

RigExpert® 915MPA Bi-directional 915 MHz Power Amplifier

Product Overview

Bidirectional ISM band (915MHz) amplifier, designed for low voltage application.

Provides around 20dB RX gain for small signals in passband and 15dB for TX.

The output power +36dBm in Pulse mode can be reached and +35dBm in CW mode.

50 Ohm matched.

VOX based TX/RX switching. VOX level can be adjusted by replacing resistors

Applications

- TX/RX Amplifier for UAV Systems
- SDR
- HAM Radio
- IoT
- Test & Measurement

Main Features

- 902-928 MHz Operation
- Automatic TX/RX switching
- Tiny Size
- Low Voltage Operation, 5 V Power Supply
- 15 dB TX RF gain
- 20 dB RX RF gain
- 35dBm CW TX Power
- 36 dBm Pulse TX Power
- ESD Protection



Specifications

Table 1. Absolute Maximum Ratings

Parameter	Rating
Max RF Input TX Power	21 dBm
Min RF Input TX Power	6 dBm
Max RF Input RX Power	-13 dBm
Device Voltage	5.5 V

**Important note: Input TX Power can be adjusted by changing input ATT.

Table 2. Recommended Operating Conditions

Parameter	Min	Typ.	Max	Units
RF Input TX Power	6	20	21	dBm
Device Voltage	+4.75	+5	+5.25	V

Table 3. Electrical Specifications

Parameter	Conditions	Min	Typ.	Max	Units
Operational Frequency Range		902		928	MHz
TX Gain			15		dB
RX Gain			20	22	dB
Output Power CW	Input RF Power 20dBm @ 916 MHz	34	35	36	dBm
Output Power Pulse	Input RF Power 20dBm @ 916 MHz	35	35.5	36	dBm
2 nd Harmonic CW	Output Power 35.1dBm @ 915 MHz		1.3		dBm
2 nd Harmonic Pulse	Output Power 36.6dBm @ 915 MHz		1.9		dBm
Power Consumption in CW TX	Output RF Power 35dBm @ 916 MHz		9.8		W
Power Consumption in RX			0.44		W

Mechanical Specifications

Table 4. Absolute Maximum Ratings

Dimensions, mm	40 x 56 x 15
Weight, g	46

Laboratory measurement results

NOTICE. All measurements are done with 5 V power supply and room temperature 22°C.

Figure 1. LNA Gain sweep. Input RF signal -20dBm

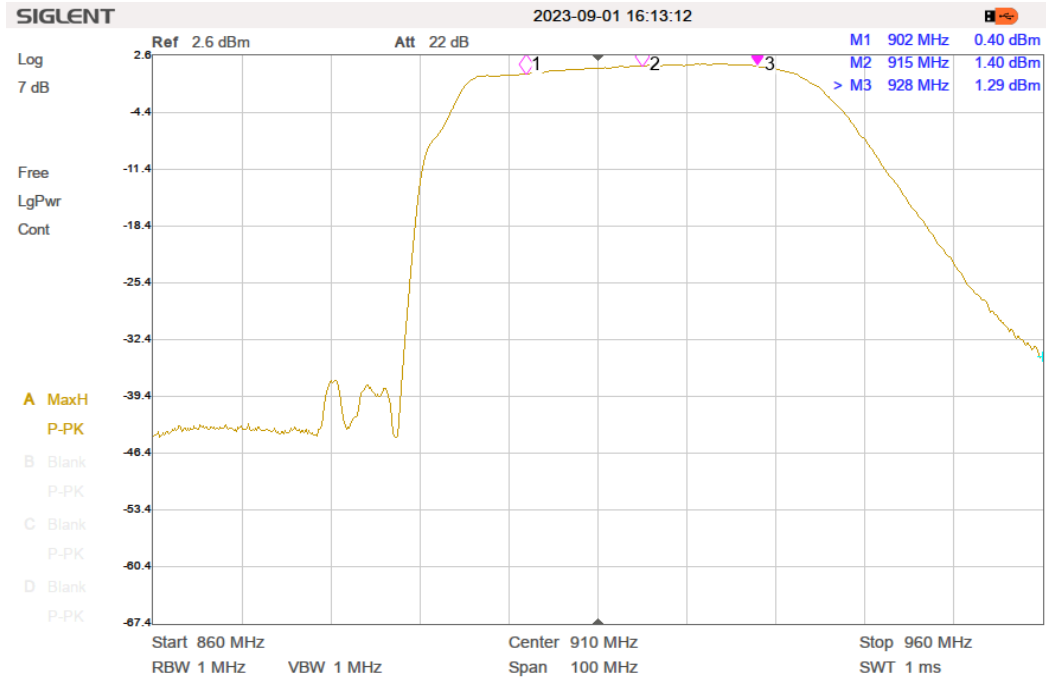


Figure 2. LNA Gain sweep. Input RF signal -40dBm

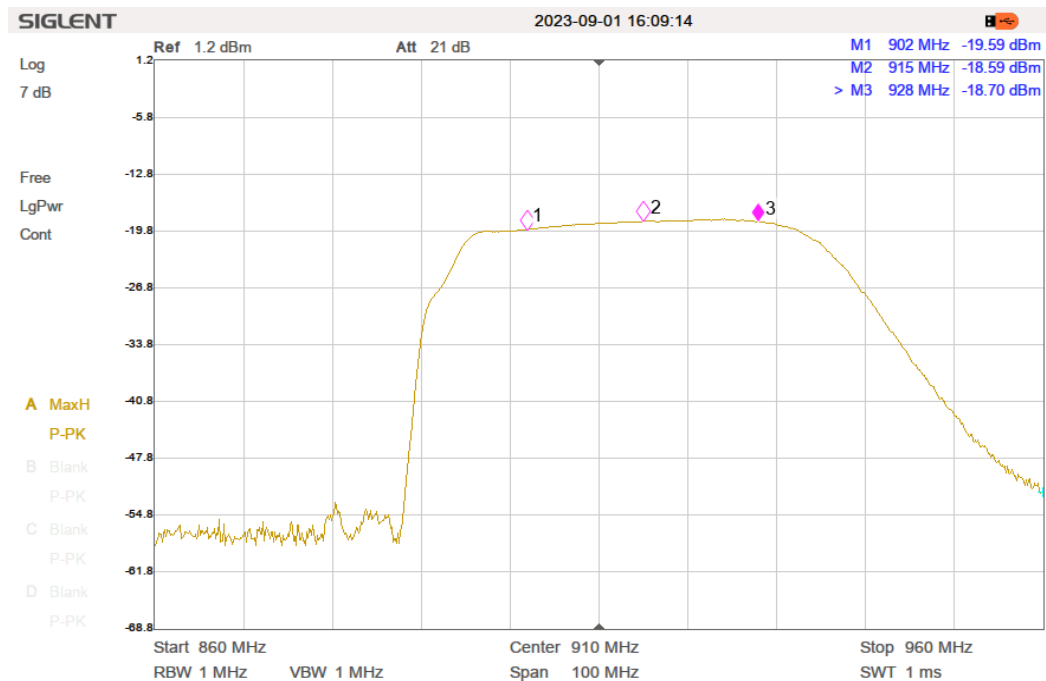
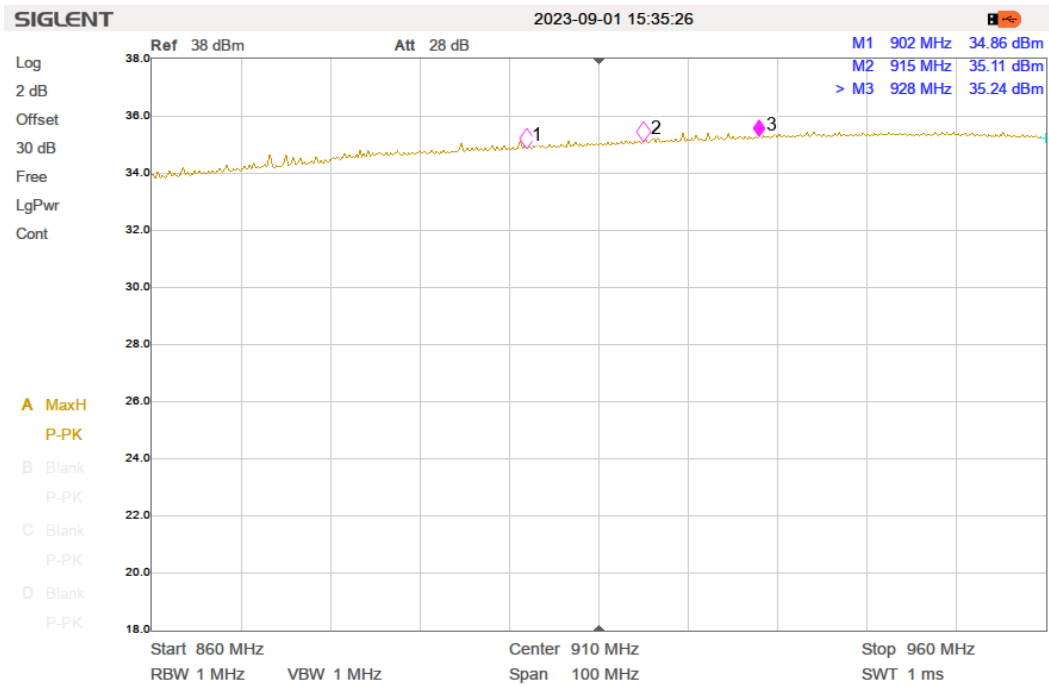


Figure 3. PA Gain sweep. Input RF signal CW 20dBm



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Figure 4. PA Gain sweep. Input RF signal Pulse 20dBm

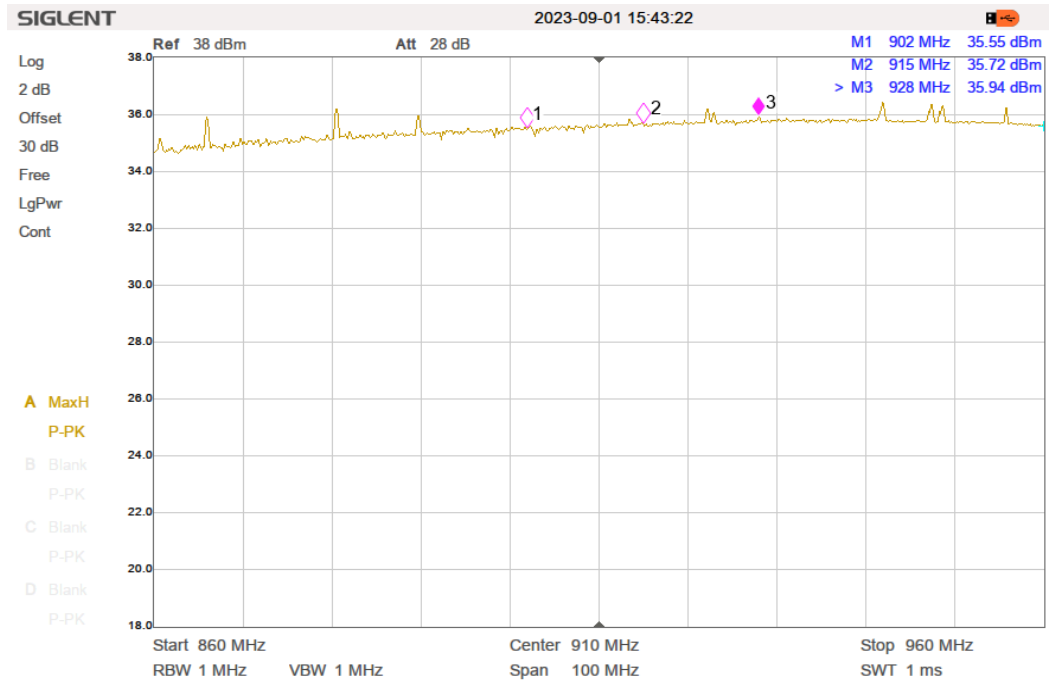
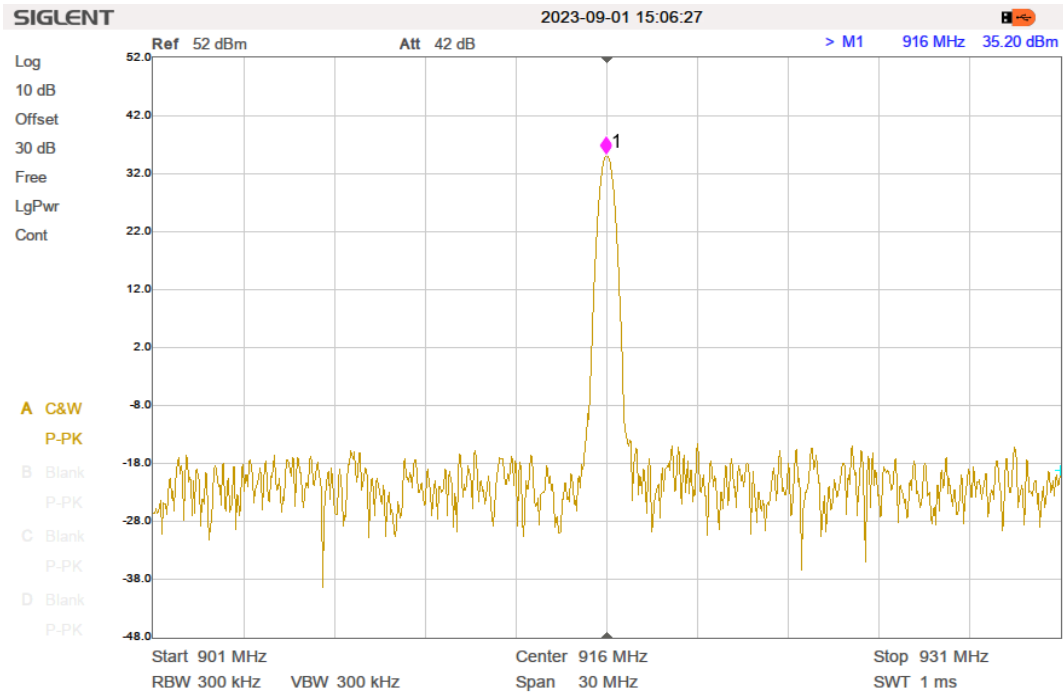


Figure 5. PA Gain. Input RF signal CW 20dBm@916MHz



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Figure 6. PA Gain. Input RF signal Pulse 20dBm@916MHz

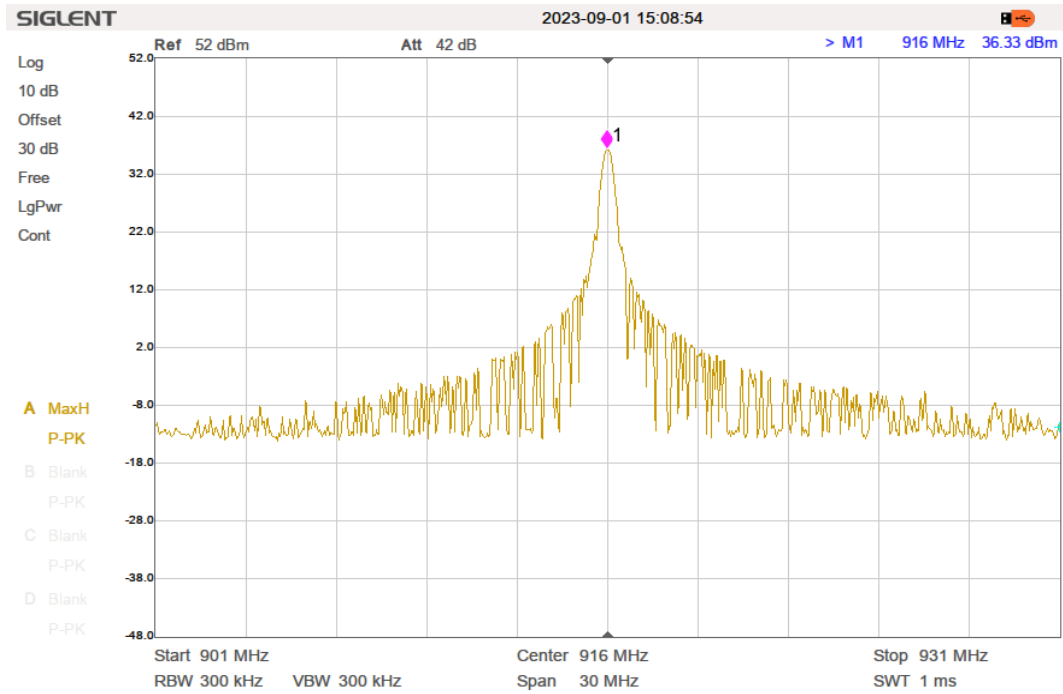


Figure 7. 2nd Harmonic. Output Power Pulse 36dBm

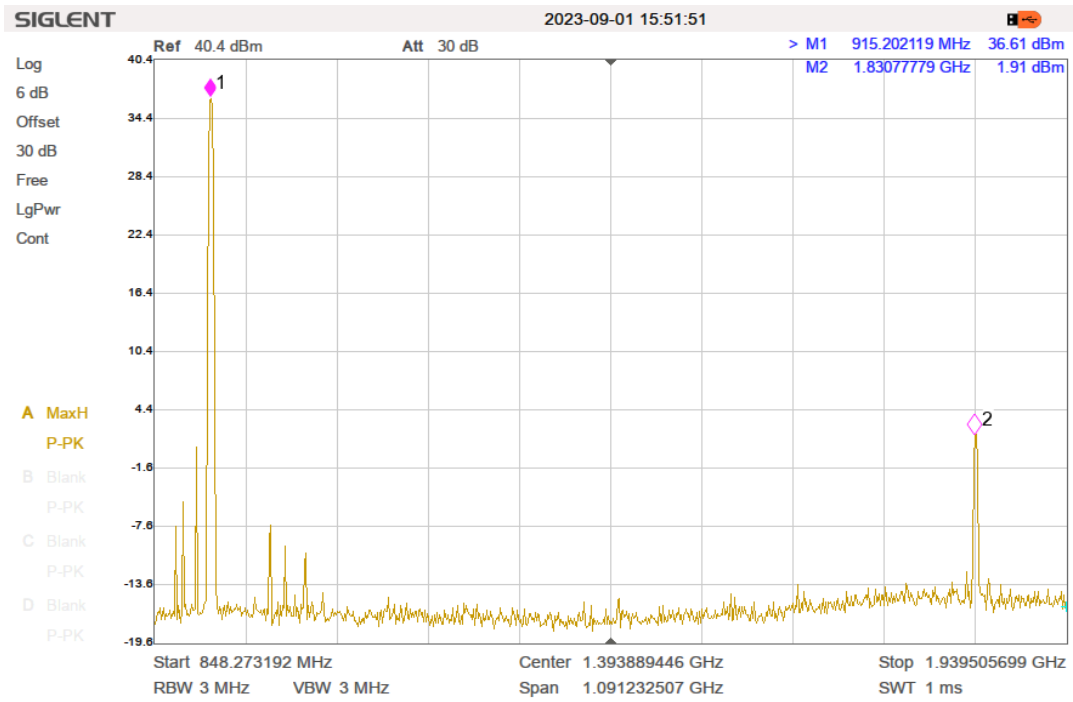


Figure 8. 2nd Harmonic. Output Power CW 35 dBm

