V234

USER MANUAL

Pro Play Radio is the automation standard for critical broadcast environments. Designed with a low-latency architecture and a hybrid audio engine, it manages live and recorded broadcasts with millisecond precision.

INTRODUCTION AND KEY CONCEPTS

Pro Play Radio is the leading automation software for zero-fault tolerance stations. Built entirely from the ground up to ensure low latency and rock-solid stability.

Main Interface: Dark Slate optimization for studio environments.

SYSTEM AND HARDWARE REQUIREMENTS

1. HARDWARE REQUIREMENTS (PC)

Processor (CPU): The software relies on clock speed to decode audio in real-time.

- **Minimum:** Intel Core i3 (8th Gen) or AMD Ryzen 3 (3000 Series). 2 Cores / 4 Threads.
- **Recommended:** Intel Core i5 (10th Gen+) or AMD Ryzen 5. Base frequency > 2.5 GHz.

RAM Memory:

- **Minimum:** 4 GB DDR4.
- **Recommended:** 8 GB - 16 GB DDR4 (required for heavy multitasking).

Storage (SSD): CRITICAL for streaming stability.

- **Minimum:** 120 GB SATA SSD.
- **Recommended:** 500 GB+ NVMe M.2 SSD. Do not use mechanical HDDs for live audio.

2. DISPLAY AND VISUALIZATION

"Single Window" design with high information density.

- **Minimum:** 1920 × 1080 (Full HD).
- **Ideal:** Ultrawide Monitor (21:9) or Dual 24" Monitors.

3. AUDIO AND CONNECTIVITY

Audio Interface: To fully utilize the mixing architecture (3 players + independent PFL).

- **Basic:** Integrated Realtek (Single stereo mix).
- **Professional:** Multichannel USB Interface (ESI Gigaport, Focusrite, Behringer U-Phoria).

Output Configuration (Target):

- Player 1 → Output 1/2 (Fader 1)
- Player 2 → Output 3/4 (Fader 2)
- Player 3 → Output 5/6 (Fader 3)
- PFL / Cue → Output 7/8 (Monitoring)

Connectivity:

- Wired Gigabit Ethernet (Mandatory, avoid WiFi).
- At least 3 free USB ports (Audio + Security + GPIO).

AOIP NETWORKS COMPATIBILITY (DANTE, RAVENNA, AES67)

The program is **100% compatible** with Audio over IP (AoIP) environments.

Native Support: The code does not include specific libraries or native routines to directly unpack Dante, Ravenna, or AES67 IP streams internally (it does not perform RTP coding by itself).

AoIP Configuration (Virtual Drivers / Virtual Soundcards): To integrate Pro Play Radio into these ecosystems, **Virtual Soundcards** are used. The software interacts perfectly with these drivers at the operating system level:

- **Dante Virtual Soundcard (DVS) / Dante Via:** Converts the Dante connection into Windows playback and recording devices.
- **Merging Audio Device (MAD) / Ravenna Virtual Audio Device:** Perform the same function for Ravenna and AES67 networks.

> 🌐 **Outputs Resolution:**
> Once these drivers are installed, they will appear as standard channels. In the program's *Audio Configuration* menu, you can assign the Players (Carts) and the PFL module to those virtual Dante or AES67 outputs immediately.

4. SOFTWARE AND ENVIRONMENT

- **OS:** Windows 10/11 (64-bit) in **High Performance** mode.
- **Libraries:** Microsoft Visual C++ Redistributable 2015-2022.
- **Antivirus:** Add exclusions to the program folder and the music directory.

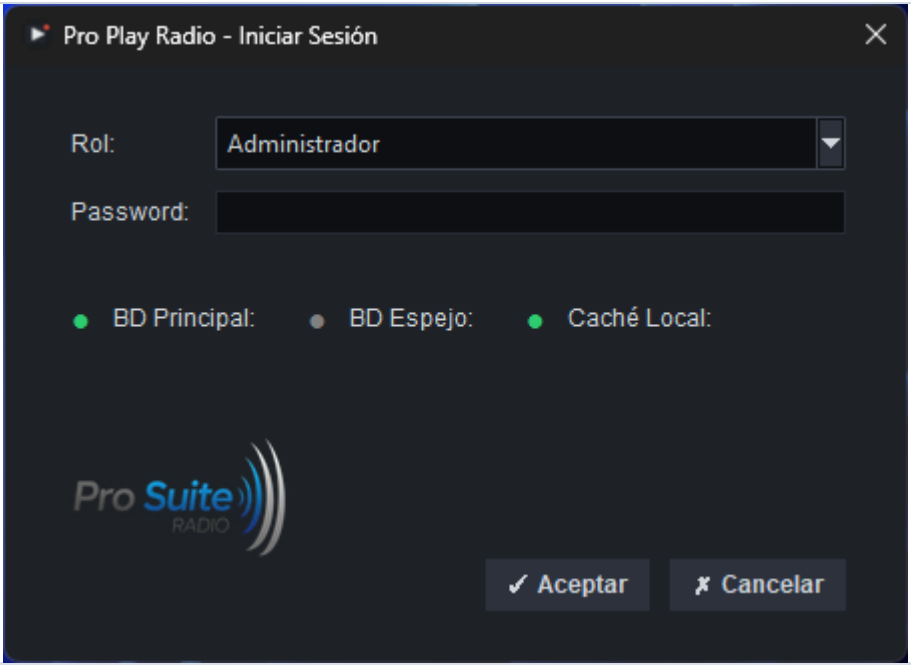
SUMMARY TABLE OF REQUIREMENTS

COMPONENT	MINIMUM (FUNCTIONAL)	RECOMMENDED (BROADCAST)
Operating System	Windows 10 (64-bits)	Windows 10 / 11 (High Performance)
Processor (CPU)	i3 (8th Gen) / Ryzen 3	i5 (10th Gen+) / Ryzen 5 (> 2.5 GHz)
RAM Memory	4 GB DDR4	8 GB - 16 GB DDR4
Storage	SATA SSD (120 GB)	NVMe M.2 SSD (500 GB+)
Monitor	Full HD (1920×1080)	24" / Ultrawide / Dual Monitor
Audio	Stereo Integrated	Multichannel Interface (4+ Outputs)

🚀 **Ideal Machine:**
Mini PC i5 (12th Gen), 16GB RAM, 500GB NVMe, 24" IPS Monitor, and USB Multichannel Card.

INSTALLATION AND COMMISSIONING

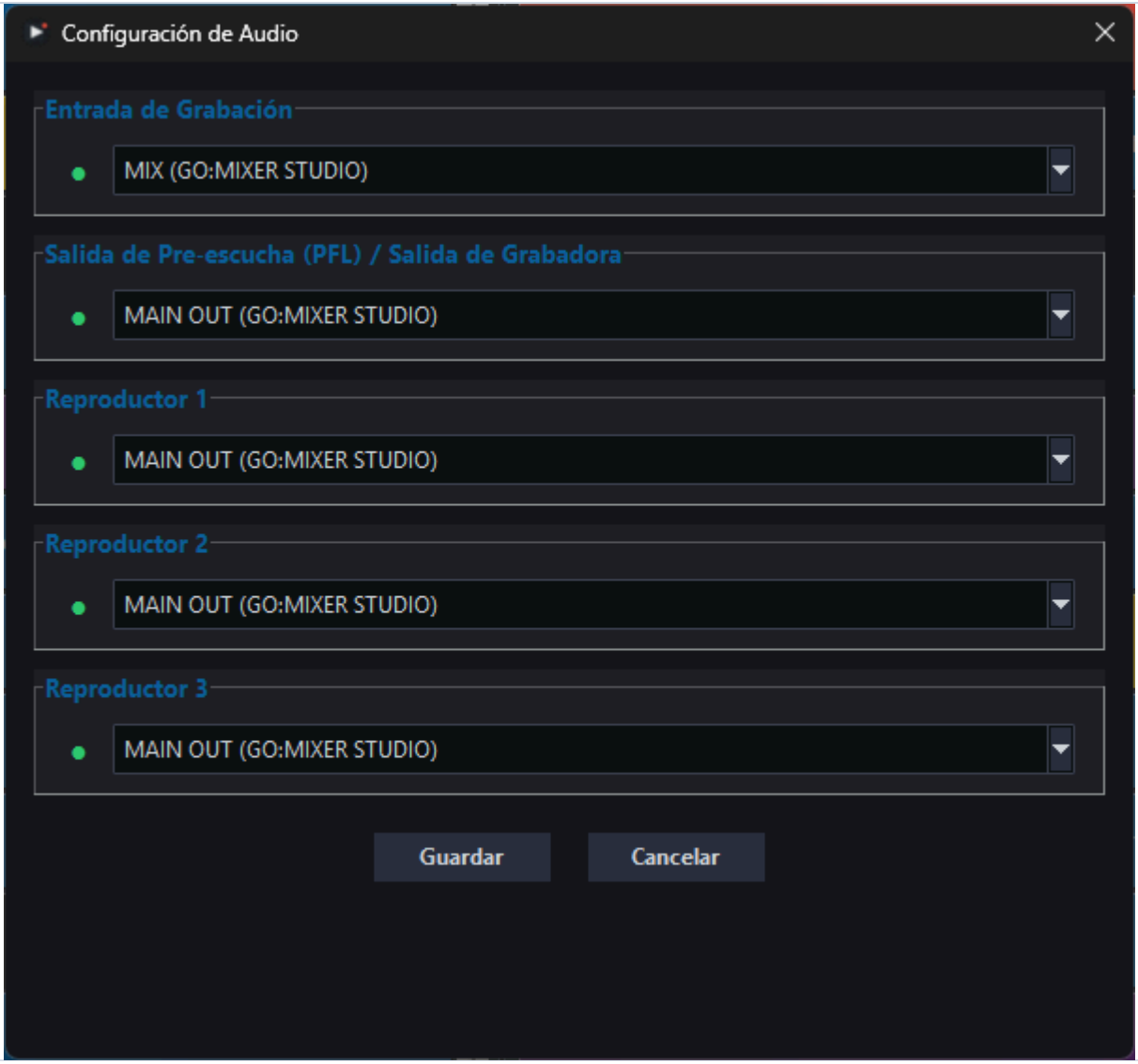
The installation is a straightforward process. The program runs optimized on Windows 10/11 without the need for complex installers that clutter the system registry.



License activation screen and first login.

ASIO AUDIO CONFIGURATION

The first critical step is to assign the audio outputs. Pro Play Radio allows separating the **Live** output from the **PFL** (Pre-fade listen) output.



Configuration of input, output, and monitoring (PFL) devices.

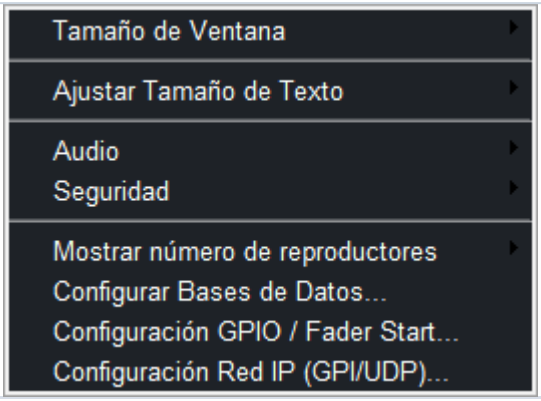
⚠️ **Technical Note:**
Always connect the USB Dongle directly to a motherboard port, avoiding cheap USB hubs to prevent cuts in license verification.

THE PROFESSIONAL INTERFACE (DARK SLATE)

The visual environment uses the **Dark Slate** scheme, designed to mitigate eye fatigue and highlight critical timing elements.

QUICK SETTINGS MENU

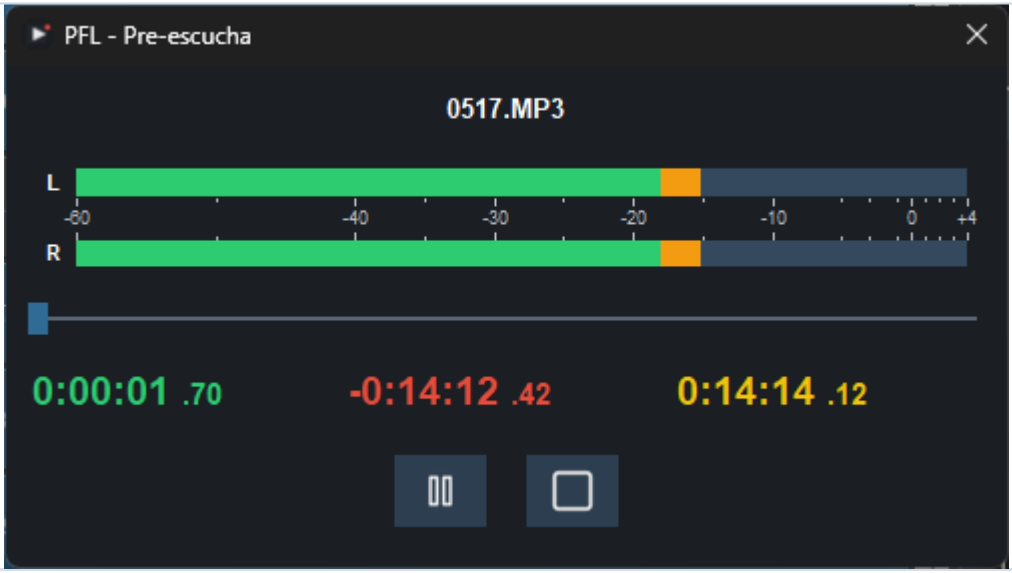
Access all vital settings from the top contextual menu, allowing dynamic adjustments of audio, databases, and security without stopping the broadcast.



Quick access menu for administration and configuration functions.

PRECISION DBFS VU METERS

The integrated VU meters follow the linear scale standard with soft fall. The red zone indicates digital saturation (Clips) above 0 dB.



Level monitoring in the PFL system to ensure optimal gain.

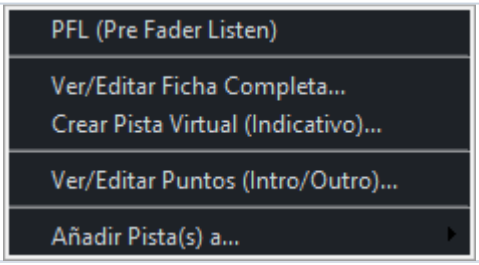
DAILY OPERATION AND AUDIO MANAGEMENT

The handling is tactical and intuitive. Audio loading is managed through the high-speed explorer that indexes thousands of files in seconds.

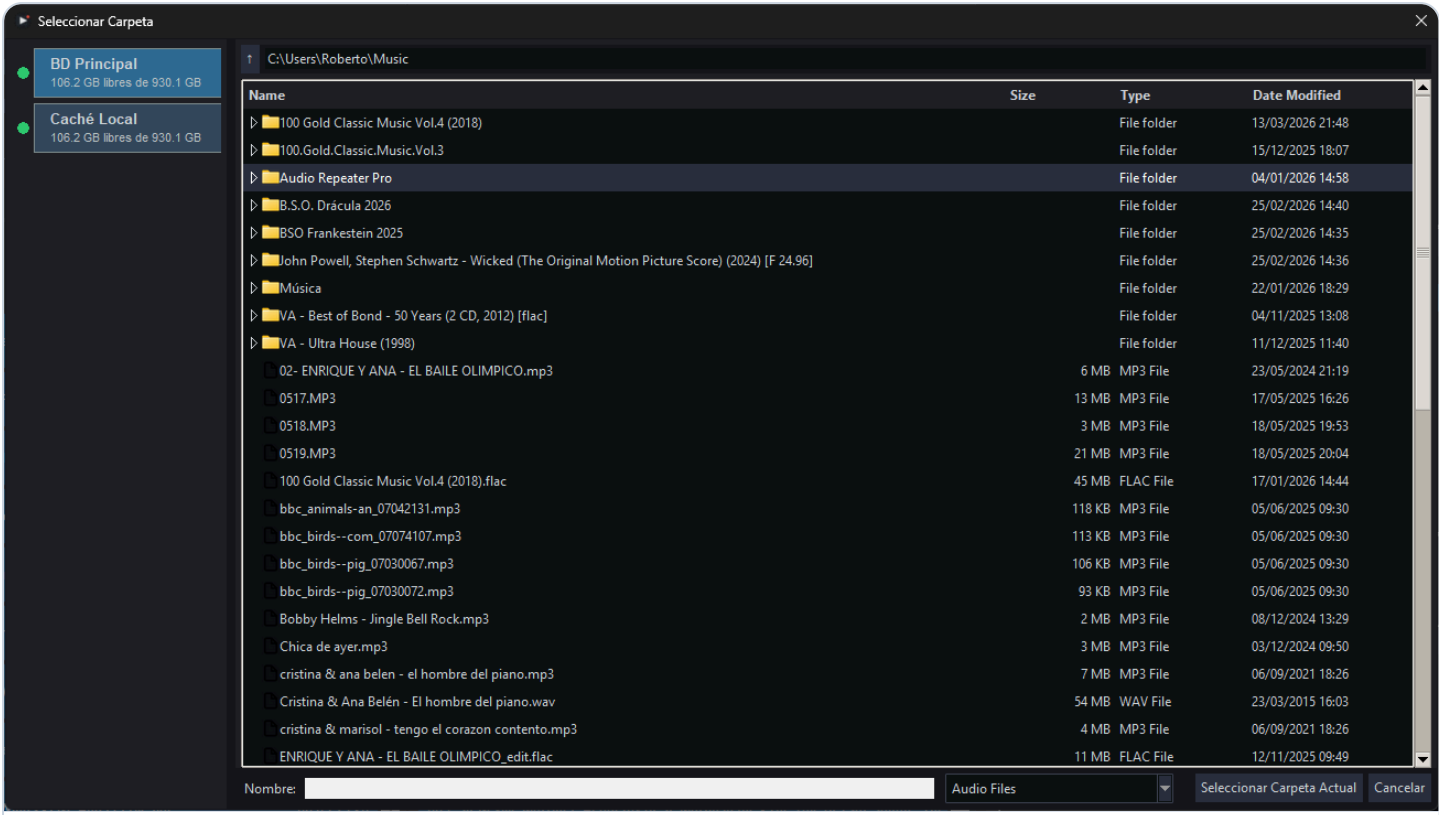
CHAIN PLAYBACK BEHAVIOR

Each player allows defining how it will behave at the end of the current track. This is vital for the fluidity of the broadcast and the management of advertising blocks.

ICON	OPERATION MODE	CHAIN BEHAVIOR
	AUTO-NEXT	Upon finishing a track, immediately triggers the next in the list. Ideal for advertising blocks.
	LOOP	Loops the current track indefinitely. Useful for "beds" or news backgrounds.
	STOP-END	Stops playback at the end and prepares the next track in "Cued" mode (highlighted red).
	DELETE-AFTER	Unloads the file from the player once played to keep the grid clean.



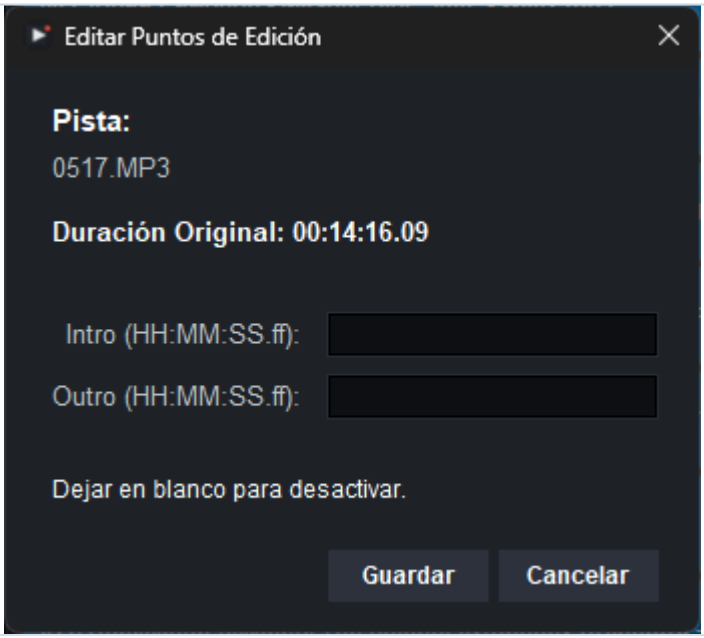
Contextual quick access menu for editing and playback tools.



File explorer with database and cache status indicators.

MIXING POINTS (INTRO / OUTRO)

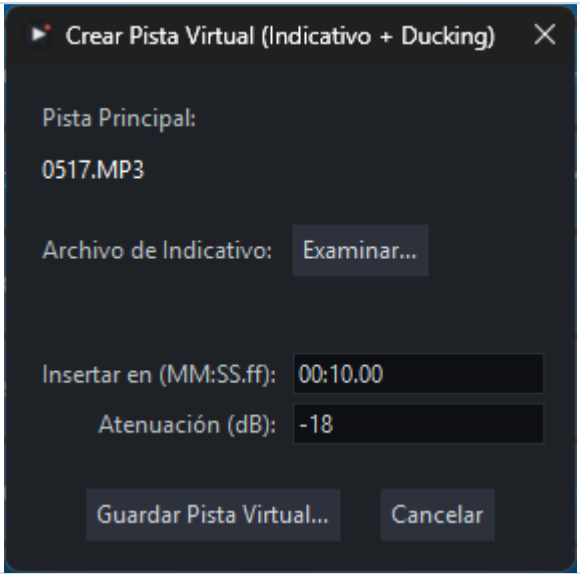
For millimetric transitions, the system allows defining **Intro** (start of voiceover) and **Outro** (end of voiceover) marks, ensuring that the automation performs crossfades with surgical precision.



Mixing points editor for professional transitions.

VIRTUAL TRACKS WITH DUCKING (.PROMIX)

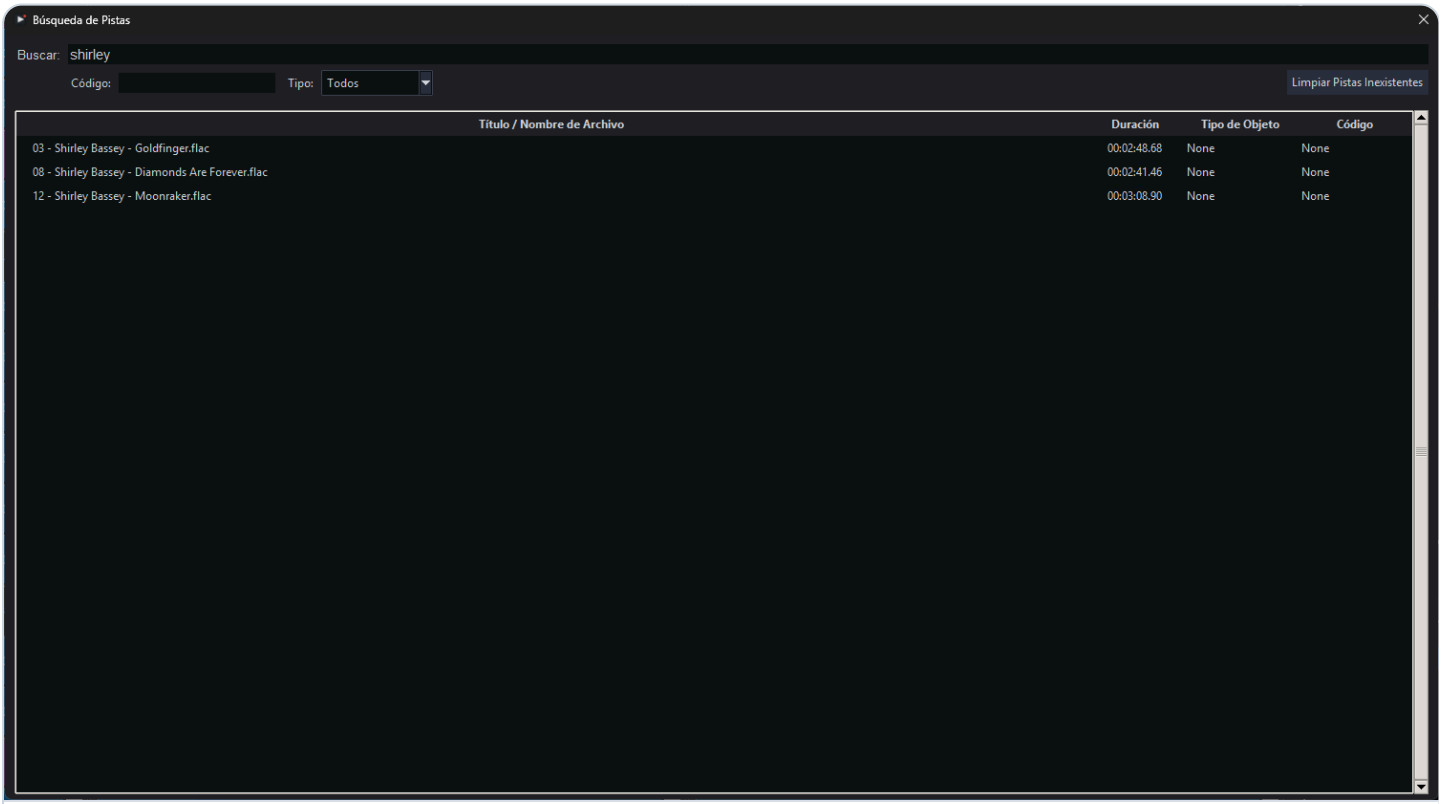
Exclusive to Pro Play Radio is the ability to create **Virtual Tracks**. This allows inserting a sweep or voice drop over a main song, automatically applying ducking at the desired decibels without modifying the original file.



Voice insert configuration with programmable background ducking.

ADVANCED TRACK SEARCH

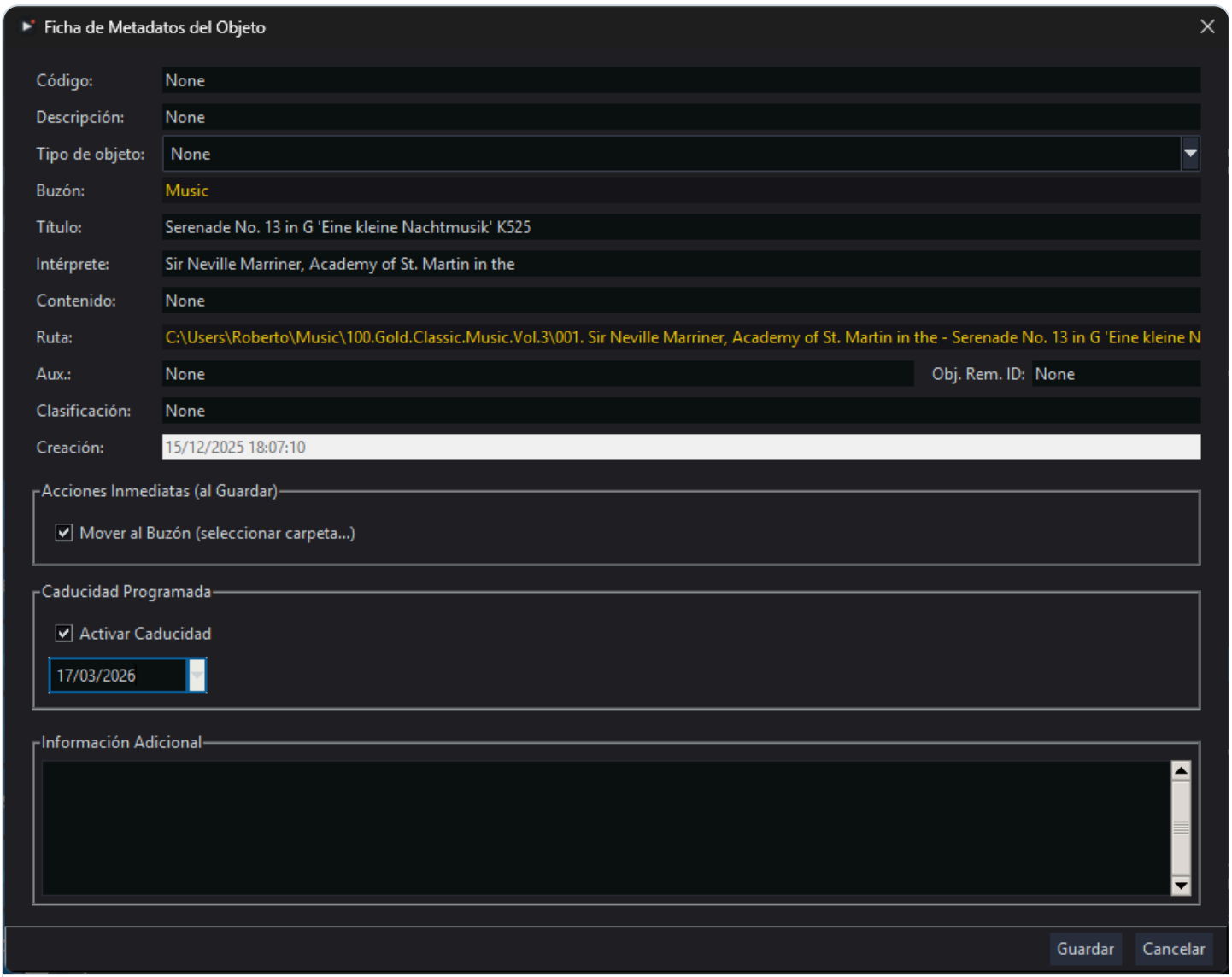
Locate any file in your library instantly by filtering by code, title, or object type.



Optimized search interface for high-speed operations.

METADATA EDITING AND EXPIRATION

Each audio object has a "Metadata File" where programming parameters, alternative paths, and automatic expiration dates are defined.



Detailed configuration of metadata, folders, and expiration control.

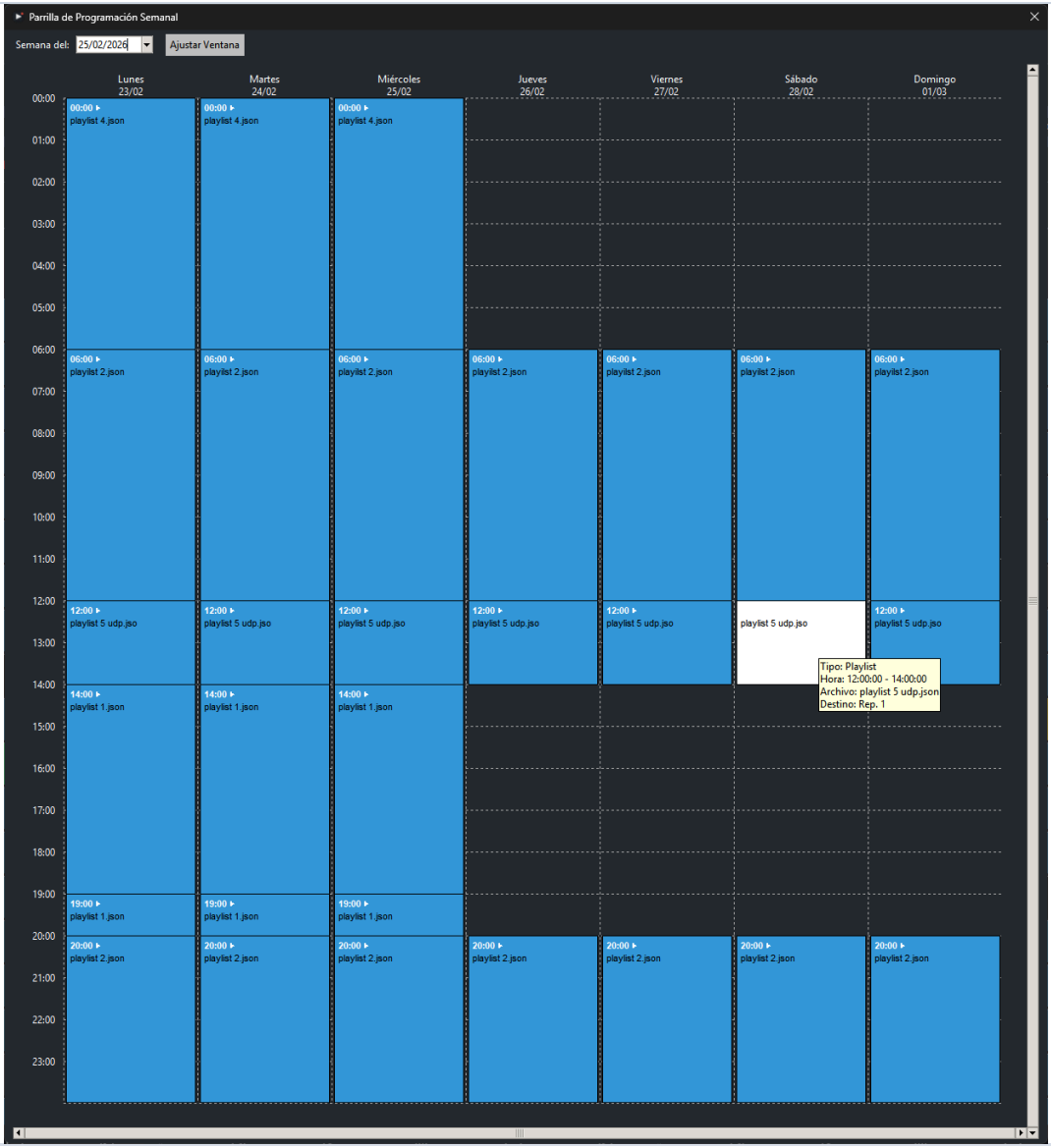
FAST RECORDING AND EDITING

Capture audio in real-time from any system input and make quick cuts before saving in FLAC or WAV format.

Integrated audio recording and waveform editing tool.

AUTOMATION AND SCHEDULING

The heart of the station lies in its ability to schedule content in advance using the weekly grid.



Weekly scheduling grid: visual assignment of blocks and playlists using color coding.

Block Management:

The grid provides a macro view of the week. You can drag playlists (.json) to any time slot. The system manages early loading (Pre-load) to ensure the first audio frame is ready exactly at the scheduled second.

SATELLITE DISCONNECTION PRECISION

Turn your software into an IP decoder that reacts to external commands to "pick up" the network (Headend) signal and release it. Schedule hourly triggers or via **UDP Commands**. The system ensures a clean transition with no "clicks" or abrupt cuts using automatic crossfades.

Previous Setup:

Ensure that in *Settings > Audio*, the "Recording Input" is correctly selected (it must be the physical line where the central station's audio enters). Also, in *Settings > IP Network*,

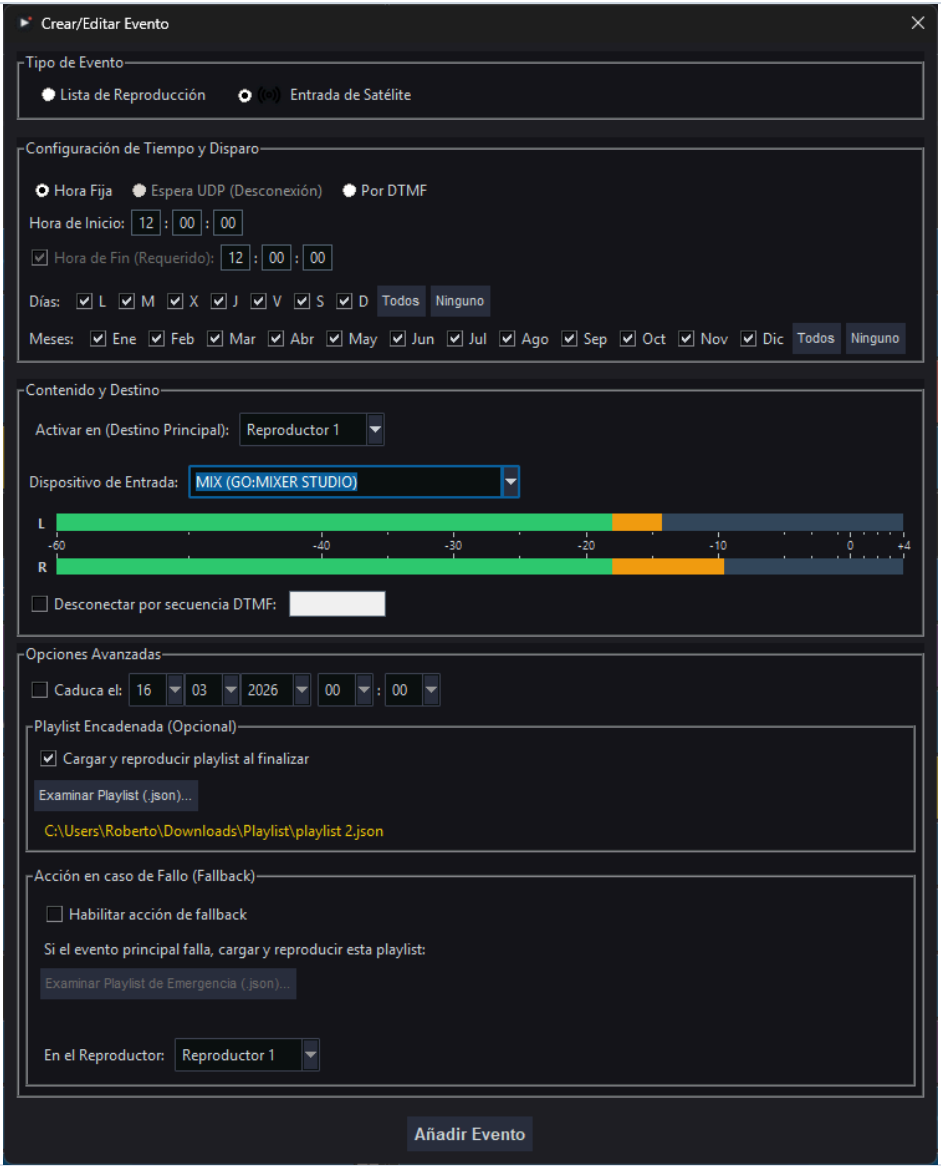
check the box and configure the local UDP listening port (e.g. 9000).

Supported UDP Commands for Satellite

- **Connect (News/Network):** Send the UDP text `SAT_START 1` to the local port (9000). The program will silence what is playing, turn Player 1 red ("SATELLITE INPUT ACTIVE"), and open the line input audio directly.
- **Disconnect (Local Block):** Send the UDP text `SAT_STOP` to port 9000. The program will cut the headend audio and begin a smooth and safe fade-out back to local continuity.
- **Traditional Local Control:** Use `PLAY 1` to start the loaded local advertising, and `STOP 1` to stop it prematurely if necessary.

💡 **PRO Tip - Advertising Automation:**

If the central station sends a UDP pulse right before advertising, configure your external matrix to send Sequences:
1. `SAT_STOP` (Cuts national network).
2. `PLAY 1` (Starts local advertising loaded on Player 1).
And after the block ends (or via another timer): `SAT_START 1` (Returns smoothly to the national network).



Event Editor: Note the 'Satellite Input' option to toggle external sources automatically or trigger internal logic.

SECURITY AND FALLBACK

To guarantee continuity, Pro Play Radio allows defining a **Fallback Action**. If the main event encounters a corrupt file or a signal-less satellite input, the system will automatically switch to a predefined emergency playlist.

EXTERNAL CONTROL: RS232, GPIO, AND UDP

Integration with physical hardware is essential for professional operation.

INSTANT FADER START (GPIO RS-232)

To operate Fader Start with maximum reliability (a dedicated COM port per player), you need to understand how the software interacts with physical contacts via the serial port (RS-232). This architecture avoids complex digital schemes by prioritizing direct port-to-port control.

1. Required Hardware

- **3 USB to Serial Adapters (RS-232 DB9):** These are affordable cables (USB-A to DB9 Male connector). Once connected, Windows assigns them a port (e.g. COM3, COM4, COM5).
- **DB9 Female Connectors:** To solder and wire to the GPOs of your mixing console.

2. Pinout and Connection Scheme (The Circuit)

The standard DB9 connector has 9 pins, but the Pro Play Radio GPIO system only requires **two** to close the trigger circuit:

- **Pin 4 (DTR): Voltage Output (+).** Acts as "power supply". *(Optionally you can use Pin 7 RTS for the same result).* Connect this pin to one side of the contact on your console's fader.
- **Pin 8 (CTS): Trigger Input (In).** Acts as "detector". Connect to the other side of the contact on your console's fader.

Electrical Flow: The program permanently activates the output of Pin 4. When the operator raises the fader, the console's internal relay closes, allowing current to flow from Pin 4 to Pin 8. The driver detects this voltage and triggers the `PLAY` action in milliseconds.

3. Bench Test (Short Circuit Test)

Allows isolating and verifying that the software correctly interacts with the Serial adapter over logic levels:

1. Connect a free USB-Serial adapter to the PC. Check the **Device Manager** for its ID (e.g. COM3).
2. In *Settings > GPIO* of Pro Play Radio, assign COM3 to Player 1 and save.
3. Load an audio segment in Player 1.
4. Using a clean metallic clip or wire, touch bridging **Pin 4 and Pin 8 simultaneously** on the connector.
5. The event will be detected and playback will start instantly.

4. Connection to Broadcast Mixing Consoles

Specialized consoles (D&R, AEQ, Axel, Allen&Heath) have "Fader Start", "GPI" or "Remote" output blocks, generally based on **Optocouplers** or **Dry contact relays**.

1. Consult your console's manual to locate the two "Remote Start" pins corresponding to Fader Channel 1.
2. Wire **Pin 4 (DB9)** to contact "A" on that console channel.
3. Wire **Pin 8 (DB9)** to contact "B" on the same channel.
4. Repeat this wiring for Faders 2 and 3, connecting them to new independent adapters (COM4, COM5).

Direct COM port assignment in the hardware configuration menu.

NETWORK CONTROL (UDP GPI/GPO)

Enable full remote control via network packets, allowing bidirectional interaction with modern digital mixing consoles. Open *Settings > IP Network Configuration* and activate the checkbox.

Port Routing (Multiple Players)

If your digital mixer has, for example, the local IP **192.168.1.100**, you can configure in the network panel that the software responds independently:

- **Player 1:** IP 192.168.1.100, Port **9001** (Console Channel 1)
- **Player 2:** IP 192.168.1.100, Port **9002** (Console Channel 2)
- **Player 3:** IP 192.168.1.100, Port **9003** (Console Channel 3)

Each player turns its channel on. The main reception (GPI) enters through a single local port (e.g. 9000), but because the command includes the internal ID (`PLAY 1`, `PLAY 2`), the routing automatically hits the correct player.

Bidirectional Commands (GPI / GPO)

- **Reception (GPI):** Configure the Local Port on 9000. From any PC or console, send a UDP packet to the broadcast computer's IP on port 9000 with the text `PLAY 1`. The player will start immediately.
- **State Output (GPO):** Configure the destination IP (e.g. a Tally light controller). Upon giving Play manually (or receiving via network) on Player 2, the software will forward `PLAYING 2` to the target IP automatically.

Fader Behaviors (Drop Action Menu)

You can accurately define how each player reacts to pulling down the fader on your physical desk (STOP command sent over the network):

- **Music:** Generally **Stop** is preferred, so when sliding up the fader the song starts over or skips.
- **Interviews/Voice Drops:** Recommended setting is **Pause**, allowing you to lower the fader for the speaker and raise it again to resume exactly where it was.
- **Long Voiceovers:** Select **None**, so the fader only changes cabin volume, but the software clock and audio continue running in the background unaffected.

Local Network Configuration (UDP GPI/GPO)

The new Network Configuration window allows integrating Pro Play Radio with digital consoles and remote automation systems through IP (UDP) protocols. This module centralizes incoming and outgoing commands without needing complex external matrixes.

- **GPI (Command Input):** Defines a local port (default 9000) for receiving external control requests. Supported commands: `PLAY 1`, `STOP 1`, `SAT_START 1`, `SAT_STOP`.
- **GPO (Telemetry Output):** Configures the remote console's IP and port for all 3 players. Defining behavior upon turning a track off (STOP, PAUSE, or NOTHING).
- **Health Indicators:** A real-time LED indicator confirms if the software is listening to and managing network traffic.

IP Configuration Panel. Observe cell allocations per player, and visual health indicators.

IP SYNCHRONIZATION AND REMOTE CONTROL

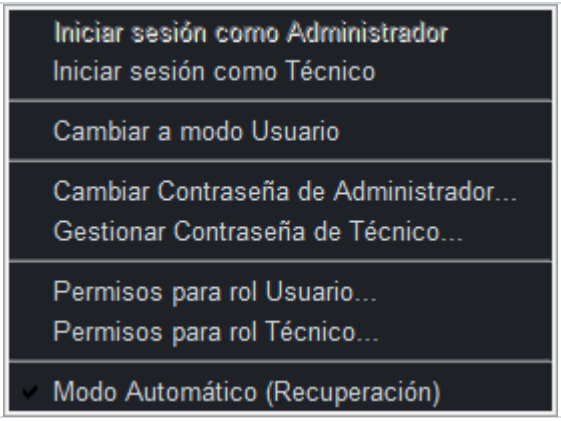
The system handles the reception (GPI) and emission (GPO) of real-time telemetry for smooth network integration.

SECURITY, REDUNDANCY, AND AUDITING

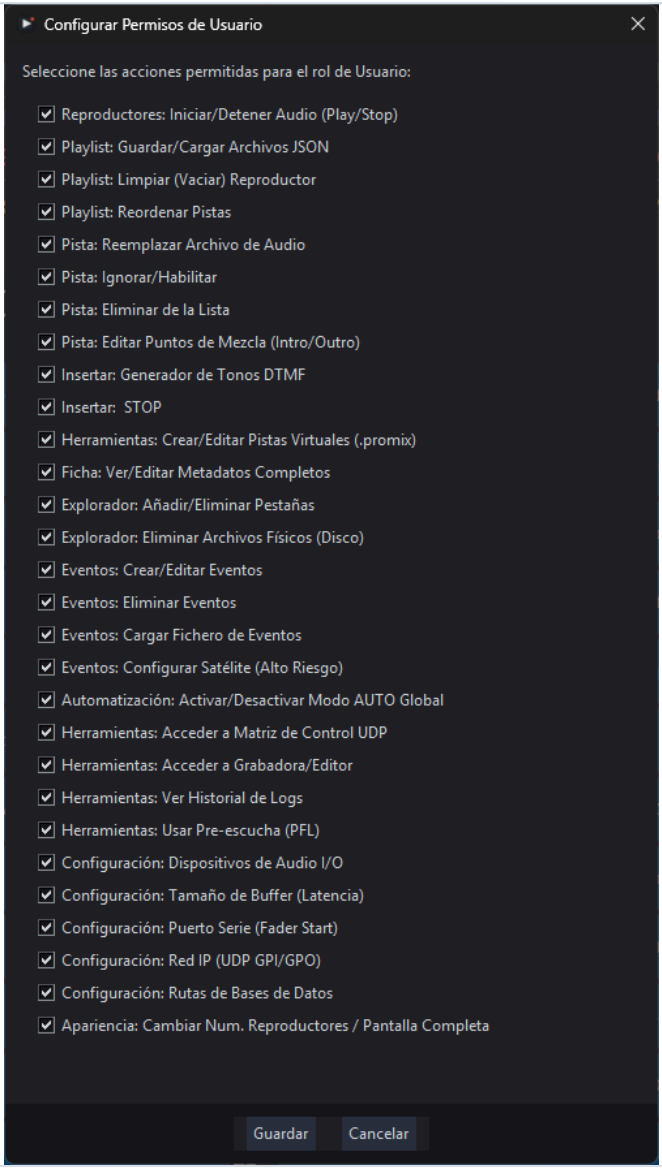
Protect your broadcast against network failures and unauthorized access.

RING-BASED ROLE PROTECTION

The software permits switching among **Administrator**, **Technician**, and **User** profiles using a quick menu, facilitating security auditing without closing the application.



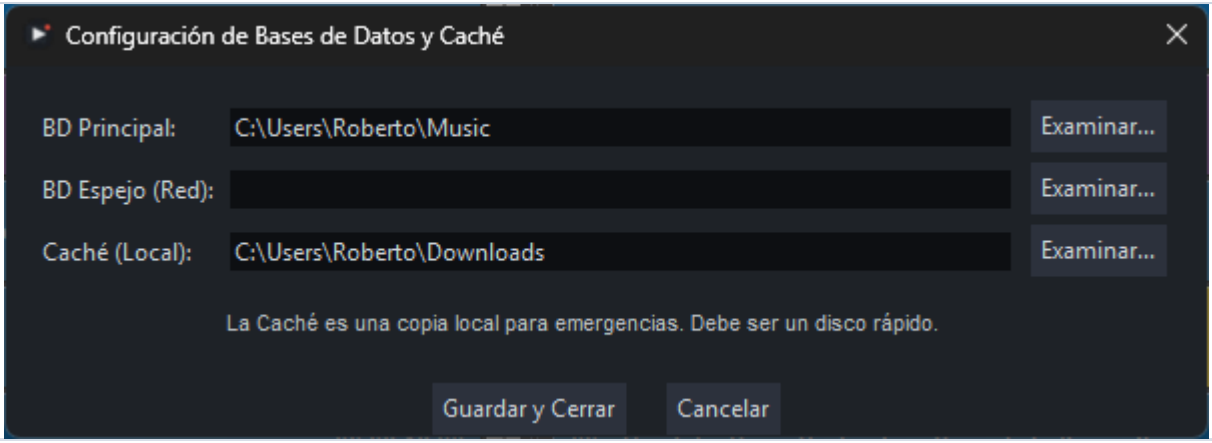
Quick menu for role changes and password management.



Detailed management of user profiles: restrict actions from recorder usage to deleting files.

CRITICAL DATA REDUNDANCY

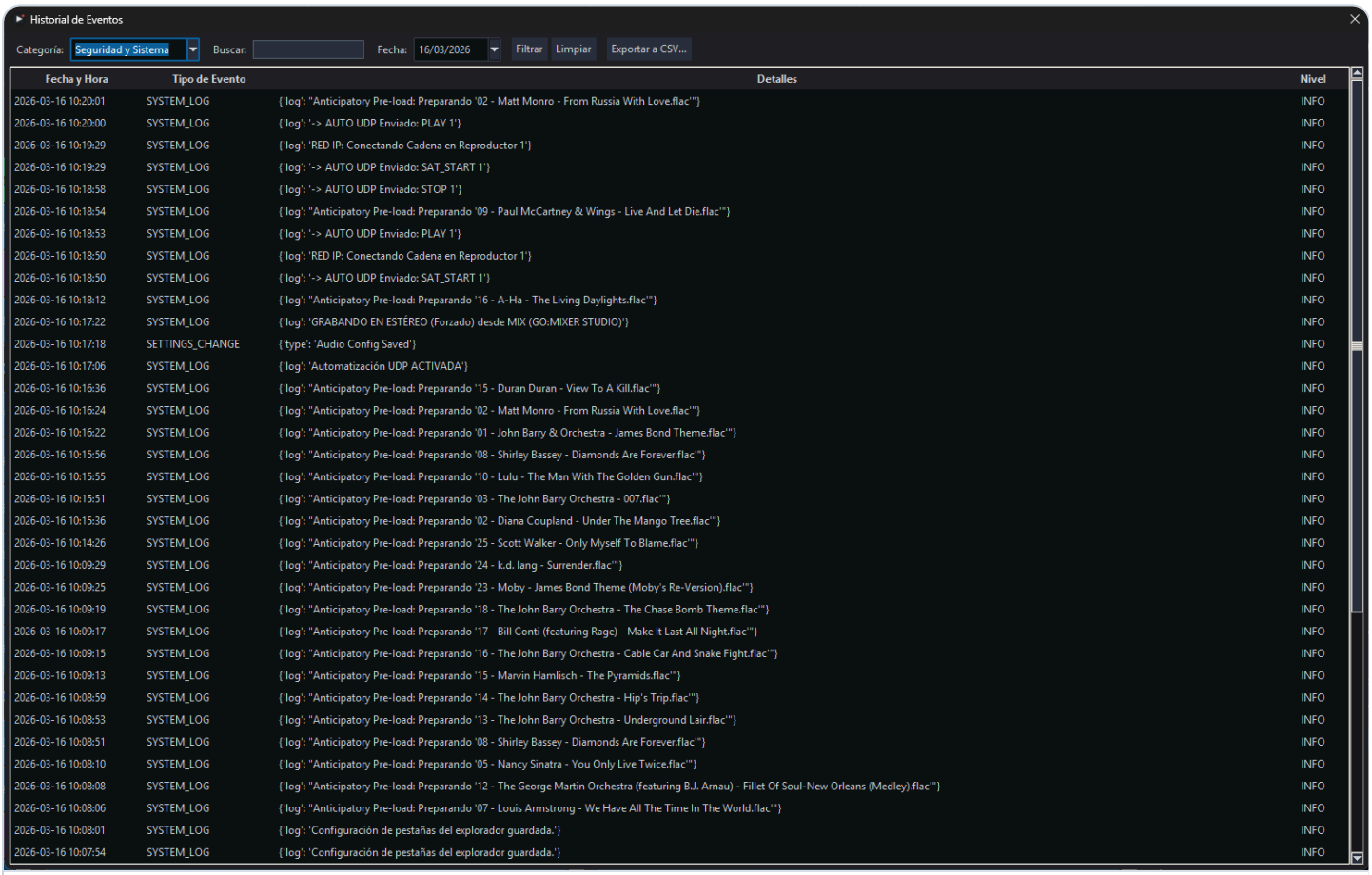
Set mirror paths to guarantee the system never loses connection to its audio database.



Main DB, Mirror DB, and Local Cache setup board.

EMISSION LOGS AND AUDIT

Keep a comprehensive record of every event generated, setting altered, and command received.



Event logs filtering by category and CSV export capabilities.

TECHNICAL SUPPORT AND DIAGNOSTICS

Advanced toolkit to assure exceptional performance stability.

Emergency Protocol:

Should network connections be severed, the software instantly resorts to its contingency mode, pulling files automatically from the local SSD storage cache.