NX3 AM Transmitter

Making Digital Broadcasting **Work** PHONE +1.902.823.2233 FAX +1.902.823.3183 info@nautel.com www.nautel.com

GENERAL

Transmitter Type
Medium wave, AM, 100% solid state

Configuration
Four RF power modules, each including a single integrated RF amplifier/modulator

No frequency dependant parts in RF module

Each module is hot pluggable and has internal microcontroller for protection and monitoring over a serial bus
Short circuit protection at the module level offers an added layer of protection
Optional redundant digital single board exciters utilizing FPGA/DSP technology with automatic changeover
Pre-correction utilized specifically to improve digital performance

RF Output Power
Carrier Power Range: 0 to 3300 W

Up to 62 preset levels, presets may include other operational parameters such as DRM vs Analog and different program inputs

Output level stabilized against AC supply voltage variations

Built in Dynamic Carrier Control

Built in AM stereo

RF Output Connection
7/8" EIA or 1-5/8" EIA

RF Output Impedance
50 ohms, unbalanced

Efficiency
82% typical at 3 kW

RF Load VSWR
800 peak reflected watts (1.7:1 VSWR @ 3 kW, 100% modulation) results in instantaneous power shutback

200 reflected watts RMS (1.7:1 VSWR @ 3 kW, 0% modulation) results in a graceful power reduction

Frequency Range
531 kHz to 1,700 kHz.
"Quick frequency change capability"

Frequency Stability
±2 ppm/year over temperature range

±0.3 ppm/year with GPS option

Modulation Capability
140% positive peak modulation to 3000 W
130% positive peak modulation to 3300 W

Spurious and Harmonic

Meets ITU-R SM.328-11
Meets ITU-R SM.329-12

AC INPUT

Voltage
208 Vac & 380 Vac, 3 phase or to customer specifications

Power Supply Variation
±10% voltage, 47 Hz to 63 Hz

ENVIRONMENTAL

Temperature Range
0°C to + 50°C
Derate 3°C per 500 m above sea level
(2°C per 1,000 ft)

Cooling

Forced Air

Humidity Range
0% to 95% non-condensing

Altitude
0 m to 4,000 m (0 ft to 13,000 ft)

SAFETY
Meets EN60215: 1996 Safety Requirements for Radio Transmitting Equipment

PHYSICAL

Dimensions
184.2 cm H x 62.2 cm W x 81.3 cm D
(72.5" H x 23.1" W x 34" D)

Making Digital Broadcasting Work PHONE +1.902.823.2233 FAX +1.902.823.3183 info@nautel.com www.nautel.com

AUDIO PERFORMANCE

Analog Broadcast Inputs

Dual AES-EBU Digital Audio inputs* adjustable from -30dBFS to 0dBFS for 100% modulation

600 ohms balanced analog audio input +10 dBm nominal for 100% modulation, adjustable from -10 to +12 dBm

Digital Broadcasting Inputs

I,Q over AES-EBU* with sample rate converter
I,Q over LVDS, 3 pairs, Clock, Data, frame sync
*Two AES-EBU inputs provided and may be used for either analog audio or digital I,Q inputs
External Generator/Content Server required for DRM broadcasting
Optional Integrated HD Radio Generator (Exgine™)

Frequency Response

+0.2 dB/-0.8 dB, 30 Hz to 10,000 Hz.

Configurable audio input filters available to meet regional bandwidth restrictions

Total Harmonic Distortion

Better than 0.8% (THD), 1 kHz tone at 95% modulation (typical)

Intermodulation Distortion

SMPTE 1:1 Ratio, 60Hz/7kHz, 95% Mod Peak - 0.5% @ 5 kW (typical)
DIM-B, 2.96kHz/9kHz, 80% Mod Peak - 0.5% @ 5 kW

Carrier Shift

0.5% or less

Hum and Noise

-65 dB or better below 100% modulation at 5 kW

CONTROL AND MONITORING

Extensive Control/Monitoring/Troubleshooting system through Advanced User Interface (AUI) available over the internet from any web enabled device. Local control available via front panel LCD.

Built in instrumentation providing detailed spectrum/ impedance and modulation analysis.

Metering

Cube

DC Voltages (B+, PA and 15V)
DC Current
Sample Levels (PDM and RF Drive)
Fan Speeds
Heat Sink Temperature

Exciter

Output Current (RMS, Peak, Carrier)
Output Voltage (RMS, Peak, Carrier)
Forward Power (RMS, Peak, Carrier)
Reflected Power (RMS, Peak, Carrier)

RF Monitor

RF monitor is a power sample (using a directional coupler) that will allow for accurate audio performance measurements

Status

Easy access to current transmitter operating state, past and present alarm conditions and historical trends of both digital and analog channels

Schedule

Intuitive easy to read built in scheduler

Up to 144 yearly rules can be defined by user

Remote Control/ Monitoring

Three Remote interfaces:

- Direct wired optically isolated inputs and open collector outputs
- Web interface - All locally available control is available over TCP/IP web interface
- SNMPv1

Notes:

Specifications defined in a laboratory environment with high grade source and demodulation equipment. Standard factory measurements do not include all items.