Lex 30, Lex 50, Lex 100 & Lex 150

Ultra Slim, Frequency Agile, 30, 50, 100 and 150 W FM Exciter / Transmitter

- 30, 50, 100 or 150 W in ultra slim size, one rack space stainless steel enclosure and Excellent Audio Specs
- Built-in, selectable, very high separation internal Stereo Generator and Fast Audio Clipper, standard
- Full Telemetry & Remote Control connection built-in through DB 25 port (rear panel), standard
- USB port (front panel) for PC connection and two independent RS 485 ports (rear panel), standard
- Up to seven presets (freq, pwr & program setup) allowing for ideal back up to multiple stations, standard
- Built-in, front panel programmable FSK ID Keyer by software for auto-ID of Translators, standard
- Can be used as part of a translator allowing local inserts via audio input switching through contact closure
- Fast access to programmability, functions & all readings from front panel via user-friendly menu display
- Proportional Auto-Foldback of output power in the event of excessive VSWR
- Adjustable power output from approximately 1 W to full power, with soft-start control
- Automatic power control maintaining the set output at any pre-set level
- Modular layout with plug-in, easily replaceable circuits and parts
- Includes low pass/harmonic filter and can be used as a stand-alone transmitter
- Meets or exceeds all FCC and CCIR requirements
- Available Options (please specify w/ order): AES-EBU Digital Audio input; Built-in RDS Encoder; Sync Port to lock frequency onto 1, 2, 2.5, 5 or 10 MHz External Reference; DC voltage input

• *RF SPECIFICATIONS*

Nominal RF power: 30, 50, 100 or 150 W adjustable from approx 1 W to Full Power
RF output impedance: 50 Ω unbalanced, VSWR less than 1.5:1
RF connector: Type N female
Frequency range: 87.5 - 108 MHz programmable in 10 kHz steps, synthesized, microprocessor controlled
Off lock attenuation:> 60 dBc
Lock-in time: typ. 4 sec
Type of modulation: F3E / F8E direct FM at carrier frequency
Frequency deviation: ±75 kHz =100 %, ±150 kHz capability
Reference: 12.8 MHz TCXO
Stability of freq. dev: ±2,5 % x 6 months
Consistency of deviation over range: < ± 2% from 87.5 to 108 MHz
Frequency drift: ≤ 1 kHz/year (due to internal TCXO aging). Can be user calibrated
Short term stability: ± 1 ppm from -5 to +45 °C (100 Hz @ 100MHz)
RF Harmonics: Exceeds EBU/ CCIR/FCC requirements >70dBc
RF Spurious: ExceedsEBU/ CCIR/FCC requirements, < -100dBc min @ ±1 MHz
RF Monitor: -40dBc±3dB from 87.5 to 108 MHz (not suitable for measuring harmonics)

• *AUDIO GENERAL SPECS*

Preemphasis: selectable Flat / 50 / 75 micros.
Preemphasis Precision: better than 0.5 dB
Wideband Amplitude Response: ± 0.1 dB 30Hz to 53KHz; ± 0.2 dB 53KHz to 100 KHz
Wideband AM Asynchronous: (FM = no modulation, Ref. = 100 % AM, Unweighted, RMS detector, BW 30-200 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 SPECIFICATIONS*

Stereo System: CCIR / FCC 'pilot tone system'
Stereo Separation: 30-80Hz >53dB, 80Hz-15kHz >60 dB (typ.70)
Crosstalk attn. (M / S):> 40 dB, 40 Hz to 15 kHz (typ. 55dB, 100Hz to 8kHz)
Audio Spurious Products: > 53 kHz < 50 dB
38 kHz Suppression: > 70 dB (typ. 85 dB)
38 kHz Tone Generation: Internal Crystal
38 kHz Tone Precision: 38 kHz ± 2 Hz
Pilot Tone frequency: 19 kHz ± 1 Hz
Phase response: 19/38 kHz 0°± 2°, internally adjustable
THD on **L & R channels:** < 0.03%, 30Hz-15 kHz
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/sinus)
Audio response: ± 0.15 dB 20 Hz to 15 kHz
Pilot Tone Deviation: ± 7 kHz nominal
S/N: Typical Values referred to ± 75kHz:
Weighted (CCIR 468/2 - Peak CCIR detector) - 75 dB / 50µs - 69 dB / flat;
Weighted (CCIR 468/2 - RMS detector) - 79 dB / 50µs -72dB / flat;
Unweighted (RMS detector, meas. 20Hz-23kHz) - 86 dB / 50µs - 80 dB / flat (stereo);
Unweighted (RMS detector, meas. 20Hz-23kHz) - 92 dB / 50µs - 88 dB / flat (mono).
AM Synchronous: (AM = 400 Hz, FM = 400 Hz ± 75 kHz Ref. = 100 % AM , RMS detector, meas. 20Hz-23kHz) < -69 dB
AM Asynchronous: FM = no modulation, Ref. = 100 % AM, Unweighted, RMS detector, meas. 20Hz-23kHz) < -70dB (typ. -85dB)
Audio Filter Attenuation: > 55 dB @ 19 kHz; >45dB 19 to 50 kHz; > 50dB to 100kHz (typ.)
Common mode rejection: > 45 dB typical, 25 Hz to 15kHz (50 dB on request)

• *AUDIO INPUTS*

MPX Input: 1 BNC conn., unbalanced, Z nominal~1k2 (1k2 ± 10 %), Lev: -3 + 6 dBm @ 75 kHz Deviation, adj. on rear panel
SCA / RDS Input: 1 BNC connector, unbalanced, Z nominal~3 kOhm (2.8<Z<3) Lev: -3 +6 dBm @ 7.5 kHz, Dev. adj. on rear panel
AUX Input: 1 BNC conn, unbal., Z nominal ~3 kohm (2.8<Z<3), Lev: -3 +6 dBm @ 7.5 kHz Deviation adj on rear panel
L&R +Mono Input: 2 XLR connectors, balanced or unbalanced; Z nominal 10 kOhm ± 1% or 600 Ohm ± 1%; µP selectable by menu; µP selectable Lev: -3 +6 dBm @ 75 kHz Deviation. Coarse steps 3 dB (µP), fine adj 3.5dB (± 1.75), adjustable on rear panel

• *OTHER CONNECTORS*

19 kHz Output: 1 BNC connector, unbalanced Z nominal: >5k Pilot = 1 Vpp19 kHz Squarewave
AES-EBU input (opt): XLR + Optical Connector
Sync Port (opt): SMA female (input & output)
RDS (opt): 3.5 mm jack, three contact type
DC input feed (opt): Hardwire Connection
DB 25: for Telemetry, Remote Control, Status of Correct Output (aka 'Pwr Good'), Selectable 'RF Off' Interlock, Presets Selection, Audio Inputs Switching for Translators' local inserts
USB: USB port on front panel
RS 485: RJ45 w/ custom pin-out connector

• *ENVIRONMENTAL*

Storage temperature: -20°C to + 60 °C
Operating temperature: 5 °C to + 45 °C
Guaranteed performance temp: 0°C to +40°C
Relative humidity: 90 %(non condensing)
Max operating altitude: 2000 m.
Max ambient field strength: ≤10 V/m; ≤ 4 A/m
Cooling: Forced air (internal low noise blower)

• *PHYSICAL & ELECTRICAL*

Front panel: 483 mm (19") W x 44 mm (1¾") H (One standard rack space high)
Cabinet Depth: 40 mm (15¾")
Approx Weight, Unit Only / Packed:
Lex 30 & Lex 50: 11 lbs (5 Kg) / 15 lbs (7 Kg)
Lex 100 & Lex 150: 15 lbs (7Kg) / 19 lbs (8.5 Kg)
Cabinet: Stainless steel
AC Power Requirement: single phase 120/220V (voltage selector) [±15%] 50/60Hz
DC Power Req. (opt): 12VDC + 12VDC (12 V x 2)
Approx. Power Consumption @ Full Power:
Lex 30: 100 VA • Lex 50: 150 VA
Lex 100: 250 VA • Lex 150: 175 VA
LCD Display Readings:
Programmed Output Power; Actual Forward Power; Refl. Power; Unclipped Deviation; Clipped Deviation; Clipper activity (clipped / unclipped differential); L Audio True Peak Level; R Audio True Peak Level; Frequency (6 digits); Sensitivity (3dB step); RDS, SCA, AUX, MPX Ext Modulation; Programmed Audio Parameters; Preemphasis (Flat, 50, or 75µS); Limiter On/Off; Input Impedance; Z=10kOhm / 600 Ohm; Preset Thresholds (min. RF power, mute time); VPA; IPA; Other misc. internal parameters readings.

BEXT **Inc 1045 Tenth Avenue San Diego CA 92101 USA • Tel 619 2398462 Fax 619 2398474 • www.bext.com • e-mail: bext@bext.com**