Extron

Extron Certified DSP Bundle for Microsoft® Teams® Rooms – Large Room • Setup Guide

IMPORTANT NOTE:

Go to **www.extron.com** for the complete user guide, installation instructions, and specifications.

Microsoft Teams and Extron have come together to provide Teams Rooms solutions with our certified hardware. Now it is easier than ever to stay connected with flexibility of real-time collaboration from anywhere. The products in our Teams Rooms Certified Design Solutions have been designed and meticulously tested for best-in-class performance and ease of use.

Requirements

Extron Equipment List		
Product	**Description**	**Quantity**
DTP3 CrossPoint 884 IPCP A	Audio and Video Matrix with 200 watt Amplifier	1
SF 26CT LP	6.5" Low profile, 2-way Ceiling Speakers, pair	2
DTP3 T 202	4K/60 HDMI DTP3 Transmitter with Input Loop-Through	2
DTP3 R 201	4K/60 HDMI DTP3 Receiver with Audio De-Embedding	2
HDMI Ultra/9	Ultra Flexible Premium High Speed Cables - 9' (2.7 m)	4
MBU 125	1/4 and 1/2 Rack Width Low-Profile Mount Kit	4
XTP DTP 22/35	Precision-terminated Shielded Twisted Pair Cables - 35' (10.6 m)	4
SPK 16P/1000	16 AWG Plenum Speaker Cable - 75' (22.8 m)	1
USBC Config cable	USB-C to USB-C 5 Gbps Cable - 6' (1.8 m)	1
Network cable	Cat-6 Plenum network cable - 35' (10.7 m)	2
Network cable	Cat-6 Plenum network cable - 50' (15.2 m)	2
Network cable	Cat-6 cable non Plenum - 6' (1.8 m)	2

Audio Technica® Equipment List		
Product	**Description**	**Quantity**
ATND1061DAN	Beamforming Ceiling Array Microphone	1
ESW-T4102/C510	Handheld Transmitter	1
ESW-T4101	Body-Pack Transmitter	1
ESW-R4180DAN	8-Channel Wireless Receiver	1
ESW-CHG4AD	Two-Bay Body Pack and Handheld Charging Station with Power Supply	1

Additional Required Equipment		
Product	**Description**	**Quantity**
Teams Rooms computer	Teams Rooms computer with camera and control interface	1
Network switch	10-port PoE network switch	1
Windows® computer or laptop	Computer **MUST** contain the following: • Extron DSP Configurator Pro • Extron Global Configurator Plus and Professional • Extron Toolbelt • Dante Controller • Audio Technica Digital Microphone Manager • Audio Technica Wireless Manager • Extron system configuration *.zip files	1

NOTE: The Windows computer or laptop is required for adjustments and can be disconnected after system configuration.

SYSTEM DIAGRAM

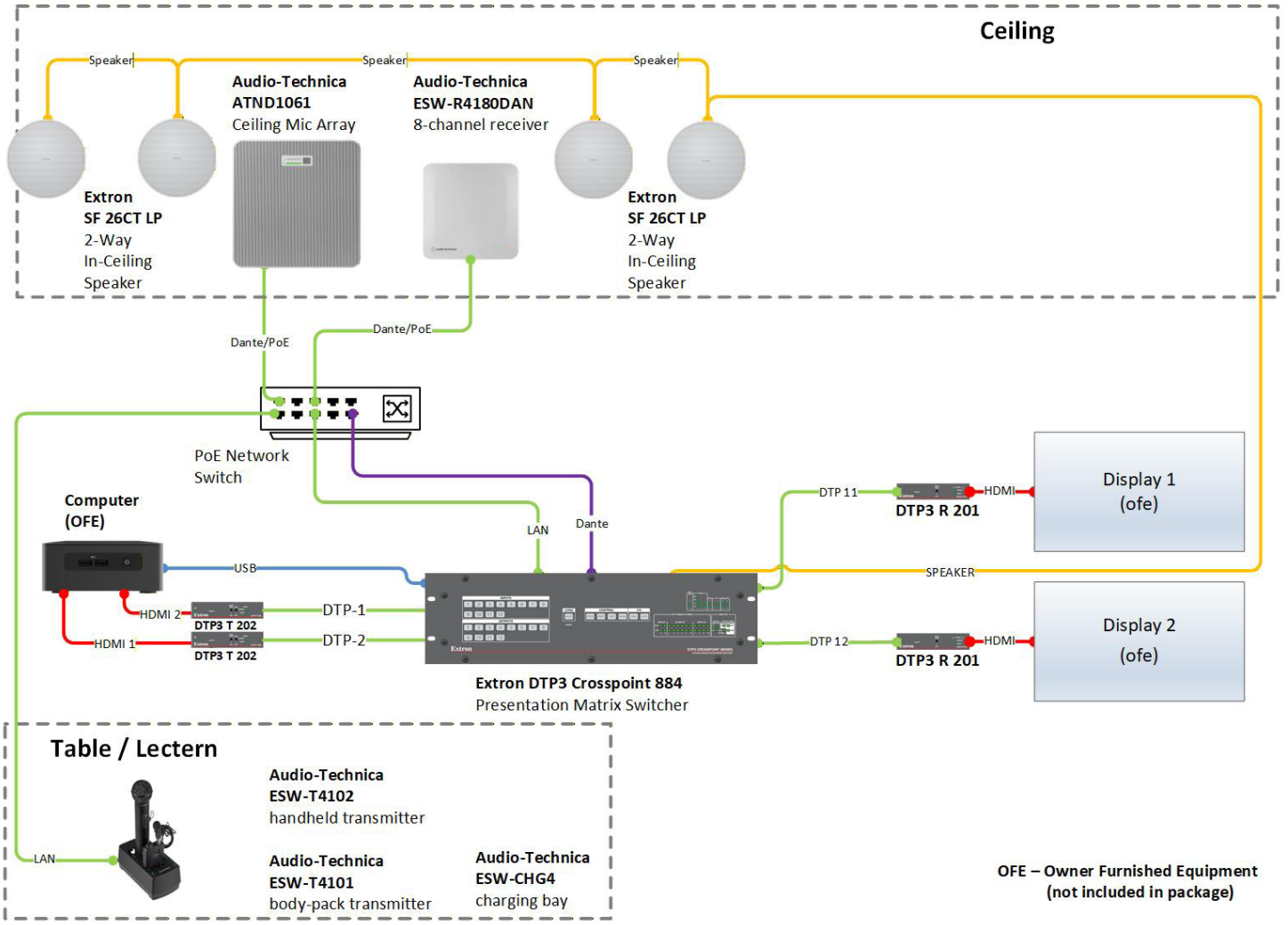


Figure 1. System Diagram Example

NOTE: The supplied network switch is manageable. However, the default configuration is sufficient for this solution to function.

Installation Details

Amplifier and Speaker Installation

During installation of the amplifier and speakers, ensure that their settings are compatible. The provided DTP3 CrossPoint configuration sets the Amplifier Output Mode to Bridged Mono, 70 V (see figure 3 for wiring). For compatibility, set each SF 26CT LP rotary tap selector switch to 70 V, 16 W (see figure 2).

For detailed setup instructions, see the included *DTP3 CrossPoint 884 Setup Guide* and *SF 26CT LP Setup Guide*.

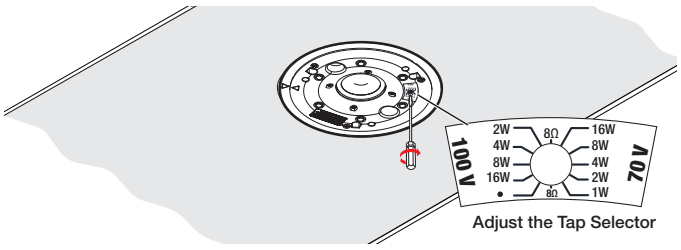
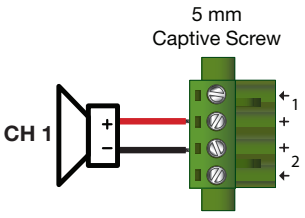


Figure 2. Adjusting the Speaker



Bridged Mono 8Ω, 70 V
or 100 V Speaker Load

Figure 3. Captive Screw Audio Cable Wiring

Configuration Overview

1. Unbox and connect the provided hardware using the diagram in figure 1 on page 2.

   NOTE: Do not connect the USB cable between the Microsoft Teams Rooms computer and Extron DTP3 CrossPoint 884 IPCP A until after the Extron DTP3 CrossPoint 884 IPCP A is completely configured.

2. Install the following software utilities on the computer:
   - Extron DSP Configurator Pro
   - Extron Global Configurator Plus and Professional
   - Extron Toolbelt
   - Dante Controller Software
   - Audio Technica Digital Microphone Manager (DMM)
   - Audio Technica Wireless Manager
3. Download the following from the Extron website (www.extron.com):
   - Extron Large Conference Room System File `.zip` folder

Audio Technica ATND1061 Microphone Setup

A single network cable connection from the Audio Technica ATND1061 to the network switch supports PoE into the microphone, Dante audio, and LED feedback for call and mute status. The Audio Technica Digital Microphone Manager software detects and identifies the ATND1061 when the network cable is attached to the Network A port and the microphone is powered on.

From this interface, carry out the following actions in the order they are listed.

Connecting Microphones

1. Set the computer to automatically obtain IP address settings.
2. Connect to the same network the microphones and the computer with Digital Microphone Manager installed.
   The microphones ship from the factory with `IP Config Mode` set to **`Auto`**.
3. Launch Digital Microphone Manager (see figure 4).
4. Select the **`Open`** `Project` button from the main menu.
5. Open a browser and navigate to the DMM project file and select **`Open`** or double click on the file.
   The `Digital Microphone Manager` window opens to connect the microphones (see figure 5).

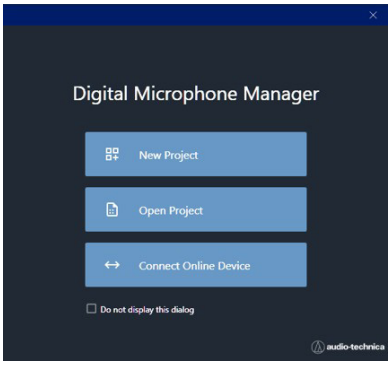


Figure 4. Digital Microphone Manager Main Menu

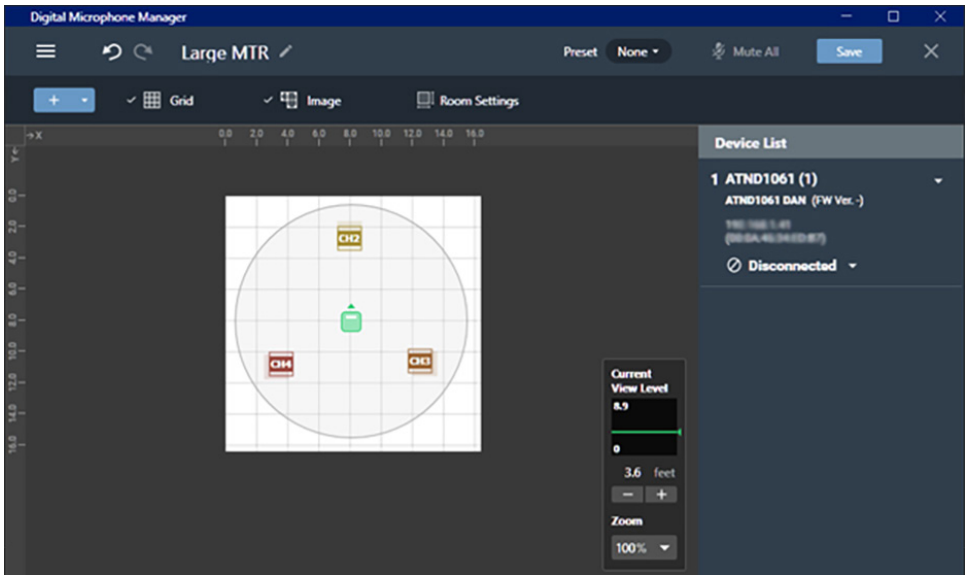


Figure 5. Digital Microphone Manager Window with Open File

6. Click the arrow beside `Disconnected` for the desired microphone and select **`Connect`** (see figure 6).
   The `Connect to Device` screen opens (see figure 7).

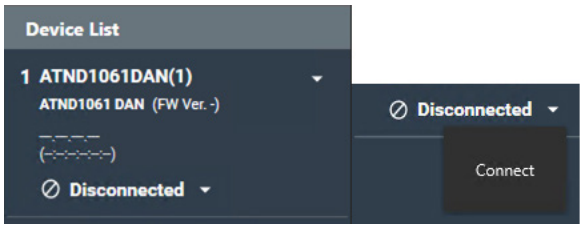


Figure 6. Connect Device List

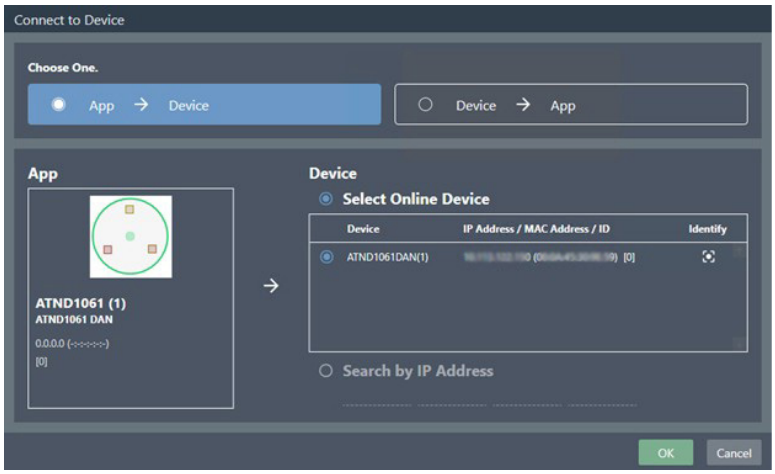


Figure 7. Connect to Device Window

7. Select the **`App → Device`** radio button.
8. Select the desired microphone radio button in the `Device` panel.
9. Click **`OK`**.
   A `Preset` status box opens (see figure 8, top).
10. Wait for the `Preset` status to change from `Saving...` to `Complete` (see figure 8, bottom).
11. Click **`OK`** when complete.
    The `Digital Microphone Manager` window opens, displaying the selected microphone is `Connected` (see figure 9).
    Repeat steps 6 through 10 to connect the second microphone.

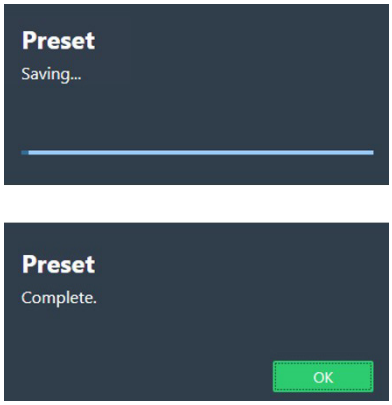


Figure 8. Connection Status Box

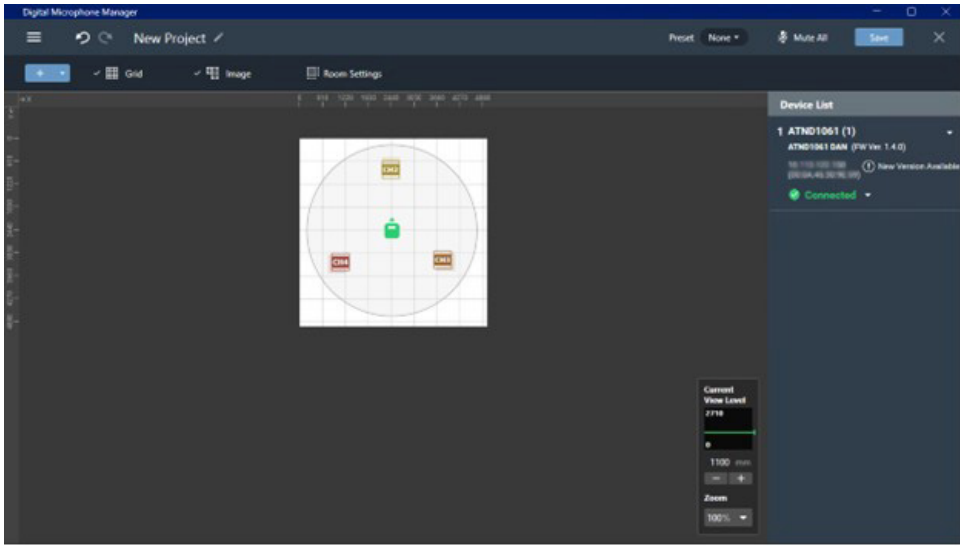


Figure 9. Digital Microphone Manager Window with Connected Microphone

Room Settings and Beam Configuration

The provided DMM project file utilizes priority zones on the ATND1061 microphone, which are configured to cover a single room. Use the *Digital Microphone Manager* software to verify the signal strength by reviewing the meters while speaking from each priority zone around the microphones. If necessary, the `Room Settings` and `Priority Zones` can be modified to better suit the room configuration.

NOTE: See the *Digital Microphone Manager* instruction manual for more information.

Audio Settings

The audio settings are pre-configured in the previously download project file (see **Configuration Overview** on page 3). Before moving forward, confirm that AEC is enabled (see figure 10, ❶), to ensure an AEC reference can be received over Dante.

Figure 10. Audio Board Controls with AEC Enabled

System Settings

General panel

To configure the system:

1. Select a microphone from the device list. The microphone settings screen displays in the right panel.
2. Click the **`gear`** icon in the right panel (see figure 10, ❷). The `Settings & Maintenance` screen opens (see figure 11).
3. Open the settings menu and click on a setting.
   - For text settings, click the field and enter the text.
   - For drop-down settings, click the arrow for the setting and make a selection from the list.
   - For switch settings, click the switch. Switches turn blue (ON) and no color (OFF).
4. Click **`Apply`** to save the settings.

   Click **`Cancel`** to return to previous settings.
5. Click **`OK`** to exit.

To change a device name:

Click in the **`Device Name`** field and enter the name.

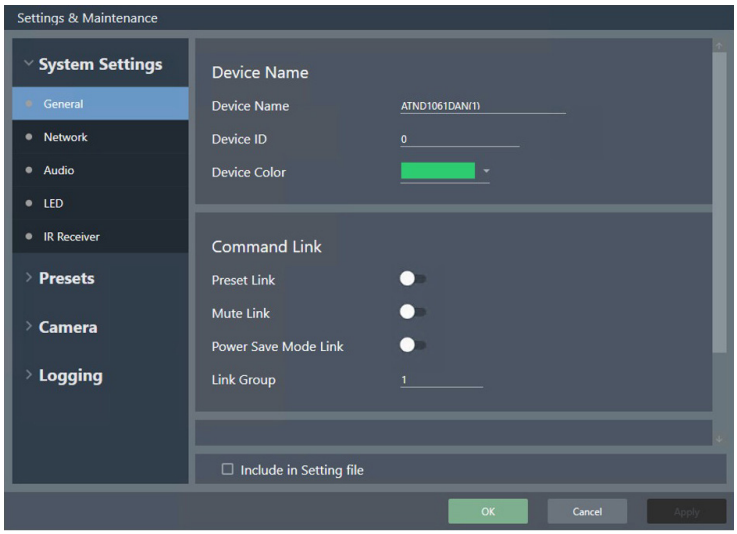


Figure 11. Settings & Maintenance General Panel

Network panel

Configure the Dante and IP control network settings as needed.

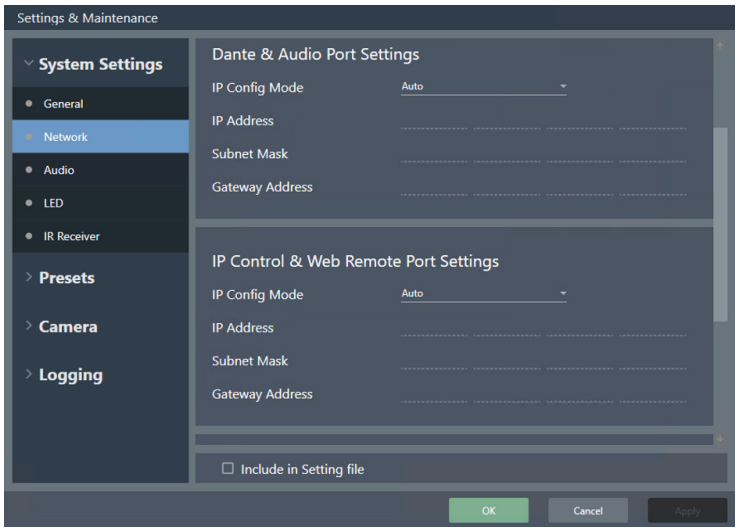


Figure 12. Settings & Maintenance Audio Panel

Audio panel

Audio settings are pre-configured in the previously downloaded project file (see **Configuration Overview** on page 3).

Confirm the following settings:

Beam Settings —

- **Beam Sensitivity** — Low
- **Auto Attenuation** — Disabled
- **Room Type** — Live

DSP Mode — AEC Mode

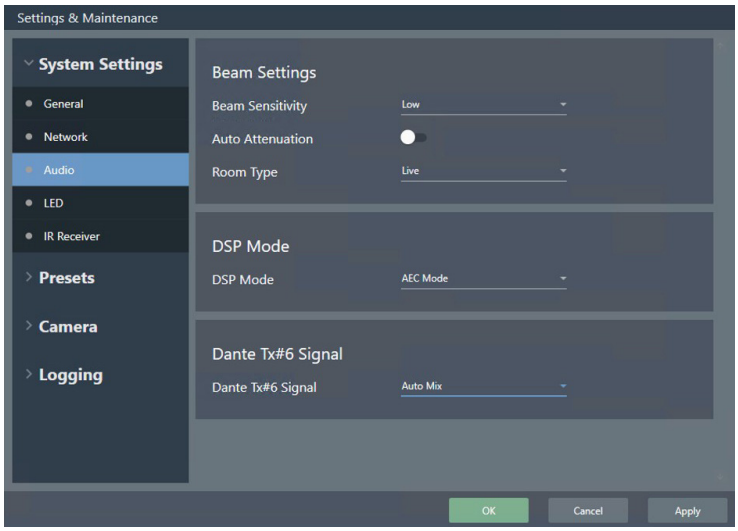


Figure 13. Settings & Maintenance Audio Panel

Audio Technica Engineered Sound Wireless System

NOTE: For more detailed information on the Audio Technica Wireless Manager software, see the Audio Technica documentation included with the microphones and receiver.

The provided wireless microphone system includes the ESW-R4180DAN, which receives audio signals from the ESW-T4101 and ESW-4102 transmitters. The Audio Technica Wireless Manager software is used to discover and configure the connected wireless devices.

To set up the Audio Technica Engineered Wireless System:

1. Connect the ESW-R4180 receiver to the network switch RJ-45 port.

   NOTE: The ESW-R4180 receiver is PoE powered.

2. Connect the ESW-CHG4 charging station to the network switch RJ-45 port.
3. Connect power to the ESW-CHG4.
4. Insert the ESW-T4101 and ESW-4102 microphones into the ESW-CHG4 charging station.
5. Connect the PC to the same network as the receiver and charging station and set the IP settings to DHCP.
6. Start the **`Wireless Manager`** software.
7. Open the provided configuration file — `WMPROJ` file (see **figure 14** on page 7).

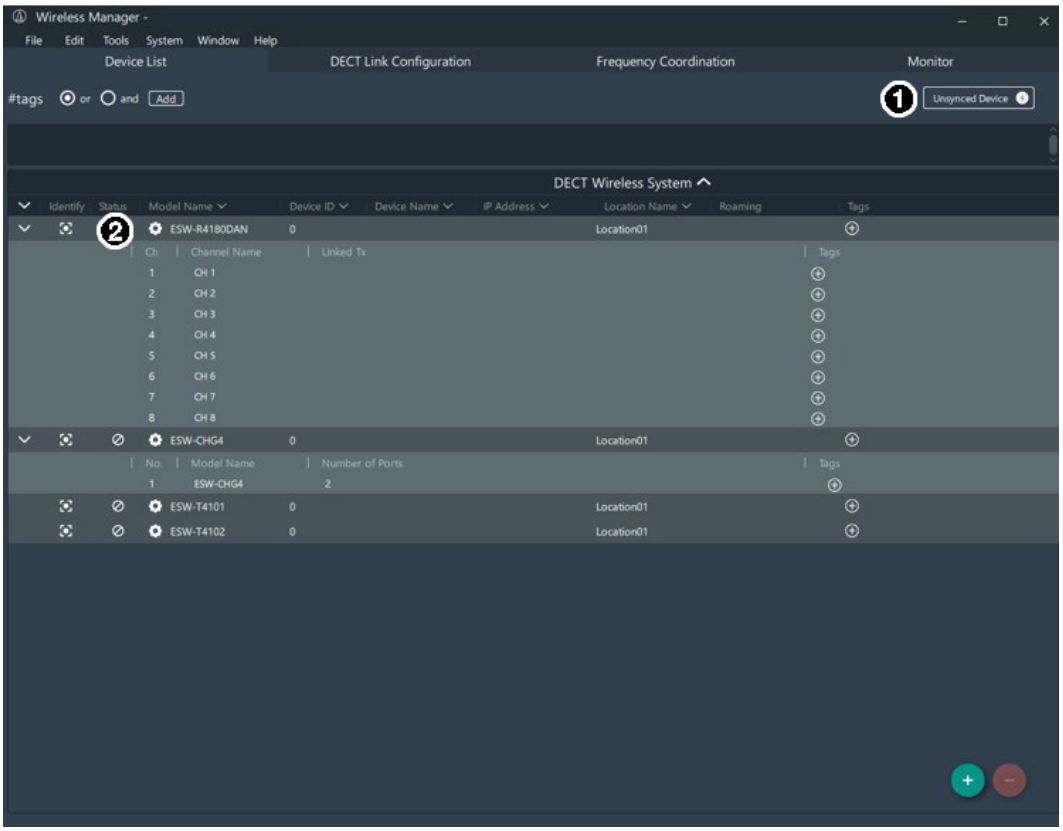


Figure 14. Wireless Manager Screen with the Open WMPROJ File

8. Click the **Unsynced Devices** button (see figure 14, ❶). The Unsynced Devices window opens (see figure 15).

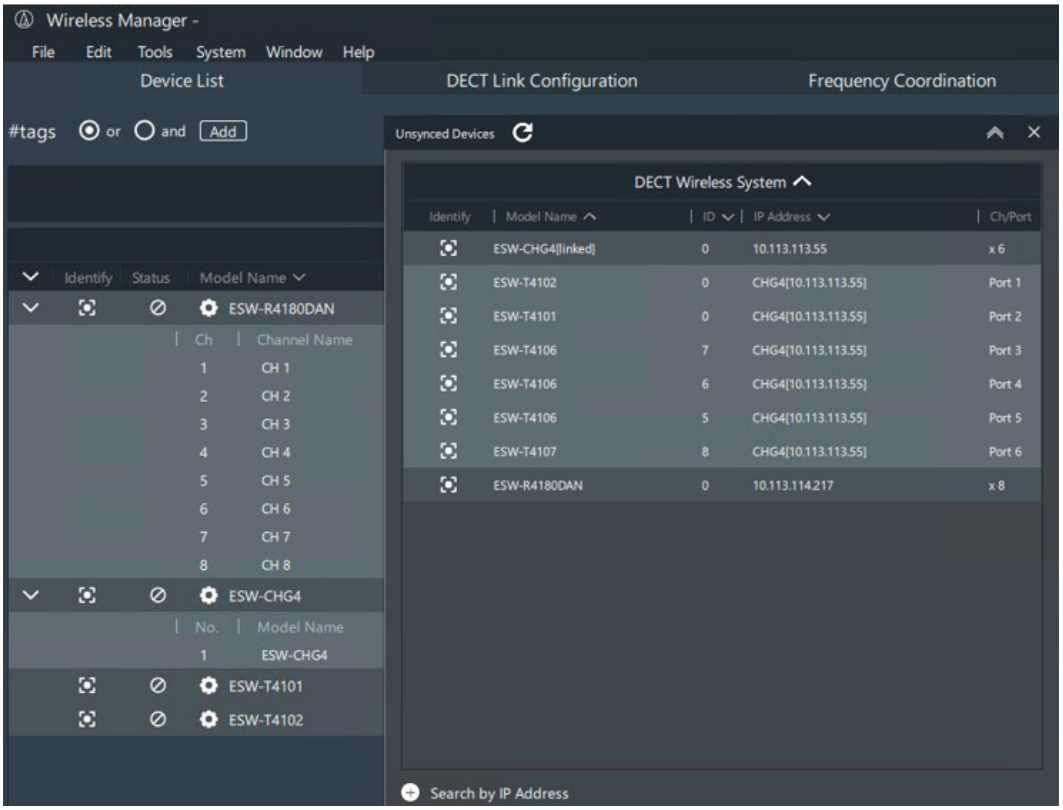


Figure 15. Wireless Manager Unsynced Devices Window

a. Click and drag each discovered device in the **Unsynced Devices** window to the corresponding model in the Device List. The Retain Device Settings Of dialog box opens (see **figure 16** on page 8).

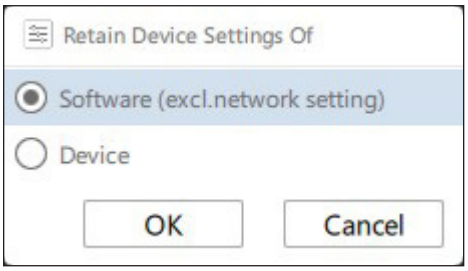


Figure 16. Retain Device Settings Of Dialog Box

b. In the `Retain Device Settings Of` dialog box, select the **`Software (excl. network setting)`** radio button.

c. Click **`OK`** to save the selection or **`Cancel`** to exit without making changes.

9. Pair the transmitter and receiver:

a. Remove the microphone from the charging station.

b. Press and hold the power button on the transmitter for approximately 2 seconds and then release the button.

c. The transmitter turns on and automatically searches for the link destination. When the link is established, the link indicator lamp on the receiver and the status indicator lamp on the transmitter light.

10. Use the software to validate the microphone audio is passing.

11. Click the **`gear`** icon (see **figure 14**, ❷ on page 7) for the receiver to set the network settings and note the IP addresses. The `DeviceSetting` window opens.

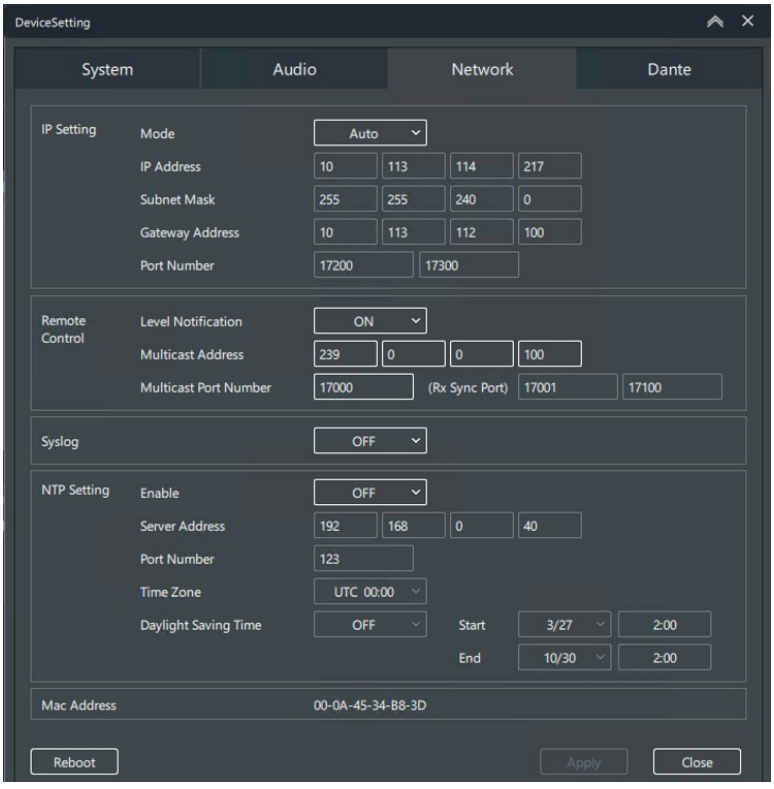


Figure 17. DeviceSetting Window

a. Select the **`Network`** tab.

b. Click in the fields for the **`IP Settings`** and set as needed.

c. Click **`Apply`** to save the IP settings.

d. Repeat these steps for each microphone

Dante Controller Setup

Dante Controller from Audinate® is required to route transmitters and receivers, and can be used to configure Dante settings and monitor performance.

General steps

- Connect the computer and devices to the network switch
- Open Dante Controller
- Discover devices
- Update network settings as needed
- Name devices
- Name transmitter and receiver channels
- Create subscriptions

Create the following subscriptions in Dante Controller to route audio signals between the audio devices in the system (default channel names are noted):

ATND1061DAN and DTP3 CrossPoint 884 Subscriptions

Dante Transmit		Dante Receive	
Device	**Channel**	**Device**	**Channel**
ATND1061DAN	Ch 2	DTP3 CrossPoint 884	AT#01
ATND1061DAN	Ch 3	DTP3 CrossPoint 884	AT#02
ATND1061DAN	Ch 4	DTP3 CrossPoint 884	AT#03
DTP3 CrossPoint 884	AT Out#01	ATND1061DAN	AEC Ref In

ESW-R4180DAN and DTP3 CrossPoint 884 Subscriptions

Dante Transmit		Dante Receive	
Device	**Channel**	**Device**	**Channel**
ESW-R4180DAN	RX1 Output	DTP3 CrossPoint 884	AT#04
ESW-R4180DAN	RX2 Output	DTP3 CrossPoint 884	AT#05

Creating Subscriptions Between the Audio Technica Microphones and Extron DTP3 CrossPoint IPCP A

ATTENTION:

- It is essential that a Dante device be named before audio subscriptions with other devices are established. Existing subscriptions are removed when a device is renamed.
- Il est essentiel qu'un appareil Dante soit nommé avant l'établissement des abonnements audio avec d'autres appareils. Les abonnements existants sont supprimés lorsqu'un appareil est renommé.

NOTE: Optionally, see **Renaming Transmitters and Receivers (Optional)** on page 10 to change device names before making subscriptions.

1. Ensure the laptop, DTP3 CrossPoint 884 IPCP A (Dante), and Audio Technica devices (Dante) are connected to the same network.
2. From the Windows **Start** menu select: **All Programs > Audinate > Dante Controller**. The Dante Controller - Network View screen opens.

   The Dante Controller auto-discovers Dante devices on the network and advertises itself to allow other Dante-enabled devices to communicate with it. Transmitters connect to receivers using the subscription matrix.

   NOTE: The DTP3 CrossPoint 884 IPCP A and Audio Technica Dante device connections are set to DHCP by default. If they cannot be discovered, ensure the correct interface is selected on the PC by selecting **Interfaces** from the File list.
3. To show the transmitters of a Dante device, click the **+** box next to the desired device in the Dante Transmitters panel, such as *DTP3-CP-2c50d4*. The + changes to a – sign when the device expands.
4. To show the receivers of a Dante device, click the **+** box next to the desired device in the Dante Receivers panel, such as *DTP3-CP-2c50d4*.
5. Click the intersection between a transmitter and a receiver.

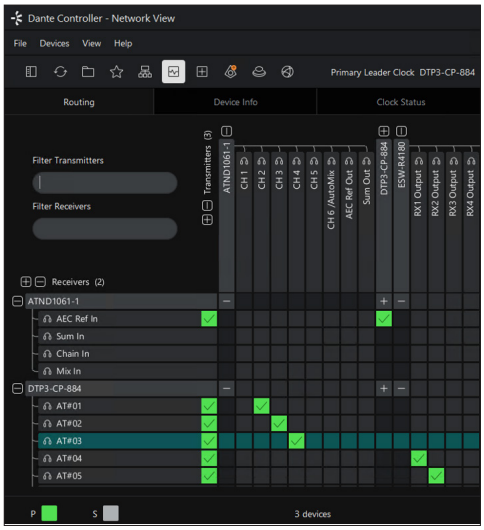


Figure 18. Subscriptions

A check mark at the intersection indicates the subscription is made. A check mark also appears next to the receiver channel.

NOTE: A receiver can connect to only one transmitter. A transmitter can connect to multiple receivers.

Renaming Transmitters and Receivers (Optional)

To rename transmitters and receivers:

1. From the Device View drop-down list, choose the Dante device.
2. Select the **Receive** tab.
3. Click a receive channel name and rename it.
4. Select the **Transmit** tab.
5. Click a transmit channel name and rename it.
6. Select the **Device Config** tab and rename the Dante device as desired.
7. Click **Apply**.
8. Repeat steps 1 through 7 for each Dante device.

See figure 19 and figure 20 to view an example of the Receive and Transmit lists of devices.

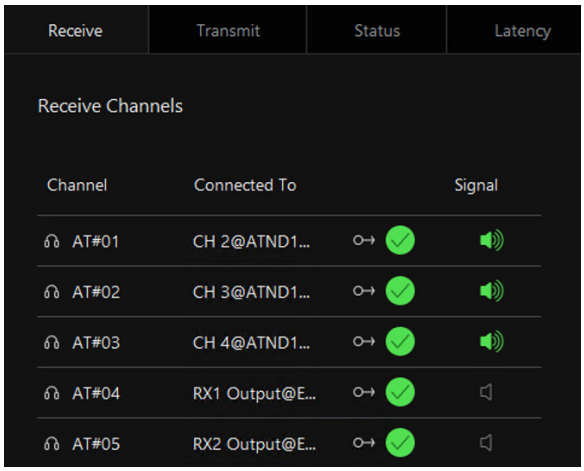


Figure 19. DTP3 CrossPoint 884 Receiver Name

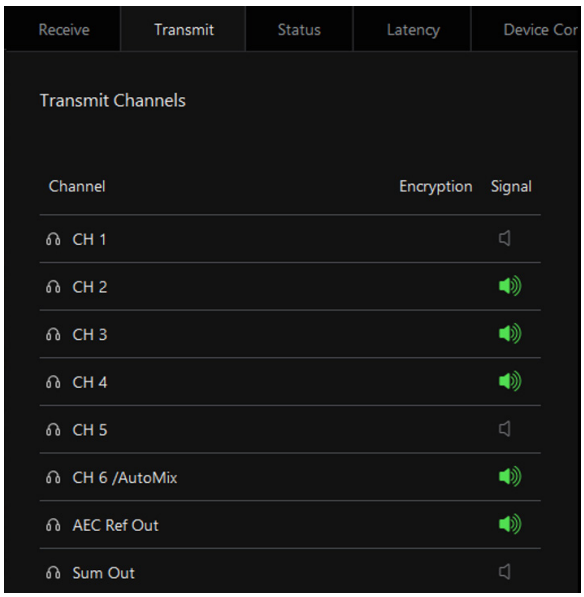


Figure 20. ATND1061DAN Transmitter Name

Extron DTP3 CrossPoint 884 IPCP A Setup

To configure the Extron DTP3 CrossPoint 884 IPCP A:

1. Connect to the AV LAN port of the DTP3 CrossPoint 884 IPCP A.
2. Set the PC IP address within the range of the product IP address. If they have not been changed, the default settings to connect through the IPCP Pro 360MQ xi card AV LAN ports are:
   - IP address: `192.168.254.254`
   - Subnet: `255.255.255.0`
   - Gateway: `0.0.0.0`
3. From a web browser, enter the device IP address into the address field.
4. Press **`Enter`**.
5. On the login page, enter `admin` as the **`Username`**, enter the **`Password`**, and click **`Sign In`**.
   - By default, the password is the product serial number.
   - If a Full Factory Reset has been performed, then the password converts to the default, **`extron`**.
6. The `Network` panel displays connection settings. Click **`Edit`** to edit the TCP/IP settings.

   The following can be edited: device name, DHCP status, IP address, subnet mask, default gateway, and DNS server. The device MAC address is also displayed.

   NOTE: If DHCP is enabled, IP address, subnet mask, and default gateway cannot be edited.

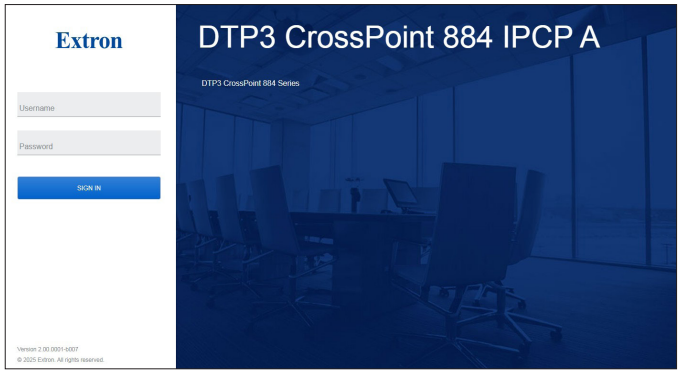


Figure 21. Login Page

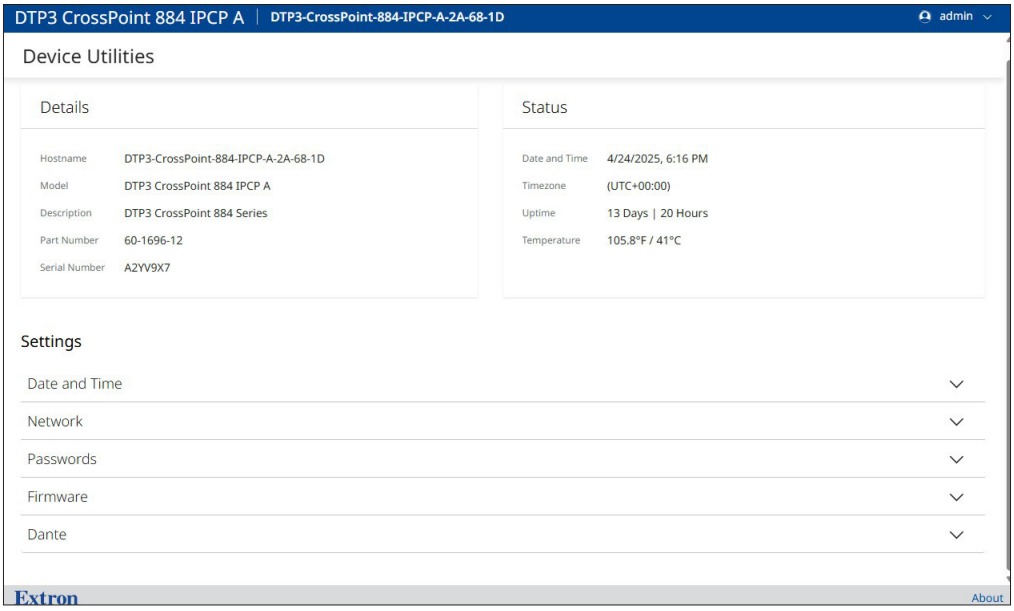


Figure 22. DTP3 CrossPoint Internal Web Page

To push the DSP Template file to the DTP3 CrossPoint 884 IPCP A:

NOTE: An Extron Insider account is required to download and use DSP Configurator Pro.

1. Open the Extron DSP Configurator Pro.
2. Select the **Open File** tab and click **BROWSE FILES** (see figure 23). The Open Configuration File... box opens.
3. Navigate to the location on the PC that the Extron .edc file was saved (downloaded previously in .zip file) and double click to open.

   The open file is displayed in DSP Configurator Pro.
4. Click the **Push** button (see figure 24, ❶).

   The Push Configuration box opens (see figure 25).

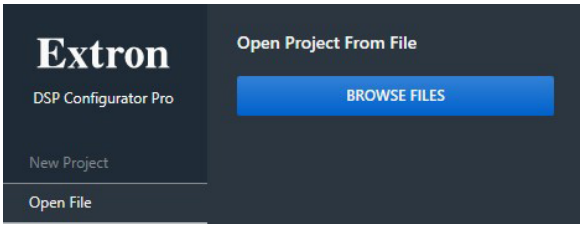


Figure 23. Connect TCP/IP Panel

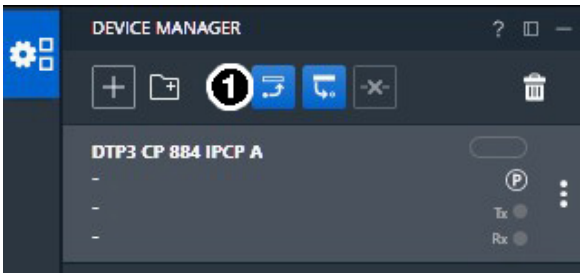


Figure 24. Push Button on the DSP Toolbar

5. In the Push Configuration panel, enter the IP address of the device in the **Hostname or IP Address** field.

   NOTE: If the IP address was not changed, the default it 192.168.254.254.
6. Leave the **Telnet Port** field empty.
7. Enter the device password in the **Password** field.

   NOTE: If the password was not changed, the default is the device serial number.
8. Click **Push** (the button is blue when the device connection fields are filled in).
9. Open DSP Configuration by double clicking DTP3 CrossPoint in the Device Manager panel.

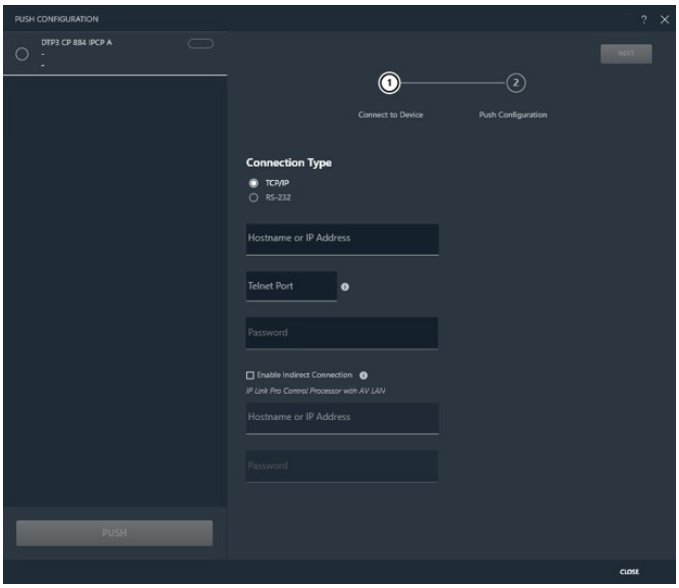


Figure 25. Pushed Configuration Box

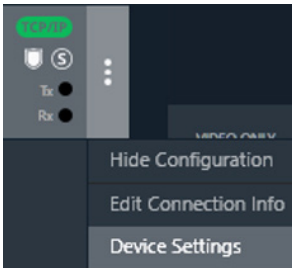
Naming USB Audio Interface

The **USB Audio** tab allows for customizing USB audio interface names and terminal types.

NOTE: Extron recommends configuring these settings before connecting USB audio devices to a PC.

To configure USB Audio name in DSP Configurator Pro:

1. From the **Tools** menu, select **Device Settings**.



   The Device Settings box opens (see figure 26).
2. Click the **USB Audio** tab.
3. In the **USB Name** field, enter the desired name for the USB Audio interface.
4. In the USB 1 Terminal Type field, select the **Echo Cancelling Speakerphone** radio button.
5. Click **Apply** to activate the new settings.
6. Connect the PC to the USB Audio port.

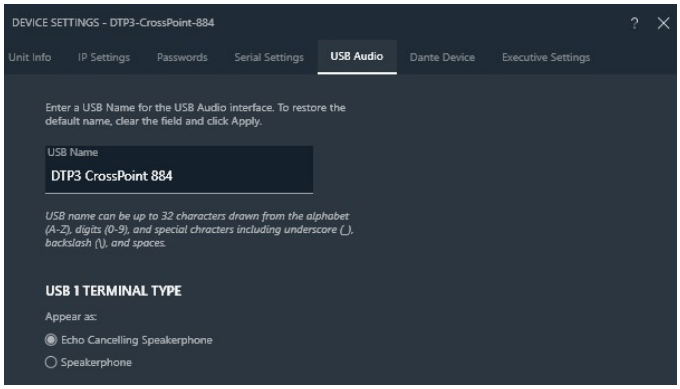


Figure 26. USB Audio Tab

Setting Amplifier Output Mode

The **Amplifier Settings** box allows the user to select the amplifier output mode.

To configure USB Audio settings in DSP Configurator Pro:

1. Right click the open device and select **Amplifier Setting** (see figure 27).

   The Amplifier Settings box opens (see figure 28).
2. Select the **Bridged Mono, 70 volts** radio button.
3. Click **Apply** to activate the new settings.
4. Connect the PC to the USB Audio port.

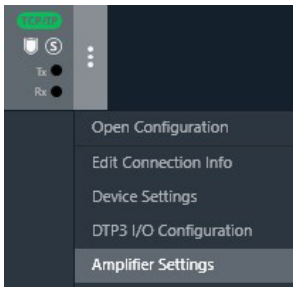


Figure 27. Amplifier Settings

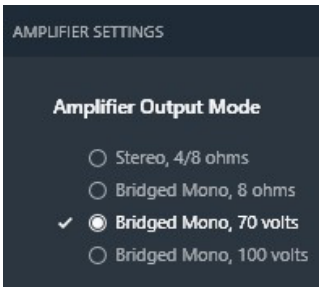


Figure 28. Amplifier Output Mode

USB Audio Settings Confirmation

The **USB Audio** settings are configured in the .edc file, but should be confirmed after pushing the file to the DTP3 CrossPoint.

To confirm Amplifier settings in DSP Configurator Pro:

1. From the **Tools** menu, select **USB Audio**.

   The USB Audio box opens (see figure 29).
2. Confirm the USB Channel Configuration drop-down lists display 2 Inputs and 2 Outputs.

   USB Audio Controls:
   - USB 1 Input Gain and Mute groups are assigned to groups affecting far end speaker audio.
   - USB 1 Output Gain and Mute groups are assigned to groups affecting near end microphone audio.

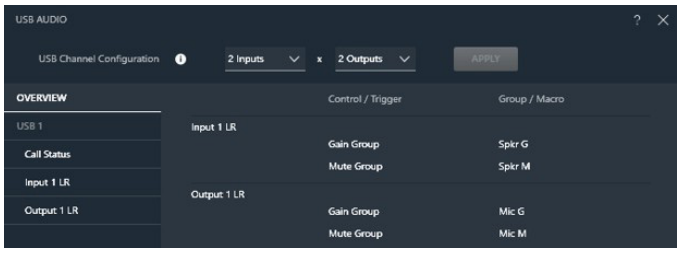


Figure 29. USB Audio Box

Extron IPCP Pro 360MQ xi Setup

The Control Processor in this system facilitates the communication between the Extron DTP3 CrossPoint 884 IPCP A and Audio Technica microphone.

Get Ready

1. Download and install the latest version of the following software:
   - **Toolbelt** — For discovering the control processor and other control products on the network, for managing core settings, and for upgrading firmware when needed.
   - **Global Configurator Plus and Professional** (GCP) — For configuring the control system.
2. Obtain network information for the unit from the network administrator. You also need the following details for each Extron Pro series Ethernet-enabled device:
   - DHCP setting (on or off)
   - LAN IP address
   - AV LAN IP address
   - Subnet mask
   - Gateway IP address
   - Username
   - Passwords

   NOTE: If DHCP is on, you do not need the IP addresses and subnet mask.
3. Write down the MAC address of each network interface on each IP Link Pro device to be used.
4. Obtain model names and setup information for devices the IPCP controls.

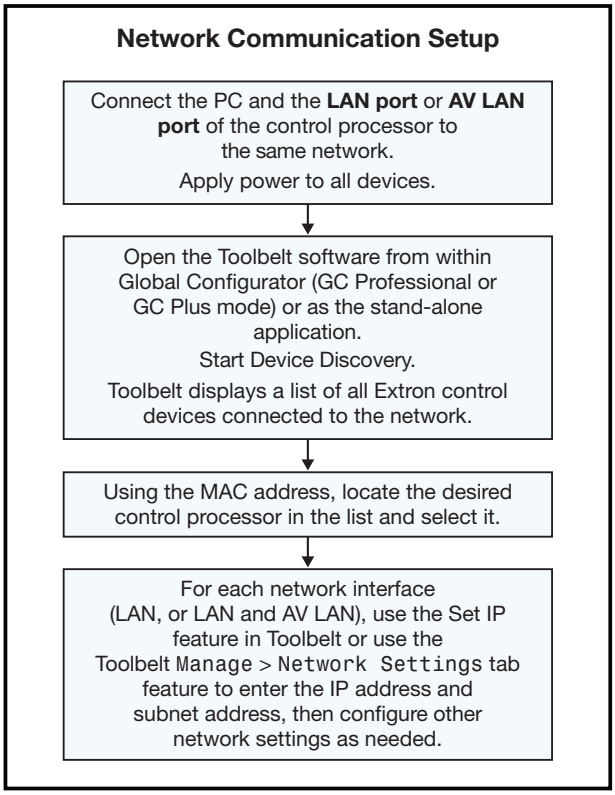
Mount and Cable All Devices

1. Cable devices to the control processor.
2. Connect power cords and power on all the devices.

Network Communication Setup

Network setup is essential prior to configuration. Use the flowchart at right as a guide to setting up the control processor for network use.

NOTE: If using 802.1X security, see the *Extron 802.1X Technology Reference Guide* and the *Toolbelt Help file* for additional details on system setup.



Set Up the Control Processor for Network Communication.

1. Connect the PC to be used for setup and the AV LAN port of the control processor to the same Ethernet network.
2. Start Toolbelt and use it to discover the IPCP Pro 360MQ xi card (see figure 30):
3. Log on to the unit (see figure 31).

NOTES:

- The factory configured passwords for all accounts on this device have been set to the device serial number. Passwords can be changed during configuration. Passwords are case sensitive.
- If the device is reset to default settings, the default password for all accounts is `extron`.

4. If required, change the password (see figure 32).
5. Set the DHCP status, IP address, subnet, gateway IP address, and related settings (see figure 33).

NOTES:

- When setting up DHCP during network configuration or if using a host name instead of an IP address, the user must enter a qualified host name (`Username.HostName.Domain`). For example: *`somename.extron.com`*.
- A dedicated AV LAN safeguards AV systems from outside intrusion or interference by separating device control and other network traffic from a corporate or campus network. To ensure that the control processor LAN and AV LAN connections (ports) are connected to separate networks, the LAN and AV LAN IP address schemes must be on different subnetworks.

See the **Network Communication Setup** flow chart on page 14.

6. If required, apply a LinkLicense.

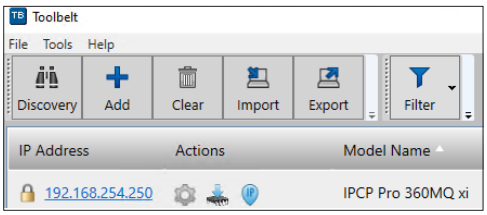


Figure 30. Discover with Toolbelt

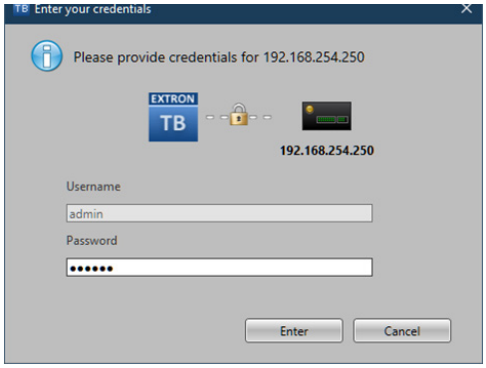


Figure 31. Log on to IPCP Pro 360MQ xi

Figure 32. Change Password

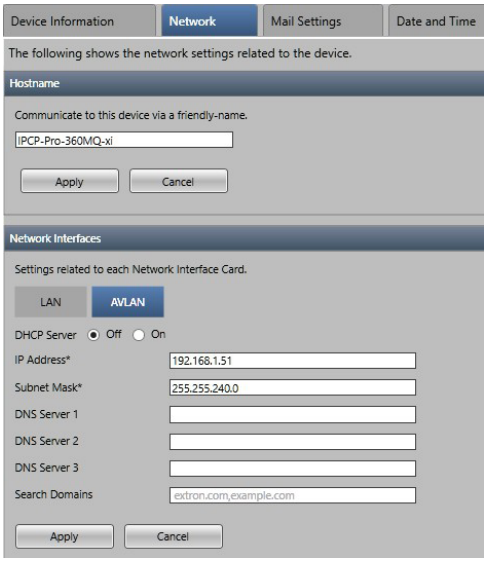


Figure 33. Configure Network Settings

Configure or Program the Control Processor

NOTE: See the *Global Configurator Plus and Professional Help File* as needed for step-by-step instructions and detailed information. The help file for GCP includes an introduction to the software and how to start a project and configuration.

Using Global Configurator, configure the control processor. The configuration tells the control processor:

- How its ports function
- How to control other products
- Whom to notify, how, and under what circumstances
- How its ports function
- When to do things

Configuration with GC Plus

1. Open the provided GC Plus configuration file. The software opens to `Configuration` view ( ). This option is also selectable from the `View` menu.

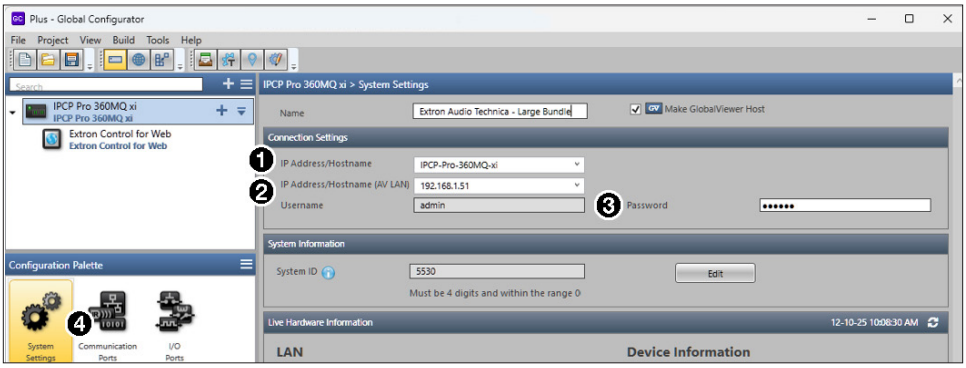


Figure 34. Configuration View — System Settings page for Control Processor

2. Set the `IP address` (see figure 34, ❶), `IP address` for AV LAN (❷), and `Admin password` (❸) of the Control Processor.

NOTE: The factory configured passwords for all accounts on a device are set to the device serial number. Passwords are case sensitive. If the device is reset to default settings, the password converts to the default password, `extron`.

3. Open the `Communications Ports` page (❹).

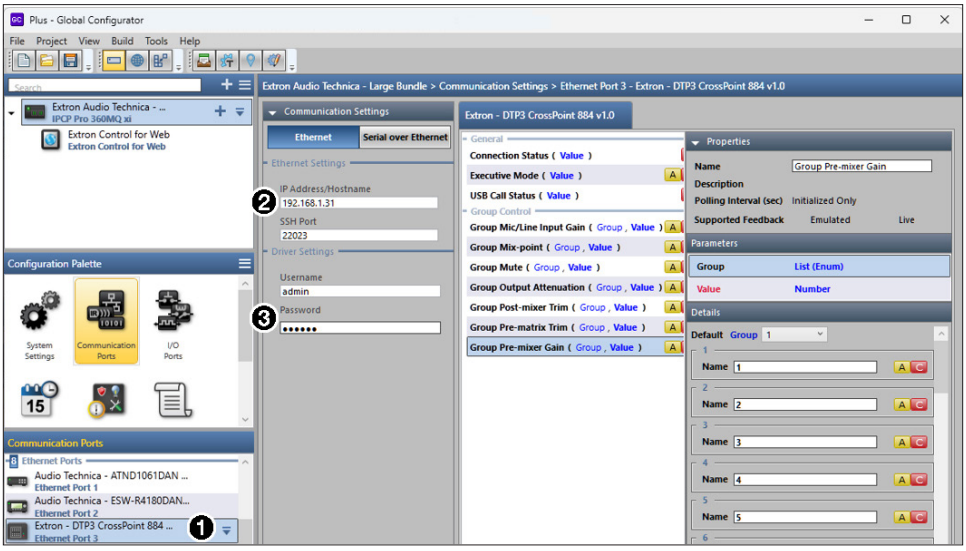


Figure 35. Configuration View — Communications Ports page for DTP3 CrossPoint

4. Choose **`DTP3 CrossPoint`** under the `Ethernet Ports` list (see figure 35, ❶).
5. Set **`IP address`** (❷) and **`Admin`** `password` of the DTP3 CrossPoint device (❸).

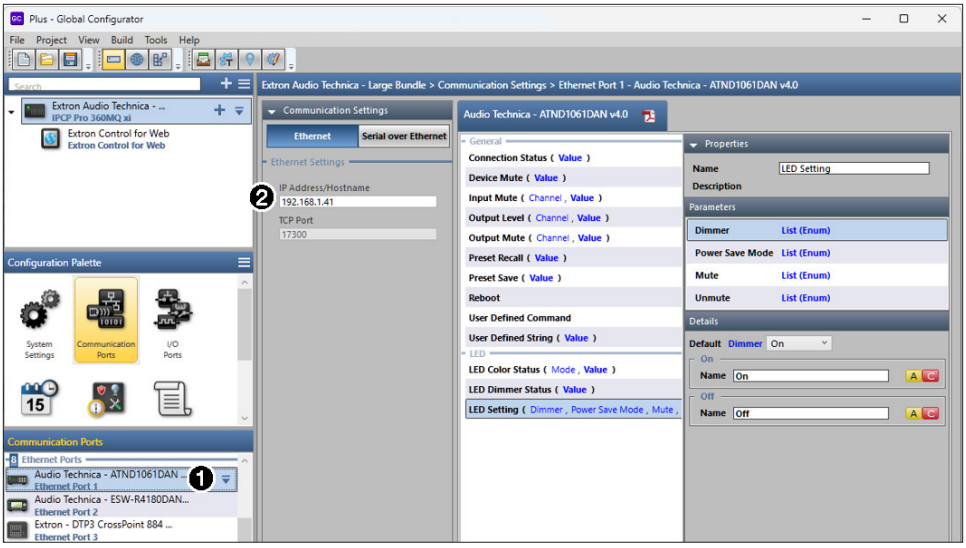


Figure 36. Configuration View — Communications Ports page for Audio Technica

6. Choose the first **Audio Technica** under the Ethernet Ports list (see figure 36, ❶).
7. Set the IP address (❷) of the Audio Technica device.
8. Repeat steps 6 and 7 to configure the second Audio Technica device.
9. Open Build Manager view (see figure 37, ❶,). This option is also selectable from the View menu.
10. Under the Build & Upload section, click the **Build** button (❷).
11. Wait for Verification. The Build and Upload bars show the progress.
12. Once the process is complete, the Build and Upload bars both show the message Complete (see figure 38).

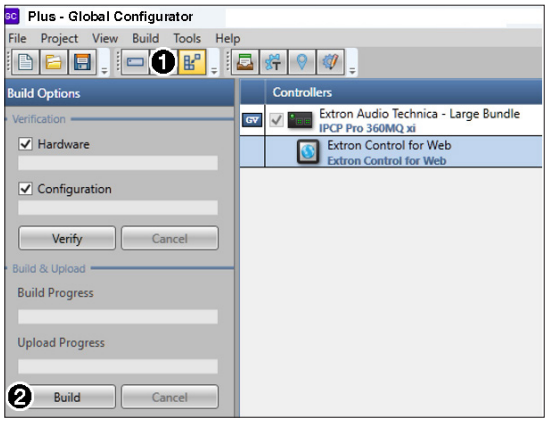


Figure 37. Build Options panel

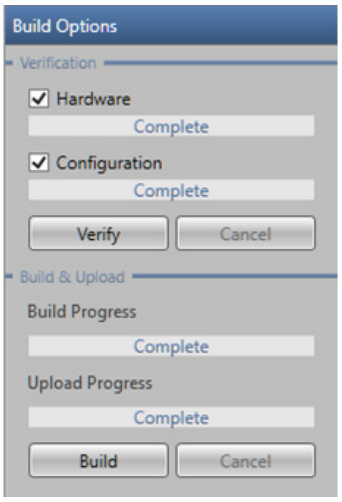


Figure 38. Build and Upload Completed

Test and Troubleshoot

Test the system (see the *IPCP Pro Q xi and xi Series User Guide* for an outline of the system testing procedure). Make adjustments to wiring or configuration as needed.

Microsoft Teams Rooms Setup

The Extron DTP3 CrossPoint 884 IPCP A connects to the Microsoft Teams Rooms system from the USB Audio port. Once the previous steps outlined in this document have been completed, please connect the Microsoft Teams Rooms system to the DTP3 CrossPoint 884 IPCP A USB Audio connection via the provided USB-C cable.

The following steps detail the required settings on the Microsoft Teams Rooms device:

Select **`Settings`** (see figure 39, ❶) in the `Microsoft Teams Rooms` interface.

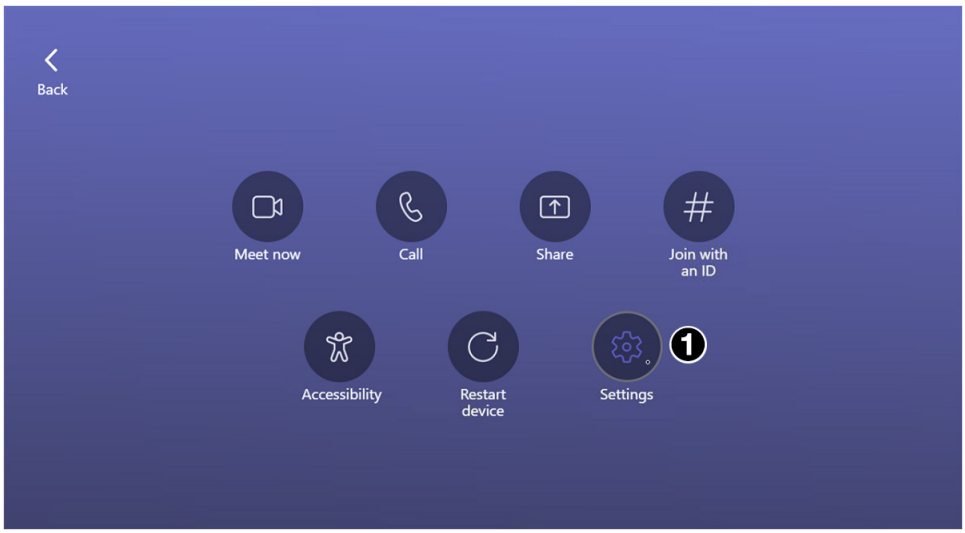


Figure 39. Microsoft Teams Rooms Setup

Microsoft Teams Rooms Interface Screen

Select the Extron DTP3 CrossPoint 884 IPCP A (or configured `USB Name` in above steps) for each of the two parameters: Microphone (see figure 40, ❶) and Speaker (❷).

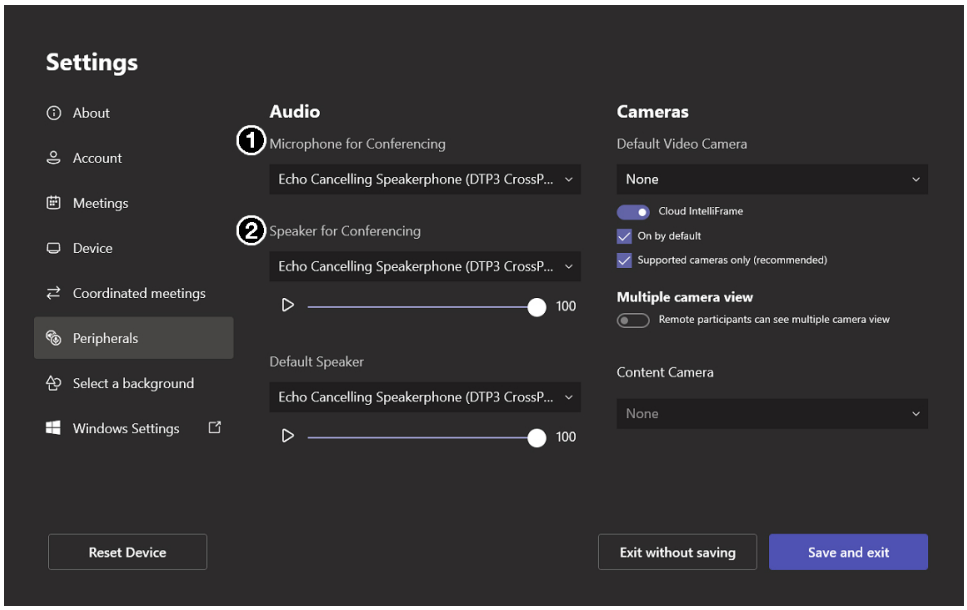


Figure 40. Microsoft Teams Rooms Interface

Microsoft Teams Rooms Settings Menu

NOTE: When using the Extron DTP3 CrossPoint 884 IPCP A, Microsoft Teams Rooms disables its internal acoustic echo cancellation (AEC) audio processing so that all audio processing is completed through the external DSP—the Extron DTP3 CrossPoint 884 IPCP A. This provides the best audio performance.

DTP3 CrossPoint 884 IPCP A Acoustic Echo Cancellation (AEC)

AEC Setup Overview

Proper gain structure involves the relationship between the signal at the selected reference and the signal at the mic input, within the context of proper levels for the reference and mic inputs independently. The mic input gain setting is naturally optimized for the voice level of the talker in that room. Therefore, the amount of signal from the far end that is picked up by the mic is dependent on how much that far end signal is being amplified in the near end room and the distance from the mic to the speakers.

The reference signal is the signal received from the far end, which arrives at the USB-assigned Aux Inputs of the DTP3 CrossPoint 884 IPCP A. This is sent to the sound reinforcement system within the near end room, as well as a designated output channel to set the reference level for the DTP3 CrossPoint 884 IPCP A AEC processor.

AEC Dialog

The AEC dialog in DTP3 CrossPoint 884 IPCP A contains meters and indicator LEDs that are essential for setting up gain structure and monitoring activity. Go to `Processors` and select **`Acoustic Echo Cancellation (AEC)`**.

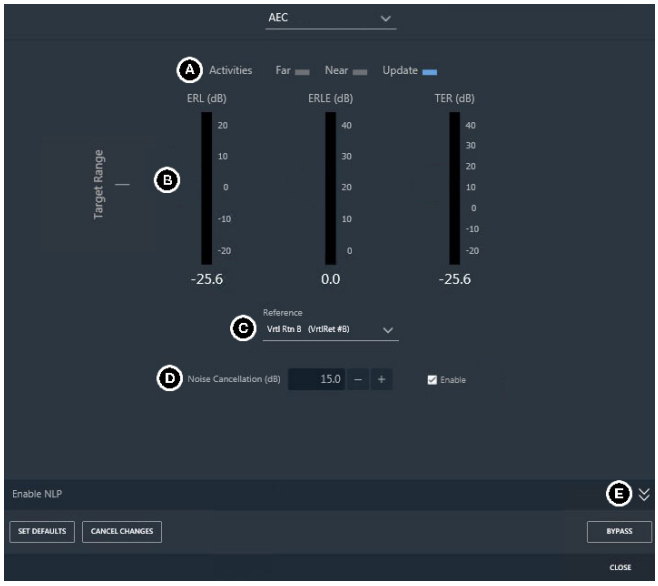


Figure 41. AEC Controls

A AEC Activity Indicators

- `Far` – Lights when activity is detected from the remote site.
- `Near` – Lights when activity is detected from the local site.
- `Update` – Lights when the AEC is updating (converging or reconverging)

B Meters

- `ERL` – The ratio in dB between the signal at the reference and the signal at the AEC channel input. When ERL is a positive number, the signal level at the AEC channel input is lower than the signal at the selected reference.

  NOTE: The ideal level range for this meter is 0 to +15 dB. This ensures the right amount of reference signal is being sent through the AEC processor.

- `ERLE` – The amount in dB of potential echo signal that the AEC algorithm, not including NLP processing, is cancelling.
- `TER` – The sum of ERL + ERLE, in dB.

C Reference Selection List — The provided configuration includes a selected AEC reference. If necessary, a different AEC reference can be selected from the drop-down list.

D Noise Cancellation Controls — Noise cancellation can be switched on or off from the AEC dialog. The noise canceller will detect steady state noise, such as HVAC or other continuous system noise, and effectively remove it without causing audible artifacts.

E Advanced AEC Controls — Click the expand and collapse icon to expose the advanced AEC controls.

Advanced control functionality is as follows:

- **Non-linear Processing (NLP) Controls:**
  - **`Enable NLP`** – This box is selected by default. Non-linear processing is necessary for the complete removal of echo.
  - `NLP Presets` – Click a button to load a set of values to the three NLP parameters. If not using one of these presets, enter values into the fields for the following three controls:
    - `Max NLP Reduction` – The maximum possible reduction in echo artifacts that can be applied
    - `Attack Time` – The speed in which NLP is applied
    - `Release Time` – The speed in which NLP is released
- **Additional Controls:**
  - `Double Talk Echo Reduction` – Sets the amount of echo reduction applied during double-talk (when two people speak at the same time).
  - `Comfort Noise` – Sets a comfort noise level in dB to eliminate states of complete silence, which may be perceived as a failed connection.

Technical Support

For Extron technical support, visit: **www.extron.com/company/contactus.aspx**.

For Audio Technica technical support, visit: **https://www.audio-technica.com/en-us/support**.

For information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the **Extron Safety and Regulatory Compliance Guide** on the Extron website.

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