

5 Operation

5.1 Setting devices into operation



Preparation

- ▶ Unpack all parts.
- ▶ Save packaging for later transport and storage.
- ▶ Check the contents of the package for visible damage.
- ▶ When visible damage to the packaging and/or delivered parts is detected:
Contact the salesperson or Neutrik sales partner.
- ▶ Do not use damaged devices under any circumstances.

⚠ CAUTION



Danger of damage to hearing!

Signal peaks may occur when an audio source or sink is connected.

- ▶ Before making connections, mute the signal path of the peripheral devices.

Putting together the device

- ▶ Screw the antennas tightly to the base station.
- ▶ Insert the module into the base station.
- ▶ Secure the module in the base station:
Using a straight screwdriver, turn the locking pin 1/4 rotation.



The XIRIUM PRO system can be used as a signal converter.
Depending on the module used, an analog signal can be converted to a digital signal, for example.

- ▶ Connect the device to the mains supply with a powerCON TRUE1 plug.
As soon as the device is connected to the mains supply 500mA will be used to charge the module.



Depending on the application, battery runtime of the device is up to 10 hours.

Switching the device ON/OFF

- ▶ Switch the device on:
Push ON/OFF switch.
- ✓ The device powers up.
- ✓ After about 5 seconds, the power LED lights green.
- ▶ Switch the device off:
Push ON/OFF switch.



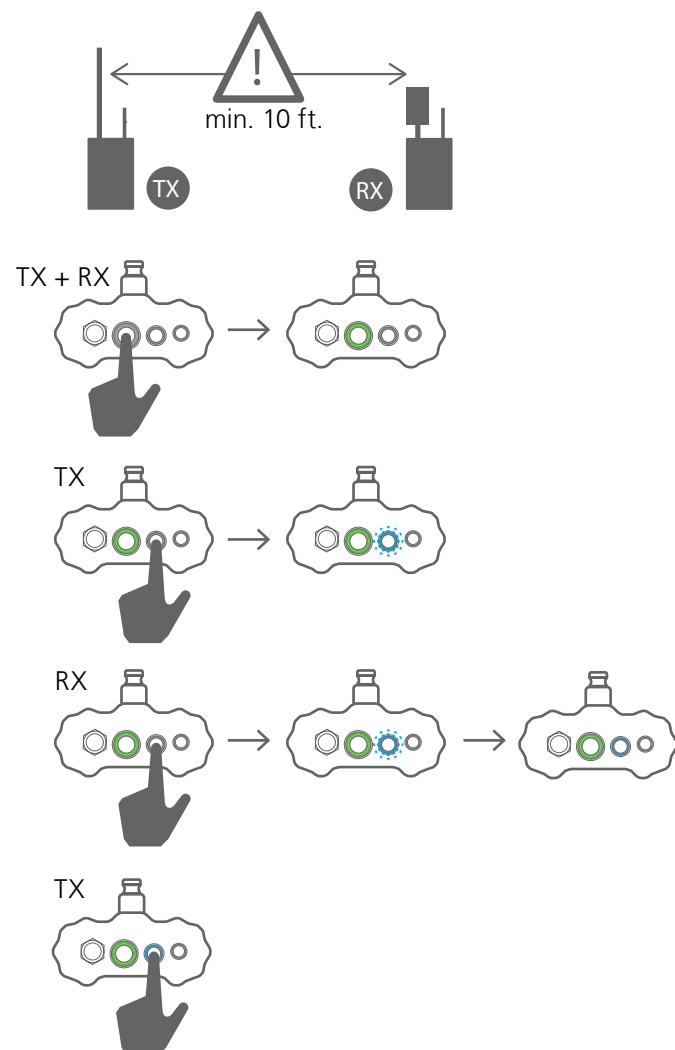
These settings remain saved after the device is switched off:
TX: Transmission channel, transmission power level, XROC mode
RX: MAC address of the linked TX, all delay settings, transmission power level (if a repeater)

5.2 Setting up the transmission path

It is also possible to set up a simple transmission path without the app. Using the app to set the parameters is recommended.

The following components are needed to set up a simple transmission path:

- ✓ 1 TX with module
- ✓ At least 1 RX with module
- ✓ Optional: 1 RX with repeater module



i Because of the signal strength, the minimum distance of 10 feet between TX and RX must be maintained for the connection process.

- ▶ Switch on TX and RX.
- ▶ Start the linking process on the TX:
Briefly push the link button.
- ✓ The TX link LED flashes blue.
- ▶ Start the linking process on the RX:
Briefly push the link button.
- ✓ The RX link LED briefly flashes blue.
- ✓ The RX link LED lights solid blue as soon as the connection to the TX is established.
- ▶ Additional RX devices can be added to the transmission path in the same way.
- ▶ End the linking process on the TX manually:
Briefly push the link button.
- ✓ The TX link LED lights solid blue.

i If the connection process is not ended manually on the TX, it is automatically ended after 10 minutes.

5.3 Installing and starting the app

The XIRIUM PRO app is available at no cost from the Apple App Store and the Google Play Store.

- ▶ Start the app:
Tap the XIRIUM PRO icon.

The Introduction Guide is displayed when the app is started. This guide provides a quick overview of the XIRIUM PRO system.

 The Introduction Guide can be called up through the [Help](#) page at any time.

5.4 Connecting devices with the app

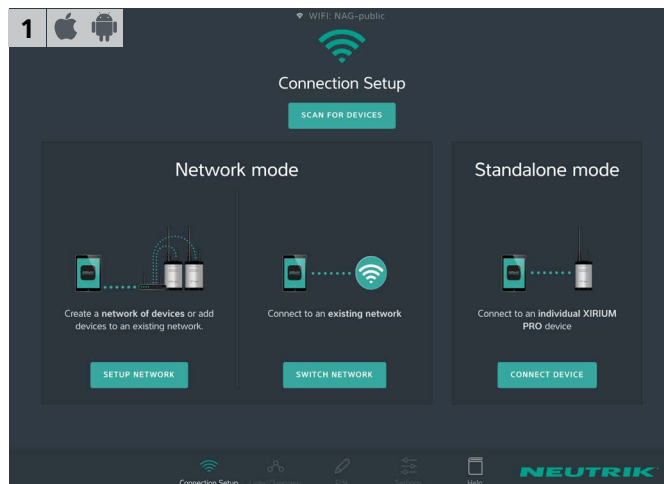
Each device has its own SSID name and its own WLAN password.

 The SSID name and WLAN password are found on the type plate inside each device and on the warranty card.

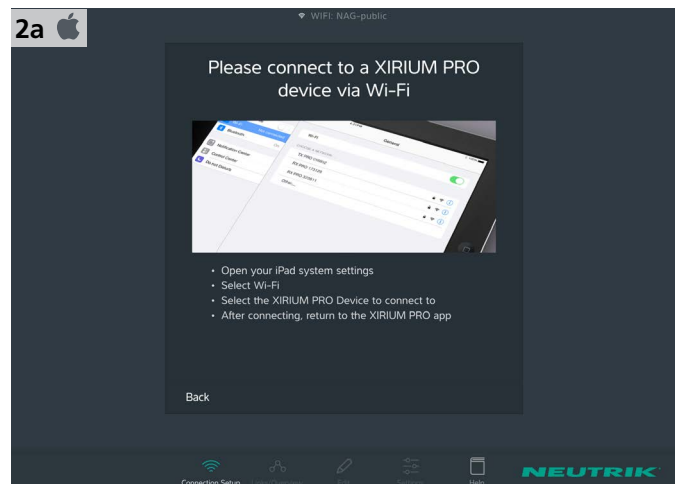
5.4.1 Connecting devices in stand-alone mode

In stand-alone mode, the XIRIUM PRO device is connected directly with the app.

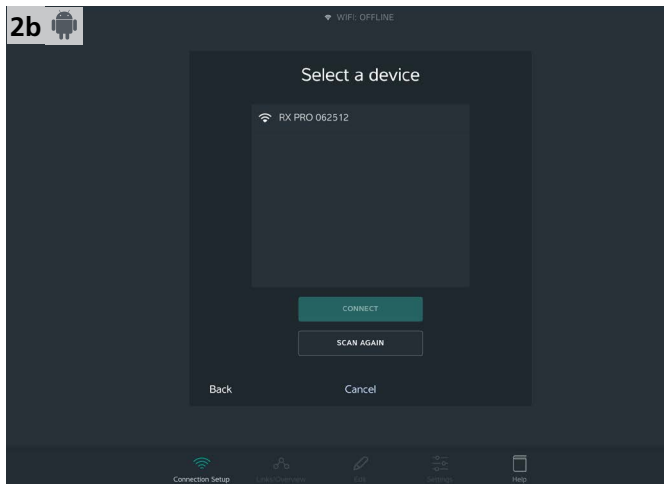
- ✓ The app is installed on the iPad/Android tablet.
- ✓ The XIRIUM PRO device is switched on and ready to operate.



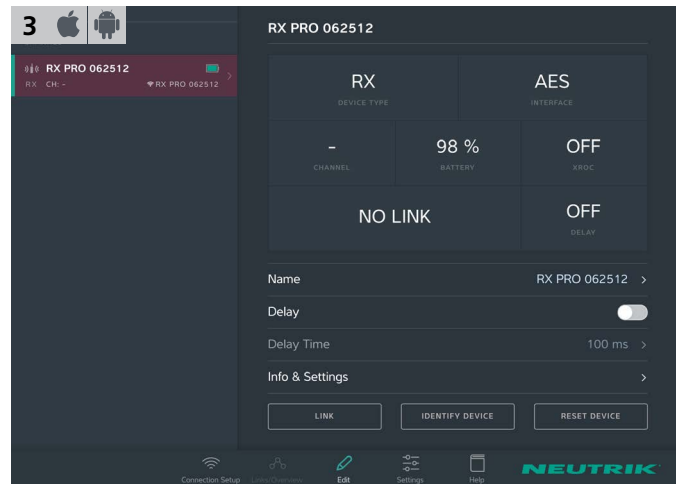
- ▶ Start the XIRIUM PRO app.
- ✓ The Connection Setup page appears.
- ▶ Under [Standalone Mode](#), tap [Connect Device](#).



- ▶ Exit the app.
- ▶ On the iPad, open [Settings > WLAN](#).
- ▶ Connect the iPad with the XIRIUM PRO device.
- ▶ Switch back to the app.
- ✓ The app connects to the device.



- ▶ Select the XIRIUM PRO device from the selections.
- ▶ Tap the **Connect** button.
- ✓ The app connects itself with the selected device.



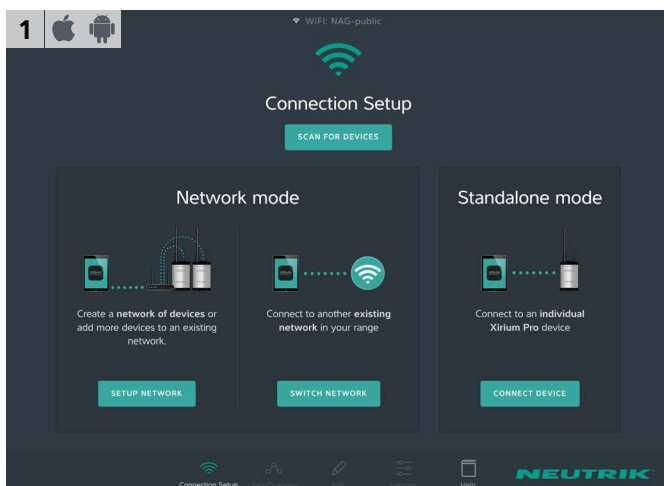
- ✓ The device is connected in standalone mode.

5.4.2 Connecting devices in network mode

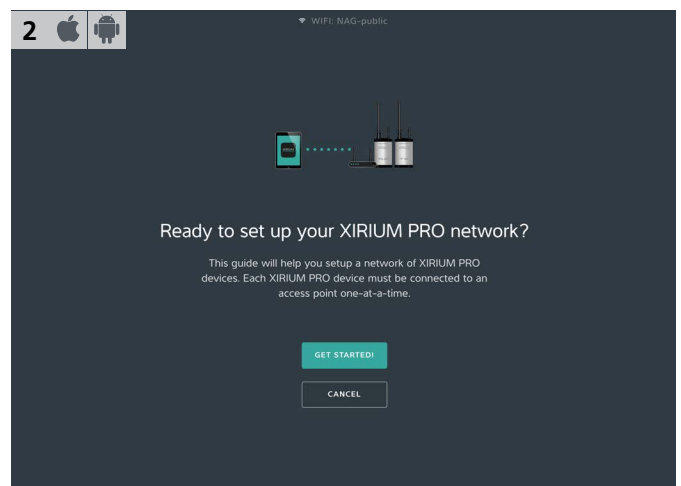
In network mode, the XIRIUM PRO devices are connected to the app via a WLAN access point. The transmission paths are set up and configured with the app.

- ✓ The app is installed on the iPad.
- ✓ The XIRIUM PRO devices are switched on.
- ✓ A 2.4 GHz WLAN access point is available and ready to operate.

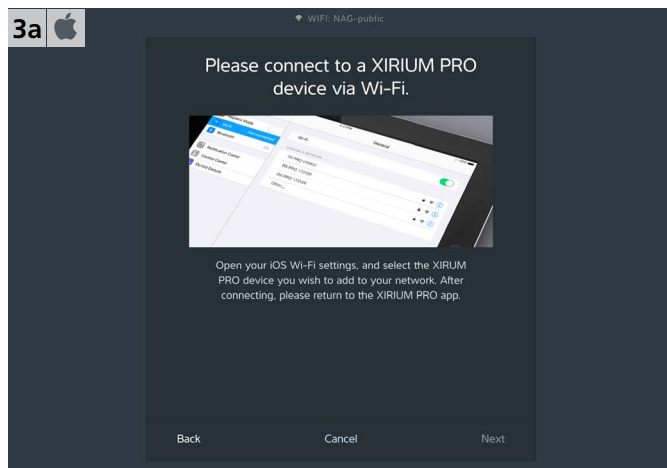
- i** WLAN access points, which work in both the 2.4 GHz and the 5 GHz band ranges, are disrupted by the signal of the XIRIUM PRO devices in the 5 GHz range.
- ▶ Therefore, deactivate the 5 GHz band range on the access point.
 - ▶ Please observe the details in chapter "8.2 Access point settings" on page 55.



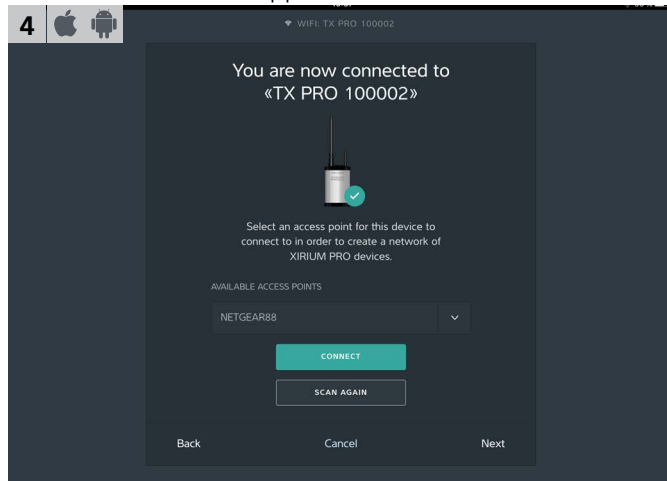
- ▶ Start the wizard:
Under **Network mode**, tap **Setup Network**.



- ▶ Set up network:
Tap **Get Started!** button.



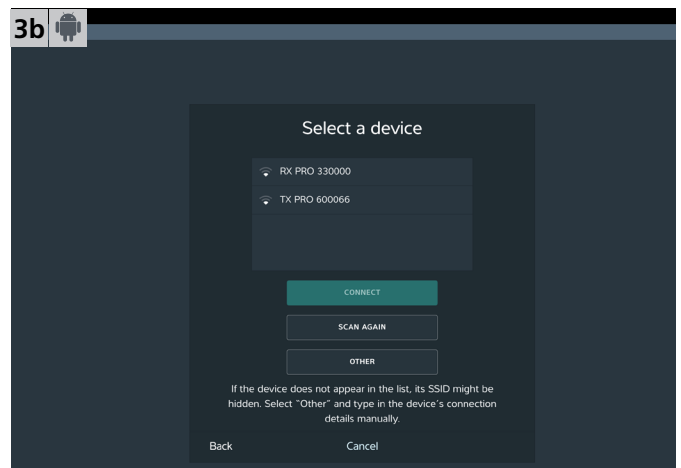
- ▶ Exit the app.
- ▶ On the iPad, open **Settings > WLAN**.
- ▶ Connect the iPad with the XIRIUM PRO device.
- ▶ Wait for the tick after selecting a device before returning to the app.
- ▶ Switch back to the app.



- ▶ Select the access point **Available Access Points** from the drop-down menu.
- ▶ Tap the **Connect** button.
- ▶ Enter the WLAN password of the access point.
- ▶ Tap the **Connect** button.



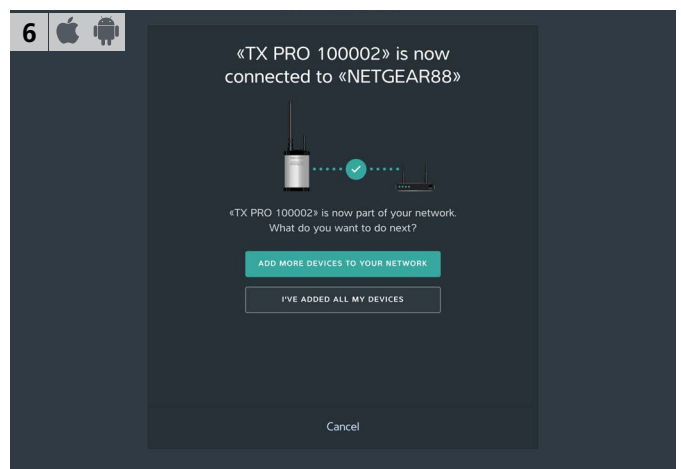
- ✓ The device is connected with the access point.
- Add additional device:



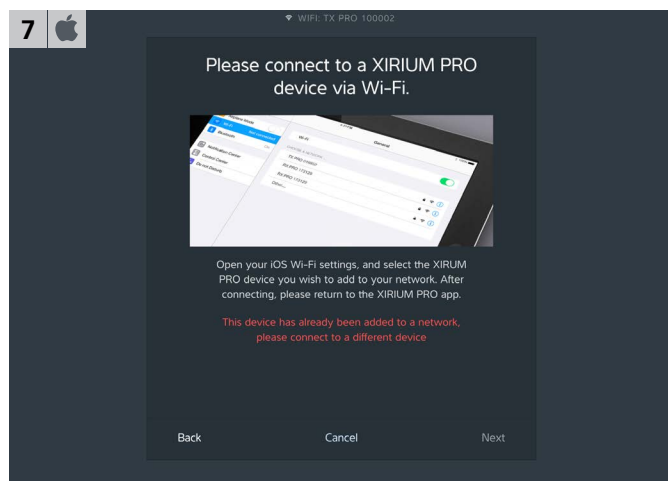
- ▶ Select the XIRIUM PRO device from the selections.
- ▶ Tap the **Connect** button.
- ✓ The app connects itself with the selected device.
- ✓ The app searches for available access points.



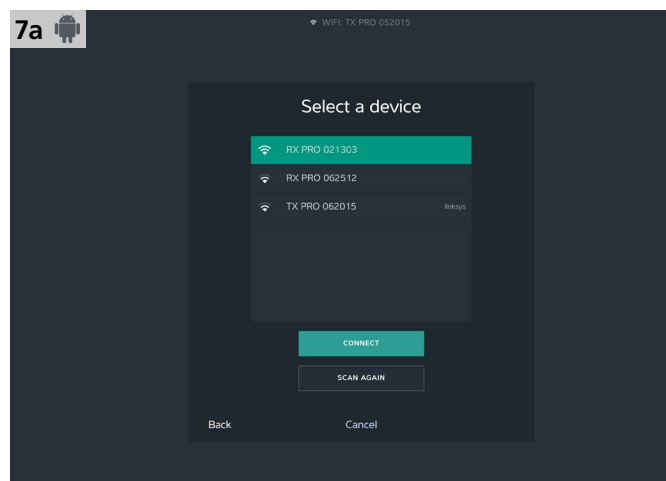
- ▶ If password is incorrect:
- ▶ Tap **Enter Password Again** button.



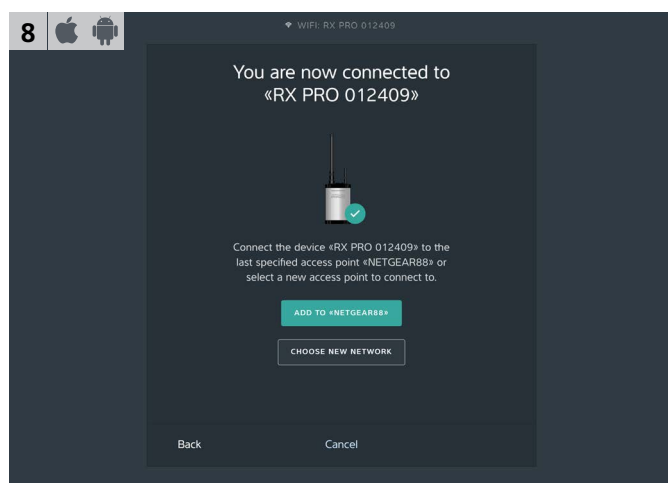
- ▶ Tap the **Add More Devices To Your Network** button.
- ▶ Exit the app.
- ▶ On the iPad, open **Settings > WLAN**.



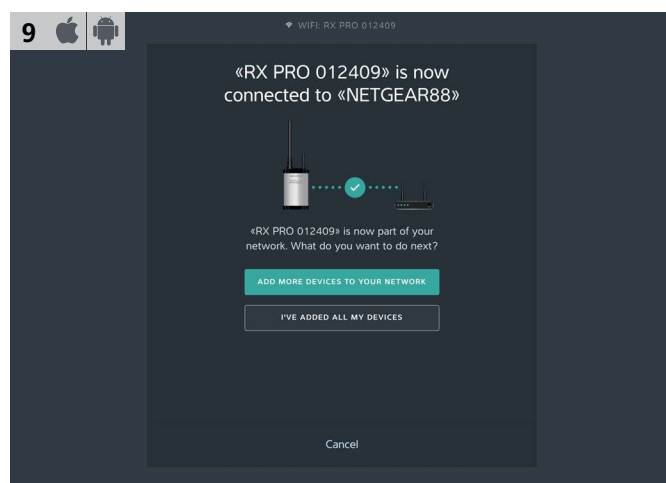
- ▶ Connect the iPad with the XIRIUM PRO device.
- ▶ Switch back to the app.
- ▶ Select the XIRIUM PRO device from the available devices.



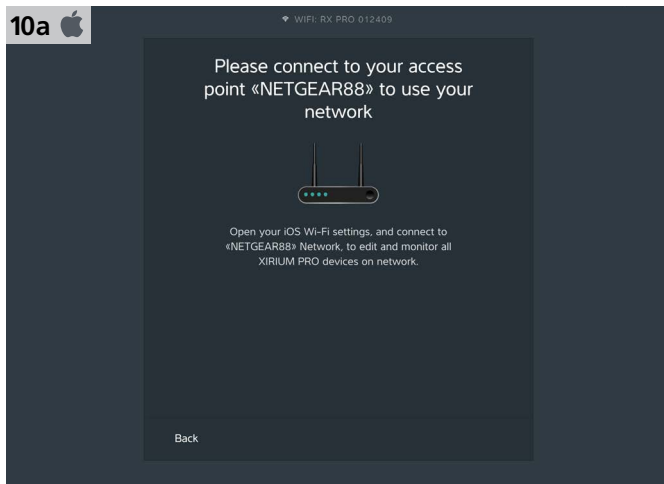
- ✓ Tap the **Connect** button. The app connects itself with the selected device.
- Add a device to the network:
- ▶ Tap **Add to «Access Point Name»** button.



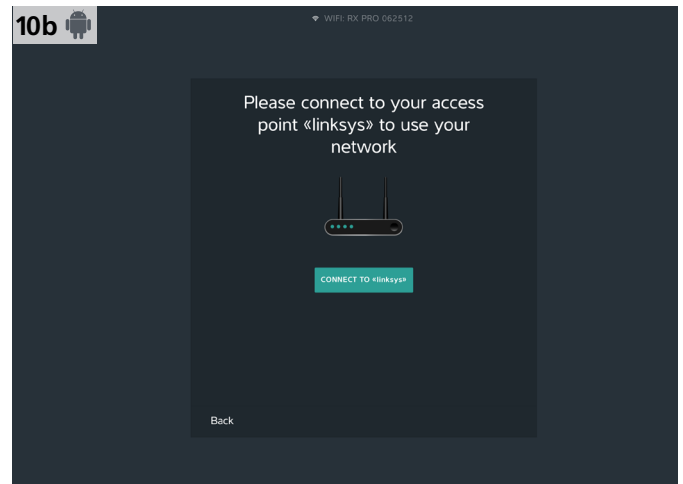
- Add a device to a new network:
- ▶ Tap the **Choose New Network** button.
 - ▶ Continue with step 3.
 - ▶ Add additional devices to the network:
Tap the **Add More Devices To Your Network** button.



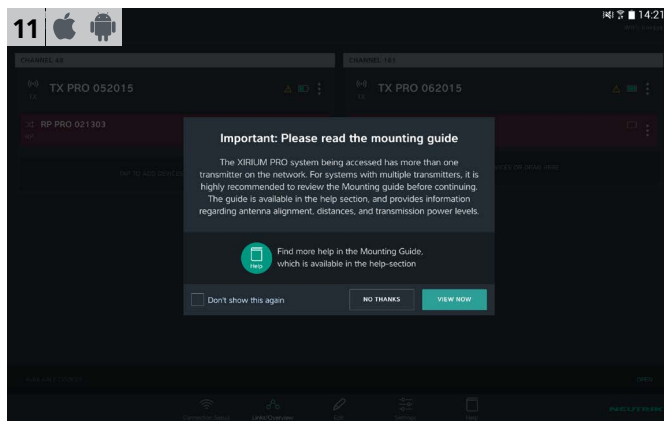
- ▶ After all devices have been added:
Tap the **I've added all my devices** button.
- ▶ Exit the app.
- ▶ On the iPad, open **Settings > WLAN**.



- ▶ Connect the iPad with the access point.
- ▶ Switch back to the app.
- ✓ The network has been set up.
- ✓ If several TXs are connected with the app: Reference to the Mounting Guide opens.



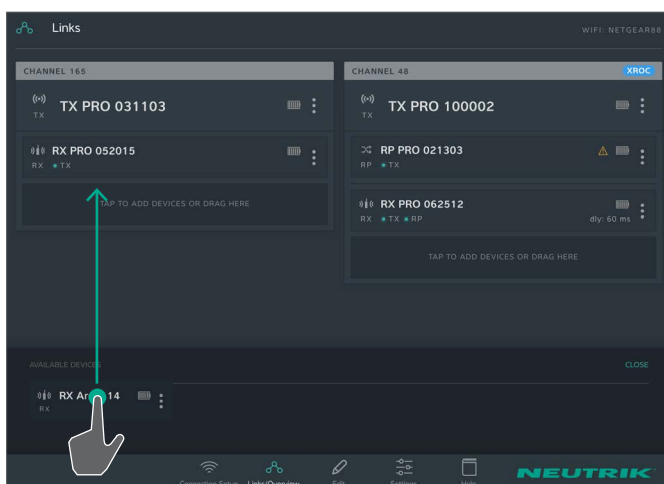
- ▶ Connect tablet to access point: Tap Connect to «Access Point Name» button.
- ✓ Tablet connects itself with access point.
- ✓ The network has been set up.



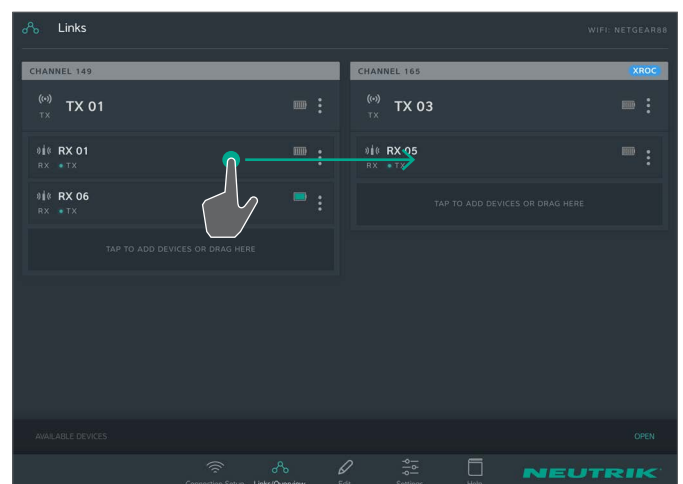
- ✓ If several TXs are connected with the app: Reference to the Mounting Guide opens.

i Additional devices can be added at any time through the [Connection Setup](#) page.

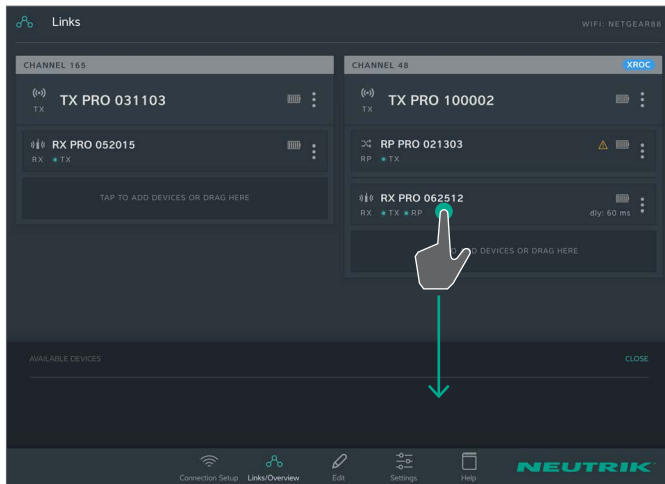
5.5 Arranging the radio transmission path



- ▶ Add an available device to a transmission path: Under [Available Devices](#), use drag&drop to add the device to the transmission path.



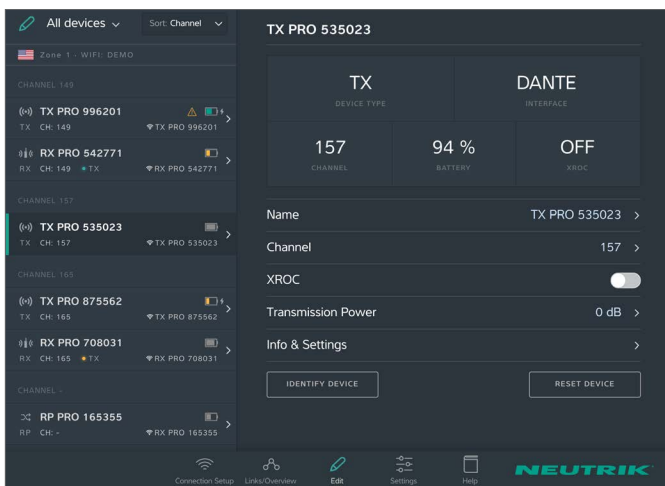
- ▶ Add a device to a different transmission path: Tap the device and drag it to the desired transmission path.



- ▶ Remove a device from a transmission path:
Tap the device and drag it to **Available Devices**.

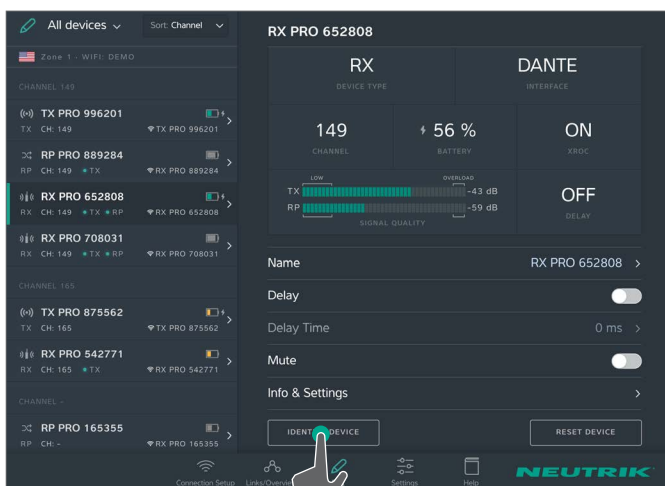
5.6 Configuring the device parameters

The devices are mainly controlled through the app.



Selecting the device to edit

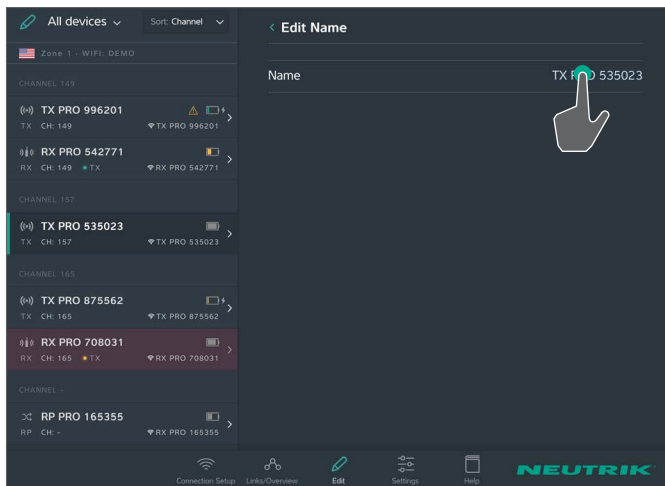
- Option 1:
▶ Tap the device on the **Links/Overview** page.
 - Option 2:
▶ On the **Links/Overview** page, tap at the device.
▶ In the options menu, tap **Edit**.
 - Option 3:
▶ On the **Edit** page, select the device from the list.
- ✓ The device is selected on the **Edit** page.



Identifying the device via the app

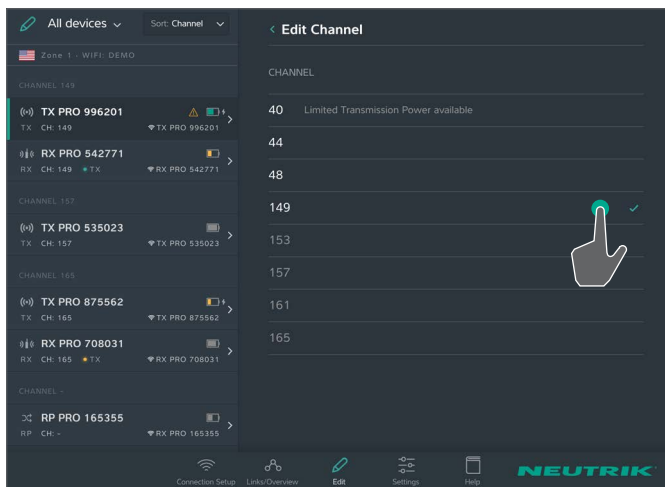
- Option 1:
▶ On the **Edit** page, tap the **Identify device** button.
✓ The power LED on the selected device flashes slowly for a few seconds.
- Option 2:
▶ On the **Links/Overview** page, tap at the device.
▶ In the options menu, tap **Identify device**.





Changing device names

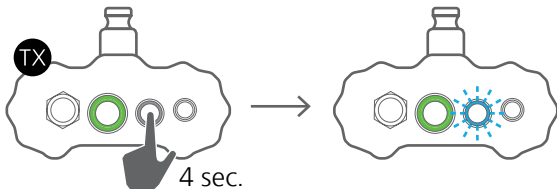
- ▶ On the **Edit** page, tap the line **Name**.
- ▶ On the **Edit Name** page, tap the device name.
- ✓ The entry keyboard appears.
- ▶ Enter the new name and confirm it.
- ▶ Back to the overview: Tap **< Edit Name**.



Changing the transmission channel

The transmission channel can only be set for one TX channel. Occupied or inactive channels cannot be selected and are displayed in gray text. The active channel is marked with ✓.

- ▶ On the **Edit** page, tap the line **Channel**.
- ▶ Tap the desired channel number.
- ✓ The selected channel is marked with ✓.



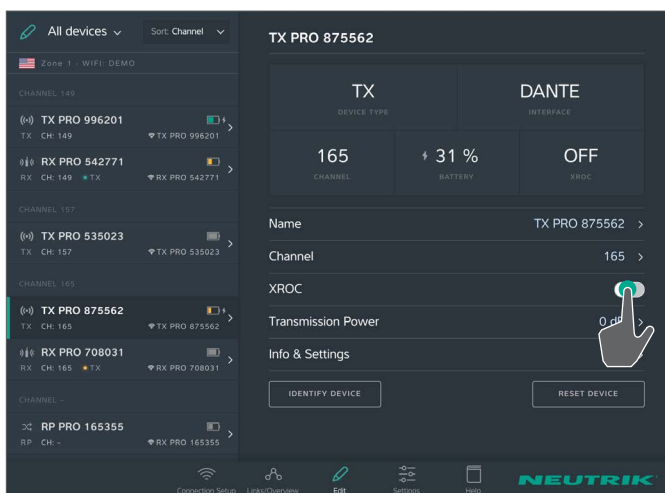
Activating/deactivating XROC mode

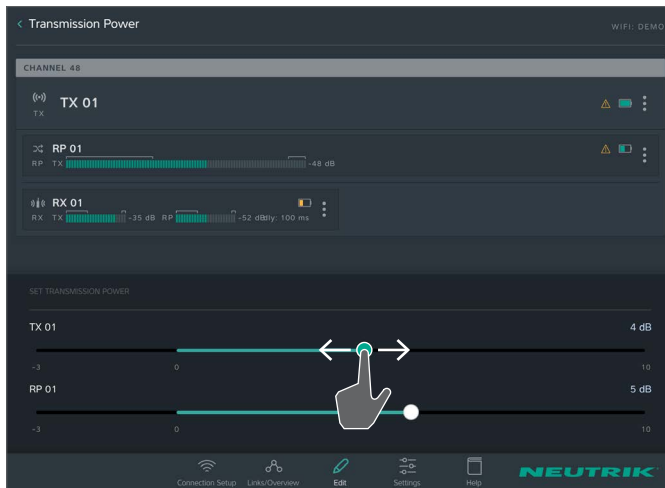
XROC mode can be activated or deactivated either on the TX or via the app.

i In XROC mode, only audio channel 1 is being transmitted.

- ▶ Activating XROC mode via the device:
Press and hold the Link/XROC button for 4 seconds.
- ✓ The Link/XROC LED slowly flashes blue.
- ▶ Activating XROC mode via the app:
On the **Edit** page, tap the XROC ON/OFF button.

i Whether XROC mode is active in the transmission path is displayed in the device properties of an RX.





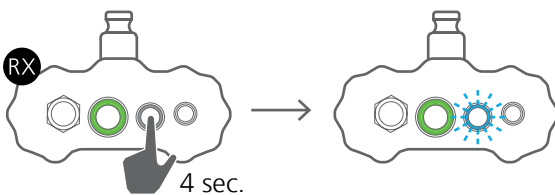
Setting transmission power

In the default setting, the transmission power is set to 0 dB.

- ▶ If the devices are used indoors or over short distances: Reduce the transmission power.
- ▶ If the devices are used outdoors or over long distances: Increase the transmission power.

i If more than 1 TX are used in the network, set the transmission power of all TXs to the same value.

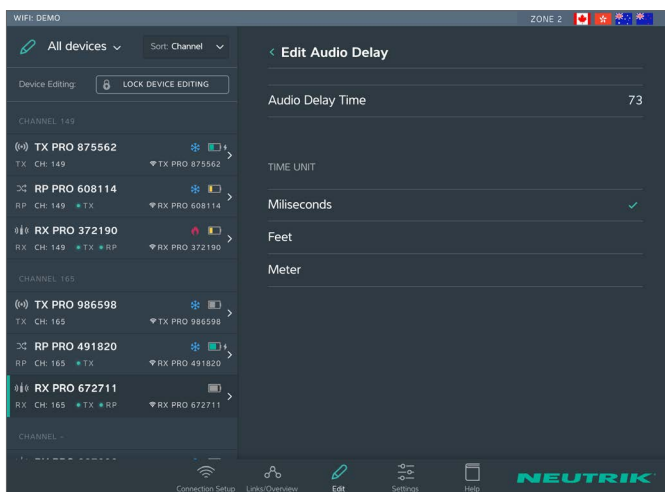
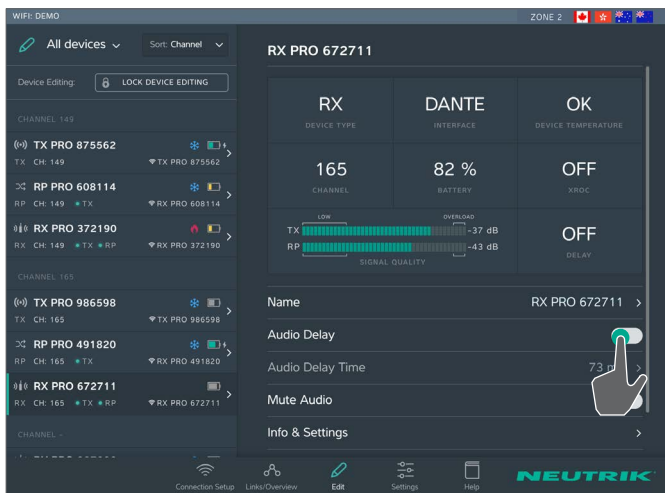
i Please consider chapter "4.4.3 Signal quality bar" on page 24 and "4.4.4 Transmission power" on page 25 for a proper setting of transmission power.



Activating/deactivating delay

- ▶ Activating the delay via the device:
Press and hold the Link/Delay button for 4 seconds.
- ✓ The Link/Delay LED slowly flashes blue.

- ▶ Activating the delay mode via the app:
On the **Edit** page, tap the Delay ON/OFF button.

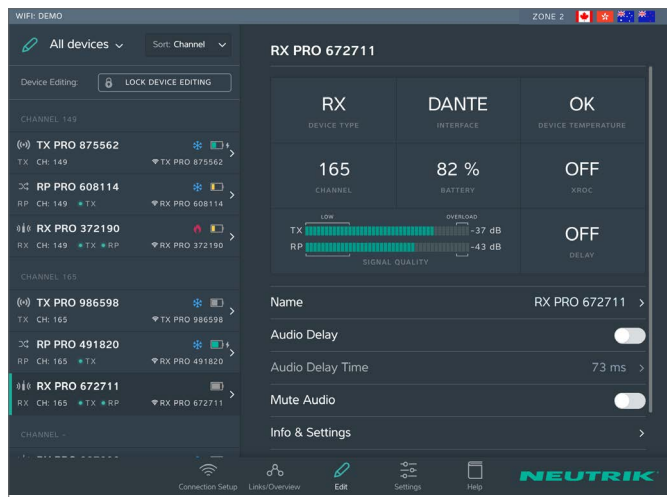


Changing the delay time

✓ The delay function is active.

- ▶ On the **Edit** page, tap the line **Delay Time**.
- ▶ On the **Edit Delay** page, change the entered delay time.
- ▶ Enter and confirm the new delay time.

i If the measurement unit is changed, the value is automatically converted to the right unit.

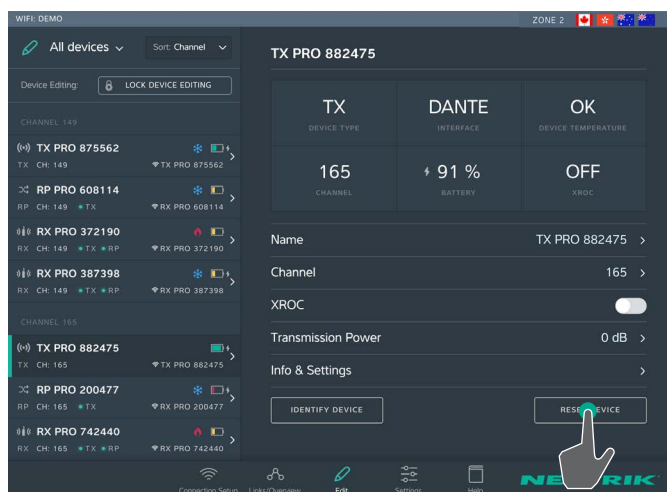


Mute audio signal

► On the **Edit** page, tap the **Mute Audio** button.



A mute icon will be displayed in the Links / Overview window next to the device.



Resetting the device

Option 1:

► On the **Edit** page, tap the **Reset device** button.

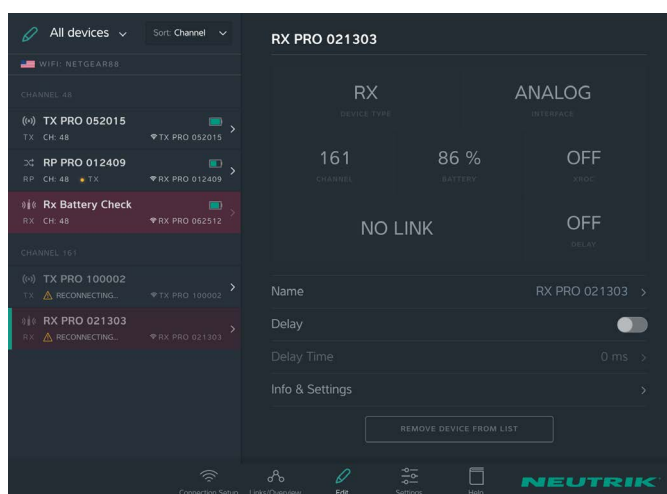
Option 2:

► On the **Links/Overview** page, tap at the device.

► In the options menu, tap **Reset device**.

The following settings are reset with this function:

- Resets the device name to the SSID name.
- Switches off XROC mode (TX).
- Switches off delay (RX).
- Resets the transmission power to the factory setting (0 dB) (TX, RP).
- Makes the SSID public if it was hidden before (TX, RX)
- Turns off the RF attenuator (RX, Advanced Mode)
- Turns off the Audio Mute (RX)



Removing device from app display

If a device is out of the 2,4 GHz range, it can be temporarily removed from the app display.



The **Remove device from list** button is only visible when the device is unavailable to the app.

► Remove device from display:

Tap the **Remove device from list** button.

► Confirm with OK in the **Remove device** window.

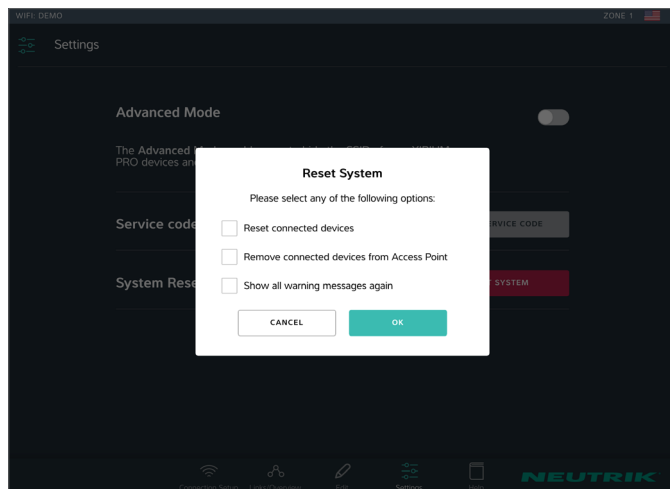
✓ The device is removed from the app display.



As soon as the device is available again, it is displayed in the app.

5.7 Editing system settings

5.7.1 Resetting the app



The user can reset various options in the app.

The following options can be selected:

- **Reset connected devices:** All devices are reset to the default setting.
- **Remove connected devices from Access Point:** All devices are removed from the network.
- **Show all warning messages again:** All faded-out warnings and notes are displayed again.

Reset System:

- ▶ On the **Settings** page, tap the **Reset system** button.
- ▶ Activate option:
Tap the checkbox.
- ▶ Confirm selection with **OK**.
- ✓ The app is reset.

i If the XIRIUM PRO devices have been removed from the accesspoint a restart of the devices is necessary!

5.7.2 Advanced Mode

The advanced mode is provided for RF specialists. Activating the Advanced mode will allow the user to edit an additional parameter on each RX, called "RF attenuator". The Advanced mode also allows to hide the SSIDs of the XIRIUM PRO devices.

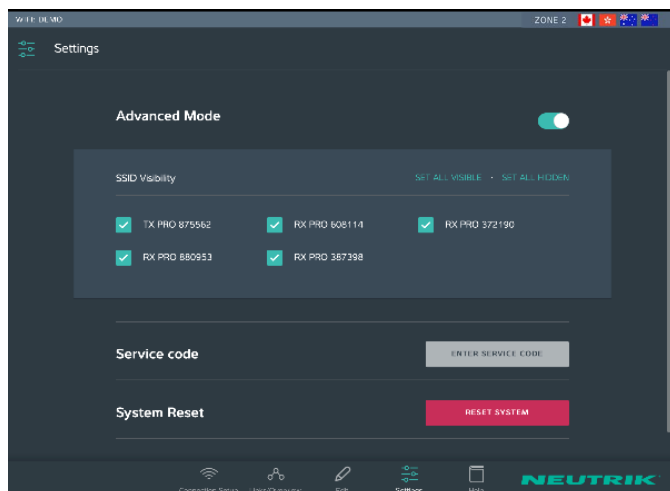
Activating / Deactivating the Advanced mode:

- ▶ On the **Settings** Page, tap the Advanced Mode switch.

i An activated attenuator or a hidden SSID is saved even after a Power Off/On of the device. The app detects whether the attenuator is turned ON or the SSID is hidden and then automatically turns on the advanced mode.

SSID visibility:

In high congested RF environment it is advisable to hide the SSIDs of all devices, in order that no requests will be received by the XIRIUM PRO devices.



Change SSID visibility:

- ▶ Turn on Advanced Mode to enable the "SSID visibility" parameter in the **Settings** menu.
- ▶ Single devices or all devices at once can be set hidden or visible.
- ▶ A checked box means the SSID is visible.
- ▶ An unchecked box means that this SSID is hidden.

i When hiding the SSID in Standalone Mode the app will lose the device for a short time. While an Android tablet will bring the device back in the app automatically, iOS users may have to select the device again in the Wi-Fi settings and then return to the app..

During a change of the SSID visibility in network mode all other options are disabled until the process is finished completely.

RF attenuator:

RF attenuator is a parameter which can be set on each RX only if the Advanced Mode is turned on. It attenuates the RF signal by 30 dB. The RF attenuator works best in combination with an increased transmission power on the TX. An activated RF attenuator increases the signal-to-noise ratio on that RX. Hence on an event with a lot of disturbing signals it is possible to lower the surrounding noise and at the same time increase your transmission power of the TX to establish a better reception.

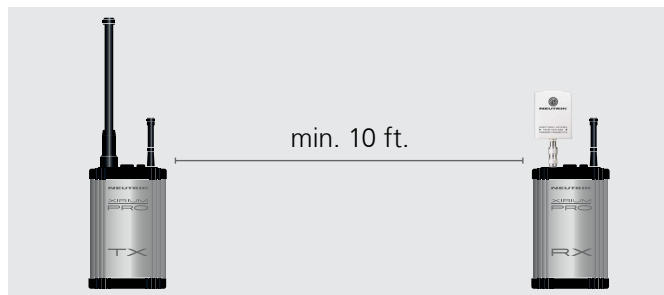
Activating / Deactivating the RF attenuator:

- ▶ On the [Settings](#) Page, tap the Advanced Mode switch to enable this additional parameter.
- ▶ On the [Edit](#) Page, click on the RX and then tap the RF attenuator switch.

5.8 Setting up and mounting the XIRIUM PRO system

5.8.1 Positioning the devices

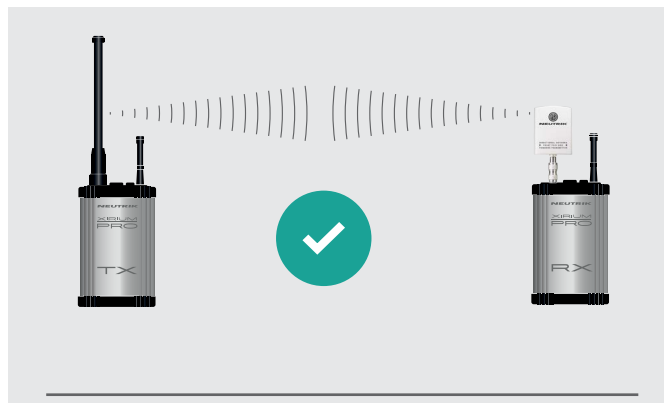
i When positioning and setting the devices, observe the information in Section "4.4 Getting started" on page 22.



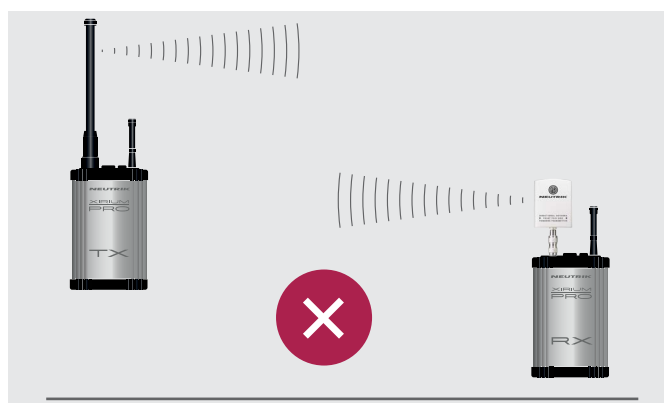
- ▶ Always keep a minimum distance of 10 feet between the TX and each RX (with mounted 6 dBi antenna and transmission power at -3 dB).

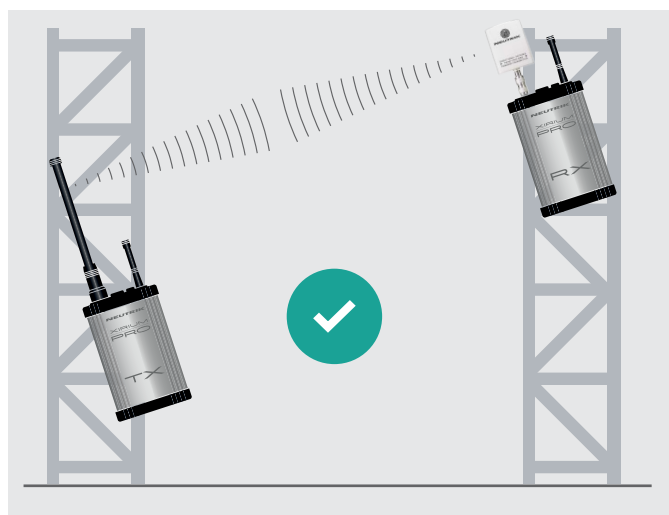
i Under the following conditions, select a greater minimum distance between TX and RX:

- XIRIUM PRO devices are operated with the 9 dBi antenna.
- The transmission power is greater than -3 dB.



- ▶ Always mount the devices so the device antennas are at the same height.



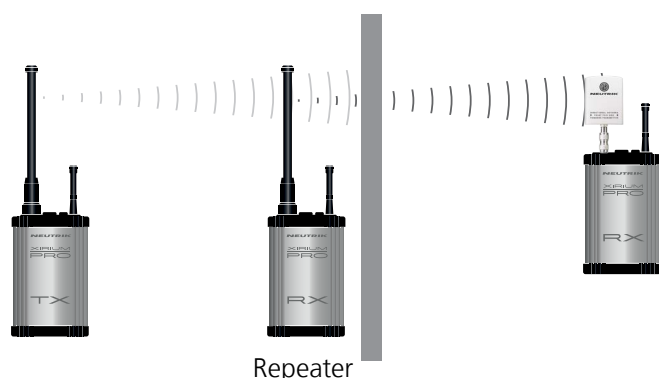


- If devices are not mounted at the same height:
Mount devices so they are parallel with each other.

i An angled positioning is only allowed if the devices are set to channel 149-165 or used indoors.
If the transmission needs to be done in the lower channels (40-48) in an outdoor location a parallel horizontal positioning of the devices with antennas in a vertical position is necessary to comply with FCC regulations.

5.8.2 Positioning the repeater

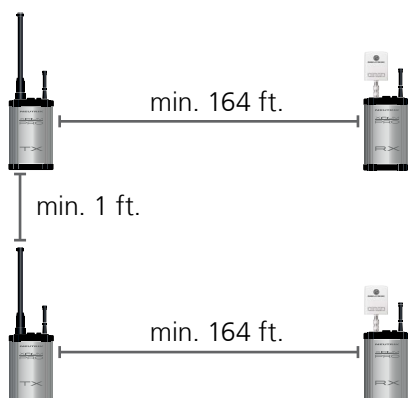
With the repeater, a connection can be stabilized by a redundant signal, obstacles can be overcome, or the signal can be transmitted over twice the distance.



- Position repeaters directly in front of obstacles.
- ✓ The signal will be transmitted through the obstacle.

i Depending on the signal strength, the repeater can also be positioned directly after the obstacle.

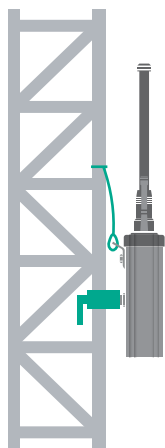
5.8.3 Systems with several transmitters



If several transmitters are used in the network, observe the following:

- Set the transmission power of all TXs to the same value.
- Select the transmission channel for the TX in the app so at least one channel is free between each channel used.
- When positioning the TX, maintain a minimum distance of at least 1 foot between each TX.
- Increase the recommended minimum distance between TX and RX to 164 feet.
- The ideal RSSI level is between -60 to -50 dB.

5.8.4 Fastening and securing XIRIUM PRO devices



⚠ WARNING

Danger of falling due to incorrectly or incompletely fastened devices!

- ▶ Always mount and secure the devices according to the instructions.
- ▶ Always mount the devices in an upright position.
- ▶ Always mount the devices to the rig with the delivered Manfrotto™ universal mounting clamp.
- ▶ Also secure the devices with the arrestor cable (not included) to the safety lug.

5.9 Upgrading firmware

The software "XIRIUM PRO Firmware Upgrade Manager" executes a firmware upgrade on the XIRIUM PRO base stations. The XIRIUM PRO USB data cable (NKXPRO-DATA), supplied with each base station, is used for connection to a computer.

The software can be downloaded at no cost from the NEUTRIK website: www.neutrik.com

There's an additional driver necessary, which can be downloaded from the Silicon Labs website (<https://www.silabs.com/products/mcu/Pages/USBtoUARTBridgeVCPDrivers.aspx>). This driver is required in order to detect the XIRIUM PRO device when connected to a computer.

5.9.1 Installing the XIRIUM PRO Firmware Upgrade Manager

System requirements

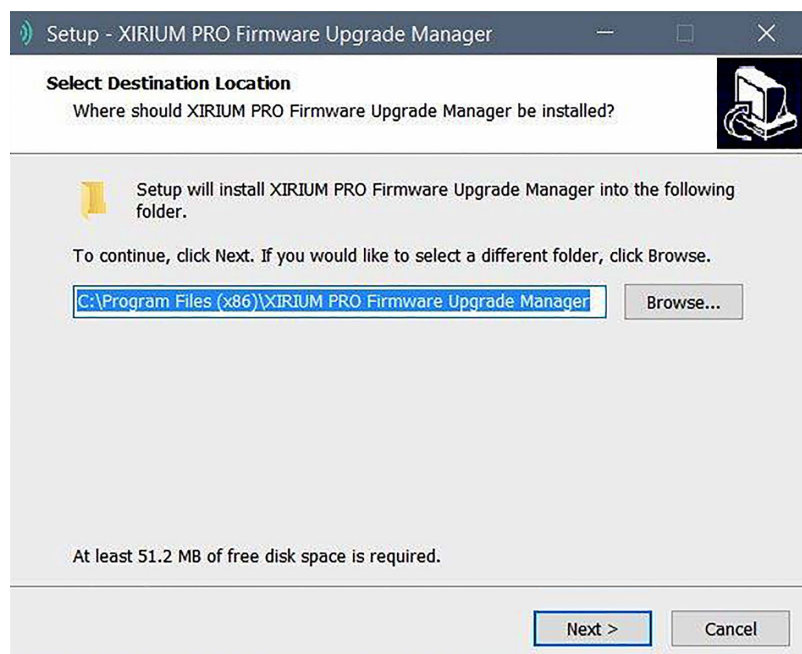
- ✓ PC with operating system Microsoft Windows XP, Windows 7, Windows 8, Windows 8.1 or Windows 10.
PCs with ARM processors (Windows 8 and Windows 10) are not supported.
- ✓ Mac with Intel processor and OSX using version 10.8.5 or later.
Mac computers with PowerPC processors are not supported.

Download

- Download ZIP file with the XIRIUM PRO Firmware Upgrade Manager Setup from the NEUTRIK website and save it.

Installing the software

- Double-click on the [XIRIUM PRO Firmware Upgrade Manager](#) application.
- ✓ The main window appears:
- Select a location to install the software.



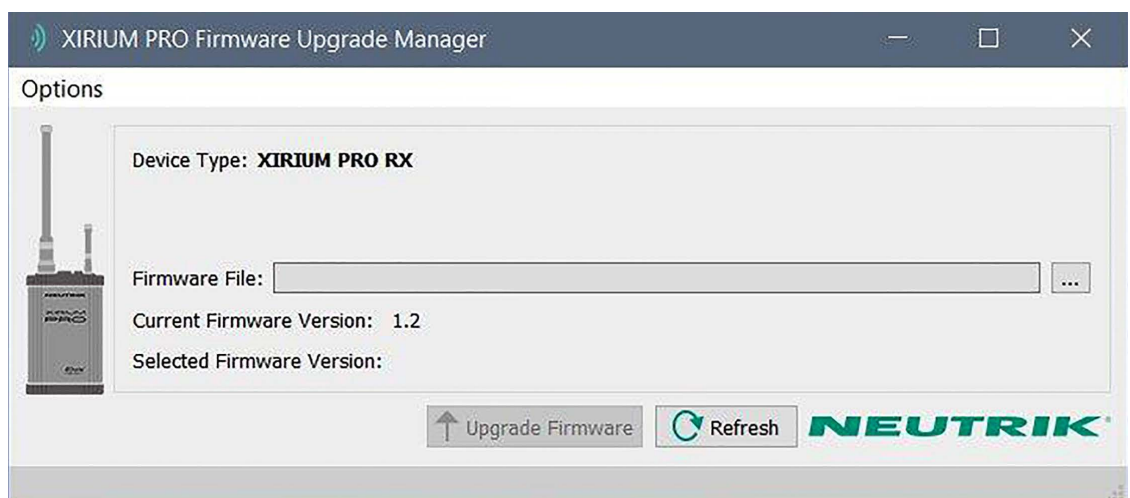
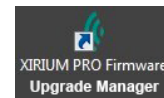
- Click the [Next](#) button.

- Follow the subsequent installation steps.

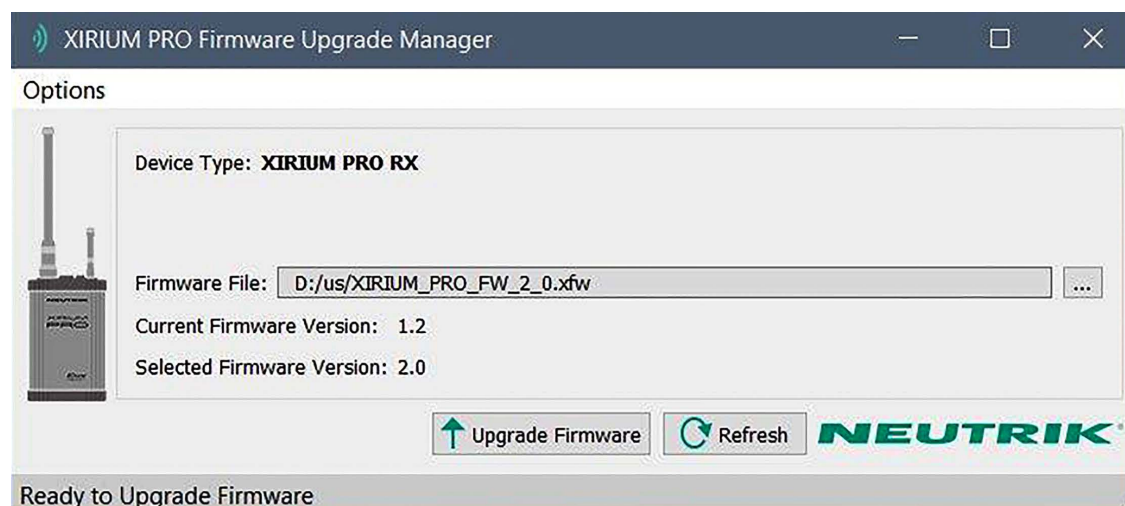


5.9.2 Executing a firmware upgrade

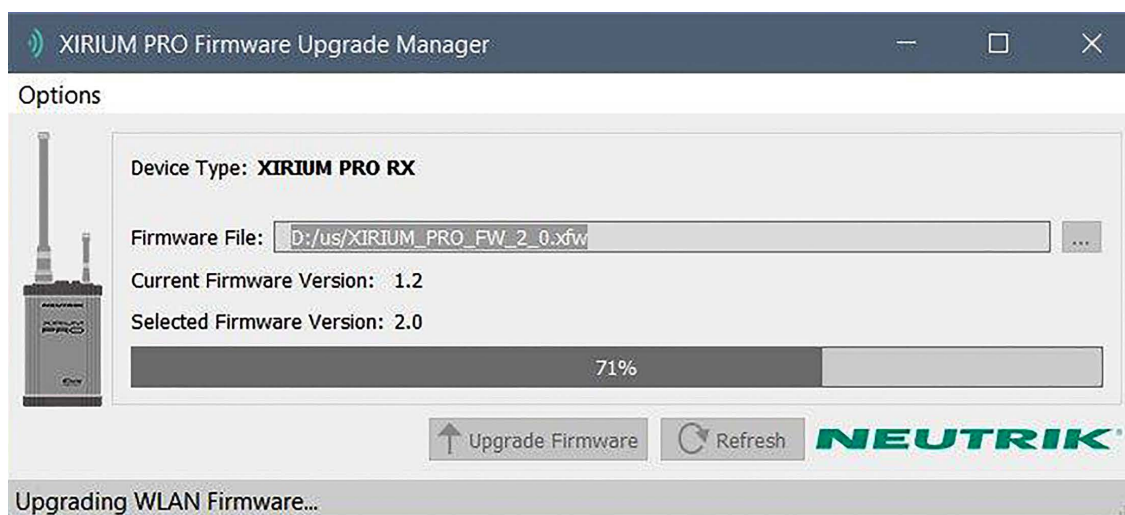
- Download the ZIP file with the current firmware from the NEUTRIK website and save it.
- Start the software:
Double-click the program icon on the Desktop.
- The program window appears:



- ▶ Connect the XIRIUM PRO base station to the computer.
- ▶ Click the [Refresh](#) button to update all the displays.



- ▶ Select the firmware file from the file selection field [Firmware File](#).
- ✓ The version number of the new firmware is displayed in [Selected Firmware Version](#).
- ✓ Execute the upgrade:
 - Click the [Upgrade Firmware](#) button.
- ✓ The software automatically executes the upgrade.



- ✓ As soon as the upgrade has completed, the software displays a message window.



- ▶ Disconnect the XIRIUM PRO base station from the computer.

5.9.3 Uninstalling the XIRIUM PRO Firmware Upgrade Manager

- ▶ Uninstall the software through the add/remove function of the operating system.

6 Troubleshooting

Message	Fault	Cause	Solution
Reconnecting...	WLAN connection to device not available.	Battery empty	► Connect device to power supply.
		Device out of 2.4 GHz network range.	► Avoid obstacles influencing reception. ► Position device or access point at a different location.
No Link!	RX does not receive a signal from TX.	TX battery empty	► Connect device to power supply.
		Device out of 5 GHz network range.	► Avoid obstacles influencing reception. ► Position TX at a different location. ► Add repeater to transmission path.
RSSI level "low" area	RX repeater receives a weak signal.	Distance between TX and RX / repeater too high.	► Increase transmission power on TX/repeater. ► Decrease distance between TX and RX/repeater by a few meters. ► If no repeater in application: Add repeater to transmission path.
RSSI level "overload" area	RX repeater receives a signal that is too strong	Distance between TX and RX/repeater too low.	► Decrease transmission power on TX/repeater. ► Increase distance between TX and RX/repeater by a few meters.
Signal quality bar is orange Signal quality bar is red	Packet loss is critical Packet loss is too high	Some reflections cause a critical or high packet loss at this position.	► Position devices at a slightly different location.
Access Point lost	Connection between tablet and access point used is broken.	Tablet out of range of access point.	► Position device or access point at a different location.
		Flight mode active on tablet.	► Deactivate flight mode on tablet.
Access point changed	Tablet connected with a different access point.	Tablet out of range of access point.	► Position device or access point at a different location.

7 After operation

7.1 Dismounting devices

- ▶ Disconnect devices from audio sources/sinks.
- ▶ Disconnect devices from power supply and pull mains plug.
- ▶ Dismount antennas.
- ▶ Remove modules from device.

7.2 Transporting

- ▶ Always transport devices and accessories in the original packaging.

7.3 Storage

- ▶ If devices are not used for a longer period:
Disconnect devices from power supply and pull mains plug.
- ▶ Always store devices and accessories in the original packaging.
- ▶ Always store devices in a clean, dry location.
- ▶ Always protect devices from dirt, dust, heat, humidity and moisture.

7.4 Cleaning and care

DANGER

Danger of electric shock and property damage due to improper cleaning!

- ▶ Disconnect device from power supply before cleaning.
 - ▶ Never immerse device or accessory in water under any circumstances.
 - ▶ Never spray device or accessory with liquids under any circumstances.
-
- ▶ Wipe the surfaces of the device and accessory with a soft cloth slightly moistened with a mild soap solution.
 - ▶ Never use aggressive, solvent-based or abrasive cleaning agents under any circumstances.
 - ▶ Never use rough materials (e.g., cleaning cloths or sponges with a rough coating).

7.5 Maintenance and repair

The XIRIUM PRO devices do not contain any parts which can be maintained or repaired by the user.

- ▶ These devices may only be repaired by a authorized XIRIUM PRO repair center.
-
- ▶ Check devices regularly for visible damage to the housings, operation elements, connections, cables and plugs.
 - ▶ If damage is detected, do not use devices under any circumstances
 - ▶ Immediately disconnect devices from power supply.
 - ▶ Replace defective cables or accessories immediately.

7.6 Disposal



- ▶ Dispose of XIRIUM PRO devices and accessories in accordance with the applicable local regulations.
- ▶ Never dispose of electrical devices or electrical accessories such as cables, plug, batteries or components with household wastes under any circumstances.

- ▶ Dispose of packaging and packaging elements in accordance with the applicable local regulations.
- ▶ Take device components made of plastic, metal or other recyclables for reclamation in accordance with the applicable local regulations.

8 Appendix

8.1 Integrating DANTE

8.1.1 Introduction to DANTE™

DANTE™ stands for **D**igital **A**udio **N**etwork **T**hrough **E**thernet and is an audio network protocol developed by the Australian company Audinate. DANTE™ delivers uncompressed, multichannel, low-latency digital audio over a standard Ethernet network using Layer 3 IP packets. A TX DANTE module is able to transmit up to two channels of digital audio, while the RX DANTE module can receive two signals of a DANTE™ network.



When XROC mode is enabled, only one channel is transmitted and received in a transmission path, because the data rate is then lowered.

All products on which DANTE™ is enabled work together to deliver perfectly synchronized audio. This is managed through a single software application called “Dante Controller”.

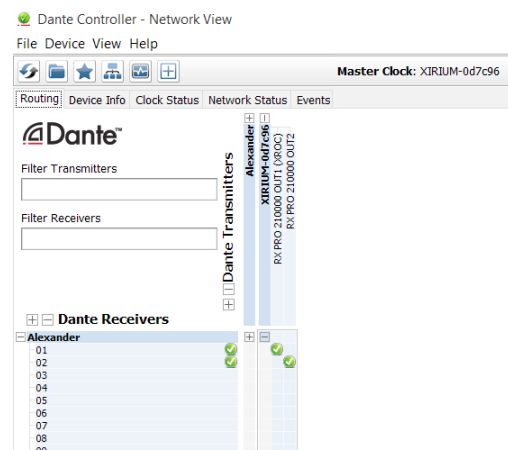
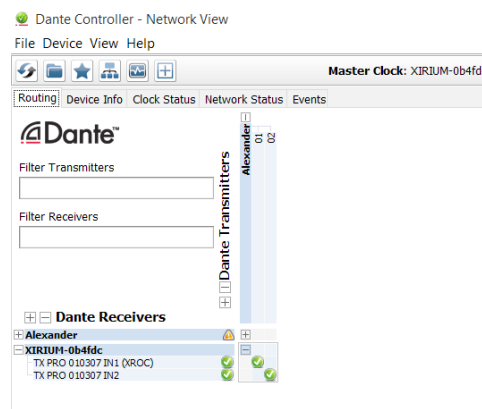
Dante Controller is a free software application that enables routing audio and configuring devices in a Dante network. Setting up a DANTE™ network is very easy. Dante Controller offers automatic device detection, one-click signal routing and user-editable device and channel labels.

A XIRIUM PRO device with an integrated DANTE™ module can be connected to the DANTE™ network using common CAT5e or CAT6 cables. If a network switch is included in the system, it should be at least a 1 Gbit network switch.

8.1.2 Enabling a DANTE™ link

- ☒ Connect the computer to the DANTE™ network with a standard CAT5e or CAT6 cable
- ☒ The DANTE Controller software is installed (<https://www.audinate.com>).

- ▶ Run the Dante Controller software.
- ▶ In the routing menu, click on the + symbols of the devices.



- ▶ Establish the desired link.



The XIRIUM PRO TX devices appear as DANTE receivers, and vice versa!

8.2 Access point settings

Using an access point makes it possible to operate the app in network mode. This way, the entire XIRIUM PRO system can be configured and monitored via the app.

8.2.1 Recommended settings

Any conventional access point can be used to set up a XIRIUM PRO network. Neutrik recommends the following settings for the access point:

- For the strongest security option, use WPA2-AES as security protocol for authentication.
- If the access point has a dual-band radio, deactivate the 5 GHz band and only leave the 2.4 GHz band activated.
- In the list of optional frequencies within the 2.4 GHz band, select channel 1 (2412 MHz), channel 6 (2437 MHz), and channel 11 (2462 MHz) to ensure the channels do not overlap during use.
- Make sure the http and https protocols are not blocked.

8.3 Technical specifications

General specifications

Radio frequency carrier range	IEEE 802.11a, UNII-1 band from 5180 MHz to 5250 MHz (channels 36 – 48) and UNII-3 band from 5725 MHz to 5825 MHz (channels 149 – 165), license-free
Data protocol	Proprietary (DiWA technology)
Transmit power	UNII-1 band: conducted 13 dBm / 19 dBm EIRP (with 6 dBi antenna) / 22 dBm EIRP (with 9 dBi antenna), FCC compliant UNII-3 band: conducted 26 dBm / 32 dBm EIRP (with 6 dBi antenna) / 35 dBm EIRP (with 9 dBi antenna), FCC compliant
Range	Up to 1000 m point to point (LOS)*, longer range depending on obstacles, reflexions, interferences, XROC mode

Audio performance (analog to analog per wireless link)

THD + Noise (TX Gain = min.)	< 0.01 % @ 20 Hz – 10 kHz, 4 dBu
Frequency response	± 0.3 dB @ 20 Hz – 20 kHz ref. 1 kHz
Dynamic range	> 105 dB @ 1 kHz, A-weighted
> 105 dB @ 1 kHz, A-weighted	< -80 dB @ 20 kHz
Number of audio channels @ 24 Mbps	2
Number of audio channels @ 6 Mbps	1 (XROC mode)
Number of receivers (RX only)	Unlimited number of RX clients
Converter resolution (ADC & DAC)	24 bit
Sampling rate	48 kHz
Latency (Delay)	3.6 ms (analog to analog)
Transmission method	Compression-free, no reduction of converted data
Operating temperature	32 °F to +122 °F / 0 °C to +50 °C
Storage temperature	-4 °F to +176 °F / -20 °C to +80 °C

Additional digital audio interfaces

AES/EBU	24 bit / 48 kHz according to AES3-2003
Dante AoE (Audio over Ethernet)	Proprietary protocol by Audinate®

* valid for a transmission in the UNII-3 band

**TX specific characteristics**

Antenna 5-6 GHz – Audio transmission	Omni-directional, 6 dBi, 25° Elevation and 360° Azimuth, N-connector male (direct mount)
Antenna 2.4 GHz – Control data transmission	1/2 wave dipole with SMA female connectors
Number of audio channels @ 24 bps	2
Number of audio channels @ 6 Mbps	1 (XROC mode)

Analog input specs

Input mode	Input level			
	Input Imp. kOhm	Rated Source Imp. Ohm	max.* dBu	Connector type
Line (balanced)	10	1000	22	XLR
Indicators	LEDs: Power ON / Start up / Low battery status / XROC mode / Linking process / Audio transmission			
Controls	Power ON / Linking process / XROC mode			
Power supply	Mains input over powerCON TRUE1 (100-240 VAC 50/60 Hz) or internal battery **			
Dimensions (w x h x d)	5.6 x 2.5 x 9.7 in / 142 x 64 x 247 mm (without antennas)			
Weight	1.59 lbs / 0.72 kg			
Optional accessories	Module Interfaces (Analog, Digital, Dante), mounting clamp			

* maximum input level before signal overflow, 0 dBu = 0.775 V rms

** typical battery runtime 10 hours, depending on type of module, transmission power settings, XROC mode, number of charging cycles and operating temperature

RX SPECIFIC CHARACTERISTICS

Antenna 5-6 GHz - Audio Transmission	Omni-directional, 6 dBi, 25° Elevation and 360° Azimuth, N-connector male (direct mount)
Antenna 2.4 GHz - Control Data Transmission	1/2 wave dipole with SMA female connectors
Number of audio channels	2

Analog output specs

Output Type	Output Level				
	Output Imp. Ohm	Rated Load Imp. kOhm	Nominal* dBu	Max. Level dBu	Connector type
Line (balanced)	< 800	10	0	22	XLR
Indicators	LEDs: Power ON / Start up / Low battery status / Audio delay / Linking process / Audio reception				
Controls	Power ON / Linking process / Audio delay				
Power Supply	Mains input over powerCON TRUE1 (100-240 VAC 50/60 Hz) or internal battery **				
Dimensions (w x h x d)	5.6 x 2.5 x 9.7 in / 142 x 64 x 247 mm (without antennas)				
Weight	1.59 lbs / 0.72 kg				
Optional Accessories	Module Interfaces (Analog, Digital, Dante, Repeater), mounting clamp				

* if TX source = 0dBu

** typical battery runtime 10 hours, depending on type of module, transmission power settings, XROC mode, number of charging cycles and operating temperature

Antennas– Omni-directional antenna / Frequency band: 5.150 GHz - 5.875 GHz

Type	NXPA-6-360-25	NXPA-9-360-12.5
Gain	6 dBi	9 dBi
Beam width horizontal	360°	360°
Beam width vertical	25°	12.5°
Connector	N-connector male	N-connector male
Dimensions	10.63 in / 270 mm	14.57 in / 370 mm
Weight	0.75 lbs / 0.34 kg	0.75 lbs / 0.34 kg
Operating temperature	32 °F to +122 °F / 0 °C to +50 °C	32 °F to +122 °F / 0 °C to +50 °C



Liechtenstein (Headquarters)

NEUTRIK AG, Im alten Riet 143, 9494 Schaan
T +423 237 24 24, F +423 232 53 93, neutrik@neutrik.com

Germany / Netherlands / Denmark / Austria

Neutrik Vertriebs GmbH, Felix-Wankel-Strasse 1, 85221 Dachau, Germany
T +49 8131 28 08 90, info@neutrik.de

Great Britain

Neutrik (UK) Ltd., Westridge Business Park, Cothey Way
Ryde, Isle of Wight PO33 1 QT
T +44 1983 811 441, sales@neutrik.co.uk

France

Neutrik France SARL, Rue du Parchamp 13, 92100 Boulogne-Billancourt
T +33 1 41 31 67 50, info@neutrik.fr

USA

Neutrik USA Inc., 4115 Taggart Creek Road, Charlotte, North Carolina, 28208
T +1 704 972 30 50, info@neutrikusa.com

Japan

Neutrik Limited, Yusen-Higashinibonbashi-Ekimaie Bldg., 3-7-19
Higashinibonbashi, Chuo-ku, Tokyo 103
T +81 3 3663 47 33, mail@neutrik.co.jp

Hong Kong

Neutrik Hong Kong LTD., Suite 18, 7th Floor Shatin Galleria
Fotan, Shatin
T +852 2687 6055, neutrik@neutrik.com.hk

China

Ningbo Neutrik Trading Co., Ltd., Shiqi Street, Yinxian Road West
Fengjia Villiage, Yinzhou Area, Ningbo, Zhejiang, 315153
T +86 574 88250488 800, neutrik@neutrik.com.cn

India

Neutrik India Pvt. Ltd., Level 3, Neo Vikram, New Link Road,
Above Audi Show Room, Andheri West, Mumbai, 400053
T +91 982 05 43 424, anklesaria@neutrik.com

Associated companies

Contrik AG

Steinackerstrasse 35, 8902 Urdorf, Switzerland
T +41 44 736 50 10, contrik@contrik.ch

H. Adam GmbH

Felix-Wankel-Straße 1, 85221 Dachau, Germany
T +49 08131 28 08-0, info@adam-gmbh.de



www.neutrik.com / www.xirium.net