XL 2000 & XL 3000

New generation 2000 W & 3000 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:
2209 W (XL 2000), 3300 W (XL 3000) adjustable from menu or via webpage
Power control stability: Better than 0.1 dB
RF Output: 7/8" EIA Flange
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 °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 μs - 69 dB / flat;
Weighted (CCIR 468/2 - RMS detector) - 79 dB / 50 μs -72 dB / flat;
Unweighted (RMS detector, meas. 20 Hz-23 kHz) - 86 dB / 50 μs - 80 dB / flat (stereo);
Unweighted (RMS detector, meas. 20 Hz-23 kHz) - 92 dB / 50 □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°± 2°, 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 kΩ.
Input level range for 75 kHz Deviation: - 6 to +12 dBm, adjustable from menu
SCA / RDS / AUX Input: BNC connector, unbalanced, 2 kΩ. Input level range: - 6 to +12 dBm, adjustable from menu
L&R or Mono Input: 2 XLR connectors, 600Ω balanced or unbalanced, switchable, or 10kΩ 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°C to + 60 °C
Operating temperature: -10°C to + 45°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 133mm (5 1/4") H (three standard rack spaces high)
Cabinet depth from front panel: approximately 570 mm (22 1/2")
Approximate Weight: 48 lbs (22 Kg)
Approx. Packed Weight: 55 lbs (25 Kg)
AC Power Requirement: 220V [±15%] single phase for XL 2000; 220V [±15%] single or three phase for XL 3000, 50/60Hz.
Approx. Power Consumption @ Full PWR: XL2000: 2800 VA; XL3000: 4200 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

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