

Key Features

- Fully compliant with A/53 (legacy) and A/153 (MH) ATSC standards
- VHF or UHF operation (specify with order)
- Powerful ADPC[™] (Adaptive Digital Pre-Correction) of all linear and non-linear distortions created by a DTV transmitter system with its unique patented multidimensional pre-correction and precision demodulation technologies
- Innovative DDRF[™] (Direct Digital RF) broadband automatic balancing technology achieves near perfect RF performance: MER > 40 dB, shoulder levels < -60 dB, out of band spurious < -60 dB and ultra low noise floor
- True real-time automatic pre-correction function uses various detection and protection mechanisms and provides 24/7 superior performance and reliability to the entire transmitter system
- Independent feedback for adaptive SWR optimization function maximizes emission signal quality after the transmitter band-pass filters (BPF)
- System level AGC (Auto Gain Control) function supports RF and DC AGC feedback samples
- Built-in GPS receiver for SFN/Mobile TV deployments

- Digital ultra-wideband phase noise processing technology automatically detects and compensates phase noise to achieve excellent performance
- Patented AIM[™] (Adaptive Impedance Match) technology ensures impedances matching at RF Output
- Continuous, automatic and real-time measurement and display of shoulder level and SNR of transmitted signal
- Dual Transport Stream inputs (DVB-ASI or SMPTE310M auto-sensing), provides seamless A/B input redundancy
- Real-time input Transport Stream rate adaption with accurate PCR correction (A/53 operation)
- Real-time input Transport Stream rate display including MH percentages
- Real-time temperature display and overheat alarm
- Power control and monitoring interfaces (web/RS232/RS485/front panel LCD) and easy to use Man Machine Interface (MMI)
- Supports firmware upgrade locally or remotely via RJ45
- Optional TSoIP input
- Optional ATSC A/110:2011 Single Frequency Network (SFN) compatible

Product Specifications

ACT-8XU/V-A-C

Signal Inputs

• TS Inputs: 4 Transport Stream inputs with loop out, **DVB-ASI or SMPTE310M auto sensing** Connector: BNC female 75 Ω

Signal Processing

- Bandwidth: 6 MHz
- Supported Mode: ATSC
- Network Mode: SFN and MFN
- SFN Time Delay Range: 0 ~ 1 s
- SFN Time Delay Step: 100 ns
- Test Mode: CW Mode/PRBS mode

RF Output

- Connector (RF Out): N-Type female 50 Ω
- Frequency: VHF/UHF in steps of 1 Hz, spectrum shifting up to \pm 50 KHz
- Level: -25 dBm ~ +5 dBm in steps of 0.05 dB
- Level Stability: < ±0.1 dB
- Frequency Stability: < 0.5 x 10⁻⁷ (with onboard 10MHz REF), < 0.1×10^{-7} (with Int. GPS), or in accordance with the Ext. GPS accuracy
- Symbol Rate: 10.762238 MHz
- MER: > 40dB
- Amplitude Flatness: < ±0.5 dB
- IMD Shoulder Lvl (± 500KHz): < -60 dB
- Out of Band Spurious: < -60 dB
- Pilot Amplitude Error: < ±0.1 dB
- Return Loss: > 15 dB
- Phase Noise (@20 kHz): < -107 dBc/Hz

Reference Clock

Internal 10MHz

- Frequency Stability: < ±0.05 ppm
- Aging: < ±0.05 ppm/year
- Output level: 0 dBm ± 3 dB Internal GPS
- Frequency Stability: < 0.01 ppm
- Acquisition time: < 15 minutes (typical) External 10MHz
- Input Level: AC coupled V (p-p) > 300 mV
- Input Connector: BNC female 50 Ω External 1PPS
- Input Level: TTL
- Input Connector: BNC female 50 Ω
- Trigger: Positive Transition

- Linear and Non-linear ADPC[™]
- Dual Feedback Samples: BNC female 50 Ω
- RF IN B: Feedback Signal Before BPF
- RF IN A: Feedback Signal After BPF
- Feedback level: -35 dBm ~ 0 dBm (suggested value: 15 $dBm \sim -5 dBm$)
- Adaptive and Automatic Correction: No additional instruments or manual operations required
- Continuous measurement and display of SNR and IMD High Efficiency: Less than 10 minutes

High Precision:

- 64-bit signal processing
- Over 20,000 independent points of amplitude and phase correction

High Performance:

- Correction of amplitude, phase and group delay
- Up to 10 dB of MER improvement
- Up to 15 dB of shoulder improvement
- In-band flatness: < ±0.5 dB
- Process up to 7th intermodulation product
- Dual memory corrections

Control Interface

- Front Panel: 6 keys, 6 LED's, 40 x 2 LCD back lit screen
- Web Interface: RJ-45 10/100 base-T
- RS 232 interface: Connector DB-9 male
- RS 485 interface: Connector DB-9 male (optional)

Other

- Power Supply: 88 ~ 264 VAC, 50/60Hz
- Operating Temperature: 0° C ~ 50° C (+32°F~+122°F)
- Operating Humidity: ≤ 95%
- Size: 1 RU, 19" Wide
- Weight: 10 LBS (net) / 15 LBS (gross)

Monitoring Outputs

- TS OUT 1 and TS OUT 2: Connector BNC female 75 Ω
- RF Monitor: Connector BNC female 50 Ω, level: 10 dB below RF output

Alarms

- Transport Stream Input signal lost or TS format error
- Transport Stream Input data rate overflow
- GPS lost or unlock or 1PPS lost
- Feedback signal level out of range during ADPC
- Feedback signal level lost or level change abnormally during ADPC
- Over temperature

