

MAXIVA™ UAXTE WITH POWERSMART® PLUS

High-Efficiency UHF Air-
Cooled TV Transmitter

PowerSmart® Plus 

Now with **Gen2** Architecture





GatesAir efficiently leverages broadcast spectrum to maximize performance for multichannel TV and radio services, offering the industry's broadest portfolio to help broadcasters wirelessly deliver and monetize content. With nearly 100 years in broadcasting, GatesAir's exclusive focus on the over-the-air market helps broadcasters optimize services today and prepare for future revenue-generating business opportunities. All research, development and innovation is driven from the company's facilities in Mason, Ohio and supported by the long-standing manufacturing center in Quincy, Illinois.

GatesAir's turnkey solutions are built on three pillars: Create, Transport and Transmit. The company is best known for powering over-the-air analog and digital radio/TV stations and networks worldwide with the industry's most operationally efficient transmitters. Groundbreaking innovations in low, medium and high-power transmitters reduce footprint, energy use and more to establish the industry's lowest total cost of ownership. Support for all digital standards and convergence with mobile networks ensure futureproof systems.

In television, GatesAir supplies proven, trusted wireless UHF and VHF solutions across all power requirements to support single-station over-the-air broadcasters on up to large national networks. The industry's most reliable software-definable exciters ensure broadcasters can optimize analog networks and quickly transition to digital TV in the field, with support for all major global DTV standards. GatesAir also supplies a wide array of over-the-air accessories to maximize transmitter control, network redundancy and signal compliance – along with installation, commissioning and ongoing support services – to deliver the industry's strongest turnkey approach for customers worldwide.

Award Winning Service

From experienced installation and field service engineers to responsive factory experts, GatesAir provides the strongest service team in the broadcast transmission industry. Couple that team with reliable products, responsible service parts inventories and a demonstrated commitment to the industry, and you have a service offering that's perfectly matched to your equipment and your operations.

Global Service Locations



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WE DID IT.. AGAIN.

GatesAir has once again shattered the expectations of what is possible with aircooled, solid-state transmitters from a cost versus performance ratio.



High-efficiency Power Amplifiers optimized for equal power levels with either ATSC 1.0 or ATSC 3.0 modulation

Modular architecture for ease of installation. Multiple transmitters in a single rack saves valuable floor space.

Power levels up to 19.2kW

Separate, hot-swappable, compact power supply for each PA, with redundancy options available

Separate, hot-swappable, high-efficiency power amplifiers

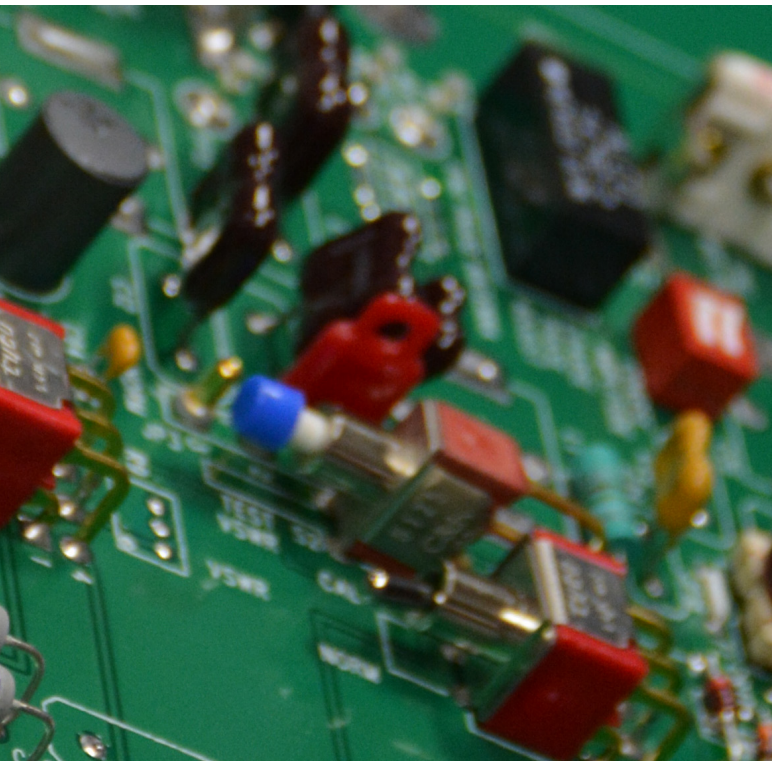
Optimized Real-Time Adaptive Correction (RTAC™) provides the best performance all the time

More services usually means higher expenses. Higher operating expenses challenge the bottom line. Maxiva UAXTE transmitters with PowerSmart Plus technology drive down total cost of ownership while allowing broadcasters to get the most out of their spectrum. Optimized designs that increase bandwidth while simplifying maintenance. Superior power density that maximizes TV coverage while reducing transmitter size and weight. Unparalleled performance that enhances picture quality while lowering utility bills. GatesAir has once again shattered the expectations of what is possible with high-power, solid-state transmitters from a cost versus performance ratio.

The Maxiva UAXTE is a compact aircooled TV transmitter that provides over the air delivery in the UHF spectrum. Built on GatesAir's groundbreaking PowerSmart Plus architecture, the Maxiva UAXTE provides an energy-efficient, broadband solution to reliably deliver rich, high-quality multiformat content to viewers at home or on the move.

The core PowerSmart Plus technology of Maxiva UAXTE assures lowest cost of ownership through reduced size, weight and energy use, while providing the highest reliability and performance.

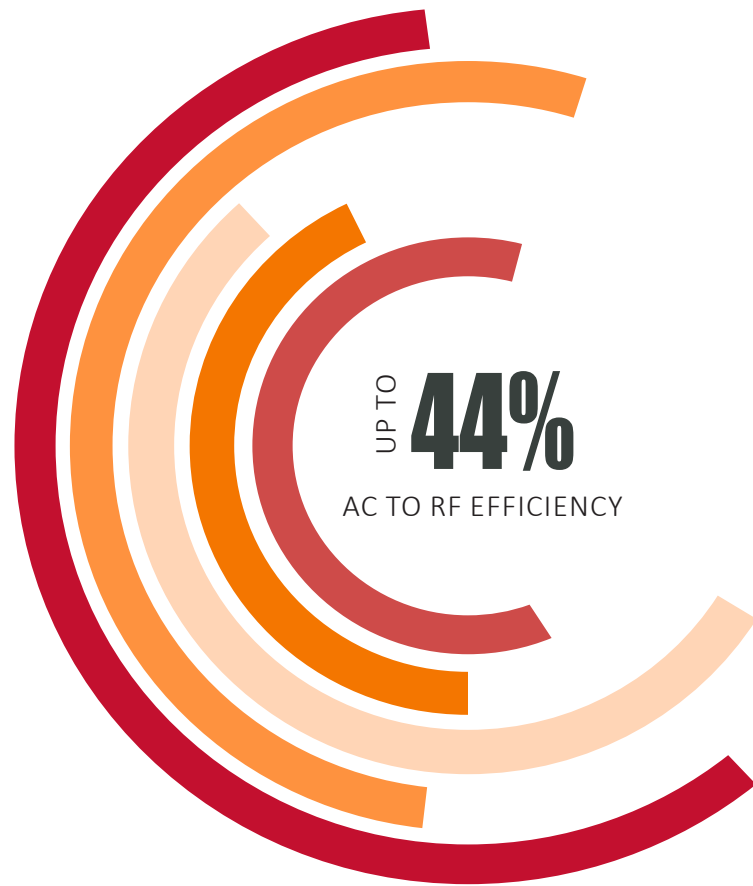
With its new Gen 2 architecture, the Maxiva UAXTE utilizes the latest generation 50 volt LDMOS amplifier devices, new compact high-efficiency power supplies and the Maxiva Compact series exciter/driver along with real-time adaptive correction (RTAC) for outstanding signal performance. The Maxiva UAXTE power amplifiers have been optimized to provide the best possible performance and efficiency for both ATSC 1.0 and ATSC 3.0. The UAXTE transmitter is rate for identical average power levels for both modulations, assuring a simple and cost-effective upgrade path for future ATSC 3.0 operation. The modular design further simplifies installation and reduces maintenance costs, dramatically lowering the total cost of ownership over the transmitters life-cycle.



Designed with future broadcasting needs in mind, the Gen 2 UAXTE transmitter is capable of multiple modulation types for UHF digital operation, including ATSC, ATSC 3.0, DVB-T/H, DVB-T2, ISDB-Tb, and future digital standards.

Savings You Can Count On!

The Maxiva UAXTE with PowerSmart Plus is an efficiency-optimized UHF transmitter. This all-new design includes several energy saving features.

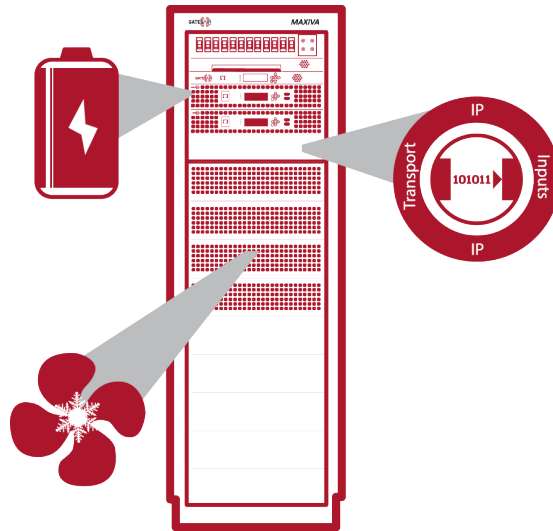


New PowerSmart® Plus amplifier technology for UHF provides a market-leading combination of efficiency and broadband operation

- Simple and cost-effective upgrade path from ATSC 1.0 to ATSC 3.0 at the same power level.
- Efficiency-optimized – for highest efficiency and lowest cost of ownership
- Variable speed fans to intelligently save energy
- Hot-swappable, compact, high-efficiency DC power supplies
- Hot-swappable, compact, high-efficiency power amplifiers, each with its own internal mid-gain driver
- Power supplies and power amplifiers can be hot-swapped from the front of the transmitter; no rear access required
- Incorporates the XTE-based Maxiva Compact exciter/driver for best-in-class performance
- RoHS compliant / CE compliant
- Support for all worldwide digital modulation standards
- Modular & upgradeable architecture
- All-digital linear and nonlinear pre-correction: Real-Time Adaptive Correction (RTAC)
- Rugged, reliable design and construction
- Ideal for N+1 configurations since all transmitters are identical and use the same PA's, minimizing spares requirements
- Lowest energy usage

Savings You Can Count On!

- Intelligent cooling system with variable speed fans to reduce energy consumption.
- Included UPS for the exciter section provides fastest system power-up following an AC power interruption.
- Smaller and lighter PA architecture provides higher RF power during PA or power supply removal and replacement.
- Separate power supplies are easily accessible and hot-swappable from the front of each PA module.



Key Features

Features	Included	Available
Equal power levels for ATSC 1.0 and ATSC 3.0	•	
Fast-acting linear and non-linear Real-Time Adaptive Correction (RTAC) for optimum performance at all times	•	
Web remote with SNMP	•	
Parallel Remote Control	•	
Internal GPS/GLONASS receiver for SFN timing	•	
Exciter internal UPS option	•	
ASI/T2MI over IP / IP transport input (Ready for ATSC 3.0)	•	
Dual exiters and switcher		•
Redundant power supplies for each PA module		•
Local touch-screen GUI		•
N+1 systems and multi-transmitters per rack		•
Extended warranties and Service Level Agreements (SLA) to suit any requirement		•



Maxiva™ UAXTE Drive — The Heart of the Transmitter

The software-defined Maxiva UAXTE Drive takes digital and mobile TV to the next level. Offering the most advanced exciter technology available, the core Maxiva XTE platform used in the UAXTE Drive employs advanced Real Time Adaptive Precorrection techniques, Native dual TSolP inputs and many other updates, providing a truly future-proof design.

Integrated within all Maxiva UAXTE air-cooled transmitters, the Maxiva UAXTE Drive delivers an RF signal with complete technical and regulatory compliance for all solid-state digital transmitters. The Maxiva XTE is the only exciter designed and manufactured in the USA that is 100% ready for ATSC 3.0.

Real-Time Adaptive Correction*

GatesAir's exclusive Real-Time Adaptive Correction (RTAC) technology, standard in Maxiva transmitters, keeps your station within compliance while maximizing coverage. Featuring simultaneous linear and nonlinear adaptive precorrection, RTAC interoperates with the Maxiva Compact Drive exciter to continuously monitor transmitter output and performance while automatically adapting for system nonlinearities — delivering the optimal level of correction for your digital over-the-air signal.



Advanced Global Monitoring and Control

In addition to local control, the Maxiva UAXTE Transmitter can be controlled from anywhere in the world with an intuitive, browser-based graphical user interface (GUI) over TCP/IP via a telecom or network connection with password protection. A rear RJ-45 jack is provided for LAN/WAN connection.

Full Simple Network Management Protocol (SNMP) facilities are provided for network management of the entire transmission system using industry-standard MIB protocols.



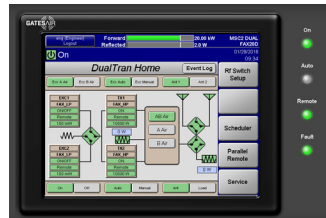
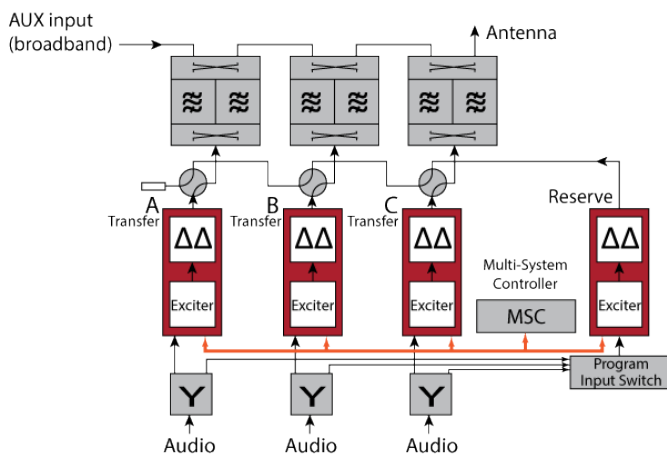
Remote Communication

The following remote interfaces are available:

- GUI (Graphical User Interface)
- Ethernet network connection RJ-45 (10/100Base-T) with TCP/IP protocol
- Automated remote alarms in the event of a fault, which are sent via SNMP or e-mail with the connection to a network
- Simple, parallel interface to panels and legacy remote control systems

Multi-System Controller (MSC3)

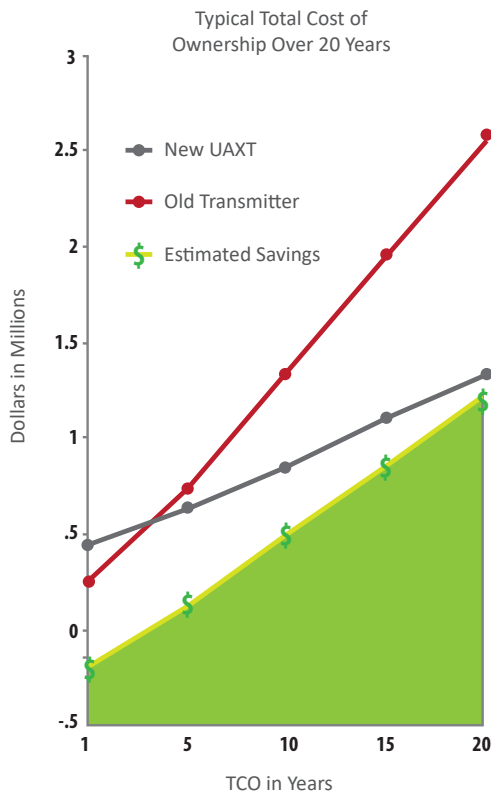
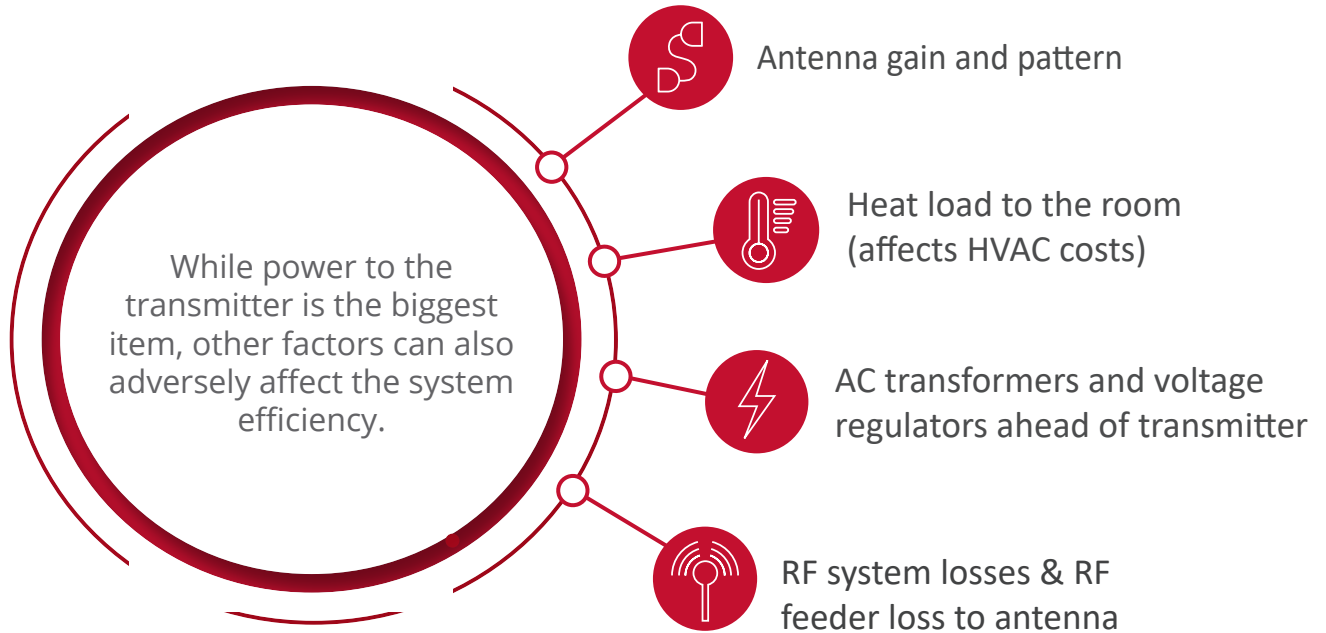
To support greater redundancy, the Multi-System Controller (MSC2) supports a range of backup options, including 1+1, full N+1 and dual-transmitter installations. The MSC3 monitors and controls the transmitter systems and controls RF switching.



» TOTAL COST OF OWNERSHIP

What is Total Cost of Ownership (TCO)?

TCO is the total cost to own and operate the transmitter system over time. This includes the initial equipment cost, installation/commissioning cost, routine and unscheduled maintenance costs, and ongoing repair and operational costs — and don't forget, rising energy costs. In fact, the lifetime operational expense of a transmitter is estimated at greater than five times the initial product cost.



Maxiva UHF transmitters now incorporate GatesAir PowerSmart Plus technology to help broadcasters save money and reduce carbon footprints. PowerSmart Plus technology delivers superior operational efficiency through fully broadband, single-amplifier designs that simplify installation, improve performance, and streamline ongoing operation – including maintenance. This comes courtesy of a modular design that eliminates tuning, reduces weight, enhances redundancy through separate power supplies, and minimizes overall labor.

PowerSmart Plus technology also lowers monthly bills through sharp power efficiency increases (up to 45 percent), and slashes rack space requirements (exceeding 50 percent) through a dramatic increase in power density. These industry-leading strides in performance and physical size reduction combine to deliver the best possible total cost of ownership over the life of the transmitter – and return money to the pockets of our customers.

PowerSmart[®] 3D

Broadband Amplification

PowerSmart Plus incorporates groundbreaking broadband amplifier designs into Maxiva UAXTE transmitters. The Maxiva UAXTE power amplifiers have been optimized to provide the best possible performance and efficiency for both ATSC 1.0 and ATSC 3.0. The UAXTE transmitter is rate for identical average power levels for both modulations, assuring a simple and cost-effective upgrade path for future ATSC 3.0 operation. These designs also consolidate spare parts and eliminate tuning and adjustments to further simplify maintenance and ongoing operation.

Compact Design

The reduced size of the UAXTE transmitter will minimize the use of valuable rack space in your transmitter facility. This provides space for other equipment, or multiple transmitters in a single rack, often eliminating the need for additional racks and the associated floor space needed.

Reduced Service Costs

Easy access to power amplifier modules and hot-pluggable universal power supply (PS) modules make on-air servicing easy and eliminate costly service interruptions. Light-weight universal PA pallets and modules facilitate overnight/ same-day shipping for simple, cost-effective spares management. With lightweight subassemblies, the Maxiva UAXTE eliminates two-person lift requirements for routine maintenance and troubleshooting.

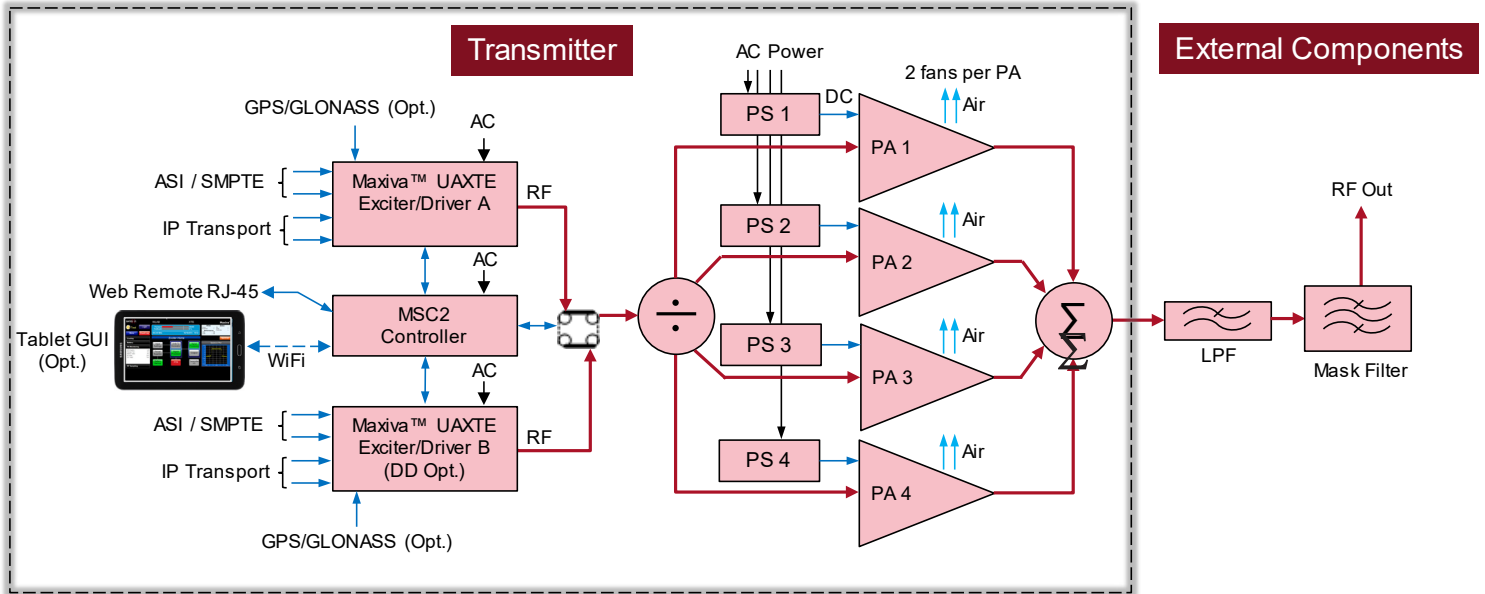
Global Monitoring and Control

The Maxiva UAXTE transmitter can be controlled from anywhere in the world with an intuitive, browserbased GUI or SNMP over TCP/IP via a telecom or network connection with password protection.



Maxiva UAXTE Block Diagram

4 PA System with dual drive option shown
(Models up to 32 PAs available)



Maxiva UAXTE Models and Power Levels

Model Number	RF Power Before Filter (Watts) UWB PA's (470-750MHz)	RF Power Before Filter (Watts) Type "E" PA's (470-608MHz)	RF Output Connector	Total Rack Space (Single Drive)	Total Rack Space (Dual Drive)
UAXTE-10	16	16	N-F	2RU	5RU (1+1)
UAXTE-50	75	75	N-F	2RU	5RU (1+1)
UAXTE-100	150	150	N-F	2RU	5RU (1+1)
UAXTE-1P-C	165	200	DIN 7-16	4RU	9RU (1+1)
UAXTE-2P-C	312	400	DIN 7-16	4RU	9RU (1+1)
UAXTE-3P-C	500	600	DIN 7-16	4RU	9RU (1+1)
UAXTE-1-G2	500	600	DIN 7-16	5RU / 37RU Rack	8RU / 37RU Rack
UAXTE-2-G2	1,000	1,200	DIN 7-16	8RU / 37RU Rack	11RU / 37RU Rack
UAXTE-3-G2	1,500	1,800	1-5/8" EIA	11RU / 37RU Rack	14RU / 37RU Rack
UAXTE-4-G2	2,000	2,400	1-5/8" EIA	14RU / 37RU Rack	17RU / 37RU Rack
UAXTE-6-G2	3,000	3,600	3-1/8" EIA	1 x 37RU Rack	1 x 37RU Rack
UAXTE-8-G2	4,000	4,800	3-1/8" EIA	1 x 37RU Rack	1 x 37RU Rack
UAXTE-12-G2	6,000	7,200	3-1/8" EIA	2 x 37RU Rack	2 x 37RU Rack
UAXTE-16-G2	8,000	9,600	3-1/8" EIA	2 x 37RU Rack	2 x 37RU Rack
UAXTE-24-G2	12,000	14,400	3-1/8" EIA	3 x 37RU Rack	3 x 37RU Rack
UAXTE-32-G2	16,000	19,200	4-1/16"	4 x 37RU Rack	4 x 37RU rack

Specifications

Specifications and designs are subject to change without notice.

General	
Frequency Range.....	UHF-TV
Transmission Standards	ATSC 1.0, ATSC 3.0, DVB-T, DVB-T2, ISDB-Tb (Contact GatesAir for availability of other standards)
Channel Bandwidth.....	6, 7 or 8 MHz (system dependent)
Rated Power Output	10W to 19.2kW (all modulations), measured before DTV mask filter
Output Power Reduction Range.....	Adjustable from 0 to -10 dB of rated transmitter power
RF Load Impedance.....	50 ohms
VSWR	Protected against open or short circuit, all phase angles. Capable of operation into infinite VSWR with user-adjustable foldback threshold. Factory pre-set to 4% of nominal nameplate power (VSWR = 1.5:1)
RF Output Connector.....	Dependent on transmitter power. Refer to GatesAir drawing for details

AC Mains	
AC Line Voltage.....	10W to 150W Models: Single-phase, 110-240V, 50/60Hz Models over 150W: Three-phase: 380 to 415 V, or 208 to 240 V, 50/60 Hz, or single-phase 220 to 240 V, 50/60 Hz (specify when ordering)
AC Line Variation	±15%, between 208 to 230 V, or 380 to 400 V
Power Factor	>0.95 (typically >0.98)

Environmental	
Altitude	Up to 2,500 m (8,200 ft.) elevation above mean sea level (See temperature derating)
Ambient Temperature.....	0° to 45° C (32° to 113° F) at sea level (upper limit derated 2° C (3.6° F) per 300 m (984 ft.) elevation AMSL)
Storage Temperature.....	-10° to 65°C (14° to 149° F)
Humidity	0 to 95%, non-condensing
Cooling Method.....	Air-cooled with internal fans, air flow front to rear (external ducted air using optional front air plenum)
Acoustic Noise	<65 dBA (measured 1 m in front of cabinet), with external input air plenum/door
Frequency Stability	Internal OCXO: 5 x 10 ⁻⁷ ppm per year With internal GNSS: ±0.5 Hz

External Inputs	
Internal GNSS antenna input	GPS/GLONASS, SMA female, 50 ohms, (+5 V DC @ 100 mA max output for active antenna)
1 PPS/10 MHz Input.....	SMA Female (rear of exciter/LPU). BNC female (racked systems), user selectable 50 Ohms, or high impedance termination

Monitoring Outputs	
RF monitor (exciter)	SMA female
1 PPS/10MHz Output	SMA Female (rear of exciter/LPU). BNC female (racked systems), 50 Ohms

ATSC 1.0/2.0 (8-VSB) Specification	
Power Output (average).....	10W to 19.2 kW models available, measured before mask filter [See power level table]
Standards.....	ATSC A-53, 8-VSB DTV standard
Transport Stream Inputs.....	2 x SMPTE-310M or ASI (user selectable), 19.39Mb/s
Impedance.....	75 ohms, unbalanced
Input Connector	2 inputs, HD-BNC female (rear of exciter). BNC female (racked systems)
Signal to Noise, EVM	>30 dB (typical >36 dB), EVM <2.9 (typical <1.5 %)
Shoulder Level.....	<-47 dB (Measured per ATSC doc. A/64B)
Sideband Performance	Compliant with FCC emission mask, when measured at the output of GatesAir supplied output filter
Harmonic Radiation & Spurious	Meets mask requirements specified in FCC 5th and 6th report and order

DVB-T / DVB-T2 / ISDB-Tb / ATSC 3.0 (OFDM) Specification	
Power Output (average).....	10W to 19.2 kW models available, measured before mask filter [See power level table]
Systems.....	DVB T: Standard EN 300744 v1.6.1 DVB -T2: Standard EN 302 755 v1.3.1/1.4.1; TS 102 773 v1.3.1 ISDB -Tb: Brazil ANATEL standard ATSC 3.0: Standard A/322:2017 (Physical Layer Protocol)
Transport Stream Inputs.....	2 inputs BNC female; 75 ohms according to EN 50083-9. Supports seamless switching between ASI/T2MI inputs for DVB-T2
TSolP / IP Transport Inputs	2 inputs, 1GbE. IP Transport per ATSC 3.0. Supports seamless input switching.
Crest Factor	13 dB maximum
MER.....	>34 dB (typical >37 dB)
Shoulder Level (before mask filter)	<-37 dB (typically <-39dB)
Intermodulation	>37 dB
Harmonics (after filter).....	<-60 dB
Central Carrier Suppression	>75 dB
DVB-T2 Modes.....	Supports multiple PLP's (8), MISO, extended bandwidth mode, PAPR Reduction
SFN Delay	Static and Dynamic, 0 to 1 second per ETSI TS 101 191 V1.4.1 (2004-06)

Remote Control	
Parallel Remote	15 conductor D-sub for single-drive models, 25 conductor D-sub for dual-drive models. Optional I/O at top of rack.
Ethernet/SNMP	RJ-45, twisted pair
Compliance.....	RoHS 2011/65/EU Directive 2014/53/EU Safety: EN 60215 EMC: EN 301-489-1 FCC Part 73 Manufacturing: ISO 9001: 2008 Brazil ANATEL Russia GOST





Connecting What's Next

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