



Key Features

- This unit functions as either an ATSC Exciter or an RF Translator
- RF Translator operation supports A/53 (legacy) or A/153 (MH) ATSC standards (specify with order)
- VHF or UHF operation (specify with order)
- 0 ppm for carrier frequency and symbol clock frequency (Translator operation)
- Retains original legacy and M/H symbol order (A/153 operation)
- Powerful ADPC™ (Adaptive Digital Pre-Correction) of all linear and non-linear distortions created by a DTV transmitter system with its unique patented multi-dimensional 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
- 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
- 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
- Continuous measurement and display of RSSNR and RSSI of received RF signal (Translator operation)
- Dual Transport Stream input (DVB-ASI) or RF input selectable from the front panel (A/53 operation)
- Real-time input transport stream rate adaption with accurate PCR correction (A/53 operation)
- Real-time temperature display and over temperature alarm
- Power control and monitoring interfaces (web/RS232/RS485/front panel) and easy to use Man Machine Interface (MMI)
- Supports firmware upgrade locally or remotely via RJ45

Signal Inputs

- TS Inputs: 2 Transport Stream with loop out, DVB-ASI only
Connector: BNC female 75 Ω
- RF Input: Frequency: VHF or UHF
Bandwidth: 6 MHz
Connector: BNC female 50 Ω
Level: -85 dBm ~ -15 dBm
AWGN TOV: ≤ 16 dB (A/53 operation)
Equalization Range ($-1 \mu\text{s} \sim 0 \mu\text{s}$): ≤ -2 dB
Equalization Range ($0 \mu\text{s} \sim 17 \mu\text{s}$): ≤ -3 dB
Adjacent Channel Rejection ($N \pm 1$): > 30 dB

Signal Processing

- Bandwidth: 6 MHz
- Supported Mode: ATSC
- Network Mode: MFN
- 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 ± 50 KHz
- Level: -25 dBm ~ +5 dBm in steps of 0.05 dB
- Level Stability: $< \pm 0.1$ dB
- Frequency Stability: $< 0.5 \times 10^{-7}$ (with onboard 10MHz REF), or in accordance with the Ext. GPS accuracy
- Symbol Rate: 10.762238 MHz
- MER: > 40 dB
- Amplitude Flatness: $< \pm 0.5$ dB
- IMD Shoulder Level (± 500 KHz): < -60 dB
- Out of Band Spurious: < -60 dB
- Pilot Amplitude Error: $< \pm 0.1$ dB
- Return Loss: > 15 dB
- Phase Noise (@20 kHz): < -107 dBc/Hz

Reference Clock

Internal 10MHz

- Frequency Stability: $< \pm 0.05$ ppm
- Aging: $< \pm 0.05$ ppm/year
- Output level: 0 dBm ± 3 dB

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 Signal: 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 ~ -5 dBm)
- Adaptive and Automatic: No additional instruments or manual operations needed
- 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: $< \pm 0.5$ 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: $\leq 95\%$
- 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: 25 dB below RF output

Alarms

- Transport Stream Input signal lost or format error
- RF signal lost or receive failure
- 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