

### **DX 200**

**200kW Digital Solid**

**State AM Transmitter**

No matter how demanding your broadcast needs, the Harris DX 200 will keep you on the air. Hundreds of broadcasters have benefited from the superior performance and reliability provided by Harris-patented digital amplitude modulation. According to our customers, DX transmitters provide unsurpassed audio performance, improved coverage, simple operation, the lowest cost of operation, and the highest reliability of any medium wave transmitter.

#### **Features/Benefits**

- ▶ Digital: Harris DX transmitters have Direct Digital Synthesis of the RF envelope using true digital modulation, not PDM.
- ▶ Reliable: Harris DX transmitters have set a new standard for RF amplifier reliability and ruggedness, the RF modules run exceptionally cool.
- ▶ Simple: Harris DX transmitters are simple to operate and maintain. Each system uses standard off-the-shelf components. Components are easily accessible and field repairable.
- ▶ Efficient: Harris DX transmitters are proven to yield typical efficiency of over 85%, resulting in the industry's lowest power cost.
- ▶ Rugged: Harris DX transmitters use a patented lightning protection system that virtually eliminates failures. Built-in surge protection is standard on all AC mains lines and internal power supplies.
- ▶ Redundant: Harris DX transmitters use redundant circuit designs in critical areas. Soft failure and FLEXPatch™ reassignment ensure uninterrupted broadcasting without significant degradation in performance. Broadband interchangeable RF amplifier modules simplify maintenance.
- ▶ Future Compatibility: Harris DX transmitters ensure future digital broadcast compatibility with high peak-to-average power capability, exceptional audio bandwidth, and virtually no audio-to-RF group delay variation. Harris DX transmitters have been used for IBOC field tests.



## ***DX 200 Specifications***

### ***General***

Type of Modulation: Harris patented AM Digital Amplitude Modulation.  
Transmitter Type: Medium Wave, 100% solid state.  
Power Output Range: 40 kW - 200 kW. Transmitter capable of combined operation. Three adjustable power levels are provided.  
Frequency Range: 531 kHz - 1620 kHz. Supplied, tuned and tested on one frequency as specified.  
AC Mains Input: 380-20 kVAC, 3 phase user specified. 360-500 VAC, 3 phase. 190-260 VAC, single phase.  
Power Supply Variation:  $\pm 5\%$  voltage, 48-63 Hz.  
Transient Protection: Meets ANSI/IEEE C62.41-1980 requirements.  
Power Factor: 0.98% typical, with optional correction.  
Frequency Stability:  $\pm 10$  Hz, 0 to 50°C,  $\pm 2$  Hz at typical conditions.  
Audio Input: -10 to + 10 dBm, adjustable transformerless input. 600, 150, and 50 ohm terminations provided.  
RF Output: 4-1/16" EIA flange (female), 50 ohms unbalanced. Other impedances available upon request per quotation.  
RF Load: 50 ohms, nominal. Front panel matching adjustments. Antenna matching range 1.2:1 VSWR minimum.  
Cabinet & Harmonic/Spurious Radiation: Meets CCIR requirements.  
RF Monitor Provisions: Up to 10V RMS RF modulated output sample (up to 6v pp constant sample level for high, medium or low power settings). 5V RMS RF frequency monitor sample.  
Power Consumption: 229.9 kW or less (typical) at 200 kW, 0% modulation; 348.8 kW or less (typical) at 200 kW, 100% tone modulation.  
Overall Efficiency: Typically 86% at 200 kW.

### ***Audio Performance***

Audio Frequency Response: +0.2/-0.8 dB, 50 Hz to 10 kHz. Reference 1 kHz.  
Total Harmonic Distortion: 0.8% or less THD at 95% modulation, 50 Hz to 10 kHz at 200 kW.  
Intermodulation Distortion: 1.5% or less, 1:1, 60/7000 Hz; 2% or less, 4:1, 60/7000 Hz; SMPTE at 95% modulation. No audio filters required.  
Transient Intermodulation Distortion: 0.7% at 95% modulation, 2.96/8.0 kHz, 4:1. No audio filters required.  
Squarewave Overshoot: 1% or less at 400 Hz, 80% modulation.  
Squarewave Tilt: 2% or less at 50 Hz 80% modulation. No audio filters required.  
Carrier Shift: Less than 1%, referenced to 1 kHz 100% modulation.  
Hum and Noise: -65 dB or better below 100% modulation (unweighted).  
Positive Peak Capability: +110%.  
Duty Cycle: 100% single tone for 10 minutes followed by 75% single tone modulation for 50 minutes, at normal factory ambient temperature.

### ***Service Conditions***

Ambient Temperature: 0°C to +45°C, (derate 2°C/1,000 feet of altitude).  
Altitude: Up to 6,000 ft (1,829 meters); higher altitudes available on request for quotation.  
Humidity Range: 0 to 95%, non-condensing.  
Size: 198 cm H x 406 cm W x 122 cm D (78" H x 160" W x 48" D).  
Weight: 2,472 KG (5,450 lbs.) unpacked.

NOTES: 1. All measurements made into test load at rated power.  
2. Noise may degrade if AC lines are unbalanced.

Specifications subject to change without notice.



***next level solutions***

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