

# XR3/XR6

TECHNICAL SUMMARY ISSUE 1.3  
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## GENERAL

### Transmitter Type

Medium wave, 100% solid state

### Configuration

Eight broadband RF amplifiers and four modulators mounted in a plug-in RF Module

Dual DDS exciters and modulation encoders.

Full automatic changeover

Second redundant spare module with full automatic changeover (optional)

### RF Output Power

**Maximum:** XR3 - 3.75 kW

XR6 - 7.5 kW

### Max average power:

XR3 - 4.5 kW

(3 kW + 100% modulation)

XR6 - 9 kW

(6 kW + 100% modulation)

**Range:** XR3 - 50 W to 3.75 kW

XR6 - 50 W to 7.5 kW

Six programmable preset power level profiles, selectable locally or remotely

### RF Output Connection

$7/8$ " or  $1\ 5/8$ " standard

### RF Output Impedance

50 ohms, unbalanced

### Efficiency

83% typical

### RF Load VSWR

XR3 - 500 peak reflected watts 1.5:1 VSWR at 3 kW, 100% modulation

XR6 - 1,000 peak reflected watts 1.5:1 VSWR at 6 kW, 100% modulation

### Frequency Range

531 kHz to 1,710 kHz. Supplied, tuned and tested to one frequency as specified

### Frequency Stability

$\pm 2$  ppm; less than 4 Hz over temperature range  
External GPS for increased stability

### Modulation Type

Nautel Wideband Interphase Pulse

Duration Modulator

### Modulation Capability

XR3

155% positive peak modulation at 2.5 kW

145% positive peak modulation at 3 kW

120% positive peak modulation at 3.75 kW

XR6

155% positive peak modulation at 5 kW

145% positive peak modulation at 6 kW

120% positive peak modulation at 7.5 kW

### Spurious and Harmonic

Exceeds FCC, IC and ITU requirements

80 dB relative to carrier

## AC INPUT

### Voltage

198 to 437 V ac, 3 phase

200 to 260 V ac, 1 phase

50 Hz or 60 Hz to customer specifications

### Power Supply Variation

$\pm 10\%$  voltage, 47 Hz to 63 Hz

### Power Consumption

XR3

3.0 kW typical at 2.5 kW, 0% modulation

4.5 kW typical at 2.5 kW, 100% modulation

3.6 kW typical at 3 kW, 0% modulation

5.4 kW typical at 3 kW, 100% modulation

XR6

6 kW typical at 5 kW, 0% modulation

9 kW typical at 5 kW, 100% modulation

7.2 kW typical at 6 kW, 0% modulation

10.8 kW typical at 6 kW, 100% modulation

### Power Factor

0.95 typical, 3 phase

0.85 typical, 1 phase

## 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 3,000 m (0 ft to 10,000 ft)

### Cooling Air Requirements

340 m<sup>3</sup>/hr (200 CFM)

## PHYSICAL

### Dimensions

184 cm H x 58.4 cm W x 80.5 cm D

(72.5" H x 23" W x 31.7" D)

### Weight

XR3 - 3 Ph - 191.5 kg (423 lbs)

XR6 - 3 Ph - 212.5 kg (469 lbs)

XR3/XR6 - 1 Ph - 223 kg (493 lbs)



## 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

XR3

1.25% @ 1,250 W

1.5% @ 500 W (typical)

XR6

1.25% @ 2,500 W

1.5% @ 500 W (typical)

### 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  $\mu$ s risetime)

### Square Wave Tilt

0.5% or less at 40 Hz

### Carrier Shift

1% or less at 25, 50, 85 & 100% modulation

### Hum and Noise

-65 dB or better below 6 kW, 100% modulation, 3 phase

-60 dB or better below 6 kW, 100% modulation, 1 phase

## 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:

Specifications 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.