



# Maxiva™ UAXT with PowerSmart 3D

High Efficiency Air-Cooled UHF Multimedia TV Transmitter



The Maxiva™ UAXT, is a new technology, high-efficiency, air-cooled UHF solid-state transmitter. The state-of-the-art design combines GatesAir's PowerSmart 3D™ architecture and Maxiva UAX Compact drive to provide today's broadcaster unmatched efficiency, performance, reliability and quality. Designed with future broadcasting needs in mind, the Maxiva UAXT transmitter is a single transmitter platform capable of DVB-T/H, DVB-T2, ATSC, ATSC Mobile DTV, ISDB-Tb, CMMB, CTTB, and other digital standards.

For pre-filter average digital power levels up to 4kW OFDM and 7.2kW ATSC, the Maxiva UAXT transmitter is ideally suited for serving broadcasters needs for highly efficient, extremely compact and easy to maintain transmitter systems. The UAXT series utilizes GatesAir platform technologies derived from the Maxiva M2X multimedia exciter, PowerSmart 3D™ technology, new generation AC to DC power supplies and the latest 50 Volt LDMOS amplifier devices. This powerful technology blend provides best-in-class performance with respect to transmitter RF performance, efficiency, size, and upgradeability.

## Product Features

- High efficiency design incorporates GatesAir PowerSmart 3D™ technology, for best-in-class power efficiency and lowest TCO
- Overall AC to RF efficiency up to 36% OFDM, 40% ATSC
- Rugged, reliable design and construction
- Digital average power levels up to 4 kW OFDM, 7.2 kW ATSC
- Maxiva M2X exciter technology, allowing easy migration between different digital standards
- Real-Time Adaptive Correction (RTAC™) technology is included with every system
- Broadband high-efficiency power amplifier (PA) modules
- Extremely compact design, allows multiple transmitters and N+1 configurations in a single rack
- Hot-pluggable air-cooled high efficiency power supplies for simplified maintenance
- Modular central control system for straightforward monitoring and in-depth diagnostics
- Web-enabled remote graphical user interface (GUI)
- Includes front panel LCD screen for display of transmitter parameters, including Forward Power and Reflected Power

## Available Options

- Integral GPS/GLONASS receiver for SFN timing
- Dual exciters and switcher
- Exciter external UPS
- ASI/T2MI over IP (100/1000BASE-T)

## Specifications

Specifications and designs are subject to change without notice

| <b>General</b>                   |  |
|----------------------------------|--|
| Frequency Range                  | UHF TV Band  |
| Transmission Standards           | ATSC, DVB-T, DVB-T2, ISDB-Tb, CTTB   |
| Channel Bandwidth                | 6, 7 or 8 MHz (system dependent)   |
| Rated Power Output               | 4kW OFDM, 7.2kW ATSC before mask filter  |
| Output Power Reduction Range     | 0 to -10 dB  |
| RF Load Impedance                | 50 ohms  |
| VSWR                             | Protected against open or short circuit, all phase angles. Capable of operation into infinite VSWR with user-adjustable fold back threshold. Factory pre-set to 4% of nominal nameplate power (VSWR = 1.5:1) |
| RF Output Connector              | See power level table below  |
| <b>AC Mains</b>                  |  |
| AC Line Voltage                  | 3 phase: 380 to 415 V, or 208 to 240 V, 50/60 Hz, or single phase 208 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  |
| <b>Environmental</b>             |  |
| Altitude                         | Up to 8,200 ft (2,500 m) elevation above mean sea level  |
| Ambient Temperature              | 32° to 113° F (0° to 45° C) at sea level (upper limit derated 3.6° F [2° C] per 984 ft [300 m] elevation AMSL)   |
| Humidity                         | 95%, non-condensing  |
| Cooling Method                   | Air-cooled with internal fans, air flow front to rear (external 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              | Without precision frequency control/GPS: ±150 Hz/month<br>(2.3 x 10 <sup>-7</sup> ppm)   |
| <b>External Inputs</b>           |  |
| GPS Input                        | SMA female, 50 ohms, (+5 V DC @ 100 mA max output for active antenna)  |
| 1 PPS Input                      | BNC female, user selectable 50 ohms or high impedance termination  |
| 10 MHz Reference Frequency Input | BNC female, 50 ohms  |
| <b>Monitoring Outputs</b>        |  |
| RF monitor (exciter)             | SMA female   |
| 1 PPS                            | BNC female   |
| 10 Mhz                           | BNC female   |

| <b>DVB-T / DVB-T2 / ISDB-Tb / CTTB Specification</b> |   |
|--|---|
| Power Output (average)                               | Up to 4 kW models available, measured before mask filter (see chart below)  |
| Systems  | DVB-T/H, standard EN 300744<br>DVB-T2, standard EN 302 755 v1.3.1<br>DVB-T2, TS 102 773 v1.3.1<br>ISDB-Tb, Brazil ANATEL standard<br>CTTB (China) |
| ASI/T2MI Inputs                                      | 2 inputs BNC female; 75 ohms according to EN 50083-9 (for DVB-H 2 main/2 hierarchical)  |
| ASI/T2MI over ASI (optional)                         | 1 input, 100/1000BASE-T   |
| Crest Factor   | 13 dB maximum   |
| Shoulder Level                                       | <-37 dB (before mask filter)  |
| END  | <0.5 dB   |
| MER  | >34 dB (typical 36 dB)  |
| Harmonics (before filter)                            | <-40 dB   |
| Central Carrier Suppression                          | >75 dB  |
| DVB-T2 Modes   | Supports multiple PLP's, 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)  |
| <b>ATSC Specification</b>                            |   |
| Power Output (average)                               | Up to 7.2 kW models available, measured before mask filter (see chart below)  |
| System   | ATSC A-53, 8-VSB DTV standard   |
| Data Input   | 19.39 Mb/s, configurable as SMPTE-310M or ASI (user selectable)   |
| Impedance  | 75 ohms, unbalanced   |
| Input Connector                                      | 2 inputs, BNC female  |
| Signal to Noise (EVM)                                | >27 dB (EVM <4%)<br>Typical >32 dB (EVM <2.5 %)   |
| Phase Noise  | <104 dBc/Hz@ 20 kHz offset (ATSC A/64)  |
| Harmonic Radiation and Spurious                      | Meets mask requirements specified in FCC 5th and 6th report and order   |
| Sideband Performance                                 | Compliant with FCC radiation mask, when measured at the output of GatesAir-supplied output filter   |
| <b>Remote Control</b>                                |   |
| Parallel Remote                                      | 25 conductor D-sub for single drive basic rack, 12 conductor terminal block (mini Wago) on deluxe rack  |
| Ethernet/SNMP  | RJ-45, twisted pair   |
| Compliance   | RoHS 2002/95/EC<br>R&TTE 1999/5/EC<br>Safety: EN 60215<br>EMC: EN 301-489-1<br>FCC Part 73<br>Manufacturing: ISO 9001: 2008                       |

### UAXT Model and Power Levels

| Model Number | OFDM Power Before Filter (Watts)* | ATSC Power Before Filter (Watts)* | RF Output Connector | Total Rack Space (1 exciter) | Total Rack Space (2 exciters) |
|--------------|-----------------------------------|-----------------------------------|---------------------|------------------------------|-------------------------------|
| UAXT-1-1P    | 165                               | 300                               | DIN 7-16            | 5RU                          | 8RU                           |
| UAXT-1-2P    | 330                               | 600                               | DIN 7-16            | 5RU                          | 8RU                           |
| UAXT-1       | 500                               | 900                               | DIN 7-16            | 5RU                          | 8RU                           |
| UAXT-2       | 1,000                             | 1,800                             | DIN 7-16            | 8RU                          | 11RU                          |
| UAXT-3       | 1,500                             | 2,700                             | 1-5/8" EIA          | 11RU                         | 14RU                          |
| UAXT-4       | 2,000                             | 3,600                             | 1-5/8" EIA          | 14RU                         | 17RU                          |
| UAXT-6       | 3,000                             | 5,400                             | 3-1/8" EIA          | 44RU Rack                    | 44RU Rack                     |
| UAXT-8       | 4,000                             | 7,200                             | 3-1/8" EIA          | 44RU Rack                    | 44RU Rack                     |

\* Guaranteed minimum rated power levels shown. For maximum rated power levels on a specific channel, please consult GatesAir.