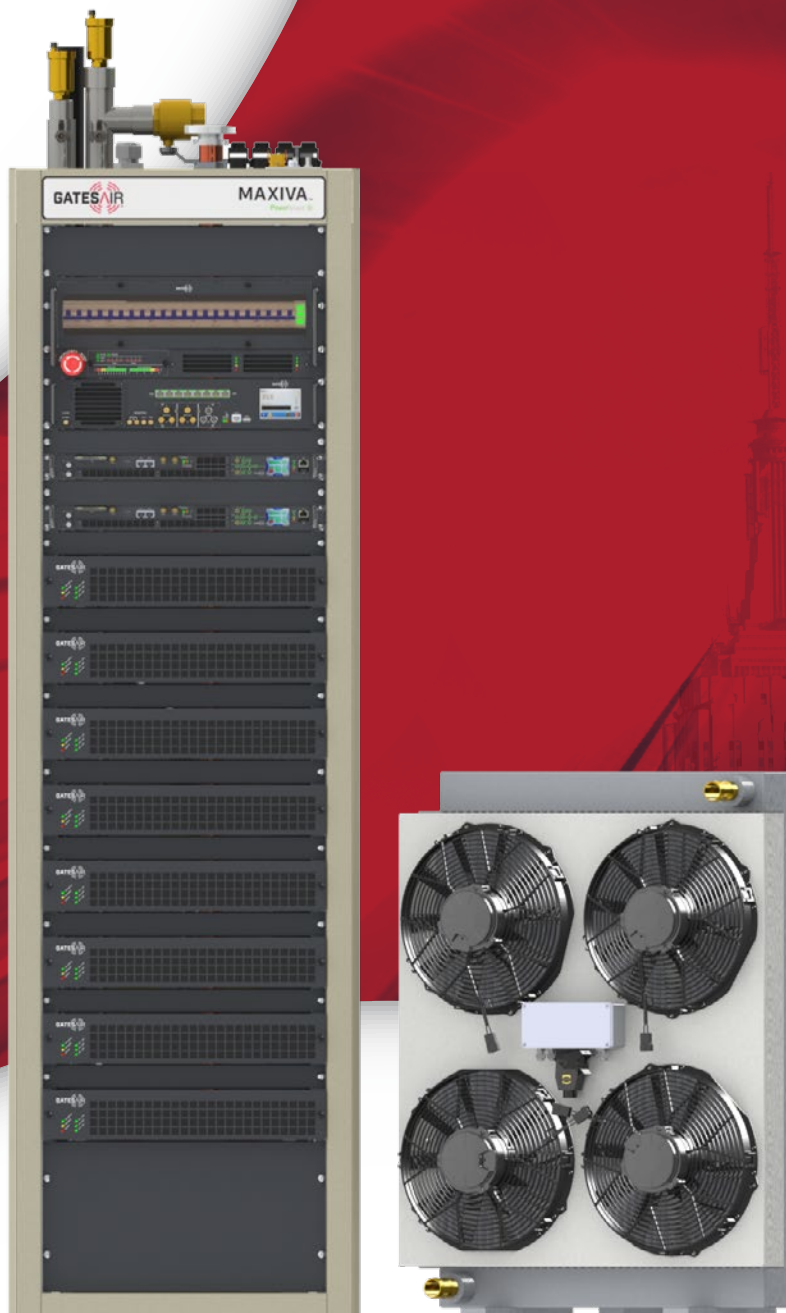




Connecting What's Next



Maxiva™ ULX-OP / VLX-OP Analog

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

Maxiva™ ULX-OP / VLX-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 3.5kW to over 80kW 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

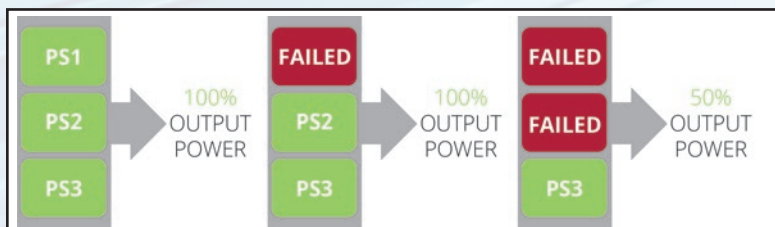
Separate hot-swappable compact power supplies, 3 per PA; for 2 of 3 full power redundancy**

Optimized for best performance using Real Time Adaptive Correction

Innovative, highly efficient liquid-cooling system



**Power supply redundancy per PA module



Maxiva™ ULX-OP / VLX-OP Analog Main Features

- High power-density, compact dimensions
- Up to 28kW UHF / 32kW Band III analog pre-filter peak sync power per rack
- Multi-rack systems available up to 80kW
- 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 high-stability GPS/GLONASS receiver with battery
- Control system with GPIO and Web Browser
- Parallel, dual redundant pumps for each cabinet
- Multiple DC Fans on Heat Exchanger- variable speed for efficiency optimization
- Automatic daily Heat Exchanger airflow reversal to eliminate debris
- Automatic coolant refill reservoir to reduce maintenance



Maxiva™ ULX-OP-A-24P8E-R42
Liquid-Cooled 84kW Analog Transmitter System

Maxiva™ ULX-OP / VLX-OP Analog

Specifications

Specifications and designs are subject to change without notice

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 (per applicable standard)
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: ± 150 Hz/month (2.3×10^{-7} ppm)
RF Output Connector	1-5/8", 3-1/8", 4-1/16", or 6-1/8" EIA (Power level dependent)
Transmitter Dimensions	See table for details
Transmitter Weight	Consult GatesAir
AC Mains	
AC Line Voltage	3 phase: 380 to 415 V, or 208 to 240V, 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 2,500m (8,200 ft) elevation AMSL ($> 2,500$ m optional)
Indoor Ambient Temperature	-5° to $+45^{\circ}\text{C}$ (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 1 PPS	BNC (f), 50 Ohm
Phase Noise	-140 dBc/Hz @10kHz -150 dBc/Hz @100kHz
Stability	$1\text{e-}12$ / 24 Hr with disciplined TCXO
Hold-over stability	5 μs after 5 hours (optional 1 μs after 24 hours)
Analog Specifications	
Frequency Bands	ULX-OP-AN: UHF Band- 470-806 MHz VAX-OP-AN: VHF Band III- 170-240MHz VHF Band I- 54-88MHz
Analog Standards	B, G, D, K, M, N, I
Color System	NTSC, PAL
Output Power	Power levels from 30 W to $>20\text{kW}$ p.s.
Sound Power	-10dB relative to vision peak sync

Vision Performance	
Inputs	(1) Video: BNC (f), 75 Ohm
Audio	(1) Mini-Q6 “Mini XLR”, 6 Pin (m), 600 Ohm
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 / 75µS)
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	TFT Touchscreen GPIO / Parallel Remote Web GUI SNMP
Mechanical	
Rack	See table for details
Width	600 mm (23.6”), per rack
Rack height	36RU 1,800 / 42RU 2,070 mm (70.9” / 81.5”)
Rack Depth	UHF models: 1,100 mm (39.4”) VHF models: 1,200 mm (47.2”)
Options	
Contact GatesAir for details	

Key Features

Transmitter Model	Power Before Filter (p.s. W)	Total Number of PAs	Number of Tx Racks	Auxiliary Racks	Number of Pump Sets	Number of Heat Exchangers	Rack Style
UHF Models							
ULX-OP-A-1P8E-R36	3500	1	1		1	1	36RU
ULX-OP-A-2P6D-R36	6000	2	1		1	1	36 RU
ULX-OP-A-2P8D-R36	7000	2	1		1	1	36 RU
ULX-OP-A-3P6D-R36	9000	3	1		1	1	36 RU
ULX-OP-A-3P8D-R36	10500	3	1		1	1	36 RU
ULX-OP-A-4P8D-R36	14000	4	1		1	1	36 RU
ULX-OP-A-5P8D-R42	17500	5	1		1	1	42 RU
ULX-OP-A-6P8D-R42	21000	6	1		1	1	42 RU
ULX-OP-A-8P8D-R42	28000	8	1		1	2	42 RU
ULX-OP-A-10P8E-R42	35000	10	2	1	1	2	42 RU
ULX-OP-A-16P8E-R42	56000	16	2	1	2	4	42 RU
ULX-OP-A-20P8E-R42	70000	20	2	2	2	4	42 RU
ULX-OP-A-24P8E-R42	84000	24	4	2	2	4	42 RU
VHF Band III Models							
VLX-OP-A-1P8-R36	4000	1	1		1	1	36 RU
VLX-OP-A-2P8-R36	8000	2	1		1	1	36 RU
VLX-OP-A-3P8-R36	12000	3	1		1	1	36 RU
VLX-OP-A-4P8-R36	16000	4	1		1	1	36 RU
VLX-OP-A-5P8-R42	20000	5	1		1	1	42 RU
VLX-OP-A-6P8-R42	24000	6	1		1	1	42 RU
VLX-OP-A-8P8-R42	32000	8	1		1	2	42 RU
VLX-OP-A-10P8-R42	40000	10	2	1	1	2	42 RU
VLX-OP-A-12P8-R42	48000	12	2	1	1	2	42 RU
VLX-OP-A-16P8-R42	64000	16	2	1	2	4	42 RU
VLX-OP-A-20P8-R42	80000	20	2	2	2	4	42 RU
VLX-OP-A-24P8-R42	96000	24	4	2	2	4	42 RU
VHF Band I Models							
VLX-OP-A-1P8L-R36	3500	1	1		1	1	36 RU
VLX-OP-A-2P8L-R36	7000	2	1		1	1	36 RU
VLX-OP-A-3P8L-R36	10500	3	1		1	1	36 RU
VLX-OP-A-4P8L-R36	14000	4	1		1	1	42 RU
VLX-OP-A-6P8L-R42	21000	6	1		1	1	42 RU
VLX-OP-A-8P8L-R42	28000	8	1		1	2	42 RU
VLX-OP-A-12P8L-R42	42000	12	2	1	1	2	42 RU
VLX-OP-A-16P8L-R42	56000	16	2	1	2	4	42 RU
VLX-OP-A-24P8L-R42	84000	24	4	2	2	4	42 RU



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 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.



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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.



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CONNECTING WHAT'S NEXT

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SR-RM-KA-062421