

FRONTGRADE

10235-50000

SIMOPS High Band Power Amplifier 10235-50000

225-512MHz/1250-2600MHz Power Amplifier

1/9/2026 | Version #1.0

Product Description

The SIMOPS High Band Power Amplifier delivers 20W output power across 225-512MHz and 1250-2600MHz. This design is well suited for multiple military and commercial platforms requiring high linearity, small form factor, and light weight requiring 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
- 225-2600MHz (20W), Failsafe Bypass
- DC input from 10-36V, 85W 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	225-512MHz, 1250-2600 MHz Failsafe Bypass
RF Input Power	0.5 W minimum 10W maximum
RF Output Power	20W
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	5dB +/- 2dB (225-2600MHz), default 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	85W nominal
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

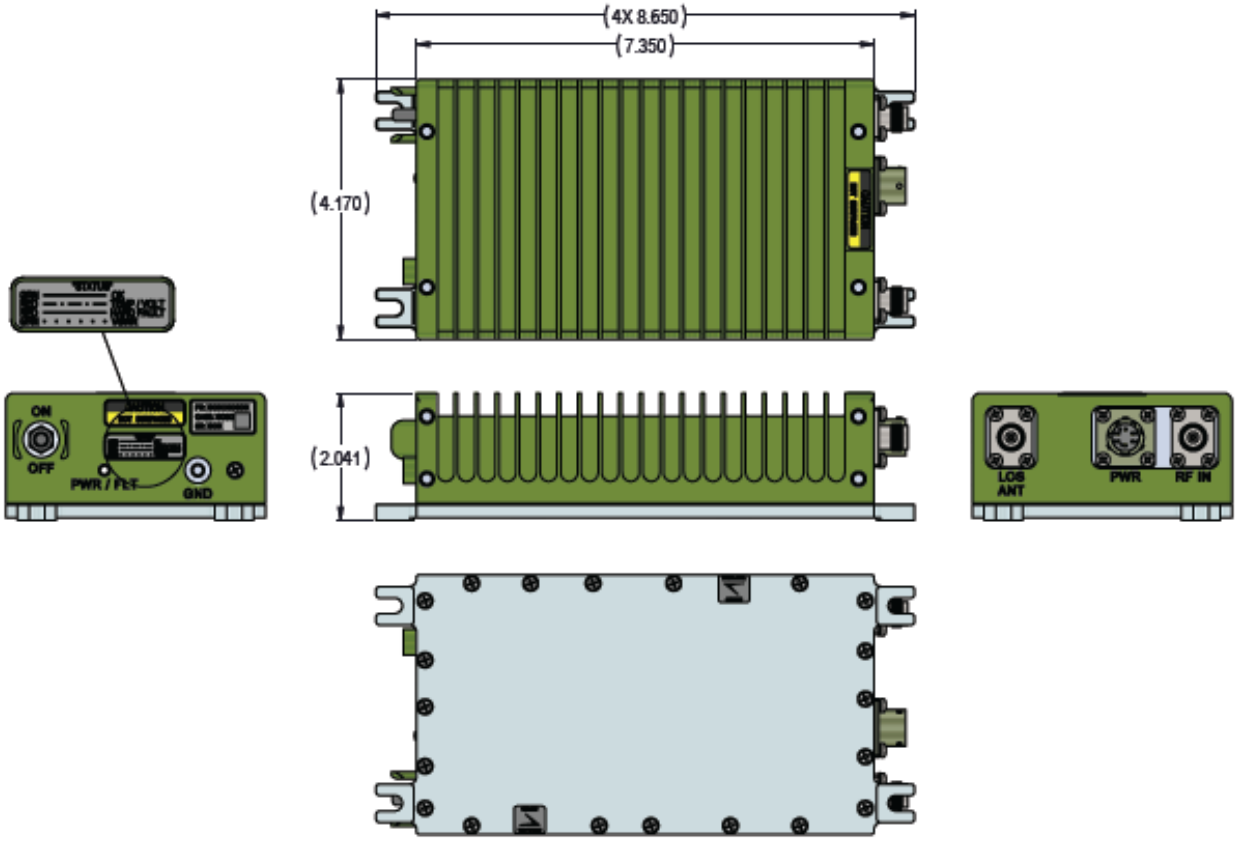
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Typical Performance Data

Test Condition -40°C													
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)			
225	30.0	43.3	13.3		-75.8	-90.8	-90.4	-90.6	-73.6	75.6			
255	30.0	43.3	13.3		-78.8	-89.2	-93.1	-92.0	-67.7	77.8			
285	30.0	43.3	13.4		-76.4	-88.4	-92.7	-93.2	-76.8	70.6			
315	30.0	43.4	13.4		-76.2	-93.5	-92.5	-88.9	-67.4	78.8			
345	30.0	43.4	13.4		-81.5	-83.6	-92.6	-86.5	-72.8	79.6			
375	30.0	43.4	13.5		-74.4	-84.5	-90.5	-92.7	-75.3	95.8			
405	30.0	43.4	13.4		-71.0	-92.2	-81.8	-92.4	-75.6	100.3			
430	30.0	43.3	13.3		-70.2	-87.7	-92.1	-91.9	-72.2	97.8			
450	30.0	43.4	13.4		-66.2	-86.3	-85.2	-85.6	-72.6	103.3			
512	30.0	43.4	13.4		-66.8	-84.8	-91.3	-94.6	-71.8	103.3			
1250	30.0	43.2	13.2		-72.1	-74.1	-89.7	-89.9	-76.5	161.1			
1320	30.0	43.4	13.4		-61.2	-78.1	-89.7	-88.4	-81.5	137.5			
1390	30.0	43.3	13.3		-65.3	-86.1	-88.8	-86.1	-71.2	111.3			
1755	30.0	43.4	13.4		-76.8	-87.6	-86.7	-86.8	-76.9	129.7			
1800	30.0	43.1	13.1		-78.9	-88.4	-86.1	-86.1	-77.6	138.5			
1850	30.0	43.1	13.1		-80.4	-88.2	-85.9	-86.4	-75.6	116.7			
1950	30.0	43.2	13.2		-88.6	-85.5	-85.0	-86.4	-73.5	105.7			
2150	30.0	43.2	13.2		-83.2	-88.2	-86.0	-86.5	-75.9	143.1			
2300	30.0	43.1	13.0		-88.9	-86.5	-83.1	-86.5	-78.0	135.3			
2600	30.0	43.1	13.1		-82.6	-83.9	-86.2	-84.5	-79.9	126.3			
Test Condition 25°C													
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
225	30.0	43.3	13.2		-77.2	-88.5	-90.2	-90.9	-72.3	75.0	16.2	3.2	13.6
255	30.0	43.1	13.1		-78.9	-87.7	-94.8	-94.8	-70.0	75.9	16.2	3.4	15.5
285	30.0	43.2	13.2		-78.7	-86.6	-91.7	-94.0	-75.2	68.3	16.2	3.3	15.3
315	30.0	43.3	13.3		-77.0	-95.7	-94.9	-90.5	-69.8	76.1	16.2	3.4	15.5
345	30.0	43.3	13.3		-85.6	-84.3	-94.7	-89.8	-73.6	76.4	16.2	3.4	15.4
375	30.0	43.3	13.2		-76.0	-91.5	-94.2	-94.4	-73.9	90.7	16.3	3.4	15.6
405	30.0	43.2	13.2		-72.1	-91.2	-84.7	-92.9	-73.3	95.7	16.4	3.8	15.2
430	30.0	43.3	13.3		-71.0	-85.0	-91.5	-89.9	-69.8	99.4	16.5	3.4	15.6
450	30.0	43.3	13.3		-62.2	-80.5	-88.8	-88.5	-70.8	105.2	16.6	3.5	13.9
512	30.0	43.3	13.3		-66.7	-81.8	-93.6	-92.7	-72.1	104.7	16.7	3.2	12.8
1250	30.0	43.1	13.1		-70.0	-75.2	-91.9	-94.4	-79.4	160.7	15.9	3.6	11.2
1320	30.0	43.3	13.3		-61.8	-77.4	-86.7	-89.6	-81.8	152.5	15.8	3.7	10.4
1390	30.0	43.2	13.2		-64.5	-88.5	-90.8	-88.0	-74.0	117.3	15.5	3.7	10.9
1755	30.0	43.1	13.1		-77.5	-86.5	-88.2	-88.1	-73.6	132.1	15.4	3.8	12.3
1800	30.0	42.9	12.9		-80.8	-90.4	-87.4	-88.3	-72.6	137.7	15.4	3.8	12.1
1850	30.0	43.0	12.9		-81.6	-87.7	-88.0	-88.8	-72.2	115.9	15.4	3.8	12.8
1950	30.0	43.0	13.0		-90.3	-90.1	-87.6	-88.9	-73.9	111.4	14.8	4.1	13.0
2150	30.0	43.1	13.1		-85.8	-90.3	-87.9	-88.5	-71.5	143.0	14.9	4.0	10.5
2300	30.1	43.0	13.0		-90.5	-88.0	-80.3	-88.4	-72.5	148.3	14.1	4.3	11.8
2600	30.1	42.9	12.8		-82.3	-86.6	-84.9	-85.8	-75.9	140.0	12.1	5.5	12.4
Test Condition 65°C													
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)			
225	30.0	43.3	13.3		-76.6	-87.2	-90.6	-90.0	-73.2	76.5			
255	30.1	43.4	13.3		-78.8	-90.2	-95.3	-94.8	-71.8	78.7			
285	30.0	43.4	13.4		-79.3	-88.0	-90.3	-94.6	-74.8	70.1			
315	29.9	43.4	13.5		-76.3	-95.5	-95.2	-91.4	-74.0	76.5			
345	30.0	43.5	13.4		-88.9	-84.1	-92.0	-89.0	-73.6	76.8			
375	30.0	43.5	13.5		-74.5	-91.8	-92.0	-94.9	-75.8	88.6			
405	30.0	43.4	13.4		-69.9	-90.1	-87.5	-93.6	-75.0	93.4			
430	30.0	43.4	13.4		-70.3	-85.6	-90.5	-90.0	-72.3	100.5			
450	30.0	43.4	13.4		-60.6	-78.4	-93.2	-78.7	-74.7	108.5			
512	30.0	43.5	13.4		-66.2	-82.7	-92.3	-93.1	-73.6	106.9			
1250	30.0	43.2	13.2		-68.6	-74.3	-90.5	-91.8	-80.6	162.2			
1320	30.0	43.1	13.1		-62.0	-77.5	-86.2	-89.8	-81.5	150.4			
1390	30.0	43.3	13.3		-63.6	-87.5	-90.8	-88.0	-74.7	122.2			
1755	30.0	43.2	13.1		-77.2	-89.9	-87.1	-90.2	-76.3	138.6			
1800	30.1	43.1	13.0		-80.8	-90.4	-87.5	-88.2	-76.3	142.4			
1850	30.0	43.1	13.1		-80.3	-90.7	-87.3	-88.3	-72.5	119.0			
1950	30.0	43.1	13.0		-89.4	-89.0	-87.9	-88.6	-76.6	118.4			
2150	30.0	43.3	13.3		-87.4	-90.2	-88.0	-88.9	-74.7	149.1			
2300	30.0	43.1	13.0		-90.1	-88.3	-80.5	-88.2	-73.8	158.1			
2600	30.0	42.3	12.3		-81.1	-85.0	-87.2	-85.7	-77.9	135.7			

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Case Outline/Dimensions



Connector Pinout

"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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