



New generation 500 W & 1000 W Full Featured FM Transmitters

- 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 AES-EBU Digital Audio Input, Dynamic RDS/RBDS Encoder, Audio Over IP, 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 Ω 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 ± 75 kHz,

Accuracy of deviation:

< ± 2 dB from 87.6 to 107.9 MHz

Frequency drift: ≤ 1 kHz/year MAX (due to internal TCXO aging).

Short term stability: ± 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 ± 0.5 dB

Wideband Amplitude Response:

± 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 ± 75 kHz:

Weighted (CCIR 468/2 - Peak CCIR detector)

- 75 dB / 50 μ s - 69 dB / flat;

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

dB / 50 μ s -72 dB / flat;

Unweighted (RMS detector, meas. 20 Hz-23

kHz) - 86 dB / 50 μ s - 80 dB / flat (stereo);

Unweighted (RMS detector, meas. 20 Hz-23 kHz) - 92 dB / 50 μ 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: ± 0.15 dB 20 Hz to 15 kHz

AM Synchronous: (AM = 400 Hz, FM = 400 Hz ± 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 ± 1 Hz

Pilot Tone Deviation: ± 7 kHz nominal

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

38 kHz Tone Generation: Internal Crystal

38 kHz Tone Precision: 38 kHz ± 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 Ω .

Input level range for 75 kHz Deviation: - 6 to

+12 dBm, adjustable from menu

SCA / RDS / AUX Input: BNC connector,

unbalanced, 2 k Ω . Input level range: - 6 to +12

dBm, adjustable from menu

L&R or Mono Input: 2 XLR connectors,

600 Ω balanced or unbalanced, switchable, or

10k Ω 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

SMAs 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 ± 3 dB, 50 Ω 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: ≤ 3 V/m; ≤ 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