nautel

NXSeries

Digital/Analog AM

HD Radio
Pure Digital. Clear Radio.

drm

1 kW and 2.5 kW Digital/Analog
AM Broadcast Transmitters

PRELIMINARY

NX Performance.
Now in Low Power.

"For the first time, Nautel's most advanced AM modulation and digital capability is available to low-power broadcasters."

SETTING THE STANDARD IN LOW POWER AM TRANSMITTER DESIGN

NX1 and NX2.5 are true extensions of Nautel's proven NX Series, bringing the same ultra-linear modulation architecture, digital transmission, and operational reliability used in high-power NX installations worldwide to 1 kW and 2.5 kW transmitters.

These are not scaled-down designs or entry-level compromises. Compact and rack-mountable, they are purpose-built NX transmitters that deliver flagship-class performance at power levels where this capability has never been available before.

PROVEN NX HERITAGE

With over 40 megawatts of AM power deployed globally, the NX Series is field-proven in demanding broadcast environments around the world. Five generations of transmitter design and tens of millions of operating hours have shaped an architecture known for spectral purity, efficiency, and long-term reliability. NX1 and NX2.5 inherit that legacy—bringing NX-class performance to low-power broadcasters who have traditionally been limited to basic transmitter designs.

DESIGNED FOR DIGITAL

NX1 and NX2.5 are the industry's first low-power AM transmitters specifically designed to support digital transmission.

Advanced digital modulation, ultra-linear design, and digital precorrection are built in—not added later—delivering exceptional performance and outstanding compatibility with modern digital AM standards.

HD Radio® Digital AM & FM

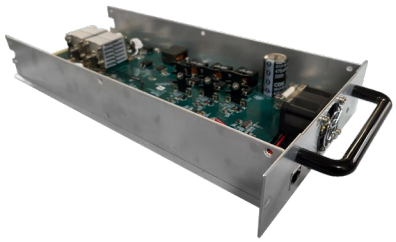
Specifically designed to support MA3 mode, they enable AM broadcasters to deliver audio quality comparable to FM, support multiple program streams, and transmit metadata such as song titles and station information —enhancing the digital AM experience.

NX Series transmitters configured with Digital DRM support all current DRM modes and provides excellent program flexibility allowing broadcasters to offer both AM and DRM services on a time of day basis.

OPTIMIZED FOR LOW POWER

Front-accessible RF Modules

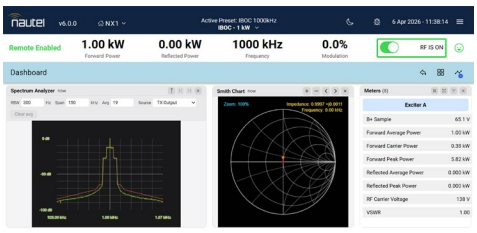
New power modules optimized for low power operation integrate an RF amplifier/ modulator, delivering a nominal 250 W of carrier power per module.



These modules are hot-pluggable from the front of the transmitter for easy service, and the advanced Class-D RF amplifier, with four transistors, offers superior efficiency and reliable performance.

Switching Power Supplies

Compact, titanium-grade power supplies with 96% efficiency minimize energy consumption and thermal stress. With a modular, easily serviceable design, the switching power supply enables quick replacement, while serial communication provides detailed metering and alarms, supporting real-time monitoring, proactive maintenance, and enhanced operational reliability.



Advanced User Interface (AUI)

PRELIMINARY

MORE CONTROL | MORE SAVINGS | MORE FLEXIBILITY

Easy On-air Serviceability

At all power and modulation levels, all modules contribute equally to the final output. If an amplifier fails, no stress is imposed on the remaining modules and spectral integrity is not compromised. Repair or replacement can be performed whenever it is convenient. Ventilation is provided by brushless DC powered ball bearing fans mounted to the front of each power module. Airflow is unaffected by AC supply variations, further ensuring cool operation and long term reliability.

Redundant Architecture

Redundancy features and protection systems make it easy to maintain continuous operation, thus reducing your operating costs even further. The NX Series offers:

- **Optional Standby Exciter**
- **Redundant Power Modules**
- **Failsafe remote control**

ADVANCED CONTROL

Bringing Nautel's award-winning HTML-based Advanced User Interface (AUI) to low power models, NX1 and NX2.5 provide enhanced control and comprehensive remote management, minimizing on-site visits. Open any modern web browser, enter your transmitter's IP address, login and you're connected.

REAL TIME BUILT-IN INSTRUMENTATION

Nautel's patented, real-time impedance measurement technology allows the antenna system load impedance to be optimized and monitored while the transmitter is operating normally. The transmitted voltage and current waveforms are compared to measure the load impedance over the operational frequency range. Because this system can measure impedance without requiring artificial swept tones, the antenna system impedance locus can be measured without taking the station off air. Impedance is measured at the combiner so no correction for harmonic filter phase is required. NX transmitters also utilize a built-in directional coupler for spectrum measurement instead of a traditional voltage or current sensor. The directional coupler increases the accuracy of spectrum measurement into a real antenna load which is quite important when measuring adjacent channel emissions.

OUTSTANDING EFFICIENCY LOWERS OWNERSHIP COST

Exceptional efficiency and low maintenance overhead make this transmitter extremely cost effective to own and operate. The high efficiency* means less energy is wasted as heat, which reduces cooling and ventilation costs. The resulting savings could amount to thousands of dollars per year.

POWER SAVING TECHNOLOGY

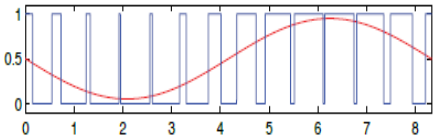
Nautel NX Series transmitters come standard with power saving technology commonly referred to as Carrier Control Algorithms or Modulation Dependent Carrier Level (MDCL). Power savings of up to 50% or more may be realized with minimal impact on the received signal quality and the coverage area.

ULTRA-LINEAR DIGITAL MODULATION

The NX Series transmitters achieve their outstanding linearity by employing a unique six phase Direct Digital Modulation that is encoded at an unprecedented 1.8 mega-samples/second.

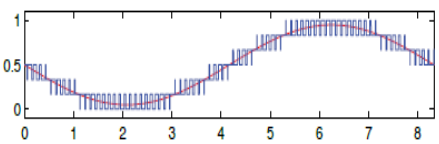
TRADITIONAL MODULATION

1 Phase Modulator



1.8 MEGA-SAMPLES/SECOND SIX PHASE DIRECT DIGITAL MODULATION

6 Phase Modulator



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* 78% efficiency for NX1, and 79% efficiency for NX2.5

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	NX1	NX2.5
ANALOG	1 kW	2.5 kW
Modules	4	10
Efficiency	78%	79%
AM Frequency	530 kHz – 1701 kHz	

NX SERIES QUICK SPECS

Efficiency
79% efficiency at rated power typical for NX2.5
78% efficiency at rated power typical for NX1

Modulation Capability
135% positive peak modulation at rated power

VSWR
1.5:1 VSWR threshold at rated power, 100% modulation

Frequency
530kHz - 1701 kHz

Transmission modes
Analog (Mono L, Mono L+R, Stereo), IBOC, DRM

Dimensions

NX2.5	75.6 cm H x 48.3 cm W x 58.4 cm D (29.75″/17 RU H x 19″ W x 23″ D)
NX1	53.3 cm H x 48.3 cm W x 58.4 cm D (21″/12 RU H x 19″ W x 23″ D)

RF output power (rated/max)

NX2.5	2.5 kW/2.75 kW
NX1	1 kW/1.1kW

Voltage
185-264Vac, 1 phase, 47 Hz to 63 Hz

Weight
- NX1: 77lbs (all components installed)
  54lbs (power modules & power modules & power supply/filtering components removed)
- NX2.5: 125lbs (all components installed)
  75lbs (power modules & B+ power supply/filtering components removed)

Power Factor
- NX2.5/NX1 - 0.95

RF output connection
7/8″ EIA for NX2.5 and Type-N for NX1

RF power modules each with:
- Digital optimized linear design
- Integrated RF amplifier/modulator
- Microcontroller for protection and monitoring
- Short circuit protection
- Hot pluggable

Advanced exciters and modulation encoders:
- Digital precorrection
- MDCL/Dynamic carrier control algorithms
- Integrated AM stereo
- Audio filter with pre-emphasis and low pass
- Automatic changeover (with optional dual exciter configuration)

Control and monitoring
- Local LCD Display
- HTML based remote access/control
- Contact closure remote interface
- Module level monitoring
- Power, current, voltage, RF spectrum, RF impedance, modulation, heat sink temperature, fan RPM

Making Digital Radio Work.

Nautel has emerged as one of the world's largest manufacturers of radio broadcast transmitters with more than 20,000 deployments in 177 countries.

PRELIMINARY