



NEXT GENERATION RADIO TRANSMISSION

CONNECTING WHAT'S NEXT



GATESAIR RADIO PRODUCT FAMILY

Σ

Radio

DAB

Low Power

FAX Air Cooled

FLX Liquid Cooled

Flexiva™ FAX

Flexiva™ LX



Flexiva™ **FAX**



Flexiva™ FAX



Flexiva™ FLX



Flexiva™ FLX

Low Power



VAXT 80/150 Ultra Compact Air Cooled



VAX 550/750



VAX 1.2kW - 13.6kW

VLX Liquid Cooled



VLX 3.8kW - 45.6kW





NEW PRODUCTS



IPL-100e

FAX OPTION

- IPL -100e
- Integrated IP Link
 - Reliable transport streams
 - Full duplex audio
 - 3 independent IP interfaces
 - Prioritized backup stream sources for redundancy
 - Time Diversity to prevent packet losses





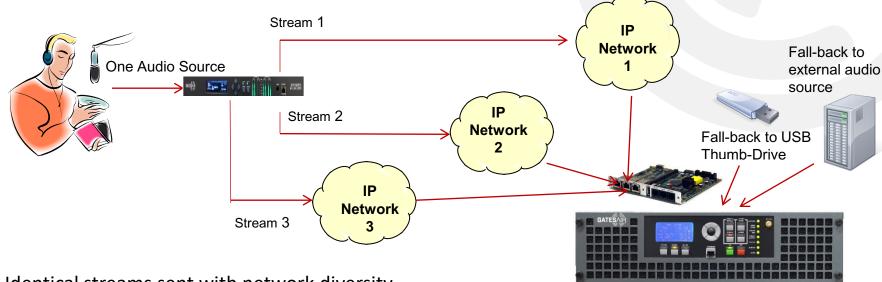








SUPPORTS DYNAMIC STREAM SPLICING



- Identical streams sent with network diversity
- FEC and Time Diversity setting for each streams
- "Hitless" operation
- Fall back to USB play-list or local audio source



FLEXIVA (FAX) 15kW

- FAX 15kW Analog or Digital
 - FAX15KFAX300 Analog version
 - FAX15KFAX300HD Digital version
- Efficiency
 - Highest Efficiency
 - 72% AC to RF Efficiency in FM
 - > 60% AC to RF Efficiency in FM+HD at -14dBc
 - 54% AC to RF Efficiency in FM+HD at -10dBc
- Redundancy
 - Hot Pluggable Power Amplifier
 - Hot Pluggable Power Supplies
 - Backup Hardware Controller Standard
 - One to One PS to PA Ratio
 - Redundant Variable Speed Fans

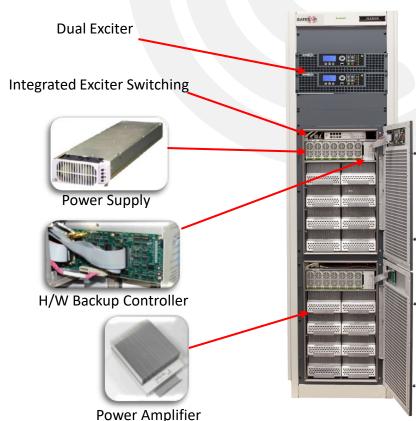






Redundancy

- Hot Pluggable Power Amplifiers
- Hot Pluggable Power Supplies
 - One to one PS to PA Ratio
- Backup Controller
 - Maintains Full Power
 - Maintains Drive Redundancy
- Redundant Variable Speed Fans
- Dual Drive Option





FM + HD SYNCHRONOUS BOOSTERS

- Synchronization software enhancements
- ALFN Frame Alignment for synchronizing
- Target Delay Setting
- Additional SFN Diagnostics
 - E2X to ALFN timing
 - ALFN to IQ Start
 - E2X to Interrupt Timing







FLEXIVA COMPACT SERIES

50 watts to 3.5kW



FLEXIVA COMPACT: 50W TO 3,850W

70% AC to RF Efficiency 500W through 3.5kW Analog FM

- High Efficiency (>80% DC-RF) LDMOS PA Technology
- High Efficiency (96% AC/DC) Power Supplies
- Highly efficient variable speed cooling system

FAX 50 / FAX150 55W/ 165W



2RU x 13" (31cm) Depth

FAX 300 / FAX 500 / FAX 1K 330W / 550W / 1,100W



3RU x 20.5" (52cm) Depth

FAX 2K / 3K / 3.5K 2,200W / 3,300W / 3,850W



4RU x 24.5" (62cm) Depth

Flexiva Compact (50W – 3.5kW)

FLEXIVA (FAX) – LOW POWER 300W – 3.5KW

- Front Panel Access
 - Air filter change on-air with no interruption to service
 - Hot Pluggable Power Supplies (300W through 3.5kW Models)

Hot Pluggable Power Supplies





FLEXIVA (FAX) – LOW POWER 3KW – 3.5KW

- Front Panel Access
 - Air filter change on-air with no interruption to service
 - Hot Pluggable Power Supplies
 - Redundant Power Supplies (2kW 3.5kW)

Hot Pluggable Power Su







GATES FLEXIVA (FAX) – LOW POWER 50W – 3.5KW

FAX Low Power

- Internal Orban 5500 Processor
- Internal GPS Receiver
 - SFN Applications
- Digital Options
 - HD Radio Exgine Card
 - DRM+
 - CDR China Digital Radio







Options



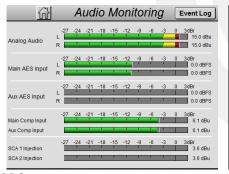


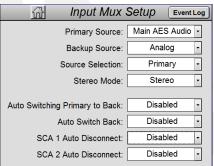
FLEXIVA™ MODULATOR: INPUTS

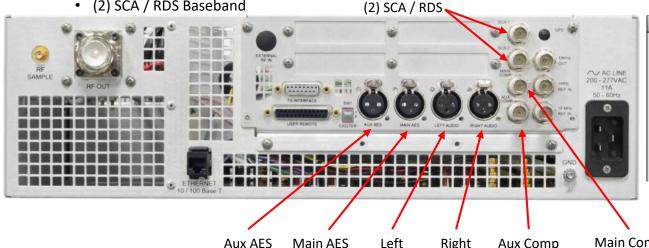
Multiple Program Inputs

- Automatic Failover Switching
 - (2) AES digital audio
 - (1) Analog L/R
 - (2) Analog MPX/Composite
 - (2) Digital MPX/Composite over AES192

(2) SCA / RDS Baseband





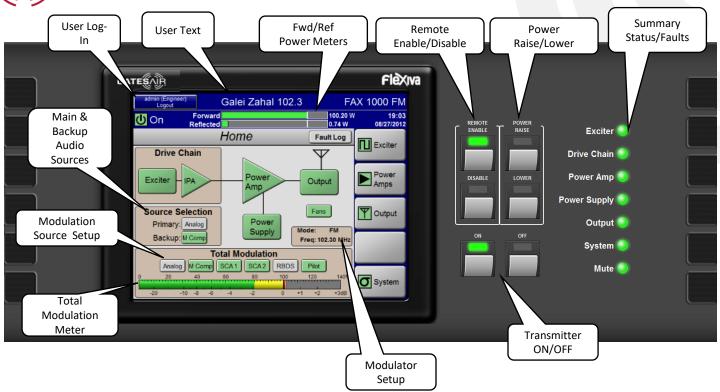


砎	Audio Thresholds						Event Log	
	Monitor Threshold		Undercut Delay T1		Return Delay T2		Log Type	
Analog:	-40	dBu	30	s	30	s	Warning	•
Main AES:	-55	dBFS	30	s	30	s	None	-
Aux AES:	-55	dBFS	30	s	30	s	None	~
Main Comp:	-40	dBu	30	s	30	s	None	•
Aux Comp:	-40	dBu	30	s	30	s	None	•
SCA 1:	-40	dBu	30	s	30	s	None	•
SCA 2:	-40	dBu	30	s	30	s	None	•

Main Comp



WEB GUI – HOME SCREEN







LX LOW POWER TRANSMITTERS

100 watts to 1000 watts



FLEXIVA LX SERIES: 100W TO 1KW

LX 100 1W to 110W



2RU x 17.7" (45cm) Depth

LX 300 / LX 600 30W to 660W



2RU x 17.7" (45cm) Depth

LX 1000 100W to 1050W



2RU x 17.7" (45cm) Depth

Flexiva LX Series (100W – 1kW)



FLEXIVA LX PRODUCT FEATURES

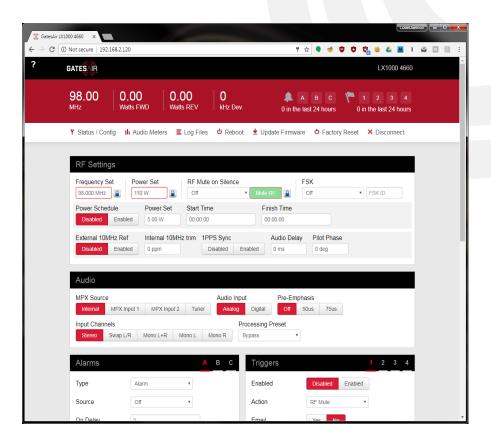
- Hot Pluggable Power Supplies
 - Redundant in LX 1000
 - Optional Redundant Supply in LX100, LX300, LX600
- Integrated Digital Multi-band Audio Processor
 - Stereo Encoder
 - Composite Clipper
- Dynamic RDS Generator
 - Implemented in software release 2.0
- Digital MPX/Composite input over AES192
- Direct-to-Carrier digital modulator
- SNMP, Email Notification, Web GUI
- GPIO, 4 in 4 out





WEB GUI – HOME SCREEN









FLEXIVA (FAX) HIGH POWER

Air Cooled FM and Digital Transmitters 5kW-80kW



GATES FLEXIVA (FAX) – PRODUCT OFFERING





GATES FLEXIVA (FAX) – HIGH POWER 5/10KW

Efficiency

- 72% 75% AC to RF Efficiency in FM
- > 60% AC to RF Efficiency in Digital at -14dBc

Size

- Smallest footprint
- Smallest volume

Redundancy

- Hot Pluggable Power Amplifier
- Hot Pluggable Power Supplies
- Redundant IPA Standard on all power levels 10k and higher
- IPA and PA Modules are identical
- Backup Hardware Controller Standard
- One to One PS to PA Ratio
- Redundant Variable Speed Fans







FLEXIVA 7.5KW – RECENT ADDITION

- FAX7.5kW Analog or Digital
 - FAX7.5KFAX150 Analog version
 - FAX7.5KFAX150HD Digital version
- Efficiency

 - Highest Efficiency
 72% AC to RF Efficiency in FM
 > 60% AC to RF Efficiency in FM+HD at -14dBc
 54% AC to RF Efficiency in FM+HD at -10dBc
- Redundancy
 - Hot Pluggable Power Amplifier

 - Hot Pluggable Power Supplies
 Backup Hardware Controller Standard
 One to One PS to PA Ratio

 - Redundant Variable Speed Fans





FLEXIVA™ CONTROL INTERFACE

IP Connectivity Intuitive Web GUI & SNMP



Easily viewed GUI using any standard WEB browser - PC, Smartphone or Tablet



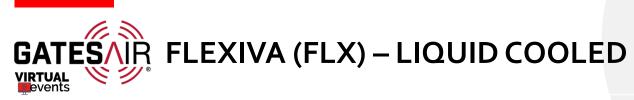
Convenience
Ease of Maintenance
24 x 7 access





FLEXIVA (FLX)

Liquid Cooled
FM and Digital Transmitters
10kW-80kW





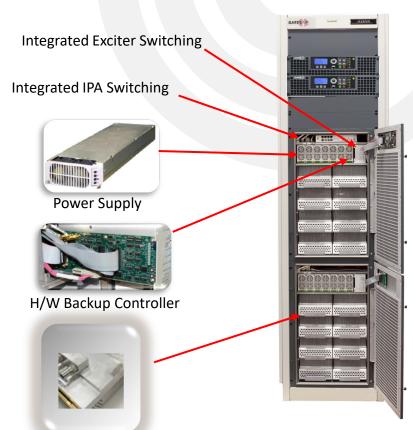


GATES FLEXIVA (FLX) – HIGH POWER 10KW – 40KW

Power Amplifier

Redundancy

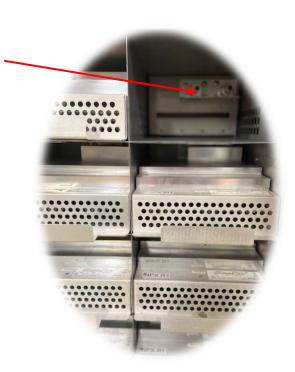
- Hot Pluggable Power Amplifiers
- Redundant IPA Standard
 - Two sides for redundancy
 - Same as PA
- Hot Pluggable Power Supplies
 - One to one PS to PA Ratio
- Backup Controller
 - Maintains Full Power
 - Maintains Drive Redundancy





GATESIP FLEXIVA (FLX) – HIGH POWER 10KW – 40KW

Self – Sealing Fluid Connectors







- GatesAir design and manufacture
- 3rd generation Optimized for High Efficiency
- Small physical size
- Dual Pumps, with auto/manual changeover
 - Low-noise, high efficiency pumps
 - Replace a pump during on-air operation!
- Low maintenance, closed-loop pressurized system
- Quiet Designed for indoor installation
- Pump speed adjustable to optimize flow rate and efficiency





GATES AIR HIGH EFFICIENCY HEAT EXCHANGER

- GatesAir manufacture
- Dual fans on-air replacement
- Low noise, high-efficiency fan blades
- Speed controlled for maximum efficiency



- Vertical or horizontal airflow (mounting can be adapted on site for either configuration)
- Two sizes available 20kW & 50kW heat dissipation







MAXIVA VAXT DAB ULTRA COMPACT SERIES

80 watts to 750 watts



3RU Models

GATES NIR DABULTRA-COMPACT VHF MODELS / POWER LEVELS



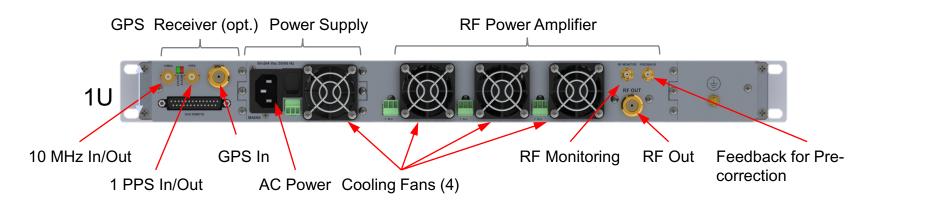
750 W





FRONT AND REAR OF 1RU ULTRA-COMPACT







R DAB ULTRA-COMPACT MODELS - SUMMARY







KEY FEATURES

- High-efficiency Doherty PA's
 - VHF BIII is a single broadband design 170-240MHz
- ETI and EDI inputs
 - Additional input board options
 - 2 EDI plus 2-ETI
 - 4 ETI inputs
- Adaptive pre-correction circuits with MER ≥ 33dB
- Modular design, PA and Power Supply plug-in and can be replaced in a few minutes.



GATES NIR MAXIVA DAB AIR-COOLED VAX-OP SERIES

Maxiva Air-Cooled VAX-OP VHF Series

300W to 1.2kW

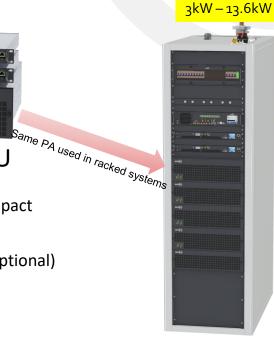


2+1 RU / 3+1 RU

1.5kW – 1.9kW



3.5+1 RU



2, 3, 4, 6 and 8 PA Systems in 36RU Rack

- Same 1RU exciter/driver and same input option cards as Ultra-Compact
- Available with single-drive or dual-drive (option)
- Multiple PA systems include a 36RU rack (single PA systems rack optional)
- GPS/GLONASS option



Maxiva DAB Liquid-Cooled VLX-OP Series

KEY FEATURES

- High Efficiency (Broadband PA's)
- Low consumption Pump and Heat Exchanger (pump + heat exchanger + external fans = 535W)
- Dual Redundant Pumps standard
- Coolant reserve tank (8 liters) for automatic liquid refilling, reduces on-site maintenance
- Liquid Cooled Control Unit: level (liquid + refilling), pressure, temperature, pump status, etc.
- Very small external heat exchanger with 24V power,
 2 fans or 4 fans
- Heat Exchanger automatic reverse fan rotation feature to remove debris (user settable timing)





GATESAIR MAXIVA LIQUID-COOLED VLX-OP SERIES

Maxiva Liquid-Cooled VLX-OP VHF Series

Single Rack Systems

15.2 kW 8 PA's

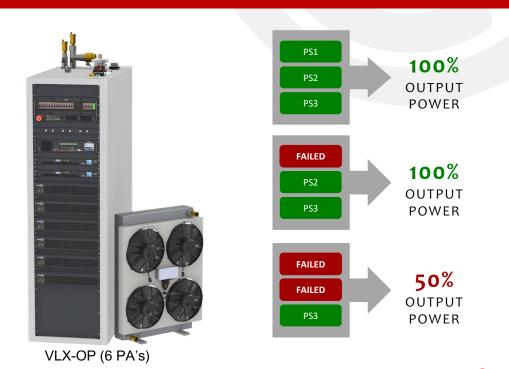
11.4 kWz 6 PA's

9.5 kW 5 PA's

7.6 kW 4 PA's

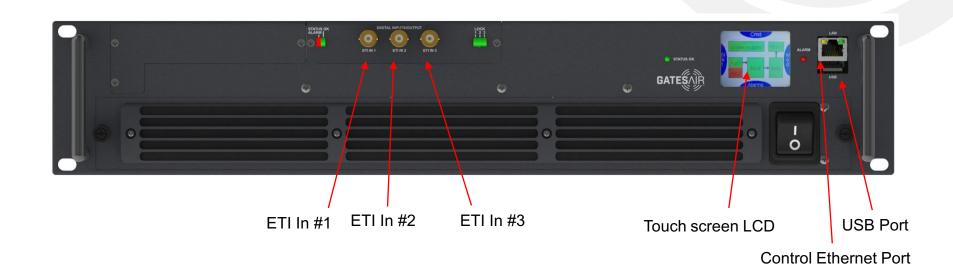
5.7 kW 3 PA's

2 PA's 3.8 kW





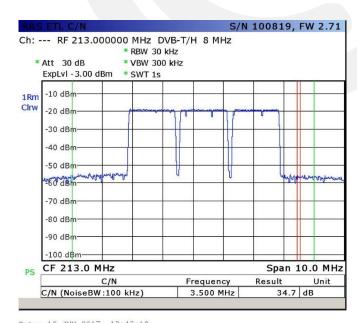
MULTICARRIER DAB+ 240W TOTAL POWER





MultiCarrier DAB Transmitter:

- Allows up to 3 DAB+ Carriers to be generated or re-transmitted through a single amplifier
- Advanced pre-correction and linear broadband amplification
- Unique solution ONLY available from GatesAir
- More economic than standard solutions
- More compact
- Less expensive to operate, lower power consumption



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MULTICARRIER DAB+ TECHNICAL SPECIFICATIONS

- Compact 1U rack 19 "chassis.
- Output power up to 240W rms total
- Common RF amplification.
- Wide Band VHF BIII Doherty Amplifier technology with high efficiency.
- Supported Modulations: DAB / DAB + / T-DMB.
- Multi-carrier modulation (3 channels), for adjacent and non-adjacent frequencies.
- Adaptive pre-correction circuits.
- Built-in high-stability GPS / GLONASS receiver (Optional).
- Hot swappable amplifier and power supply.
- Input interface: 3 ETI inputs.
- SNMP, Web interface and Touch Screen display.
- USB service interface for up-grade / download.





FLEXIVA FMXI 4G

HD Embedded Exporter Importer



GATES HD Radio Exporter / Importer Review

Exporter

- Encodes Main audio program channel – MPS.
- Creates UDP/IP stream for the Exgine card, E2X.
- Hardware Linux OS, and Embedded **Linux Processor**

Importer

- Encodes supplemental audio channels, HD2, HD3, HD4.
- Aggregates Program Associated Data, Artist/Title/Album Art
- Traditionally Windows OS, Win XP, Win 7
- Only Gen 4, Supports Embedded **Processor**





GATESAIR FMXI 4G – HD RADIO EXPORTER/IMPORTER

Gen 4 Supports Combining Exporter and Importer into a single hardware platform



Combination Exporter and Importer



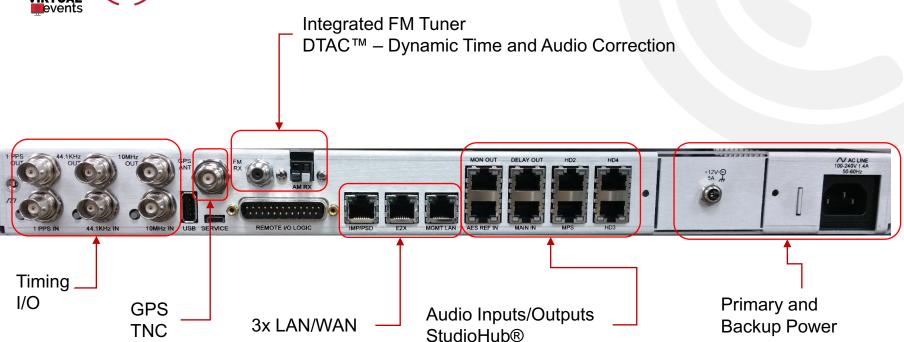


Exporter Only

Importer Only



FMXI 4G REAR PANEL





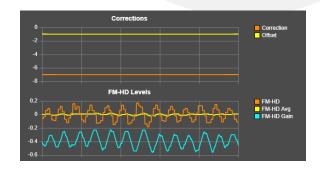
BUILT-IN TUNER





DTAC™ – Dynamic Time and Audio Correction

- Automatically resolves Analog / HD Diversity Delay.
- Resolves audio level and phase correction.



#2 - Confidence monitoring for HD primary and secondary Audio signals, and PSD (data)



GATESAIR FMXI 4G – HD RADIO EXPORTER/IMPORTER

Using the FMXi-4g to Enhance your listeners experience with properly aligned audio



Combination Importer and Exporter

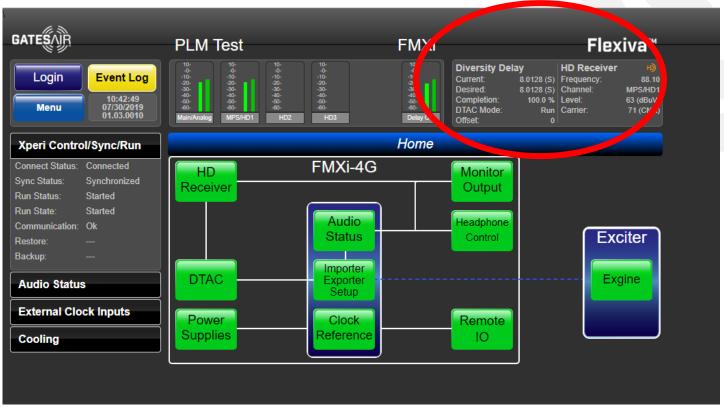




Importer Only Exporter Only



FMXI 4G GUI



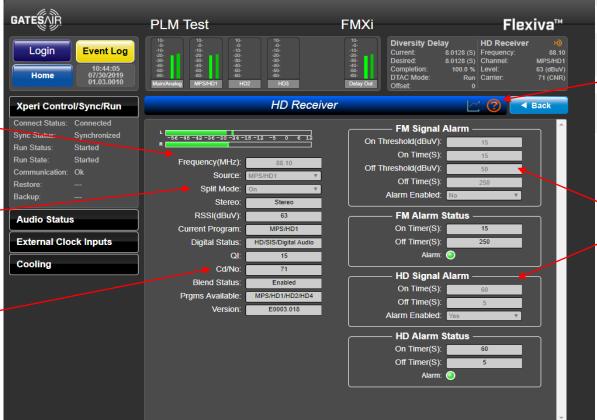


FMXI 4G HD RECEIVER SETTINGS

Receiver Setup

Receiver Split Mode for correlation measurements

Received Signal Status



Online help and Histogram

Customizable Signal Loss Alarms

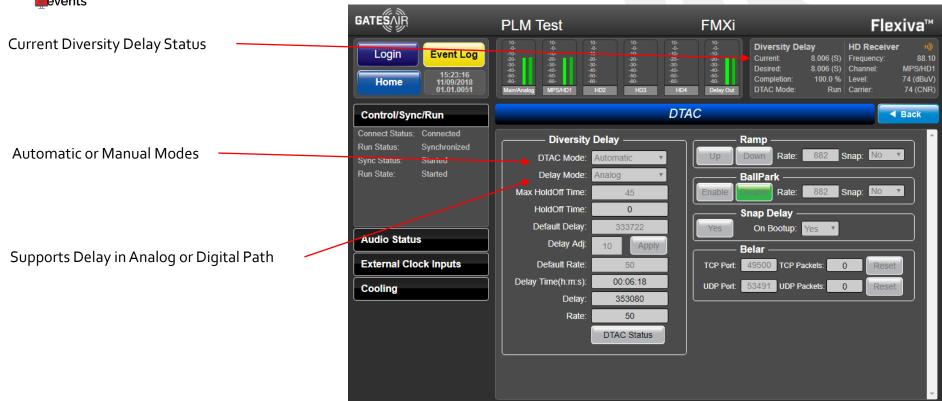




Realtime monitoring FM Signal and HD Carrier to Noise ratio



FMXI 4G DTAC™ SETTINGS





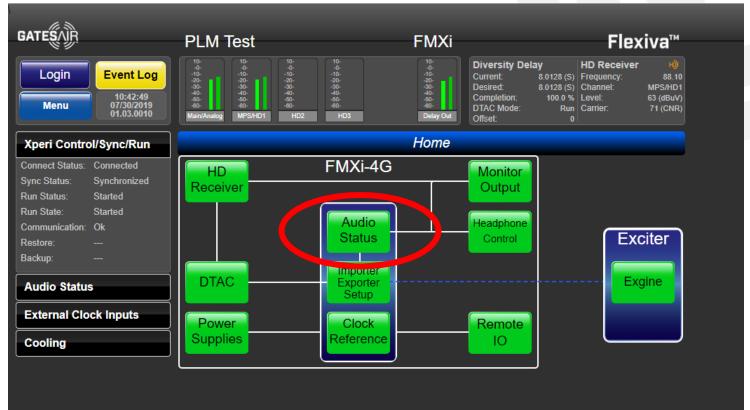
FMXI 4G DTAC™ REALTIME LOGGING



Realtime monitoring and logging of DTAC corrections and levels



FMXI 4G GUI





GATES AIR FMXI 4G – AUDIO AND PSD STATUS



Incoming PSD From Automation

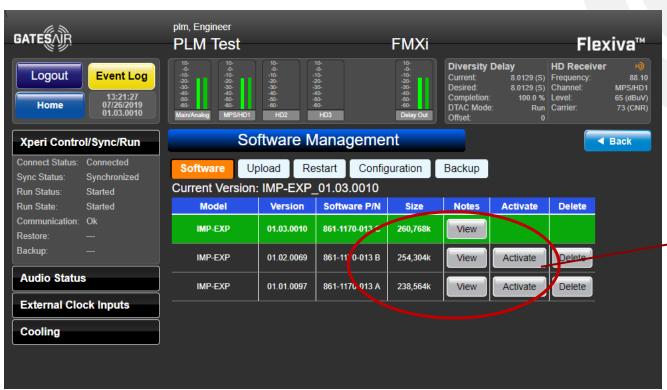
On-Air PSD Data
Captured From Tuner

Support for local and remote capture clients





GATES FMXI 4G – SOFTWARE MANAGEMENT



Easily return to previous software versions.



FMXI 4G – HD EXPORTER / IMPORTER SUMMARY



- Embedded Exporter / Importer
 - Non-Windows based operating system
 - Fast boot up time
 - Do not need to maintain or keep drivers up to date
 - No operating system to maintain
 - Combined or Separate Unit
 - Export/Importer Combo, Exporter Only, Importer Only
 - 1RU chassis
 - Integrated FM/HD Radio Tuner
 - DTAC[™] Dynamic Time and Audio Correction
 - Confidence Monitoring



FMXI 4G – HD RADIO EXPORTER / IMPORTER

- Enhances Listeners Experience
 - Automatic Time Level and Phase Alignment
 - Eliminates blending artifacts
 - Supports Artist Experience
 - Integrated MSAC and FTP capabilities



- Enhanced Engineering Experience
 - Simplifies HD installation setup and monitoring
 - Web browser for local and remote access, SNMP, Email notification.
 - Confidence monitoring of primary and secondary audio channels
 - Confidence monitoring of Program Associated Data
 - Support for HD booster and SFN applications





THANK YOU STAY SAFE

WWW.GATESAIR.COM