

## GENERAL

### Transmitter Type

FM Broadcast, 100% solid state

### Configuration

Four power amplifiers with two switching power supplies

One pre-amp/IPA with one switching power supply

Integrated exciter/controller

### RF Output Connection

7/16 DIN, female standard

7/8" EIA female optional

### RF Output Impedance

50 ohms unbalanced

### RF Load VSWR

1.5:1 - Automatic power reduction into higher VSWR

Protected from open and short circuits at all phase angles

### RF Frequency Range

87 MHz to 108 MHz in 10kHz steps

No tuning required

### Spurious and Harmonic

Meets or exceeds all FCC/ISED/RED requirements

## HD UPGRADE

Upgrade to digital is achieved with the addition of an external 2RU VS HD box. The HD upgrade provides the Exgine card and iBiquity software necessary to broadcast your signal in HD

The VS HD has no user interface and is controlled locally or remotely from the VS Series display or AUI.

## EXCITER / CONTROLLER

### Exciter

Integrated analog FM exciter using direct-to-channel digital modulation

Built-in RDS encoder, SCA encoder and Stereo generator

### Audio Sources

AES, Analog L/R, Composite, Audio Player (IP stream/USB)

Up to four audio sources may be enabled with priority levels

### Audio Player Inputs

Ethernet connection (IP audio stream): Shoutcast, Livewire 1.0

USB drive (Audio files): MP3, PCM

### Audio Backup

Automatic failover to backup audio source in the event that main audio source becomes unavailable

## FM SIGNAL - TO - NOISE RATIO

### Digital or Analog Stereo Input

80 dB below 100% modulation (reference 400 Hz, measured in 22 Hz to 22 kHz bandwidth with 75  $\mu$ s de-emphasis and DIN 'A' weighting)

### Monaural Digital/Analog or Wideband Composite Operation

90 dB below 100% modulation (reference 400 Hz, measured in 22 Hz to 22 kHz bandwidth with 75  $\mu$ s de-emphasis and DIN 'A' weighting)

## AC INPUT

### Voltage

180 Vac to 264 Vac, 1-ph., 50/60 Hz

### Power Consumption

Analog

4242 W at 2800 W RF output (4285 VA) typical

-20 dB hybrid mode

3940 W at 2365 W RF output (3980 VA) typical

-14 dB hybrid mode

3260 W at 1795 W RF output (3300 VA) typical

-10 dB hybrid mode

2540 W at 1270 W RF output (2570 VA) typical

### Power Factor

Unity Power Factor Corrected (typically 0.99)

### Power Line Harmonics

IEEE 519-1992

RF Output	Analog Mode	HD Radio Hybrid (-20 dB)	HD Radio Hybrid (-14 dB)	HD Radio Hybrid (-10 dB)	HD Radio Only (-20 dB)	HD Radio Only (-14 dB)	HD Radio Only (-10 dB)
Power (W)	64 - 2800	2365	1795	1270	960	780	700
Typical Efficiency	66%	60%	55%	50%			

\*Typical power measured at midband in MP1 mode with better than 1.2 VSWR. Compliant with NRSC measurement standards. Power outputs vary with injection level, frequency, VSWR, MP operating mode, symmetrical vs. asymmetrical sidebands. Numbers shown do not include HD PowerBoost which can provide up to 25% additional hybrid mode power and up to 5% increased efficiency. Efficiency shown at rated power. Please contact your Nautel representative to discuss your specific HD power requirement.

## IP CONNECTIVITY

### SNMP

Allows VS Series to be set up as part of a network and monitored remotely via a single control point

### Streaming audio

Broadcast streaming audio sources such as Shoutcast/Icecast and Livewire 1.0

### Remote AUI

Remotely connect to a VS transmitter via Nautel's Advanced User Interface. Remote connectivity allows for setting of operating parameters and viewing the transmitter status from any web enabled device.

### E-mail notification

Automatically receive e-mail notifications when an alarm has been activated.

## AUDIO PERFORMANCE

### Asynchronous AM S/N Ratio

Better than 60 dB below reference carrier with 100% amplitude modulation using 75  $\mu$ s de-emphasis (no FM modulation present)

### Synchronous AM S/N Ratio

Better than 50 dB below reference carrier with 100% amplitude modulation using 75  $\mu$ s de-emphasis

## CONTROL AND MONITORING

### Local Interface (front panel LCD)

Presets

Logs

Status (meters and active alarms)

### Status

Tricolor LED's for summary status functions

### Remote Interface (AUI)

Software upgrades

Presets

Remote I/O setup

Logs

Status (meters and active alarms)

Audio Player setup

Audio spectrum analyzer

Audio levels

## COMPLIANCE

Product complies with:

- ISED specification BETS6 issue 2
- FCC CFR title 47 part 2 and part 73
- Conforms with all essential requirements of Radio European Directive 2014/53/EU

## ENVIRONMENTAL

### Temperature Range

0°C to +50°C

Derate 3°C per 500 m above sea level (2°C per 1000 ft)

### Humidity Range

0% to 95% non-condensing

### Altitude

0 m to 3000 m (0 ft to 10,000 ft)

### Cooling Air Requirements

1019 m<sup>3</sup>/hr (600 cfm)

## PHYSICAL

### Dimensions

Open ventilation configuration:

W = Standard 19" (48.3 cm) EIA rack

[minimum opening of 17.5" (44.5 cm)]

H = 5 RU = 8.75" (22.2 cm)

D = Dependent upon connector type (not including handles)

7/16" DIN = 26.4" (67.1 cm)

7/8" EIA = 27.4" (69.6 cm)

### Weight

29.5 kg (65 lbs)

