

Product Features

- 5850 to 6725 MHz frequency band
- Solid-state design using GaN devices
- Provides 100 Watts of saturated power
- 1:1 Redundant configuration
- Harmonic filter
- Built-in self-protection circuits
- Calibrated forward and input sample port
- Forced air-cooled with integrated blowers
- Integrated AC/DC power supply
- Local/remote monitoring and control via Ethernet and RS485 interfaces

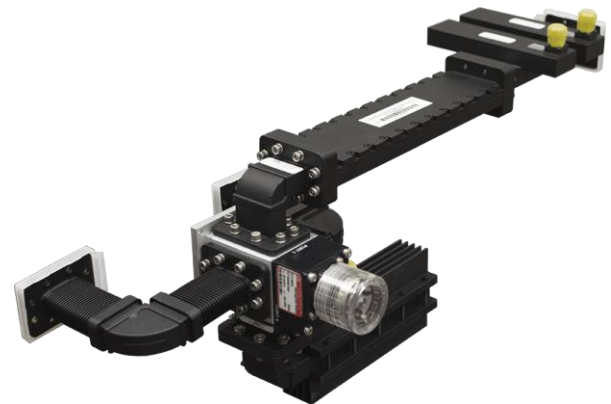


Product Description

Our UniMatrix family of C-Band solid-state power amplifiers (SSPA) are built using the latest GaN transistor technology. The highly linear designs are the ideal replacement for TWTAs used in any application. They offer 150W of saturated power with maximum reliability and long service life.

The SSPA's are compact, field-replaceable system components, designed for rack mounting in a controlled indoor environment. They are force air-cooled using integrated blowers and are powered by an internal AC/DC power supply. The SSPA's feature monitoring and self-protection circuits including input overdrive, forward power, reflected power, over-temperature, operating current and operating voltage.

Additionally, every GaN transistor is fully protected against potentially harmful reflected power caused by antenna mismatches. The SSPA's operational parameters are monitored and controlled by an integrated system controller. A front panel display provides the user with local monitoring and control, while RS485 and Ethernet interfaces provide the user with local/remote monitoring and control via PC GUI, Web GUI and SNMP.



Output switching assembly with harmonic filter

Product Specifications

Electrical	
Operating Frequency	5850 - 6725 MHz
Saturated RF Output Power (Psat)	100W (50 dBm)
Small Signal Gain	65 dB
Small Signal Gain Flatness	±1 dB
Gain Stability	±0.25 dB / 24 hour max. @ constant drive and temperature
Gain Variation vs. Temperature	±1 dB over operating temperature range
Gain Adjustment	0 to 20 dB, step size 0.1 dB
Input RF Level	-10 dBm to 0 dBm
Phase Noise	-80 dBc/Hz, max @100 Hz offset -85 dBc/Hz, max @1 KHz offset -90 dBc/Hz, max @10 KHz offset -110 dBc/Hz, max @100 KHz offset
AM/PM Conversion	0.2 deg/dB
Group Delay	0.01ns/MHz Linear 0.003ns /MHz Parabolic 1.0ns/p-p Ripple
Third Order Intermodulation (1MHz spacing)	-28 dBc
Harmonics (with filter)	
2nd	-80 dBc max
3rd	-80 dBc max
Spurious	-60 dBc max
Input Return Loss	< -14 dB
Output Return Loss	< -27 dB

Interfaces	
RF Input	N-type (female) 50Ω
RF Output	WR137 CPRG
RF Input Sample	N-type (female) 50Ω
RF Output Sample	N-type (female) 50Ω
Monitoring and Control	
RS422 Interface Protocol	DB-9 (female) Proprietary
Front Panel LCD	2 Line by 40 Character Display with Cursor/Execute Keys

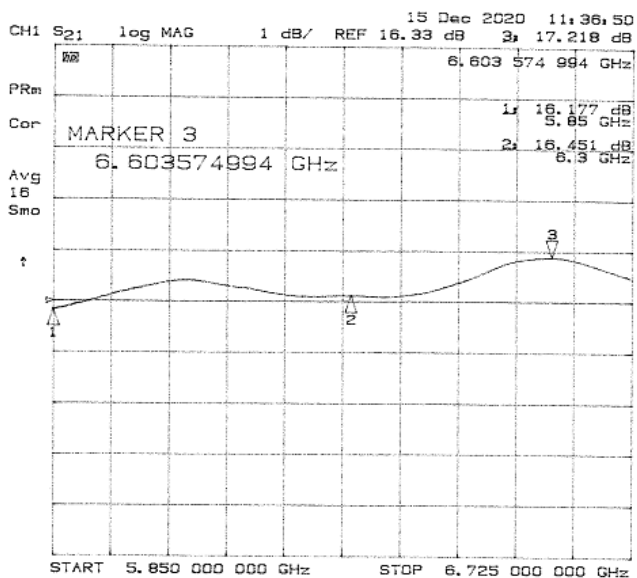
Power Supply	
Voltage	Single-phase, 210 to 240 VAC, ±10%
Frequency	50 to 60 Hz, ±10%
Power Consumption	600 W max. @ Psat
Power Factor	0.995

Product Specifications

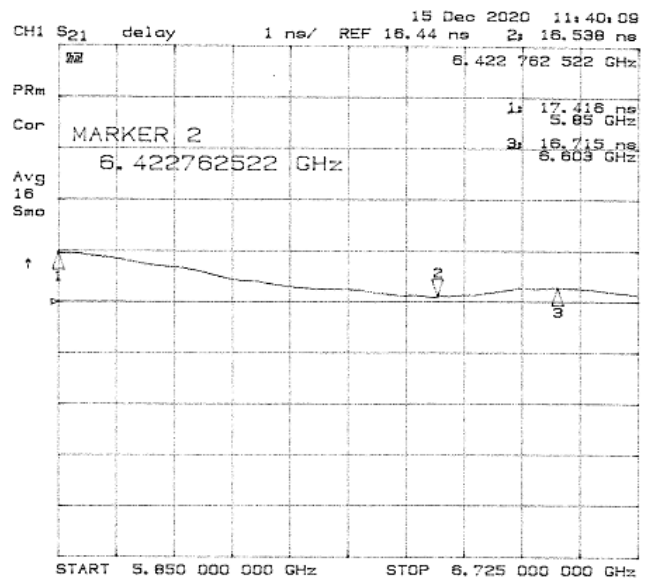
Environmental	
Ambient Operating Temperature	0°C to +50°C
Ambient Storage Temperature	-40°C to +85°C
Relative Humidity	5% to 95%, non-condensing @ +40°C
Altitude	3000 m (10000 ft.)
Cooling	Forced air with integrated blowers and serviceable air filter
Sound Level	≤75 dBa at 1m

Mechanical	
Package	8U, 19" rack mount chassis
Dimensions (W x D x H)	533 x 800 x 406 mm (21.0 x 31.5 x 16 inches)
Dimensions With Output Switch Assembly	533 x 800 x 692 mm (21.0 x 31.5 x 27.2 inches)

Typical Performance

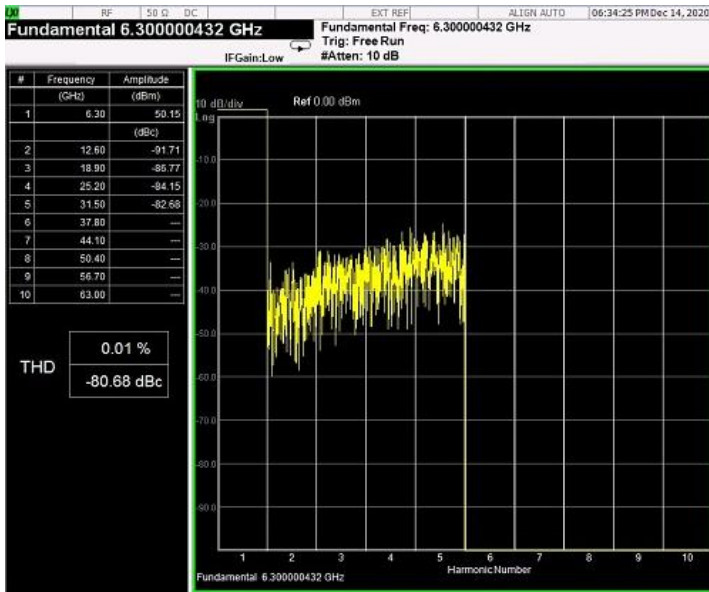


Plot 1 – Small Signal Gain Flatness

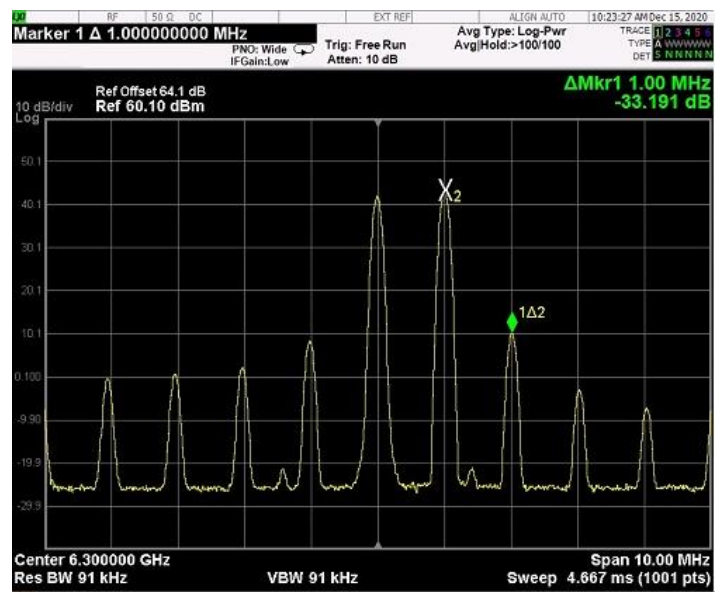


Plot 2 – Group Delay

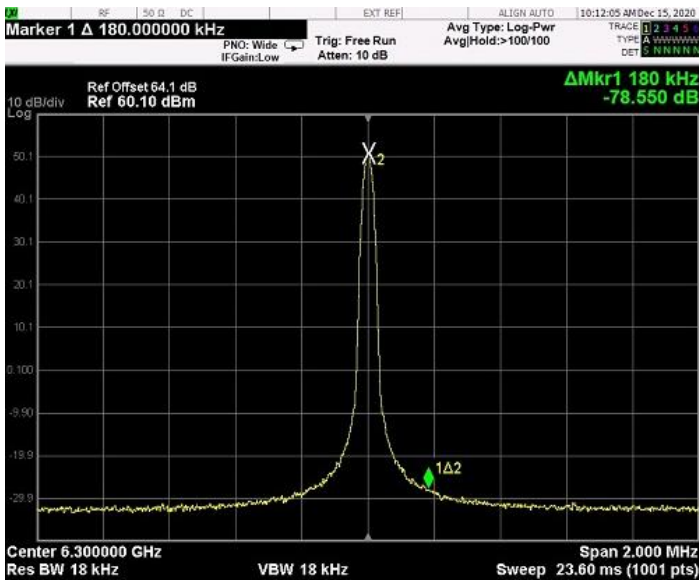
Typical Performance



Plot 3 – Harmonics @ P_{OUT} = 100W



Plot 4 – IMD3 @ 6300 MHz



Plot 5 – Spurious @ 6300 MHz



Plot 6 – Phase Noise