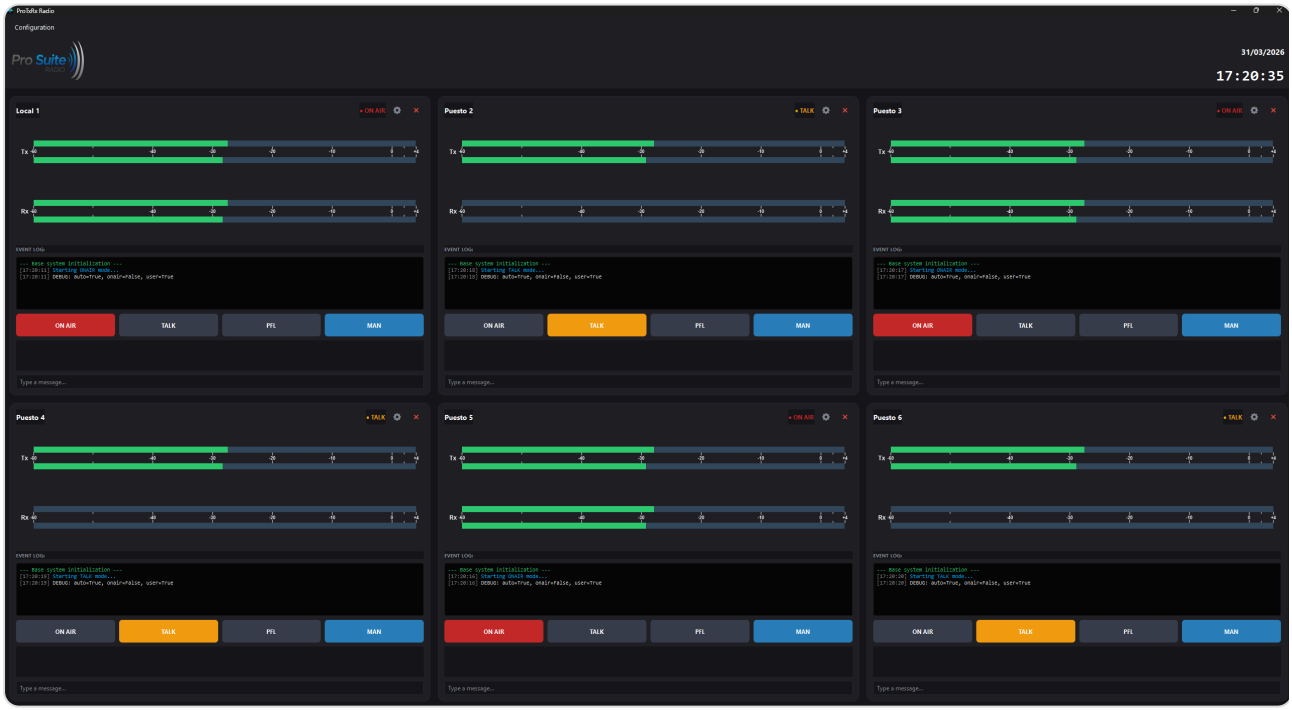
V 9.0.0

USER MANUAL

Pro TxRx Radio V9 is an advanced broadcast communications software designed to send and receive high-quality audio over IP networks using the ultra-low latency UDP protocol. Developed for professional environments, it allows interconnecting multiple stations or remote studios with high resilience features.



Pro TxRx Radio Main Interface: Multi-point monitoring and control

SYSTEM REQUIREMENTS

To ensure stable and continuous execution during long shifts (24 hours a day, 7 days a week, 365 days a year), it is essential to meet the recommended hardware specifications. The system makes intensive use of real-time processing (48kHz PCM stereo per module).

COMPONENT	MINIMUM REQUIREMENTS	RECOMMENDED FOR CONTINUOUS USE (24/7/365)
Processor (CPU)	Intel Core i3 / AMD Ryzen 3 (Dual-core)	Intel Core i5 / i7 or AMD Ryzen 5 / 7 (Quad-core or higher)
RAM Memory	4 GB	8 GB to 16 GB DDR4/DDR5
Storage	HDD/SSD Disk	NVMe SSD Disk (Minimum 256GB free)
Audio Hardware	Integrated Sound Card (Realtek)	Dedicated Audio Interface (ASIO/WDM) such as Focusrite, Behringer, SSL, operating at native 48000Hz.
Network	Ethernet 100 Mbps LAN	Gigabit Ethernet (1000 Mbps) LAN, Managed Switches with QoS for UDP traffic. Wi-Fi is not recommended.
Operating System	Windows 10 (64-bit)	Windows 10 / 11 Pro (64-bit), optimized without hibernation.
Power	Standard power outlet	Uninterruptible Power Supply (UPS).

INSTALLATION AND STABLE 24/7 USE

The **Pro TxRx Radio V9** engine incorporates internal crash protection mechanisms, separating the graphical user interface (UI) from the audio and network threads. To ensure stream purity:

- **Disable USB and hard drive suspension:** In *Windows Power Options*, select "High Performance" and prevent the network card or USB ports from turning off to save power.
- **Firewall configuration:** Make sure to allow incoming and outgoing connections in Windows Firewall for this application, especially the UDP ports starting from **12341 onwards** (assigned by default to stations).

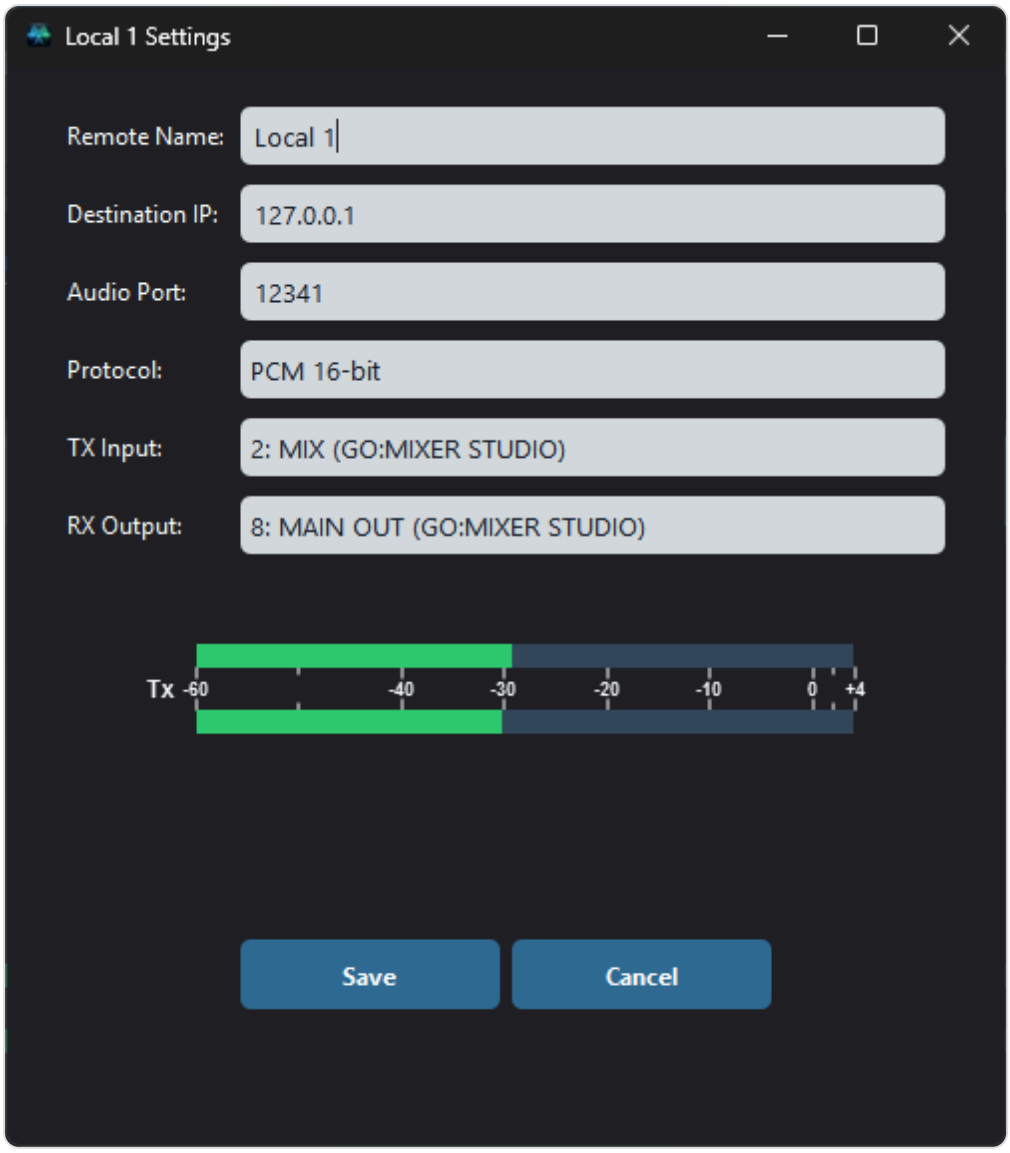
MAIN INTERFACE

The central window organizes the communication modules in a dynamic grid. In the upper right part, there is a high-precision clock integrated into the system, essential for controlling advertising schedules or broadcast times.

The **Configuration** menu in the upper toolbar allows adding additional stations to the grid ("Add more stations") or removing them cleanly ("Remove last station"), releasing memory and audio resources dynamically.

COMMUNICATION MODULES (STATIONS)

Each "Station" is an autonomous send and receive (Tx/Rx) entity towards a given IP address and UDP port.



Station Control Panel: Ultra-fast VU meters, Console, and Chat

STATUS AND CONTROL BUTTONS

The core of the interaction lies in the bottom buttons that dictate which audio channels are opened:

- **ON AIR**
  Opens the local microphone for transmission to the remote IP and activates remote audio reception simultaneously. It is the main broadcast mode.
- **TALK**
  Enables "Talkback" cross-communication or instructions from control to the studio. It transmits audio but temporarily silences reception.

- **PFL**
  Exclusive "Pre-Fader Listen" route. Allows listening (Rx) to the remote source without sending (Tx) signal to the air. Useful for previews before an interview.
- **AUTO / MAN**
  Switches between manual and automatic mode. In **AUTO Mode**, if the system detects a network loss while on the air, it will initiate persistent reconnection routines every 5 seconds until the link is established.

PRECISION VU METERS AND LOGS

The twin VU meters (**Tx** and **Rx**) show decibels (dBFS) in real-time in stereo (-60 to +4). The green meter represents safe signals (up to -18dB), yellow (up to 0dB) denotes optimum, and red indicates saturation (clipping).
Below, a local **Event Log** console in terminal style is inserted, which records the exact times of system commands and network drops, followed by an interactive box for direct **Text Chat** with that IP.

ADVANCED CONFIGURATION AND ROUTING

By clicking on the gear icon in the upper right corner of any station, the **Station Settings** dialog opens.

- **Remote Name and Destination IP:** Specifies the alias and IPv4 address of the equipment at the end of the tunnel.
- **UDP Audio Port:** The port through which PCM packets will travel (e.g., 12341). Parallel stations should not share ports on the same network card if possible.
- **TX Input (Mic/Line):** Enumerated dropdown that selects the WDM/ASIO driver to use as the sound broadcast source. Includes a pre-VU meter at the top for safe testing before broadcasting.
- **RX Output (Speakers/Headphones):** The physical playback point where the sound coming from the distant connection will materialize.