AARON 655

FM / FM-HD Radio® Rebroadcast Receiver

AARON 655 introduces digital HD Radio to Inovonics' line of high performance rebroadcast/translator receivers. The AARON series excels in even the most challenging reception conditions, combining premium features with unparalleled performance.

AARON 655 can select among multiple program sources: off-air analog FM, HD Radio channels HD1-8, IP-streamed programming and analog and digital line inputs. The included RDS/RBDS encoder can regenerate and customize incoming data or convert HD Radio PAD or streamed metadata to the RDS display format. The composite/MPX output is complemented by configurable analog and digital line outputs.

More than just a receiver, AARON 655 includes comprehensive audio processing with 10 factory and 10 user presets. This makes it easy to craft a custom 'sonic signature' from any selected program source.

In addition to quick and easy front-panel setup, an IP interface allows 2-way program streaming, plus total remote addressing and control with any PC or mobile device, including remote listening and full SNMP support.

Reception alarms may be programmed to switch programming to backup sources. Alarms trigger local tally closures and instantly dispatch SMS/email notifications to selected personnel. Alarms are also logged for later analysis.

HD Radio

INOVONICS BROADCAST

5805 Hwy 9, Felton CA 95018
www.inovonicsbroadcast.com

AARON 655 FM / FM-HD REBROADCAST RECEIVER

AARON rebroadcast receivers feature a “responsive” Web Interface, allowing complete setup, listening, logging and control of the unit from your PC or mobile device. Reliable 2-way connectivity is ensured with a built-in Dynamic DNS utility. Advanced off-air metering tools include an FM/HD BandScanner™ for a spectral display of the entire band at the receiver location.

FEATURE HIGHLIGHTS

- Uncompromising DSP-based (SDR) receiver performance
- Accepts program audio from analog FM, digital HD1 through HD8 programs, streaming sources and analog or AES-digital line inputs, all with assignable failover audio backup
- Audio processing with AGC, parametric EQ, bass ‘punch’ enhancement, multiband compression, independent broadband/HF peak control and composite clipping
- A regenerated and peak-controlled composite/MPX output, plus balanced analog and AES-digital program line outputs for exciters with built-in stereo generators
- An internal RDS/RBDS encoder that can customize incoming off-air RDS data, convert HD Radio PAD to RDS, convert streamed metadata to RDS, or receive IP Telnet data
- An intuitive remote-control Web Interface with remote audio monitoring; self-logging reception alarms give instant email and text notification
- SNMP remote monitoring and control of all AARON 655 functions
- A built-in BandScanner™ for a snapshot of the local RF spectrum

AARON 655’s “responsive” Web Interface allows remote control, monitoring, and even listening from a variety of mobile and desktop devices.

TECHNICAL SPECIFICATIONS

RECEIVER PERFORMANCE

Tuning Range: (processing bypassed)
87.5MHz - 107.9MHz in 100kHz steps

Sensitivity/Noise Performance:
5dBµV for 50dB unweighted, monaural analog-FM SNR

Off-Air Frequency Response:
Analog-FM: ±0.5dB, 20Hz - 15kHz
HD Radio: 20Hz - 20kHz (per certification spec.)

FM De-Emphasis:
75µs or 50µs, menu-selectable

Stereo Separation (at 1kHz):
Analog-FM: >50dB
HD Radio: >90dB

Radio Data System:
Analog-FM: RDS/RBDS, menu-selectable
HD Radio: "PAD"

Program Signal Latency (Delay):
3.7ms to analog line out, 4.53ms to digital line out, 4.1ms to MPX out

INPUTS & OUTPUTS

Antenna Input:
50Ω (N)

Composite/MPX Output:
75Ω (BNC); 1V p-p - 6V p-p for ±75kHz FM carrier deviation

Program Line Inputs:
Analog: Active-balanced (XLR) accepts '0VU' line levels between –15dBu and +15dBu; +24dBu clipping
AES Digital: Balanced (XLR) accepts peak line levels between –30dBFS and 0dBFS at sampling rates between 32kHz and 96kHz
IP Streaming: Accepts Icecast/SHOUTcast MP3, Ogg and AAC streams

Program Line Outputs:
Characteristic: Analog and digital program line outputs may be switched between FM-pre-emphasized or 'normalized' (flat) response
Analog: Active-balanced (XLR) delivers –12dBu to +18dBu at 100% modulation; +18dBu clipping; 200Ω source
AES Digital: (XLR) 24-bit, 44.1kHz sampling; delivers –30dBFS to 0dBFS at 100% modulation
Streaming: MP3-encoded for remote IP/browser monitoring

Network Port:
RJ45 jack TCP/IP network connection for complete remote setup and operation of the AARON 655; supports SNMP

GPIO:
4 GPI, 6 GPO screw-terminal connections, all assignable with selectable logic polarity; enable contact-closure control of certain setup and operating functions and provide local external alarm tallies or connection to remote control systems

Headphone Jack:
¼-inch front-panel (TRS)

FAILOVER AUDIO PROTECTION

Four progressive (sequential) failovers may be selectively programmed to respond to carrier loss, audio loss, FM pilot loss, HD loss, stream loss or RDS mismatch as appropriate to the source fault

AUDIO PROCESSING

AGC:
Gated, 'gain-riding' AGC with ±15dB capture range; dual-rate 'windowed' operation

Leveling:
Variable 'syllabic' 2:1 compression normalizes dialog and music sources

Parametric Equalization:
4 sections of parametric EQ, each with variable frequency, 'Q' and gain

Bass 'Punch':
Variable bass enhancement accentuates the initial bass attack

Compression:
3 bands of r.m.s. and peak compression with selectable crossover frequencies, variable master and individual band drive controls

Final Peak Control:
Feed-forward final peak limiting eliminates flat-top clipping; independent HF limiter for pre-emphasis protection

Composite Clipper:
0dB - 3dB adjustable MPX clipping depth (excludes stereo pilot and RDS subcarrier)

Processing Presets:
10 factory, 10 user-defined presets

(continued)

RDS/RBDS ENCODER

Fields Supported:
PI, PTY, PS, RT, M/S, TP, DI, CT, AF

HD 'PAD' to RDS:
HD Radio Name, Slogan, Artist, Title, Album and Genre may be converted to the RDS scrolling-PS and RT fields

Streaming Audio Metadata to RDS:
Streamed Name, Metadata, Description and Genre may be converted to the RDS scrolling-PS and RT fields

Telnet to RDS:
Accepts dynamic PS and Radio Text updates via IP

BANDSCANNER™

A built-in spectrum analyzer utility sweeps the entire FM band (or a selected portion) and presents a graphic display of all signals received, including RSSI values and HD Radio transmissions

MISCELLANEOUS

Alarms:
Fault alarms include radio audio loss, analog audio loss, digital audio loss, stream audio loss, low signal, RDS error, stereo pilot loss and HD Radio channel loss. Alarms trigger front-panel indications, local (GPO) closures, browser interface notations, SMS/email dispatches, SNMP

Alarm Logs:
Alarms are logged and may be downloaded as daily, weekly or monthly CSV files

SNMP:
All setup and operating controls and alarm functions of the AARON 655 are under SNMP management

Internal Test Tone Generator:
20Hz - 20kHz; programmable frequency and amplitude

Power Requirement:
88VAC - 264VAC, 48Hz - 63Hz ('universal'); 12 watts

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

Environmental:
32°f/0°C - 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

3 year WARRANTY

Made in USA

INOVONICS
5805 Hwy 9, Felton CA 95018
www.inovonicsbroadcast.com
sales@inovonicsbroadcast.com