



## New generation 500 W & 1000 W Full Featured FM Transmitters

- **NEW** Now available with optional built-in multiband high performance Audio Processor
- Easy access to settings, functions and readings via touch screen color display and via web page
- Built-in User Manual file always accessible via front panel port even when AC power is disconnected
- Options include Audio Over IP, AES-EBU Digital Audio Input, Dynamic RDS/RBDS Encoder, SNMP2
- Newest high efficiency, high ruggedness LD MOS devices capable of withstanding 65:1 VSWR
- Conservatively rated, easily replaceable, highly efficient power supplies
- Proportional Auto-Foldback of RF output power protection in the event of excessive VSWR
- Excellent audio performance and built-in Stereo Generator with fast acting audio limiter
- Up to six available user-programmable profile presets for use as a backup of multiple FM stations
- Programmable FSK ID Keyer by software for use as auto-ID of Translators or Boosters
- Optional 10 MHz Ext Ref port + 1 pps port for Phase Locking & Time Delay Adj. to sync boosters or SFNs
- Highly efficient transmitters with low power consumption and low heat generation
- All Bext FM transmitters include low pass/harmonic filter and meet or exceed all FCC requirements

### • RF Specifications

#### Nominal RF Output Power:

550 W (XL500), 1100 W (XL1000) adjustable from menu or via webpage

**Power control stability:** Better than 0.1 dB

**RF Output:** 7-16 Type female connector, 50  $\Omega$  impedance, unbalanced.

**Frequency range:** 87.5-108 MHz, front panel programmable or via webpage, 10 kHz steps

**Reference:** 10 MHz TCXO

**Off-lock attenuation:** > 80 dBc

**Start-up time:** Typically 5-10 seconds

**Type of modulation:**

F3E / F8E direct FM at carrier frequency

**Frequency deviation:** Nominal  $\pm 75$  kHz,

**Accuracy of deviation:**

<  $\pm 2$  dB from 87.6 to 107.9 MHz

**Frequency drift:**  $\leq 1$  kHz/year MAX (due to internal TCXO aging).

**Short term stability:**  $\pm 1$  ppm from -5 to +45  $^{\circ}$ C (100 Hz @ 100 MHz)

**RF Harmonics:**

Exceeds EBU/CCIR/FCC requirements

**RF Spurious:**

Exceeds EBU/ CCIR/FCC requirements

### • Audio General Specs

**Preemphasis:** Selectable Flat / 50 / 75 micros.

**Preemphasis Precision:** Better than  $\pm 0.5$  dB

**Wideband Amplitude Response:**

$\pm 0.2$  dB 30 Hz to 100 kHz

**Wideband AM Asynchronous:** (FM = no modulation, Ref = 100 % AM, Unweighted, RMS detector, BW 30-100 kHz) < -68dB, typ. -80dB

**Wideband Distortion, THD:** < 0.1% (typ. 0.05%)

**WB Distortion, IMD:** < 0.1% (typ. 0.05%)

**WB Transient IMD:** < 0.25% (square/sine wave)

### • Composite & Mono Specs

**S/N:** Typical Values referred to  $\pm 75$  kHz:

Weighted (CCIR 468/2 - Peak CCIR detector)

- 75 dB / 50  $\mu$ s - 69 dB / flat;

Weighted (CCIR 468/2 - RMS detector) - 79

dB / 50  $\mu$ s -72 dB / flat;

Unweighted (RMS detector, meas. 20 Hz-23

kHz) - 86 dB / 50  $\mu$ s - 80 dB / flat (stereo);

Unweighted (RMS detector, meas. 20 Hz-23 kHz) - 92 dB / 50  $\mu$ s - 88 dB / flat (mono)

**IMD:** 70 Hz / 6 kHz 4:1 RATIO < 0.03% measured with 1 kHz and 1.3 kHz tones, 1:1 ratio @ 75 kHz deviation

**Transient IM:** < 0.03 % (square/sine)

**Audio response:**  $\pm 0.15$  dB 20 Hz to 15 kHz

**AM Synchronous:** (AM = 400 Hz, FM = 400 Hz  $\pm 75$  kHz Ref. = 100 % AM, RMS detector, meas. 20 Hz-23 kHz) < -69 dB

**AM Asynchronous:** FM = no modulation, Ref. = 100 % AM, Unweighted, RMS detector, meas. 20Hz-23kHz) < -70 dB (typ. -85 dB)

**Common mode rejection:** > 45 dB typical, 25 Hz to 15 kHz

### • Built-in Stereo Gen. Specs

**Stereo System:** EBU/CCIR/FCC standard "Pilot Tone System"

**Pilot Tone Frequency:** 19 kHz  $\pm 1$  Hz

**Pilot Tone Deviation:**  $\pm 7$  kHz nominal

**38 kHz Suppression:** > 70 dB (typ. 85 dB)

**38 kHz Tone Generation:** Internal Crystal

**38 kHz Tone Precision:** 38 kHz  $\pm 2$  Hz

**Phase response:** 19/38 kHz  $0^{\circ} \pm 2^{\circ}$ , internally adjustable

**Stereo Separation:** 30-80 Hz >53 dB, 80 Hz-

15 kHz >60 dB

**Crosstalk attn. (M / S):** > 40 dB, 40 Hz to 15

kHz (typ. 55 dB, 100 Hz to 8 kHz)

**Audio Spurious Products:** > 53 kHz < 50 dB

**THD on L & R channels:** < 0.03%, 30 Hz-15 kHz

**Audio Filter Attenuation:** > 55 dB @ 19 kHz;

>45 dB 19 to 50 kHz; > 50 dB to 100 kHz (typ.)

### • Audio Inputs (on rear panel)

**Baseband / Composite / MPX Input:**

1 BNC connector, unbalanced, 2 k $\Omega$ .

Input level range for 75 kHz Deviation: - 6 to

+12 dBm, adjustable from menu

**SCA / RDS / AUX Input:** BNC connector,

unbalanced, 2 k $\Omega$ . Input level range: - 6 to +12

dBm, adjustable from menu

**L&R or Mono Input:** 2 XLR connectors,

600 $\Omega$  balanced or unbalanced, switchable, or

10k $\Omega$  unbalanced, input level range for 75 kHz

Deviation: -6 to +12 dBm, adjustable from menu

**AES-EBU input (optional)** XLR connector and

optional optical connector

### • Other Connectors (on rear panel)

**19 kHz Output:** 1 BNC connector, unbalanced, Pilot tone 2 Vpp 19 kHz

**Baseband / Composite / MPX Output:**

1 BNC connector, unbalanced

**DB25** for Analog Telemetry & Remote Control (include RF forward & reflected PWR, ext. interlock, contacts for ON/STBY & much more).

**RJ 45s:** LAN / WEB connection, optional

VOIP, optional SNMP2

**USB A:** for SNMP2 Software

**DB9:** RS485 for interconnection w/ other units

**SMA**s for 10 MHz external reference port and

for 1 pps port (optional).

### • Front Panel Connectors

**USB C or micro:** Front panel port to access

user manual file & other technical test reports

**RF Monitor:** -36 dBc  $\pm 3$  dB, 50  $\Omega$  BNC

### • Environmental

**Storage temperature:** -20 $^{\circ}$ C to + 60  $^{\circ}$ C

**Operating temperature:** -10 $^{\circ}$ C to + 45 $^{\circ}$ C

**Relative humidity:** 90% (non-condensing)

**Max operating altitude:** 3000 m.

**Max ambient field strength:**  $\leq 3$  V/m;  $\leq 4$  A/m

**Cooling:** Forced air (easily replaceable fan)

### • Physical & Electrical

**Front panel:** 483mm (19") W x 88mm (3 1/2")

H (two standard rack spaces high)

**Cabinet depth from front panel:**

approximately 480 mm (18 3/4")

**Approximate Weight:** 18 lbs (9 Kg)

**Approx. Packed Weight:** 24 lbs (11 Kg)

**AC Power Requirement:** Full range,

115-220V [ $\pm 15\%$ ] 50/60Hz single phase.

**Approx. Power Consumption @ Full PWR:**

XL500: 750 VA; XL1000: 1400 W

**Available Readings** include: FWD PWR,

RFL PWR, Frequency, Audio Presence,

Deviation, Preemphasis Status, Audio Input

Selection, L & R Channels Modulation Level,

Stereo Generator Enabled / Disabled, Audio

Limiter Enabled / Disabled, VPA, IPA,

Temperature, Efficiency, Status of FSK ID

Keyer and many other readings & functions

**All Bext products' features & specifications**

**are subject to change without notice**