Unique Broadband Systems
a DOL Technologies Inc. Company

Model: DPAYVC0500IXA

Unimatrix UHF-Band 500W LDMOS Solid State Power Amplifier System

Product Features

- **235 – 275 MHz operating frequency**
- **Solid state design using LDMOS devices**
- **Provides up to 500 Watts of saturated power**
- **Protected against temperature, input overdrive, output overdrive and output load VSWR conditions**
- **Integrated modular AC/DC power supply**
- **Forced air cooled**
- **Local/remote monitoring and control via RS422 interfaces**

Product Description

UBS' UHF-band solid state power amplifier (SSPA) is built using the latest LDMOS transistor technology. The highly-efficient design is the ideal for radar and ground test applications. It offers 500 Watts of saturated power with maximum reliability and long service life.

The SSPA is a compact, 3RU, field replaceable system component, designed for rack mounting in a controlled indoor environment. It is force air cooled using integrated blowers and is powered by an internal AC/DC power supply.

The SSPA features monitoring and self-protection circuits including input overdrive, forward power, reflected power, over temperature, operating current and operating voltage.

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 RS422 interface provides the user with local/remote monitoring and control.

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Product Specifications

Electrical	
Operating Frequency	235 - 275 MHz
Saturated RF Output Power (Psat)	500W (57 dBm)
Small Signal Gain	70 dB
Small Signal Flatness	±0.5 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
Harmonics	
2nd	-50 dBc max
3rd	-60 dBc max
Spurious	-60 dBc max
Switch Modulation	from CW to 10 kHz pulse repetition
RF Output Sample	-50 dB
Input Return Loss	-17 dB max
Output Return Loss	-15 dB max

Interfaces	
RF Input	N-type (female) 50Ω
Switch Modulation Input	BNC (female)
RF Output	N-type (female) 50Ω
RF Output Sample	N-type (female) 50Ω
Monitoring and Control	
RS422 Interface	DB-9 (female)
Protocol	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 Hz, ±10%
Power Consumption	2.7 kW max. @ Psat
Power Factor	0.98

Mechanical	
Package	3U, 19” rack mount chassis
Dimensions (W x D)	482.6 x 855.6 mm (19.00 x 33.69 inches)

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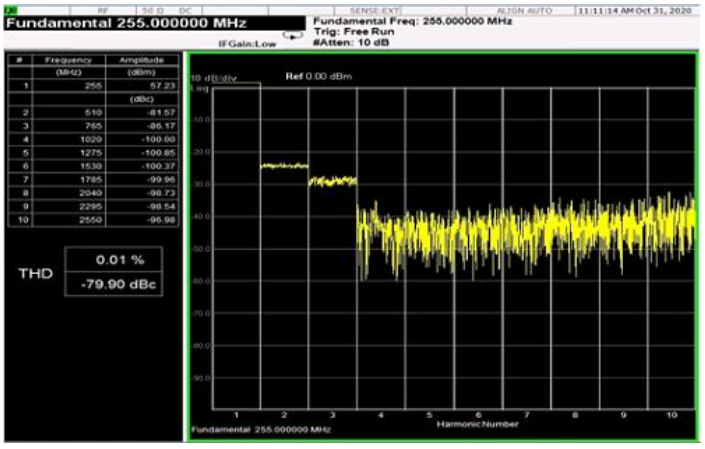
Product Specifications

Environmental	
Ambient Operating Temperature	0°C to +40°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

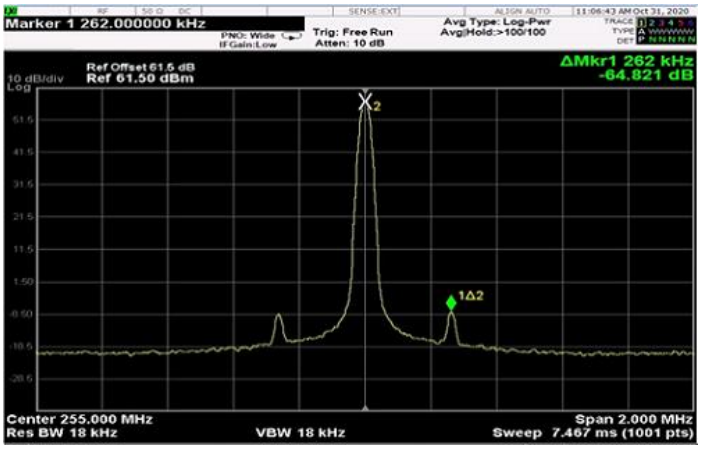
Typical Perfomance

Plot 1 – Small Signal Gain

Plot 2 – Gain Flatness



Plot 3 – Harmonics @ P_{OUT} = 500W



Plot 4 – Spurious @ 255MHz

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