

**BEXT**

## LEX 30

*Ultra slim, Frequency Agile, 30 W FM Exciter / Transmitter*

- 30 Watts of Frequency Agile FM Power in a one rack space, ultra compact size
- Built-in, selectable high separation internal Stereo Generator, standard
- Fast access to all functions & parameters from front panel via user-friendly menu display
- Instant frequency programmability directly from software
- Proportional Auto-Foldback of output power in the event of excessive VSWR
- Adjustable power output from 0 to 30 W with soft-start control
- Automatic power control maintaining the output at any pre-set level
- Modular layout with plug-in, easily replaceable circuits and parts
- Voltage selector for 120 or 230 V operation
- Built in programmable FSK ID Keyer
- Meets or exceeds all FCC and CCIR requirements
- Includes low pass/harmonic filter and can be used as a stand-alone transmitter

### • RF SPECIFICATIONS

**Nominal RF power:** 30 W adjustable from 0.5W to 31W

**RF output impedance:** 50Ω unbalanced, VSWR less than 1.5:1

**RF connector:** N Type Female

**Frequency range:** 87.5 - 108 MHz programmable in 10 kHz steps, synthesized, μprocessor controlled

**Off lock attenuation:** > 60 dBc

**Lock-in time:** < 20 sec. (typ. < 7 sec)

**Type of modulation:** F3E / F8E direct FM at carrier frequency

**Frequency deviation:** ±75 kHz = 100 %, ±150 kHz capability

**Reference:** 12.8 MHz VTCXO

**Stability of freq. dev:** ±2.5 % x 6 mo.

**Consistency of deviation over range:** < ± 2% from 87.5 to 108 MHz

**Frequency drift:** ≤ 2 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:** Exceeds EBU/ CCIR/FCC requirements, < -90dBc min @ ±1 MHz

**RF Monitor:** -40dBc±3dB from 87.5 to 108 MHz (not suitable for measuring harmonics)

### • AUDIO GENERAL SPECIFICATIONS

**Preemphasis:** Flat/50/75 μs, μprocessor controlled

**Preemphasis precision:** better than 0.5 dB

**Stereo System:** CCIR / FCC "pilot tone system"

**Distortion, THD:** Less than 0.1% (typ. 0.05%)

**Intermodulation (IMD):** Less than 0.1% (typ. 0.05%)

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

**Wideband Amplitude Response:** ± 0.25 dB, 30 Hz to 100 kHz

**Audio Filter Attenuation:** > 50 dB @ 19 kHz, >30dB 19 to 50 kHz, >50dB to 100kHz (typ.)

**Common mode rejection:** > 40 dB typ. 30 Hz to 15kHz (50dB on request)

### • COMPOSITE SPECIFICATIONS

**Stereo Separation:** 30-80Hz >50dB, 80Hz-15kHz >60 dB (typ.65)

**Crosstalk attn. (M / S):** > 40 dB 40 Hz to 15 kHz (typ. 50dB / 100Hz to 8kHz)

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

**38 kHz Suppression:** > 50 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:** < 0.1% 30Hz - 15 kHz

**IMD:** 70 Hz / 6 kHz 4 : 1 RATIO < 0.1 %

**Transient IM:** < 0.25 % (square/sinus)

**Audio response:** ± 0.25 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) 80 dB / 50μs -74dB / flat

Weighted (CCIR 468/2 - RMS detector) 83 dB / 50μs -77dB / flat

Unweighted (RMS detector, 30Hz-20kHz) 80dB / 50μs - 79 dB / flat

Unweighted (RMS detector, 10Hz-200kHz) 80dB / 50μs - 71 dB / flat

**AM Synchronous:** (AM=500 Hz, FM = 500 Hz ± 75 kHz Ref. = 100 % AM, RMS detector, BW 30Hz-200kHz ) < -55dB typ. -60dB

**AM Asynchronous:** FM = no modulation, Ref. = 100 % AM, Unweighted, RMS detector, BW 30Hz-200kHz ) < -55dB typ. -60dB

**Am asynchronous:** (Fm = no modulation, Ref. = 100 % AM, Unweighted, RMS detector, BW 30-200 kHz) < -68dB, typ. -80dB

### • AUDIO INPUTS

**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

**MPX Input:** 1 BNC conn., unbalanced, Z nominal~1k2 ( 1k2 ± 10 % ), Lev: -3 + 6 dBm @ 75 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

**Status of correct output:** 1 BNC connector, unbalanced, 15Vmax, 100mA (open drain)

**Interlock:** 1 BNC connector, unbalanced, Normally open or normally closed, selectable by internal jumper

**RS 232:** DB9 on front panel (firmware update)

**RS 485:** RJ45 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 (1 3/4") H (One standard rack space high)

**Overall Depth:** 365 mm (14")

**Weight:** Approx. 4 kg (8.8 lbs)

**Cabinet:** Stainless steel

**AC Power:** 120 / 220V AC single phase (±15%), 50-60Hz; Internal voltage selector

**LCD Display Readings:** Programmed Output Power; Forward Power; Refl. Power; Unclipped Deviation (simulated Led Bar); Clipped Deviation (simulated Led Bar); Clipper activity (clipped / unclipped differential); L Audio True Peak Level (simulated Led Bar); R Audio True Peak Level (simulated Led Bar); 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)