



Companion — RFutils user guide

This module puts a **radio-mic rack on a control surface**, through [RFutils](#): per-channel battery, RF and audio state across mixed vendors, and frequency programming.

The [README](#) covers installing the module. This is how to build a page that tells you the truth about a rack.

Before you rely on this: how much to trust a *reading* depends on the vendor adapter behind it, not on this module. RFutils' README carries a **Protocol status** table, and the Sennheiser adapter is labelled an *unverified skeleton*. A channel showing nothing may be the receiver, the network, or the adapter.

This module was built with AI assistance, directed and reviewed by a human author.

Connecting

The RFutils server, port **8420** by default.

No authentication, and it binds 0.0.0.0. Keep it on a trusted production network.

Set the battery and RF thresholds in the connection config, not on each button. Every channel tile then agrees without you editing forty buttons, and a change before doors applies everywhere.

Reading a channel tile

Colour	Means
default	fine
amber	battery low, or RF weak
red	battery critical
blue	this channel has stopped reporting

Blue wins over everything, and it is the important one.

Every threshold here goes dark when a receiver goes quiet rather than showing its last value — because without that, **a dead receiver looks healthy**. The variables read `--` for the same reason: a

battery percentage from twenty minutes ago looks exactly like a current one, and the one time that matters is the one time it will cost you.

Audio present and audio silent

Both take a dBFS threshold, and they are different questions:

- **-60** catches "the mic is open".
- **Towards -20** catches "someone is actually talking".

Pick per page. A cue light wants the second; a fault light wants the first.

Both go dark on a stale channel, because **silence and no-information are different things** and a page that conflates them will send someone on stage to fix a receiver that is fine.

RF is normalised across vendors

RF is reported 0–100 whatever the receiver is, so **one threshold means the same thing on every box in the rack**. That is the point of putting a mixed rack behind one server.

Battery is not always so cooperative — read the vendor's own units where the adapter exposes them.

Programming receivers

Program frequencies to receivers sends commands to real hardware that may be in use on a show.

It is a **dry run unless *Actually transmit* is ticked**, and the log line says which happened. Leave it as a dry run while you build the page, and read the log before you tick the box.

Building a surface that fails safe

1. **Blue on every channel tile**. Without it the rack lies about its dead channels.
2. **Thresholds in the connection config**, so the whole page agrees.
3. **Audio-present at the threshold that matches the question** the page is asking.
4. **Programming buttons on their own page**, dry-run by default.

Troubleshooting

Symptom	Cause
A channel is blue	It has stopped reporting. Receiver, network, or adapter — in that order of likelihood.
Variables read <code>--</code>	Same thing. A stale value is deliberately not shown.
A channel never reports anything	Check RFutils' Protocol status table for that vendor — the Sennheiser adapter is an unverified skeleton.
Audio-present never lights	The threshold is set for speech (<code>-20</code>) rather than for an open mic (<code>-60</code>).
Programming did nothing	It was a dry run. <i>Actually transmit</i> was not ticked; the log says so.

See also

- [README](#) — installing, and the full action/feedback/variable list
 - [companion/HELP.md](#) — the same material, in Companion's help panel
 - [RFutils](#) — the server, and its **Protocol status** table
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