

AUDIO SPECIFICATIONS

GENERAL

RF Frequency Range

87.5 MHz to 108 MHz

Digitally programmable in 10 kHz steps

Frequency Stability

± 1 ppm 0°C to +50°C ambient temperature range

Modulation Type

Direct Digital Synthesis (DDS) using a 32-bit NCO

Modulation Capability

160% (4 dB) ± 75 kHz reference standard

STEREO PERFORMANCE WITH DIGITAL AUDIO INPUT

Input Connector

Two XLR female inputs

AES/EBU Input Impedance

110 ohms, nominal

Input Level

0 dBfs to -16 dBfs for 100% modulation

Data Format

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

Data Rate

48 kHz to 192 kHz

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

Specification: Better than 60 dB, 30 Hz to 15 kHz

Typical: -65 dB, 30 Hz to 15 kHz

Amplitude Response (L or R)

± 0.1 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

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 using left channel, right channel, or left + right channels

STEREO PERFORMANCE WITH ANALOG STEREO INPUT

Input Connector

Two XLR female (Left and Right)

Input Impedance

Balanced, no transformers, 600 ohms

Input Level

-12 dBu to 12 dBu for 100% modulation

Input Quantization

Sampled at 96 kHz with 24-bit ADC

Pre-Emphasis

0 μ s, 50 μ s or 75 μ s, user selectable

Pilot Carrier

19 kHz ± 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 ± 75 Hz deviation reference

Stereo Separation

Specification: Better than 60 dB, 30 Hz to 15 kHz

Typical: -65 dB, 30 Hz to 15 kHz

Amplitude Response (L or R)

± 0.1 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 kHz, 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 using left channel, right channel, or left + right channels

AUDIO SPECIFICATIONS

MONAURAL PERFORMANCE WITH DIGITAL OR ANALOG INPUTS

Amplitude Response (L or R)

±0.1 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 ±75 kHz deviation with 75 μs 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 μs de-emphasis

WIDEBAND COMPOSITE OPERATION

Input Connector

Two BNC female connectors, balanced

Input Impedance

10,000 ohms

Input Quantization

Sampled at 750 kS/s with 16-bit ADC

Input Level

3.5 V_{pp} nominal for 100% modulation

Amplitude Response

±0.05 dB, 20 kHz to 100 kHz

Phase Response

±0.1° from linear phase, 20 Hz to 100 kHz

FM Signal-to-Noise Ratio

90 dB below 100% modulation (reference 400 Hz at ±75 kHz deviation with 75 μs 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 μs 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, balanced

Input Impedance

10,000 ohms

Input Level

3.5 V_{pp} 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 93 kHz (25 kHz to 93 kHz monaural)

SCA GENERATOR PERFORMANCE

Input Connector

Two XLR female connectors, balanced

Input Impedance

600 ohms

Input Level

-12 dBu to 12 dBu for ±7.5 kHz deviation

Amplitude Response

±0.2 dB, 30 Hz to 7.5 kHz

Pre-Emphasis

0 μs, 50 μs, or 75 μs

Signal-to-Noise Ratio

70 dB or better

Frequency

20 kHz to 99 kHz, adjustable in 1 Hz steps

Modulation

Narrow band FM with maximum deviation of ±7.5 kHz

Injection Level

0% to 15%, user adjustable

RDS/RBDS GENERATOR PERFORMANCE

Input Connector

RJ45, RS-232 (DCE, 115.2 kbps)

Frequency

57 kHz ±0.03 Hz

Injection Level

0% to 10%, user adjustable

Programming

ASCII, UECP

Supported Commands

PI, PS, PTY, PTYN, TA, TP, MS, DI, RT, AF, ODA (Freeformat)