1. Key Features

- Operating Frequency: 2–40GHz
- Two-Band Frequency Switching
- Saturated Output Power:
  8W (CW, 2–18GHz)
  4W (CW, 18–40GHz)
- Class A Operation
- Forced Air Cooling
- Supports Continuous Wave (CW) & Pulse
- Over-Temperature, Over-Current Protection with Alarm Indication
- Real-time Display of Drain Current and Module Temperature



P2936A-PDS-F01

Figure 1: Product Outline

2. Applications

- Industrial Testing
- Reliability Testing
- Active Load-Pull System
- RF Power Stress Testing
- Laboratory Test Instrument
- Antenna and Component Testing
- Radiated and Conducted EMC Testing

3. Product Introduction

This datasheet describes the P2936A solid-state power amplifier, a broadband unit covering 2–40GHz with a saturated output power of 4W. The P2936A provides frequency-band selection and can be freely switched between the 2–18GHz and 18–40GHz bands. It adopts a hybrid architecture of GaAs driver devices and GaN final-stage power transistors. The P2936A delivers outstanding high-temperature tolerance, high reliability and high power efficiency, and supports continuous wave (CW), pulse waveforms and various broadband modulated signals.

Built-in over-temperature and over-current protection circuits are integrated inside the unit. If an over-temperature or over-current fault is detected, the internal power supply will automatically shut down, with corresponding alarm messages displayed on the front panel screen. The front panel screen continuously monitors and displays the drain current and module temperature of the final-stage amplifier. Equipped with forced-air cooling, the unit maintains stable full-power continuous operation.

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4. Specifications

Table 1: Electrical Specifications (Band1: 2-18GHz) *

Parameter	Min.	Typ.	Max.	Unit
Operating Frequency	2	-	18	GHz
Small Signal Gain	-	50	-	dB
Gain Flatness	-	-	±3	dB
Output Power @P1dB	-	33	-	dBm
Output Power @P3dB	-	37	-	dBm
Saturated Output Power (P_{SAT})	-	39	-	dBm
Saturated Output Power (P_{SAT})	-	8	-	W
Input Power @P_{SAT}	-	-	-9	dBm
Input VSWR (50Ω)	-	-	1.7:1	-
Output VSWR (50Ω)	-	-	2:1	-
Harmonic Distortion @P1dB	-	-	-15	dBc
Spurious @P1dB	-	-70	-	dBc
Power Consumption	-	-	80	W

* Test results under CW operation

Table 2: Electrical Specifications (Band2: 18-40GHz) *

Parameter	Min.	Typ.	Max.	Unit
Operating Frequency	18	-	40	GHz
Small Signal Gain	-	48	-	dB
Gain Flatness	-	-	±3	dB
Output Power @P1dB	-	30	-	dBm
Output Power @P3dB	-	34	-	dBm
Saturated Output Power (P_{SAT})	-	36	-	dBm
Saturated Output Power (P_{SAT})	-	4	-	W
Input Power @P_{SAT}	-	-	-7	dBm
Input VSWR (50Ω)	-	-	1.3:1	-
Output VSWR (50Ω)	-	-	2:1	-
Harmonic Distortion @P1dB	-	-	-25	dBc
Spurious @P1dB	-	-70	-	dBc
Power Consumption	-	-	75	W

* Test results under CW operation

Table 3: Electrical Specifications

Parameter	Min.	Typ.	Max.	Unit
Input Impedance	-	50	-	Ohm
Output Impedance	-	50	-	Ohm
AC Supply Voltage (50Hz)	-	220	-	V
Operating Temperature	0	-	40	°C
Storage Temperature	-40	-	70	°C

Table 4: Mechanical Specifications

Parameter	Nominal	Unit
Weight	9	kg
Dimensions (incl. handles and stands) (W×H×D)	291.5×115.5×434.0	mm
Cooling	Forced air	-

5. Connector Interfaces

Table 5: Front Panel Interfaces

Function	Type	Notice
RF Input	2.92mm, female (50Ω)	-
RF Output	2.92mm, female (50Ω)	Do not operate with the RF output unloaded
Dual-Band Switching	Mechanical switch	Toggle the switch to select between Band1 and Band2
Power	Mechanical button	Power on; Power off

Table 6: Rear Panel Interfaces

Function	Type	Notice
GPIB	24-Pin	-
Ethernet	RJ-45	-
USB	2×Type-A, 1×Type-C	-
AC	220V, 50Hz	-
GND	Ground terminal	Ground connection required before power-on

6. Typical Performance

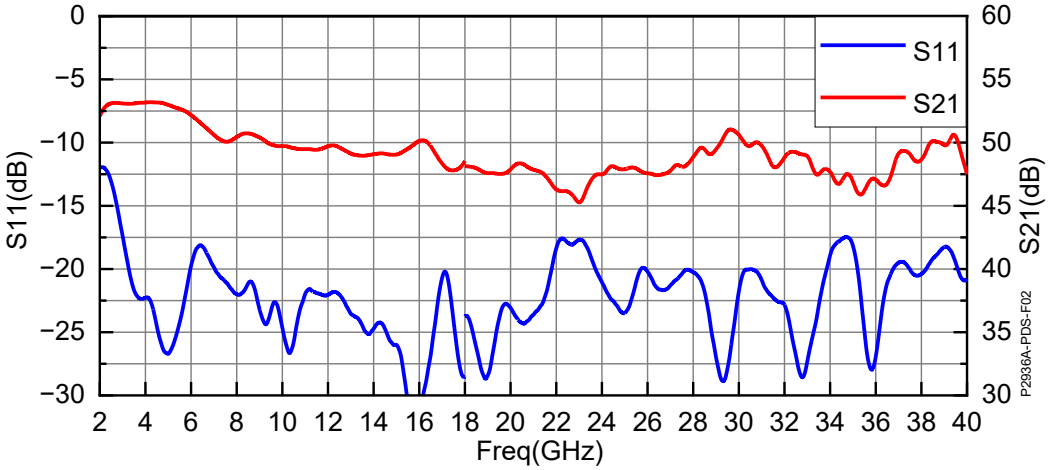


Figure 2. S21 and S11

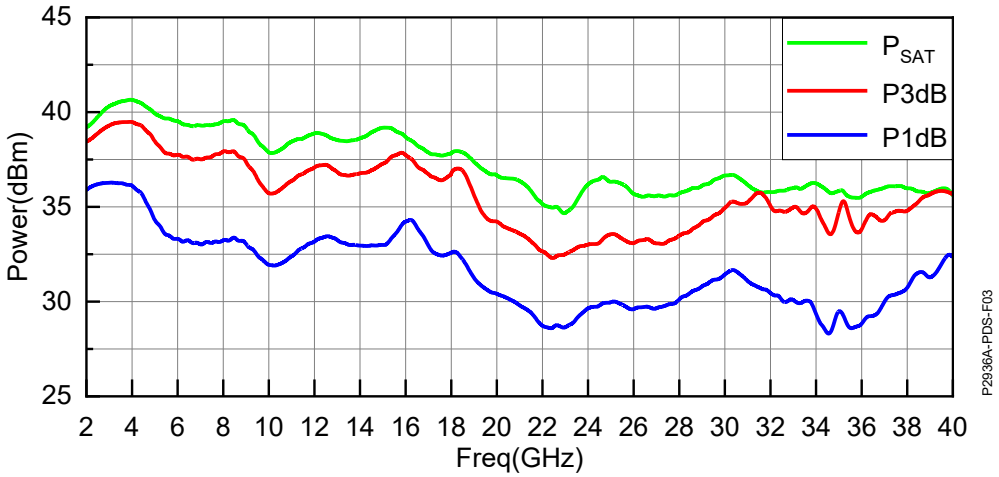


Figure 3. P1dB, P3dB, and P_{SAT}

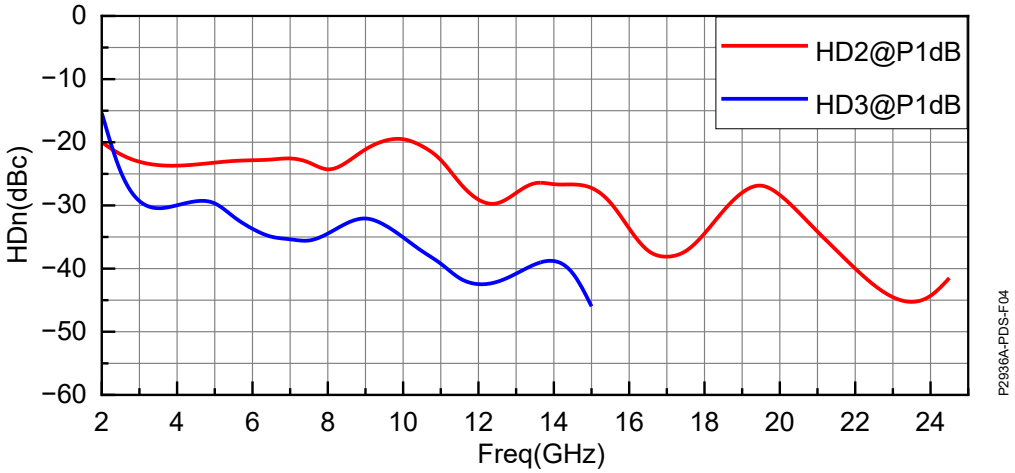
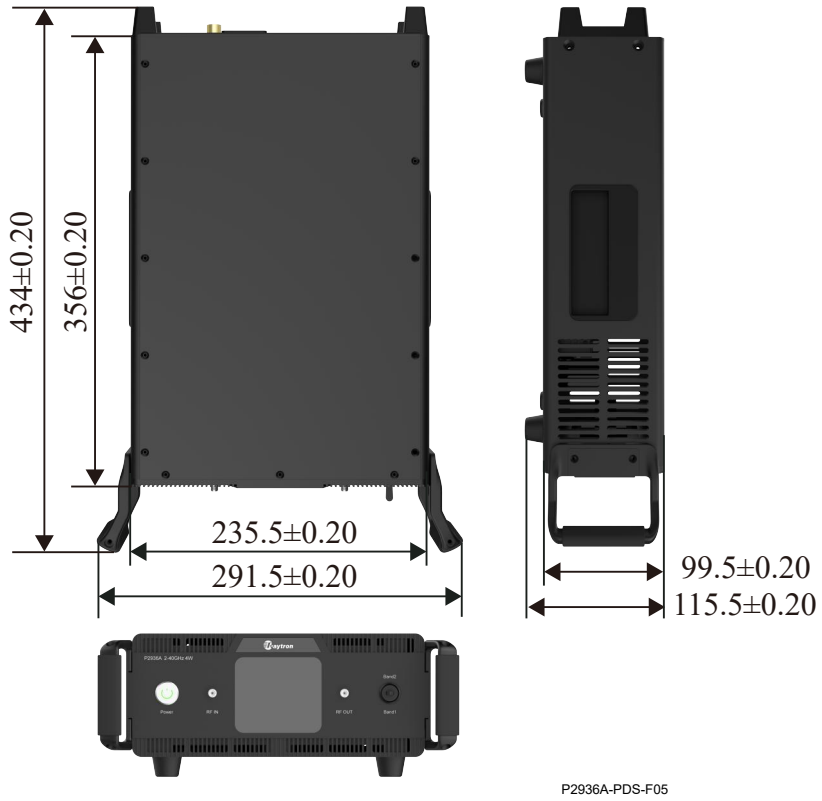


Figure 4. Harmonic Distortion @ P1dB

Notes: test conditions, AC220V, 50ohm matching device, 25°C

7. Dimensions



Dimensions shown in millimeters

Figure 5. Outline Dimensions

8. Contact Information

For the latest specifications, additional product information, technical support and sales support, please contact:

- **Email:** RF.support@raytrontek.com
- **Web:** www.raytrontek.com

9. Disclaimer

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