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:	Display
Manufacturer:	Sharp
Firmware Version:	N/A
Model(s):	PN-E702, PN-E802, PN-E602

Tested on the Following Software and Firmware Versions

IP Link Pro Control Processor Firmware	Global Scripter Version
2.06.0002-b002	1.4.2

Version History

Module Version	Date	Notes
1_0_6_0	8/22/2018	Updated to Rev B.
1_0_5_0	2/26/2016	Initial Version

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 and deviceUsername must be set accordingly.
  Example: `InterfaceName.devicePassword = 'extron'`

Supported Classes and Examples

SerialClass
`InterfaceName = ModuleName.SerialClass(ProcessorName, 'COM1', Model='PN-E702')`
SerialOverEthernetClass
`InterfaceName = ModuleName.SerialOverEthernetClass('192.168.254.254', 2001, Model='PN-E702')`
EthernetClass
`InterfaceName = ModuleName.EthernetClass('192.168.254.254', 1025, Model='PN-E702')`

Control Commands

Format with Qualifier:

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

Format without Qualifier:

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

Command	Value	Value	Value
AdjustmentLock	'Mode 1'	'Mode 2'	'Off'
`# AdjustmentLock example` `InterfaceName.Set('AdjustmentLock', 'Mode 1')`			
Command	Value	Value	Value
AdjustmentLockTarget	'Remote Control'	'Monitor Buttons'	'Both'
`# AdjustmentLockTarget example` `InterfaceName.Set('AdjustmentLockTarget', 'Remote Control')`			
Command	Value	Value	Value
AspectRatio	'Wide'	'Zoom 1'	'Zoom 2'
	'Normal'	'Dot by Dot'	
Qualifier Key	Qualifier Value	Qualifier Value	Qualifier Value
'Input'	'PC DVI-D'	'PC D-sub'	'AV Component'
	'AV Video'	'PC RGB'	'AV DVI-D'
	'AV S-Video'	'AV HDMI'	'PC HDMI'
`# AspectRatio example` `InterfaceName.Set('AspectRatio', 'Wide', {'Input': 'PC DVI-D'})`			
Command	Value		
AutoImage	None		
`# AutoImage example` `InterfaceName.Set('AutoImage', None)`			
Command	Value		
Brightness	0 to 31 in steps of 1		
`# Brightness example` `InterfaceName.Set('Brightness', 31)`			
Command	Value	Value	Value
Input	'PC DVI-D'	'PC D-sub'	'AV Component'
	'AV Video'	'PC RGB'	'AV DVI-D'
	'AV S-Video'	'AV HDMI'	'PC HDMI'
`# Input example` `InterfaceName.Set('Input', 'PC DVI-D')`			
Command	Value	Value	
Mute	'On'	'Off'	

```
# Mute example
InterfaceName.Set('Mute', 'On')
```

Command	Value	Value	Value
OnScreenDisplay	'On'	'On (Mode 2)'	'Off'

```
# OnScreenDisplay example
InterfaceName.Set('OnScreenDisplay', 'On')
```

Command	Value	Value	Value
PbyPPosition	'Position 1'	'Position 2'	'Position 3'

```
# PbyPPosition example
InterfaceName.Set('PbyPPosition', 'Position 1')
```

Command	Value	Value	Value
PIP	'Off'	'Picture in Picture'	'Side-by-Side Mode 1'
	'Side-by-Side Mode 2'		

```
# PIP example
InterfaceName.Set('PIP', 'Off')
```

Command	Value	Value	Value
PIPInput	'PC DVI-D'	'PC D-sub'	'AV Component'
	'AV Video'	'PC RGB'	'AV DVI-D'
	'AV S-Video'	'AV HDMI'	'PC HDMI'

```
# PIPInput example
InterfaceName.Set('PIPInput', 'PC DVI-D')
```

Command	Value	Value
PIPMainPosition	'Position 1'	'Position 2'

```
# PIPMainPosition example
InterfaceName.Set('PIPMainPosition', 'Position 1')
```

Command	Value
PIPSize	1 to 64 in steps of 1

```
# PIPSize example
InterfaceName.Set('PIPSize', 64)
```

Command	Value	Value
Power	'On'	'Off'

```
# Power example
InterfaceName.Set('Power', 'On')
```

Command	Value
Volume	0 to 31 in steps of 1

```
# Volume example
InterfaceName.Set('Volume', 31)
```

Status Available

For all commands, call Update to receive the latest status. 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	Value	Value	Value
AdjustmentLock	'Mode 1'	'Mode 2'	'Off'

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

Command	Value	Value	Value
AdjustmentLockTarget	'Remote Control'	'Monitor Buttons'	'Both'

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

Command	Value	Value	Value
AspectRatio	'Wide'	'Zoom 1'	'Zoom 2'
	'Normal'	'Dot by Dot'	
Qualifier Key	Qualifier Value	Qualifier Value	Qualifier Value
'Input'	'PC DVI-D'	'PC D-sub'	'AV Component'
	'AV Video'	'PC RGB'	'AV DVI-D'
	'AV S-Video'	'AV HDMI'	'PC HDMI'

```
# AspectRatio examples
InterfaceName.Update('AspectRatio', {'Input': 'PC DVI-D'})
Value = InterfaceName.ReadStatus('AspectRatio')
InterfaceName.SubscribeStatus('AspectRatio', None, FeedbackHandler)
```

Command	Value
Brightness	0 to 31 in steps of 1

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

Command	Value	Value	
ConnectionStatus	'Connected'	'Disconnected'	

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

Command	Value	Value	Value
Input	'PC DVI-D'	'PC D-sub'	'AV Component'
	'AV Video'	'PC RGB'	'AV DVI-D'
	'AV S-Video'	'AV HDMI'	'PC HDMI'

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

Command	Value	Value	
Mute	'On'	'Off'	

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

Command	Value	Value	Value
OnScreenDisplay	'On'	'On (Mode 2)'	'Off'

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

Command	Value	Value	Value
PbyPPosition	'Position 1'	'Position 2'	'Position 3'

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

Command	Value	Value	Value
PIP	'Off'	'Picture in Picture'	'Side-by-Side Mode 1'
	'Side-by-Side Mode 2'		

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

Command	Value	Value	Value
PIPInput	'PC DVI-D'	'PC D-sub'	'AV Component'
	'AV Video'	'PC RGB'	'AV DVI-D'
	'AV S-Video'	'AV HDMI'	'PC HDMI'

```
# PIPInput examples
InterfaceName.Update('PIPInput')
```

```
Value = InterfaceName.ReadStatus('PIPInput')
InterfaceName.SubscribeStatus('PIPInput', None, FeedbackHandler)
```

Command	Value	Value
PIPMainPosition	'Position 1'	'Position 2'

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

Command	Value
PIPSize	1 to 64 in steps of 1

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

Command	Value	Value	Value
Power	'On'	'Off'	'Input Signal Waiting'

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

Command	Value
Volume	0 to 31 in steps of 1

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

Cable and Adapter Requirements

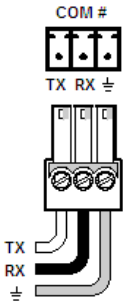
Captive Screw to Female DB9 RS-232 Serial Cable

Notes for the Device

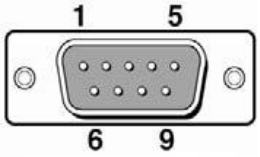
Serial communication

Port Type:	RS-232	**Parity:**	None
Baud Rate:	38400	**Stop Bits:**	One
Data Bits:	8	**Flow Control:**	None

Pin Assignments Diagram



Signal	Main Cable	Pin	Signal
TxD		2	TxD
RxD		3	RxD
GND		5	GND



RS232 DB9 Male Display

Network communication

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

Port Type:	Ethernet
Default Port:	1025
Logon Credentials Supported:	Yes
Multi-Connection Capabilities:	No
Port Changeability:	Yes

Ethernet Module Configuration Description

Please refer to user manual for settings and changes to the network communication

Notes for the Device

The TCP port number can be set to any value between the ranges 1025 to 65535.

Appendix A. Set Commands

Adjustment Lock Mode 1	ALCK 1\x0D
Adjustment Lock Mode 2	ALCK 2\x0D
Adjustment Lock Off	ALCK 0\x0D
Adjustment Lock Target Both	ALTG 2\x0D
Adjustment Lock Target Monitor Buttons	ALTG 1\x0D
Adjustment Lock Target Remote Control	ALTG 0\x0D
Aspect Ratio Dot by Dot	WIDE 5\x0D
Aspect Ratio Normal	WIDE 4\x0D
Aspect Ratio Wide	WIDE 1\x0D
Aspect Ratio Zoom 1	WIDE 2\x0D
Aspect Ratio Zoom 2	WIDE 3\x0D
Auto Image None	AGIN 1\x0D
Brightness 0	VLMP 0\x0D
Brightness 31	VLMP 31\x0D
Input AV Component	INPS 3\x0D
Input AV DVI-D	INPS 7\x0D
Input AV HDMI	INPS 9\x0D
Input AV S-Video	INPS 8\x0D
Input AV Video	INPS 4\x0D
Input PC D-sub	INPS 2\x0D
Input PC DVI-D	INPS 1\x0D
Input PC HDMI	INPS 10\x0D
Input PC RGB	INPS 6\x0D
Mute Off	MUTE 0\x0D
Mute On	MUTE 1\x0D
On Screen Display Off	LOSD 1\x0D
On Screen Display On	LOSD 0\x0D
On Screen Display On (Mode 2)	LOSD 2\x0D
PbyP Position Position 1	MW2P 0\x0D
PbyP Position Position 2	MW2P 1\x0D
PbyP Position Position 3	MW2P 2\x0D
PIP Input AV Component	MWIP 3\x0D
PIP Input AV DVI-D	MWIP 7\x0D
PIP Input AV HDMI	MWIP 9\x0D
PIP Input AV S-Video	MWIP 8\x0D
PIP Input AV Video	MWIP 4\x0D

PIP Input PC D-sub	MWIP 2\x0D
PIP Input PC DVI-D	MWIP 1\x0D
PIP Input PC HDMI	MWIP 10\x0D
PIP Input PC RGB	MWIP 6\x0D
PIP Main Position Position 1	MWPP 0\x0D
PIP Main Position Position 2	MWPP 1\x0D
PIP Off	MWIN 0\x0D
PIP Picture in Picture	MWIN 1\x0D
PIP Side-by-Side Mode 1	MWIN 2\x0D
PIP Side-by-Side Mode 2	MWIN 3\x0D
PIP Size 1	MPSZ 1\x0D
PIP Size 64	MPSZ 64\x0D
Power Off	POWR 0\x0D
Power On	POWR 1\x0D
Volume 0	VOLM 0\x0D
Volume 31	VOLM 31\x0D

Appendix B. Update Commands

Adjustment Lock	ALCK????\x0D
Adjustment Lock Target	ALTG????\x0D
Aspect Ratio	WIDE????\x0D
Brightness	VLMP????\x0D
Input	INPS????\x0D
Mute	MUTE????\x0D
On Screen Display	LOSD????\x0D
PbyP Position	MW2P????\x0D
PIP	MWIN????\x0D
PIP Input	MWIP????\x0D
PIP Main Position	MWPP????\x0D
PIP Size	MPSZ????\x0D
Power	POWR????\x0D
Volume	VOLM????\x0D