUDIO.VOLUME	1006	=?+-		0-100	No	AUDIO.VOLUME=50 *AUDIO.VOLUME:50*	See Main -> Audio -> Volume
Wall	WALL	503	=?+-	0 = ENABLE 1 = WIDTH 2 = HEIGHT 3 = COLUMN 4 = ROW 5 = FRAME.ENABLE 6 = FRAME.WIDTH 7 = FRAME.HEIGHT	0-100	No	[Set the wall width to 4] WALL(WIDTH)=4 *WALL(WIDTH):4*	See Main -> Advanced Settings -> Tiling

7. Current Zone Layout

Value	Name	Layout	Advanced Layout	Current Zone
0	S.1	Single View	N/A	Zone 1
1	P.UL.1	PIP	Upper Left	Zone 1
2	P.UL.2	PIP	Upper Left	Zone 2
3	P.UR.1	PIP	Upper Right	Zone 1
4	P.UR.2	PIP	Upper Right	Zone 2
5	P.LL.1	PIP	Lower Left	Zone 1
6	P.LL.2	PIP	Lower Left	Zone 2
7	P.LR.1	PIP	Lower Right	Zone 1
8	P.LR.2	PIP	Lower Right	Zone 2
9	D.L.1	Dual View	Left / Right	Zone 1
10	D.L.2	Dual View	Left / Right	Zone 2
11	D.T.1	Dual View	Top / Bottom	Zone 1
12	D.T.2	Dual View	Top / Bottom	Zone 2
13	T.L.1	Triple View	One Left / Two Right	Zone 1
14	T.L.2	Triple View	One Left / Two Right	Zone 2
15	T.L.3	Triple View	One Left / Two Right	Zone 3
16	T.R.1	Triple View	Two Left / One Right	Zone 1
17	T.R.2	Triple View	Two Left / One Right	Zone 2
18	T.R.3	Triple View	Two Left / One Right	Zone 3
19	T.T.1	Triple View	One Top / Two Bottom	Zone 1
20	T.T.2	Triple View	One Top / Two Bottom	Zone 2
21	T.T.3	Triple View	One Top / Two Bottom	Zone 3
22	T.B.1	Triple View	Two Top / One Bottom	Zone 1
23	T.B.2	Triple View	Two Top / One Bottom	Zone 2
24	T.B.3	Triple View	Two Top / One Bottom	Zone 3
25	T.M.1	Triple View	Side-by-Side	Zone 1
26	T.M.2	Triple View	Side-by-Side	Zone 2
27	T.M.3	Triple View	Side-by-Side	Zone 3
28	Q.1	Quad View	N/A	Zone 1
29	Q.2	Quad View	N/A	Zone 2
30	Q.3	Quad View	N/A	Zone 3
31	Q.4	Quad View	N/A	Zone 4

8. Key

Value	Name	Equivalent Remote Control Button	Description
0	UP	UP	Navigate up
1	DOWN	DOWN	Navigate down
2	MENU	MENU	Opens the menu
3	SOURCE	[None]	Toggles the source on the current zone
5	VOLUME.PLUS	VOL +	Volume increase
6	VOLUME.MINUS	VOL -	Volume decrease
9	EXIT	[None]	Exits the menu
12	LEFT	LEFT	Navigate left
13	ENTER	ENTER	Selects the current menu item
14	PREV	PREV	Returns to the previous menu
15	RIGHT	RIGHT	Navigate right
17	KEY.1	1	Number button 1
18	KEY.2	2	Number button 2
19	KEY.3	3	Number button 3
20	KEY.4	4	Number button 4
21	KEY.5	5	Number button 5
22	KEY.6	6	Number button 6
23	KEY.7	7	Number button 7
24	KEY.8	8	Number button 8
25	KEY.9	9	Number button 9
26	MUTE	MUTE	Audio mute
32	KEY.0	0	Number button 0
256	STDBY.TOGGLE	[None]	Toggles the power on and off
257	STDBY.ENTER	OFF	Power off
258	STDBY.EXIT	ON	Power on
259	MENU.PREV	[None]	Returns to the previous menu
260	TOP	TOP	Selects the top line in the current menu
261	PRESETS	PRESETS	Opens the Presets menu
262	PRESET1	PRESET 1	Applies Preset 1

Value	Name	Equivalent Remote Control Button	Description
263	PRESET2	PRESET 2	Applies Preset 2
264	PRESET3	PRESET 3	Applies Preset 3
265	PRESET4	PRESET 4	Applies Preset 4
266	ZONE1	ZONE 1	Selects the input for Zone 1
267	ZONE2	ZONE 2	Selects the input for Zone 2
268	ZONE3	ZONE 3	Selects the input for Zone 3
269	ZONE4	ZONE 4	Selects the input for Zone 4
270	PIP.MODE	PIP MODE	Selects the Multi-Source View setting
271	PIP.SWAP	PIP SWAP	Swaps the main and PIP windows
272	HDMI1	HDMI 1	Selects HDMI 1 for the current zone
273	HDMI2	HDMI 2	Selects HDMI 2 for the current zone
274	HDMI3	HDMI 3	Selects HDMI 3 for the current zone
275	HDMI4	HDMI 4	Selects HDMI 4 for the current zone
276	DISPLAY.PORT	DP	Selects DP for the current zone
277	DVI	DVI	Not used
278	VGA	VGA	Not used
279	OPS	OPS	Selects OPS for the current zone
280	WALL	VIDEO WALL	Opens the Tiling menu
281	COLOR	COLOR	Not used
282	MISC	MISC	Opens the Image Information menu
283	ARROW.LEFT	⍰	Not used
284	ARROW.RIGHT	⍰	Not used
285	STAR.STAR	**	Not used

9. Timezone

Value	Name	Description
0	UTCM1200.INTERNATIONAL.DATE.LINE.WEST	(UTC-12:00) International Date Line West
1	UTCM1100.COORDINATED.UNIVERSAL.TIMEM11	(UTC-11:00) Coordinated Universal Time -11
2	UTCM1000.HAWAII	(UTC-10:00) Hawaii
3	UTCM0900.ALASKA	(UTC-09:00) Alaska
4	UTCM0800.BAJA.CALIFORNIA	(UTC-08:00) Baja California
5	UTCM0800.PACIFIC.TIME.US.CANADA	(UTC-08:00) Pacific Time (US and Canada)
6	UTCM0700.ARIZONA	(UTC-07:00) Arizona
7	UTCM0700.CHIHUAHUA.LA.PAZ.MAZATLAN	(UTC-07:00) Chihuahua, La Paz, Mazatlan
8	UTCM0700.MOUNTAIN.TIME.US.CANADA	(UTC-07:00) Mountain Time (US and Canada)
9	UTCM0600.CENTRAL.AMERICA	(UTC-06:00) Central America
10	UTCM0600.CENTRAL.TIME.US.CANADA	(UTC-06:00) Central Time (US and Canada)
11	UTCM0600.GUADALAJARA.MEXICO.CITY.MONTERREY	(UTC-06:00) Guadalajara, Mexico City, Monterrey
12	UTCM0600.SASKATCHEWAN	(UTC-06:00) Saskatchewan
13	UTCM0500.BOGOTA.LIMA.QUITO.RIO.BRANCO	(UTC-05:00) Bogota, Lima, Quito
14	UTCM0500.CHETUMAL	(UTC-05:00) Chetumal
15	UTCM0500.EASTERN.TIME.US.CANADA	(UTC-05:00) Eastern Time (US and Canada)
16	UTCM0500.INDIANA.EAST	(UTC-05:00) Indiana (East)
17	UTCM0430.CARACAS	(UTC-04:30) Caracas
18	UTCM0400.ASUNCION	(UTC-04:00) Asuncion
19	UTCM0400.ATLANTIC.TIME.CANADA	(UTC-04:00) Atlantic Time (Canada)
20	UTCM0400.CUIABA	(UTC-04:00) Cuiaba
21	UTCM0400.GEORGETOWN.LA.PAZ.MANAUS.SAN.JUAN	(UTC-04:00) Georgetown, La Paz, Manaus, San Juan
22	UTCM0330.NEWFOUNDLAND	(UTC-03:30) Newfoundland
23	UTCM0300.BRASILIA	(UTC-03:00) Brasilia
24	UTCM0300.CAYENNE.FORTALEZA	(UTC-03:00) Cayenne, Fortaleza
25	UTCM0300.CITY.OF.BUENOS.AIRES	(UTC-03:00) Buenos Aires
26	UTCM0300.GREENLAND	(UTC-03:00) Greenland
27	UTCM0300.MONTEVIDEO	(UTC-03:00) Montevideo
28	UTCM0300.SALVADOR	(UTC-03:00) Salvador
29	UTCM0300.SANTIAGO	(UTC-03:00) Santiago
30	UTCM0200.COORDINATED.UNIVERSAL.TIMEM02	(UTC-02:00) Coordinated Universal Time -02
31	UTCM0100.AZORES	(UTC-01:00) Azores
32	UTCM0100.CABO.VERDE.IS	(UTC-01:00) Cabo Verde Is.
33	UTC.CASABLANCA	(UTC) Casablanca
34	UTC.COORDINATED.UNIVERSAL.TIME	(UTC) Coordinated Universal Time
35	UTC.DUBLIN.EDINBURGH.LISBON.LONDON	(UTC) Dublin, Edinburgh, Lisbon, London
36	UTC.MONROVIA.REYKJAVIK	(UTC) Monrovia, Reykjavik

Value	Name	Description
37	UTCP0100.AMSTERDAM.BERLIN.BERN.ROME. STOCKHOLM.VIENNA	(UTC+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna
38	UTCP0100.BELGRADE.BRATISLAVA.BUDAPEST. LJUBLJANA.PRAGUE	(UTC+01:00) Belgrade, Bratislava, Budapest, Ljubljana, Prague
39	UTCP0100.BRUSSELS.COPENHAGEN.MADRID.PARIS	(UTC+01:00) Brussels, Copenhagen, Madrid, Paris
40	UTCP0100.SARAJEVO.SKOPJE.WARSAW.ZAGREB	(UTC+01:00) Sarajevo, Skopje, Warsaw, Zagreb
41	UTCP0100.WEST.CENTRAL.AFRICA	(UTC+01:00) West Central Africa
42	UTCP0100.WINDHOEK	(UTC+01:00) Windhoek
43	UTCP0200.AMMAN	(UTC+02:00) Amman
44	UTCP0200.ATHENS.BUCHAREST	(UTC+02:00) Athens, Bucharest
45	UTCP0200.BEIRUT	(UTC+02:00) Beirut
46	UTCP0200.CAIRO	(UTC+02:00) Cairo
47	UTCP0200.DAMASCUS	(UTC+02:00) Damascus
48	UTCP0200.HARARE.PRETORIA	(UTC+02:00) Harare, Pretoria
49	UTCP0200.HELSINKI.KYIV.RIGA.SOFIA.TALLINN.VILNIUS	(UTC+02:00) Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius
50	UTCP0200.ISTANBUL	(UTC+02:00) Istanbul
51	UTCP0200.JERUSALEM	(UTC+02:00) Jerusalem
52	UTCP0200.KALININGRAD.RTZ.1	(UTC+02:00) Kaliningrad (RTZ 1)
53	UTCP0200.TRIPOLI	(UTC+02:00) Tripoli
54	UTCP0300.BAGHDAD	(UTC+03:00) Baghdad
55	UTCP0300.KUWAIT.RIYADH	(UTC+03:00) Kuwait, Riyadh
56	UTCP0300.MINSK	(UTC+03:00) Minsk
57	UTCP0300.MOSCOW.ST.PETERSBURG.VOLGOGRAD. RTZ.2	(UTC+03:00) Moscow, St. Petersburg, Volgograd (RTZ 2)
58	UTCP0300.NAIROBI	(UTC+03:00) Nairobi
59	UTCP0330.TEHRAN	(UTC+03:30) Tehran
60	UTCP0400.ABU.DHABI.MUSCAT	(UTC+04:00) Abu Dhabi, Muscat
61	UTCP0400.BAKU	(UTC+04:00) Baku
62	UTCP0400.IZHEVSK.SAMARA.RTZ.3	(UTC+04:00) Izhevsk, Samara (RTZ 3)
63	UTCP0400.PORT.LOUIS	(UTC+04:00) Port Louis
64	UTCP0400.TBILISI	(UTC+04:00) Tbilisi
65	UTCP0400.YEREVAN	(UTC+04:00) Yerevan
66	UTCP0430.KABUL	(UTC+04:30) Kabul
67	UTCP0500.ASHGABAT.TASHKENT	(UTC+05:00) Tashkent
68	UTCP0500.EKATERINBURG.RTZ.4	(UTC+05:00) Ekaterinburg (RTZ 4)
69	UTCP0500.ISLAMABAD.KARACHI	(UTC+05:00) Islamabad, Karachi
70	UTCP0530.CHENNAI.KOLKATA.MUMBAI.NEW.DELHI	(UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi
71	UTCP0530.SRI.JAYAWARDENEPURA	(UTC+05:30) Sri Jayawardenepura
72	UTCP0545.KATHMANDU	(UTC+05:45) Kathmandu

Value	Name	Description
73	UTCP0600.ASTANA	(UTC+06:00) Astana
74	UTCP0600.DHAKA	(UTC+06:00) Dhaka
75	UTCP0600.NOVOSIBIRSK.RTZ.5	(UTC+06:00) Novosibirsk (RTZ 5)
76	UTCP0630.YANGON.RANGOON	(UTC+06:30) Yangon (Rangoon)
77	UTCP0700.BANGKOK.HANOI.JAKARTA	(UTC+07:00) Bangkok, Hanoi, Jakarta
78	UTCP0700.KRASNOYARSK.RTZ.6	(UTC+07:00) Krasnoyarsk (RTZ 6)
79	UTCP0800.BEIJING.CHONGQING.HONG.KONG.URUMQI	(UTC+08:00) Beijing, Chongqing, Hong Kong, Urumqi
80	UTCP0800.IRKUTSK.RTZ.7	(UTC+08:00) Irkutsk (RTZ 7)
81	UTCP0800.KUALA.LUMPUR.SINGAPORE	(UTC+08:00) Kuala Lumpur, Singapore
82	UTCP0800.PERTH	(UTC+08:00) Perth
83	UTCP0800.TAIPEI	(UTC+08:00) Taipei
84	UTCP0800.ULAANBAATAR	(UTC+08:00) Ulaanbaatar
85	UTCP0900.OSAKA.SAPPORO.TOKYO	(UTC+09:00) Osaka, Sapporo, Tokyo
86	UTCP0900.SEOUL	(UTC+09:00) Seoul
87	UTCP0900.YAKUTSK.RTZ.8	(UTC+09:00) Yakutsk (RTZ 8)
88	UTCP0930.ADELAIDE	(UTC+09:30) Adelaide
89	UTCP0930.DARWIN	(UTC+09:30) Darwin
90	UTCP1000.BRISBANE	(UTC+10:00) Brisbane
91	UTCP1000.CANBERRA.MELBOURNE.SYDNEY	(UTC+10:00) Canberra, Melbourne, Sydney
92	UTCP1000.GUAM.PORT.MORESBY	(UTC+10:00) Guam, Port Moresby
93	UTCP1000.HOBART	(UTC+10:00) Hobart
94	UTCP1000.MAGADAN	(UTC+10:00) Magadan
95	UTCP1000.VLADIVOSTOK.MAGADAN.RTZ.9	(UTC+11:00) Vladivostok (RTZ 9)
96	UTCP1100.CHOKURDAKH.RTZ.10	(UTC+11:00) Chokurdakh (RTZ 10)
97	UTCP1100.SOLOMON.IS.NEW.CALEDONIA	(UTC+11:00) Solomon Is., New Caledonia
98	UTCP1200.ANADYR.PETROPAVLOVSK.KAMCHATSKY. RTZ.11	(UTC+12:00) Anadyr, Petropavlovsk- Kamchatsky (RTZ 11)
99	UTCP1200.AUCKLAND.WELLINGTON	(UTC+12:00) Auckland, Wellington
100	UTCP1200.COORDINATED.UNIVERSAL.TIMEP12	(UTC+12:00) Coordinated Universal Time +12
101	UTCP1200.FIJI	(UTC+12:00) Fiji
102	UTCP1300.NUKU.ALOFA	(UTC+13:00) Nuku'alofa
103	UTCP1300.SAMOA	(UTC+13:00) Samoa
104	UTCP1400.KIRITIMATI.ISLAND	(UTC+14:00) Kiritimati Island

Sending Serial Commands via USB

The USB-B connector accept the same serial command set as RS232. As most PCs no longer have RS232 connections, using the USB-B connector becomes a convenient method for performing serial communication with the display.

10. Installing the LO552 USB drivers

Before using USB for serial communication, the USB drivers must be installed. This section describes the steps necessary to install the USB drivers. You can skip this section if you have already installed the USB drivers on your computer.

10.1 Automatically Installing the USB Drivers

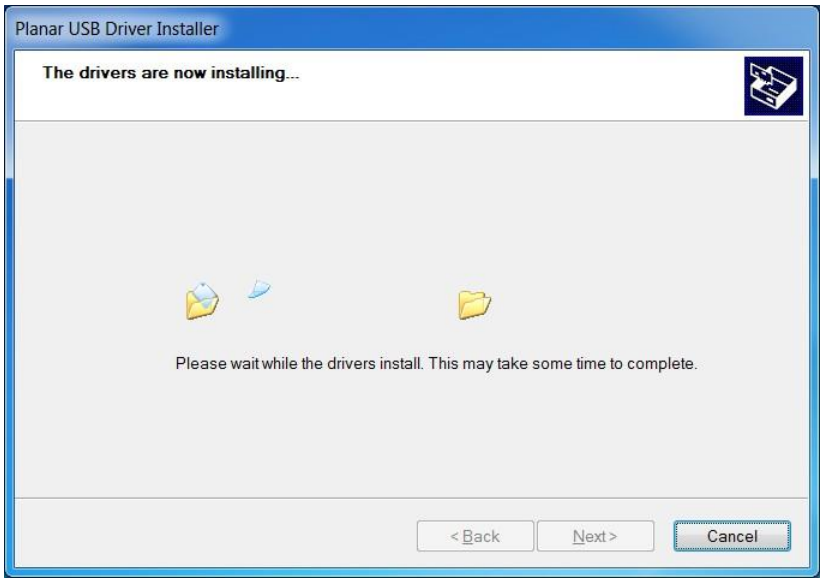
In most cases, the USB driver installation can be performed using the automated driver installation program included on the USB flash drive in your accessory kit.

- If using a 64-bit version of Windows, use the CP210xVCPInstaller_x64.exe installation program.
- If using a 32-bit version of Windows, use the CP210xVCPInstaller_x86.exe installation program.

If you're unsure whether your machine is 32-bit or 64-bit, try both installation programs. If the selected program is for a different architecture, the installer will inform you to use the other installation program.

1. When the Planar USB Driver Installer page opens, click "Next".

2. The USB drivers will be automatically installed.

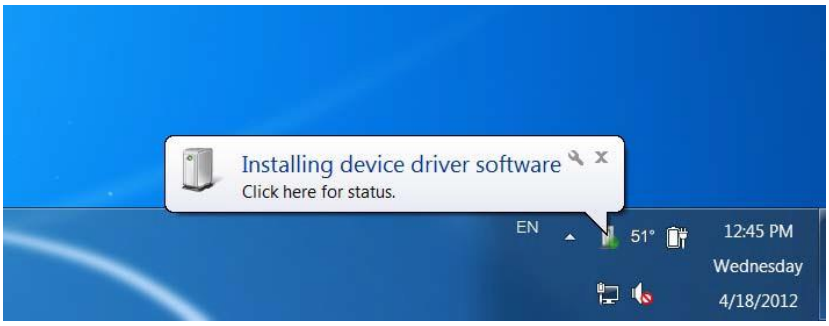


3. When the installation completes, click “Finish”. The USB driver installation process is now complete.

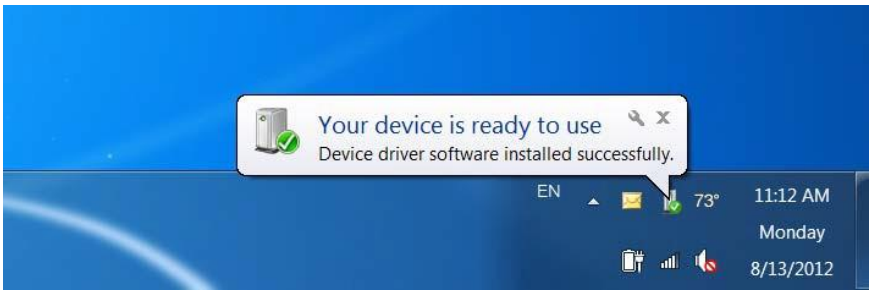
10.2 Manually Installing the USB Drivers

If the automatic USB driver installation doesn't succeed, you can follow the steps below to manually install the USB drivers. The USB flash drive in your accessory kit contains the USB drivers for manual installation.

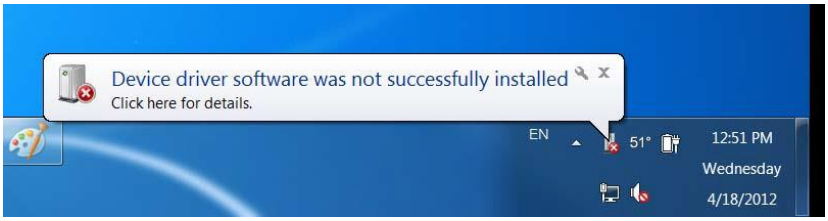
1. Plug in the USB cable to your computer and to the LO552 display.
2. Windows will detect the new hardware and attempt to install the drivers on its own. If you do not see the "Installing device driver software" message, then the driver installation previously failed. Skip to step 5.



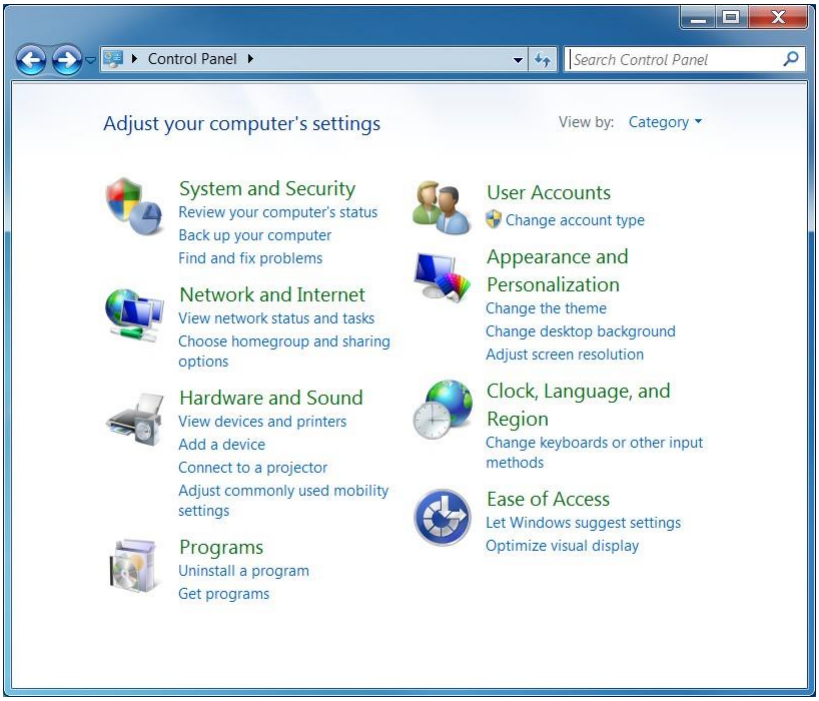
3. If driver installation succeeds, you will see a message like the one shown below. If so, driver installation is complete.



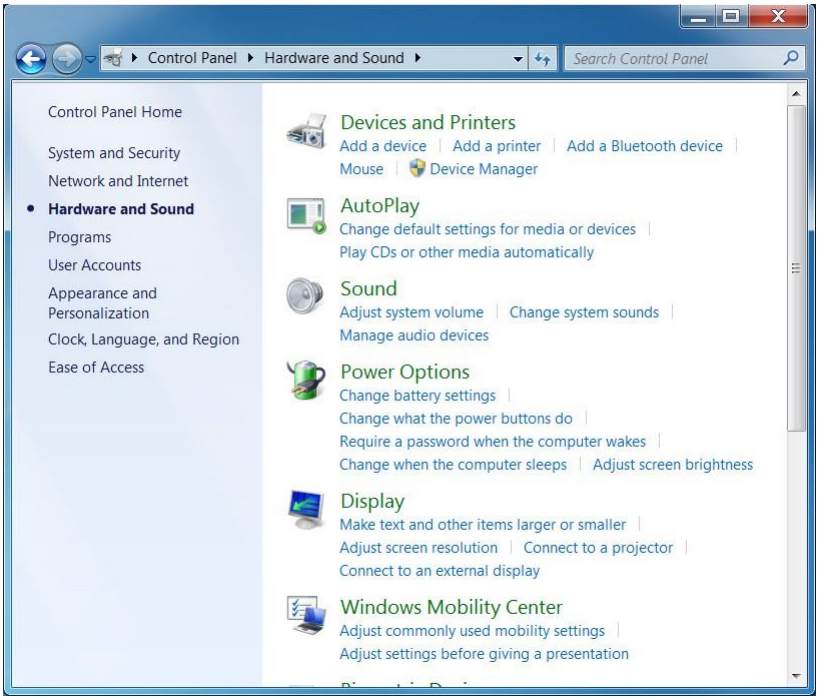
4. If Windows' attempt at installing the drivers fails, you will need to manually install the drivers using the steps below.



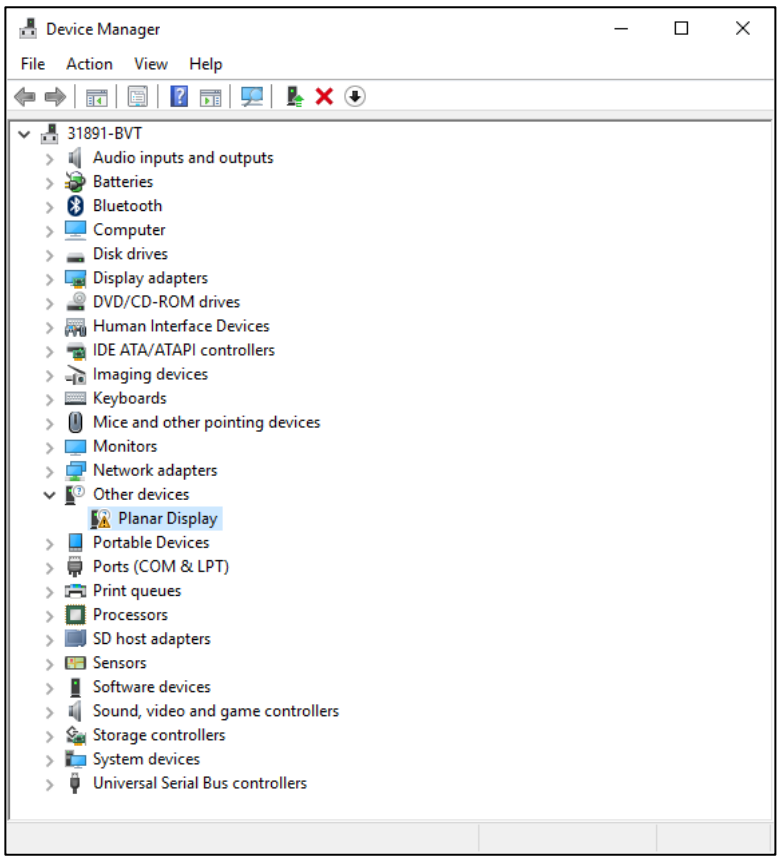
5. Open the Start menu and select “Control Panel”.



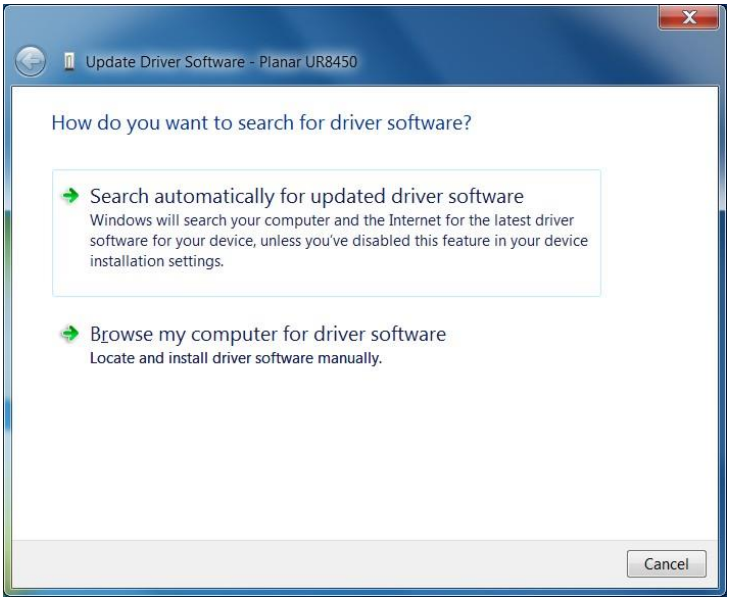
6. Select Hardware and Sound. In the following menu, under Devices and Printers, select “Device Manager”.



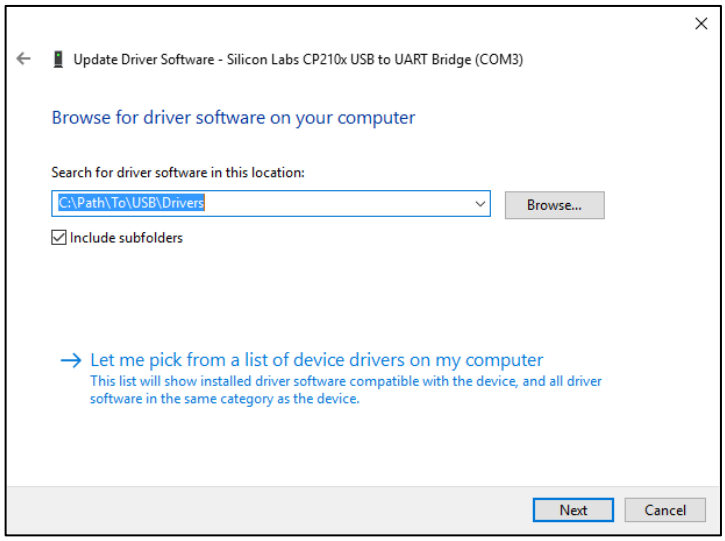
7. In the Device Manager, there will be a “Planar Display” item in the “Other Devices” section. Right-click on Planar Display and select “Update Driver Software”.



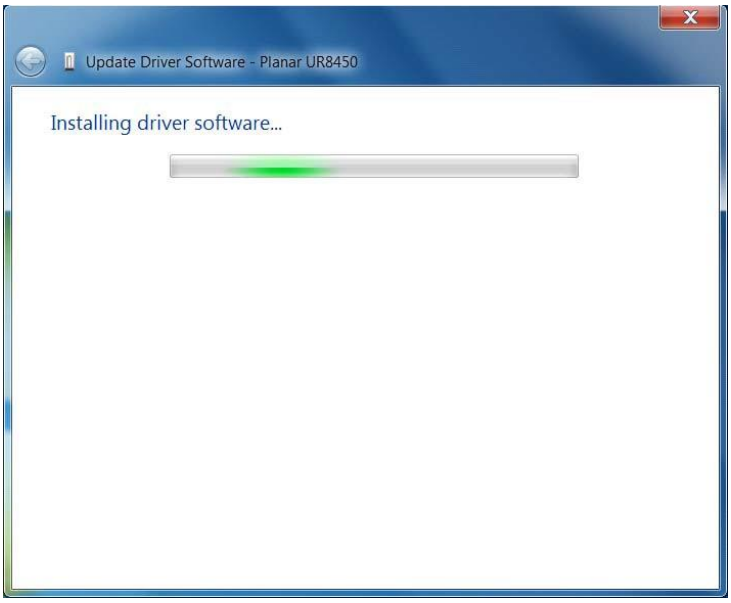
8. Follow the steps defined in the Update Driver Software wizard as follows.
   a. On the initial screen, select “Browse my computer for driver software”.



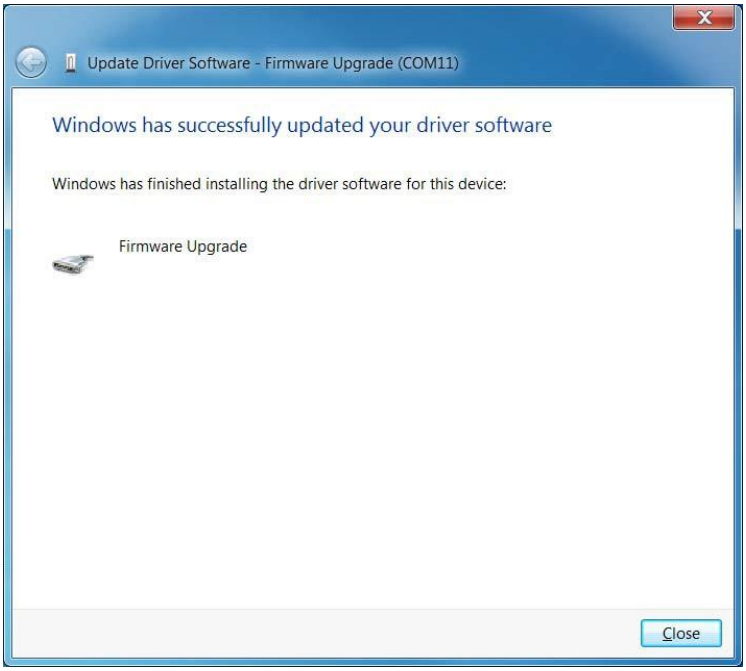
b. Make sure the “Include subfolders” checkbox is checked. The USB drivers are included on the USB flash drive in the accessory kit; they can also be obtained from http://www.planar.com/support. Use the “Browse” button to locate the directory where the USB drivers are located. Click “Next”.



c. The Update Driver Software wizard will search the directory for the proper USB drivers and install them.



d. When the installation completes, click “Close”. The USB driver installation process is now complete.



11. Using the LO552 USB Connection

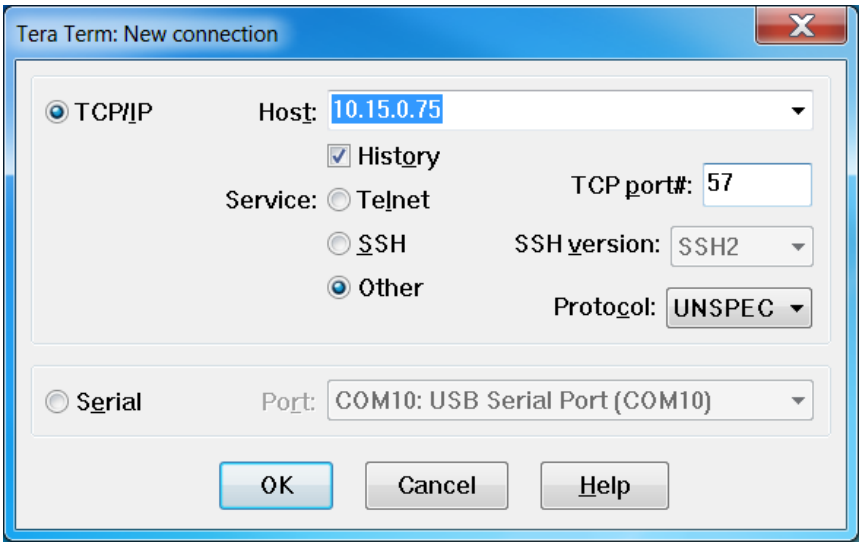
Once the USB drivers are installed, the PC will recognize the USB-B connection as a regular serial port. The USB-B connection will appear in the COM port list of each serial terminal program. Any terminal program such as Tera Term can be used to test the connection.

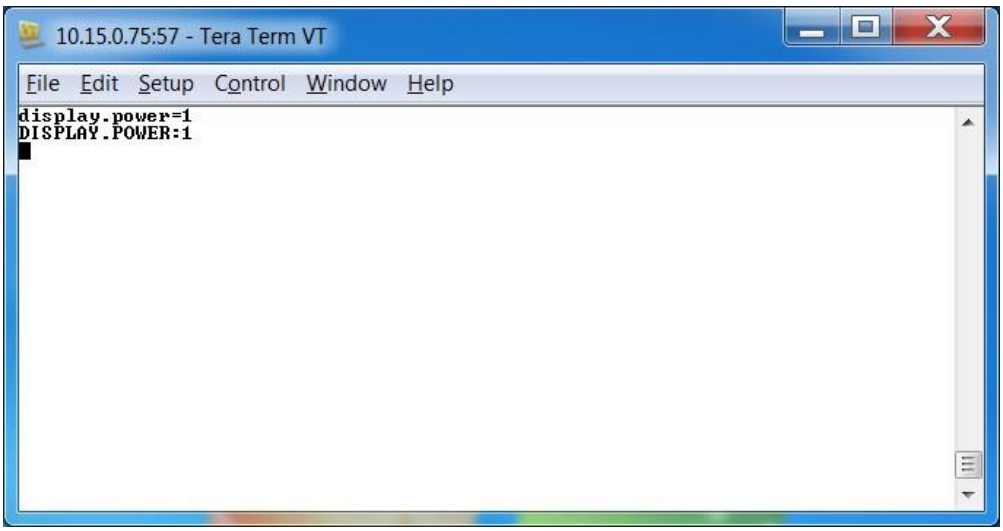
Sending RS232 Commands Via TCP or UDP

TCP and UDP port 57 accept the same serial command set as RS232. It is convenient for IP control applications and can be tested with a TCP terminal program such as Tera Term or a UDP terminal program such as Hercules.

Notice the following in the TCP example below using Tera Term:

- The IP address is 10.15.0.75
- Port 57 is selected
- Service is set to “Other” to indicate that TCP is being used without Telnet or SSH





Notice the following in the UDP example below using Hercules:

- The IP address is 10.15.0.67
- Port 57 is selected
- “444953504C41592E504F5745523D310D” in the Send box is hex for “DISPLAY.POWER=1”

Note: Most UDP terminal programs won’t automatically send the [CR] at the end of the command, so the hex command is used to do this manually.