



LEX 30/50/100

Ultra slim, Frequency Agile, FM Exciter / Transmitter

- 30, 50 or 100 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 0.5 to maximum 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, 50 or 100W adjustable from 0.5W to full power.

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 Vpp 19 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 1/4") 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)