VX Series FM Transmitter

VX150-VX2

The Nautel VX Series of transmitters is a range of compact, solid state FM transmitters focused on maintainability, power density, and affordability.

MODELS

- VX150: 150 W
- VX300: 300 W
- VX600: 600 W
- VX1: 1 kW
- VX1.5: 1.5 kW
- VX2: 2 kW

GENERAL

- Analog FM transmitter
- High power density
- Compact size: 2 RU height, 50.8 cm/20” depth
- Greater than 70% efficiency
- Single phase AC
- Orban Inside Audio Processor (option)

USABILITY

- Front Panel User Interface
  - Full color, 3.5” TFT display
  - Rotary/push button navigation
  - Dedicated RF and Remote ON/OFF buttons
  - USB port (2.0 Type A)
- Fast software updates
- Variable speed fans for improved acoustics and efficiency

SERVICEABILITY

- Solderless power amplifier replacement
- Hot-swappable PA power supply
- Removable, washable air filter
- Front supported chassis for rail-free rack installation
- Maintainable with common tools

REDUNDANCY

- Automatic audio input failover to a backup source
- Support for main/standby and N+1 configurations (Nautel SC1)

SOFTWARE

- HTML5 remote control and monitoring (AUI)
- Encrypted network communications
- SNMP v2c
- RDS Encoder with scrollable 64-character PS
- Analog SFN support
- NTP support

AUI (ADVANCED USER INTERFACE)

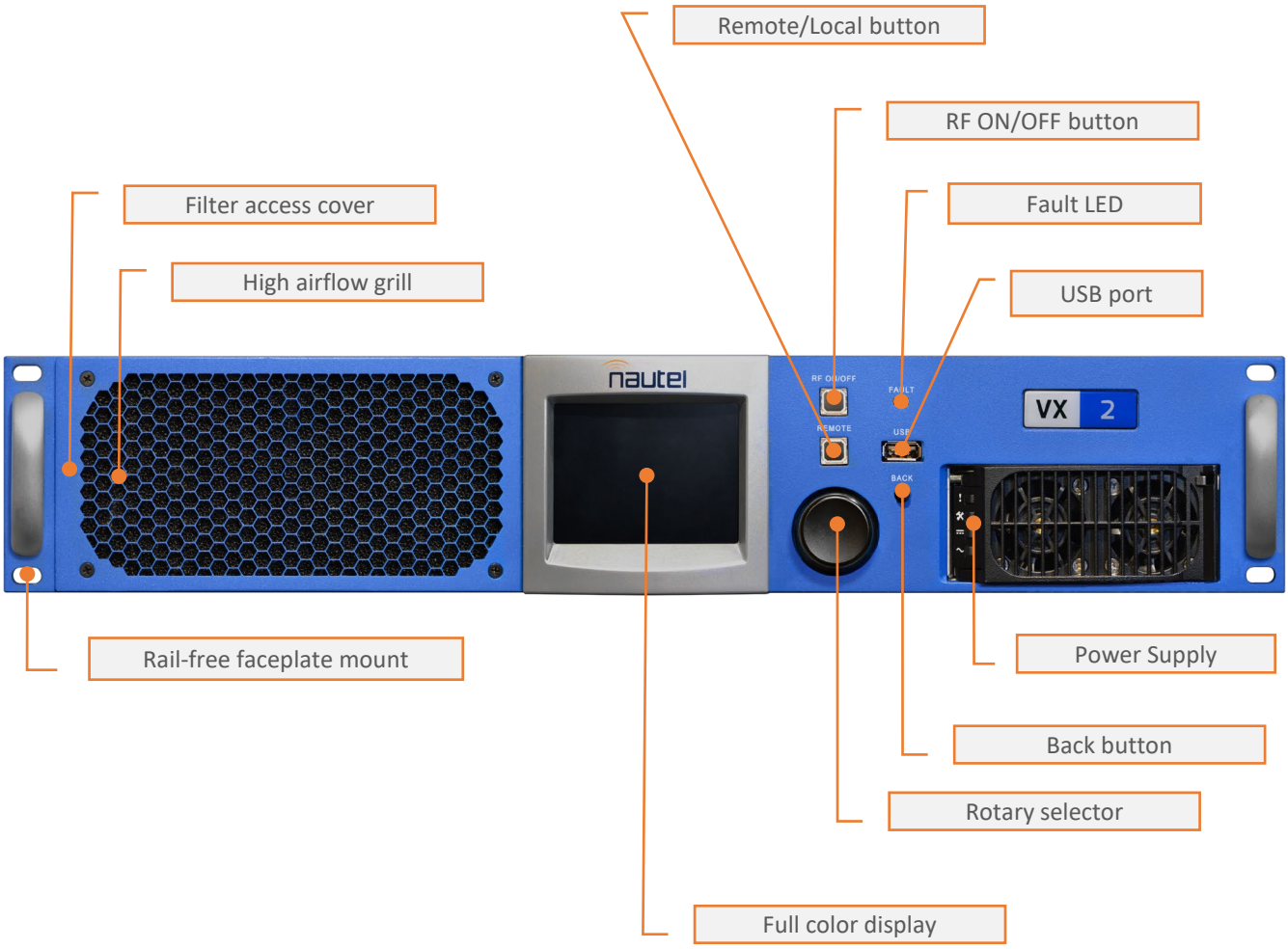
- HTML5 responsive design (desktop, tablet, & smartphone)
- Comprehensive dashboard featuring meters, alarms, audio, and modulation data.
- Instrumentation: Spectrum Analyzer

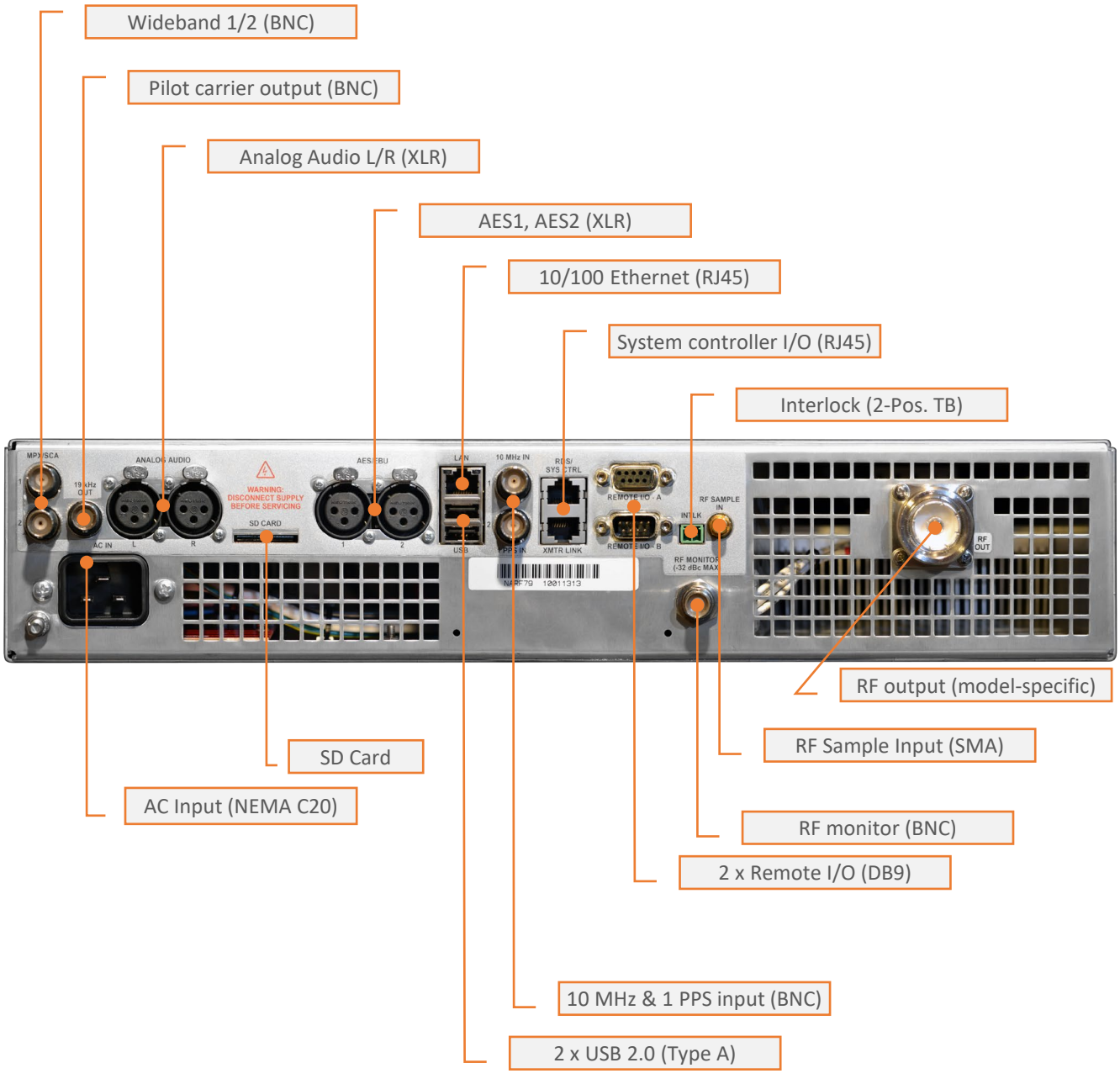
SUPPORT

- 4-Year Warranty
- Phone, online, and email support

Regulatory

- FCC / IC / CE compliance
- LPFM certification (VX150 & VX300)


Remote/Local button
RF ON/OFF button
Filter access cover
Fault LED
High airflow grill
USB port
nautel
RF ON/OFF
FAULT
REMOTE
USB
BACK
VX 2
Rail-free faceplate mount
Power Supply
Back button
Rotary selector
Full color display


Wideband 1/2 (BNC)
Pilot carrier output (BNC)
Analog Audio L/R (XLR)
AES1, AES2 (XLR)
10/100 Ethernet (RJ45)
System controller I/O (RJ45)
Interlock (2-Pos. TB)
RF output (model-specific)
RF Sample Input (SMA)
RF monitor (BNC)
2 x Remote I/O (DB9)
10 MHz & 1 PPS input (BNC)
2 x USB 2.0 (Type A)
SD Card
AC Input (NEMA C20)
MPX/SCA
ANALOG AUDIO
AES/EBU
LAN
10 MHz IN
RS-485 SYS CTRL
REMOTE I/O - A
REMOTE I/O - B
INTLK
RF SAMPLE IN
RF OUT
RF MONITOR (-32 dBc MAX)
WARNING: DISCONNECT SUPPLY BEFORE SERVICING
SD CARD
AC IN
USB
PPS IN
XMTR LINK

GENERAL	VX150	VX300	VX600	VX1	VX1.5	VX2
Rated Output Power	150 W	300 W	600 W	1000 W	1500 W	2000 W
Output Power Range	15-165 W	30-330 W	60-660 W	100-1100 W	150-1650 W	200-2200 W
Power Amplifier	1	1	1	1	2	2
PA power supply	1					
Pre-Amplifier	1					
Pre-Amplifier power supply	1					
Exciter/Controller	Integrated					
RF Output Connector	Type “N”, female			7/16 DIN, female		
RF Terminating Impedance	50 ohms unbalanced					
RF Load VSWR	100% Rated Power into 1.5:1 VSWR					
	110% Rated Power into 1.2:1 VSWR					
	Automatic power reduction into higher VSWR					
	Protected from open and short circuits at all phase angles					
RF Frequency Range	87.5 MHz to 108 MHz in 10 kHz steps					
	No tuning required					
Spurious and Harmonic	ISED specification BETS6 Issue 2					
	FCC CFR title 47 part 2, part 73, and part 74		FCC CFR title 47 part 2 and part 73			
	CE Radio Equipment Directive 2014/53/EU					
EXCITER/CONTROLLER						
Exciter/Controller	Integrated analog FM exciter using direct-to-channel digital modulation					
	Built-in RDS encoder, SCA encoder, and stereo generator					
Audio Sources	2 x AES					
	Analog L/R					
	2 x Wideband (suitable for composite, RDS, or SCA)					
Audio Backup	Automatic changeover to backup audio source in the event that main audio source fails					
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 µs de-emphasis and DIN 'A' weighting)					
FM Signal-to-Noise Ratio: Monaural Digital/Analog or Wideband Composite Operation	90 dB below 100% modulation (reference 400 Hz, measured in 22 Hz to 80 kHz bandwidth with 75 µs de-emphasis and DIN 'A' weighting)					

AC INPUT	VX150	VX300	VX600	VX1	VX1.5	VX2
Voltage	90-265 VAC, 1-ph, 47-66 Hz				185-265 VAC, 1-ph, 47-66 Hz	
Power Consumption at Rated Output Power	286 W (295 VA) Typical	465 W (470 VA) Typical	811 W (819 VA) Typical	1322 W (1349 VA) Typical	2046 W (2067 VA) Typical	2650 W (2677 VA) Typical
Typical Efficiency	51%	65%	74%	75%	73%	75%
Power Factor	Unity Power Factor Corrected (0.97 typical at 120 VAC)	Unity Power Factor Corrected (0.99 typical at 120 VAC)	Unity Power Factor Corrected (0.99 typical at 120 VAC)	Unity Power Factor Corrected (0.98 typical at 208 VAC)	Unity Power Factor Corrected (0.99 typical at 208 VAC)	Unity Power Factor Corrected (0.99 typical at 208 VAC)
Power Line Harmonics	IEEE 519-2014					
	EN 61000-3-2					
IP CONNECTIVITY						
SNMP	Allows VX Series to be set up as part of a network and monitored remotely via a single control point					
	SNMP v2c					
Remote AUI	Remotely connect to a VX transmitter via Nautel's HTML5 Advanced User Interface (AUI). Remote connectivity allows for setting of operating parameters and viewing the transmitter status from any web enabled device.					
Email Notification	Automatically receive email 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 µs de-emphasis (no FM modulation present)					
Synchronous AM S/N Ratio	Better than 50 dB below reference carrier with 100% amplitude modulation using 75 µs de-emphasis					
CONTROLLING AND MONITORING						
Local Interface (Front panel LCD)	Presets					
	Logs					
	Status (meters and active alarms)					
Status	Fault LED for status summary					
Remote Interface (AUI)	HTML5, responsive design supports desktop, tablet, and smartphone					
	Software upgrades					
	Presets					
	Remote I/O Setup					
	Status (meters and active alarms)					
	Audio Levels					
	Audio Spectrum Analyzer					

COMPLIANCE	VX150	VX300	VX600	VX1	VX1.5	VX2
Complies with:	ISED specification BETS6 issue 2					
	FCC CFR title 47 part 2 and part 73B					
	FCC Low Power FM Certified - CFR title 47 part 73G					
	FCC Translator/Booster Certified - CFR title 47 part 73L					
	Conforms with all essential requirements of Radio Equipment Directive 2014/53/EU					
ENVIRONMENTAL						
Temperature Range	0°C to +50°C / 32°F to 122°F					
	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 4500 m / 0 ft to 15,000 ft					
Cooling Air Requirements	VX Series feature variable speed fans, and requirements vary with model. Max: 136 m3/hr / 80 cfm (Detailed requirements to follow)					
PHYSICAL						
Dimensions	W = 19" / 48.3 cm Standard 19"EIA rack with min opening of 17.5" (44.5 cm)]					
	H = 2 RU / 3.5" / 7.7 cm					
	D = 19.8” / 50.3 cm (including output connector)			D = 20” / 50.8 cm (includes output connector)		
Weight	10.4 kg / 23 lb				11.5 kg / 25 lb	