



**"Results You Can Count On"**

## **Model GHN-AT-PROG-UPLC-3-SLOPE**

**PLC 3-Channel Attenuator with Slope Filter  
CLI and GUI Reference Guide**

**Rev. -  
Date of Publication: 04/30/2019**



## Customer Support

This document provides the installation and usage instructions for the CLI (Command Line Interface) and GUI (Graphical User Interface) applications for the Model GHN-AT-PROG-UPLC-3-SLOPE PLC 3-Channel Attenuator with Slope Filter. These applications are used to set and read the attenuation levels and slope filter of the attenuation device.

### Contact Information:

#### Telephone

General: 631-423-3232  
Technical support: 800-835-3298  
Fax: 631-385-8184

#### E-mail/Internet

support@telebytebroadband.com  
sales@telebytebroadband.com  
www.telebytebroadband.com

#### Mail

Telebyte, Inc.  
355 Marcus Blvd  
Hauppauge, NY 11788



## Warranty

### Included With Your Purchase

#### *One-year Warranty*

- Telebyte will furnish parts and labor for the repair or replacement of products found by Telebyte to be defective in material or workmanship during the warranty period.

### Disclaimer of Warranties and Other Terms and Conditions

TELEBYTE, INC. warrants its broadband simulation equipment to be free from defects in material and workmanship, under normal and proper use and in its unmodified condition, for 12-months, starting on the date it is delivered for use. TELEBYTE'S sole obligation under this warranty shall be to furnish parts and labor for the repair or replacement of products found by TELEBYTE to be defective in material or workmanship during the warranty period. Warranty repairs will be performed at the point of manufacture. Equipment approved for return for warranty service shall be returned F.O.B. TELEBYTE factory and will be redelivered by TELEBYTE freight prepaid, except for non-continental U.S.A. locations. These deliveries will be sent COD freight and import/export charges.

The above warranty is in lieu of all other warranties, expressed or implied, statutory or otherwise, including any implied warranty of merchantability or fitness for a particular purpose. TELEBYTE shall not be liable for any damages sustained by reseller or any other party arising from or relating to any equipment failure, including but not limited to consequential damages, nor shall TELEBYTE have any liability for delays in replacement or repair of equipment.



## Equipment Returns

Out of warranty equipment may be returned, prepaid, to the Hauppauge, N.Y. customer service facility. Return shipping charges will be billed to the customer. The repaired unit will have a 90-day warranty. In those cases where "no trouble" is found, a reduced charge will be billed to cover handling, testing, and packaging. Whether in or out of warranty, a Return Material Authorization number (RMA) is required and may be obtained by going to [www.telebytebroadband.com](http://www.telebytebroadband.com) and opening a technical support case.

Please be sure to reference the RMA number on the outside container.



## Table of Contents

1.0	Personnel Safety Warning.....	1
2.0	System Requirements .....	1
3.0	Specifications .....	1
4.0	Before You Begin .....	2
5.0	Application Installation Steps.....	3
5.1	Command Line Interface (CLI).....	3
	Graphical User Interface (GUI) .....	6
6.0	Control.....	7
6.1	CLI Overview .....	7
6.1.1	CLI Commands .....	7
6.1.1.1	Screen Examples .....	7
6.1.1.2	CLI Command List .....	9
6.2	PLC Test Control Center Overview .....	10
6.2.1	GUI Screen Examples .....	10
6.2.2	Status Messages .....	12

## 1.0 Personnel Safety Warning



For personnel safety, the metal enclosure of the GHN-AT-PROG-UPLC-3-SLOPE must be earth grounded. Connect one end of an AWG16 cooper wire to the lug provided with the enclosure and the opposite end of the wire to the facility earth ground.

## 2.0 System Requirements

Windows 7, 10

.Net Framework 3.5

USB 2.0 Cable A Male to Mini B Male

## 3.0 Specifications

<b>Number of Channels</b>	3
<b>Frequency Range</b>	1 to 100 MHz
<b>Attenuation Range</b>	1 to 100 dB (1-dB steps)
<b>Attenuation Accuracy</b>	+/- 0.5 dB
<b>Slope Filter</b>	Monotonically increasing in attenuation from 1 to 100 MHz  Typ. 1 dB ±1dB at 1MHz 10 dB ±1dB at 30MHz 20 dB ±1dB at 100MHz
<b>Port Type</b>	SMA Female Connectors
<b>Impedance</b>	50 Ω
<b>Return loss</b>	≤ -15dB
<b>Power Rating</b>	+20 dBm
<b>Interface</b>	MINI-B USB PORT



## 4.0 Before You Begin

Control of the Model GHN-AT-PROG-UPLC-3-SLOPE PLC 3-Channel Attenuator with Slope Filter (referred to as the device) is accomplished through a Command Line Interface (CLI) or the PLC Test Center Graphical User Interface (GUI). Options available include the ability to set the attenuation and slope filter values for one to three channels, on each of one to nine devices.

All devices to be controlled must be connected to USB ports in the host PC (referred to as the system). Each device is identified with a serial number by default. This ID number can be changed to a custom User ID number.

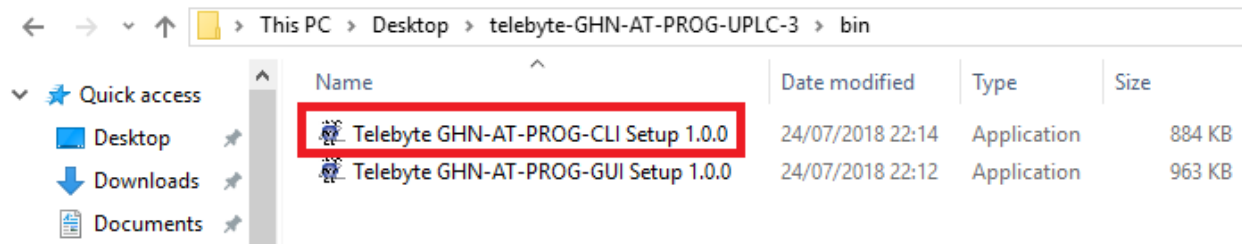
### Value Definitions:

UserIDNum	a user-assigned identifying number for a device
ChannelNum	the number of a channel (or a range of channels)
AttnValue	the attenuation value for a channel (or range of channels) on one (or a range) of devices
SlopeFilterState	the state of a specified slope filter on a channel (or range of channels) of one (or a range) of devices
newUserIDNum	the new user-assigned identifying number for a device

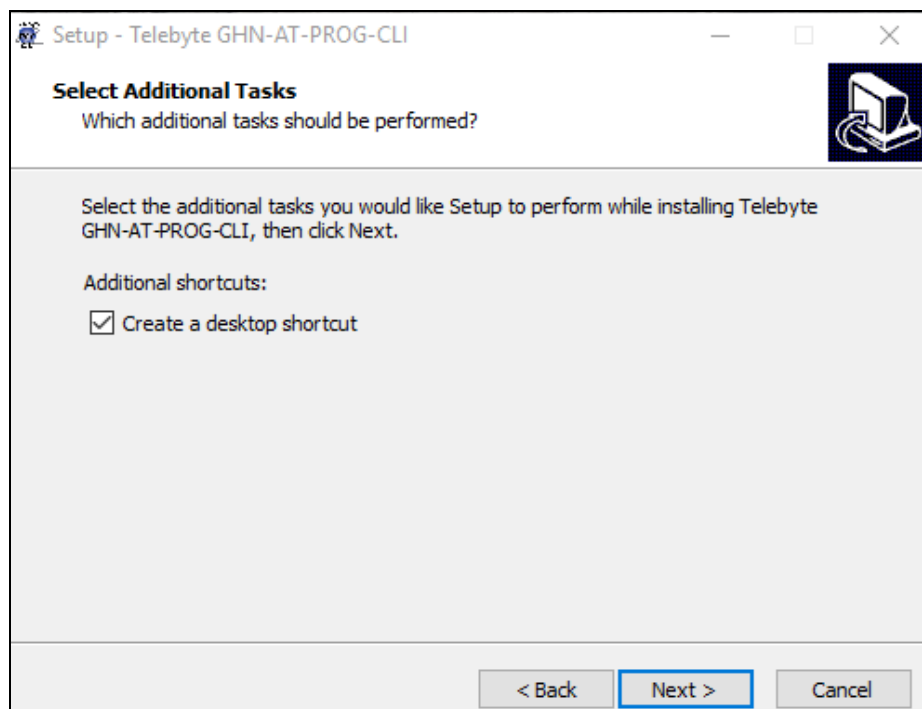
## 5.0 Application Installation Steps

- Net framework 3.5 is required. Windows GUI and CLI application prompts for the installation of the required files if they are not found.

### 5.1 Command Line Interface (CLI)

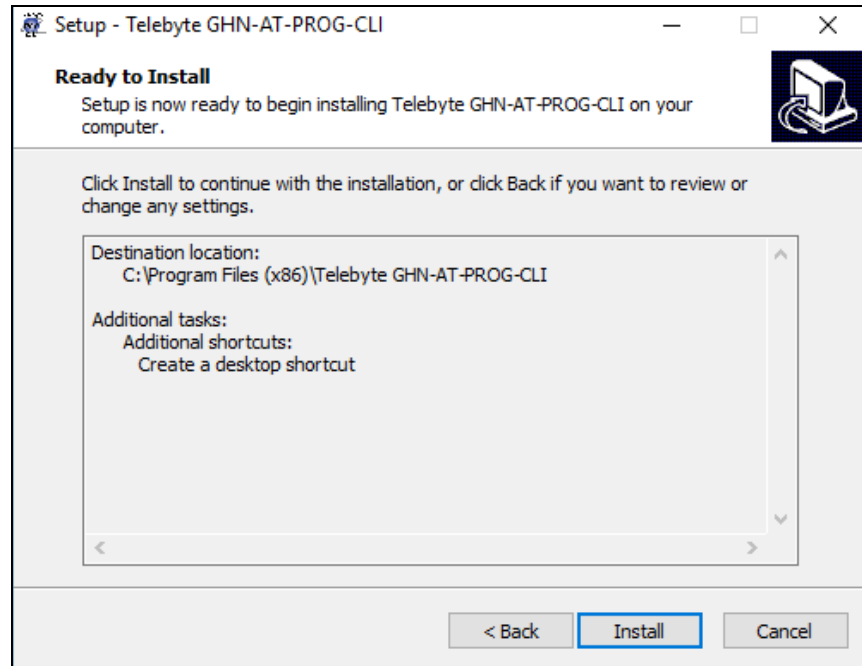


- To install the CLI setup program, click on “Telebyte GHN-AT-PROG-CLI Setup 1.3.0” and follow the instructions. The Select Additional Tasks screen is shown.

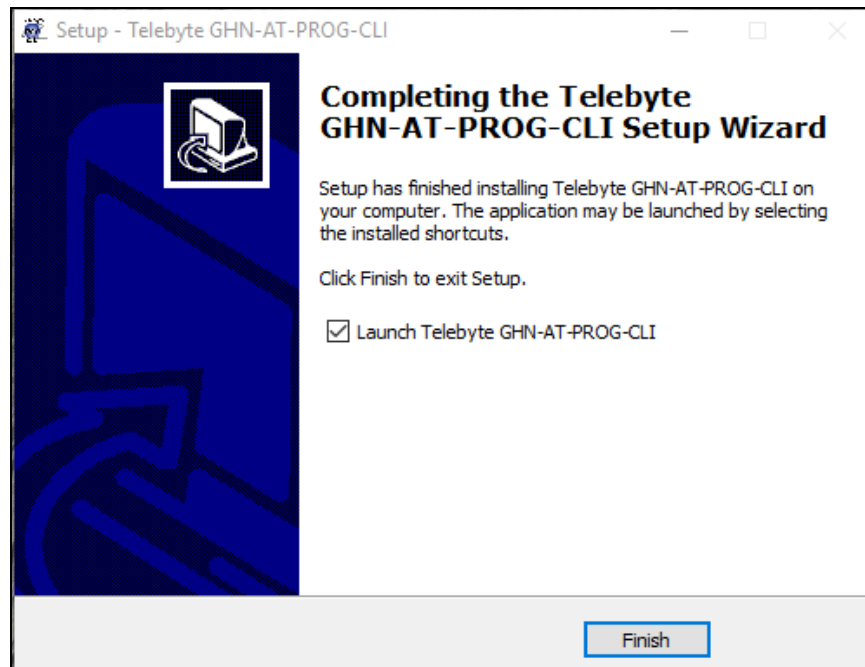


- Click Next. The Ready to Install screen is shown.



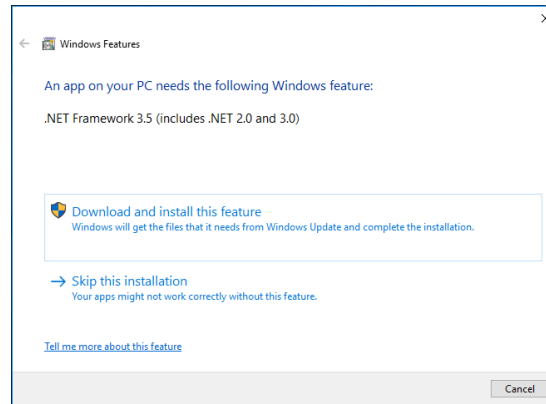


- Click Install. When the installation is done, the Completion screen is shown.

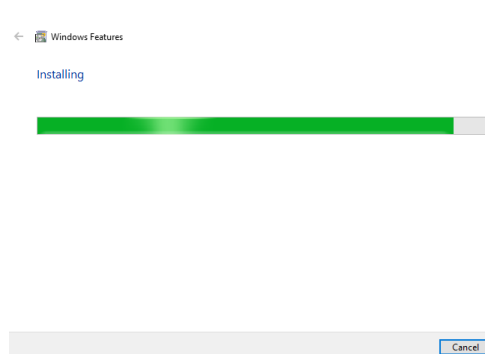
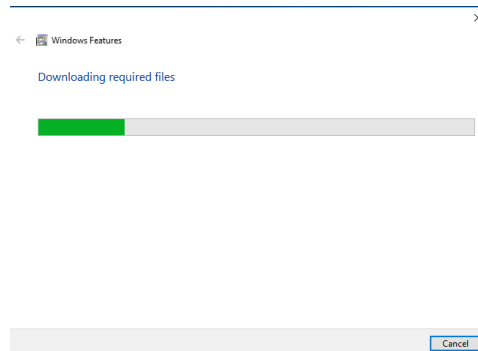


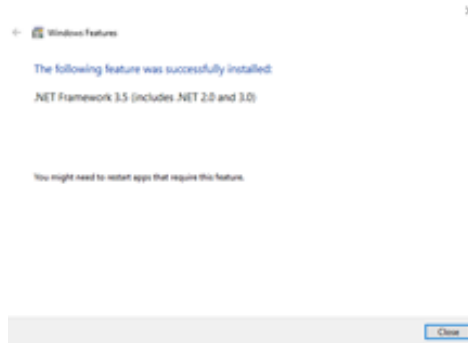
- Click Finish

- Windows will require .Net Framework 3.5 to be installed only if the required files are not found.

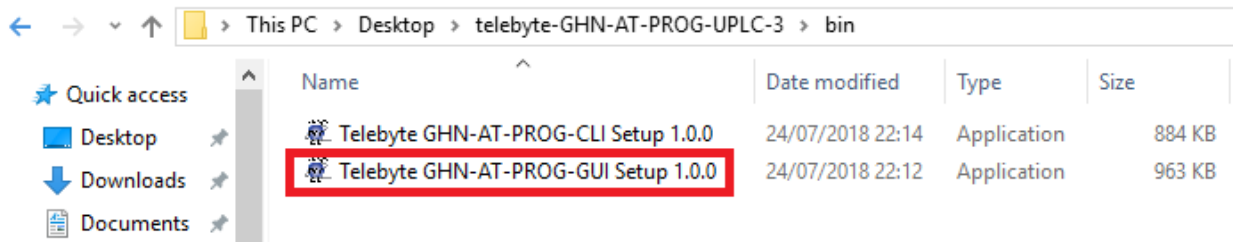


- Click on Download and install this feature.





## 5.2 Graphical User Interface (GUI)



- To install the GUI program, click on “Telebyte GHN-AT-PROG-GUI Setup 1.3.0” and follow the same procedure as explained in of CLI Installation section.



## 6.0 Control

### 6.1 CLI Overview

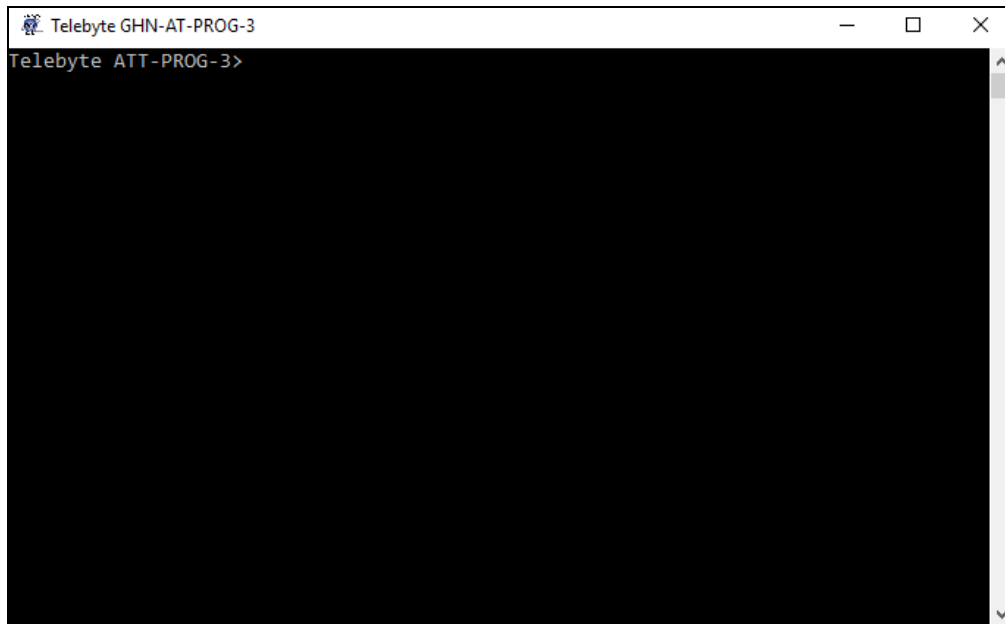
The CLI allows the user to send commands to set the attenuation and slope filter values on each device. All devices must be connected to the system.

- When the user connects any Telebyte device to the system, the **Refresh** command is used to update the device list.

#### 6.1.1 CLI Commands

##### 6.1.1.1 Screen Examples

- Commands are entered at the **Telebyte ATT-PROG-3>** prompt as shown below.





- **Show Command Examples**

**Show attndevicelist** displays all devices connected to the system along with User ID Number and Device Index.

```
Telebyte GHN-AT-PROG-3
Telebyte ATT-PROG-3>show attndevicelist
show attndevicelist Successful

Device list:

Device Index: 1
User ID Number: 87654321

Telebyte ATT-PROG-3>
```

- **Set Command Example**

**Set attn** sets the attenuation level of a specified channel (or range of channels) on a specified device (or range of devices).

```
Telebyte GHN-AT-PROG-3
Telebyte ATT-PROG-3>show attndevicelist
show attndevicelist Successful

Device list:

Device Index: 1
User ID Number: 87654321

Telebyte ATT-PROG-3>set attn 87654321 1 1
set attn 87654321 1 1 Successful

Telebyte ATT-PROG-3>
```



## 6.1.1.2 CLI Command List

No	Commands
1	<p><b>set attn &lt;UserIDNum&gt; &lt;ChannelNum&gt; &lt;AttnValue&gt;</b>            Set the attenuation value, for the specified channel(s), on the device(s) identified with specified User ID Number(s).</p> <p>Example: set attn 87654321 1 20</p>
2	<p><b>set slopefilter &lt;UserIDNum&gt; &lt;ChannelNum&gt; &lt;SlopeFilterState&gt;</b>            To set or bypass the slope filter, for the specified channel(s), on the device(s) identified with the specified User ID Number(s)</p> <p>Example: set slopefilter 87654321 1 on</p>
3	<p><b>set userid &lt;UserIDNum&gt; &lt;newUserIDNum&gt;</b>            To change the User ID Number value of a device.</p> <p>Example: set userid 87654321 87654</p>
4	<p><b>show attn &lt;UserIDNum&gt;</b>            Display the attenuation level of the specified devices(s) connected to the host PC.</p> <p>Example: show attn 1234567a,1234567b</p>
5	<p><b>show attndevicelist</b>            Display a list of devices connected to the system including Device Index, Device ID &amp; User ID number.</p> <p>Example: show attndevicelist</p>
6	<p><b>show version</b>            Display the version of the current software application.</p> <p>Example: show version</p>
7	<p><b>Show -h</b>            Displays the help menu with command description and uses.</p>
8	<p><b>Refresh</b>            Display an updated device list.</p>
<b>NOTE</b>	<p><b>Arguments:</b>            UserIDNum - single or in group (separated by a comma)            ChannelNum - single, range (separated by colon), or in group (separated by comma)            AttnValue - single or in group (separated by a comma)            SlopeFilterState - numeric value (range: 1 to 100)            newUserIDNum - maximum of 8 characters</p>



## 6.2 PLC Test Control Center Overview

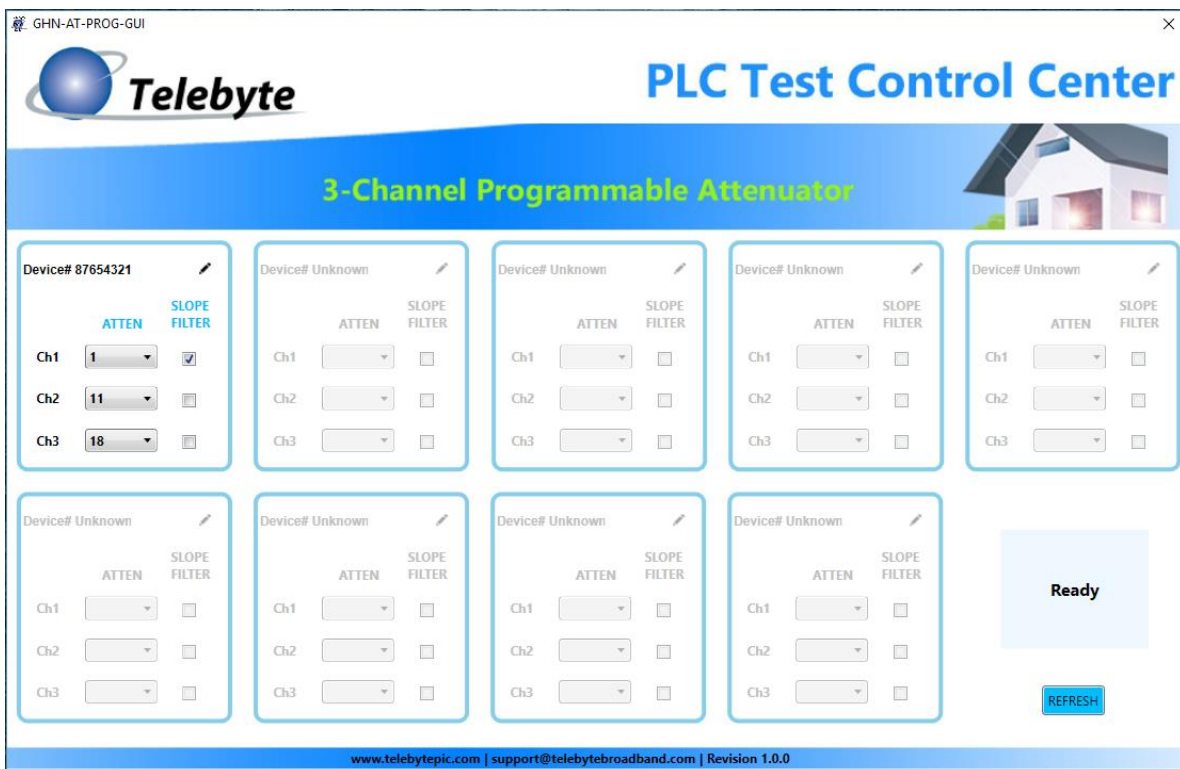
The PLC Test Control Center GUI provides one device panel for each device connected to the system. Up to nine devices may be controlled through this GUI.

- When the user connects any Telebyte device to the system, click Refresh in the lower-right corner of the interface to update the device panels.

**NOTE:** Multiple sessions of the GUI and/or CLI utilities are not allowed.

### 6.2.1 GUI Screen Examples

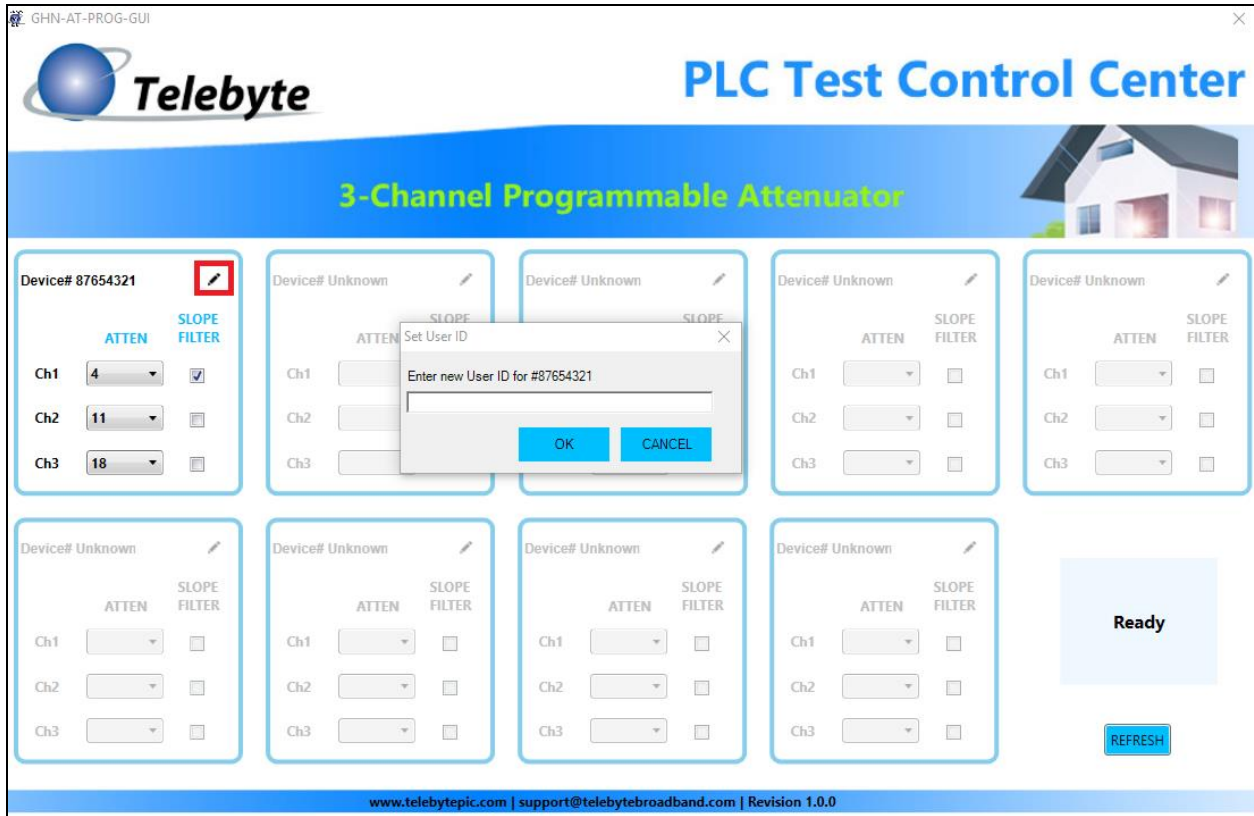
- All active devices connected to the system display a Device# on the top of the device panel. All others are grayed out.
- Click on the dropdown to the right of a device's channel to select the attenuation value for that channel.
- Click in the Slope filter checkbox to the right of the attenuation dropdown to turn the Slope Filter for that channel on or off.



*One device is connected to the system in the example above. The attenuation level and slope filter state for each channel is shown.*



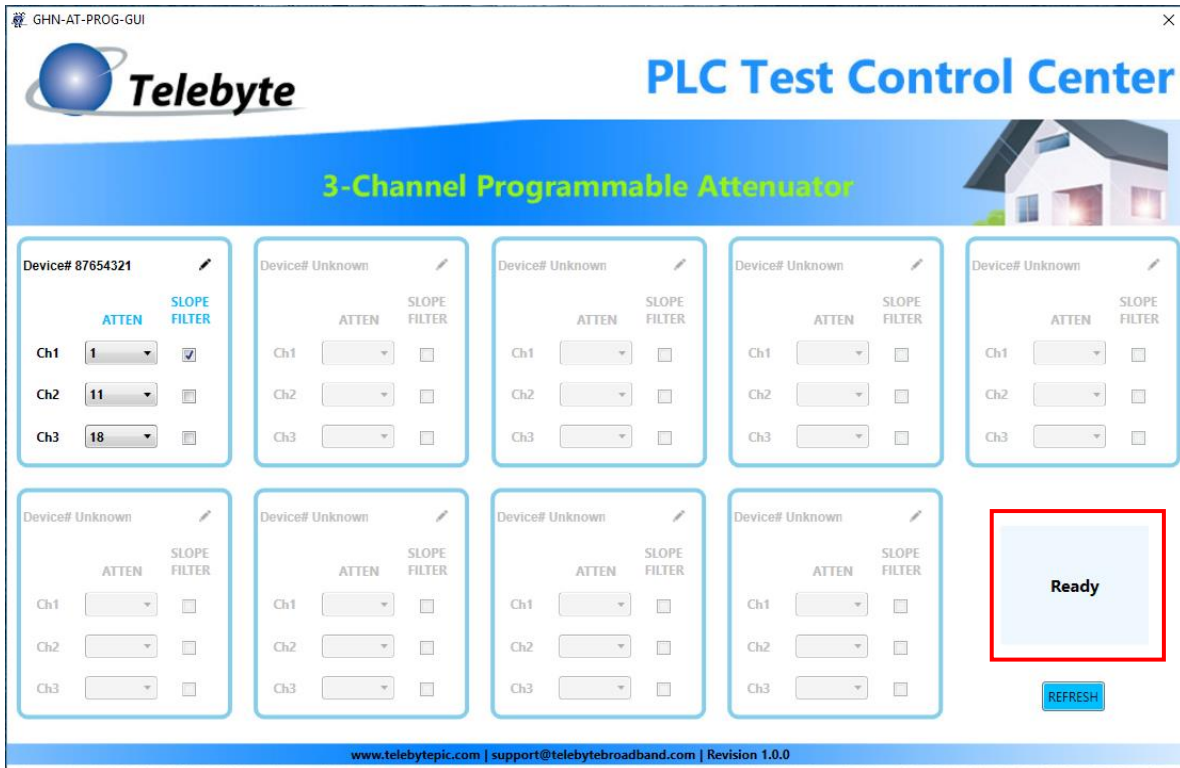
- To change the User ID for a device, click the Edit icon in the upper-right corner of the device panel. The Enter new user ID dialogue box is shown.



- Enter the new User ID number and click OK.



## 6.2.2 Status Messages



The screenshot displays the 'PLC Test Control Center' interface for a '3-Channel Programmable Attenuator'. The interface includes a header with the Telebyte logo and title, and a main area with eight control panels for different devices. The first panel, for 'Device# 87654321', shows settings for three channels (Ch1, Ch2, Ch3) with 'ATTEN' and 'SLOPE FILTER' options. The 'ATTEN' option is selected for Ch1, Ch2, and Ch3. The 'SLOPE FILTER' option is selected for Ch1. The 'Ready' status message is highlighted in a red box, and a 'REFRESH' button is visible below it.

- BUSY: Settings are being saved.
- SUCCESS: Settings successfully saved
- READY: Ready to configure
- FAIL: Failed to save settings