Planar Simplicity M Series RS232

SLM43
SLM50
SLM55
SLM65
SLM75
SLM86

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RoHS Compliance Statement

The Planar Simplicity M Series is fully RoHS Compliant.

Part Number: 020-1410-00D

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RS232 Communication

RS232 control is not necessary for operation, but is a convenient way to control Planar Simplicity M 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 Planar Simplicity M Series models.

2.   RS232 Setup

The use of RS232 requires the display's **Power Saving Mode** to be in **Wake on Signal** or **Always On**. See the "Power Saving Mode" section of the *Planar Simplicity M Series User Manual*.

The RS232 connection must use the following settings:

- 9600 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 male DB9 connector is wired as a null model serial connection.

Male D-Sub 9-Pin (outside view)
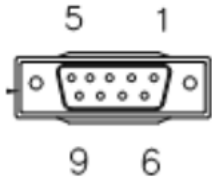
DB9 Pin #	Signal	2.5mm Pin Description
1	NC	
2	RXD	Input to LCD Monitor = 1st Ring on 2.5mm TRRS
3	TXD	Output from LCD Monitor = Tip on 2.5mm TRRS
4	NC	
5	GND	Sleeve on 2.5mm TRRS
6	NC	
7	NC	

2.5mm TRRS Pin Diagram

Note: Use a crossover cable (null modem) for connection to the host controller:
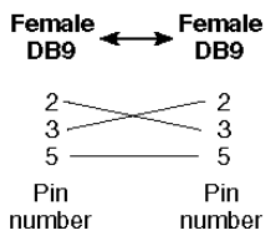
4.   RS232 Command Protocol

4.1   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 7). 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 7).
  - '#' reads the setting value in numeric form (see "Examples" on page 7).
  - '+' 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 7).
  - 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 7).
  - 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.

4.2   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).

4.3   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)

Command	Response	Notes
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)
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.

5.   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 Code	Operators	Modifiers	Operands	Available in Standby	Example	Notes
Aspect Ratio	ASPECT	500	=?+-		1 = FILL 2 = 4X3 3 = NATIVE 4 = 21X9 5 = CUSTOM	No	ASPECT=FILL *ASPECT:FILL*	See Main -> Screen -> Aspect Ratio
Audio Out (Line Out)	AUDIO.VOLUME. LINE	5005	=?+-		0-100	No	AUDIO.VOLUME.LINE=50 *AUDIO.VOLUME.LINE:50*	See Main -> Audio -> Audio Out (Line Out)
Audio Out Sync	AUDIO.OUT.SYNC	5009	=?		0 = OFF 1 = ON	No	AUDIO.OUT.SYNC=OFF *AUDIO.OUT.SYNC:OFF*	See Main -> Audio -> Audio Out Sync
Audio Source	AUDIO.SOURCE	5008	=?		0 = ANALOG 1 = DIGITAL	No	AUDIO.SOURCE=ANALOG *AUDIO.SOURCE:ANALOG*	See Main -> Audio -> Audio Source
Auto Adjust	AUTO.ADJUST	5004	!			No	AUTO.ADJUST *AUTO.ADJUST@ACK*	See Main -> Screen -> Auto Adjust
Auto Power On	AUTO.ON	1407	=?+-		0 = OFF 1 = ON 2 = LAST.STATUS	No	AUTO.ON=ON *AUTO.ON:ON*	See Main -> Configuration 1 -> Auto Power On
Auto Scan Sources	SOURCE.SCAN	105	=?+-		0 = OFF 1 = ON 2 = FAILOVER	No	SOURCE.SCAN=OFF *SOURCE.SCAN:OFF*	See Main -> Advanced Settings -> Auto Signal Detection -> Detect Mode
Backlight Intensity	BACKLIGHT. INTENSITY	1400	=?+-		1-100	No	BACKLIGHT.INTENSITY=75 *BACKLIGHT.INTENSITY:75*	See Main -> Picture -> Backlight
Backlight Panel Saving	PANEL.SAVING. BACKLIGHT	5010	=?		0 = OFF 1 = ON	No	PANEL.SAVING.BACKLIGHT=OFF *PANEL.SAVING.BACKLIGHT:OFF*	See Main -> Configuration -> Panel Saving -> Backlight
Balance	AUDIO.BALANCE	1000	=?+-		0-100	No	AUDIO.BALANCE=50 *AUDIO.BALANCE:50*	See Main -> Audio -> Balance
Bass	AUDIO.BASS	1001	=?+-		0-100	No	AUDIO.BASS=50 *AUDIO.BASS:50*	See Main -> Audio -> Bass

Setting	Command Code	Numeric Command Code	Operators	Modifiers	Operands	Available in Standby	Example	Notes
Boot Source Input	BOOT.SOURCE. INPUT	5013	=?		Source 1 = HDMI®.1 2 = HDMI.2 6 = DVI 7 = VGA 8 = MEDIA. PLAYER 9 = BROWSER 10 = CMS 11 = ANDROID 12 = ANDROID. APP	No	BOOT.SOURCE.INPUT=HDMI.1 *BOOT.SOURCE.INPUT:HDMI.1*	See Main -> Configuration 1 -> Boot On Source -> Input
Boot Source Last Input	BOOT.SOURCE. LAST	5012	=?		0 = OFF 1 = ON	No	BOOT.SOURCE.LAST=OFF *BOOT.SOURCE.LAST:OFF*	See Main -> Configuration 1 -> Boot On Source -> Last Input
Boot Source Playlist	BOOT.SOURCE. PLAYLIST	5014	=?+-		0-7	No	BOOT.SOURCE.PLAYLIST=2 *BOOT.SOURCE.PLAYLIST:2*	See Main -> Configuration 1 -> Boot On Source -> Last Input
Brightness	BRIGHTNESS	200	=?+-		0-100	No	BRIGHTNESS=55 *BRIGHTNESS:55*	See Main -> Picture -> Brightness
Color	COLOR	202	=?+-		0-100	No	COLOR=55 *COLOR:55*	See Main -> Picture -> Color
Color Space	COLORSPACE	207	=?+-	Value Type 0 = SETTING 1 = ACTUAL	2 = RGB 3 = RGB.VIDEO 4 = AUTO	No	[Setting Color Space] COLORSPACE(SETTING)=AUTO *COLORSPACE(SETTING):AUTO* [Reading the actual Color Space] COLORSPACE(ACTUAL)? *COLORSPACE(ACTUAL):RGB*	"Setting" is the value that the color space is set to. See Main -> Configuration 1 -> RGB Range. "Actual" is the currently applied color space (cannot return AUTO). RGB = Full Range.

Setting	Command Code	Numeric Command Code	Operators	Modifiers	Operands	Available in Standby	Example	Notes
								RGB.VIDEO = Limited Range.
Color Temperature	COLOR. TEMPERATURE	208	=?+-		0 = 3200K 1 = 5500K 2 = 6500K 3 = 7500K 4 = 9300K 5 = NATIVE 6 = USER1 7 = USER2	No	COLOR.TEMPERATURE=NATIVE *COLOR.TEMPERATURE:NATIVE*	See Main -> Picture -> Color Temperature
Contrast	CONTRAST	201	=?+-		0-100	No	CONTRAST=55 *CONTRAST:55*	See Main -> Picture -> Contrast
Custom Zoom	CUSTOM.ZOOM	5003	=?+-	0 = ZOOM 1 = HZOOM 2 = VZOOM 3 = HPOS 4 = VPOS	0-100	No	CUSTOM.ZOOM(HZOOM)=50 *CUSTOM.ZOOM(HZOOM):50*	See Main -> Screen -> Custom Zoom
Default Gateway	IPV4.GATEWAY	1206	=?	0 = STATIC [None = Current (for reads only)] [None = STATIC (for writes only)]	String	No	[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 Android -> Network -> Ethernet -> Gateway
DHCP	NETWORK.DHCP	1207	=?		0 = OFF 1 = ON	No	NETWORK.DHCP=ON *NETWORK.DHCP:ON*	See Android -> Network -> Ethernet -> Static IP
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

Setting	Command Code	Numeric Command Code	Operators	Modifiers	Operands	Available in Standby	Example	Notes
DNS Server 1	NETWORK.DNS1	1212	=?	0 = STATIC [None = Current (for reads only)] [None = STATIC (for writes only)]	String	No	[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 Android -> Network -> Ethernet -> DNS 1
DNS Server 2	NETWORK.DNS2	1213	=?	0 = STATIC [None = Current (for reads only)] [None = STATIC (for writes only)]	String	No	[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"*	See Android -> Network -> Ethernet -> DNS 2
Enable Internal Speakers	AUDIO.SPEAKERS	1004	=?		0 = OFF 1 = ON	No	AUDIO.SPEAKERS=ON *AUDIO.SPEAKERS:ON*	See Main -> Audio -> Internal Speaker
Enable Status LED	LED.ENABLE	1902	=?		0 = DISABLE 1 = ENABLE	No	LED.ENABLE=ENABLE *LED.ENABLE:ENABLE*	See Main -> Advanced Settings -> Status LED
Factory Reset	RESET	2400	!	0 = USER 5 = PICTURE 6 = AUDIO 7 = CONFIG1 8 = CONFIG2 9 = ADV. SETTINGS 10 = SCREEN		No	RESET(USER) *RESET(USER)@ACK*	USER is the same as Main -> Configuration 1 -> Factory Reset. PICTURE is the same as Main -> Picture -> Picture Reset. AUDIO is the same as Main -> Audio -> Audio Reset. CONFIG1 is the same as Main -> Configuration 1 -> Configuration 1 Reset.

Setting	Command Code	Numeric Command Code	Operators	Modifiers	Operands	Available in Standby	Example	Notes
								CONFIG2 is the same as Main -> Configuration 2 -> Configuration 2 Reset. ADV.SETTINGS is the same as Main -> Advanced Settings -> Advanced Settings Reset.
Failover Source	FAILOVER. SOURCE	5019	=?	Slot 1-9 255 = ALL [None = ALL]	Source 1 = HDMI.1 2 = HDMI.2 6 = DVI 7 = VGA 8 = MEDIA. PLAYER 9 = BROWSER 10 = CMS 11 = ANDROID 12 = ANDROID. APP	No	[Change Failover 3 to HDMI 2] FAILOVER.SOURCE(3)=HDMI.2 *FAILOVER.SOURCE(3):HDMI.2* [Set all Failover settings] FAILOVER.SOURCE=HDMI.1 HDMI.2 DVI VGA MEDIA.PLAYER BROWNER CMS ANDROID ANDROID.APP *FAILOVER.SOURCE:HDMI.1 HDMI.2 DVI VGA MEDIA.PLAYER BROWNER CMS ANDROID ANDROID.APP*	See Main -> Advanced Settings -> Auto Signal Detection -> Failover 1-9
Gain	GAIN	209	=?+-	Color 0 = RED 1 = GREEN 2 = BLUE 255 = ALL [None = ALL]	For RED, GREEN and BLUE modifiers, one operand: 0-255 For ALL operand, three operands: Red Gain: 0-255 Green Gain: 0-255 Blue Gain: 0-255	No	[For red gain only] GAIN(RED)=100 *GAIN(RED):100* [For all three gains: Red Gain = 101, Green Gain = 102, Blue Gain = 103] GAIN=101 102 103 *GAIN=101 102 103*	See Main -> Color Control -> Red/Green/Blue Gain. ALL modifier adjusts all three gains at the same time.
Gamma	GAMMA	1504	=?+-		6 = 1.8 8 = 1.9	No	GAMMA=2.5 *GAMMA:2.5*	See Main -> Picture -> Gamma

Setting	Command Code	Numeric Command Code	Operators	Modifiers	Operands	Available in Standby	Example	Notes
					10 = 2.0 12 = 2.1 14 = 2.2 16 = 2.3 18 = 2.4 20 = 2.5 27 = NATIVE 28 = SGAMMA 29 = DIMAGE			
HDMI CEC	CEC.ENABLE	2407	=?		0 = OFF 1 = ON	No	CEC.ENABLE=OFF *CEC.ENABLE:OFF*	See Main -> Advanced Settings -> HDMI CEC
HDMI CEC Power Off	CEC.STANDBY	5018	=?		0 = OFF 1 = ON	No	CEC.STANDBY=OFF *CEC.STANDBY:OFF*	See Main -> Advanced Settings -> HDMI CEC Power Off
HDMI Version	HDMI.VERSION	5016	=?		0 = HDMI14 1 = HDMI20	No	HDMI.VERSION=HDMI20 *HDMI.VERSION:HDMI20*	See Main -> Configuration 2 -> HDMI Version
Image Position	PAN	502	=?+-	Direction 0 = X 1 = Y 255 = ALL [None = ALL]	0-100	No	[For H Position = 15] PAN(X)=15 *PAN(X):15* [For Horizontal Position = 10, Vertical Position = 20] PAN=10 20 *PAN:10 20*	For the 'X' modifier, see Main -> Screen -> H Position. For the 'Y' modifier, see Main -> Screen -> V Position.
Information OSD	INFO.TIMEOUT	5015	=?+-		0-60	No	INFO.TIMEOUT=30 *INFO.TIMEOUT:30*	See Main -> Configuration 2 -> Information OSD
IP Address	IPV4.ADDRESS	1204	=?	0 = STATIC [None = Current (for reads only)] [None = STATIC (for writes only)]	String	No	[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)="192.16	See Android -> Network -> Ethernet -> IP Address

Setting	Command Code	Numeric Command Code	Operators	Modifiers	Operands	Available in Standby	Example	Notes
							8.12.12" *NETWORK.DNS1(STATIC):"192.168.12.12"*	
IR Remote Lock	IR.LOCK	1202	=?		0 = DISABLE 1 = ENABLE 2 = LOCK.ALL.BUT.VOLUME 3 = LOCK.ALL.BUT.POWER 4 = LOCK.ALL.BUT.PWR.VOL	No	IR.LOCK=ENABLE *IR.LOCK:ENABLE*	See Menu -> Advanced Settings -> IR Remote Lock
Key	KEY	1200	=		[See separate table on page 25.]	Yes (just power on and power toggle)	[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 2 = LOCK.ALL.BUT.VOLUME 3 = LOCK.ALL.BUT.POWER 4 = LOCK.ALL.BUT.PWR.VOL	No	KEY.LOCK=ENABLE *KEY.LOCK:ENABLE*	See Menu -> Advanced Settings -> Keypad Lock
Language	LANGUAGE	5020	=?		0 = ENGLISH 1 = FRENCH 2 = GERMAN 3 = SPANISH	No	LANGUAGE=ENGLISH *LANGUAGE:ENGLISH*	See Main - Advanced Settings -> Language

Setting	Command Code	Numeric Command Code	Operators	Modifiers	Operands	Available in Standby	Example	Notes
					4 = ITALIAN 5 = CHINESE. SIMPLIFIED 6 = CHINESE. TRADITIONAL 7 = PORTUGUESE 8 = JAPANESE			
MAC Address	NETWORK.MAC	1203	?		String	No	NETWORK.MAC? *NETWORK.MAC="12:34:56:AB:CD:EF"*	See Android -> Network -> Ethernet -> MAC Address
Maximum Volume	VOLUME.MAX	5006	=?+-		0-100	No	VOLUME.MAX=50 *VOLUME.MAX:50*	See Main -> Audio -> Maximum Volume
Menu Position	OSD.POSITION	1301	=?+-	Direction 0 = X 1 = Y 255 = ALL [None = ALL]	0-100	No	[For OSD H Position = 15] OSD.POSITION(X)=15 *OSD.POSITION(X):15* [For OSD Horizontal Position = 10, OSD Vertical Position = 20] OSD.POSITION=10 20 *OSD.POSITION:10 20*	For the 'X' modifier, see Main -> Configuration 2 -> OSD H Position. For the 'Y' modifier, see Main -> Configuration 2 -> OSD V Position.
Minimum Volume	VOLUME.MIN	5007	=?+-		0-100	No	VOLUME.MIN=50 *VOLUME.MIN:50*	See Main -> Audio -> Minimum Volume
Model ID	MODEL.ID	2306	?		String	No	MODEL.ID? *MODEL.ID="SLM55"*	See Main -> Configuration 2 -> Monitor Information -> Model Name
Model Series	MODEL.SERIES	2316	?		String	No	MODEL.SERIES? *MODEL.SERIES:"Simplicity"*	Always returns "Simplicity" for this product. Other products using this protocol will have a different response for this command.

Setting	Command Code	Numeric Command Code	Operators	Modifiers	Operands	Available in Standby	Example	Notes
Monitor ID	MONITOR.ID	5022	=?+-		1-255	No	MONITOR.ID=5 *MONITOR.ID:5*	See Main - > Configuration 2 -> Monitor ID
Mute	AUDIO.MUTE	1002	=?		0 = OFF 1 = ON	No	AUDIO.MUTE=ON *AUDIO.MUTE:ON*	See Main -> Audio -> Mute
Noise Reduction	NOISE. REDUCTION	205	=?		0 = OFF 1 = LOW 2 = MEDIUM 3 = HIGH	No	NOISE.REDUCTION=LOW *NOISE.REDUCTION:LOW*	See Main -> Picture -> Noise Reduction
NTP Server	NETWORK. NTPSERVER	1214	=?		String	No	NETWORK.NTPSERVER="pool.ntp.org" *NETWORK.NTPSERVER:"pool.ntp.org"*	Selects the NTP server to be used with the Auto Sync (Use Network Time) setting. Default = "0.pool.ntp.org"
Off Timer	OFF.TIMER	5017	=?+-		0-24	No	OFF.TIMER=4 *OFF.TIMER:4*	See Main -> Advanced Settings -> Off Timer
Operation Hours	UPTIME	1430	?		Unsigned integer	No	[For 175 hours of operation] UPTIME? *UPTIME:175*	See Main -> Configuration 2 -> Monitor Information -> Operation Hours
OSD Rotation	ORIENTATION	1302	=?		0 = LANDSCAPE 1 = PORTRAIT	No	ORIENTATION=LANDSCAPE *ORIENTATION:LANDSCAPE*	See Main -> Advanced Settings -> Menus and Messages -> OSD Rotation
OSD Timeout	OSD.TIMEOUT	1304	=?+-		0 = OFF 5-120 (in increments of 5)	No	OSD.TIMEOUT=60 *OSD.TIMEOUT:60*	See Main -> Configuration 2 -> OSD Timeout.
OSD Transparency	OSD. TRANSPARENCY	1303	=?+-		0 = OFF 5-100 (in increments of 5)	No	OSD.TRANSPARENCY=25 *OSD.TRANSPARENCY:25*	See Main -> Advanced Settings -> OSD Transparency

Setting	Command Code	Numeric Command Code	Operators	Modifiers	Operands	Available in Standby	Example	Notes
Overscan	OVERSCAN	501	=?		0 = OFF 1 = ON	No	OVERSCAN=ON *OVERSCAN:ON*	See Main -> Picture -> Overscan
Phase	PHASE	5002	=?+-		0-100	No	PHASE=50 *PHASE:50*	See Main -> Screen -> Phase
Pixel Orbit	PIXEL.ORBIT	1906	=?		0 = OFF 1 = ON	No	PIXEL.ORBIT=ON *PIXEL.ORBIT:ON*	See Main -> Configuration 1-> Panel Saving -> Pixel Orbit
Power Saving Mode	POWER.DOWN.MODE	1422	=?		0 = STANDBY.MODE 1 = NETWORKED.STANDBY.MODE 3 = WAKE.ON.SIGNAL 4 = ALWAYS.ON	No	POWER.DOWN.MODE=STANDBY.MODE *POWER.DOWN.MODE:STANDBY.MODE*	See Main -> Power Save Mode
Revert Image Settings	REVERT.IMAGE.SETTINGS	215	!			No	REVERT.IMAGE.SETTINGS *REVERT.IMAGE.SETTINGS@ACK*	See Main -> Picture -> Picture Reset
Schedule	SCHEDULE	2100	=?	Mod 1: Slot 1-7 Mod 2: Parameter 0 = FREQ 1 = MINUTE 2 = HOUR 3 = ENABLE 4 = END.MINUTE 5 = END.HOUR 6 = INPUT 7 = PLAYLIST 8 = DAY.MON 9 = DAY.TUE 10 = DAY.WED 11 = DAY.THU	Unsigned int	No	[Enable schedule 3 on Monday] SCHEDULE(3, DAY.MON)=ON *SCHEDULE(3, DAY.MON):ON*	See Main -> Advanced Settings -> Schedule Reference the Schedule Frequency and Schedule Input settings for operand values.

Setting	Command Code	Numeric Command Code	Operators	Modifiers	Operands	Available in Standby	Example	Notes
				12 = DAY.FRI 13 = DAY.SAT 14 = DAY.SUN 15 = END.TIME.NEXT.DAY [None = ALL]				
Schedule Day	SCHEDULE.DAY	2101	=?	Mod 1: Slot 1-7 Mod 2: Day 0 = MON 1 = TUE 2 = WED 3 = THU 4 = FRI 5 = SAT 6 = SUN	0 = OFF 1 = ON	No	[Enable schedule 3 on Monday] SCHEDULE.DAY(3, MON)=ON *SCHEDULE.DAY(3, MON):ON*	See Main -> Advanced Settings -> Schedule -> Days of the Week
Schedule Frequency	SCHEDULE.FREQUENCY	2103	=?	Slot 1-7	0 = ONCE 1 = EVERY.WEEK	No	[Set schedule 3 to every week] SCHEDULE.FREQUENCY(3)=EVERY.WEEK *SCHEDULE.FREQUENCY(3): EVERY.WEEK*	See Main -> Advanced Settings -> Schedule -> Every Week
Schedule Input	SCHEDULE.INPUT	5021	=?+-	Slot 1-7	Source 1 = HDMI.1 2 = HDMI.2 6 = DVI 7 = VGA 8 = MEDIA.PLAYER 9 = BROWSER 10 = CMS 11 = ANDROID	No	[Change the schedule 4 input to DVI] SCHEDULE.INPUT(4)=DVI *SCHEDULE.INPUT(4):DVI*	See Main -> Advanced Settings -> Schedule -> Input

Setting	Command Code	Numeric Command Code	Operators	Modifiers	Operands	Available in Standby	Example	Notes
					12 = ANDROID. APP			
Serial Number	SERIAL.NUMBER	2303	?		String	No	SERIAL.NUMBER? SERIAL.NUMBER="ABCD1234"	See Main -> Configuration 2 -> Monitor Information -> Serial Number
Sharpness	SHARPNESS	204	=?+-		0-100, in increments of 10	No	SHARPNESS=10 *SHARPNESS:10*	See Main -> Picture -> Sharpness
Smart Power	SMART.POWER	5000	=?		0 = OFF 1 = MEDIUM 2 = HIGH	No	SMART.POWER=OFF *SMART.POWER:OFF*	See Main -> Picture -> Smart Power
Source Message	SOURCE. MESSAGE	111	?		String	No	[When locked to 4K/60Hz] SOURCE.MESSAGE? *SOURCE.MESSAGE:"3840x2160 @ 60Hz"* [When no signal is present] SOURCE.MESSAGE? *SOURCE.MESSAGE:"No Signal"*	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	=?+-		Source 1 = HDMI.1 2 = HDMI.2 6 = DVI 7 = VGA 8 = MEDIA. PLAYER 9 = BROWSER 10 = CMS 11 = ANDROID 12 = ANDROID. APP	No	SOURCE.SELECT=HDMI.2 *SOURCE.SELECT:HDMI.2*	See the Source menu

Setting	Command Code	Numeric Command Code	Operators	Modifiers	Operands	Available in Standby	Example	Notes
Splash Screen	SPLASH.SCREEN	1305	=?+-		0 = OFF 1 = ON 2 = USER	No	SPLASH.SCREEN=ENABLE *SPLASH.SCREEN:ENABLE*	See Main -> Configuration 2 -> Splash Screen
Subnet Mask	IPV4.NETMASK	1205	=?	0 = STATIC [None = Current (for reads only)] [None = STATIC (for writes only)]	String	No	[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 Android -> Network -> Ethernet -> Netmask
System State	SYSTEM.STATE	2310	?		0 = STANDBY 1 = POWERING.ON 2 = ON 3 = POWERING.DOWN	Yes	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.
Thermal Status	TEMPERATURE	1431	?		String	No	TEMPERATURE? *TEMPERATURE:"41.50°C 106.70°F"*	See Main -> Configuration 2 -> Thermal Status
Time	TIME	1100	=?	0 = YEAR 1 = MONTH 2 = DATE	Unsigned int	No	[Set the month to March] TIME(MONTH)=3 *TIME(MONTH):3*	See Main -> Advanced Settings -> Date and Time

Setting	Command Code	Numeric Command Code	Operators	Modifiers	Operands	Available in Standby	Example	Notes
				3 = HOUR 4 = MINUTE [None = ALL]				
Time - Day	TIME.DAY	1101	?		0 = MON 1 = TUE 2 = WED 3 = THU 4 = FRI 5 = SAT 6 = SUN	No	TIME.DAY? *TIME.DAY:TUE*	See Main -> Advanced Settings -> Date and Time -> Set Day
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	No	TIME.MONTH=MARCH *TIME.MONTH:MARCH*	See Main -> Advanced Settings -> Date and Time -> Set Day
Time - String	TIME.STRING	1103	?		String	No	TIME.STRING? *TIME.STRING:"2015-09-01 13:21"*	See Main -> Advanced Settings -> Date and Time
Time Zone	TIMEZONE	1208	=?+-		[See separate table on page 27.]	No	TIMEZONE=UTCM0800.PACIFIC.TIME.US.CANADA *TIMEZONE:UTCM0800.PACIFIC.TIME.US.CANADA*	See Main -> Advanced Settings -> Date and Time -> Set Time -> Choose Time Zone. See table on page 27 for valid values
Tint	TINT	203	=?+-		0-100	No	TINT=55 *TINT:55*	See Main -> Picture -> Tint

Setting	Command Code	Numeric Command Code	Operators	Modifiers	Operands	Available in Standby	Example	Notes
Tracking	TRACKING	5001	=?+-		0-100	No	TRACKING=50 *TRACKING:50*	See Main -> Screen - Tracking
Treble	AUDIO.TREBLE	1005	=?+-		0-100	No	AUDIO.TREBLE=50 *AUDIO.TREBLE:50*	See Main -> Audio -> Treble
Use Network Time	NETWORK.NTP	1209	=?		0 = OFF 1 = ON	No	NETWORK.NTP=ON *NETWORK.NTP:ON*	See Main -> Advanced Settings -> Date and Time -> Auto Sync
Version Info	BUILD.INFO	2302	?		String	No	BUILD.INFO? *BUILD.INFO:"1.0.600"*	See Main -> Configuration 2 -> Monitor Information -> SW Version
Volume	AUDIO.VOLUME	1006	=?+-		0-100	No	AUDIO.VOLUME=50 *AUDIO.VOLUME:50*	See Main -> Audio -> Volume

5.1 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	Not used

Value	Name	Equivalent Remote Control Button	Description
261	PRESETS	PRESETS	Not used
262	PRESET1	PRESET 1	Not used
263	PRESET2	PRESET 2	Not used
264	PRESET3	PRESET 3	Not used
265	PRESET4	PRESET 4	Not used
266	ZONE1	ZONE 1	Opens the source menu
267	ZONE2	ZONE 2	Not used
268	ZONE3	ZONE 3	Not used
269	ZONE4	ZONE 4	Not used
270	PIP.MODE	PIP MODE	Not used
271	PIP.SWAP	PIP SWAP	Not used
272	HDMI1	HDMI 1	Selects the HDMI 1 input
273	HDMI2	HDMI 2	Selects the HDMI 2 input
274	HDMI3	HDMI 3	Not used
275	HDMI4	HDMI 4	Not used
276	DISPLAY.PORT	DP	Not used
277	DVI	DVI	Selects the DVI-D input
278	VGA	VGA	Selects the VGA input
279	OPS	OPS	Not used
280	WALL	VIDEO WALL	Not used
281	COLOR	COLOR	Not used
282	MISC	MISC	Not used
283	ARROW.LEFT	◄	Not used
284	ARROW.RIGHT	►	Not used
285	STAR.STAR	**	Not used

5.2 Timezone

Value	Name	Display Name
1	UTCM1100.MIDWAY.ISLAND	(UTC-11:00) Midway Island
2	UTCM1000.HAWAII	(UTC-10:00) Hawaii
3	UTCM0900.ALASKA	(UTC-09:00) Alaska
4	UTCM0800.PACIFIC.TIME	(UTC-08:00) Pacific Time
5	UTCM0800.TIJUANA	(UTC-08:00) Tijuana
6	UTCM0700.ARIZONA	(UTC-07:00) Arizona
7	UTCM0700.CHIHUAHUA	(UTC-07:00) Chihuahua
8	UTCM0700.MOUNTAIN.TIME	(UTC-07:00) Mountain Time
9	UTCM0600.CENTRAL.AMERICA	(UTC-06:00) Central America
10	UTCM0600.CENTRAL.TIME	(UTC-06:00) Central Time
11	UTCM0600.MEXICO.CITY	(UTC-06:00) Mexico City
12	UTCM0600.SASKATCHEWAN	(UTC-06:00) Saskatchewan
13	UTCM0500.BOGOTA	(UTC-05:00) Bogota
14	UTCM0500.EASTERN.TIME	(UTC-05:00) Eastern Time
15	UTCM0400.VENEZUELA	(UTC-04:00) Venezuela
16	UTCM0400.ATLANTIC.TIME.BARBADOS	(UTC-04:00) Atlantic Time (Barbados)
17	UTCM0400.ATLANTIC.TIME.CANADA	(UTC-04:00) Atlantic Time (Canada)
18	UTCM0400.MANAUS	(UTC-04:00) Manaus
19	UTCM0400.SANTIAGO	(UTC-04:00) Santiago
20	UTCM0330.NEWFOUNDLAND	(UTC-03:30) Newfoundland
21	UTCM0300.BRASILIA	(UTC-03:00) Brasilia
22	UTCM0300.BUENOS.AIRES	(UTC-03:00) Buenos Aires
23	UTCM0300.GREENLAND	(UTC-03:00) Greenland
24	UTCM0300.MONTEVIDEO	(UTC-03:00) Montevideo
25	UTCM0200.MID.ATLANTIC	(UTC-02:00) Mid-Atlantic
26	UTCM0100.AZORES	(UTC-01:00) Azores
27	UTCM0100.CAPE.VERDE.ISLANDS	(UTC-01:00) Cape Verde Islands

Value	Name	Display Name
28	UTCP0000.CASABLANCA	(UTC+00:00) Casablanca
29	UTCP0000.LONDON.DUBLIN	(UTC+00:00) London, Dublin
30	UTCP0100.AMSTERDAM.BERLIN	(UTC+01:00) Amsterdam, Berlin
31	UTCP0100.BELGRADE	(UTC+01:00) Belgrade
32	UTCP0100.BRUSSELS	(UTC+01:00) Brussels
33	UTCP0100.SARAJEVO	(UTC+01:00) Sarajevo
34	UTCP0100.WINDHOEK	(UTC+01:00) Windhoek
35	UTCP0100.W.AFRICA.TIME	(UTC+01:00) W. Africa Time
36	UTCP0200.AMMAN.JORDAN	(UTC+02:00) Amman, Jordan
37	UTCP0200.ATHENS.ISTANBUL	(UTC+02:00) Athens, Istanbul
38	UTCP0200.BEIRUT.LEBANON	(UTC+02:00) Beirut, Lebanon
39	UTCP0200.CAIRO	(UTC+02:00) Cairo
40	UTCP0200.HELSINKI	(UTC+02:00) Helsinki
41	UTCP0200.JERUSALEM	(UTC+02:00) Jerusalem
42	UTCP0200.HARARE	(UTC+02:00) Harare
43	UTCP0300.MINSK	(UTC+03:00) Minsk
44	UTCP0300.BAGHDAD	(UTC+03:00) Baghdad
45	UTCP0300.MOSCOW	(UTC+03:00) Moscow
46	UTCP0300.KUWAIT	(UTC+03:00) Kuwait
47	UTCP0300.NAIROBI	(UTC+03:00) Nairobi
48	UTCP0330.TEHRAN	(UTC+03:30) Tehran
49	UTCP0400.BAKU	(UTC+04:00) Baku
50	UTCP0400.TBILISI	(UTC+04:00) Tbilisi
51	UTCP0400.YEREVAN	(UTC+04:00) Yerevan
52	UTCP0400.DUBAI	(UTC+04:00) Dubai
53	UTCP0430.KABUL	(UTC+04:30) Kabul
54	UTCP0500.ISLAMABAD.KARACHI	(UTC+05:00) Islamabad, Karachi

| Value	Name	Display Name
55	UTCP0500.URALSK	(UTC+05:00) Ural'sk
56	UTCP0500.YEKATERINBURG	(UTC+05:00) Yekaterinburg
57	UTCP0530.KOLKATA	(UTC+05:30) Kolkata
58	UTCP0530.SRI.LANKA	(UTC+05:30) Sri Lanka
59	UTCP0545.KATHMANDU	(UTC+05:45) Kathmandu
60	UTCP0600.ASTANA	(UTC+06:00) Astana
61	UTCP0630.YANGON	(UTC+06:30) Yangon
62	UTCP0700.KRASNOYARSK	(UTC+07:00) Krasnoyarsk
63	UTCP0700.BANGKOK	(UTC+07:00) Bangkok
64	UTCP0700.JAKARTA	(UTC+07:00) Jakarta
65	UTCP0800.BEIJING	(UTC+08:00) Beijing
66	UTCP0800.HONG.KONG	(UTC+08:00) Hong Kong
67	UTCP0800.IRKUTSK	(UTC+08:00) Irkutsk
68	UTCP0800.KUALA.LUMPUR	(UTC+08:00) Kuala Lumpur
69	UTCP0800.PERTH	(UTC+08:00) Perth
70	UTCP0800.TAIPEI	(UTC+08:00) Taipei
71	UTCP0900.SEOUL	(UTC+09:00) Seoul
72	UTCP0900.TOKYO.OSAKA	(UTC+09:00) Tokyo, Osaka
73	UTCP0900.YAKUTSK	(UTC+09:00) Yakutsk
74	UTCP0930.ADELAIDE	(UTC+09:30) Adelaide
75	UTCP0930.DARWIN	(UTC+09:30) Darwin
76	UTCP1000.BRISBANE	(UTC+10:00) Brisbane
77	UTCP1000.HOBART	(UTC+10:00) Hobart
78	UTCP1000.SYDNEY.CANBERRA	(UTC+10:00) Sydney, Canberra
79	UTCP1000.VLADIVOSTOK	(UTC+10:00) Vladivostok
80	UTCP1000.GUAM	(UTC+10:00) Guam
81	UTCP1100.MAGADAN	(UTC+11:00) Magadan

Value	Name	Display Name
82	UTCP1200.MARSHALL.ISLANDS	(UTC+12:00) Marshall Islands
83	UTCP1200.AUCKLAND	(UTC+12:00) Auckland
84	UTCP1200.FIJI	(UTC+12:00) Fiji
85	UTCP1300.TONGA	(UTC+13:00) Tonga

6.   Sending RS232 Commands Via TCP or UDP

TCP and UDP port 5000 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 Hercules.

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

- The IP address is 10.15.0.75
- Port 5000 is selected
- Service is set to "Other" to indicate that TCP is being used without Telnet or SSH
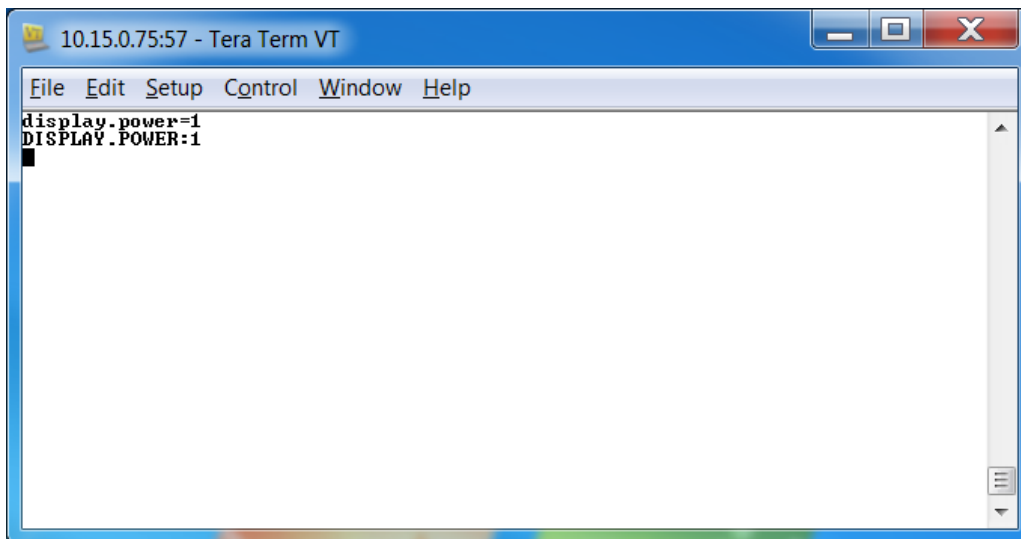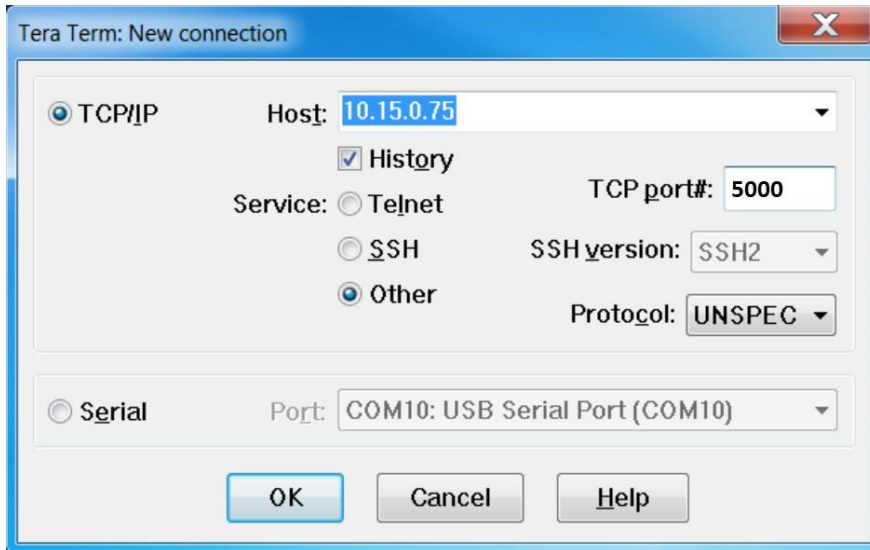
Notice the following in the UDP example below using Hercules:

- The IP address is 10.15.0.67
- Port 5000 is selected

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.