



Connecting What's Next



## Maxiva™ UAX-OP / VAX-OP Analog

High-Efficiency UHF & VHF Air-Cooled Analog TV Transmitters

# Maxiva™ UAX-OP / VAX-OP Analog 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 analog 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!

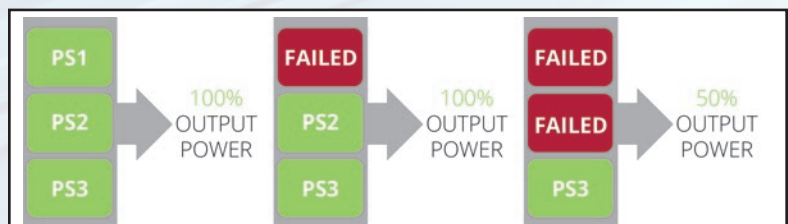
Hot-swappable power amplifiers

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 / VAX-OP Analog Main Features

- High power-density, compact dimensions
- Power levels available up to 14kW peak sync analog, 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, DTMB, 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 Analog Transmitter Systems



UAX-OPG2-A-2500



UAX-OPG2-A-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: $\pm 150\text{Hz/month}$ ( $2.3 \times 10^{-7}$ 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.....	$\pm 15\%$ , 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 -150 dBc/Hz @100kHz
Stability.....	1e-12/24 Hr with disciplined TCXO
Hold-over Stability	5 $\mu\text{s}$ after 5 hours (optional 1 $\mu\text{s}$ 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 Performance	
Inputs .....	Video: BNC (f), 75 Ohm Audio: Tini-Q6 "Mini XLR", 6 Pin (m), 600 Ohm
Frequency Stability .....	$2.3 \times 10^{-7}$ / Month
Differential Gain .....	3%
Differential Phase.....	3°
LF Linearity .....	5%
ICPM.....	$\pm 3^\circ$
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 (50 $\mu\text{s}$ 75 $\mu\text{s}$ )
Frequency Response.....	$\pm 0.5\text{dB}$ , 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, $\pm 25\text{kHz}$ 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

## Air-Cooled Analog UHF/VHF OP Models

Ultra-Compact Analog TV Transmitter Model	Analog Power Before Filter	# Rack Units (RU)
<b>UHF Band IV &amp; V</b>		
UAXT-A-50G2-UC	50	1
UAXT-A-70G2-UC	70	1
UAXT-A-125G2-UC	125	1
UAXT-A-220G2-UC	220	1
UAXT-A-250G2-UC	250	1
UAXT-A-600G2D-UC	600	2
UAXT-A-1200G2D-UC	1200	2
UAXT-A-600G2E-UC	600	3
UAXT-A-1200G2E-UC	1200	3
<b>VHF Band III</b>		
VAXT-A-50G2-UC	50	1
VAXT-A-70G2-UC	70	1
VAXT-A-200G2-UC	200	1
VAXT-A-250G2-UC	250	1
VAXT-A-600G2-UC	600	2
VAXT-A-1200G2-UC	1200	3
VAXT-A-1500G2-UC	1500	3
<b>VHF Band I</b>		
VAXT-A-125LG2	125	1
VAXT-A-600LG2	600	2
VAXT-A-1200LG2	1200	3

## Air-Cooled Analog UHF/VHF OP Models (continued)

Mid- and High-Power Digital TV Transmitter Model	Power Before Filter (p.s. W)	Total Number of PA's	Configuration / Rack Style	Number of Tx Racks
<b>UHF Band IV &amp; V Models</b>				
UAX-OPG2D-A-600	600	1	2+1 RU	Option
UAX-OPG2E-A-600	600	1	2+1 RU	Option
UAX-OPG2D-A-1200	1,200	1	3+1 RU	Option
UAX-OPG2E-A-1200	1,200	1	3+1 RU	Option
UAX-OPG2D-A-2500	2,500	1	3+1 RU	Option
UAX-OPG2E-A-2500	2,500	1	3+1 RU	Option
UAX-OPG2D-A-3000	3,000	1	3.5 + 1 RU	Option
UAX-OPG2D-A-3500	3,500	1	3.5 + 1 RU	Option
UAX-OPG2E-A-3500	3,500	1	3.5 + 1 RU	Option
UAX-OP-A-2P6D-R36	6,000	2	36 RU	1
UAX-OP-A-2P6E-R36	6,500	2	36 RU	1
UAX-OP-A-2P7D-R36	7,000	2	36 RU	1
UAX-OP-A-3P6D-R36	9,000	3	36 RU	1
UAX-OP-A-3P7D-R36	10,500	3	36 RU	1
UAX-OP-A-3P7E-R36	10,500	3	36 RU	1
UAX-OP-A-4P6D-R36	12,000	4	36 RU	1
UAX-OP-A-4P6E-R36	13,000	4	36 RU	1
UAX-OP-A-4P7D-R36	14,000	4	36 RU	1
UAX-OP-A-4P7E-R37	14,000	4	36 RU	1
<b>VHF Band III Models</b>				
VAX-OPG2-A-600	600	1	2+1 RU	Option
VAX-OPG2-A-1200	1,200	1	3+1 RU	Option
VAX-OPG2-A-1500	1,500	1	3+1 RU	Option
VAX-OPG2-A-2500	2,500	1	3+1 RU	Option
VAX-OPG2-A-3000	3,000	1	3.5+1 RU	Option
VAX-OPG2-A-4000	4,000	1	3.5+1 RU	Option
VAX-OP-A-2P6-R36	6,000	2	36 RU	1
VAX-OP-A-3P6-R36	9,000	2	36 RU	1
VAX-OP-A-4P6-R36	12,000	3	36 RU	1
VAX-OP-A-2P7-R36	7,000	3	36 RU	1
VAX-OP-A-3P7-R36	10,500	4	36 RU	1
VAX-OP-A-4P7-R36	14,000	4	36 RU	1
VAX-OP-A-6P7-R36	21,000	6	36 RU	2
VAX-OP-A-8P7-R36	28,000	8	36 RU	2
<b>VHF Band I Models</b>				
VAX-OPG2-A-2500L	2,500	1	3.5+1 RU	Option
VAX-OPG2-A-3000L	3,000	1	3.5+1 RU	Option
VAX-OPG2-A-3500L	3,500	1	3.5+1 RU	Option
VAX-OP-A-2P7L-R36	7,000	2	36 RU	1
VAX-OP-A-4P7L-R36	14,000	4	36 RU	1
VAX-OP-A-6P7L-R42	21,000	6	42 RU	1
VAX-OP-A-8P7L-R42	28,000	8	42 RU	1



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.



### Contact Information

+1 800 622 0022

North America

NorthAmerica@gatesair.com

Caribbean and  
Latin America

CALA@gatesair.com

Europe, Middle East  
and Africa

EMEA@gatesair.com

Asia Pacific

APAC@gatesair.com

For more information, please visit [gatesair.com](http://gatesair.com)

### Global Service Locations







## Award Winning Service -- Global Locations

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.



North America  
Caribbean and  
Latin America

NorthAmerica@gatesair.com  
CALA@gatesair.com

Europe, Middle East  
and Africa

EMEA@gatesair.com

Asia Pacific

APAC@gatesair.com

For more information, please visit [gatesair.com](http://gatesair.com)

GatesAir is a registered trademark of GatesAir, Inc.  
Trademarks and tradenames are the  
property of their respective companies.

### CONNECTING WHAT'S NEXT

5300 Kings Island Drive, Suite 101  
Mason, OH USA 45040  
Tel: +1 513 459 3400

[GatesAir.com](http://GatesAir.com)



© 2021 GatesAir  
MAXIVA-UAX-OP-AN-VAX-EN-  
SR-RM-KA-062321