



GENERAL

RF Output Power

1 W to 55 W, adjustable by front panel controls

RF Frequency Range

87.5 MHz to 108 MHz
Digitally programmable in 10 kHz steps by front panel controls

Fine Frequency Range

±9,990 Hz
Digitally programmable in 10 kHz steps by front panel controls

RF Terminating Impedance

50 ohms unbalanced
BNC jack VSWR protected

RF Output Monitor

-30 dBc, BNC jack

RF Harmonics/Spurious Output

Meets and exceeds all FCC, DOC, and ISC requirements and CCIR recommendations for a 55 W transmitter when used with optional low pass filter

Frequency Stability

± 250 Hz
0°C to +50°C ambient temperature range

Modulation Type

Direct Digital Synthesis (DDS)

Display

Backlit 240x64 graphic display for control, meters, diagnostics and modulation indicator

Alarm log holds up to 128 entries in reverse chronological order

Modulation Capability

150% (±75 kHz reference standard)

Asynchronous AM S/N Ratio

75 dB minimum below reference carrier with 100% amplitude modulation using 75 µs de-emphasis (no FM modulation present)

Synchronous AM S/N Ratio

60 dB below reference carrier with 100% amplitude modulation at 400 Hz with 75 µs de-emphasis

ELECTRICAL AND MECHANICAL

AC Input Power

Universal, PF >0.98, 90 V ac to 264 V ac, 47 Hz to 63 Hz, 180 W typical at 50 W output

AC Entry

Appliance inlet style, switched with 5 A breaker

ENVIRONMENTAL

Temperature Range

0°C to +50°C
Derate 3°C per 500 m above sea level (2°C per 1,000 ft)

Humidity Range

0% to 95% non-condensing

Altitude

0 m to 4,000 m (0 ft to 13,000 ft)

PHYSICAL

Dimensions

13.34 cm H x 48.26 cm W x 50.8 cm D (5.25" H x 19" W x 20" D)

Mounting

Standard 48.3 cm (19") EIA rack-mountable

Weight

11 kg (24.5 lbs)

STEREO PERFORMANCE WITH DIGITAL AUDIO INPUT

Input Connector

Two total; one XLR female and one optical input receiver, selected with internal jumper

XLR Input Impedance

110 ohms, nominal

Input Level

0 dBf to -10 dBf for 100% modulation, front panel adjustable

Data Format

AES/EBU (XLR), SPDIF (optical); 16 bits to 24 bits resolution

Data Rate

31 kHz to 108 kHz (32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz typical)

Pre-Emphasis

0 µs, 25 µs, 50 µs or 75 µs, front panel selectable

Pilot Carrier

19 kHz ±0.01 Hz, programmable 6% to 12% injection level. Available on rear panel BNC as 1 Vp-p sine wave. Pilot phase may be referenced to GPS 1 PPS (BNC) and adjusted with 1° resolution.

38 kHz Suppression

80 dB below ±75 Hz deviation reference

Stereo Separation

Better than 70 dB, 30 Hz to 15 kHz

Amplitude Response (L or R)

±0.2 dB, 30 Hz to 15 kHz referenced to 0 dB at 400 Hz

FM Signal-to-Noise Ratio (L or R)

80 dB below 100% modulation (reference 400 Hz, measured in 22 Hz to 22 kHz bandwidth with 75 µs de-emphasis and DIN 'A' weighting)



Stereo Total Harmonic Distortion (L or R)

0.025% or less, 30 Hz to 15 kHz, measured in 22 Hz to 22 kHz bandwidth with 75 μ s de-emphasis

Stereo Crosstalk

60 dB below 100% (30 Hz to 15 kHz).

Modulation reference: L+R to L-R and L-R to L+R

Intermodulation Distortion (L or R)

CCIF: 0.008% or less (14/15 kHz, 1:1)

SMPTE: 0.025% or less (60 Hz and 7,000 Hz, 1:1)

Transient Intermodulation Distortion (DIM) (L or R)

0.05% or less (2.96 kHz square wave/14 kHz sine wave)

Stereo/Monaural Mode Control

Monaural mode selectable from front panel using left channel

STEREO PERFORMANCE WITH ANALOG STEREO INPUT

Input Connector

Two XLR female connectors (Left/Mono, Right)

Input Impedance

Balanced, no transformers, 600 ohms/10,000 ohms selectable with internal jumper

Input Level

4 dBm (600 ohms) nominal for \pm 75 kHz deviation. Adjustable from 0 dBm to 24 dBm (1.55 Vrms to 24.56 Vrms)

Input Quantization

Sampled at 93 kHz with 24-bit analog-to-digital converter

Pre-Emphasis

0 μ s, 25 μ s, 50 μ s or 75 μ s, front panel selectable

Pilot Carrier

19 kHz \pm 0.01 Hz, programmable 6% to 12% injection level. Available on rear panel as TTL or 1 Vp-p sine wave. Pilot phase may be referenced to GPS 1 PPS (BNC) and adjusted with 1° resolution.

38 kHz Suppression

80 dB below \pm 75 Hz deviation reference

Stereo Separation

Better than 70 dB, 30 Hz to 15 kHz

Amplitude Response (L or R)

\pm 0.2 dB, 30 Hz to 15 kHz referenced to 0 dB at 400 Hz

FM Signal-to-Noise Ratio (L or R)

80 dB below 100% modulation (reference 400 Hz, measured in 22 Hz to 22 kHz bandwidth with 75 μ s de-emphasis and DIN 'A' weighting)

Stereo Total Harmonic Distortion (L or R)

0.025% or less, 30 Hz to 15 kHz, measured in 22 Hz to 22 kHz bandwidth with 75 μ s de-emphasis

Stereo Crosstalk

50 dB below 100% (30 Hz to 15 kHz).

Modulation reference: L+R to L-R and L-R to L+R

Intermodulation Distortion (L or R)

CCIF: 0.008% or less (14/15 kHz, 1:1)

SMPTE: 0.025% or less (60 Hz and 7,000 Hz, 1:1)

Transient Intermodulation Distortion (DIM) (L or R)

0.05% or less (2.96 kHz square wave/14 kHz sine wave)

Stereo/Monaural Mode Control

Monaural mode selectable from front panel using left channel

MONO AURAL PERFORMANCE WITH DIGITAL OR ANALOG INPUTS

Amplitude Response (L or R)

\pm 0.2 dB, 30 Hz to 15 kHz referenced to 0 dB at 400 Hz

FM Signal-to-Noise Ratio

90 dB below 100% modulation (reference 400 Hz at \pm 75 kHz deviation with 75 μ s de-emphasis and DIN 'A' weighting in 22 Hz to 22 kHz passband)

Harmonic Distortion

0.005% or less at 400 Hz measured in 22 Hz to 22 kHz bandwidth with 75 μ s de-emphasis

WIDEBAND COMPOSITE OPERATION

Input Connector

One BNC connector. 50 ohms/10,000 ohms selectable with internal jumper, balanced/unbalanced selectable with rear panel switch

Input Level

1.24 Vrms nominal for \pm 75 kHz deviation. Adjustable from 1 Vrms to 4 Vrms

Amplitude Response

0.05 dB, 20 Hz to 100 kHz

Phase Response

\pm 0.1° from linear phase, 20 Hz to 100 kHz

FM Signal-to-Noise Ratio

90 dB below 100% modulation (reference 400 Hz at \pm 75 kHz deviation with 75 μ s de-emphasis and DIN 'A' weighting in 22 Hz to 22 kHz passband)



Total Harmonic Distortion

0.005% or less, (reference 400 Hz at ± 75 kHz deviation with 75 μ s de-emphasis and DIN 'A' weighting in 22 Hz to 22 kHz passband)

Stereo Separation

50 dB, 20 Hz to 15 kHz

SCA (RBDS/RDS) PERFORMANCE

Input Connector

Two BNC female connectors

Input Impedance

10,000 ohms unbalanced

Input Level

1.24 Vrms nominal for ± 7.5 kHz deviation

Amplitude Response (L or R)

± 0.2 dB, 20 Hz to 100 kHz

Subcarrier Frequency Range

57 kHz to 92 kHz (25 kHz to 92 kHz monaural)

SCA GENERATOR PERFORMANCE

Input Connector

DB9

Input Impedance

2 balanced, 600 ohms or 10,000 ohms jumper selectable

Composite Input Level

2.8 Vp-p nominal for ± 7.5 kHz deviation

Mono Input Level

4 dBm (600 ohms) nominal for ± 5 kHz deviation. Adjustable from 0 dBm to 24 dBm (1.55 Vrms to 24.56 Vrms).

Amplitude Response (L or R)

± 0.02 dB, 30 Hz to 15 kHz

Pre-Emphasis

0 μ s, 50 μ s, 75 μ s or 150 μ s, front panel selectable

Signal-to-Noise Ratio

60 dB or better

Frequency

20 kHz to 99 kHz, adjustable in 10 Hz steps from front panel

Modulation

Narrow band FM with maximum deviation of ± 7.5 kHz

Injection Level

0% to 15%, front panel adjustable

RDS/RBDS GENERATOR PERFORMANCE

Input Connector

DB9, RS 232 (DCE, 75 to 115.2 k BAUD)

Frequency

57 kHz ± 0.03 Hz

Injection Level

0% to 15%, front panel adjustable

Programming

External (UECP via input connector) or Internal (programmed through front panel user interface)

Supported Commands

PI, PS, TP, TA, MS, PTY, DI, RF, AF (RT and CT when using UECP)

HD RADIO COMPATIBILITY

Exciter generates complete hybrid FM waveform with analog FM and IBOC components.

Exciter accepts LVDS IQ stream and 10 MHz frequency reference from Nautel NE IBOC-HD Radio signal generator. Forward compatible for exporter/excigne configuration.

Input Connectors

RJ45 (LVDS IQ), BNC (GPS 10 MHz)

Notes:

Specifications established at rated power unless otherwise noted.

All measurements at 50 ohm resistive load.

Not all specifications are tested in production.

AC input voltage at nominal level.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

