XR50

TECHNICAL SUMMARY ISSUE 2.1
www.nautel.com | info@nautel.com

GENERAL

Transmitter Type
Medium wave, 100% solid state

Configuration
Eight RF power modules each including eight broadband RF amplifiers and four modulator

Dual DDS exciters and modulation encoders. Full automatic changeover

RF Output Power
Maximum: 60 kW

Range: 10 kW to 60 kW

Six programmable preset power level profiles, selectable locally or remotely

RF Output Connection
3 1/8 inch EIA flange standard

RF Output Impedance
50 ohms, unbalanced

Efficiency
84% typical

RF Load VSWR
8,000 peak reflected watts 1.5:1 VSWR at 50 kW, 100% modulation

Frequency Range
531 kHz to 1,610 kHz. Supplied, tuned and tested to one frequency as specified

Frequency Stability
± 2ppm over temperature range. External GPS for increased stability

Modulation Type
Nautel Wideband Interphase Pulse Duration Modulator

Modulation Capability
140% positive peak modulation at 50 kW
120% positive peak modulation at 60 kW

Spurious and Harmonic
Exceeds FCC, IC and ITU requirements

80 dB relative to carrier

AC INPUT

Voltage
198 V ac to 630 V ac, 3 phase, 50 Hz or 60 Hz to customer specifications

Power Supply Variation
±10% voltage , 47 Hz to 63 Hz

Power Consumption
59.9 kW typical at 50 kW, 0% modulation
89.3 kW typical at 50 kW, 100% modulation

71.4 kW typical at 60 kW, 0% modulation
107 kW typical at 60 kW, 100% modulation

Power Factor
0.95 typical

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)

Cooling Air Requirements
2,700 m^3/hr (1,600 CFM)

PHYSICAL

Size
184 cm H x 134.5 cm W x 104 cm D
(72.5" H x 53" W x 41" D)

Weight
885 kg (1,950 lbs)

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AUDIO PERFORMANCE

Audio Input
600 ohms balanced

+10 dBm nominal (adjustable from 0 dBm to +12 dBm)

Frequency Response
+0.2 dB/-0.8 dB, 30 Hz to 10,000 Hz.
Referenced at 1 kHz, 95% modulation

Total Harmonic Distortion
Better than 0.8% (THD), 30 Hz to 10,000 Hz.
Referenced at 1 kHz, 95% modulation

Intermodulation Distortion
1.0% or less, 60/7000 Hz, 1:1 ratio
SMPTE standards at 95% modulation.

Transient Intermodulation Distortion
0.5% at 80% modulation, 2.96 kHz/8 kHz, 30 kHz BW

Square Wave Overshoot
1.0% or less at 400 Hz (100 µS risetime)

Square Wave Tilt
0.5% or less at 40 Hz

Carrier Shift
0.5% or less

Hum and Noise
-65 dB or better 50 kW, 100% modulation

DIGITAL COMPATIBILITY

HD Radio™
Compatible with NE IBOC - HD Radio signal generator

Exceeds all regulatory requirements for AM HD Radio operation

DRM
Compatible - Consult factory

Notes:
Specficiations defined in a laboratory environment with high grade source and demodulation equipment. Standard factory measurement does not include all items

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

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