

## AUDIO SPECIFICATIONS

### GENERAL

#### RF Output Power

Up to 750 W (Depending on transmitter model)

#### RF Frequency Range

87.5 MHz to 108 MHz

Digitally programmable in 1 kHz steps

#### RF Output Monitor

-30 dBc, BNC jack

#### Frequency Stability

± 200 Hz

0°C to +50°C ambient temperature range

#### Modulation Type

Direct Digital Synthesis (DDS) using a 32 bit NCO  
Direct-to-channel RF generation at 635 MS/s with  
a 16-bit DAC

#### Modulation Capability

160% (4 dB) ±75 kHz reference standard

±300 kHz modulation capable upon request

#### Output Impedance

50 ohms

### STEREO PERFORMANCE WITH DIGITAL AUDIO INPUT

#### Input Connector

One XLR female, one DB15 male and one optical input

#### AES/EBU Input Impedance

110 ohms, nominal

#### Input Level

0 dBfs to -16 dBfs for 100% modulation

#### Data Format

AES/EBU (XLR, DB15), SPDIF (optical); 16 bits to 24 bits resolution

#### Data Rate

20 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 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 µs 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)

SMPTTE: 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

### STEREO

### PERFORMANCE WITH ANALOG STEREO INPUT

#### Input Connector

DB15 male

#### Input Impedance

Balanced, no transformers, 600 ohms

#### Input Level

-6 dBu to 12 dBu for 100% modulation

#### Input Quantization

Sampled at 77.5 kHz with 24-bit ADC

#### Pre-Emphasis

0 µs, 25 µs, 50 µs or 75 µs, 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 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 µs 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

## AUDIO SPECIFICATIONS

### 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

## MONAURAL PERFORMANCE WITH DIGITAL OR ANALOG INPUTS

### Amplitude Response (L or R)

±0.05 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 connectors, one balanced, one unbalanced

### Input Impedance

10,000 ohms

### Input Quantization

Sampled at 620 KS/s with 16 bit ADC

### Input Level

3.5 V<sub>pp</sub> nominal for 100% modulation

### Amplitude Response

±0.05 dB, 20 Hz 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

### Input Impedance

10,000 ohms unbalanced

### Input Level

1.24 V<sub>rms</sub> 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

DB15 Male

### Input Impedance

2 balanced, 600 ohms

### Input Level

-6 dBu to 12 dBu for ±7.5 kHz deviation

### Amplitude Response

±0.02 dB, 30 Hz to 7.5 kHz

### Pre-Emphasis

0 µs, 50 µs, 75 µs or 150 µs

### Signal-to-Noise Ratio

60 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

DB9, RS-232 (DCE, 75 to 115.2 kbps)

### Frequency

57 kHz ±0.03 Hz

### Injection Level

0% to 15%, user adjustable

### Programming

ASCII, UECF

### Supported Commands

PI, PS, PTY, PTYN, TA, TP, MS, DI, RT, AF, ODA (Free-format)