


Defense & Aerospace

RFHIC PRODUCT CATALOGUE

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 **RFHIC**[®]

About RFHIC

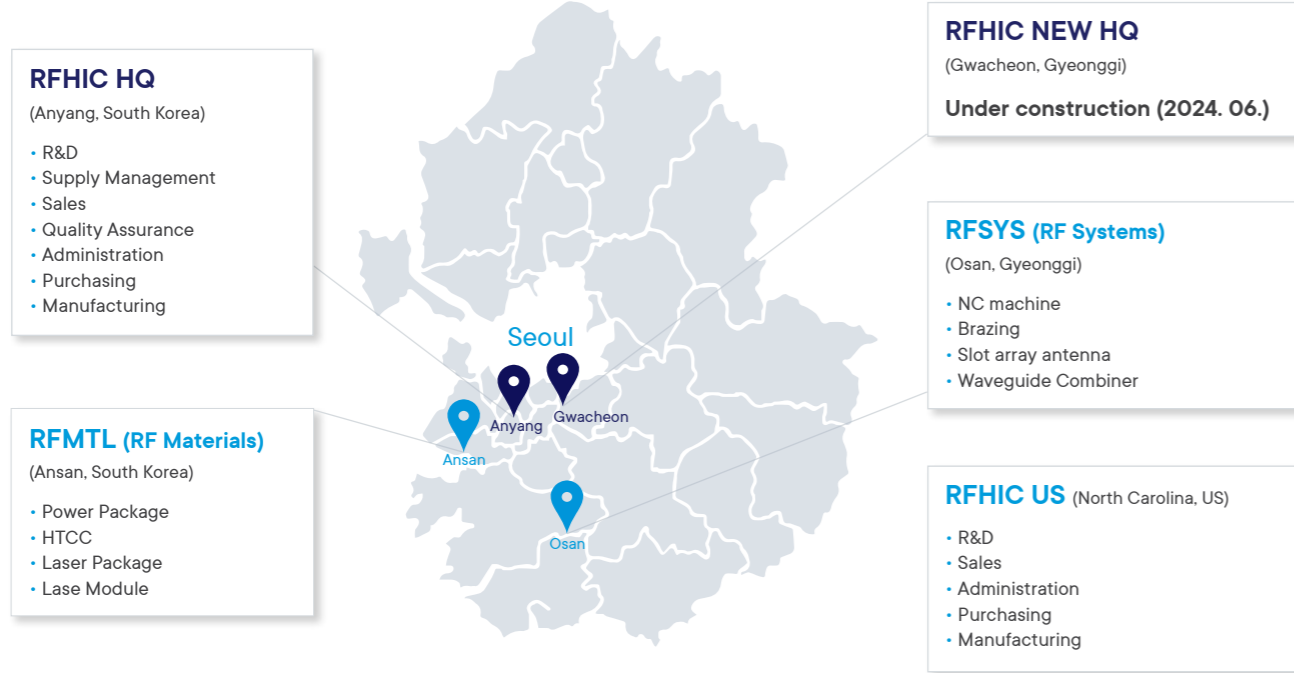
RFHIC is a global leader in designing and manufacturing GaN-on-SiC components for a variety of applications such as Radar, RF energy, and Telecommunications. In radar technology RFHIC is at the very forefront in providing customers with outstanding solutions for the radar industries' most challenging problems.

Solutions for a variety of applications including: weather radar, military radar, airport surveillance radar and more. Working with RFHIC means you will benefit from our excellence in engineering innovation, efficiency and most importantly our excellence in service.

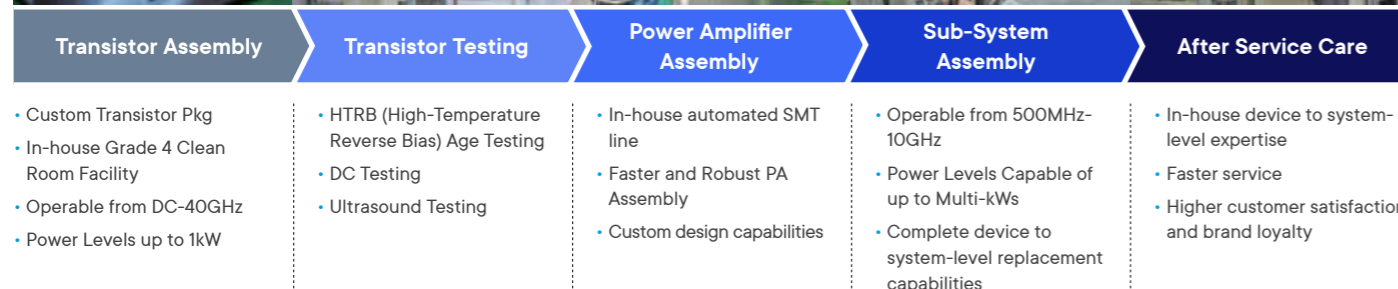
Our ground-breaking innovations in GaN technology will give your products the capabilities to cut through the barrier of the unimaginable into the imaginable. Come step into the future and see how we can exceed your vision.



Company & Affiliates



One Stop Solution



APPLICATION 01

Radar

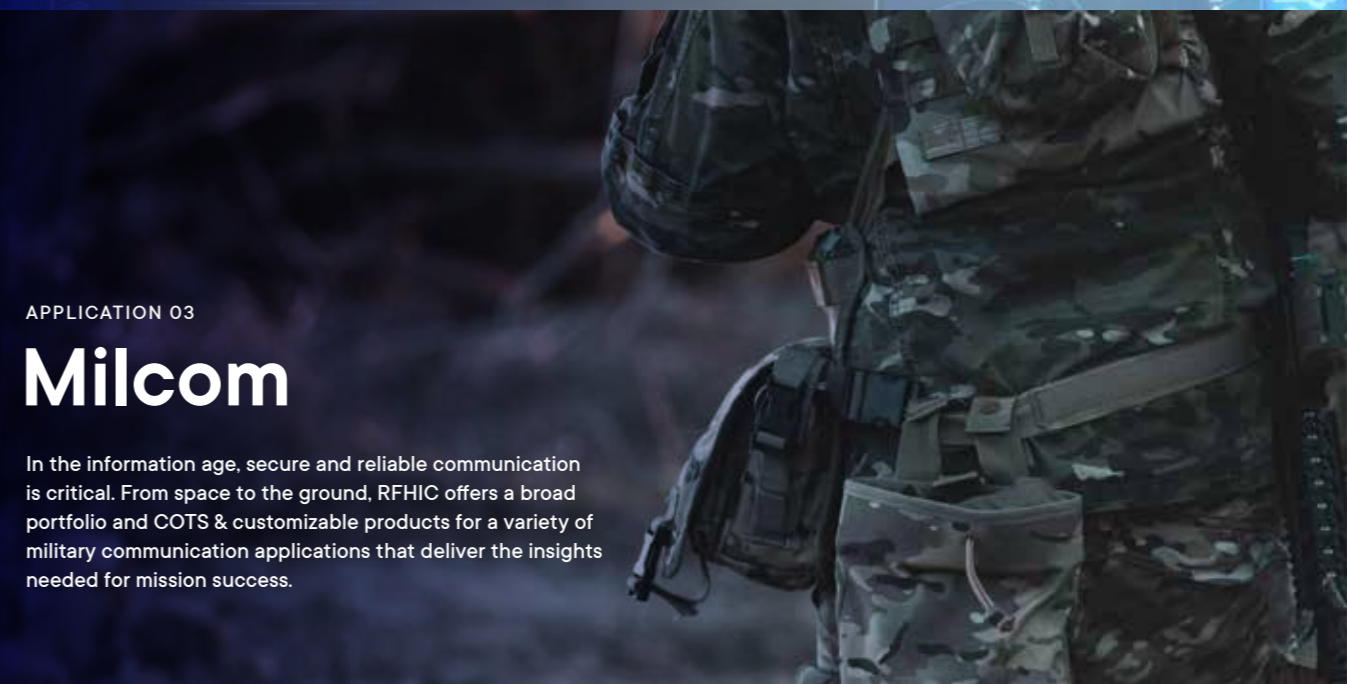
RFHIC is at the very forefront in providing customers with outstanding solutions for the radar industries most challenging problems. We offer a broad product portfolio operable in L/S/C/X bands for a variety of applications including weather radar, defense radar, airport surveillance radar and more.



APPLICATION 02

Electronic Warfare

RFHIC provides a full spectrum of EW capabilities from ground to airborne. With the utilization of RFHIC's GaN technology we can offer our customers with COTS & customizable products operable in L/S/C and X bands.



APPLICATION 03

Milcom

In the information age, secure and reliable communication is critical. From space to the ground, RFHIC offers a broad portfolio and COTS & customizable products for a variety of military communication applications that deliver the insights needed for mission success.

GaN Transmit / Receive Modules

RFHIC's wide portfolio of connectorized power amplifiers covers line of Gallium Nitride (GaN) Transmit and Receive(T/R) modules with a frequency range starting from 1.2 GHz. Our GaN T/R modules utilize our state-of-the-art GaN technology allowing them to provide excellent output power and efficiency for radar applications.

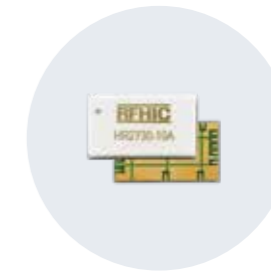
Compactly designed to occupy less space, making them the perfect solution for all AESA radar applications. Customizable solutions are available upon request.



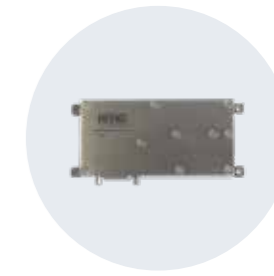
C-band TRM
RFMR57-CTRM-020SP-500A-SM



L-band TRM
RFMR13-LTRM-250-200B



S-band TRM
HR3135-10A

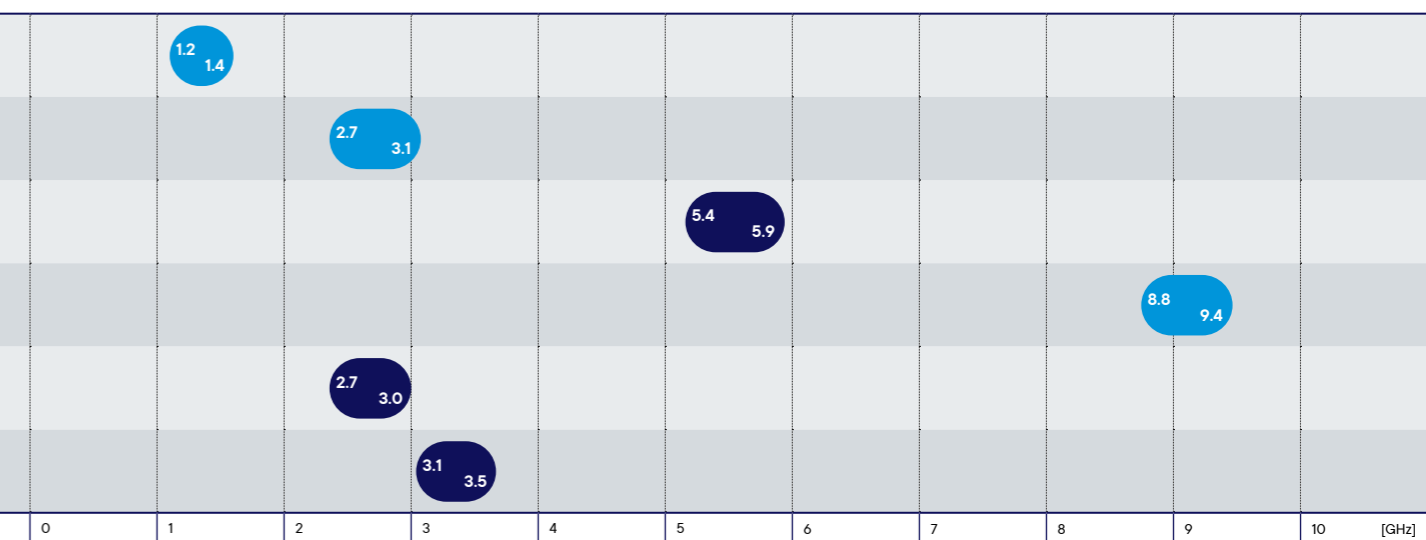


X-band TRM
RRM8894010-M1D

Part Number	Freq. [GHz]		TX Pout	RX NF	RX Gain	TX Gain	Duty	Pulse Width	Attenuator	Phase Shifter
	Min	Max	[W]	[dB]	[dB]	[dB]	[%]	[us]		

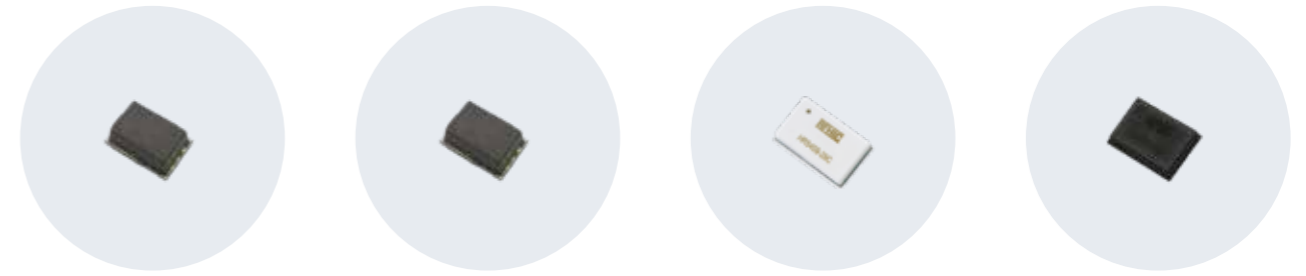
RFMR13-LTRM-250-200B	1.2	1.4	250	2.5	45	52	10	2000	6BIT, 31.5dB	6BIT, 360deg
RFMR29-SFEM-200-400A	2.7	3.1	200	3	28	59	10	100	-	-
RFMR57-CTRM-020SP-500A-SM	5.4	5.9	20	3.5	25	40	10	50	6BIT, 31.5dB	6BIT, 360deg
RRM8894010-M1D	8.8	9.4	10	4	31	35	20	100	6BIT, 31.5dB	6BIT, 360deg
HR2730-10A	2.7	3.0	15	3.2	22	25	10	100	-	-
HR3135-10A	3.1	3.5	12.5	3.5	19	21	10	100	-	-

Frequency



GaN SMD Modules

RFHIC offers cutting edge GaN SMD modules fabricated for radar applications. Our cutting-edge GaN SMD Modules offer excellent output power, high gain and high efficiency. Customizable solutions are available upon request.



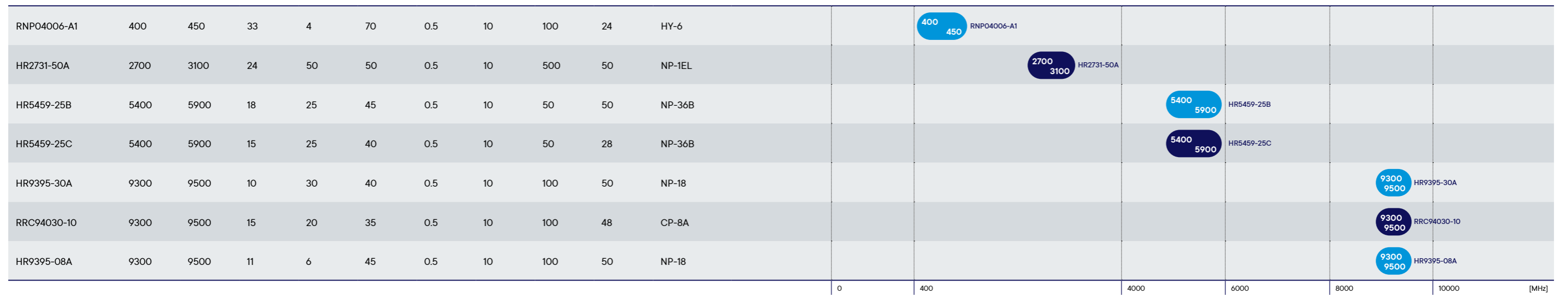
4W SMD Module
RNP04006-A1

20W X-band-SMD Module
RRC94030-10

25W C-band SMD Module
HR5459-25C

50W S-band SMD Module
HR2731-50A

Part Number	Freq. [MHz]		Gain	Pout	Eff.	Pulse Droop	Duty	Pulse Width	Vds	Package
	Min	Max	[dB]	[W]	[%]	[dB]	[%]	[us]	[V]	



Up Down Converter

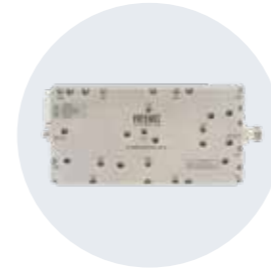
RFHIC's frequency converters are designed to offer multi-function features in one single part. Our multi-functional converters are designed to meet the demanding performance, functionality, and cost goals of current and next-generation commercial/military communication (MILCOM) applications.

Converter Type	Part Number	Input Freq		Output Freq		Ch BW	Gain Control	Gain Step	OP1dB	NF[dB]@ Max Gain	Spurious	Power Consumption	Dimension	Display & Control
		[MHz]	[MHz]	[MHz]	[MHz]									
Up Converter (IF [70 / 140] → RF)	RSF5767-30C0S	Center Selection		Min	Max	36 / 72	0 ~ 30	0.25dB	15	12	<-55	50Watt @90 ~ 264VAC 1Phase 50 / 60Hz	483 x 450 x 44	LCD, LED, Keypad RS232, RS422, LVDS, Ethernet
		70 / 140	5700	6700										
Down Converter (RF → IF [70 / 140])	RSF3442-40C0S	Min	Max	Center Selection		36 / 72	10 ~ 40	0.25dB	15	10	<-55	50Watt @90 ~ 264VAC 1Phase 50 / 60Hz	483 x 450 x 44	LCD, LED, Keypad RS232, RS422, LVDS, Ethernet
		3400	4200	70 / 140										

Module Amplifiers

RFHIC's broad range of connectorized power amplifiers provides users with high breakdown voltage and high efficiency for a variety of radar applications. We offer a wide portfolio of frequency ranges, power levels, for both pulsed and continuous operations. Customizable solutions are available upon request.

Part Number	Freq [MHz]		Gain	Pout	Eff.	Pulse Droop	Duty	Pulse Width	Vds	Dimensions
	Min	Max	[dB]	[W]	[%]	[dB]	[%]	[us]	[V]	[mm]



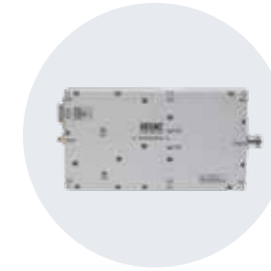
1.2kW, C-band Module Amplifier
RRP54591K2-42



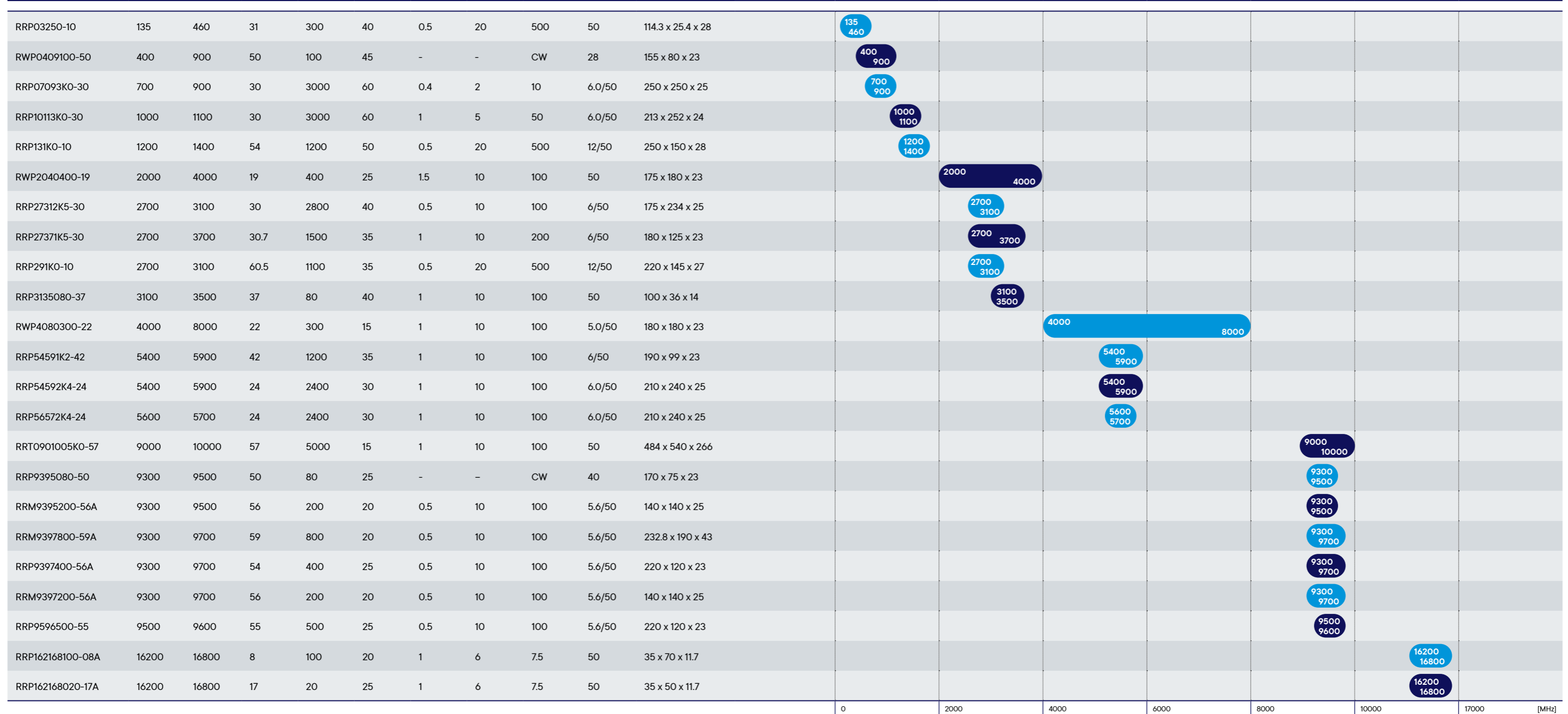
200W, X-band Module Amplifier
RRM9397200-56A



80W, S-band Module Amplifier
RRP3135080-37



500W, X-band Module Amplifier
RRP9596500-55



Transmitter

RFHIC's Solid State Transmitters (SSTXs) provide single form with high reliable and high efficient cabinet for a high-power radar applications. It is an industry standard cabinet design and offers wide options of frequency ranges, power levels, coolings, and so on. Customizable solutions are available upon request.



5kW, S-Band Pulsed Amplifiers
RRK20405KO-680



8.5kW, C-Band Pulsed Amplifiers
RRK56578K5-790



5kW, X-Band Pulsed Amplifiers
RRT92975KO-57



15kW, S-Band Pulsed Amplifiers
RRT273115K-690

Band	Part Number	Freq [MHz]		Bandwidth [MHz]	Pout [W]	Input [dBm]	Gain [dB]	Duty [%]	Pulse Width [us]	Output Type	Voltage [V]	Power Consumption [kW]	Cooling	Dimensions W x H x D [mm]
		Min	Max											
S-Band	RRT273115K-690	2700	3100	400	15000	0	72	10	100	WR284	208VAC, 380VAC 3Phase 60Hz	7	Forced Air	806 x 1805 x 965
	RRK20405KO-680	2000	4000	2000	5000	+15	52	15	120	WRD200	208VAC 3Phase 60Hz	6	Water	800 x 743 x 997
C-Band	RRK40805KO-680	4000	8000	4000	5000	+15	52	15	120	WRD350	208VAC 3Phase 60Hz	15	Water	800 x 921 x 997
	RRK54596KO-780	5400	5900	500	6000	-10	78	10	30	WR187	415VAC 3Phase 50 & 60Hz	5	Forced Air	740 x 816 x 1075
	RRK56578K5-790	5600	5700	100	8500	-10	79	10	100	WR159	415VAC 3Phase 50 & 60Hz	5	Forced Air	740 x 823 x 1075
	RRT545915K-440	5400	5900	500	15000	+28	44	10	100	WR159	50VDC	9	Water	810 x 1010 x 1100
	RRT545930K-440	5400	5900	500	30000	+31	44	10	100	WR159	50VDC	17	Water	810 x 1010 x 1100
X-Band	RRT9397400-560	9300	9700	400	400	0	56	10	100	N-Type(F)	115VAC 1Phase 60Hz	1	Forced Air	482.6 x 88 x 500
	RRT92975KO-57	9200	9700	500	5000	+10	57	10	100	WR90	50VDC	5	Forced Air	482.6 x 266 x 538
	RRT901005KO-57	9000	10000	500	5000	+10	57	10	100	WR90	50VDC	5	Forced Air	482.6 x 266 x 538

Pallet Amps

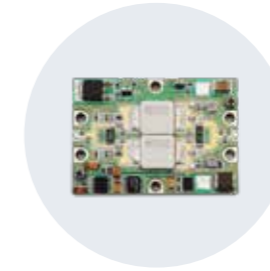
RFHIC's state-of-the-art GaN-on-SiC pallet amplifiers are the industry's leading components for numerous radar applications. Our world-class GaN-on-SiC pallet amplifiers deliver high efficiency and excellent thermal stability across a broad range of power. Customizable solutions are available upon request.

Part Number	Freq. [MHz]		Gain	Pout	Eff.	Pulse Droop	Duty	Pulse Width	Vds	Dimension
	Min	Max	[dB]	[W]	[%]	[dB]	[%]	[us]	[V]	[mm]

RRP1214550-14	1200	1400	14	550	65	0.5	15	500	5/50	86 x 60 x 12
RRP2731330-09	2700	3100	9	400	55	0.5	20	500	50	50 x 25 x 12
RRP2731200-08	2700	3100	8	250	55	0.5	20	500	38	50.8 x 35.8 x 11.1
RRP2735160-35	2700	3500	35	180	40	0.5	20	2000	50	76 x 25 x 14
RRP2731080-39	2700	3100	39	100	42	0.5	20	500	5/50	100 x 36 x 14



100W, S-band Pallet Amplifier
RRP2731080-39



250W, S-band Pallet Amplifier
RRP2731200-08

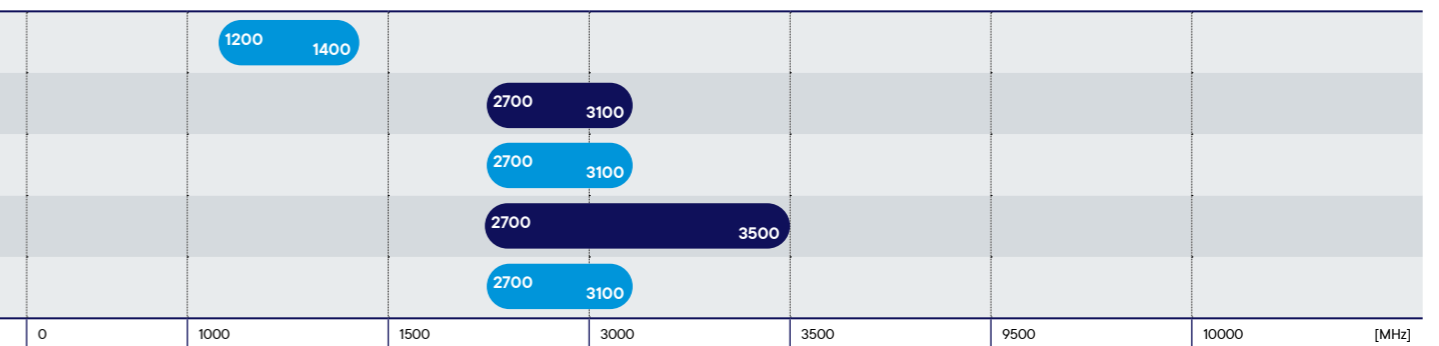


400W, S-band Pallet Amplifier
RRP2731330-09



550W, L-band Pallet Amplifier
RRP1214550-14

Frequency

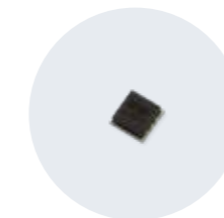


Low Noise Amps

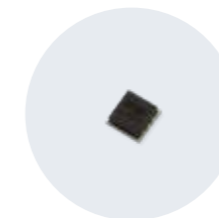
RFHIC's low noise amplifiers for radar applications cover a frequency range of 1200 to 3800 MHz and a gain range from 11.5 to 21. All our LNAs are built using our GaAs pHEMT die, which is attached to a ceramic film substrate. Customizable solutions are available upon request.

Part Number	Freq. [MHz]		Gain	NF	P1dB	OIP3	Vds	Idd	Maximum Input Power	Package
	Min	Max	[dB]	[dB]	[dBm]	[dBm]	[V]	[mA]	[dBm]	

LCL3322-L	2700	3800	21	1.4	27	39	5	190 ~ 250	18	CP-16B
CL1302D-L	1200	1400	18	0.7	20	33	5	100	30	CP-16A
CL2102D-L	1750	2600	14.5	0.7	20	33	5	100	30	CP-16A
CL3102D-L	2700	3500	11.5	1.1	20	33	5	100	30	CP-16A
RRM1214-R1A	1200	1400	37	0.45	18	-	15	200	20	Module



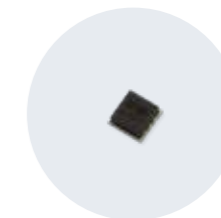
L-band, LNA 1200-1400 MHz
CL1302D-L



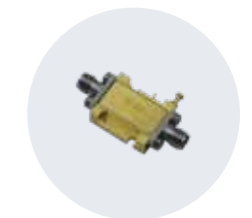
S-band, LNA 1750-2600 MHz
CL2102D-L



S-band, LNA 2700-3500 MHz
CL3102D-L

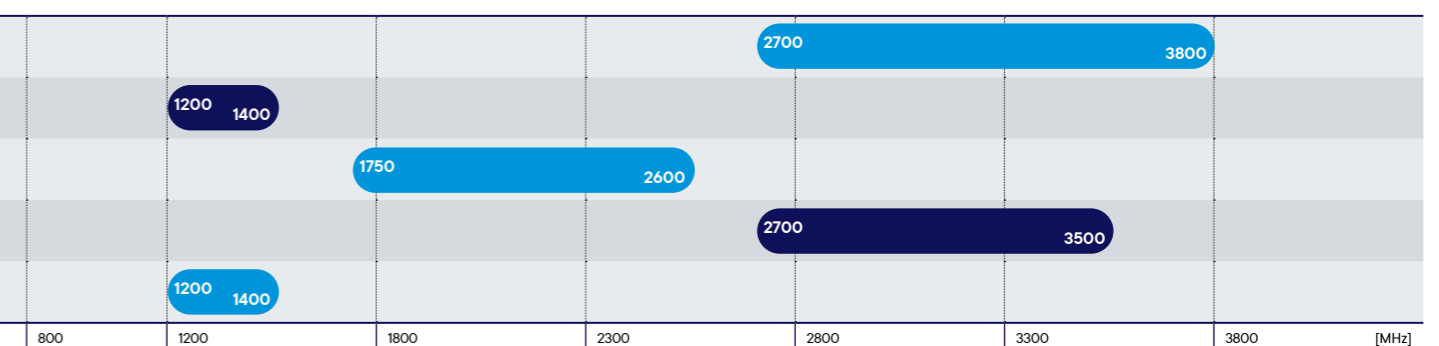


S-band, LNA 2700-3800 MHz
LCL3322-L



L-band, 1200-1400 MHz
RRM1214-R1A

Frequency



Wideband Amplifiers

In the air, on land, and at sea. Our GaN-on-SiC amplifiers offer continuous amplifications with excellent harmonics and exceptional wideband performance for EW defense applications. See and experience how we can meet today's most challenging defense problems with both our standard and custom solutions.



100W, 2-6 GHz
GaN Wideband Power Amplifier
RWP2060080-50



40W, 500-1000 MHz
GaN Wideband Power Amplifier
RWP06040-60

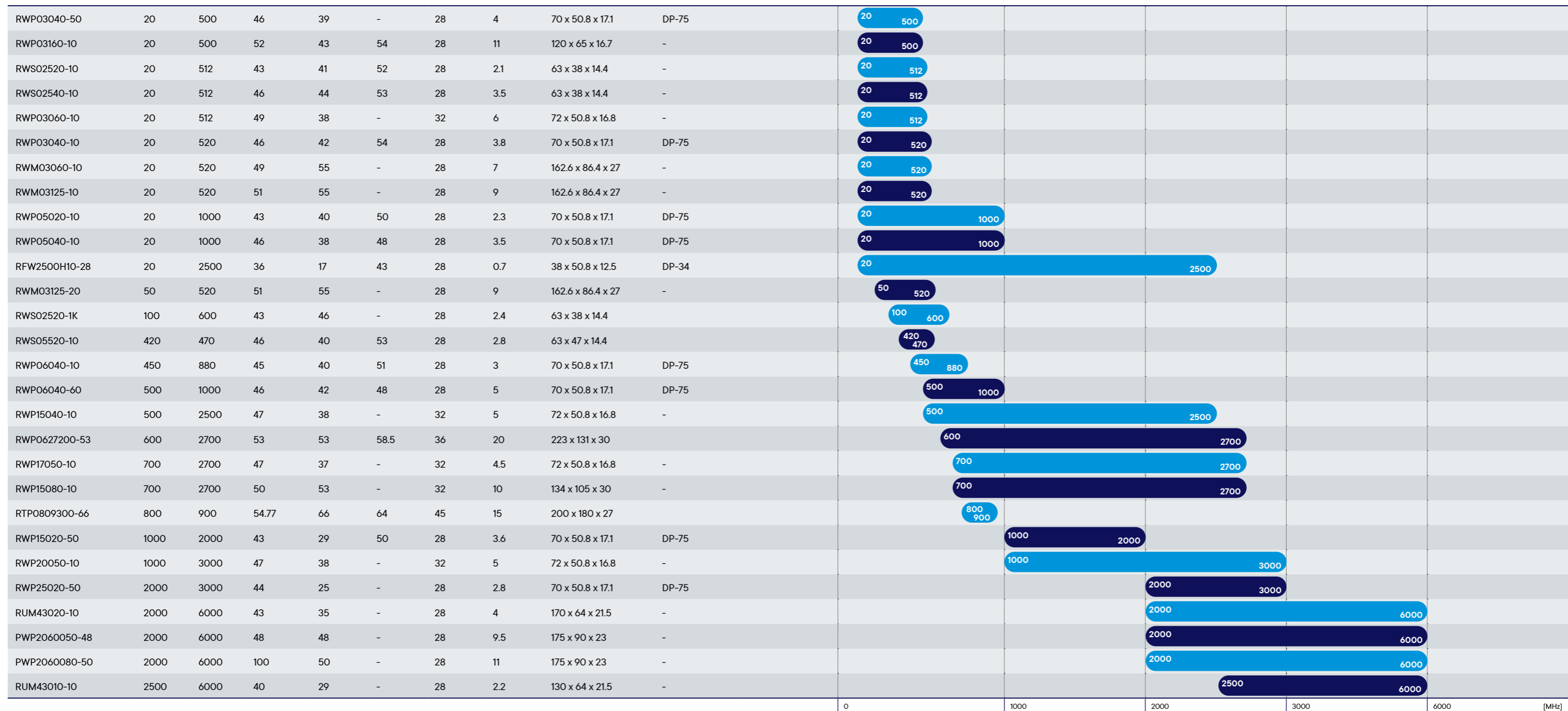


20W, 100-600 MHz
GaN Wideband Power Amplifier
RWS02520-1K



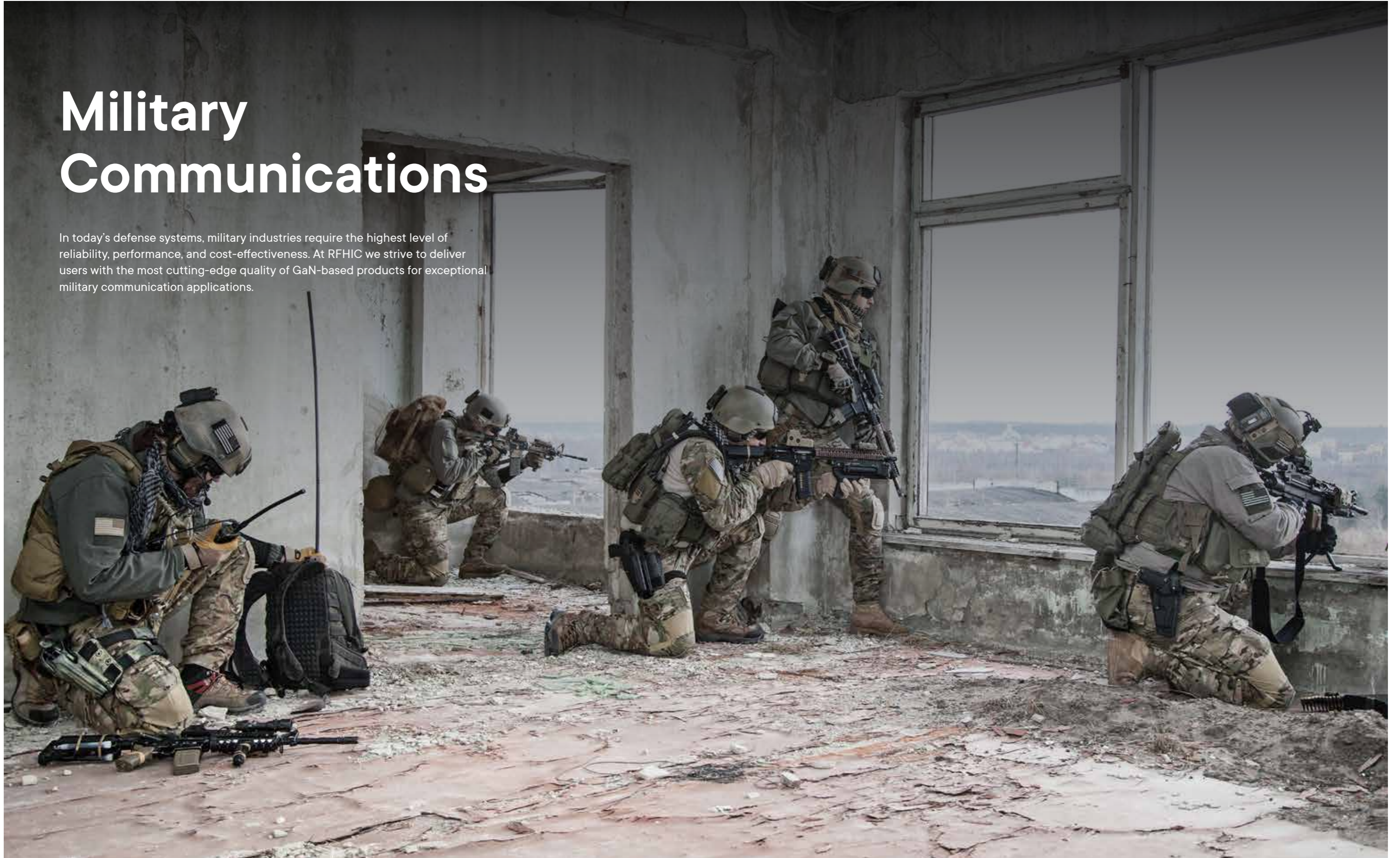
200W, 600-2700 MHz
GaN Wideband Power Amplifier
RWP0627200-53

Part Number	Freq. [MHz]		P3dB (peak)	Gain	OIP3	Vds	Idd	Dimension	Package
	Min	Max	[dBm]	[dB]	[dBm]	[V]	[A]	[mm]	



Military Communications

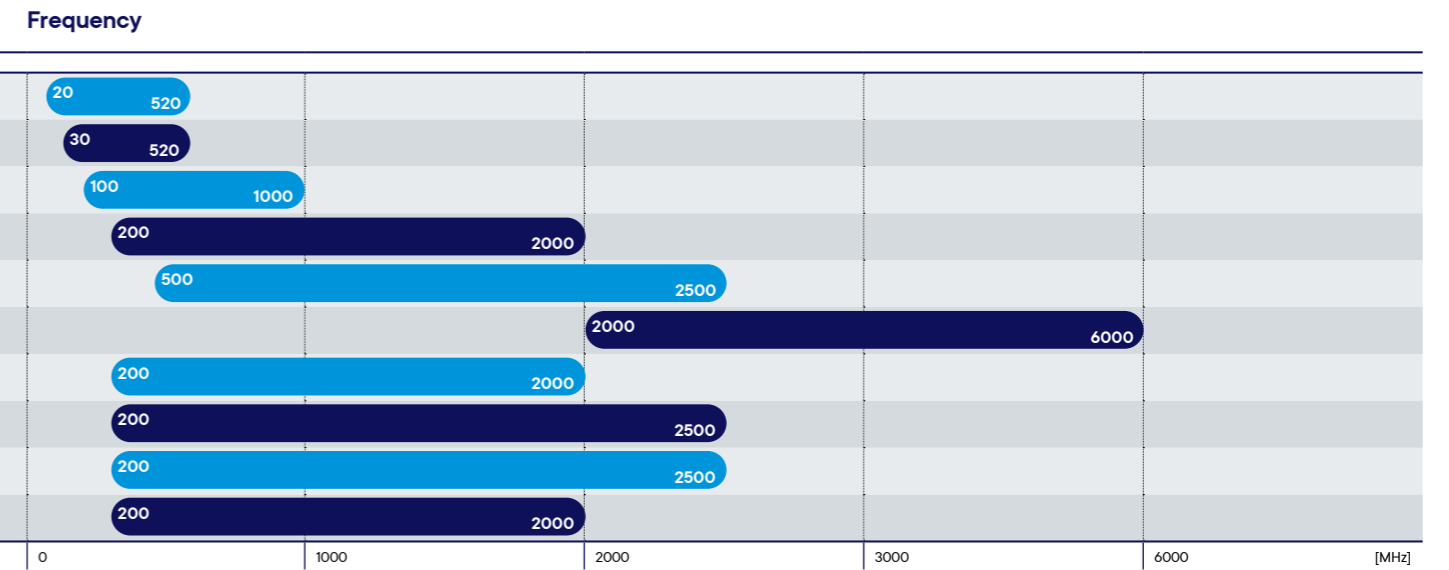
In today's defense systems, military industries require the highest level of reliability, performance, and cost-effectiveness. At RFHIC we strive to deliver users with the most cutting-edge quality of GaN-based products for exceptional military communication applications.



GaN SMD Modules

RFHIC's portfolio of GaN SMD modules support the demanding requirements of today's military communication systems. Our GaN SMD modules utilize our world-class GaN-on-SiC HEMT technology, providing users with a smaller size, weight, higher efficiency, gain, and overall lower costs. At RFHIC we offer users the flexibility to customize their systems to fit their unique requirements.

Part Number	Freq. [MHz]		Output Power	Eff.@P3dB	Power Gain	Vdd	Idd	Dimension
	Min	Max	[W]	[%]	[dB]	[V]	[mA]	[mm]
HM0005-10A	20	520	10	45	30	28	900	NP-1E
TG520-10	30	520	10	60	16	28	600	NP-18
TG1000-10	100	1000	10	50	15	28	700	NP-18
TG2000-10	200	2000	10	50	12	28	600	NP-18
HM0525-10A	500	2500	10	30	20	28	1300	NP-1E
HM2060-10A	2000	6000	10(Psat)	25	16	32	1400	NP-1EL
HM0220-05A	200	2000	5	40	35	24	525	NP-1A
HM0225-05A	200	2500	5	35	35	24	525	NP-1A
HM0225-05B	200	2500	5	31	34	24	670	NP-1A
HM0220-03A	200	2000	3	39	34	18	450	NP-1A



Low Noise Amps

At RFHIC we offer hybrid type, fully matched and low noise amplifiers operating up to 4 GHz. Our hybrid type, low noise amplifiers offer solutions to meet today's military communication systems. Customizable solutions are available upon request.

Part Number	Freq. [GHz]		Gain	Flatness	NF	P1dB	OIP3	Vdd	Idd	Package
	Min	Max	[dB]	[dB]	[dB]	[dBm]	[dBm]	[V]	[mA]	
WLP0640	20	520	19.5	0.8	2.5 ~ 2.9	31	43	12	360	CP-6C
WL0510	1	520	23	1.2	1.4 ~ 2.0	22	33	5	100	CP-16
WL1015-L	50	1000	16	2	1.7	21	35	5	160	CP-16A
WL2215-L	50	2200	15	4	1.7	21	35	5	160	CP-16A
WL2208-L	50	2200	15	4	1.5	20	31	5	100	CP-16A
WL1008-L	50	1000	16	2	1.5	19	31	5	100	CP-16A
WL2205-L	30	2200	15.5	1.2	1.4 ~ 1.7	15	26	5	50	CP-16A

