

## DX100 to DX200

100 to 200 kW Digital Solid State

Analog Transmitter

### Rugged and reliable DX transmitters from Harris. Simply the best for your modernization program.

With hundreds of Harris DX high power transmitters and power blocks installed worldwide, the digital-ready DX Series is the standard for high power medium wave broadcasting. The design of the DX Series blends exceptional audio performance, powerful and complete coverage, and low cost of operation. Plus, with Harris, customers get a warranty commitment that really performs when it counts. Call anytime day or night – even after the warranty period – and **get Harris expert telephone support at no cost.** Why take a chance on anything less?

#### FEATURE

#### ADVANTAGE

#### BENEFIT

<p>&gt; <b>Total Overall Efficiency</b> - This is a measure of how much output power is produced relative to the input electrical power.</p>	<p>&gt; Harris transmitters perform with an industry-best overall AC to RF efficiency of 86% including the cooling system.</p>	<p>&gt; Customers save significant money with a highly efficient transmitter, and those savings provide a better return on investment year after year.</p>
<p>&gt; <b>Digital Performance</b> - Harris high power DX transmitters are truly "digital-ready."</p>	<p>&gt; Other high power transmitters may not be usable for the coming digital revolution and thus, a complete re-investment may be required.</p>	<p>&gt; With Harris DX transmitters, conversion to digital radio (DRM or HD Radio) is quick and simple.</p>
<p>&gt; <b>Redundancy</b> - Harris DX transmitters feature dual oscillators (optional), dual buffer amplifiers, dual pre-driver amplifiers, multiple RF driver amplifiers, and multiple RF power amplifiers.</p>	<p>&gt; Harris redundant-design high power transmitters are available at a competitive price, so why buy another transmitter which does not feature the same redundancy?</p>	<p>&gt; Soft failure and the FLEXPatch™ RF amplifier reassignment ensures uninterrupted broadcasting without significant degradation in performance. This is particularly important for customers operating the transmitter remotely. Redundant features provide confidence to the customer.</p>
<p>&gt; <b>Identical, no-tune RF amplifier modules</b> - All RF modules used in the Harris high power AM transmitter use the same model-wide band amplifier module, meaning any Harris RF power amplifier (PA's) can be substituted, no matter the frequency.</p>	<p>&gt; Competing designs require keeping track of different PA's in different places within the transmitter. With multiple transmitters, technicians have to keep track of which transmitter an amplifier was removed from. This usually requires having more spare amplifiers on hand to solve these problems.</p>	<p>&gt; Harris simplifies the procurement or repair of PA's. Plus, there are no tuning controls or frequency dependent parts requiring adjustment.</p>
<p>&gt; <b>Diagnostics capability</b> - Harris transmitters include multiple sensors and detectors that protect the transmitter against real world operating conditions. All control, status, and metering of the transmitter can be communicated remotely via SNMP (or parallel or RS232) and generate alarm signals as necessary.</p>	<p>&gt; Harris transmitters are among the industry leaders for comprehensive diagnostic capabilities.</p>	<p>&gt; Even a minimal or reduced service staff can solve problems quickly and effectively over the telephone, leaving transmitter maintenance for routine visits. Extensive built-in diagnostic capability helps you manage multiple sites and transmitters through one spare parts depot, further reducing costs.</p>
<p>&gt; <b>Signal to Noise Ratio</b> - This is a measure of the hum or clarity of the broadcast. Harris DX transmitters feature a Signal to Noise Ratio of -68 dB.</p>	<p>&gt; Our Signal-to-Noise Ratio and Total Harmonic Distortion performance figures are the best in the industry.</p>	<p>&gt; Clear broadcasts draw more listeners. Harris customers repeatedly confirm that they're impressed with the audio quality of their Harris high power transmitters.</p>
<p>&gt; <b>Total Harmonic Distortion</b> - Another measure of audio quality, Harris high power transmitters feature a THD of 0.5% (typical) at 95% modulation for the DX200. The DX100 is 0.3% (typical).</p>		



> **DX100**  
Air Cooled



> **DX200**  
Air or Liquid Cooled Available  
Liquid Cooled Shown



## GENERAL SPECIFICATIONS

<b>Type of Modulation</b>	Harris patented AM Digital Amplitude Modulation.
<b>Transmitter Type</b>	Medium Wave & Long Wave versions available, 100% solid-state.
<b>Power Output Range</b>	100/150/200 kW, Transmitter capable of combined operation. Three adjustable power levels are provided.
<b>Frequency Range-MW</b>	531 kHz - 1620 kHz. Supplied, tuned and tested on one frequency as specified.
<b>Frequency Range-LW</b>	153 kHz - 279 kHz. Supplied, tuned and tested on one frequency as specified.
<b>AC Mains Input</b>	DX100: Any voltage between 363 and 502 VAC, 3 phase, plus 190 to 260 VAC, 1 phase, 50/60 Hz. DX150/DX200: Any voltage between 380 and 20 KVAC, 3 phase, plus 360 to 500 VAC, 3 phase, 50/60 Hz.
<b>Power Supply Variation</b>	+/- 5% voltage for full performance, 48 - 63 Hz. Transmitter operational over +10%/-15%.
<b>Transient Protection</b>	Meets ANSI/IEEE C62.41-1980 requirements.
<b>Power Factor</b>	DX100: 0.98 typical. DX150/200: 0.85 typical, 0.95 with optional correction.
<b>Frequency Stability</b>	+/- 10 Hz, 0 to 50° C, +/- 2 Hz at typical conditions. +/- 1 Hz under stable conditions with synthesizer.
<b>Audio Input</b>	-10 to + 10 dBm, adjustable, less the transformer input. 600, 150, and 50 ohm terminations provided.
<b>RF Output</b>	50 ohms unbalanced. Other impedances available upon request per quotation.
<b>RF Load</b>	50 ohms, nominal. Front panel matching adjustments. Antenna matching range 1.2:1 VSWR minimum.
<b>Cabinet &amp; Harmonic/Spurious Radiation</b>	All products less than 50 mW (CCIR requirements).
<b>RF Monitor Provisions</b>	Up to 10V RMS RF modulated output sample (adjustable sample level over 6/1 power range). 5V RMS RF frequency monitor sample.
<b>Overall Efficiency</b>	Typically 86%.

## AUDIO PERFORMANCE

<b>Audio Frequency Response</b>	+0.2/-0.8 dB at 95% modulation, 50 Hz to 10 kHz. Reference 1 kHz.
<b>Total Harmonic Distortion</b>	DX100: 0.6% or less at 95% modulation, 0.3% is typical (50 Hz to 10 kHz). DX200: 0.9% or less at 95% modulation, 0.5% is typical (50 Hz to 10 kHz).
<b>Transient Intermodulation Distortion</b>	0.8% at 95% modulation, 2.96/8.0 kHz, 4:1.
<b>Squarewave Overshoot</b>	1% or less at 400 Hz, 80% modulation. Measured peak to peak. No audio filters required.
<b>Squarewave Tilt</b>	1% or less at 50 Hz, 80% modulation. No audio filters required.
<b>Carrier Shift</b>	Less than 1%, 100% modulation at 1 kHz.
<b>Hum and Noise</b>	-68 dB (typical and unweighted).
<b>Positive Peak Capability</b>	DX100: +135%. DX150/200: +110%. Peak performance may be higher depending on power amplifier loading, temperature and input voltage.
<b>Duty Cycle</b>	100% single tone for 10 minutes followed by 75% single tone for 50 minutes, at normal factory ambient temperatures.

## SERVICE CONDITIONS

<b>Ambient Temperature</b>	0° to + 50°C (derate 2°C/304 meters feet of altitude) for air-cooled DX100 and DX200. For the liquid-cooled DX200, 0° to + 45°C (derate 2°C/304 meters feet of altitude).
<b>Altitude</b>	Up to 6,000 feet (1,829 meters); higher altitudes available on request for quotation.
<b>Humidity Range</b>	0 to 95%, non-condensing.

NOTES: 1) All tests made into a test load at rated power. 2) Noise may degrade if AC lines are unbalanced.  
3) Specifications may be changed by Harris without prior notice.



Specifications are subject to change. For a complete listing of the most current specifications, please visit our website at [www.harris.com/globalradio](http://www.harris.com/globalradio).

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