Flexiva™ GX Series

Ultra-Compact Air-Cooled FM Analog Transmitter/Exciter:
Low-Power Models from 50W to 3.5kW

Made in USA

The Flexiva™ GX air-cooled FM solid-state transmitter family provides today's broadcaster with an ultra-compact transmission platform. Incorporating field-proven GatesAir technology, Flexiva transmitters deliver world-class performance, reliability and quality.

Flexiva GX utilizes the most compact design to provide the most reliable and robust low-power transmitter on the market today. Flexiva GX continues the legacy of the highly successful line of GatesAir FM transmitters and combines innovative RF amplification and feature sets to take FM transmission to the next level.

Featuring PowerSmart® technology, the Flexiva line offers unmatched efficiency that makes it ideal for all FM applications. The LDMOS device technology delivers a dramatic increase in power density, lower operating costs and reduced cost of ownership over the life of the transmitter.

As a world leader in digital transmission technology, our experts have developed the Flexiva GX for optimal size, efficiency, signal quality, and overall dependability. With multiple inputs and an integrated stereo encoder, it is a flexible, self-contained solution for a variety of FM broadcasting needs.

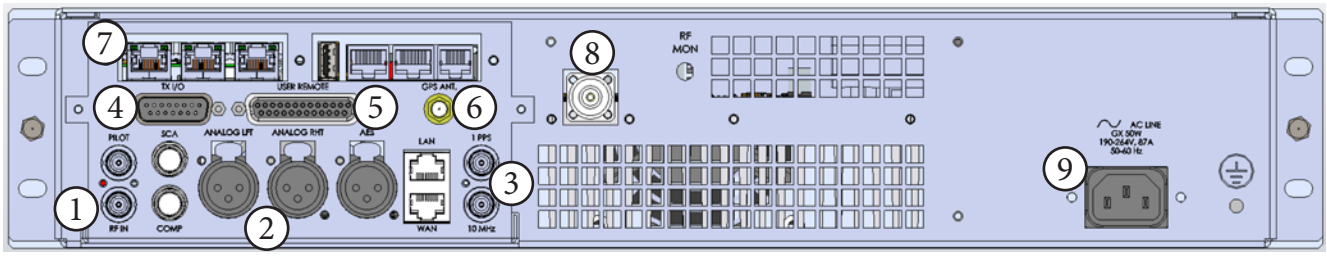
Customers can count on GatesAir for implementation. The company offers a range of support options from standard 24/7 telephone technical assistance and parts to installation, training, full system design and field maintenance contracts.

Product Features

Flexiva GX FM Transmitter Family Features:

- Ultra-compact, space-saving 2RU and 3RU designs
- Broadband, frequency agile design 87.5 to 108 MHz requires no tuning or adjustments
- Best-in-class power efficiency for lowest operating costs
- State-of-the-art, direct-to-carrier digital modulator
- Program inputs with automatic failover switching
- Integrated stereo encoder
- Static RDS generator
- 1 AES, 1 Analog L/R and 1 composite; optional AoIP and 2nd AES input
- Digital MPX/Composite input over AES192 interface
- Operation over a wide range of voltage and power stability conditions
- Operation at up to 1.5:1 VSWR with proportional foldback
- Full remote control capability including:
  - Web-based HTML GUI interface
  - SNMP v1, v2, v3
  - Parallel control/monitoring
  - Extensive Fault, Warning and Operational parameter logging
- N+1, dual transmitter and main/alternate; automatic switching capability
- Optional Features
  - GPS receiver for SFN synchronization
  - Intraplex IP Link 100e: STL via AOIP Linear, AES67, Icecast
  - Audio Processor, Audio Playout from USB

1. Transmitter Control
   - Transmitter On
   - Transmitter Off
   - Remote Enable/Disable
2. Transmitter Status
   - Transmitter ON
   - Output Power Normal
   - Remote Enable
   - Summary Fault
3. LCD Touchscreen Display 3.5”
   - Configuration
   - Control
   - Diagnostics and Logs
4. Removable Front Panel with Easy Access to Washable Air Filter



1. External RF Input
2. Audio Inputs
   - Analog L/R
   - AES192, AES3
   - Analog MPX
   - SCA
3. Clocking and Synchronization
   - 1PPS In/Out
   - 10MHz In/Out
   - Pilot Reference
4. Transmitter I/O Control
5. GPIO
6. Optional GPS
7. Expansion Slot
   - IP Link
   - Audio Processor
8. RF Output
   - N-Type
     - GX50, GX150, GX300, GX500
   - 7/16 DIN
     - GX1K, GX2K
   - 7/8 EIA or Optional 1 5/8 Unflanged
     - GX3K, GX3.5K
9. AC Input
   - IEC320-C14
     - GX50, GX150, GX300, GX500
   - IEC320-C20
     - GX1K
   - M4 Terminal Lugs
     - GX2K, GX3K, GX3.5K

Flexiva™ GX

Specifications

Specifications and designs are subject to change without notice

GENERAL								
Transmitter Type	Solid-State VHF Low Power Amplifier for FM							
Exciter	Direct-digital synthesis, direct-to-channel modulator							
Frequency Range	87.5 to 108.0 Mhz, 10 kHz steps							
Operating Modes	FM							
Frequency Stability	• ±150 Hz <10-6 0° to 50° C using high accuracy internal TCXO • 10 MHz input for synchronization to external (GPS) reference • Automatic switching to internal oscillator if external reference fails							
Power Stability	≤ ±0.25 dB, across full range of power.							
Modulation Indication	Front-panel UI Display to 140% Web GUI modulation display with peak hold auto-ranging (14%/140% full scale)							
Composite Peak Limiter	Integrated							
Asynchronous AM SNR	75dB minimum below equivalent 100% amplitude modulation by 400Hz using 75µs de-emphasis (no FM modulation present)							
Synchronous AM SNR	60dB minimum below equivalent 100% amplitude modulation with 75µs de-emphasis and 400Hz high pass filter (FM deviation +/-75kHz by a 1kHz sine wave). Measured at wideband input							
RF Harmonic & Spurious Suppression	Meets or exceeds ETSI requirements							
VSWR	Up to 1.5:1 at nominal forward power. Proportional fold-back threshold from 1.5:1. Continued operation (with fold-back) up to infinite VSWR. Protected against sudden short and open circuit conditions with mute to remove sustained arcing conditions, at all phase angles. User selectable (1.3 to 1.5:1 foldback) and the selectable 3.0:1 VSWR mute							
Compliance	RoHs, FCC, IC, Anatel, CE							
OUTPUT POWER - MAX WATTS								
	GX50	**GX150**	**GX300**	**GX500**	**GX1K**	**GX2K**	**GX3K**	**GX3.5K**
Nominal Power	50W	150W	300W	500W	1000W	2000W	3000W	3500W
FM Analog Power Range	5-55W	15-165W	30-330W	50-550W	100-1,100W	200-2,200W	300-3,300W	350-3,850W
50 ohms RF Output Connector	N-type	N-type	N-type	N-type	7/16 DIN	7/16 DIN	7/16 DIN	7/8 EIA Unflanged
ELECTRICAL								
AC Input Voltage AC Line Freq 47-63 Hz Single Phase	90-277 VAC	90-277 VAC	90-277 VAC	90-277 VAC	180-277 VAC	180-277 VAC	180-277 VAC	180-277 VAC
Power Consumption MAX Watts	184W	318W	479W	764W	1,507W	3,014W	4,521W	5,348W
AC-RF Analog FM Efficiency at Nominal Power	>30%	>52%	>69%	>72%	>73%	>73%	>73%	>72%
Power Factor			.98% or better					
Power Connector	IEC320-C14	IEC320-C14	IEC320-C14	IEC320-C14	IEC320-C20	PowerCON NAC3FC-HC	M4 Terminal Lugs	M4 Terminal Lugs
MECHANICAL								
Number of Power Amplifiers	1	1	1	1	1	2	3	3
Number of Power Supplies	1	1	1	1	1	1	3	3
Number of Fans	1	2	2	2	2	2	3	3
Width (in)	19	19	19	19	19	19	19	19
Depth (in)	14.5	14.5	20	20	20	23	25	25
Height	2RU	2RU	2RU	2RU	2RU	2RU	3RU	3RU

ENVIRONMENTAL	
Altitude	10,000 ft (3,048 m), 3000 AMSL
Ambient Temperature Range	0 to +45° C inlet air temperature must not exceed 45° centigrade at sea level. Derate at 2° C per 1,000 ft (300 m) AMSL
Humidity	95%, noncondensing
Ambient Noise at 30C	The volume and the evaluated noise level intensity of an individual system in normal operating mode may not exceed 65 dB(A). The measurement is made at a distance of 1 m at a height of 1.5 m.
AUDIO PERFORMANCE - DIGITAL MODULATION	
FM Modulation Capability	±150 kHz deviation, 200% modulation
Stereo Amplitude Response	±0.05 dB
Wideband Amplitude Response	< +/- 0.04 dB, 20 Hz to 53 kHz
Stereo Separation	>80 dB
Crosstalk	>70 dB
Total Harmonic Distortion	≤0.05%
Intermodulation Distortion	≤0.05%
Stereo FM SNR	≥83 dB 75 µs de-emphasis "A" weighting
Composite/Mono FM SNR	≥90 dB
Pre-emphasis	Selectable 0, 25, 50, or 75 microseconds
PROGRAM INPUTS	
1 - AES Input	Single AES3 input, female XLR, 110 Ohms balanced; -2.8dBfs nominal; Electronically adjustable level from 0 dBfs to -15 dBfs in 0.1 dB steps for +/- 75 kHz deviation; input sample rate 44.1 to 196kb/s. Supports AES192 Digital MPX/ Composite/MPX on L or R channels.
1 - Analog Input	XLR, Female, >10K Ohms, balanced, resistive; default level is +10dBu for +/-75kHz deviation. Level GUI adjustable from -10 dBu to +15 dBu
1 - Analog MPX/Composite	1 BNC female balanced input. Impedance 10K Ohms or 50 Ohms (selectable) Input level: 3.5V P-P for +/-75 kHz deviation; adjustable 2V P-P to 5 V P-P
External SCA Injection	67 kHz at 1.5 Vpp for 10%. (1) BNC female, balanced; >10K Ohm; 1.5V p-p nominal for +/-7.5kHz (10%) deviation of main carrier; adjustable from 1V P-P to 4V P-P. Presence of the audio inputs is monitored and may be configured to report loss of SCA/RDS envelope
Internal RDS Generator	Optional internal Dynamic RDS/RBDS encoder
REFERENCE I/O	
External 10 MHz Clock Input	BNC female, unbalanced, 50 ohms, -10 dBm to +10 dBm
External 1 PPS Clock Input	BNC female, unbalanced, 50 Ohm, 4.5Vp level
External 10 MHz Clock Output	BNC female, unbalanced, 50 Ohm, 7 dBm sinewave
External 1 PPS Clock Output	BNC female, unbalanced, 50 Ohm, TTL level pulse
GPS Antenna Input w/ Internal GPS Option	Optional GPS with supplied antenna +5v 30ma
19kHz Pilot Sync Output	BNC female, unbalanced, 50 Ohms resistive, sinewave, AC coupled, 4.5 V P-P nominal, unterminated
REMOTE I/O	
Transmitter I/O	15 Pin, FAX Protocol Compatible
Ethernet Port	1 rear panel with static or DHCP IP address for LAN/WAN access to Web GUI and SNMP
Telnet Control	Telnet Support
Parallel GPI/O	DB25 female standard remote control GPI/O Active-low, 5v 100ma
RF Sample Outputs	1 x rear panel
RF Sample Output Front	47.5dB+/-1 dB
RF Sample Output Rear	47.5dB+/-1 dB
RF INPUTS	
Dual Drive Input	External, low-level digital modulator may be inserted. Automatic failover switching
MISCELLANEOUS	
8 Full Operational Presets	All operation parameters should be saved and recalled via GUI, MIB, and GPIO
Options	GPS Receiver Intraplex IP Link 100e Integrated Audio Processor Dynamic RDS Encoder