# XT 30 & XT 50


## *Ultra Slim, Frequency Agile, 30 W and 50 W FM Exciter / Transmitter*

- 30 W or 50 W in ultra slim size, one rack space, stainless steel enclosure & excellent audio specs
- Fast access to programmability, functions & all readings from front panel via user-friendly menu display
- Built-in, selectable, very high separation internal Stereo Generator and Fast Audio Clipper, standard
- Full Telemetry & Remote Control connection through DB 15 port (rear panel), standard
- RS 232 interface through DB 9 (front panel), standard
- Instant user programmability allowing for ideal backup to multiple stations, standard
- Programmable FSK ID Keyer by software for auto-ID of translators, standard
- Proportional Auto-Foldback of output power in the event of excessive VSWR
- Adjustable power output from 0.1 W to full power, with soft-start control
- Automatic power control maintaining the set output at any pre-set level
- Connections for external power control loop to maintain pre-set power level of external amplifier
- 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 Option (please specify w/ order): AES-EBU Digital Audio input

### ● *RF Specifications*

**Nominal RF Output Power:** 30 W / 50 W, adjustable from approx. 0.1 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, front panel programmable in 10 kHz steps, synthesized, microprocessor controlled
**Off-lock attenuation:**> 60 dBc
**Lock-in time:** typ. 7 sec
**Type of modulation:** F3E / F8E direct FM at carrier frequency
**Frequency deviation:** ±75 kHz =100 %, ±150 kHz capability
**Reference:** 10 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:** Exceeds EBU/ CCIR/FCC requirements, < -100dBc min @ ±1 MHz

### ● *Audio General Specs*

**Preemphasis**: selectable Flat / 50 / 75 micros.
**Preemphasis Precision:** better than ± 0.5 dB
**Wideband Amplitude Response:** ± 0.2 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 & Mono Specs*

**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)
**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. 20Hz-23kHz ) < -69 dB
**AM Asynchronous**: FM = no modulation, Ref. = 100 % AM, Unweighted, RMS detector, meas. 20Hz-23kHz ) < -70dB (typ. -85dB)
**Common mode rejection:** > 45 dB typical, 25 Hz to 15kHz

### ● *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**: 30-80Hz >53dB, 80Hz-15kHz >60 dB
**Crosstalk attn. (M / S):**> 40 dB, 40 Hz to 15 kHz (typ. 55dB, 100Hz to 8kHz)
**Audio Spurious Products:** > 53 kHz < 50 dB
**THD** on **L & R channels:** < 0.03%, 30Hz-15 kHz
**Audio Filter Attenuation:** > 55 dB @ 19 kHz; >45dB 19 to 50 kHz; > 50dB to 100kHz (typ.)

### ● *Audio Inputs*

**Composite/MPX Input**: 1 BNC connector, unbalanced, 50 Ω / 600 Ω switchable. Input level range for 75 kHz Deviation: -13 to +13 dBm, adjustable on rear panel
**SCA / RDS / AUX Inputs**: 2 BNC connectors, unbalanced, 10 kΩ. Input level range: -20 to +13 dBm for 7.5 kHz, adjustable on rear panel
**L&R + Mono Input**: 2 XLR connectors, balanced or unbalanced; switchable 50 Ω / 600 Ω. Input level range for 75 kHz Deviation: -13 to +13 dBm, adjustable on rear panel
**AES-EBU** input (optional): XLR connector

### ● *Other Connectors*

**19 kHz Output**: 1 BNC connector, unbalanced, 4.7kΩ. Pilot tone 1 Vpp 19 kHz Squarewave
**DB 15**: for Telemetry, including readings of RF forward and reflected power, PA Voltage, PA Current, Remote Control (including momentary contacts for on/off), Status of Correct Output (aka 'PWR Good'), 'RF Off' Interlock (Normally Open)
**Additional "RF Off" Interlock**: BNC (Normally Open)
**RS 232 Interface**: DB 9 (on front panel).
**RF Monitor** (not suitable for measuring harmonics): -30dBc ±3dB, 50 Ω BNC (on front panel)

### ● *Environmental*

**Storage temperature:** -20°C to + 60 °C
**Operating temperature:** -10°C to + 50°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 blower)

### ● *Physical & Electrical*

**Front panel:** 483 mm (19") W x 44 mm (1¾") H (One standard rack space high)
**Cabinet depth from front panel**: 393mm (15½")
**Total depth including front handles:** 420mm (16½")
**Cabinet**: Stainless steel
**Approximate Weight**: 13 lbs (5,8 Kg)
**Approx. Packed Weight**: 19 lbs (8.6 Kg)
**AC Power Requirement:**
Single phase 120 / 220V [±15%] 50 / 60Hz, extended range input
**Approx. Power Consumption @Full Pwr:** 75 VA for XT 30, 110 VA for XT 50
**LCD Display Readings**:
Forward Power, Reflected Power, Frequency of Operation, Audio Presence, Deviation, Audio Input Selection, Audio Impedance, Preemphasis Status, Stereo Generator Enabled / Disabled, Audio Clipper Enabled / Disabled, L & R Channels Modulation Level, VPA, IPA, Temperature, Efficiency, Status of FSK ID Keyer, other misc. readings & functions

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