Maxiva™ UAX-OP-AN / VAX-OP-AN
High-Efficiency UHF & VHF Air-Cooled Analogue TV Transmitters
Maxiva™ UAX-OP-AN / VAX-OP-AN Product Overview

We did it again.
GatesAir has once again shattered the expectations of what is possible with high-power, solid-state transmitters in terms of efficiency, power density, and performance.

- Power levels from 600W to 28kW analogue peak of sync
- High-efficiency broadband Doherty power amplifiers for all bands (VHF and UHF)
- All models are upgradable via software for future digital operation
- The only transmitter on the market using Doherty amplifiers in analog-mode—highest efficiency!
- Hot-swappable power amplifiers
- Separate hot-swappable compact power supplies, 3 per PA; for 2 of 3 full power redundancy**
- Optimized for best performance using Real Time Adaptive Correction
- Innovative, highly efficient air-cooling system with variable speed cooling fans

**Power supply redundancy per PA module
Maxiva™ UAX-OP-AN / VAX-OP-AN Main Features

- High power-density, compact dimensions
- Power levels available up to 14kW peak sync analogue, per rack
- Multi-rack systems available up to 28kW peak sync power
- High-efficiency broadband Doherty PA design
- Dual drive option
- Enhanced Power Supply redundancy
- Modulations available: NTSC, PAL (NICAM sound option)
- S/W Upgradeable to: ATSC-1, DVB-T, DVB-T2, ISDB-T, DAB/DAB+
- Adaptive pre-correction included
- Optional Integrated high-stability GPS / GLONASS receiver with battery
- Control system with GPIO and Web Browser

Maxiva™ Air-Cooled Analogue Transmitter Systems

UAX-OP-AN-2500

UAX-OP-AN-3500

UAX-OP-4X AMPS
**General**

- Frequency Range: VHF & UHF TV Bands
- Transmission Standards: NTSC, PAL, System B, G, D, K, M, N, I
- Channel Bandwidth: 6, 7 or 8 MHz (system dependent)
- Rated Power Output: See table for details
- Output Power Reduction Range: 0 to -10 dB
- RF Load Impedance: 50 ohms
- VSWR: Full power up to 1.3:1
- Frequency Stability: Without precision frequency control/GPS: +150Hz/month (2.3x10^-7 ppm)
- RF Output Connector: 1-5/8", 3-1/8" or 4-1/16" EIA (dependent upon power level)
- Transmitter Dimensions: See table for details
- Transmitter Weight: Contact GatesAir for details

**AC Mains**

- AC Line Voltage: 3 phase: 380 to 415 V, or 208 to 240 V, 47-63Hz - specify voltage when ordering
- AC Line Variation: ±15%, between 208 to 230 V or 380 to 400 V
- Power Factor: >0.95

**Environmental**

- Altitude: Up to 2,500 m (8,200 ft) elevation AMSL (>2,500m optional)
- Indoor Ambient Temperature: -5° to +45° C (23° 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: 95%, non-condensing
- Cooling Method: Liquid-cooled, using 50/50 mix of ethylene glycol and water
- Acoustic Noise: <65 dBA (measured 1 m (3.3 ft) in front of cabinet)

**GPS/GLONASS**

- Input Connector: N (f), 50 Ohm
- Input/Monitor output 10 MHz: BNC (f), 50 Ohm
- Input/Monitor output 1PPS: BNC (f), 50 Ohm
- Phase Noise: -140 dBc/Hz @10kHz
- Stability: 1e-12/24 Hr with disciplined TCXO
- Hold-over Stability: 5 µs after 5 hours (optional 1 µs after 24 hours)

**Analog Specifications**

- Frequency Bands: UAXTE: UHF Band- 470-806 MHz
  VAXTE: VHF Band III- 170-240 MHz
  VAXTE-L: VHF Band I- 54-88 MHz
- Analog Standards: B, G, D, K, M, N, I
- Color System: NTSC, PAL
- Output Power: Power levels from 600W to 28kW p.s. available
- Sound Power: -10dB relative to vision peak sync
- Vision Power: -10dB relative to vision peak sync

**Vision Performance**

- Frequency Stability: 2.3 x 10^-7 / Month
- Differential Gain: 3%
- Differential Phase: 3°
- LF Linearity: 5%
- ICPM: ≤3°
- 2T K Factor: 3% or less
- Spurious Emissions: ≤-60dB, or better, relative to peak vision power, measured after GatesAir supplied filter
- Harmonics: ≤-60dB, or better, relative to peak vision power, measured after GatesAir supplied filter
- In-Channel Intermodulation Distortion: ≤-57dB, or better

**Sound Performance**

- Audio Input Level: 0 to +10dBm, 600 Ohms
- Pre-Emphasis: As required by system standard (50µS 75 µS)
- Frequency Response: ≤-0.5dB, 40Hz to 15kHz
- Harmonic Distortion: <0.5%
- FM Signal to Noise Ratio: >60dB after de-emphasis
- AM Synchronous Noise: -40dB r.m.s. at 400Hz, +25kHz deviation
- NICAM Sound: Integrated NICAM encoder available - specifications available upon request

**Remote Control**

- Parallel Remote: TFT Touchscreen
- GPIO / Parallel Remote
- Web GUI
- SNMP

**Mechanical**

- Rack: See table for details
- Width: 600 mm (23.6"), per rack
- Rack Height: 30RU, 1,530mm/42RU 2,070 mm (70.9"/81.5")
- Rack Depth: UHF models: 1,000 mm (39.4")
  VHF models: 1,200 mm (47.2")

**Options**

- Contact GatesAir for details
## Key Features

<table>
<thead>
<tr>
<th>Transmitter Model</th>
<th>Power Before Filter (p.s. W)</th>
<th>Total Number of PA’s</th>
<th>Configuration / Rack Style</th>
<th>Number of Tx Racks</th>
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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. Until 2019, research, development and innovation has been driven from the company’s facilities in Mason, Ohio and supported by the long-standing manufacturing center in Quincy, Illinois. In May 2019, the company acquired an Italian company operating as GatesAir S.r.l. which provides an additional research, development and service location within the EU.

GatesAir’s turnkey solutions are built on two pillars: 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.
Award Winning Service -- Global Locations

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