



# NV40

FM Digital/Analog



40kW High Power  
FM Transmitter

# NV40



**44kW** Analog  
**32kW** Hybrid -20dB  
**17.5kW** Hybrid -10dB

The first high power, solid state FM transmitter with tube comparable affordability.

## MORE POWER, MORE CONTROL

With the highest single cabinet power output of any FM broadcast transmitter at 44kW the NV40 creates a whole new class of broadcast transmitter. More power and more options. More power for digital and more power for increased IBOC injection levels.

And power is only part of the NV40 story. The NV40 includes Nautel's Advanced User Interface (AUI) with 17" touch screen monitor and web access. The frequency agile NV40 comes complete with an advanced integral digital exciter and digital radio capability. Extensive architectural redundancy ensures no single point of failure. Add hot-swap front access serviceability with rugged design and the result is the most advanced digital FM transmitter available today.

## NAUTEL INNOVATIONS

- Highest single cabinet FM power: 44kW
- HD Power Boost for more IBOC power
- Footprint: 1/2 of comparable transmitters
- 17" touch screen interface
- 100% of local interface via the web
- Advanced instrumentation and management
- Integral digital exciter with pre-correction
- Plug-in upgrade to HD Radio Engine

# Making Digital Radio Work.



## NV40 ADVANCED USER INTERFACE (AUI)

The NV40 features a 17 inch color LCD screen with a wide range of configurable displays. The AUI can be controlled by touch screen, or via a mouse and keyboard. Screens are easy to set up and read, and clearly display the parameters you need to see.

Some of the features of the AUI include:

- RF and audio spectrum analyzers
- Comprehensive monitoring and control to the sub-module level
- Extensive logging of all events
- HD Radio constellation view

## 100% REMOTE ACCESS

No matter where you are, you're only moments away from ensuring your NV40 transmitter is operating optimally. Open a web browser, enter your transmitter's IP address and password and you're connected. 100% of the local NV40 display functionality is available on any web-interfaced device.

## INTEGRAL EXCITER FOR OUTSTANDING FM

Audio in RF out. The NV40 makes it that simple by incorporating the most advanced FM exciter available today. Direct to-channel digital modulation at more than 600 MSPS eliminates microphonics and spurious outputs. Consider these additional class leading capabilities:

- Next-generation adaptive precorrection
- Combiner equalization
- Spectrum analysis
- Redundant digital and analog audio inputs
- 100% digital setup: no potentiometers
- Flexible RDS/RBDS encoder and SCA encoders

## FREQUENCY AGILE

The NV40 transmitter utilizes a completely linear broadband design ideal for all N+1 configurations. The integral digital exciter selects the required presets to define the operating frequency and output power level making this transmitter completely adaptable.

## RUGGED AND ROBUST WITH ON-AIR SERVICEABILITY

The NV40 is ruggedly engineered to provide easy on-air service and maintenance. Sixteen hot-plug power modules and 32 hot-plug power supplies form the basis of the NV40's extremely redundant architecture. Each power module incorporates 8 power amplifiers and 6 brushless DC-powered fans. Both power modules and power supplies plug into the front of the transmitter, making service easy.





### HD POWER BOOST FOR EVEN MORE IBOC POWER (OPTIONAL)

The NV40 is designed to support Nautel's unique patent-pending technique for optimizing IBOC peak to average power ratios, HD Power Boost. By using intelligent algorithms, peak power requirements are reduced allowing the NV40 to transmit higher IBOC carrier power levels and at the same time achieve greater transmitter efficiency. This effect is even more pronounced at higher carrier injection levels and can produce significant power gains.

### EASE OF INSTALLATION

The Nautel NV40 is shipped as a complete unit with all modules installed ready for plug and play installation. Select AC inputs from 180 – 264 Vac in three phase or single phase or 312 – 457 Vac three phase.

## THE NAUTEL SOLID STATE MISSION

40 years ago Nautel set forth on a mission to give broadcasters superior solutions based on solid state technology. With the NV40 Nautel creates a whole new category of high power solid state transmitters that are truly affordable. Now Nautel reliability and modularity is available in a new power class at half the cost of traditional high power solid state solutions.

### NAUTEL RELIABILITY

With forty years of worldwide transmitter experience and one of the industry's most recognized reliability track records, your Nautel NV40 transmitter can be counted on for years to come. Combine Nautel's reliability with our top rated customer service and your broadcasting success is ensured.

QUICK SPECS		NV40
Analog FM Only	Max power (kW)	44
	Rated Power (kW)	40
	Typical Efficiency	64%
HD Hybrid Mode -20dB	Max power (kW)	32
	Typical Efficiency	55%
HD Hybrid Mode -10dB	Max power (kW)	17.5
	Typical Efficiency	40%
AC Input 50/60 Hz		1 phase 180 - 264V 3 phase 180 - 264V / 312 - 457V
Power Modules		16
Switching Power Supplies		32
Power Factor (typical)		0.99
Height (in/cm)		72.5 (184.2)
Width (in/cm)		65 (165.1)
Depth (in/cm)		32 (81.3)
Weight (lbs/kg)		1,600 (726)

Specifications subject to change

# Making Digital Radio Work.

## BUILT FOR HD RADIO BROADCASTING

The NV40 and Nautel's integrated digital solutions make your move to HD Radio™ broadcasting easy and economical. Innovative digital components provide a complete studio and transmitter site solution. Gain the full benefits of HD Radio including crystal clear programming, three channels on one frequency, song tagging, and the delivery of advanced Program Associated Data.

### BUILT FOR HD-RADIO BROADCASTING

Whether you intend to broadcast digitally now or in the future your NV40 will be ready. Just insert Nautel's optional Engine card into the NV40 chassis and deploy an Exporter at your studio site. Using the NV40 in this configuration provides an outstanding 32kW of FM + HD Radio hybrid mode power and allows the simultaneous transmission of an analog program and a CD quality digital format. Two more digital channels can be added by deploying an optional Nautel Importer and appropriate iBiquity Corporation licenses.

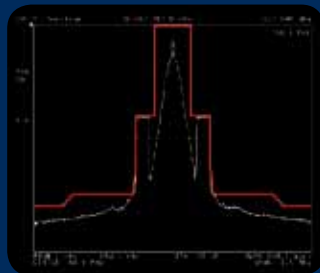


### ENGINE

The Engine is implemented as a card installed in the NV40's integral exciter. It accepts the digital channel program feed via LAN connections, decodes the data, and produces I and Q signals for the integral exciter. Nautel's Engine utilizes internal timing hardware to synchronize the data packets thereby eliminating the requirement for GPS inputs at the transmitter site.

### DIGITAL ADAPTIVE PRECORRECTION

The NV40 integral exciter can monitor RF output and provide continuous correction signals to ensure the radio signal is within specified spectral limits. This eliminates the need for expensive external bandpass filters.



Improved linearity results in worry-free occupied spectrum and fewer digital errors ensuring the highest quality HD Radio signal.

## STUDIO COMPONENTS

### Exporter Plus

A required component of all HD Radio systems, the Nautel Exporter Plus codes the main program audio stream for digital broadcast. If an optional Importer is deployed the Exporter also combines the digital version of the main audio stream with the secondary audio and data services from the Importer. Nautel's 1RU rack mount Exporter Plus is a 100% solid state device that provides outstanding reliability.



### IPR Importer for Multicasting

An optional component of HD Radio systems, the Nautel IPR Importer codes the secondary program services of an IBOC transmission including digital channels two and three. The Nautel IPR Importer is a rack-mount Microsoft Windows™ based system. A convenient user interface permits the selection of IBOC service modes and partitioning of IBOC signal bandwidth for a variety of audio and data services including multicasting.



### Nautel Reliable HD Transport Suite

To ensure the integrity of your HD Radio studio to transmitter site communications, Nautel offers an enhanced protocol called the Nautel Reliable HD Transport Suite. It supports standard HD data transmission equipment and can improve IBOC on-air quality.



For further information, please contact us at:

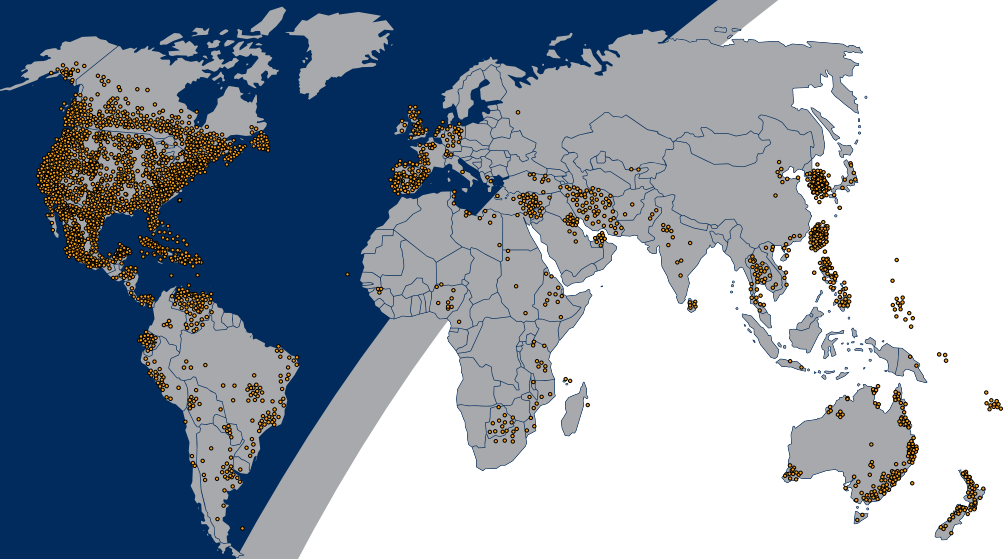
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● **Nautel installed transmitters**



**WHY CHOOSE NAUTEL?**

Nautel designers and engineers have the experience to support our products, old or new. Our customer service staff is available 24 hours a day, 7 days a week to answer your questions and provide experienced technical support. We provide extensive training and on-site support for all our products along with extended warranties and a ready supply of parts that can be shipped at a moment's notice.

Nautel products include extensive documentation, manuals and schematics to guide you through everything from installation to troubleshooting. We build value into every piece of equipment that leaves our facilities; in terms of technical features, innovation and cost effectiveness, Nautel is always one step ahead of the pack.

Making Digital Radio **Work.**



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