# AARON 650

## Premium FM Rebroadcast Receiver


AARON 650 is Inovonics' third generation FM rebroadcast/translator receiver built to handle the most challenging reception conditions. Boasting sensitivity and selectivity superior to even the most elite professional or consumer radios, AARON 650 combines premium features with unparalleled receiver performance.

AARON operates in either a composite pass-through or composite-regeneration mode. Composite pass-through eliminates retransmission delay (latency), and composite-regeneration provides the ability to completely reconstruct your baseband signal for lower noise, and even alter your RDS messaging prior to rebroadcast.

Rear-panel connectors provide dual 50 Ohm (N) antenna inputs, dual adjustable Composite outputs, Balanced Analog, and AES-digital audio outputs, plus IP access for web-based remote control and monitoring. Rear-panel and self-logging alarms constantly check for Audio Loss, RF Loss, and RDS Loss (or 'hijacking'). Advanced notifications alert personnel with email or SMS messaging when any or all of the the alarms occur.

The front panel displays left and right audio metering, local LED alarms, and an LCD screen with jog wheel for advanced control and editing of all operating parameters. Failover audio backup is provided via a front-panel SD Card or Web stream should your signal go down.

INOVONICS BROADCAST

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# AARON 650 FM REBROADCAST RECEIVER

AARON 650's "responsive" Web Interface allows complete setup, listening, logging, and control of the unit from your PC, tablet, or smartphone, and reliable 2-way connectivity is ensured with a built-in Dynamic DNS utility. Advanced off-air metering tools include an FM BandScanner and FFT of the MPX spectrum. Reception bandwidth, auto-blending, and many other receiver parameters are controlled via manual or automatic reception processing.

## FEATURE HIGHLIGHTS

- Unparalleled DSP-based receiver performance
- Composite Pass-Through and Baseband Regeneration modes
- Dual Antenna and Composite Outs, Balanced Analog, and AES-Digital Program Line outputs
- Active reception processing for Bandwidth, Stereo Blend, HF Blending, and Multipath Mitigation
- Advanced metering includes an FFT Spectrum Analyzer for the MPX, Left/Right XY plots, and audio levels over time
- Built in BandScanner for local RF Spectrum Analysis
- Local alarm tallies plus self-logging alarms constantly check for Audio Loss, RF Loss, and RDS Loss
- Failover audio or web-stream backup
- Remote control web interface and listening plus email and text notifications
- SNMP remote monitoring and control

AARON 650's "responsive" Web Interface allows remote control, monitoring and even listening from a variety of mobile and desktop devices.


# TECHNICAL SPECIFICATIONS

## GENERAL PERFORMANCE

**Tuning Range:**
65.0MHz - 108.0MHz in 200kHz, 100kHz, or 50kHz steps

**Sensitivity/Noise Performance:**
(Unweighted monaural SNR for AES Digital and L/R Analog line outputs; referenced to ±75kHz carrier deviation at specified RF input levels):

≥82dB Digital, ≥80dB Analog at 60dBµv
≥78dB Digital, ≥76dB Analog at 40dBµv
≥60dB Digital/Analog at 20dBµv
≥50dB Digital/Analog at 10dBµv
≥43dB Digital/Analog at 0dBµv

**Selectable IF bandwidths:**
311kHz, 287kHz, 254kHz, 236kHz,
217kHz, 200kHz, 184kHz, 168kHz,
151kHz, 133kHz, 114kHz, 97kHz,
84kHz, 72kHz, 64kHz and 56kHz

**Frequency Response:**
MPX Output (pass-through): ±0.5dB, 20Hz - 100kHz; Line Outputs (digital/analog): ±0.2dB, 20Hz - 15kHz

**Stereo Separation (at 1kHz):**
MPX Output: ≥45dB in pass-through mode, ≥50dB in MPX-regen mode; Line Out (digital/analog): >50dB

**Program Signal Latency (Delay):**
MPX Output: ≤250µs in pass-through mode, ≤2.4ms in MPX-regen mode; Line Out (digital/analog): ≤2.4ms

**De-Emphasis (Line Outputs):**
75µs or 50µs

**Radio Data System:**
(Pass-Through or Regen): RDS/RBDS

## INPUTS & OUTPUTS

**Antenna Inputs:**
Two 50-ohm (N), assigned by station presets

**Composite/MPX Outputs:**
Two (BNC), independently adjustable between 1V p-p and 6V p-p for ±75kHz carrier deviation; 75-ohm source impedance.

**Digital Line Output:**
AES3 (XLR) 24-bit stereo output adjustable between –30dBFS and 0dBFS for ±75kHz carrier deviation, with or without de-emphasis; 32kHz, 44.1kHz or 48kHz output sampling rate.

**Analog Line Outputs:**
Active balanced (XLR) adjustable between –20dBu and +18dBu (+15.5dBm) for ±75kHz carrier deviation, with or without de-emphasis; 200-ohm source impedance.

**USB Port:**
Delivers raw RDS data for analysis

**Network Port:**
RJ45 jack TCP/IP network connection for complete remote setup and operation of the AARON 650 with full SNMP support.

**Headphone Jack:**
Quarter-inch (TRS), monitors off-air program signal; menu-adjustable volume

## FAILOVER AUDIO PROTECTION

Upon loss of incoming carrier, loss of program audio, or RDS 'hijacking,' the off-air program may be replaced with pre-recorded material on a plug-in SD card, a Web-streamed audio feed, or a secondary off-air frequency.

## MISCELLANEOUS

**Composite/MPX Processing:**
In either the pass-through or MPX regeneration modes, up to 3dB of composite clipping may be engaged to better define the FM deviation limit. The 19kHz stereo pilot and the 57kHz RDS subcarrier are stripped, filtered and reinserted after the clipper.

**Test Tone Generator:**
20Hz - 20kHz; 60dB attenuator

**AC Mains Requirements:**
90 - 130VAC or 200 - 255VAC, 50/60Hz; 5W

**Size and Weight:**
H: 1¾in/44mm, W: 19in/483mm, D: 9½in/240mm (1U)
9lb/4kg (net), 12lbs/5.4kg (shipping)

**Environmental:**
32°F/0°C to 122°F/50°C; 0-95% non-condensing relative humidity; 10,000ft/ 3048m

**Conformances:**

CE EN50081-1
EN50082-1
93/68/EEC

RoHS 2002/95/EC

Made in USA

3 year WARRANTY