

FM 20T - Technical Specifications : Technical Specifications

RF SPECS

Output Power:**Range:**

20 kW (7.5 kW to 22 kW)

Efficiency:

Typically 68% (AC line input to RF output)

VSWR:

1.8:1 maximum (will operate into higher VSWR with automatic power reduction)

Impedance:

50 ohm

Frequency:**Range:**

87.5 MHz to 108 MHz, tuned to specific operating frequency, exciter programmable in 10 kHz steps

Stability:

± 300 Hz, 0 to 50° C

RF Harmonics Suppression:

Suppression meets all FCC/DOC requirements and CCIR recommendations

Modulation:**Type:**

Direct frequency modulation of carrier frequency

Capabilities:

Greater than ± 350 kHz

Regulatory:

Meets IEC 215 safety requirements

STXE 60 EXCITER AUDIO SPECIFICATIONS

General**RF Power Output:**

5-66W

Output Impedance:

50 ohms nominal

VSWR:

Rated power into 1.5:1 VSWR. Open and short circuit protected at all phase angles

Frequency Range:

87.5MHz to 108MHz; 10kHz increments

Frequency Stability:

Internal TCXO: +/-100Hz factory calibration, +/-4ppm agin/temp, -10 degrees C to +50 degrees C; External Input: +/- accuracy of reference source

Audio Inputs:

AES, L&R analog, Unbalanced composite, SCA audio inputs, RDS input

Modulation Type:

Direct-to-channel digitally generated FM (no analog up-conversion); FM only

Modulation Capability:

Up to 300kHz

Asynchronous AM S/N Ratio:

75dB below rated power reference carrier with 100% AM modulation at 400Hz, with no FM modulation present.

Synchronous AM S/N Ratio:

60dB below rated power reference carrier with 100% AM modulation at 400Hz, with FM modulation +/- 75kHz at 400Hz

Spurious and Harmonic:

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: 85dB or better typical, low pass filter standard

AC Input:

90 to 264VAC; 47-63Hz

Power Factor:

0.99 typical at 110VAC, 0.95 typical at 220VAC

AC Inputs Testing:

Tested to EN 301 489-1, including Voltage Dips and Dropouts (Section 9.7B), Voltage Surges (Section 9.8), and conducted immunity and conducted radiation

Regulatory:

FCC; IC; CE; BETS-6; IEC 215 Safety

Operational Modes:

Stereo, mono (L+R), L only, R only

Stereo:**Connector Type:****AES:**

Wire – XLR

L&R:

XLR

Input Level:**AES:**

-2 dBfs for 100% modulation; 16-24 bits (32, 44.1, 48 or 96 kHz typical rates for AES/EBU devices)

L&R:

+10 dBm for 100% modulation into 600 ohms

Impedance:**AES:**

110 ohm balanced

L&R:

600 ohms or 10 k selectable; balanced

Amplitude Response:**AES:**

±0.25 dB, 20 Hz to 15 kHz

L&R:

±0.25 dB, 20 Hz to 15 kHz

THD + Noise:**AES:**

0.03 or better @400Hz measured 10 Hz-22Khz, 75 uS deemphasis

L&R:

0.005 typical @400Hz, measured 10 Hz-22Khz, 75 uS deemphasis

S/N Ratio:**AES:**

95dB typical below 100% modulation @ 400Hz, 10Hz-22Khz bandwidth, A-weighted filter 100dB typical below 100% modulation @ 400 Hz, 10Hz-22Khz bandwidth, CCIR-468 filter

L&R:

86dB or better below 100% modulation @ 400Hz, 10 Hz-22Khz bandwidth, unweighted

Analog:

93dB typical below 100% modulation @ 400Hz, 10Hz-22Khz bandwidth, A-weighted filter 98dB typical below 100% modulation @ 400 Hz, 10Hz-22Khz bandwidth, CCIR-468 filter

S/N Ratio Stereo:

80dB or better below 100% modulation @ 400Hz, unweighted

Stereo Separation:

70dB or better, 20Hz to 15kHz

AES:

80 dB, 20 Hz to 15 kHz

L&R:

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70 dB, 20 Hz to 15 kHz

Pilot Stability:

± 0.3 Hz, 0° C to +50° C

Audio Overshoot:

150% peak deviation max.

Composite Performance:

Connector Type:

BNC Unbalanced: BNC

Input Level:

3.5 V p-p for 100% modulation into 10 kOhms

Impedance:

Balanced: 10 kOhm or 50 ohm selectable, Unbalanced: 10 kOhm

Amplitude Response:

± 0.03 dB 20 Hz to 53 kHz; 0.1 dB 53 kHz to 99 kHz

Phase Response:

$\pm 0.1^\circ$ from linear phase; 53 kHz to 100 kHz

THD + Noise:

0.005% or less @ 400Hz, 10-22Khz bandwidth, 75 us deemphasis

Intermod Dist:

SMPTE: 0.01% or less (60/7000 Hz, 1:1 ratio) DIM-B: 0.005% typical (14Khz)

FM S/N Radio:

88 dB below 100% modulation @ 400 Hz, 10Hz-22Khz bandwidth, unweighted

FM S/N Ratio:

95dB typical below 100% modulation @ 400Hz, 10Hz-22Khz bandwidth, A-weighted filter

FM S/N Ratio:

100dB typical below 100% modulation @ 400 Hz, 10Hz-22Khz bandwidth, CCIR-468 filter

SCA/SCA2/RDS:

Air Conditioning Sizing:

5.41 ton A/C

Impedance:

10k ohms unbalanced

Amplitude Response:

+/- 0.1dB; 53Hz to 100kHz

19kHz Output:

19kHz synchronization clock for external RBDS/RDS operation 1V pp into high impedance

Physical:

Height:

3.5 inches (2 RU)

Width:

19" EIA rack mountable

Depth:

STXe 60 19.5 inches

Weight:

STXe 60 20lbs. unpacked

MECHANICAL/PHYSICAL

Size:

Unpacked:

Transmitter: 50.5"W x 70"H x 31.5"D (128.3 x 177.8 x 80 cm) Power Supply: 28.5"W x 70"H x 31.5"D (72.4 x 177.8 x 80 cm)

Weight:

Unpacked:

Transmitter: 1200 lbs. (545 kg) Power Supply: 1500 lbs. (681 kg)



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RF Output Connector:

3-1/8" EIA flange

Heat Dissipation:

10 kW (34,130 BTU/hr) at 20 kW RF output

Air Conditioning Sizing:

2.85 ton A/C unit

To determine Air Condition size for closed system:

one BTU/hr=0.293 watt one watt=3.413 BTU/hr 12,000 BTU/hr=1 ton of A/C eg. at 10 kW dissipated $(10,000 \times 3.413 = 34,130/12,000 = 2.85)$

ENVIRONMENTAL**Temperature Range:**

-10° to +50° C

Altitude:

7500 ft. (2286 M) @ 50 Hz; 10,000 ft. (3048 M) @ 60 Hz

Humidity:

0-95% Non-Condensing

ELECTRICAL**AC Input Voltage:**

208/240 V Delta or WYE, 50/60 Hz, three phase. (Taps for 196 to 252 V, other voltages and line frequencies are available upon request)

Power Consumption:

30 kW at 20 kW RF output

ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

