

# thinkRF™ H1000A

## Multi-Band Cellular RF Power Amplifier



## Mission Critical RF Power Amplifier 715 MHz to 2.7 GHz



### COMPACT & LIGHT DESIGN

267 x 227 x 200 mm  
(10.5" x 8.9" x 7.9")  
< 5 kg (< 11 lbs)



### FULLY INTEGRATED

Regulated power supply,  
surge suppressor and  
battery interface



### SMART

Microprocessor to aid in  
set-up and diagnostics



## OVERVIEW

### H1000A Multi-Band Cellular RF Power Amplifier

Smart, compact, fanless, broad band coverage, networked and remotely deployable RF power amplifier

1

715 MHz - 2.7 GHz

2

10 Watts  
RF Power Output

3

23 - 43 dB  
Power Gain

4

Dual-band architecture  
(High/Low band)

5

IP66 rated enclosure &  
sealed ports

6

Compact & Light  
267 x 227 x 200 mm  
(10.5" x 8.9" x 7.9")  
< 5 kg (< 11 lbs)



## Smart, rugged, compact and fully integrated RF power amplifier that covers 715 MHz to 2.7 GHz

The thinkRF H1000A RF power amplifier assembly is a ruggedized RF power amplifier assembly that supports operation from a 12V vehicular power system and provides regulation of the incoming power as well as surge protection.

The H1000A provides complete coverage where you need it and when you need it! The H1000A covers mobile wireless frequency bands from 715 MHz - 2.7 GHz. It is fully integrated: regulated power supply, surge suppressor and battery interface. It can replace several RF power amplifiers to cover a wideband.

The H1000A is compact and light. It's fanless, so it's silent. It's designed for mounted (vehicle) or dismounted

(portable/man-mounted) use. It can be operated by 12V vehicle power or over-the-counter mountable V-mount camera battery. Camera batteries can easily be stacked up based on power requirement of the application. This provides an uninterrupted operational use for Electronic Warfare (EW) or Signal Intelligence (SIGINT) applications.

The H1000A is smart: the built-in microprocessor simplifies set-up and diagnostics. The Ethernet port allows access to diagnostic functions like monitoring the input voltage & current, measurement of internal unit temperatures and the level of the RF input power.



# FEATURES & BENEFITS

## H1000A Multi-Band Cellular RF Power Amplifier

- 1 Dual-band architecture (High/Low band)
- 2 Covers mobile wireless frequency bands that occur between 715 MHz - 2.7 GHz
- 3 RF operating power output: 10 Watts
- 4 Power Gain: Up to 43 dB
- 5 Networkable: Ethernet connection
- 6 Single TNC RF input port
- 7 Dual TNC (frequency-banded) output ports
- 8 IP66 rated enclosure and sealed ports
- 9 LED indicators for power & status  
Stealth mode to turn off LEDs
- 10 Power detectors for RF drive detection
- 11 Web-enabled power control
- 12 Power options: Vehicle power or V-mount batteries
- 13 Fanless: Silent, high reliability & low maintenance



# APPLICATIONS

## H1000A Multi-Band Cellular RF Power Amplifier

The thinkRF H1000A is designed for discrete mission-critical operations. It's a compact, rugged, fanless, networked and remotely deployable multiband cellular RF power amplifier.

Hybrid-mode operation enables an uninterrupted power source when switching from vehicle power to battery power and back. The hot swappable battery feature allows the users to swap one battery at a time.

The thinkRF H1000A's versatile power options make it a perfect asset for use cases in:

- 1 Homeland security
- 2 Electronic countermeasures
- 3 Emergency communications
- 4 Electronic attack
- 5 TSCM (non-linear junction detection)
- 6 Rural communications / Portable cellular base station deployments



## Specifications

Frequency Band of Operation	Band Designation	Transmit Frequencies	Units	Comments
Low Band	Band 29	717 – 728	MHz	SDL
Low Band	Band 12	729 – 746	MHz	FDD
Low Band	Band 17	734 – 746	MHz	FDD
Low Band	Band 13	746 – 756	MHz	FDD
Low Band	Band 28	758 – 803	MHz	FDD
Low Band	Band 26	859 – 894	MHz	FDD
Low Band	Band 5	869 – 894	MHz	FDD
Low Band	Band 8	925 – 960	MHz	FDD

High Band	Band 3	1805 – 1880	MHz	FDD
High Band	Band 2	1930 – 1990	MHz	FDD
High Band	Band 25	1930 – 1995	MHz	FDD
High Band	Band 4	2110 – 2155	MHz	FDD
High Band	Band 1	2110 – 2170	MHz	FDD
High Band	Band 66	2110 – 2200	MHz	FDD
High Band	Band 40	2300 – 2400	MHz	TDD
High Band	Band 38	2570 – 2620	MHz	TDD
High Band	Band 41	2496 – 2690	MHz	TDD
High Band	Band 7	2620 – 2690	MHz	FDD
High Band	Wi-Fi	2400 - 2500	MHz	-

### Physical Ports

RF In	TNC	Covers entire frequency range
Tx Port 1	TNC	Covers the “Low Band” (LB)
Tx Port 2	TNC	Covers the “High Band” (HB)

Electrical Specifications	Min	Typical	Max	Units	Comments
RF Power Output			20	Watts	@ 3db
RF Power Output (Operating)			10	Watts	CW tone
RF Power Gain	23		43	dB	0-20 dB prog. Atten.
Small Signal Gain Flatness			± 1.5	dB	Any 100 MHz band
Input Return Loss (715 - 2700 MHz)		-13	-10		
Two-Tone IM3 (LB)		-37	-30	dBc	Pout = 8W, 10 MHz spacing



## Specifications

Electrical Specifications	Min	Typical	Max	Units	Comments
Two-tone IM3 (HB, 1800 - 2400 MHz)		-30	-25	dBc	Pout = 8W, 10 MHz spacing
Two-tone IM3 (HB, 2700 MHz)		-20		dBc	Pout = 6W, 10 MHz spacing
Power Consumption (LB=HB=ON)		100	120	Watts	Pout = 2x10W (CW)
Power Consumption (LB=ON)		65		Watts	Pout = 10W (CW)
Power Consumption (HB=ON)		50		Watts	Pout = 10W (CW)
Quiescent Power		30		Watts	No RF input

### Power

Voltage	10.5-16 Volts DC
Surge Protection	ISO 16750-2 (sec 4.6.4) ISO 16750-2 (sec 4.3.0) ISO 16750-2 (sec 4.6.3)

### Physical

Operating Temperature Range	-10°C to +55°C
Storage Temperature Range	-30°C to +85°C
Size (W x L x H)	267 x 227 x 200 mm (approximately) (10.5" x 8.9" x 7.9")
Weight	no V-mount adapters 5.1 kg (11.24 lbs) two V-mount adapters 5.8 kg (12.79 lbs)
LED Indicator	POWER - Green / Yellow STATUS - Green / Yellow / Red

### Regulatory Compliance

RoHS Compliance	RoHS/RoHS 2 (European Union)	
REACH	Per Regulation (EC) No 1907/2006 of the European Parliament	
Marks	CE, CSA, FCC	
EMC Directive	EN 61326-1:2013, FCC PT15 & IEC-003	Electromagnetic Compatibility
Low Voltage Directive	IEC/EN 61010-1, CSA/UL 61010-1	

## Ordering Information

Base Units	Part Number	Description
H1000A	TBD	HPA-1000A RF power amplifier assembly

CONTACT US TODAY!

# thinkRF™ H1000A

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Intellectual Property - Patents

The thinkRF H1000A product line are protected by patents, (US8,675,781, US9,197,260, US9,350,404, US8,886,794) in the United States. This information is provided to satisfy the patent marking provisions including, but not limited to, the patent marking provisions of the America Invents Act (AIA) and is intended to serve as notice under 35 U.S.C. § 287(a), as amended by Section 16 of the AIA. Additional patents may be pending in the United States and/or elsewhere.

 **thinkRF™**  
monitor. detect. analyze.

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