



Connecting What's Next



TRANSPORT



TELEVISION
TRANSMISSION



RADIO
TRANSMISSION

Over-the-Air Broadcasting Solutions



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: Content Transport, TV Transmission, and Radio Transmission. GatesAir's globally renowned Intraplex range comprises the Transport pillar, enabling audio contribution and distribution (along with data) over IP and TDM networks. Intraplex solutions provide value for broadcasters for point-to-point (STL, remote broadcast) and multipoint (single-frequency networks, syndicated distribution) connectivity. GatesAir continues to innovate robust and reliable solutions for traditional RF STL connections that can also accommodate IP traffic. In larger transmitter networks, Simulcasting technology ensures all GatesAir transmitters are time-locked for synchronous, over-the-air content delivery.

Powering over-the-air analog and digital radio/TV stations and networks worldwide with the industry's most operationally efficient transmitters is a longtime measure of success for GatesAir. 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.

GatesAir's unrivalled legacy in over-the-air radio reaches new heights with the Flexiva™ transmitter family. The Flexiva range symbolizes decades of broadcast innovation and engineering experience, offering the industry's most complete and reliable solutions to suit all over-the-air power and coverage requirements in FM and digital radio. Truly groundbreaking strides in operational efficiency make high-quality broadcasting and low total cost of ownership a reality in equal measure.

Contact Information

+1 800 622 0022

Americas Americas@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

Thriving

During Uncertainty and Change

Broadcasters and broadcast network operators face an unprecedented scope of change and uncertainty — from increasing global competition, skyrocketing electricity costs and new business models for content distribution, to complex modulation approaches and diminished pools of skilled RF engineers and technicians.

As broadcasters around the world tackle these challenges, they're turning to the company with the scale, technology, solutions, quality, reliability and customer support to help them come out ahead of the competition — GatesAir.



Designing

Transmitters for Years of Reliable, Cost-Effective Service

For years, radio and television broadcasters approached their transmission requirements with a similar set of technologies and approaches. Often a new radio or TV transmitter could be installed with the confidence that the technology requirements would be the same for decades and a quality transmitter could remain in service for 20, 30 or more years.

Today, broadcasters are preparing for changing standards and technologies continue to changing rapidly. For broadcast transmitters to provide long-term service, they should be easy to upgrade to the newest modulation version — even supporting total software change-outs from one standard to another.

Successful transitions from moving spectrum, analog to digital transmission, the deployment of mobile TV and other multimedia networks, can require scores of transmitters in greatly varying sizes and power levels, challenging the support logistics and expanding the costs of installing and maintaining transmitters. At the same time, the demand for lower operating costs and a more eco-friendly approach means that broadcasters require transmission systems that operate more efficiently.

With the largest installed base, the widest technology range, the broadest global transmission business and the greatest selection of software-upgradeable, power-friendly products, GatesAir offers the solutions and capabilities you need to thrive for years to come.



From high-power AM transmitters in Africa and DAB & FM services in Norway and France, to super-high power digital TV services in the United States and comprehensive infrastructure rebuilds in Thailand, GatesAir offers broadcasters the cost-saving solutions that companies need to thrive in the 21st century. As the only global company with products for virtually every broadcast band and modulation, GatesAir offers broadcasters solutions tailored to their unique requirements.

PowerSmart[®] Plus

Broadband Amplification

PowerSmart Plus incorporates groundbreaking broadband amplifier designs into Flexiva and Maxiva transmitters. A fully broadband high efficiency power amplifier provides coverage from total band in a single design. Alternatively, an efficiency optimized version is available, providing unsurpassed efficiency with superior performance. These designs also consolidate spare parts and eliminate tuning and adjustments to further simplify maintenance and ongoing operation.

Compact Design

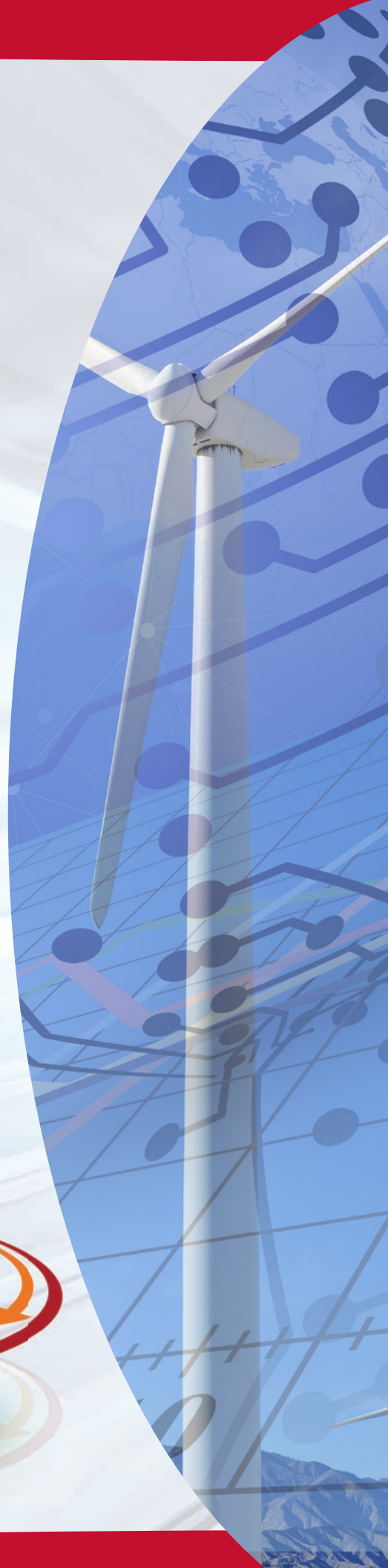
The reduced size of the GatesAir transmitters will minimize the use of valuable rack space in your transmitter facility. This provides space for other equipment, or multiple transmitters in a single rack, often eliminating the need for additional racks and the associated floor space needed.

Global Monitoring and Control

GatesAir transmitters can be controlled from anywhere in the world with an intuitive, browser-based GUI or SNMP over TCP/ IP via a telecom or network connection with password protection.

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. Lightweight universal PA pallets and modules facilitate overnight/same-day shipping for simple, cost-effective spares management. With lightweight subassemblies, GatesAir eliminates two-person lift requirements for routine maintenance and troubleshooting.



RTAC™ Explained

With the newest generation of RTAC™ advanced digital pre-correction, the Maxiva™ XTE enables high-efficiency transmitter power amplifiers to deliver the highest signal quality.

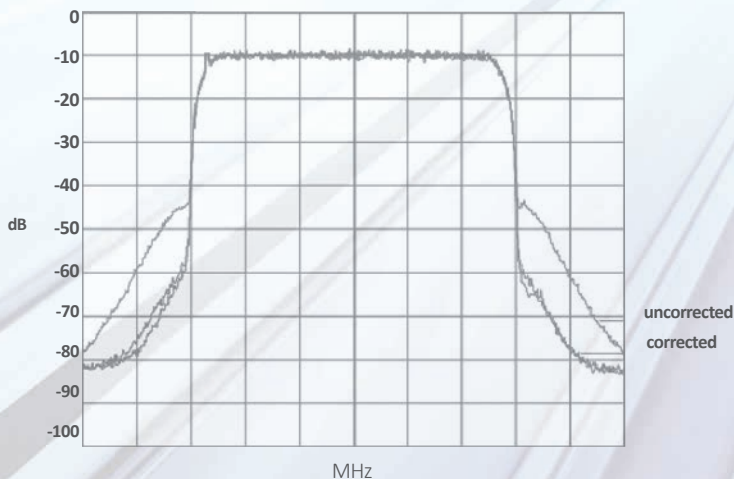
Pre-correction is a term for modifying an RF signal to compensate for non-ideal transmission systems. While this may seem to be an unnecessary complexity, in fact it is this architectural approach that has enabled other desirable system characteristics such as superior energy efficiency and cost of ownership.

Digital pre-correction has now been employed in many generations of digital and even analog exciter systems. The universal adoption of OFDM and the latest architectures in solid-state Doherty power amplifiers have pushed the demand on the signal processing capability. This has allowed us to develop and deliver the most advanced pre-correction suite to meet this critical demand.

There are two simultaneous pre-corrections used by the Maxiva™ XTE: linear and nonlinear.

Linear Precorrection

Linear pre-correction compensates for the non-ideal amplitude response and time response of the transmission system, including the power amplifier and any bandpass filters. An RF bandpass filter is



required to meet spectral emission compliance, but the filter itself introduces an undesired distortion. With linear pre-correction, the transmitted signal has optimal modulation performance so less equalization is required at the receiver.

Nonlinear Precorrection

Linear amplification is necessary for any amplitude modulated waveform but modern high-efficiency RF amplifiers cannot provide a sufficiently high degree of gain or phase linearity, without some form of advanced pre-correction. Nonlinear pre-correction has always targeted the AM to AM and AM to PM non-linearity in the RF power amplifier that would otherwise cause unwanted modulation distortion and RF mask non-compliance.

In addition to the basic inherent non-linearity, a state-of-the-art Doherty amplifier exhibits the characteristics of its form – multiple coupled non-linear devices. The increased complexity of the distortion makes existing pre-distortion schemes ineffective.

By advancing the capabilities of the pre-correction, we have not only tamed these architectures to deliver unmatched signal performance, we have also opened up the possibilities for future, more advanced, amplifier technologies.

Fixed vs. Adaptive

Fixed pre-correction can improve the system linearity for one specific operating point, but has to be manually readjusted for changes in power output, antenna load impedance, temperature or operating point.

Adaptive digital pre-correction uses observation of the amplifier and system outputs to automatically adjust the current pre-correction, continuously optimizing the transmitted signal.

Full Featured, Hands Off

Now RTAC has been designed to simply deliver the expected performance without setup or adjustment. Along with the increased capability, the speed of execution has also increased. The net result is accurate and stable behavior with the expected reliable transmitter operation.

The Heart of GatesAir's Technology



Maxiva™ XTE

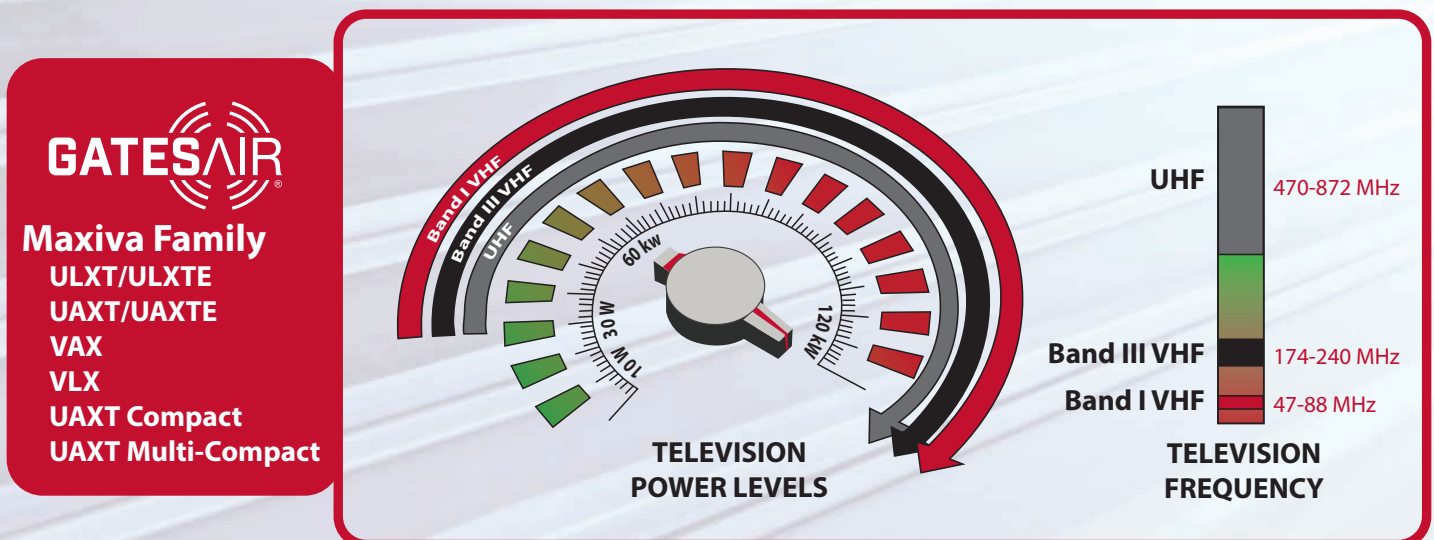
The heart of the transmitter, the Maxiva™ XTE provides a flawless signal with complete technical and regulatory compliance for tube and solid-state digital transmitters, and provides excellent support for a complete range of global digital and analog TV standards. The Maxiva™ XTE technology is designed for change, adapting easily via software downloads from one modulation version to another, such as from DVB-T to DVB-T2 and from ASTC to ATSC 3.0, while also supporting transitions from analog to digital modulation. Additional benefits include dual redundant Transport Stream inputs, with seamless switching as well as TSoIP and native IP inputs.

Solutions

for All Global Television Standards

GatesAir offers television and multimedia broadcasters solutions that are easy to install and maintain, and less expensive. With the Maxiva XTE multimedia exciter technology at the core of our Maxiva product families, GatesAir offers VHF and UHF broadcasters the assurance of reliable operation and outstanding operating efficiency.

Maxiva transmitters address a wide range of power levels — making sparing and support logistics easier. These products also feature market-leading GatesAir PowerSmart® technology — offering greater power density for smaller space requirements and lower power requirements for reduced cost of operation.



Standards ■ ATSC ■ ATSC 3.0 ■ CMMB ■ CTTB ■ ISDB-Tb ■ DMB ■ DVB-T/T2 ■ SECAM ■ NTSC ■ PAL



Maxiva™ ULXTE

Maxiva™ ULXT/ULXTE transmitters offer high power levels, small footprints and market-leading high-efficiency UHF operation in virtually every digital television format, with maximum power levels exceeding 125kW for all modulations.



Maxiva™ UAXTE

For digital power requirements from a few hundred Watts to over 25kW for all modulations, Maxiva™ UAXT/UAXTE transmitters provide compact, reliable, high-efficiency UHF solutions for both existing and emerging digital multimedia and mobile standards.



Maxiva™ VAXTE

The Maxiva™ VAXTE is a compact air-cooled TV & DAB transmitter that provides over the air delivery in the VHF spectrum. Built on GatesAir's groundbreaking PowerSmart Plus architecture, the Maxiva VAXTE provides an energy-efficient, broadband solution to deliver rich, high-quality multiformat content to consumers at home or on the move.

ATSC 3.0

Next-Generation Transmission Platform

ATSC 3.0 uses new technologies and advanced error correction for the physical layer featuring OFDM modulation to create a wireless data agnostic IP delivery system. It accommodates and extends the existing high-power/tall-tower broadcast infrastructure, while supporting delivery of robust mobile and pedestrian mobile television and other data services to portable devices.

- It is not backwards compatible with ATSC 1.0 receiving devices (new receivers or STB's needed).
- ATSC 3.0 is a "scalable," "interoperable" and "adaptable" platform.
- It provides enhanced viewing and listening experiences:
- Ultra HD video up to 3,840 x 2,160 (8.2 Megapixels) at 60 fps. Delivers a unique immersive audio experience.

Solutions

for All Global Television Standards



Maxiva™ UAXTE/VAXTE Compact Series

The Maxiva Compact air-cooled UHF and VHF solid-state transmitters incorporate the same technology and advanced features found in the Maxiva XTE Exciter, to provide today's broadcaster with unmatched performance, reliability and quality from a few Watts up to 800W.



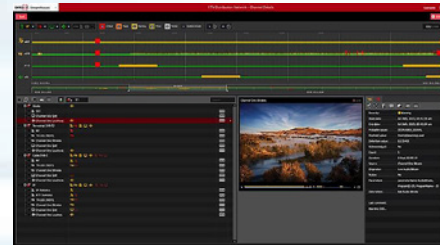
Maxiva™ Ultra-Compact Class

The Maxiva Ultra-Compact family of transmitters, transposers and gap-fillers further extends the capabilities of the Maxiva series, providing a single family of transmission products capable of satisfying any coverage architecture. The Maxiva Ultra-Compact provides pre-filter power levels up to 130W, in an exceptionally compact and space-saving 1RU package.



Maxiva™ Multi-Compact

Designed for digital or analog broadcasting, the Maxiva Multi-Compact is a platform available in Transmitter, Transposer or SFN Gap Filler configurations for DVB-T/H, DVB-T2, ATSC, ISDB-Tb and analog networks. The Maxiva Multi-Compact can be configured for up to 8 independent systems, or as N+1, N+2 or N+1/M+1 configurations.



Maxiva™ StreamAssure

Maxiva™ StreamAssure provides broadcasters and network operators with a centralized platform for monitoring transport streams, transmitter parameters and modulated RF, to ensure full compliance with standards and customer Quality of Experience. This cloud-based system allows on-premises and off-site, managed service-based monitoring of physical, transport and audio/video streams from a single dashboard. This simplifies the traditional component-based architecture that traditionally employs disparate monitoring systems to understand network-wide performance.



The Broadest Range

of Radio Transmitters

Since we started serving the emerging radio broadcasting industry in 1922, GatesAir has provided a growing range of products. Analog radio remains an important connection for many consumers, whether it is their preferred choice of entertainment or their only reliable source of news and information. Digital radio, however, brings new opportunities to broadcasters and consumers. The increased capacity of the digital audio stream extends radio's mantra of local, mobile and free by opening new revenue-generation lanes for broadcasters through targeted advertising. Additionally, digital streams make local on-demand content a reality — engaging loyal radio listeners in new, exciting and interactive ways.

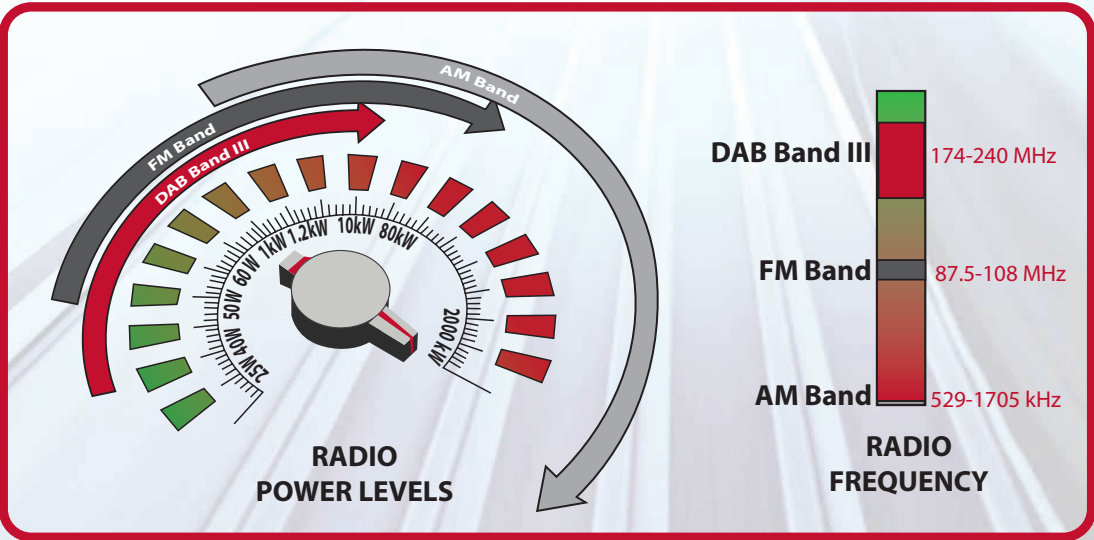
GatesAir is the only company to support all digital radio standards (HD Radio, DAB and DRM/DRM+), and our over-the-air customers rely on our transmission solutions to maximize new revenue opportunities. Regardless of whether you require support for analog, digital or hybrid radio, our innovative solutions will help you achieve the outstanding sound quality and reception required to attract, retain and grow your audience share while delivering low total cost of ownership.

Most consumers still think of AM and FM when it comes to radio, and despite competing media approximately 95% globally tune in weekly. While it is true that the lion's share of over-the-air broadcasts remains analog, the winds of change are increasingly gusting toward digital. Many U.S., European and Asian broadcasters offer digital radio programming alongside traditional AM and FM services. Globally, several countries have announced digital transition plans, with analog sunset deadlines firmly in place.



Flexiva™ Family

- FAX
- FAX Compact
- FLX
- LX
- 3DX



Standards

- AM
- DAB/DAB+/DMB
- DRM30/DRM+
- FM
- HD Radio
- CDR

Solutions

for All Global Radio Standards



Flexiva™ FLX

Flexiva FLX utilizes the latest 50 volt LDMOS amplifier devices, compact high-efficiency power supplies, variable speed cooling and the Flexiva FAX exciter with RTAC™.

Featuring PowerSmart® 3D technology, the Flexiva FLX line offers unmatched efficiency that makes it ideal for all FM applications. FLX provides today's broadcaster with unparalleled power efficiency and outstanding signal performance.



Flexiva™ FAX

Flexiva is designed for low- and high-power requirements, up to 80 kW, while utilizing the most compact design on the market today. Flexiva continues the legacy of the highly successful line of GatesAir FM transmitters and combines innovative, new quad-mode RF amplification and software-defined exciter technology to take FM transmission to the next level.



Flexiva™ Compact

The Flexiva™ Compact air-cooled FM solid-state transmitter family provides today's broadcaster with a single transmission platform capable of analog and digital operation. Incorporating field-proven GatesAir technology, Flexiva transmitters deliver world-class performance, reliability and quality.



Flexiva™ LX

The Flexiva™ LX FM solid-state transmitter family provides today's broadcaster with a no-compromise, cost-effective transmission platform with features previously only found in top-of-the-line products. Incorporating field-proven GatesAir technology, Flexiva LX transmitters deliver world-class performance, reliability and quality.



Maxiva™ VAXTE

The Maxiva™ VAXTE is a compact air-cooled DAB transmitter that provides over the air delivery in the VHF spectrum. Built on GatesAir's groundbreaking PowerSmart Plus architecture, the Maxiva VAXTE provides an energy-efficient, broadband solution to deliver rich, high-quality multiformat content to consumers at home or on the move.



Flexiva™ 3DX

Flexiva™ 3DX digital, solid-state AM transmitters feature Direct Digital Drive (3D) technology, which provides a host of capabilities and benefits, including elimination of the RF driver section. This enhancement results in simpler design, greater efficiency and improved reliability — ultimately reducing operational costs.

Audio over IP Codec Solutions

Audio, Voice and Data Transport Solutions

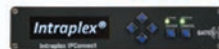
For more than 30 years, Intraplex® solutions have been broadcasters' top choice for linking studios and transmitters—from the simplest setup to the most complex network. For one clear reason: Intraplex products deliver solid reliability and long-term value, proven technology plus the latest innovations to help our customers outpace the competition.

At GatesAir, we've built our business intelligently—by listening to customers. We've incorporated the best technologies into industry-first products that enable broadcasters to step into the future.



Intraplex® IP Link Family

The Intraplex® IP Link family of IP audio codecs provides high-end features at an affordable price. Offering an array of audio coding options, the IP Link codecs are suitable for use in Studio to Transmitter Links (STLs) as well as audio contribution and distribution networks. Support for IP multicast and multiple unicast streams enables one encoder to feed multiple decoders.



Intraplex® IPConnect

The Intraplex® IPConnect is a standalone IP gateway to provide transport reliability for IP data packets using Dynamic Stream Splicing technology.



Intraplex® HD Link™

The renowned Intraplex® product family provides an outstanding range of wired and wireless IP and audio networking solutions for radio broadcasters that make it easy to manage multiple transmitters and studios. For digital radio operations, Intraplex also offers the 950 MHz digital STL, HD Link™.



Intraplex® LiveLook

GatesAir's Intraplex® LiveLook application for IP Link provides advanced network analytics and monitoring capabilities at an affordable price. It is an invaluable tool for optimizing and monitoring network performance.



Intraplex® STL HD — T1 STL System

The Intraplex® STL HD solution lets you customize your T1 STL with the features and circuits you require. The modular system transports crystal-clear digital audio on all types of T1 links, across any terrain. The STL HD system can be set up to carry one-way or full-duplex stereo audio, with or without compression. STL HD provides a range of data-interface options and supports a variety of telephone, intercom and other voice-grade applications.



Intraplex® NetXpress™

Intraplex NetXpress™ takes IP audio transport to a new level of performance and reliability. It provides transport over packet-switched networks for a wide range of real-time audio, voice, video and data applications. NetXpress delivers all the quality of Intraplex and all the economy of IP in one solution.

Great Broadcasters

Examples from Our Wide Global Customer Base

Thriving in a competitive global economy requires more than strong products and comprehensive support. It also requires the opportunity to serve great customers. Over the years, GatesAir has had the privilege of working closely with many of the world's premier broadcasting organizations as they have built, extended and rebuilt their broadcast networks



Global TV and Radio

An aggressive early adopter of DVB-T2 digital television, national broadcaster Vietnam Television (VTV) placed orders for transmitter network expansions. The first project is comprised of multiple Maxiva transmitters for unspecified VTV channels. The second project is specific to VTV5, a specialty channel serving ethnic minority communities.

On the radio side, like many global regions Vietnam is investing in existing FM infrastructure with improvement and expansion projects. Voice of Vietnam (VOV), the national radio broadcaster, had multiple transmitter orders which serves as the broadcaster's Ethnic Languages Channel. All of the projects included turnkey equipment, installation and commissioning services to ensure a unified process from start to finish.



North American TV

With the U.S. TV spectrum repack on the horizon, the recent channel relocation project for KOHD-TV in Oregon is an ideal example of how GatesAir can quickly and efficiently move broadcasters to new channel assignments. Thanks to the broadband amplification of GatesAir's PowerSmart Plus architecture, GatesAir was quickly able to move KOHD from Channel 51 to Channel 18 with a new Maxiva UAXT transmitter – in less than three months. The new UAXT transmitter has also improved signal quality and operational efficiency for KOHD, while providing plenty of headroom to support future over-the-air channel launches.



Intelligent IP Networking

KCLU-AM-FM in central California faced a significant challenge for studio-to-transmitter program delivery upon acquiring nearby KCLM(FM). With T1 service discontinued by its Telco provider, the broadcaster turned to GatesAir for reliable IP transport. The transition to Intraplex IP Link codecs has provided the station with the rock-solid reliability associated with legacy Intraplex systems to move program audio and data over a 45-mile distance. With stream optimization for higher performance and network visibility using Intraplex LiveLook software as additional benefits, the broadcaster has cut distribution costs by more than 50 percent since transitioning to GatesAir intelligent IP networking.

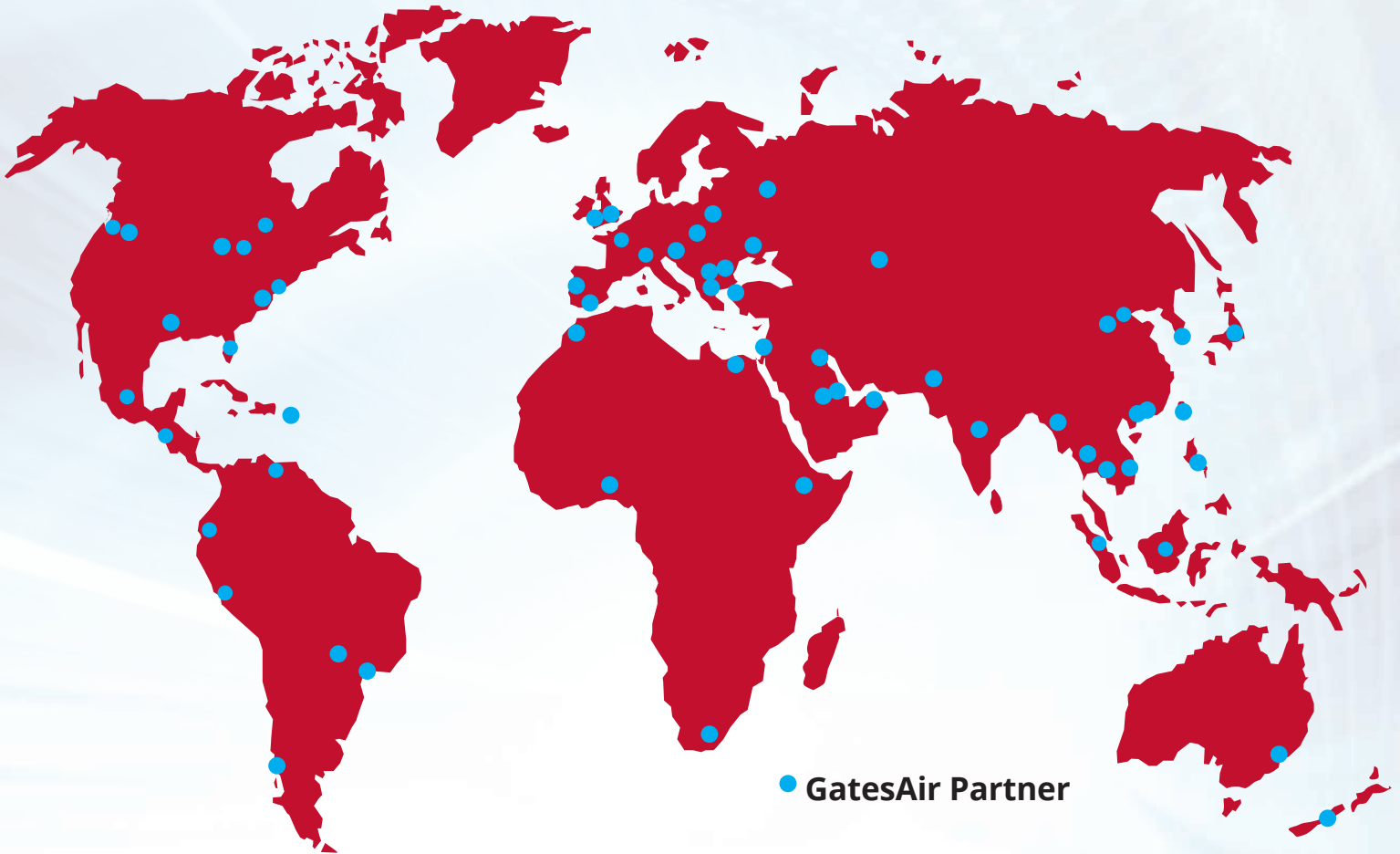


Radio Delivery

The unusual terrain of Brazil often requires either a very high-power single transmitter or a network of low-to-medium power transmitters to cover large regions. Nova FM in Brazil opted for the former, installing an 80KW high-efficiency Flexiva transmitter to power high-quality FM Radio programming across the States of Rio de Janeiro and Sao Paulo. GatesAir partner Foccus Digital, which designed and integrated the complete RF system, chose the Flexiva due to exceptional performance, low energy consumption, and a modular design that simplified the relocation of Nova FM's RF facility. A redundant architecture and hot-swappable modules keep maintenance and total cost of ownership low.

Great Service

Training, and Professional Services — GatesAir Offers the Complete Package



With its global reach and local support, GatesAir offers broadcasters the services they need to plan, implement and maintain efficient, reliable broadcast networks. From comprehensive product training and project management services, to spares, repairs and product update offerings, GatesAir matches the industry's broadest product range with an equally effective set of support options. When planning your next transmission project, make GatesAir your first choice. With our world-class solutions and unmatched support, we'll be there for you for many years to come.

At GatesAir, we are committed to customer service excellence. It is our goal to provide the highest level of support by applying a simple rule: We take ownership of helping our customers succeed. Our support teams consist of innovative technical experts who support all situations regarding product performance, integration and operational processing. We are adept at providing proven solutions, making workflows better and ensuring reliability of the product and system. At GatesAir, our experienced and dedicated teams stand ready to help you meet your goals for premium product performance, 100% up-time and reduced maintenance investment.



GatesAir Service Support Contact Information

support@gatesair.com
+1 217-222-8200

Turnkey Solutions for Wireless Content Delivery

No over-the-air industry supplier offers a range of products, systems and services as comprehensive as GatesAir. From local and remote intelligent networking to the industry's most efficient transmitters, GatesAir provides broadcasters with integrated solutions that improve performance, reduce costs, accelerate return on investment, and enable new services and opportunities for emerging business models.

Warranty

Because we want to assure you that GatesAir stands beside its products and system solutions, our products carry a standard set of warranty services, which are competitive with — and in some cases outperform — others in the industry.

Service Packages

As a leader in providing innovative products and comprehensive over-the-air solutions to broadcasters worldwide, GatesAir understands the needs for reliability in service and support.

With a long history of broadcast innovation and expertise, GatesAir personnel are ready to help with day-to-day requests and unexpected issues. We offer a complete range of Technical Support and Training/Education initiatives, a full Professional Services team, and an evolving self-service Online Parts Store.



Americas

Americas@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

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



©2018 GatesAir
GATESAIR-CORP-08-22-18