



# Flexiva FLX Liquid-Cooled High-Power FM Transmitters

November 11, 2015

Webinar

Featuring  
GatesAir's



**Tim Anderson**  
Radio Product & Business  
Development Manager

# Flexiva FLX Liquid-Cooled High-Power FM Transmitters



# Flexiva Liquid Cooled FM



FAX Exciters

TX Power Block

Cooling Control Panel

Redundant Pump System

- **EFFICIENT:** 72% AC-RF efficiency
  - 88% heat to liquid transfer efficiency
  - Only 466W (1,590 BTU) A/C required
- **COMPACT:** 11kW with dual exciters & internal pump module in a single rack



PowerSmart® 





- **SCALABLE:** 22kW with dual exciters in a single rack with external pump module



- **RUGGED:** Latest LDMOS Power-FETS, Hardware based system controller
- **RELIABLE:** Complete redundancy. No single point of failure
- **SERVICEABLE:** Modular, Hot-Swappable, Hot Pluggable power supplies and power amplifiers

PowerSmart® 





- **SCALABLE:** 40kW with dual exciters in a single rack with external pump module
- **PROVEN:** Leveraging technology from GateAir's ULX TV liquid transmitters and FAX air-cooled FM transmitters
- **CONNECTED:** 24x7 Access via IP, Web, SNMP and Email
- **FUTURE PROOF:** Digital Ready





- **Broadband, high-efficiency and maximum power density**
- **Most compact footprint available**
- **Modular design with small, lightweight, hot-pluggable PA modules and power supplies**
- **Robust RF and Control Systems with redundant controllers**
- **Future-proof architecture, Digital Ready  Radio **
- **Best Trained Service Dept. Available 24/7**

**= Lowest Total Cost of Ownership!**

**PowerSmart** 



# Flexiva FLX Power Chart



Flexiva Liquid Cooled FM		FLX 5K	FLX 10K	FLX 20K	FLX 30K	FLXT40K
Analog Only	Max Power	5,500	11,000	22,000	33,000	44,000
	Typical Efficiency	72%	72%	72%	72%	72%
Analog @ -20 dBc HD	Max Power	5,000	10,000	20,000	30,000	40,000
	Typical Efficiency	70%	70%	70%	70%	70%
Analog @ -14 dBc HD	Max Power	4,850	9,700	19,400	29,100	38,800
	Typical Efficiency	57%	57%	57%	57%	57%
Analog @ -10 dBc HD	Max Power	3,800	7,600	15,200	22,800	30,400
	Typical Efficiency	52%	52%	52%	52%	52%



## New Flexiva™ FLX Liquid-Cooled FM Transmitters





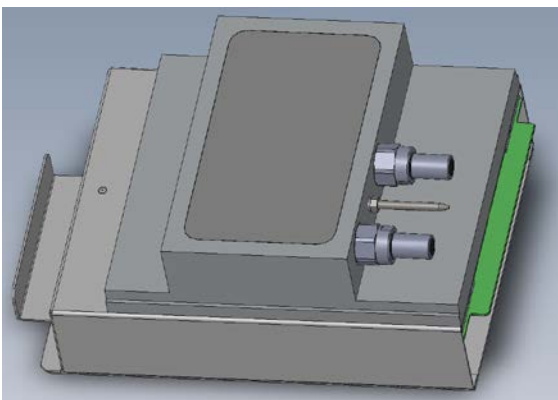
## New Flexiva™ FLX Liquid-Cooled FM Transmitters



### FLX10K 16RU Cabinet

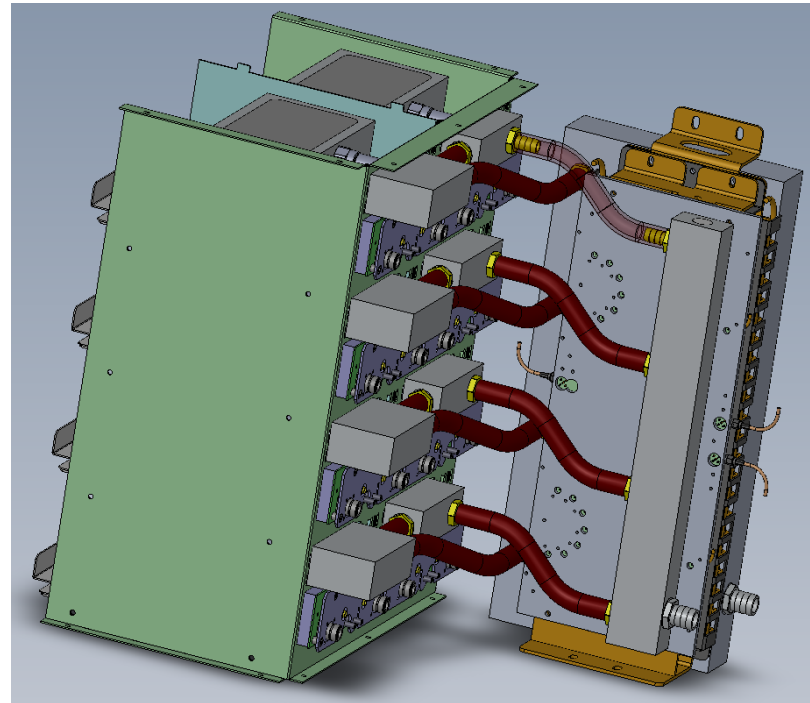
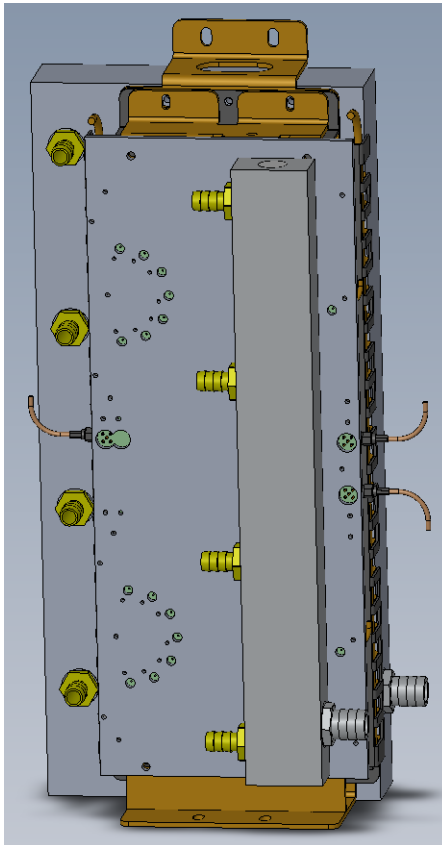
- 12 kW average power
- 17kW peak power
- 7 - 50 Volt, 2.75 kW power supplies
  - 96% AC-DC Efficiency
- 14 - **New** 970 Watt PA pallets
- 7 - 1940 Watt PA modules
  - 82% DC-RF PA efficiency
- Dual Exciter and IPA – failover switching





Hot-Pluggable  
Liquid Cooled PA Module  
with Quick-Disconnects

Liquid cooled 14-Way  
Splitter & ISO-Loads



Liquid Cooling Distribution System





## NEW FLX Liquid Cooled FM Transmitter

- FLX10K
  - 12 kW Analog at 72% AC-RF Efficiency
  - 9.7 kW Analog, FM+HD @ -14dBc – 60% AC-RF Efficiency
  - 7.7 kW Analog, FM+HD @ -10dBc – 55% AC-RF Efficiency
- **Power Block Scalable 5kW – 80kW**

**Available in Digital-Ready Analog  
Or Fully Digital**





## NEW! Flexiva™ FLX Liquid-Cooled FM Transmitters

- 88% overall heat dissipation to liquid transfer efficiency
- Internal or external redundant pump modules
- Two 10kW transmitters with dual exciters, in a single rack
- 20kW with dual exciters in a single rack

PowerSmart® 





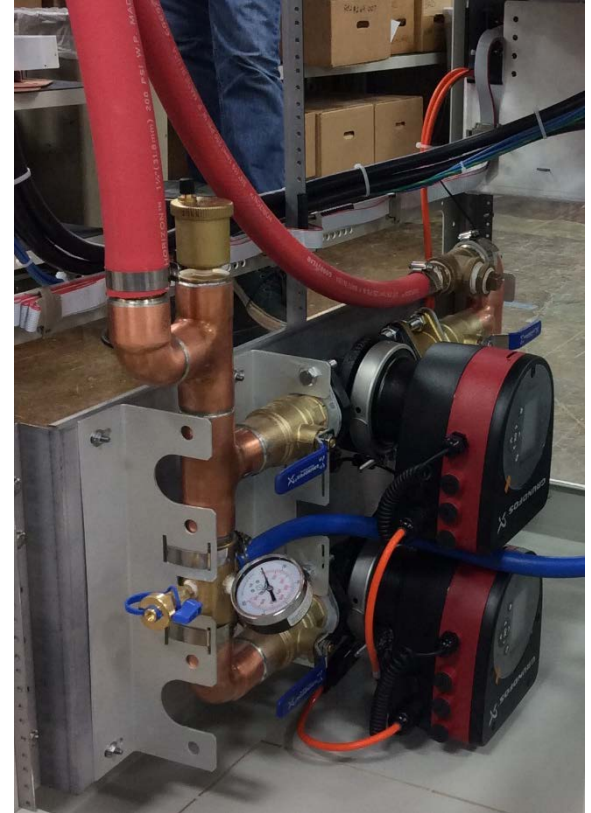
**Up to 80kW**

**Most Immediate Plans  
call for a 20 and 40kW  
Liquid Cooled**



## Internal or External Dual Pumps, with auto/manual changeover

- Pump speed inverter controlled
- Optimized for High Efficiency
- Reliable, proven
- Small physical size
- Low maintenance, closed-loop pressurized system
- Quiet – Designed for indoor installation



## High Efficiency, Dual-Fan Outdoor Heat Exchanger

- Low noise, with high-efficiency fan blades
- Speed controlled for maximum efficiency
- Vertical or horizontal airflow
- Two sizes available 20kW & 50kW heat dissipation

