

FRONTGRADE

10244-50000

SIMOPS Low Band Power Amplifier 10244-50000

30-512MHz Power Amplifier

1/14/2026 | Version #1.0

Product Description

The SIMOPS Low Band Power Amplifier delivers 50W output power across 30-512MHz. This design is well suited for multiple military and commercial platforms requiring high linearity, small form factor, and light weight operation in harsh environments.

Performance Advantages

- Small Size, Weight, and Power
- Addresses Airborne and Ground platforms
- Designed to support TSM, SRW, WNW, SINCGARS, ANW2, HAVEQUICK I/II, P25
- 30-512 MHz (50W), Failsafe Bypass
- DC input from 10-36V, 140W nominal power consumption
- No Interface required, Input frequency sensing
- Small form factor: 8.5”L x 4.2”W x 2.0”H w/connectors
- Weight 3.2lbs
- Automatic Leveling Control
- VSWR sensing
- Environmentally sealed design
- Tested to MIL-STD-810, 461, and 1275 requirements
- Field Upgradeable Firmware
- Supports Field Repair and Sustainability

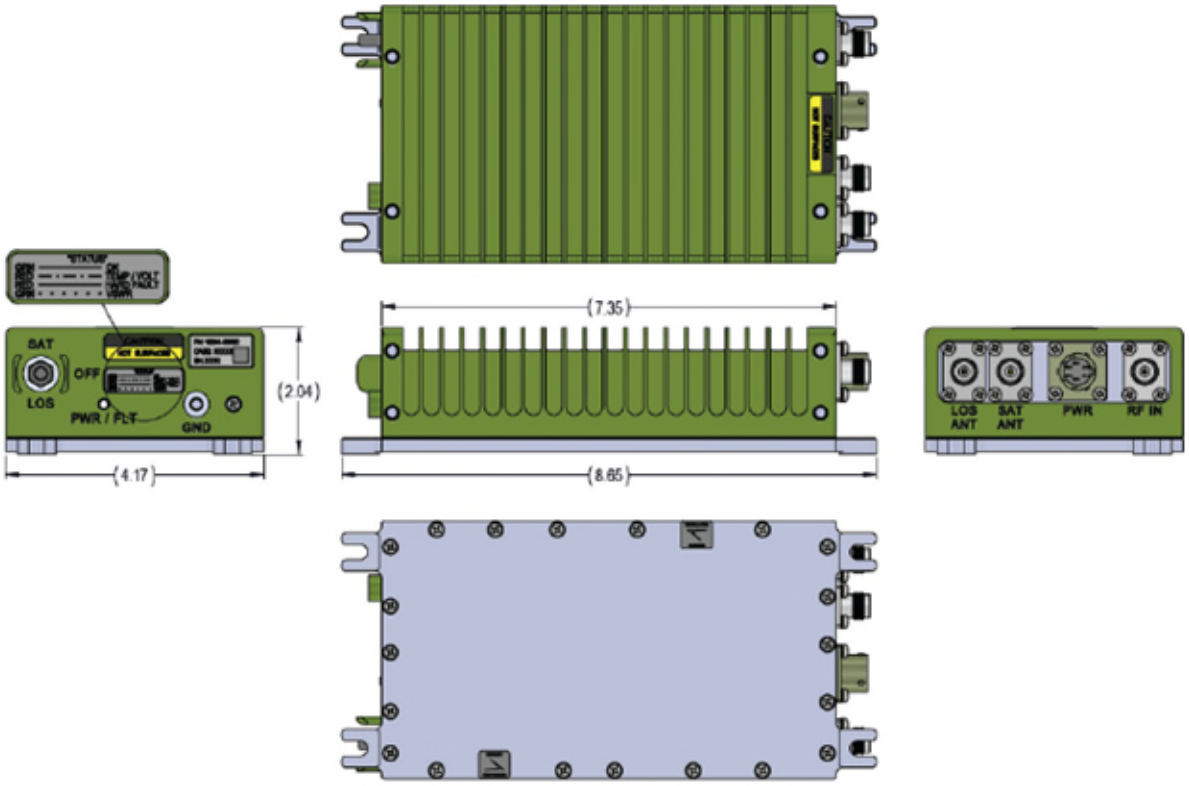
Performance Highlights/Specifications

Frequency Range	30-512MHz Failsafe Bypass
RF Input Power	0.5 W minimum 10W maximum
RF Output Power	50W
Duty Cycle	100% continuous
Harmonics and Spurious	CE106 compliant
Output Load Impedance	50 ohm nominal
Input Port VSWR	1:5:1 (50 ohms)
Load VSWR	3.0:1 max VSWR Graceful output power reduction >3:1
Rx Gain	13.5dB +/- 1.2dB Up to 15dB, factory configurable or selectable via interface
Rx Noise Figure	≤ 6 dB
Rx Input 3rd Order Intercept Point (IIP3)	≥ +10dBm
DC Input Voltage	10- 36 Vdc
DC Power Consumption	140W nominal, 175 max
Environmental	-40C to +60C MIL-STD-810G/461F/1275D/704F
Interfaces provided (Frequency sensing, no interface required)	Customizable : RS 232, 422, 485, LVDS, Ethernet
Connector Interface	N, TNC, as specified
Chassis Finish	Olive Green CARC, Black annodized/powdercoat, or chemical conversion optional

Typical Performance Data

Test Condition -40°C Baseplate													
Freq.	Pin	Pout	Gain @ Pwr		2nd Harm.	3rd Harm.	4th Harm.	5th Harm.	In-Band	DC			
MHz	dBm	dBm	dB		-dBc	-dBc	-dBc	-dBc	Spurs dBc	(W)			
30.0	30.0	47.3	17.3		-75.5	-80.1	-80.5	-84.6	-77.8	140.1			
40.0	30.1	47.1	17.0		-75.7	-77.6	-86.9	-90.5	-78.4	135.9			
50.0	30.0	47.2	17.3		-74.7	-81.5	-88.9	-90.9	-78.6	129.3			
60.0	30.0	47.2	17.2		-76.6	-82.9	-88.9	-80.2	-78.9	122.7			
70.0	30.0	47.3	17.4		-66.7	-86.6	-92.2	-89.7	-79.4	119.1			
80.0	29.9	47.2	17.3		-69.8	-85.4	-90.5	-92.3	-78.8	113.5			
88.0	30.0	47.3	17.3		-69.9	-91.1	-91.8	-92.0	-78.9	112.5			
118.0	30.0	47.1	17.1		-68.1	-88.9	-88.9	-91.9	-78.1	136.3			
174.0	29.9	46.2	16.3		-70.7	-71.5	-90.7	-82.6	-78.8	145.3			
225.0	30.0	47.2	17.1		-80.3	-87.5	-74.9	-91.1	-79.4	141.1			
255.0	30.0	47.2	17.1		-72.4	-88.7	-90.6	-91.0	-79.0	140.3			
285.0	30.0	47.2	17.2		-68.2	-87.7	-91.0	-91.6	-79.5	146.1			
315.0	30.0	47.1	17.0		-61.9	-88.7	-86.7	-90.8	-78.2	153.5			
345.0	30.0	47.2	17.1		-80.7	-87.5	-91.3	-83.6	-78.7	135.1			
375.0	30.1	47.1	17.0		-80.0	-89.2	-91.0	-85.2	-76.0	156.9			
405.0	30.0	47.1	17.1		-72.3	-90.2	-90.0	-90.3	-78.8	142.3			
430.0	30.0	47.2	17.1		-78.0	-91.1	-87.9	-90.3	-79.1	129.9			
450.0	30.1	47.2	17.1		-75.8	-89.4	-85.7	-89.9	-77.9	138.7			
512.0	30.0	47.3	17.3		-82.0	-83.6	-89.4	-89.0	-78.6	173.5			
Test Condition 25°C Baseplate													
Freq.	Pin	Pout	Gain @ Pwr		2nd Harm.	3rd Harm.	4th Harm.	5th Harm.	In-Band	DC	Rx Gain	Rx NF	Rx IP3
MHz	dBm	dBm	dB		-dBc	-dBc	-dBc	-dBc	Spurs dBc	(W)	dB	dB	dB
30.0	30.0	47.4	17.4		-77.4	-83.8	-90.1	-90.3	-78.3	140.8	14.4	5.1	10.4
40.0	30.0	47.1	17.1		-76.5	-80.2	-91.3	-91.0	-78.4	139.1	14.4	4.1	13.7
50.0	30.1	47.2	17.1		-75.9	-83.4	-92.2	-91.9	-78.4	129.6	13.9	4.0	15.0
60.0	30.0	47.3	17.3		-77.0	-84.4	-92.6	-81.2	-79.0	132.1	13.6	3.9	15.1
70.0	30.0	47.4	17.4		-68.5	-88.3	-91.2	-89.4	-78.6	125.1	13.5	3.6	11.9
80.0	30.0	47.3	17.3		-69.6	-86.9	-90.9	-91.9	-79.0	115.3	13.5	3.5	14.6
88.0	30.0	47.3	17.3		-70.5	-89.9	-91.6	-92.2	-78.4	115.6	13.4	3.4	15.1
118.0	30.1	47.3	17.3		-68.3	-87.5	-87.3	-91.6	-77.9	141.1	13.4	3.3	13.2
174.0	30.0	46.4	16.4		-71.6	-72.1	-90.3	-84.5	-78.9	150.6	13.0	3.4	12.8
225.0	30.0	47.2	17.2		-81.1	-87.7	-75.1	-91.4	-79.2	143.9	12.9	3.3	11.5
255.0	30.0	47.3	17.3		-73.5	-86.7	-91.3	-91.5	-78.2	144.7	12.9	3.5	13.5
285.0	30.0	47.3	17.2		-68.2	-86.3	-90.6	-91.2	-78.1	150.3	12.7	3.2	13.4
315.0	30.0	47.3	17.3		-63.3	-87.6	-87.3	-90.7	-79.0	161.5	12.5	3.4	13.5
345.0	30.0	47.4	17.3		-80.5	-88.2	-91.4	-85.0	-79.6	145.3	12.2	3.7	15.0
375.0	30.0	47.3	17.2		-78.8	-89.1	-90.8	-85.9	-79.1	161.2	12.1	3.7	14.8
405.0	30.0	47.2	17.2		-71.3	-90.6	-90.9	-90.0	-78.7	143.3	12.0	3.5	15.2
430.0	30.0	47.3	17.3		-77.1	-90.7	-91.2	-90.3	-79.5	134.4	11.7	3.5	15.1
450.0	30.0	47.3	17.3		-73.7	-88.4	-87.8	-89.9	-79.8	144.7	11.5	3.9	14.5
512.0	30.0	47.3	17.3		-81.6	-84.4	-89.0	-89.5	-77.9	174.7	11.1	3.7	14.4
Test Condition 65°C Baseplate													
Freq.	Pin	Pout	Gain @ Pwr		2nd Harm.	3rd Harm.	4th Harm.	5th Harm.	In-Band	DC			
MHz	dBm	dBm	dB		-dBc	-dBc	-dBc	-dBc	Spurs dBc	(W)			
30.0	30.0	47.2	17.2		-73.1	-88.7	-90.7	-91.7	-79.0	137.6			
40.0	30.0	47.2	17.2		-75.9	-82.5	-91.4	-90.9	-77.7	143.0			
50.0	30.0	47.2	17.2		-76.2	-84.0	-92.1	-92.2	-79.0	133.8			
60.0	30.1	47.3	17.3		-77.4	-85.8	-92.5	-79.2	-79.4	137.6			
70.0	30.0	47.4	17.4		-71.0	-90.4	-91.7	-88.5	-79.5	132.1			
80.0	30.0	47.4	17.4		-69.7	-85.9	-89.2	-91.8	-78.0	117.8			
88.0	30.0	47.3	17.3		-70.7	-92.2	-91.5	-91.7	-79.8	118.7			
118.0	30.0	47.4	17.4		-68.5	-86.4	-86.9	-92.3	-78.4	144.0			
174.0	30.0	46.4	16.4		-71.8	-73.1	-90.4	-86.5	-78.6	150.4			
225.0	30.0	47.2	17.2		-82.2	-87.3	-74.6	-91.3	-79.4	144.9			
255.0	30.1	47.4	17.3		-74.1	-87.7	-91.8	-91.0	-79.2	147.8			
285.0	30.0	47.4	17.4		-68.4	-85.4	-91.3	-90.6	-79.2	156.5			
315.0	30.1	47.3	17.2		-64.2	-87.0	-86.9	-90.8	-79.0	166.1			
345.0	30.0	47.2	17.2		-80.3	-88.5	-90.9	-88.3	-80.2	143.6			
375.0	30.1	47.2	17.1		-82.4	-89.0	-90.4	-89.2	-79.9	161.9			
405.0	30.0	47.3	17.3		-71.3	-90.4	-91.0	-90.4	-80.0	143.7			
430.0	30.0	47.2	17.2		-76.8	-90.5	-90.3	-90.5	-79.5	135.4			
450.0	30.0	47.3	17.3		-76.4	-86.0	-89.5	-89.8	-79.9	146.6			
512.0	30.0	47.2	17.2		-82.0	-85.9	-88.8	-90.0	-79.3	171.5			

Case Outline/Dimensions



"POWER CONNECTOR TABLE"		
PIN	SIGNAL NAME	ADDITIONAL INFORMATION
A	PA_V_BATT	—
B	GND	—
C	SERIAL_DATA_OUT	USED FOR FACTORY TEST
D	GND	—
E	PA_V_BATT	—
F	SERIAL_DATA_IN	USED FOR FACTORY TEST

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