FLEXIVA DX™

1000 kW
Solid-State AM Transmitters

Flexiva DX™ family - made up of the DX 1000 kW solid-state AM transmitters — will stay on the air no matter how demanding the broadcast needs. Hundreds of broadcasters have benefited from the superior performance and reliability provided by patented digital amplitude modulation. Flexiva DX transmitters provide unsurpassed audio performance, improved coverage, simple operation, the lowest cost of operation and the highest reliability of any medium-wave transmitter. Extensive options are available to tailor the Flexiva DX system to facility needs, including both air and liquid-cooling options.

Flexiva DX™ Product Features

A digitally modulated transmitter, the Flexiva DX system is ready for DRM (Digital Radio Mondiale) or HD Radio™. Simply add the appropriate exciter, and Flexiva DX is on the air in digital broadcast mode.

- **Digital** — Flexiva DX transmitters have Direct Digital Synthesis of the RF envelope using true digital modulation, not PDM
- **Reliable** — Flexiva DX transmitters have set a new standard for RF amplifier reliability and ruggedness. The RF modules run exceptionally cool
- **Simple** — Simple to operate and maintain, Flexiva DX transmitters use standard off-the-shelf components, which are easily accessible and field repairable
- **Efficient** — Flexiva DX transmitters are proven to yield typical efficiency of over 83 percent, resulting in the industry's lowest power cost
- **Rugged** — Failures are virtually eliminated through a patented lightning protection system. Built-in surge protection is standard on all AC mains lines and internal power supplies
- **Redundant** — In critical areas, Flexiva DX transmitters use redundant circuit designs. Soft failure and FLEXPatch reassignment ensure uninterrupted broadcasting without significant degradation in performance. Broadband, interchangeable RF amplifier modules simplify maintenance
- **Future Compatibility** — Future digital broadcast compatibility is ensured with high peak-to-average power capability, exceptional audio bandwidth and virtually no audio-to-RF group delay variation. Flexiva DX transmitters have been used for IBOC field tests

Flexiva DX™

Specifications

Specifications and designs are subject to change without notice

General	
Type of Modulation	GatesAirpatented AM Digital amplitude modulation
Transmitter Type	Mediumwave, 100 percent solid state
Power Output Range	
DX 1000	100 W to 1000 kW
3 adjustable preset power levels are provided	
Frequency Range	
DX 1000	531 to 1620 kHz
Tuned and tested to 1 frequency, as specified	
AC Mains Input	
DX 1000	380 to 20 k VAC, 3phase user specified 360 to 500 VAC, 3phase 190 to 260 VAC, single phase
Power Supply Variation	
DX 1000	+10/-15% voltage, 48 to 63 Hz
Transient Protection	
DX 1000	Meets ANSI/IEEE C62.411980 requirements
Power Factor	
DX 1000	0.95% typical
Frequency Stability	
DX 1000	±10 Hz, 0 to 50° C, ±2 Hz at typical conditions
Audio Input	
DX 1000	-10 to +10 dBm, adjustable transformerless input; 600, 150, and 50 ohms terminators provided
RF Output	
DX 1000	4-1/16 in. EIA flange (female), 50 ohms unbalanced Other impedances available upon request per quotation
RF Load	
DX 1000	50 ohms, nominal Frontpanel matching adjustments Antenna matching range 1.2:1 VSWR minimum
Cabinet and Harmonic/Spurious Radiation	
DX 1000	Meets CCIR requirements
Overall AC Efficiency	
DX 1000	Typically 86%
General Specifications Specifically for DX 1000 kW Model	
RF Monitor Provisions	
DX 1000	Up to 10 V RMS RF modulated output sample (up to 6v pp constant sample level for high-, medium- or low-power settings) 5 V RMS RF frequency monitor sample

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Power Consumption	
DX 1000	1149.5 kW or less (typical) at 1000kW, 0% modulation; 1744kW or less (typical) at 1000kW, 100% tone modulation
Audio Performance	
Audio Frequency Response	
DX 1000	+0.2/-0.8 dB, 50 Hz to 10 kHz, reference 1kHz
Total Harmonic Distortion	
DX 1000	0.8% or less THD at 95% modulation, 50 Hz to 10 kHz at 200 kW
Intermodulation Distortion	
DX 1000	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	
DX 1000	0.7% at 95% modulation, 2.96/8.0 kHz, 4:1, no audio filters required
Squarewave Overshoot	
DX 1000	1% or less at 400 Hz, 80% modulation
Squarewave Tilt	
DX 1000	2% or less at 50 Hz, 80% modulation, no audio filters required
Carrier Shift	
DX 1000	Less than 1%, referenced to 1 kHz, 100% modulation
Hum and Noise	
DX 1000	-65 dB or better below 100% modulation (unweighted)
Positive Peak Capability	
DX 1000	+125%
Duty Cycle	
DX 1000	100% single tone for 10 minutes, followed by 75% single tone modulation for 50 minutes, at normal factory ambient temperature
Service Conditions	
DRM Average Power	
DX 1000	>500 KW in all digital mode at a PAPR less than 10
Ambient Temperature	
DX 1000	0° C a +45° C; (derate 2° C/1,000 ft of altitude)
Altitude	
DX 1000	Up to 6,000 ft (1,829 m); higher altitudes available on request for quotation
Humidity Range	
DX 1000	0 to 95%, noncondensing
Dimensions (H x W x D)	
DX 1000	78 x 800 x 48 in. (198 x 2032 x 122 cm)

Notes
All measurements made into test load at rated power.
Noise may degrade if AC lines are unbalanced.