



ANYWAVE

ANYWAVE COMPANY AND PRODUCT OVERVIEW

MAY 2026

David Neff
General Manager



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About ANYWAVE

A brief summary of the company and history

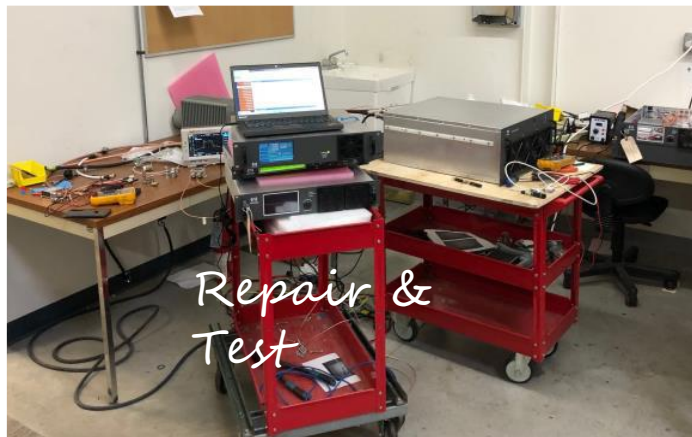
About ANYWAVE

HEADQUARTERED IN CHICAGO (VERNON HILLS) ILLINOIS, USA – ENGINEERING, FINAL MANUFACTURING AND TESTING, SERVICE AND SUPPORT LOCATED THERE. OWNED BY ENGINEERS, NOT FINANCIAL INVESTORS – WE ARE IN THE INDUSTRY FOR THE LONG TERM!!

EXCEPTIONAL ENGINEERING TEAM – CREATED INDUSTRY-LEADING EXCITERS, POWER AMPLIFIERS, GAP FILLERS, LOW, MEDIUM, AND HIGH POWER TRANSMITTERS AND MORE. WE ***CONTINUE TO DEVELOP AND RELEASE*** MAJOR NEW PRODUCTS.

LEADING MARKET SHARE IN LOW POWER TV. GROWING IN HIGH POWER. ADVANCED, RELIABLE PRODUCTS FULLY DEVELOPED AND AVAILABLE. ANYWAVE IN BUSINESS FOR 17 YEARS.

About ANYWAVE



About ANYWAVE

- Product Range
 - High and Low Band VHF and UHF TV Transmitters from 2W to 150kW
 - Air and Liquid Cooled
 - Exciters and complete signal chain
- Product Features
 - Unique product position -
 - Broadband
 - Highest Power Density per cabinet
 - 25kW for Liquid cooled
 - 10kW for air cooled
 - Highest Efficiency (System efficiency in broadband mode > 40% (UHF))
 - Simple Installation
 - Easy and routine maintenance
 - Modular with comprehensive individual self monitoring

About ANYWAVE

- **Product Service**

- Highly experienced engineers provide expert telephone support
- Extensive parts inventory in Vernon Hills - near O'Hare airport
- Nearly all RMA repairs performed in less than a week

- **Project Management**

- Management, oversight, and delivery of entire project available as needed
 - Transmitter delivery, installation, commissioning, and proof
 - Installation of filters, heat exchangers, etc.
 - Subcontracting of HVAC, electricians, plumbing, construction
 - Subcontracting of tower crews
 - As much as, or as little as customer needs

Our Products

A list of our transmitter product portfolio

Our Products...



Transmitters



MAGMA and MAGMA LP Series; 1200W to 150kW
Liquid cooled, UHF
VHF Band I and Band III



MARBLE Series; 70W to 8500W Air cooled,
UHF, VHF Band I and Band III



NEW! FLINT Series: 1W to 400W Air cooled UHF,
VHF Band I and III On-Channel Digital Repeater



MAGMA SERIES

Recent New Products



Marble Series UHF Transmitter line
Industry's most compact! 2 kW in 4.5 rack units!



ATSC 1.0/3.0 Exciter+ - hardware platform includes 3.0 gateway capability and 1.0/3.0 translator Capability. With new Encoder+ at right – offers complete signal chain for ATSC 1.0/3.0

Magma LP transmitter
Liquid cooled low power series

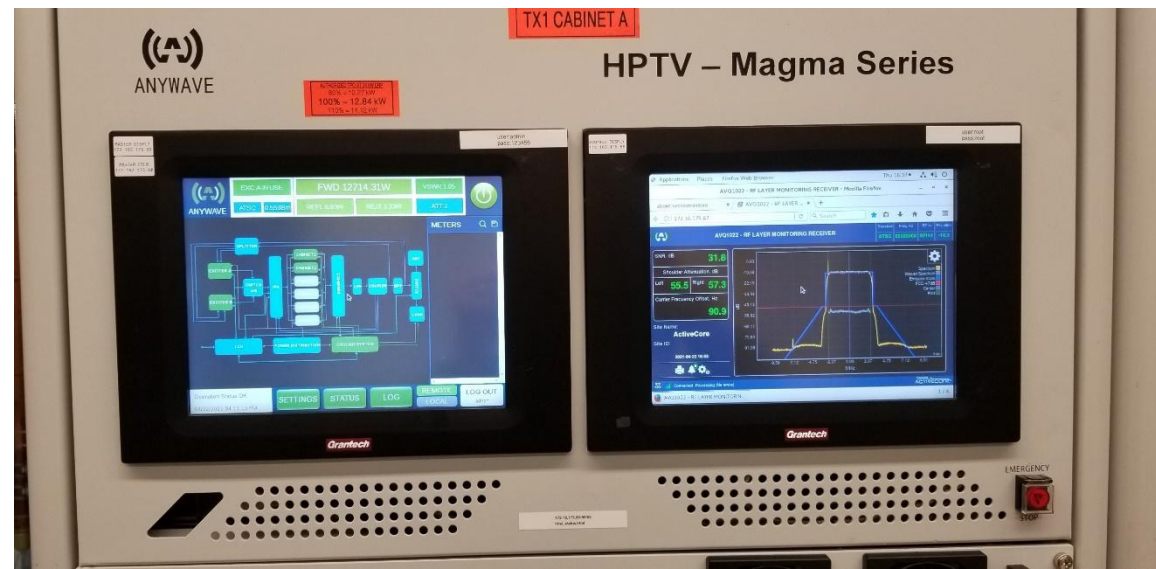


ATSC 1.0/3.0 Encoder+ - fully featured encoder for MPEG-2/4 and HEVC. Includes signaling server for ATSC 3.0

MAGMA Series: Unique features

A description of some of the product's beneficial features

Unique Features...



1. Exceptional efficiency
2. Maximum power density
3. Optimum performance
4. Reliability through exceptional heat transfer and Friction Stir Welding
5. Easy to set up Opti-tune™ auto phasing
6. System redundancy; Quad power supplies
7. Intelligent cooling system
8. Comprehensive monitoring

MAGMA SERIES

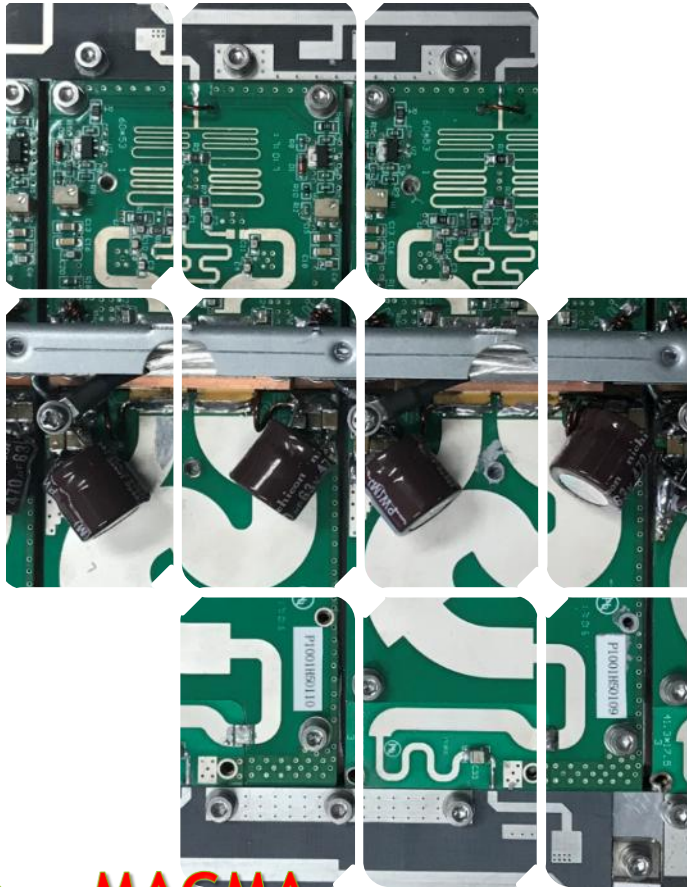
20kW VHFATSC TV Transmitter

 **ANYWAVE**

1. Unique Features; Very High System Efficiency

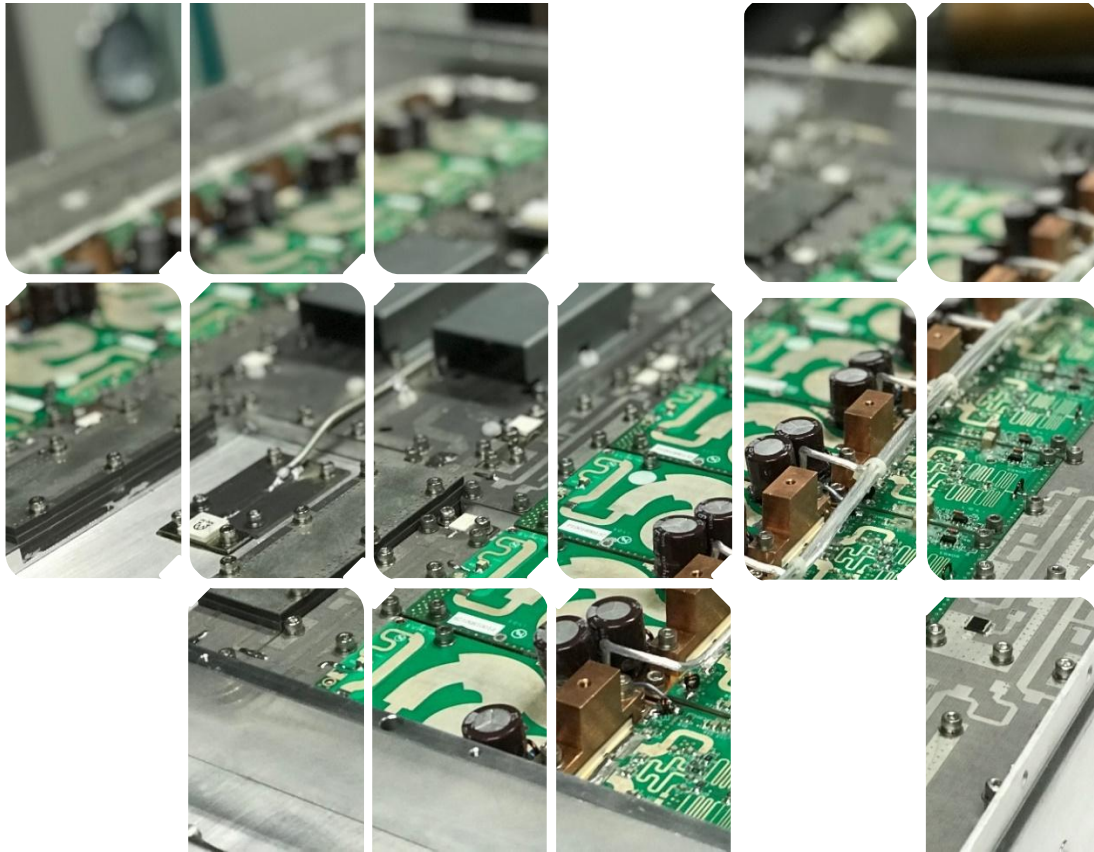
Very high system efficiency is due to

- Broadband asymmetrical Doherty **BLF989E** LDMOS transistor pallets
 - Anywave was the first to use these advanced devices - over 2 years ago
 - Prior 888 series devices are now marked as “not for new designs” by the manufacturer, and are outsourced to an obsolescence management company. But still used by other suppliers.
- No tuning or hardware to change channels.
- Transistor efficiency >55%
- System efficiency >40%
- High power density configuration
- Adjustable voltage power supplies
- Opti-Tune amplifier phasing system
- Low loss RF system components



MAGMA SERIES

2. Unique Features; Well-designed amplifier structure



MAGMA SERIES

Convenience

- Field replaceable pallets with easy access to all components
- No proprietary parts

Power Density

- Highest power level per PA and power density on the market.
- 3.5 RU PA module which has 16x989E can produce up to 3000 W

3. Unique Features; Outstanding performance

Exciter



Dual Exciter



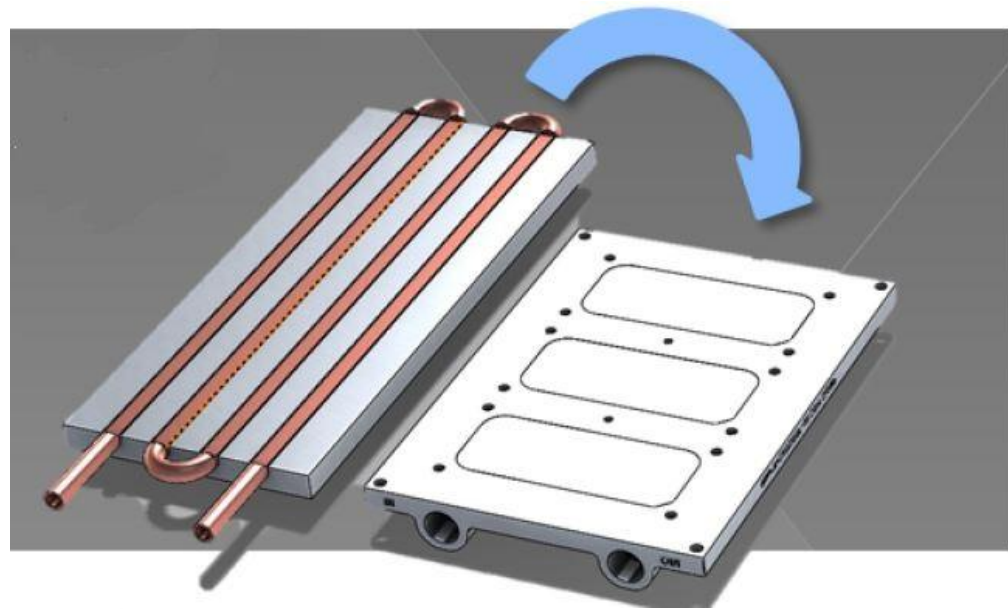
MAGMA SERIES

Optimum performance

- Innovative DDRF™ (Direct Digital RF) broadband automatic balancing technology achieves near perfect RF performance
- Superior linear and non-linear pre-correction
- IMD greater than 56 dB*

**Corrected*

4. Unique Features; Friction Stir Welding (FSW)



MAGMA SERIES

Friction Stir Welding

- FSW is a special metal joining process
- It is accomplished by joining two pieces of steel together while staying below their melting point
- Creates a leak-proof seal stronger and more reliable than any other cold plate joining method.
- Results in exceptional thermal performance

5. Unique Features; System redundancy quad power supplies



Quad power supplies

- Each PSU's output is monitored for voltage, currents, power, fans status, temperature, etc.
- Adjustable output for better efficiency
- By adjusting voltage from 50v to 46v, at 2500w, the efficiency will increase 2% in ATSC

MAGMA SERIES

5. Unique Features; System redundancy quad power supplies



Quad Power Supplies

- Each PA module has 4 high capacity PSUs, which are all front panel accessible, hot swappable.
- 100% redundancy
- Even if two are lost, the transmitter can still operate at near full power. Each PSU has two fans - speed is controlled by temperature

MAGMA SERIES

6. Unique Features; Intelligent cooling system



MAGMA SERIES

Commercial off the shelf pumps

- Remote control communication
- Best in class efficiency
- Integrated heat energy meter
- Easy swap exchange for simple maintenance

6. Unique Features; Intelligent cooling system

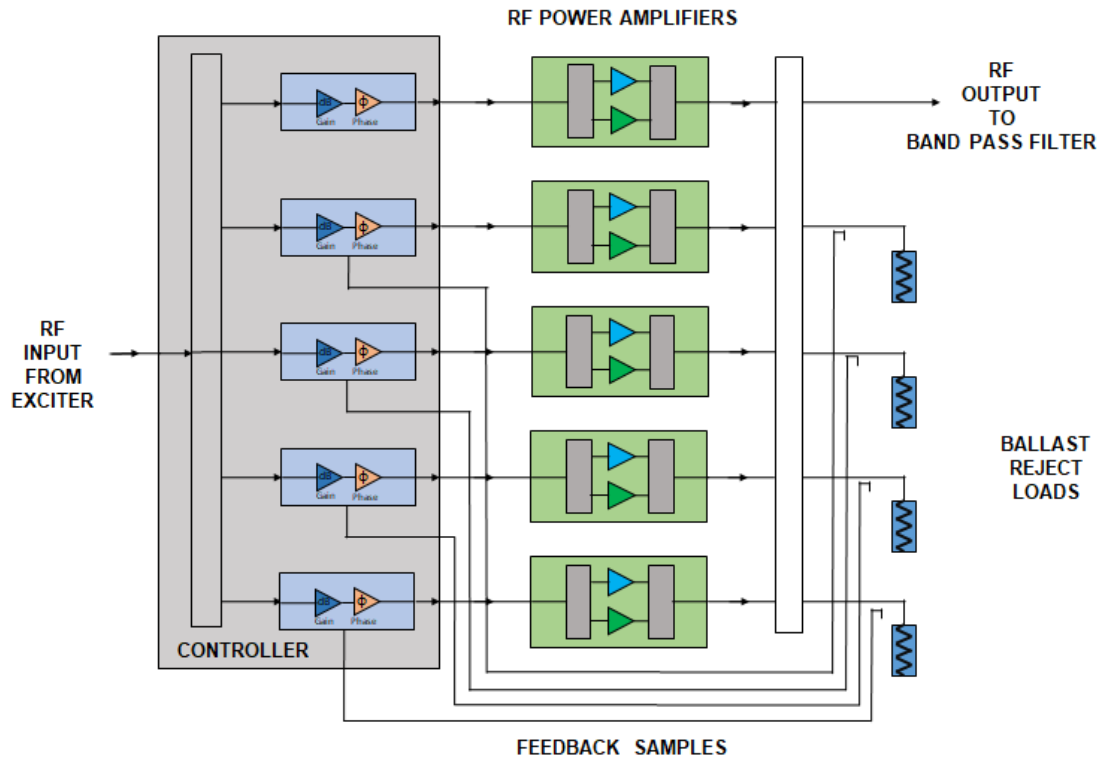


MAGMA SERIES

Cooling System

- Intelligent high-performance pumps automatically optimize setting and continuously adjust for best operation
- Optimizes flow and minimizes energy consumption
- Two pumps work in series
- Maintenance can be performed to one of the two pumps without interrupting the normal operation of the other pump

7. Unique Features; Opti-Tune amplifier phasing system

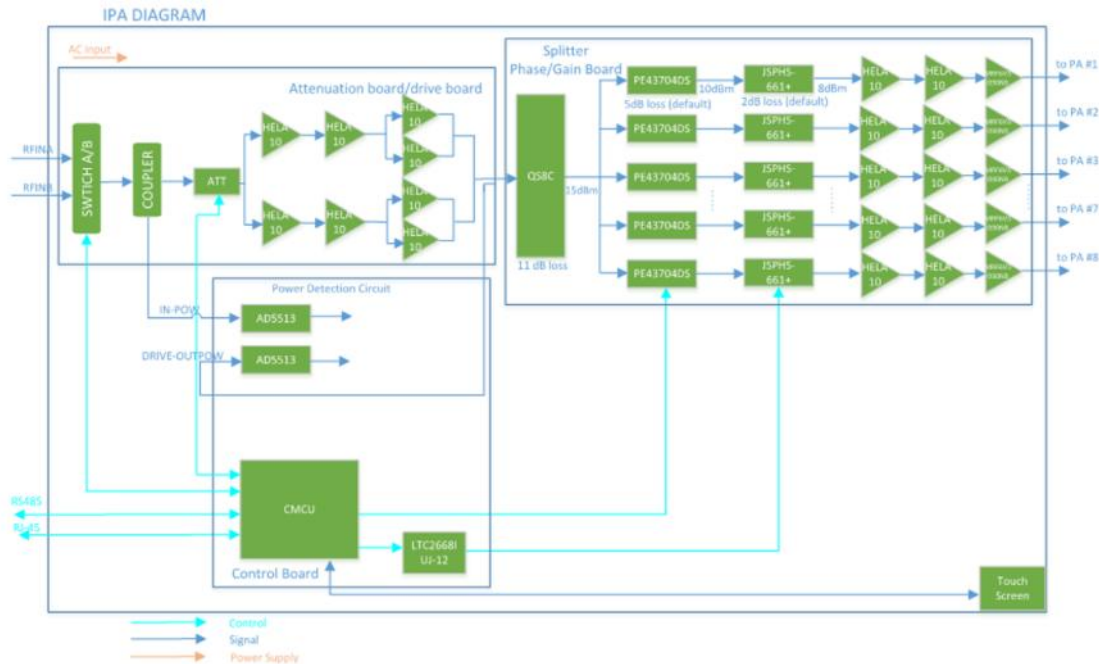


Opti-Tune™

- Self-running, all automatic, adaptive phase and gain matching of all PA modules and or racks.
- Multiple PA modules (up to 10 per rack, and up to 6 racks)

MAGMA SERIES

7. Unique Features; Opti-Tune amplifier phasing system

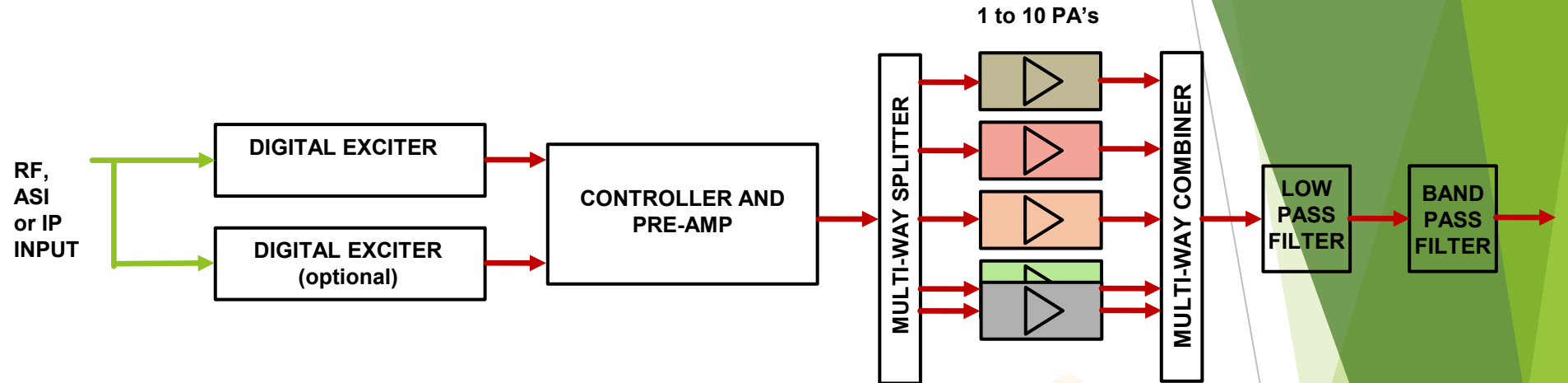


Opti-Tune™

- Automatically balances entire system in gain and phase within 10 minutes for maximum output power and highest efficiency
- Typical system efficiency improvement up to 4-8%

MAGMA SERIES

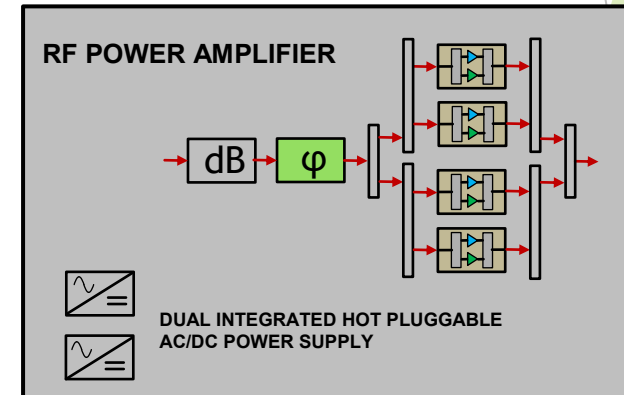
8. Unique Features; Monitoring



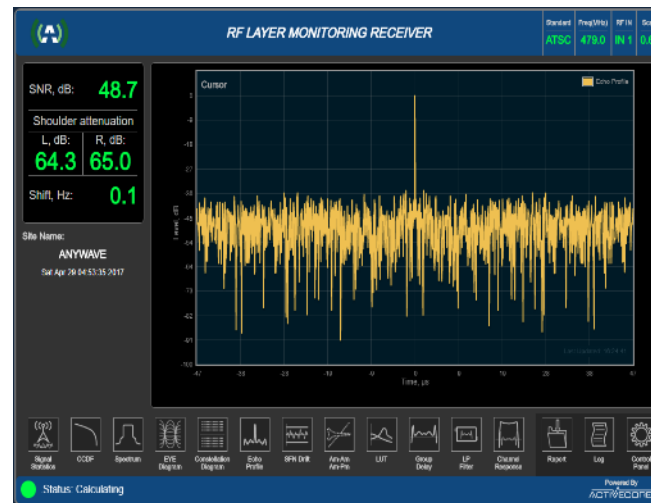
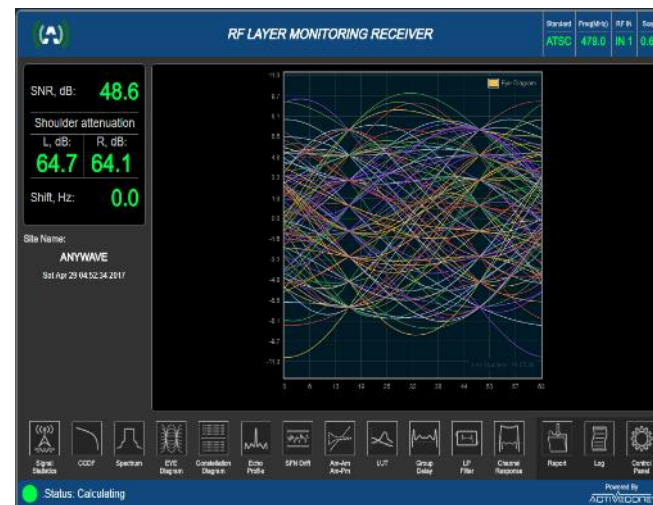
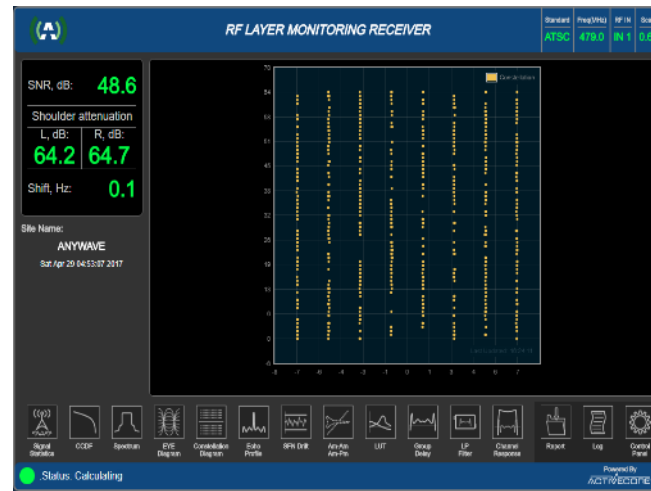
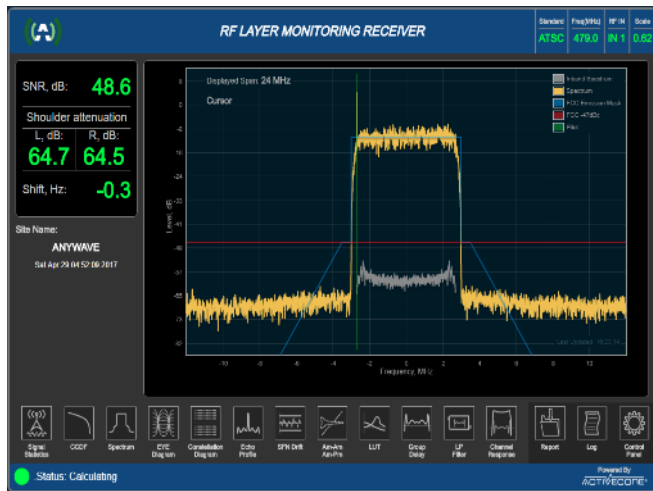
Monitoring

- 10 Amplifiers for 25kW* transmitter power output (TPO)
- 32 various sensors in each PA unit, 364 sensors and over 24 micro controllers in a 10 PA rack

* Before filter



8. Unique Features; Monitoring



ANY1020/22 option

- Real time signal quality monitoring including
- Spectrum
- Constellation
- MER
- Frequency response
- Impulse response
- Group delay
- CCDF and more

8. Unique Features; Monitoring

- Web Browser Remote control
- SNMP MIBS
- E-mail alerts *
- Parallel I/O

- * Email alerts (optional) for
- Forward Power Low
 - VSWR High
 - Room Temperature High



SNMP Configuration Properties

Shared

snmpIp: 127.0.0.1

snmpPort: 161

snmpTransport: udp

snmpVersion: v2c

snmpCommunity: public

snmpSecurityContext: hqadmin

snmpPassword: *****

snmpPrivacyPassPhrase: *****

snmpUser: username

snmpAuthType: none

snmpPrivacyType: none

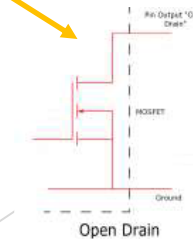
oid: 0.0

Monitoring: This resource does not have any monitoring Configuration Properties.

OK Reset Cancel

MPTV

COM STATUS	CONTROL STATUS	REMOTE
POST AMP PARA	CONTROL STATUS	REMOTE
POST AMP PARA	COM AMP RUN PARA	
POST AMP PARA	FWD-POW	1472.82 W
POST AMP PARA	REFLT-POW	3.25 W
POST AMP PARA	REJTS-POW	14.8 W
POST AMP PARA	REJTS-POW	5.27 W
POST AMP PARA	REJTS-POW	0 W
POST AMP PARA	REJTS-POW	0 W
EXCESS STATE	VSWR	1.09
ATT	ATT	2
SYSTEM M1	COM AMP-ALARM-INFO	
CORRAL M1	FWD-POW	OK
POST AMP M1	REFLT-POW	OK
POST AMP M1	REJTS-POW	OK
ADVANCE SET	REJTS-POW	OK
LOG-INFO	VSWR	OK



Summary



MAGMA SERIES

The best

- Efficiency
- Power density
- Performance
- Reliability
- Redundancy
- Cooling system
- Monitoring
- From a US owned, growing, technology leading company

Magma LP liquid cooled LPTV transmitter

- Superior cooling of liquid vs. air
- But heat exchanger, pump, etc. all built into the cabinet - like an air cooled to the user
- Hot swappable amplifier modules - one pallet per module - simplifies field repairs
- Very quiet operation - much quieter than air cooled
- Available in 1200, 2000, and 3400 watt ratings (ATSC 1.0 rating)



Magma LP liquid cooled LPTV transmitter



MARBLE Series: Unique features

A description of some of the product's beneficial features

Key features



2kW UHF ATSC 1.0 TV Transmitter

Highly advanced and compact - entire 2 kW (ATSC)/1.3 kW (OFDM) UHF transmitter in 4.5 rack units!

- Highest efficiency Doherty amplifiers
- Exceptional Anywave exciter with adaptive linear and non linear correction
- Power levels beginning at 70/50 watts (ATSC 1.0), up to 8.5/5.6 kW UHF
- UHF and VHF band I and III

MARBLE SERIES

Marble power levels

UHF power lineup - single PA wattage
70, 300, 600, 1200, 2000; multiple
PAs 3400, 5100, 6800, 8500 (ATSC
3.0/OFDM ~66% of above power
levels)

Single PA = internal controller, no
cabinet

Multiple PAs = external controller,
cabinet included

VHF band I and VHF band III power
levels also available

Anywave's world-class exciters

The most advanced exciters for ATSC 1.0 and 3.0

ANYWAVE ATSC 1.0 EXCITERS

POWERFUL ADAPTIVE LINEAR AND NONLINEAR CORRECTION

ALL DIGITAL SIGNAL GENERATION

ALL BAND OPERATION

MULTIPLE INPUTS AVAILABLE

- RF TUNER FOR TRANSLATORS
- ASI
- SMPTE-310
- TSoIP

REMOTE/LOCAL MONITORING AND CONTROL VIA WEB BROWSER, RS485, AND FRONT PANEL

**INDUSTRY BEST PHASE NOISE PERFORMANCE (@20 KHz):
< -124 dBc/Hz**



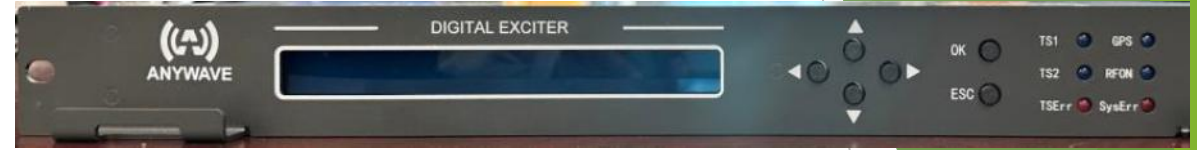
7X Exciter

ANYWAVE'S UNIQUE NEW ADVANCED EXCITER/GATEWAY PLATFORM FOR ALL ATSC 1.0/3.0 APPLICATIONS!

*ONE 1 RU CHASSIS CONTAINS ALL HARDWARE AND
PROCESSING POWER –SELECT FIRMWARE LICENSE TO MEET
YOUR NEEDS:*

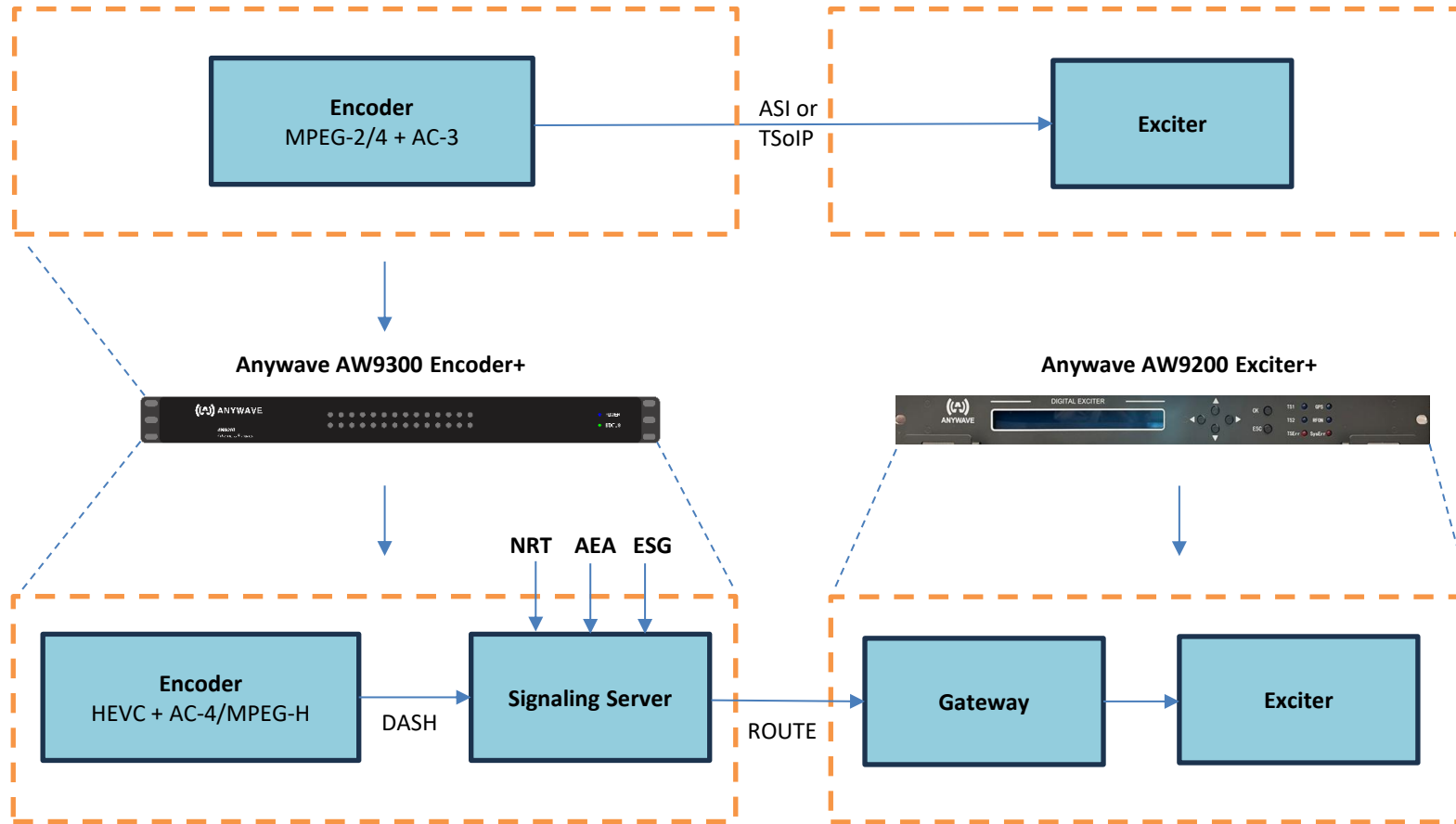
- ATSC 1.0 EXCITER – WITH SIMPLE FUTURE UPGRADE TO 3.0
- ATSC 3.0 EXCITER – WITH ATSC 1.0 INCLUDED
- ATSC 1.0 TRANSLATOR – RF INPUT INCLUDED
- ATSC 3.0 TRANSLATOR – INCLUDES 3.0 RF TUNER, 3.0 EXCITER, AND 3.0 GATEWAY FUNCTIONS TO ALLOW 3.0 TRANSLATOR WITH UPDATED SIGNALING AND ANNOUNCEMENT
- ATSC 3.0 EXCITER WITH BUILT IN GATEWAY FOR STATIONS SUCH AS LPTV WITH NO SEPARATE STUDIO
- ATSC 3.0 STANDALONE GATEWAY FOR STATIONS WITH A STUDIO SEPARATE FROM TRANSMITTER SITE

*ALL EXCITERS INCLUDE ANYWAVE'S POWERFUL ADAPTIVE
CORRECTION*



ANYWAVE'S COMPLETE ATSC 1.0/3.0 SIGNAL CHAIN – ALL AT TX SITE

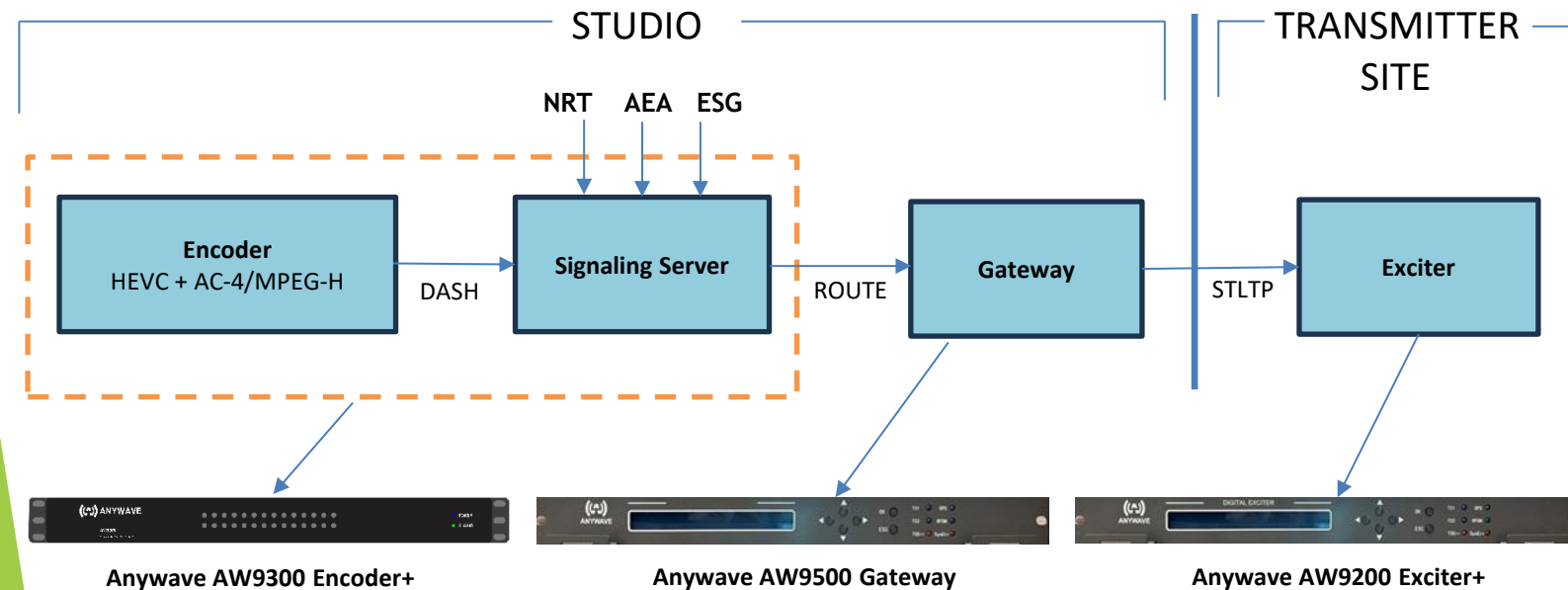
ATSC 1.0 NOW



ATSC 3.0 LATER

ANYWAVE'S COMPLETE ATSC 1.0/3.0 SIGNAL CHAIN – STUDIO/TX SITE

A typical full Service ATSC 3.0 implementation is shown below for stations with separate studio and transmitter sites.



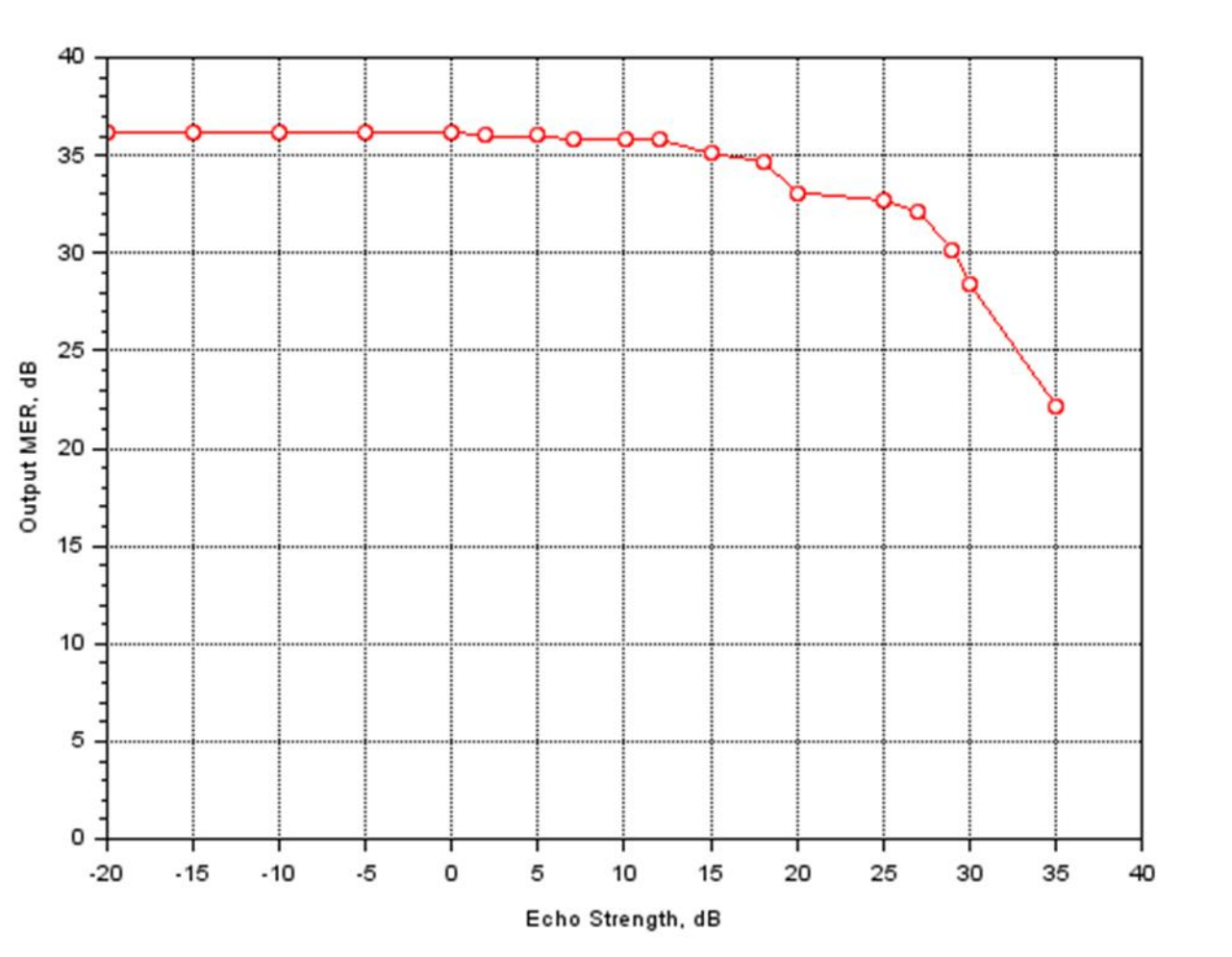
Anywave Gap Fillers



- Industry best echo cancellation, using two stage process (patented)
- Any standard - ATSC 1/3, DVB-T/T2, ISDB-T; UHF/VHF
- Outdoor and indoor versions
- UHF version uses highest efficiency Doherty amplifiers - efficient, cool
- Adaptive precorrection for amplifier

Anywave Gap Fillers

Gap filler performance vs. echo level



Thank you for your attention

www.anywavecom.net

