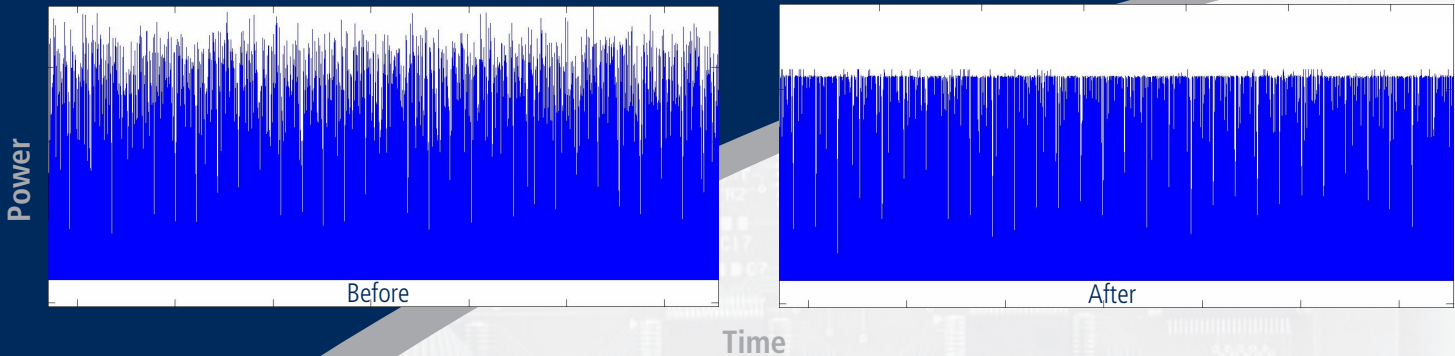


# HD PowerBoost



Peak to Average Power Before and After HD PowerBoost

## How it Works

HD PowerBoost uses an intelligent peak to average power ratio (PAPR) reduction technique to squeeze more hybrid power from a transmitter and increase hybrid-mode efficiency. The major difference between Nautel's PAPR reduction scheme and the standard method, developed by iBiquity Digital, is a difference in peak detection - Nautel processes the entire envelope of analog + HD Radio signal whereas iBiquity processes only the digital portion.



## Increase Both Power Output and Cost Efficiencies

HD PowerBoost™, which garnered Radio World's Cool Concept award at NAB '09, is a revolutionary technology that increases HD Radio™ power output while at the same time increasing efficiency, and addresses the recent FCC HD injection level increase ruling. Initial release is targeted for Nautel's NV Series products in 2010, which provide up to 44kW of solid-state power.

### HD PowerBoost:

- **Reduces HD Radio conversion costs** - transmitter investment savings of up to \$22,000
- **Increases HD Radio transmitter power output** - up to 30% at -10dB
- **Increases transmitter efficiency** - up to 7% at -10dB
- **Reduces operating costs** - efficiency savings of up to 12% on your power bill at -10dB
- **Reduces transmitter space requirements** - up to half the physical footprint required
- **Reduces cost of listenership** - adoption of HD Radio more affordable for broadcasters
- **Reduces adjacent channel interference** - enables adjustable unequal sideband levels (subject to FCC approval)

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# HD PowerBoost FAQ

## **What is the purpose of HD PowerBoost?**

The goal is to lower the peak to average power ratio (PAPR) of the FM + HD signal. Benefits of a lower PAPR are as much as 30% higher average power and up to 7% greater transmitter efficiency.

## **How does Nautel's HD PowerBoost compression algorithm improve upon the iBiquity system?**

Nautel processes the entire envelope of analog + HD Radio signal whereas the iBiquity system is working only on the digital portion.

## **If you are altering the PAPR by some type of compression scheme, aren't you going to distort the digital carriers and create errors in the data?**

The amount of distortion created is comparable to that created by the iBiquity system itself. Signal quality using PowerBoost PAPR will exceed the requirements of new standards set by the NRSC.

## **How much rack space do I need in my Nautel transmitter to accommodate HD PowerBoost?**

No additional rack space is needed because HD PowerBoost hardware and software is contained entirely within the NV transmitter exciter itself.

## **Will I need FCC approval to use HD PowerBoost?**

No.

## **Can HD PowerBoost be added to my existing NV Series HD Radio transmitter?**

Yes, contact the Nautel Customer Support Department for implementation details (North America Toll Free: 1.877.628.8353). You will need to replace a circuit board and update operating software, but it's straightforward.

## **Can I turn HD PowerBoost on and off in my transmitter so I can measure the difference?**

Yes, it is controlled through the AUI (Advanced User Interface) and may be enabled and disabled locally or remotely via the Internet to see both efficiency and power capability improvements.

## **How do I go about obtaining HD PowerBoost?**

If you are purchasing a new Nautel NV Series Transmitter, your sales proposal can contain this option.

If you have an existing Nautel NV Transmitter to convert, contact the Nautel Customer Service Department (North America Toll Free: 1.877.628.8353) for costs and details of installation.



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