

### FM 5T - Technical Specifications : Technical Specifications

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#### RF SPECS

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**Output Power:****Range:**

5 kW (2.5 kW to 5.5 kW)

**Efficiency:**

Typically 60% (AC line input to RF output)

**VSWR:**

1.8:1 maximum. (Capable of operating into higher VSWR with automatic power reduction)

**Impedance:**

50 ohm (others on special request)

**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

#### FM AUDIO SPECIFICATIONS WITH FXI 250 EXCITER

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**Modes:**

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

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

Wire – XLR, Optical – Toshiba (TosLink)

**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 ohm

**Impedance:****AES:**

110 ohm balanced

**L&R:**

600 ohm or 10 kOhm selectable; balanced

**Amplitude Response:****AES:**

±0.5 dB, 20 Hz to 15 kHz

**L&R:**

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±0.5 dB, 20 Hz to 15 kHz

**THD + Noise:**

**AES:**

0.05% or better

**L&R:**

0.05% or better

**Intermod Dist:**

**AES:**

0.05% or better

**L&R:**

0.05% or better

**S/N Radio:**

**AES:**

82 dB or better below 100% modulation @ 400 Hz

**L&R:**

82 dB or better below 100% modulation @ 400 Hz

**Separation:**

**AES:**

50 dB, 20 Hz to 15 kHz

**L&R:**

50 dB, 20 Hz to 15 kHz

**Linear Crosstalk:**

45 dB below 100% modulation; 20 Hz to 15 kHz; main to sub and sub to main

**Pilot Stability:**

±0.3 Hz, 0° C to 50° C

**38, 57, 76, 95 kHz Suppression:**

80 dB below 100% modulation

**Asynchronous AM S/N Ratio:**

55 dB below rated power reference carrier with 100% AM modulation at 400 Hz, 75 µs de-emphasis with no FM modulation present

**Synchronous AM S/N Ratio:**

50 dB below rated power reference carrier with 100% AM modulation at 400 Hz, 75 µs de-emphasis with FM modulation ±75 kHz at 400 Hz

**Pre-emphasis:**

None, 50 µs, or 75 µs; software programmable

**Composite:**

**Connector Type:**

BNC (2); unbalanced, balanced

**Input Level:**

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

**Impedance:**

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

**Amplitude Response:**

±0.01 dB 20 Hz to 53 kHz; 0.1 dB 53 kHz to 99 kHz

**Phase Response:**

±0.1° from linear phase; 53 kHz to 100 kHz

**THD + Noise:**

0.02% or less

**Intermod Dist:**

0.02% or less

**S/N Radio:**

85 dB below 100% modulation @ 400 Hz

**Asynchronous AM S/N Ratio:**

55 dB below rated power reference carrier with 100% AM modulation at 400 Hz, 75 µs de-emphasis with no FM modulation present

**Synchronous AM S/N Ratio:**



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50 dB below rated power reference carrier with 100% AM modulation at 400 Hz, 75  $\mu$ s de-emphasis with FM modulation  $\pm 75$  kHz at 400 Hz

### **Mono:**

#### **Connector Type:**

XLR

#### **Input Level:**

3.5 V p-p for 100% modulation into 600 ohm

#### **Impedance:**

600 ohm or 10 kOhm selectable

#### **Amplitude Response:**

$\pm 0.5$  dB; 20 Hz to 15 kHz

#### **THD + Noise:**

0.02% or less; 20 Hz to 15 kHz

#### **Intermod Dist:**

0.02% or less; 20 Hz to 15 kHz

#### **S/N Ratio:**

85 dB below 100% modulation @ 400 Hz

#### **Asynchronous AM S/N Ratio:**

55 dB below rated power reference carrier with 100% AM modulation at 400 Hz, 75  $\mu$ s de-emphasis with no FM modulation present

#### **Synchronous AM S/N Ratio:**

50 dB below rated power reference carrier with 100% AM modulation at 400 Hz, 75  $\mu$ s de-emphasis with FM modulation  $\pm 75$  kHz at 400 Hz

### **SCA:**

#### **Internal:**

##### **Input Level:**

+10 dB for 10% modulation into 600 ohm

##### **Impedance:**

600 ohm or 10 kOhm selectable

##### **Amplitude Response:**

$\pm 0.5$  dB; 20 Hz to 7 kHz

##### **S/N Ratio:**

60 dB or better

##### **Frequency:**

20 kHz to 99 kHz; software programmable

##### **Deviation:**

2.5 to 10 kHz; software programmable

##### **Injection Level:**

2% to 15%; software programmable

#### **External:**

##### **Connector Type:**

BNC

##### **Input Level:**

3.5 V p-p for 10% deviation

##### **Impedance:**

10 kOhm unbalanced

##### **Amplitude Response:**

$\pm 0.5$  dB; 20 Hz to 100 kHz

### **RDS:**

#### **Internal:**

##### **Frequency:**

57 kHz

##### **Injection Level:**

2% to 15%; software programmable

#### **External:**

##### **Connector Type:**



# Broadcast Electronics

## Technical Specifications

BNC

**Input Level:**

3.5 V p-p for 10% deviation

**Impedance:**

10 kOhm unbalanced

**Amplitude Response:**

±0.5 dB; 20 Hz to 100 kHz

**19 kHz:**

19 kHz synchronization clock for external RBDS/RDS operation 2.5 V p-p into 50 ohm

### FM AUDIO SPECIFICATIONS WITH FM 250C EXCITER

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**Composite:**

**Connector Type:**

BNC (3); un-balanced, balanced, front panel test

**Input Level:**

3.5 V p-p nominal, for ±75 kHz deviation

**Impedance:**

Unbalanced: 10 kOhm, nominal, resistive. Balanced: 10 kOhm or 50 ohm, programmable, jumper selected

**Amplitude Response:**

±0.1 dB, 30 Hz to 53 kHz

**Phase Response:**

±0.25 degree from linear phase, 30 Hz to 53 kHz

**THD + Noise:**

0.02% or less

**Intermod Dist:**

0.02% or less

**S/N Radio:**

85 dB below 100% modulation @ 400 Hz

**Asynchronous AM S/N Ratio:**

55 dB below rated power reference carrier with 100% AM modulation at 400 Hz, 75 µs de-emphasis with no FM modulation present

**Synchronous AM S/N Ratio:**

50 dB below rated power reference carrier with 100% AM modulation at 400 Hz, 75 µs de-emphasis with FM modulation ±75 kHz at 400 Hz

**Mono:**

**Connector Type:**

Terminal Block

**Input Level:**

+10 dBm nominal for ±75 kHz deviation @ 400 Hz, adaptable to other levels

**Impedance:**

600 ohm balanced, resistive, adaptable to other impedances, 60 dB common mode suppression

**Amplitude Response:**

±0.5 dB, 30 Hz to 15 kHz; selectable flat, 25, 50, or 75 µs pre-emphasis

**THD + Noise:**

0.02% or less

**Intermod Dist:**

0.02% or less

**S/N Radio:**

85 dB below 100% modulation @ 400 Hz

**Asynchronous AM S/N Ratio:**

55 dB below rated power reference carrier with 100% AM modulation at 400 Hz, 75 µs de-emphasis with no FM modulation present

**Synchronous AM S/N Ratio:**

50 dB below rated power reference carrier with 100% AM modulation at 400 Hz, 75 µs de-emphasis with FM modulation ±75 kHz at 400 Hz

**SCA:**



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## Technical Specifications

**External:****Connector Type:**

BNC (3); un-balanced

**Input Level:**

3.5 V p-p nominal for 7.5 kHz deviation

**Impedance:**

100 kOhm nominal, resistive

**Amplitude Response:**

±0.2 dB, 40 kHz to 100 kHz

### MECHANICAL/PHYSICAL

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**Size:****Unpacked:**

34.5"W x 70"H x 37.25"D (87.83 x 177.8 x 94.61 cm)

**Weight:****Unpacked:**

1000 lbs. (455 kg)

**RF Output Connector:**

1 5/8" EIA flange

### ENVIRONMENTAL

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**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

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**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:**

Typically 8.3 kW (at 0.92 pf) at 5 kW RF output

### ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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