



Tomorrow's Radio Today



STX20



Continuing the Tradition

The STX10 and STX20 have been intelligently designed to offer the perfect combination of audio quality, reliability, redundancy, serviceability, and efficiency in a compact design. Each transmitter is crafted with superior attention to detail and features the highest quality components.

Efficiency

With an efficiency of greater than 70% AC to RF, electricity costs are saved immediately and for years to come.

Serviceability & Redundancy

Power amplifier modules and hot-pluggable power supplies are all accessible from the front in the **10kW** and **20kW** models. The STX series saves time on service and maintenance with every part and assembly.

STX Series

STX 10 & STX 20

THE ADVANTAGE

- Best in Audio Quality
- Proven Reliability
- Superior Support (24/7/365)
- Designed for Redundancy
- Designed for Serviceability
- Energy Efficient

Power Options
10kW
20kW

STX10



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Key Features in all STX Exciters

- Multiple Audio Inputs with Auto-failover capabilities
- RDS Generator Built-in (Static and/or Dynamic)
- Synchronous FM Compatible
- Highest Quality Audio
- AES over Composite / Baseband 192 Capable
- Next Generation Digital Radio Capable (HD Radio DRM+)
- SNMP Level III Security
- Perfect for translators with built-in FSK-ID
- IP Connectivity with GUI

Exciter Technology:

STXe500, CPE
(Controller Plus Exciter)

STXe500



At the core of the
STX series of
exciters is the **CPE**

Superior Remote GUI Interface

- From your PC, your tablet, or your phone
- Three levels with password access: view only, limited access, and Chief with FULL CONTROL
- Overall Status at a glance or dig deeper to access each Power Amplifier, each Power Supply, and an advanced log for history



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Specifications - Exciter

RF SPECIFICATIONS	
VSWR	Rated power into 1.5:1 maximum, capable of operating into higher VSWR with automatic power reduction, open and short circuit protected at all phase angles
Impedance	50 Ohm
Range (Frequency)	87.5 MHz to 108 MHz, tuned to specific operating frequency, exciter programmable in 10 kHz steps
Stability (Frequency)	+/- 300 Hz, 0° to 50° C
Regulatory	Meets IEC 215 safety requirements, CE, IC, FCC
Type (Modulation)	Direct frequency modulation of carrier frequency
Capabilities (Modulation)	Greater than +/-350 kHz

Audio Specifications	
RF Power Output Exciter	25 – 550 W
Output Impedance	50 Ohms nominal
VSWR	Rated power into 1.5:1 VSWR. Open and short circuit protected at all phase angles
Frequency Range	87.5 MHz to 108 MHz ; 10kHz increments
Frequency Stability	Internal TCXO: +/- 100 Hz factory calibration, +/- 4ppm aging/temp, -10° C to +50° C; External Input: +/- accuracy of reference source
Audio Inputs	AES, L&R analog, Unbalanced composite, SCA audio inputs, RDS input
Modulations Type	Direct-to-channel digitally generated FM (no analog up-conversion); FM only
Modulations Capabilities	Up to 300kHz
Asynchronous AM S/N Ratio:	75dB below rated power reference carrier with 100% AM modulation at 400Hz, with no FM modulation present
Synchronous AM S/N Ratio:	60dB below rated power reference carrier with 100% AM modulation at 400Hz, with FM modulation +/- 75kHz at 400Hz
Spurious and Harmonics	85dB or better typical, including low pass filter (standard)
AC Input	90 to 264VAC; 47 – 63Hz
Power Factor	0.99 typical at 110VAC, 0.95 typical at 220VAC
AC Inputs Testing	Tested to EN 301 489-1, including Voltage Dips and Dropouts (Section 9.7B), Voltage Surges (Sections 9.8), and conducted immunity and conducted radiation
Regulatory	FCC; IC; CE; BETS-6; IEC 2015 Safety
Operational Modes	Stereo, mono (L+R), L only, R only
AES Connector Types	Wire – XLR
L&R Connector Types	XLR
AES Input Level	-2 dBfs for 100% modulation; 16-24 bits (32, 44.1, 48 or 96 kHz typical rates for AES/EBU devices)
▫ L&R Input Level	+10dBm for 100% modulation into 600 ohms
AES Impedance	110 ohm balanced
L+R Impedance	600 ohms or 10 k selectable; balanced
AES Amplitude Response	+/- 0.25dB, 20Hz to 15Hz
L&R Amplitude Response	+/- 0.25dB, 20Hz to 15Hz
AES THD + Noise	0.03 or better @400Hz measured 10Hz-22kHz, 75 uS deemphasis
L&R THD + Noise	0.005 or better @400Hz measured 10Hz-22kHz, 75 uS deemphasis

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Specifications Continued

STXe500 Exciter Audio Specifications Continued	
AES S/N Ratio	95dB typical below 100% modulation @ 400Hz, 10Hz-22kHz bandwidth, A-weighted filter 98dB typical below 100% modulation @ 400Hz, 10Hz-22kHz, CCIR-468 filter
L&R S/N Ratio	86dB or better below 100% modulation @ 400Hz, 10Hz-22kHz bandwidth , unweighted
Analog S/N Ratio	93dB typical below 100% modulation @ 400 Hz, 10Hz-22kHz bandwidth, A-weighted filter 98dB typical below 100% modulation @ 400Hz, 10Hz-22kHz bandwidth, CCIR-468 filter
Stereo S/N Ratio	80dB or better below 100% modulation @400Hz, unweighted
Stereo Separation	70dB, 20Hz to 15kHz
AES Stereo Separation	80dB, 20Hz to 15kHz
L&R Stereo Separation	70dB, 20Hz to 15kHz
Pilot Stability	+/-0.3Hz, 0° C to +50° C
Audio Overshoot	150% peak deviation max
Connector Type (Composite Performance)	BNC Unbalanced: BNC
Input Level (Composite Performance)	3.5 V p-p for 100% modulation into 10 kOhms
Impedance (Composite Performance)	Balanced: 10 kOhm or 50ohm selectable, Unbalanced: 10 kOhms
Amplitude (Composite Performance)	+/-0.03dB 20Hz to 53 kHz; 0.1 dB 53 kHz to 99 kHz
Phase Response (Composite Performance)	+/-0.1° from linear phase; 53 kHz to 100 kHz
THD+Noise (Composite Performance)	0.005% or less @ 400Hz, 10-22kHz bandwidth, 75 us deemphasis
Intermod Dist (Composite Performance)	SMPTE: 0.01% or less (60/7000Hz, 1:1 ratio) DIM-B: 0.005% typical (14kHz)
FM S/N Ratio (Composite Performance)	88dB below 100% modulation @ 400 Hz, 10Hz-22kHz bandwidth, unweighted
FM S/N Ratio (Composite Performance)	95dB typical below 100% modulation @ 400 Hz, 10Hz-22kHz bandwidth, A-weighted filter
FM S/N Ratio (Composite Performance)	100dB typical below 100% modulation @ 400 Hz, 10Hz-22kHz bandwidth, CCIR-468 filter
Impedance (SCA/SCA2/RDS)	10k ohms unbalanced
Amplitude (SCA/SCA2/RDS)	+/-0.1dB; 53Hz to 100kHz
19 kHz Output (SCA/SCA2/RDS)	19kHz synchronization clock for external RBDS/RDS operation 1V pp into high impedance
Height (Physical)	3.5 inches (2 RU)
Width (Physical)	19 inches EIA rack mountable
Depth (Physical)	21 inches
Weight (Physical)	25 lbs. Unpacked

ENVIRONMENTAL

Temperature Range	0° C to +50° C
Altitude	7500 ft. (2286 M) @ 50Hz; 10,000 ft. (3048 M) @ 60Hz
Humidity	0-95% Non-Condensing

ELECTRICAL

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AC Input Voltage	196-252 VAC, DELTA (or 340-435 VAC 4 WIRE WYE), 50/60Hz three phase, single phase
Power Factor	0.98 at 230 VAC

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Specifications Continued

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RF SPECIFICATIONS		
Output Power	2.5 kW to 10 kW	9 kW to 20 kW
Efficiency	70% or greater typical @ 10 kW (AC to RF)	70% or greater typical @ 20 kW (AC to RF)
MECHANICAL/PHYSICAL SPECIFICATIONS		
Height	20RU, 35" (88.9 cm)	68" (172.7 cm)
Width	19" (48.3 cm) EIA Rack Mount	44.75" (113.7 cm)
Depth	29" (73.7 cm) with connectors	30" (76.2 cm)
Weight	260lbs (118 kg) unpacked	1050 lbs (476.3 kg) unpacked
Air Outlet Size	160 in2 (1032 cm2), rear and top of unit	160 in2 (1032 cm2), rear and top of unit
RF Output Connector	3 1/8" Rigid Coax Clamp standard; 15/8" optional	3 1/8" EIA Rigid Coax Clamp
AC Power Consumption	Typical at 10,000 W RF Power Output; 14,085 W	Typical at 20,000 W RF Power Output; 28,964 W

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Taking the next step is easy with Broadcast Electronics. Contact your sales representative today to discuss solutions that will work for you and your station(s).

To contact your BE sales representative, simply visit our website at bdcast.com or call 217.224.9600 and learn more about what BE has to offer.

BE manufactures complete RF systems for radio and TV. Our products encompass program generation, audio and data management, interfacility transport and analog and digital (*HD Radio and DRM transmission*).

They are used daily in more than 40,000 installations in nearly 100 countries. For over sixty years, BE pioneering developments have set industry standards for innovation and reliability, while providing broadcasters with new options for operational productivity and income generation. BE is headquartered in Quincy, Illinois, USA, and is represented worldwide by a network of local representatives.

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STX-10 & STX-20 Transmitter Brochure V1.1.1