This document provides additional assistance with wiring your Extron IP Link Pro Control Processor to your device. Different components may require a different wiring scheme than those listed below.

For complete operating instructions, refer to the user's manual for the specific IP Link Pro Control Processor or the documentation supplied by the manufacturer of the controlled device.

For more information on using Global Scripter Modules, refer to the "Guide to Using Scripter Modules" document.

Device Specifications

Device Type:	Matrix Switcher
Manufacturer:	Extron
Firmware Version:	1.06.0000-b006
Model(s):	DXP 44 HD 4K, DXP 84 HD 4K, DXP 88 HD 4K, DXP 168 HD 4K, DXP 1616 HD 4K

Tested on the Following Software and Firmware Versions

IP Link Pro Control Processor Firmware	Global Scripter Version
3.01.0000-b010	2.1.0

Version History

Module Version	Date	Notes
1_3_3_0	1/22/2019	Fixed VideoMute and Updated InputTieStatus logic.
1_3_1_0	10/30/2018	Fixed MatrixTieCommand. Updated module to Rev. B1
1_3_0_1	4/12/2018	Fixed Matrix Refresh command.
1_3_0_0	3/1/2018	Renamed InputSignalStatus state 'Inactive' to 'Not Active'
1_2_0_0	1/2/2018	Renamed model names to DXP HD 4K. Updated InputTieStatus, OutputTieStatus. Added EDIDAssignment, HDCPInputAuthorization,

		HDCPInputStatus, HDCPOutputStatus, InputFormat, and RefreshMatrix. Renamed SignalStatus to InputSignalStatus, OutputVolume to Volume, RecallPreset to PresetRecall, and SavePreset to PresetSave.
1_1_3_0	11/2/2017	Updated MatrixTie command and Input/OutputTieStatus to account for unsupported Audio outputs.
1_1_1_0	04/05/2017	Fixed Matrix Tie Status.
1_1_0_1	12/13/2016	Updated to new standards.
1_1_0_0	6/7/2016	Added Audio Output Mute features.
1_0_1_1	2/26/2016	Fixed update issue.

Module Notes

- Unidirectional variable must be set to 'True' if status is not required. Default value is 'False'.
  Example: `InterfaceName.Unidirectional = 'True'`

- connectionCounter variable must be set to the number of queries that will be sent to the device before displaying 'Disconnected' if no response is received. Default value is 15.
  Example: `InterfaceName.connectionCounter = 5`

- If login credentials are required, devicePassword must be set accordingly.
  Example: `InterfaceName.devicePassword = 'extron'`

Supported Classes and Examples

SerialClass
`InterfaceName = ModuleName.SerialClass(ProcessorName, 'COM1', Model='DXP 44 HD 4K')`
SerialOverEthernetClass
`InterfaceName = ModuleName.SerialOverEthernetClass('192.168.254.254', 2001, Model='DXP 44 HD 4K')`
EthernetClass
`InterfaceName = ModuleName.EthernetClass('192.168.254.254', 23, Model='DXP 44 HD 4K')`

Control Commands

Format with Qualifier:

```
InterfaceName.Set(Command, Value, {'Qualifier Key': 'Qualifier Value'})
```

Format without Qualifier:

```
InterfaceName.Set(Command, Value)
```

Command **AudioMute**	Value 'On'	Value 'Off'	
Qualifier Key **'Output'**	Qualifier Value '1' – '4' [1, 2]	Qualifier Value '1' – '8' [3, 4]	Qualifier Value '1' – '16' [5]
`# AudioMute example` `InterfaceName.Set('AudioMute', 'On', {'Output': '1'})`			
Command **AudioOutputMute**	Value 'Off' 'HDMI and Analog audio mute' 'Analog audio and S/PDIF mute'	Value 'HDMI audio mute' 'S/PDIF mute' 'HDMI audio, Analog audio, and S/PDIF mute'	Value 'Analog audio mute' 'HDMI audio and S/PDIF mute'
Qualifier Key **'Output'**	Qualifier Value '1' – '2' [1, 2, 3]	Qualifier Value '1' – '4' [4, 5]	
`# AudioOutputMute example` `InterfaceName.Set('AudioOutputMute', 'Off', {'Output': '1'})`			
Command **ExecutiveMode** [6]	Value 'Off'	Value 'Mode 1'	Value 'Mode 2'
`# ExecutiveMode example` `InterfaceName.Set('ExecutiveMode', 'Off')`			
Command **GlobalAudioMute**	Value 'On'	Value 'Off'	
`# GlobalAudioMute example` `InterfaceName.Set('GlobalAudioMute', 'On')`			
Command **GlobalVideoMute**	Value 'On'	Value 'Off'	
`# GlobalVideoMute example` `InterfaceName.Set('GlobalVideoMute', 'On')`			
Command **HDCPInputAuthorization**	Value 'On'	Value 'Off'	
Qualifier Key **'Input'**	Qualifier Value '1' – '4' [1]	Qualifier Value '1' – '8' [2, 3]	Qualifier Value '1' – '16' [4, 5]
`# HDCPInputAuthorization example` `InterfaceName.Set('HDCPInputAuthorization', 'On', {'Input': '1'})`			

Command **InputGain**	Value -20 to 0 in steps of 1 dB		
Qualifier Key **'Input'**	Qualifier Value '1' – '4' [1]	Qualifier Value '1' – '8' [2, 3]	Qualifier Value '1' – '16' [4, 5]
`# InputGain example` `InterfaceName.Set('InputGain', 0, {'Input': '1'})`			
Command **MatrixTieCommand**	Value None		
Qualifier Key **'Input'**	Qualifier Value '0' – '4' [1]	Qualifier Value '0' – '8' [2, 3]	Qualifier Value '0' – '16' [4, 5]
Qualifier Key **'Output'**	Qualifier Value '1' – '4' [1, 2] 'All'	Qualifier Value '1' – '8' [3, 4]	Qualifier Value '1' – '16' [5]
Qualifier Key **'Tie Type'**	Qualifier Value 'Audio/Video'	Qualifier Value 'Video'	Qualifier Value 'Audio'
`# MatrixTieCommand example` `InterfaceName.Set('MatrixTieCommand', None, {'Input': '0', 'Output': '1', 'Tie Type': 'Audio/Video'})`			
Command **PresetRecall**	Value '1' – '16' [1, 2, 3]	Value '1' – '32' [4, 5]	
`# PresetRecall example` `InterfaceName.Set('PresetRecall', '1')`			
Command **PresetSave**	Value '1' – '16' [1, 2, 3]	Value '1' – '32' [4, 5]	
`# PresetSave example` `InterfaceName.Set('PresetSave', '1')`			
Command **RefreshMatrix**	Value None		
`# RefreshMatrix example` `InterfaceName.Set('RefreshMatrix', None)`			
Command **VideoMute**	Value 'Off'	Value 'On'	Value 'Video and Sync'
Qualifier Key **'Output'**	Qualifier Value '1' – '4' [1, 2]	Qualifier Value '1' – '8' [3, 4]	Qualifier Value '1' – '16' [5]
`# VideoMute example` `InterfaceName.Set('VideoMute', 'Off', {'Output': '1'})`			
Command **Volume**	Value 0 to 100 in steps of 1 dB		
Qualifier Key **'Output'**	Qualifier Value '1' – '2' [1, 2, 3]	Qualifier Value '1' – '4' [4, 5]	

```
    # Volume example
    InterfaceName.Set('Volume', 100, {'Output': '1'})
```

[1] Supported by DXP 44.

[2] Supported by DXP 84.

[3] Supported by DXP 88.

[4] Supported by DXP 168.

[5] Supported by DXP 1616.

[6] Mode 1 locks all front panel functions. Mode 2 locks advanced front panel functions.

[7] For Audio, only outputs 1 through 4 for DXP 1616 HD 4K and DXP 168 HD 4K are supported and only outputs 1 and 2 for DXP 44 HD 4K, DXP 84 HD 4K, and DXP 88 HD 4K are supported.

Status Available

For all commands except for HDCPInputStatus, HDCPOutputStatus, InputFormat, InputSignalStatus, InputTieStatus, OutputTieStatus, and Temperature, Update should be called only once since the command's status will be updated automatically as the device's status changes. ConnectionStatus does not support the Update function and is triggered by the device providing a successful response to other Update function calls.

Format with Qualifier:

```
InterfaceName.Update(Command, {'Qualifier Key': 'Qualifier Value'})
Value = InterfaceName.ReadStatus(Command, {'Qualifier Key': 'Qualifier Value'})
InterfaceName.SubscribeStatus(Command, {'Qualifier Key': 'Qualifier Value'}, FeedbackHandler)
```

FeedbackHandler will be called only when the specified qualifier gets a new status.

Format without Qualifier:

```
InterfaceName.Update(Command)
Value = InterfaceName.ReadStatus(Command)
InterfaceName.SubscribeStatus(Command, None, FeedbackHandler)
```

FeedbackHandler will be called when any qualifier gets a new status.

Command **AudioMute**	Value 'On'	Value 'Off'	
Qualifier Key **'Output'**	Qualifier Value '1' – '4' [1, 2]	Qualifier Value '1' – '8' [3, 4]	Qualifier Value '1' – '16' [5]

```
# AudioMute examples
InterfaceName.Update('AudioMute', {'Output': '1'})
Value = InterfaceName.ReadStatus('AudioMute', {'Output': '1'})
InterfaceName.SubscribeStatus('AudioMute', None, FeedbackHandler)
```

Command **AudioOutputMute**	Value 'Off' 'HDMI and Analog audio mute' 'Analog audio and S/PDIF mute'	Value 'HDMI audio mute' 'S/PDIF mute' 'HDMI audio, Analog audio, and S/PDIF mute'	Value 'Analog audio mute' 'HDMI audio and S/PDIF mute'
Qualifier Key **'Output'**	Qualifier Value '1' – '2' [1, 2, 3]	Qualifier Value '1' – '4' [4, 5]	

```
# AudioOutputMute examples
InterfaceName.Update('AudioOutputMute', {'Output': '1'})
Value = InterfaceName.ReadStatus('AudioOutputMute', {'Output': '1'})
InterfaceName.SubscribeStatus('AudioOutputMute', None, FeedbackHandler)
```

Command **ConnectionStatus**	Value 'Connected'	Value 'Disconnected'	

```
# ConnectionStatus examples
Value = InterfaceName.ReadStatus('ConnectionStatus')
InterfaceName.SubscribeStatus('ConnectionStatus', None, FeedbackHandler)
```

Command	Value	Value	Value

EDIDAssignment	'1280x800 @ 60Hz'	'1440x900 @ 60Hz'	'1600x900 @ 60Hz'
	'1680x1050 @ 60Hz'	'1920x1200 @ 60Hz'	'2560x1440 @ 60Hz'
	'2560x1600 @ 60Hz'	'720p 2_Ch Audio @ 50Hz'	'720p 2_Ch Audio @ 60Hz'
	'1080p 2_Ch Audio @ 50Hz'	'1080p 2_Ch Audio @ 60Hz'	'4K/UHD 2_Ch Audio @ 30Hz'
	'720p S/PDIF Audio @ 50Hz'	'720p S/PDIF Audio @ 60Hz'	'1080p S/PDIF Audio @ 50Hz'
	'1080p S/PDIF Audio @ 60Hz'	'4K/UHD S/PDIF Audio @ 30Hz'	'Output 1'
	'Output 2'	'Output 3'	'Output 4'
	'Output 5'	'Output 6'	'Output 7'
	'Output 8'	'User Assigned 1'	'User Assigned 2'
	'User Assigned 3'	'User Assigned 4'	'User Assigned 5'
	'User Assigned 6'	'User Assigned 7'	'User Assigned 8'
	'User Assigned 9'	'User Assigned 10'	'User Assigned 11'
	'User Assigned 12'	'User Assigned 13'	'User Assigned 14'
	'User Assigned 15'	'User Assigned 16'	'Output 9'
	'Output 10'	'Output 11'	'Output 12'
	'Output 13'	'Output 14'	'Output 15'
	'Output 16'		
Qualifier Key **'Input'**	Qualifier Value '1' – '4' [1]	Qualifier Value '1' – '8' [2, 3]	Qualifier Value '1' – '16' [4, 5]

```
# EDIDAssignment examples
InterfaceName.Update('EDIDAssignment', {'Input': '1'})
Value = InterfaceName.ReadStatus('EDIDAssignment', {'Input': '1'})
InterfaceName.SubscribeStatus('EDIDAssignment', None, FeedbackHandler)
```

Command **ExecutiveMode**	Value 'Off'	Value 'Mode 1'	Value 'Mode 2'

```
# ExecutiveMode examples
InterfaceName.Update('ExecutiveMode')
Value = InterfaceName.ReadStatus('ExecutiveMode')
InterfaceName.SubscribeStatus('ExecutiveMode', None, FeedbackHandler)
```

Command **HDCPInputAuthorization**	Value 'On'	Value 'Off'	
Qualifier Key **'Input'**	Qualifier Value '1' – '4' [1]	Qualifier Value '1' – '8' [2, 3]	Qualifier Value '1' – '16' [4, 5]

```
# HDCPInputAuthorization examples
InterfaceName.Update('HDCPInputAuthorization', {'Input': '1'})
Value = InterfaceName.ReadStatus('HDCPInputAuthorization', {'Input': '1'})
InterfaceName.SubscribeStatus('HDCPInputAuthorization', None, FeedbackHandler)
```

Command **HDCPInputStatus**	Value 'No Source Connected'	Value 'HDCP Content'	Value 'No HDCP Content'
Qualifier Key **'Input'**	Qualifier Value '1' – '4' [1]	Qualifier Value '1' – '8' [2, 3]	Qualifier Value '1' – '16' [4, 5]

```
# HDCPInputStatus examples
InterfaceName.Update('HDCPInputStatus', {'Input': '1'})
Value = InterfaceName.ReadStatus('HDCPInputStatus', {'Input': '1'})
InterfaceName.SubscribeStatus('HDCPInputStatus', None, FeedbackHandler)
```

Command **HDCPOutputStatus**	Value 'No monitor connected' 'Monitor connected, currently encrypted'	Value 'Monitor connected, HDCP not supported'	Value 'Monitor connected, not encrypted'
Qualifier Key **'Output'**	Qualifier Value '1' – '4' [1, 2]	Qualifier Value '1' – '8' [3, 4]	Qualifier Value '1' – '16' [5]

```
# HDCPOutputStatus examples
InterfaceName.Update('HDCPOutputStatus', {'Output': '1'})
Value = InterfaceName.ReadStatus('HDCPOutputStatus', {'Output': '1'})
InterfaceName.SubscribeStatus('HDCPOutputStatus', None, FeedbackHandler)
```

Command **InputFormat**	Value 'No signal detected' 'HDMI RGB 444 Limited' 'HDMI YUV 422 Full'	Value 'DVI RGB 444' 'HDMI YUV 444 Full' 'HDMI YUV 422 Limited'	Value 'HDMI RGB 444 Full' 'HDMI YUV 444 Limited'
Qualifier Key **'Input'**	Qualifier Value '1' – '4' [1]	Qualifier Value '1' – '8' [2, 3]	Qualifier Value '1' – '16' [4, 5]

```
# InputFormat examples
InterfaceName.Update('InputFormat', {'Input': '1'})
Value = InterfaceName.ReadStatus('InputFormat', {'Input': '1'})
InterfaceName.SubscribeStatus('InputFormat', None, FeedbackHandler)
```

Command **InputGain**	Value -20 to 0 in steps of 1 dB		
Qualifier Key **'Input'**	Qualifier Value '1' – '4' [1]	Qualifier Value '1' – '8' [2, 3]	Qualifier Value '1' – '16' [4, 5]

```
# InputGain examples
InterfaceName.Update('InputGain', {'Input': '1'})
Value = InterfaceName.ReadStatus('InputGain', {'Input': '1'})
InterfaceName.SubscribeStatus('InputGain', None, FeedbackHandler)
```

Command **InputSignalStatus** [7]	Value 'Active'	Value 'Not Active'	
Qualifier Key	Qualifier Value	Qualifier Value	Qualifier Value

'Input'	'1' – '4' [1]	'1' – '8' [2, 3]	'1' – '16' [4, 5]

```
# InputSignalStatus examples
InterfaceName.Update('InputSignalStatus')
Value = InterfaceName.ReadStatus('InputSignalStatus', {'Input': '1'})
InterfaceName.SubscribeStatus('InputSignalStatus', None, FeedbackHandler)
```

Command	Value	Value	Value
InputTieStatus	'Audio' 'Untied'	'Video'	'Audio/Video'
Qualifier Key	**Qualifier Value**	**Qualifier Value**	**Qualifier Value**
'Input'	'1' – '4' [1]	'1' – '8' [2, 3]	'1' – '16' [4, 5]
Qualifier Key	**Qualifier Value**	**Qualifier Value**	**Qualifier Value**
'Output'	'1' – '4' [1, 2]	'1' – '8' [3, 4]	'1' – '16' [5]

```
# InputTieStatus examples
InterfaceName.Update('InputTieStatus')
Value = InterfaceName.ReadStatus('InputTieStatus', {'Input': '1', 'Output': '1'})
InterfaceName.SubscribeStatus('InputTieStatus', None, FeedbackHandler)
```

Command	Value	Value	Value
OutputTieStatus	'0' – '4' [1]	'0' – '8' [2, 3]	'0' – '16' [4, 5]
Qualifier Key	**Qualifier Value**	**Qualifier Value**	**Qualifier Value**
'Output'	'1' – '4' [1, 2]	'1' – '8' [3, 4]	'1' – '16' [5]
Qualifier Key	**Qualifier Value**	**Qualifier Value**	**Qualifier Value**
'Tie Type'	'Audio'	'Video'	'Audio/Video'

```
# OutputTieStatus examples
InterfaceName.Update('OutputTieStatus')
Value = InterfaceName.ReadStatus('OutputTieStatus', {'Output': '1', 'Tie Type': 'Audio'})
InterfaceName.SubscribeStatus('OutputTieStatus', None, FeedbackHandler)
```

Command	Value
Temperature	Degrees Celsius

```
# Temperature examples
InterfaceName.Update('Temperature')
Value = InterfaceName.ReadStatus('Temperature')
InterfaceName.SubscribeStatus('Temperature', None, FeedbackHandler)
```

Command	Value	Value	Value
VideoMute	'Off'	'On'	'Video and Sync'
Qualifier Key	**Qualifier Value**	**Qualifier Value**	**Qualifier Value**
'Output'	'1' – '4' [1, 2]	'1' – '8' [3, 4]	'1' – '16' [5]

```
# VideoMute examples
InterfaceName.Update('VideoMute', {'Output': '1'})
Value = InterfaceName.ReadStatus('VideoMute', {'Output': '1'})
InterfaceName.SubscribeStatus('VideoMute', None, FeedbackHandler)
```

Command	Value
Volume	0 to 100 in steps of 1 dB

Qualifier Key	Qualifier Value	Qualifier Value
'Output'	'1' – '2' [1, 2, 3]	'1' – '4' [4, 5]

```
# Volume examples
InterfaceName.Update('Volume', {'Output': '1'})
Value = InterfaceName.ReadStatus('Volume', {'Output': '1'})
InterfaceName.SubscribeStatus('Volume', None, FeedbackHandler)
```

[1] Supported by DXP 44.

[2] Supported by DXP 84.

[3] Supported by DXP 88.

[4] Supported by DXP 168.

[5] Supported by DXP 1616.

[6] Mode 1 locks

[7] Qualifier parameters is not required when calling the Update method with this command because the response returns statuses for all qualifier states. all front panel functions. Mode 2 locks advanced front panel functions.

Cable and Adapter Requirements

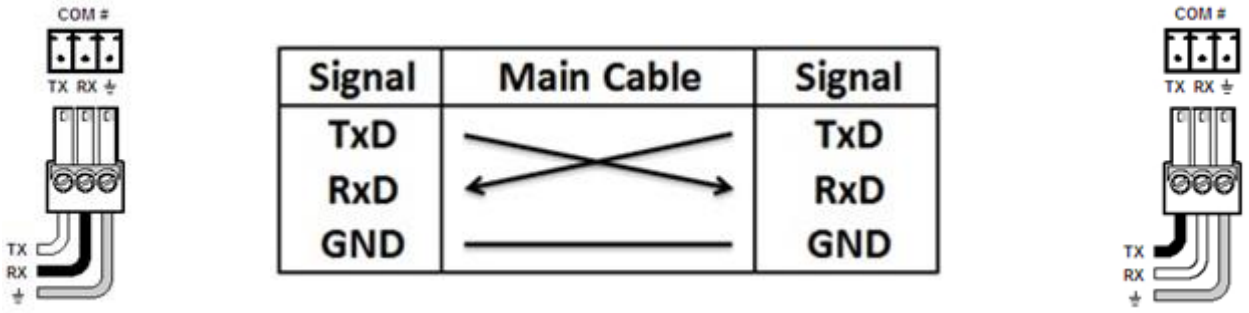
Captive Screw to Captive Screw RS-232 Serial Cable

Notes for the Device

Serial communication

Port Type:	RS-232	**Parity:**	None
Baud Rate:	9600	**Stop Bits:**	One
Data Bits:	8	**Flow Control:**	None

Pin Assignments Diagram



Network communication

When configuring the Ethernet module, be sure device settings match those of the Global Scripter ethernet interface

Port Type:	Ethernet
Default Port:	23
Logon Credentials Supported:	Yes
Multi-Connection Capabilities:	Yes
Port Changeability:	Yes

Ethernet Module Configuration Description

Please refer to user manual for settings and changes to the network communication.
If User password is used for Authentication, then control of the device may be limited.

Notes for the Device

Appendix A. Set Commands

Audio Mute Off Output 1	1*0Z
Audio Mute Off Output 16	16*0Z
Audio Mute Off Output 4	4*0Z
Audio Mute Off Output 8	8*0Z
Audio Mute On Output 1	1*1Z
Audio Mute On Output 16	16*1Z
Audio Mute On Output 4	4*1Z
Audio Mute On Output 8	8*1Z
Audio Output Mute Analog audio and S/PDIF mute Output 1	1*6Z
Audio Output Mute Analog audio and S/PDIF mute Output 2	2*6Z
Audio Output Mute Analog audio and S/PDIF mute Output 4	4*6Z
Audio Output Mute Analog audio mute Output 1	1*2Z
Audio Output Mute Analog audio mute Output 2	2*2Z
Audio Output Mute Analog audio mute Output 4	4*2Z
Audio Output Mute HDMI and Analog audio mute Output 1	1*3Z
Audio Output Mute HDMI and Analog audio mute Output 2	2*3Z
Audio Output Mute HDMI and Analog audio mute Output 4	4*3Z
Audio Output Mute HDMI audio and S/PDIF mute Output 1	1*5Z
Audio Output Mute HDMI audio and S/PDIF mute Output 2	2*5Z
Audio Output Mute HDMI audio and S/PDIF mute Output 4	4*5Z
Audio Output Mute HDMI audio mute Output 1	1*1Z
Audio Output Mute HDMI audio mute Output 2	2*1Z
Audio Output Mute HDMI audio mute Output 4	4*1Z
Audio Output Mute HDMI audio, Analog audio, and S/PDIF mute Output 1	1*7Z
Audio Output Mute HDMI audio, Analog audio, and S/PDIF mute Output 2	2*7Z
Audio Output Mute HDMI audio, Analog audio, and S/PDIF mute Output 4	4*7Z

Audio Output Mute Off Output 1	1*0Z
Audio Output Mute Off Output 2	2*0Z
Audio Output Mute Off Output 4	4*0Z
Audio Output Mute S/PDIF mute Output 1	1*4Z
Audio Output Mute S/PDIF mute Output 2	2*4Z
Audio Output Mute S/PDIF mute Output 4	4*4Z
Executive Mode Mode 1	1X
Executive Mode Mode 2	2X
Executive Mode Off	0X
Global Audio Mute Off	0*Z
Global Audio Mute On	1*Z
Global Video Mute Off	0*B
Global Video Mute On	1*B
HDCP Input Authorization Off Input 1	wE1*0HDCP\x0D
HDCP Input Authorization Off Input 16	wE16*0HDCP\x0D
HDCP Input Authorization Off Input 4	wE4*0HDCP\x0D
HDCP Input Authorization Off Input 8	wE8*0HDCP\x0D
HDCP Input Authorization On Input 1	wE1*1HDCP\x0D
HDCP Input Authorization On Input 16	wE16*1HDCP\x0D
HDCP Input Authorization On Input 4	wE4*1HDCP\x0D
HDCP Input Authorization On Input 8	wE8*1HDCP\x0D
Input Gain 0 Input 1	1*0G
Input Gain 0 Input 16	16*0G
Input Gain 0 Input 4	4*0G
Input Gain 0 Input 8	8*0G
Input Gain -20 Input 1	1*-20G
Input Gain -20 Input 16	16*-20G
Input Gain -20 Input 4	4*-20G
Input Gain -20 Input 8	8*-20G
Matrix Tie Command None Input 0 Output 1 Tie Type Audio	0*1$
Matrix Tie Command None Input 0 Output 1 Tie Type Audio/Video	0*1!
Matrix Tie Command None Input 0 Output 1 Tie Type Video	0*1%
Matrix Tie Command None Input 0 Output 16 Tie Type Audio	0*16$
Matrix Tie Command None Input 0 Output 16 Tie Type Audio/Video	0*16!

Matrix Tie Command None Input 0 Output 16 Tie Type Video	0*16%
Matrix Tie Command None Input 0 Output 4 Tie Type Audio	0*4$
Matrix Tie Command None Input 0 Output 4 Tie Type Audio/Video	0*4!
Matrix Tie Command None Input 0 Output 4 Tie Type Video	0*4%
Matrix Tie Command None Input 0 Output 8 Tie Type Audio	0*8$
Matrix Tie Command None Input 0 Output 8 Tie Type Audio/Video	0*8!
Matrix Tie Command None Input 0 Output 8 Tie Type Video	0*8%
Matrix Tie Command None Input 0 Output All Tie Type Audio	0*$
Matrix Tie Command None Input 0 Output All Tie Type Audio/Video	0*!
Matrix Tie Command None Input 0 Output All Tie Type Video	0*%
Matrix Tie Command None Input 16 Output 1 Tie Type Audio	16*1$
Matrix Tie Command None Input 16 Output 1 Tie Type Audio/Video	16*1!
Matrix Tie Command None Input 16 Output 1 Tie Type Video	16*1%
Matrix Tie Command None Input 16 Output 16 Tie Type Audio	16*16$
Matrix Tie Command None Input 16 Output 16 Tie Type Audio/Video	16*16!
Matrix Tie Command None Input 16 Output 16 Tie Type Video	16*16%
Matrix Tie Command None Input 16 Output 8 Tie Type Audio	16*8$
Matrix Tie Command None Input 16 Output 8 Tie Type Audio/Video	16*8!
Matrix Tie Command None Input 16 Output 8 Tie Type Video	16*8%
Matrix Tie Command None Input 16 Output All Tie Type Audio	16*$

Matrix Tie Command None Input 16 Output All Tie Type Audio/Video	16*!
Matrix Tie Command None Input 16 Output All Tie Type Video	16*%
Matrix Tie Command None Input 4 Output 1 Tie Type Audio	4*1$
Matrix Tie Command None Input 4 Output 1 Tie Type Audio/Video	4*1!
Matrix Tie Command None Input 4 Output 1 Tie Type Video	4*1%
Matrix Tie Command None Input 4 Output 4 Tie Type Audio	4*4$
Matrix Tie Command None Input 4 Output 4 Tie Type Audio/Video	4*4!
Matrix Tie Command None Input 4 Output 4 Tie Type Video	4*4%
Matrix Tie Command None Input 4 Output All Tie Type Audio	4*$
Matrix Tie Command None Input 4 Output All Tie Type Audio/Video	4*!
Matrix Tie Command None Input 4 Output All Tie Type Video	4*%
Matrix Tie Command None Input 8 Output 1 Tie Type Audio	8*1$
Matrix Tie Command None Input 8 Output 1 Tie Type Audio/Video	8*1!
Matrix Tie Command None Input 8 Output 1 Tie Type Video	8*1%
Matrix Tie Command None Input 8 Output 4 Tie Type Audio	8*4$
Matrix Tie Command None Input 8 Output 4 Tie Type Audio/Video	8*4!
Matrix Tie Command None Input 8 Output 4 Tie Type Video	8*4%
Matrix Tie Command None Input 8 Output 8 Tie Type Audio	8*8$
Matrix Tie Command None Input 8 Output 8 Tie Type Audio/Video	8*8!
Matrix Tie Command None Input 8 Output 8 Tie Type Video	8*8%

Matrix Tie Command None Input 8 Output All Tie Type Audio	8*$
Matrix Tie Command None Input 8 Output All Tie Type Audio/Video	8*!
Matrix Tie Command None Input 8 Output All Tie Type Video	8*%
Preset Recall 1	1.
Preset Recall 16	16.
Preset Recall 32	32.
Preset Save 1	1,
Preset Save 16	16,
Preset Save 32	32,
Video Mute Off Output 1	1*0B
Video Mute Off Output 16	16*0B
Video Mute Off Output 4	4*0B
Video Mute Off Output 8	8*0B
Video Mute On Output 1	1*1B
Video Mute On Output 16	16*1B
Video Mute On Output 4	4*1B
Video Mute On Output 8	8*1B
Video Mute Video and Sync Output 1	1*2B
Video Mute Video and Sync Output 16	16*2B
Video Mute Video and Sync Output 4	4*2B
Video Mute Video and Sync Output 8	8*2B
Volume 0 Output 1	1*0V
Volume 0 Output 2	2*0V
Volume 0 Output 4	4*0V
Volume 100 Output 1	1*100V
Volume 100 Output 2	2*100V
Volume 100 Output 4	4*100V

Appendix B. Update Commands

Audio Mute Output 1	1Z
Audio Mute Output 16	16Z
Audio Mute Output 4	4Z
Audio Mute Output 8	8Z
Audio Output Mute Output 1	1Z
Audio Output Mute Output 2	2Z
Audio Output Mute Output 4	4Z
EDID Assignment Input 1	wA1EDID\x0D
EDID Assignment Input 16	wA16EDID\x0D
EDID Assignment Input 4	wA4EDID\x0D
EDID Assignment Input 8	wA8EDID\x0D
Executive Mode	X
HDCP Input Authorization Input 1	wE1HDCP\x0D
HDCP Input Authorization Input 16	wE16HDCP\x0D
HDCP Input Authorization Input 4	wE4HDCP\x0D
HDCP Input Authorization Input 8	wE8HDCP\x0D
HDCP Input Status Input 1	wI1HDCP\x0D
HDCP Input Status Input 16	wI16HDCP\x0D
HDCP Input Status Input 4	wI4HDCP\x0D
HDCP Input Status Input 8	wI8HDCP\x0D
HDCP Output Status Output 1	wO1HDCP\x0D
HDCP Output Status Output 16	wO16HDCP\x0D
HDCP Output Status Output 4	wO4HDCP\x0D
HDCP Output Status Output 8	wO8HDCP\x0D
Input Format Input 1	1*\
Input Format Input 16	16*\
Input Format Input 4	4*\
Input Format Input 8	8*\
Input Gain Input 1	1G
Input Gain Input 16	16G
Input Gain Input 4	4G
Input Gain Input 8	8G
Input Signal Status	0LS
Temperature	2S
Video Mute Output 1	1B
Video Mute Output 16	16B

Video Mute Output 4	4B
Video Mute Output 8	8B
Volume Output 1	1V
Volume Output 2	2V
Volume Output 4	4V