



Guerrilla RF

Making Better Networks

PRODUCT SELECTION GUIDE

Summer 2019



About

About Guerrilla RF

Guerrilla RF's high-performance RF and Microwave IC products enable greater coverage areas and higher data rates for wireless networks.

Focused on a wide variety of infrastructure and general market applications, our unique products utilize our patented Guerrilla Armor™ technology, expert IC design talents, cutting-edge device technologies and high-capacity supply chain to deliver superior performance.

PRODUCTS	MARKETS						
	 Automotive	 WiFi	 Military	 5G Infrastructure	 Cellular Boosters/DAS	 Wireless Audio	 GPS
Broadband LNAs	■	■	■	■	■	■	□
Failsafe Devices	■	□	■	■	■	■	□
High Frequency Gain Blocks	■	■	■	■	■	□	□
High Linearity Gain Blocks	■	■	■	■	■	■	■
Linear Drivers	■	■	■	■	■	■	■
Linear PAs	■	■	■	■	■	■	■
Low Current LNAs	■	■	■	■	■	■	■
Mixers	□	□	■	□	■	■	□
Saturated PAs	□	□	■	□	□	■	■
Power LNAs	■	■	■	■	■	■	□
Ultra LNAs	■	■	■	■	■	■	■

Making Better Networks



About

Customer Support

Our team of industry veterans are committed to providing detailed, custom applications support through all stages of your product design process from initial prototyping through mass production.

New Products

Please see the Guerrilla RF website for all the latest product information at:

www.guerrilla-rf.com/products/new

NEW!



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**RoHS
compliant**

All products are provided in RoHS compliant lead-free packaging.



Featured Products

LNA/Driver with Bypass

Tuning Range: 0.1 to 3.8 GHz



GRF4142

APPLICATIONS

- Cellular Repeaters and Signal Boosters
- Cellular Infrastructure
- WLAN, ZigBee®

FEATURES

Reference: 3.3 V / 50 mA / 1.9 GHz

- Gain: 15.3 dB
- Evaluation Board NF: 0.90 dB
- OP1dB: 19.3 dBm
- OIP3: 33.0 dBm
- Bypass Mode Gain: -1.9 dB
- Bypass OP1dB: 25.4 dBm
- Bypass OIP2: 43.7 dBm
- Flexible Bias Voltage and Current
- Single Control Logic Input
- Pre-matched to 50 Ω
- Process: GaAs pHEMT

Broadband LNA/Linear Driver

Tuning Range: 0.1 to 3.8 GHz



GRF4002

APPLICATIONS

- Linear Driver Amplifier for High PAR Waveforms Such as LTE and WCDMA
- Small Cells and Cellular Repeaters
- First Stage LNA
- Microwave Backhaul
- Low Voltage Radios

FEATURES

Reference: 5 V / 70 mA / 2.5 GHz

- Evaluation Board NF: 0.85 dB
- Gain: 15.0 dB
- OP1dB: 23.5 dBm
- OIP3: 36.5 dBm
- Flexible Bias Voltage and Current
- Internally Matched to 50 Ω
- Process: GaAs pHEMT

Product	Description	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Package (mm)
GRF4142	Broadband LNA with Bypass	0.1-2.7	3.3 V/ 50 mA/ 1.9 GHz	16.0	0.95	19.0	34.0	1.8-5.0	20-80	1.5 DFN-6
GRF4002	Broadband LNA Linear Driver	0.1-3.8	5 V/ 70 mA/ 2.5 GHz	15.0	0.85	23.5	36.5	1.8-5.0	20-80	1.5 DFN-6



Featured Products

Ultra-Low Noise Amplifier Tuning Range: 3.0 to 6.0 GHz



GRF2073

APPLICATIONS

- First Stage LNA for Infrastructure
- Small Cells and Cellular Repeaters
- Distributed Antenna Systems
- C-Band LNA to 6 GHz

FEATURES

Reference Condition: 5 V / 70 mA / 3.6 GHz

- Gain: 18.6 dB
- Evaluation Board NF: 0.63 dB
- OP1dB: 18.0 dBm
- OIP3: 35.0 dBm
- Flexible Bias Voltage and Current
- Process: GaAs pHEMT

28.3 dBm Power-LNA



GRF5109

APPLICATIONS

- Power Amplifier
- Linear Driver Amplifier for High PAR Waveforms
- Multi-stage LNA

FEATURES

Reference Condition: 5 V / 170 mA / 0.9 GHz

- Gain: 17.9 dB
- OP1dB: 28.3 dBm
- OIP3: 45.0 dBm
- Evaluation Board NF: 1.2 dB
- Flexible Bias Voltage and Current
- Process: GaAs pHEMT

Product	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Package (mm)
GRF2073	3.0-6.0	5 V/ 70 mA/ 3.6 GHz	18.6	0.65	18.0	35.0	2.7-5.0	20-100	2.0 DFN-8
GRF5109	0.4-1.5	5 V/ 160 mA/ 830 MHz	17.9	1.20	28.3	45.0	2.7-5.0	50-200	3.0 QFN-16



Featured Products

Ultra-High Gain LNA Tuning Range: 0.1 to 2.7 GHz



GRF2133

APPLICATIONS

- Cellular Boosters / Repeaters
- General Purpose LNA, Broadband Gain Block, Linear Driver Amplifier

FEATURES

- Internally Matched
- Unconditionally Stable
- Flexible Biasing
- Process: GaAs pHEMT

Reference: 5.0 V / 60 mA / 1950 MHz

- Gain: 28.0 dB
- OP1dB: 20.0 dBm
- OIP3: 31.0 dBm
- NF: 0.70 dB

Reference: 5.0 V / 60 mA / 800 MHz

- Gain: 37.5 dB
- OP1dB: 20.8 dBm
- OIP3: 29.8 dBm
- NF: 0.65 dB

WLAN / ISM / Low Current LNAs / Drivers



GRF2806

APPLICATIONS

- Cellular Boosters
- ISM Radios

FEATURES

Reference: 3.3 V / 15 mA / 0.9 GHz

- Internally Matched to 50 Ω
- Low NF
- High Gain
- Low Current Guerrilla Bloc™ Integrated Module

Product	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Package (mm)
GRF2133	0.4-2.7	5.0 V/ 60 mA/ 1950 MHz	28.5	0.65	20.3	30.0	1.8-5.0	30-160	1.5 DFN-6
GRF2806	0.7-0.96	3.3 V/ 15 mA/ 0.9 GHz	20.0	1.2	13.5	23.5	2.7-5.0	10-30	4.0 Module



Featured Products

Ultra-Low Noise Amplifier Tuning Range: 0.7 to 2.7 GHz



GRF2071

APPLICATIONS

- First Stage LNA for Infrastructure
- Small Cells and Cellular Repeaters
- Distributed Antenna Systems
- Military Grade GPS

FEATURES

Reference: 5.0 V / 60 mA / 1.9 GHz

- Gain: 19.0 dB
- Evaluation Board NF: 0.36 dB
- OP1dB: 21.0 dBm
- OIP3: 36.0 dBm
- Flexible Bias Voltage and Current
- Process: GaAs pHEMT

High Gain, Ultra-Low Noise Amplifier

802.11ac: 4.9 to 6.0 GHz



GRF2501

APPLICATIONS

- WiFi Access Points
- Mobile WiFi Devices
- Microwave Backhaul
- 802.11p Vehicle Communications

FEATURES

Reference: 3.3 V / 15 mA / 5.5 GHz

- De-embedded NF: 0.8 dB
- Gain: 16.0 dB
- IP1dB: -8.0 dBm
- Flexible Bias Voltage and Current
- Internally Matched to 50 Ω
- Process: GaAs pHEMT

Product	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Package (mm)
GRF2071	0.7-2.7	5 V/ 60 mA/ 1.9 GHz	19.0	0.35	21.0	38.0	2.7-5.0	20-100	2.0 DFN-8
GRF2501	4.9-6.0	3.3 V/ 15 mA/ 5.5 GHz	16.0	1.0	7.0	19.0	2.7-5.0	12-28	1.5 DFN-6



InGap HBT Amplifiers

Guerrilla RF introduces a new portfolio of amplifiers utilizing indium gallium phosphide (InGap) heterojunction bipolar transistor (HBT) technology. Our InGap HBT family includes saturated power amplifiers, high linearity drivers/ power amplifiers and ultra-high linearity power amplifier modules.

The devices offer high efficiency and ruggedness and exhibit outstanding linearity and gain. They are designed for 5G infrastructure, automotive, small cell, cellular booster/ distributed antenna system (DAS), military, wireless audio and other high performance applications.

High Efficiency Saturated Power Amplifiers



GRF5504, GRF5509

APPLICATIONS

- UHF
- 900 MHz ISM
- Automatic Meter Reader
- RFID

FEATURES

- Frequency Coverage: 400 to 1000 MHz with Fractional Bandwidths of 3 to 5%
- Saturated Output Powers up to 5 Watts
- Ultra-High Collector Efficiencies to 60%
- Flexible Vcc: 3.0 to 5.0 Volts

Product	Reference (MHz)	Gain (dB)	P3dB (dBm)	Efficiency (%)	Vcc/Iccq (V/mA)	Tuning Range (MHz)	Bandwidth (%)	Package (mm)
NEW! GRF5504	460	40	36.0	59	5.0/125	400-500	3 to 5	3.0 QFN-16
NEW! GRF5509	915	35	36.5	60	5.0/125	700-1000	3 to 5	3.0 QFN-16



InGap HBT Amplifiers

High Linearity Drivers/Power Amplifiers



GRF4200, GRF4205

APPLICATIONS

- Linear Driver Amplifier
- Small Cells and Cellular Repeaters
- Distributed Antenna Systems
- VHF and UHF Radios
- ISM Radios

FEATURES

- Frequency Coverage: 100 to 3800 MHz with Fractional Bandwidths of 15 to 20%
- OP1dB to >1 Watt
- OIP3 to >50 dBm
- Flexible Vcc: 3.0 to 5.0 Volts

Product	Reference (MHz)	Gain (dB)	OP1dB (dBm)	OIP3 (dBm)	Vcc/Iccq (V/mA)	Tuning Range (MHz)	Bandwidth (%)	Package (mm)
NEW! GRF4200*	1900	21.5	18.0	35.5	5.0/35	100-3800	15	3.0 QFN-16
NEW! GRF4205*	1900	20.0	30.5	51.0	5.0/500	400-3800	15	3.0 QFN-16

* Product is in Pre-Production; Sampling Now. Contact sales@guerrilla-rf.com for production schedule and minimum order quantity.



Guerrilla Search™ and Guerrilla Replace™

Identify the Optimum Amplifier for Your Application

Search measured performance data over power supply and frequency.

Looking to Replace a Competitor's Part?

Easily search by manufacturer and part number.

[SEARCH NOW](#)



InGap HBT Amplifiers

Ultra-High Linearity Power Amplifier Modules



GRF55xx Family

APPLICATIONS

- Small Cells and Boosters
- Supports Linear Air Interfaces Such as LTE, WCDMA, Etc.
- TDD and FDD

FEATURES

- Designed for Excellent IMD3 and ACLR Characteristics Over Full Output Power Range
- Internally Matched for a 50 Ohm System
- 3.5 x 3.5 mm Module with Integrated Matching

Repeater/Small Cell Power Amplifier Modules

Product	Bandwidth (%)	VCC/ICCQ (V/mA)	Gain (dB)	OP1dB (dBm)	OIP3 (dBm)**	Linear Power (dBm) ***	Package (mm)
NEW! GRF5507*	700-800	5.0/220	31.0	32.5	49.0	TBD	3.5 x 3.5
NEW! GRF5508*	800-880	5.0/220	30.0	32.5	50.0	TBD	3.5 x 3.5
NEW! GRF5510*	880-960	5.0/180	28.5	32.0	50.5	TBD	3.5 x 3.5
NEW! GRF5517*	1700-1800	5.0/220	27.0	31.8	49.5	TBD	3.5 x 3.5
NEW! GRF5518*	1800-1910	5.0/220	26.5	32.5	46.0	TBD	3.5 x 3.5
NEW! GRF5519*	1920-2000	5.0/220	25.5	32.0	46.0	TBD	3.5 x 3.5
NEW! GRF5521*	2100-2200	5.0/200	26.0	32.0	51.0	TBD	3.5 x 3.5
NEW! GRF5526*	2500-2600	5.0/220	27.0	32.0	49.5	TBD	3.5 x 3.5

* Product is in Pre-Production; Sampling Now. Contact sales@guerrilla-rf.com for production schedule and minimum order quantity.

** 23 dBm output power per tone; 600 kHz tone spacing.

*** -48 dBc ACLR @ 10 MHz offset; test signal: LTE 10Q50RB, PAR: 9.6 dB



Fully Integrated Ultra-Low Noise Amplifier, Driver and PA Modules

Guerrilla RF's growing family of thermally-efficient lead frame module (LFM) plastic packaged products are fully integrated modules (with the exception of a current-sensing resistor). Internal matching to 50 ohms eliminates matching requirements. Flexible bias voltage and current provide optimal efficiency and linearity performance.

These fully integrated modules are available in small footprint 4 x 4 x 0.75 mm packages.

Guerrilla Bloc™ Fully Integrated, Low Current and Ultra-Low Noise Modules

Part Number	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Internally Matched (50 ohms)	Features
GRF2806	0.7-1.0	0.9 GHz 5.0 V; 15 mA	20.0	1.05	14.0	25.5	2.7-5.0	10-30	Yes	Cost-effective gain; low NF
GRF2807	1.6-2.5	1.9 GHz 5.0 V; 15 mA	18.2	0.80	13.4	23.0	2.7-5.0	10-30	Yes	Cost-effective gain; low NF
GRF2870	0.6-1.0	0.9 GHz 5.0 V; 70 mA	20.0	0.35	20.0	40.0	2.7-5.0	20-80	Yes	Ultra-low noise; high gain
GRF2871	1.5-2.2	1.9 GHz 5.0 V; 70 mA	19.5	0.40	19.0	37.5	2.7-5.0	20-80	Yes	Ultra-low noise; high gain
GRF2872	2.0-3.0	2.5 GHz 5.0 V; 70 mA	19.0	0.50	21.2	37.5	2.7-5.0	20-80	Yes	Ultra-low noise; high gain
GRF2873	3.0-4.2	3.6 GHz 5.0 V; 70 mA	16.8	0.65	18.8	37.0	2.7-5.0	20-80	Yes	Ultra-low noise; high gain



DFN-6 Package Product Portfolio

Guerrilla RF's dual-flat no-lead 6-pin (DFN-6) package product portfolio includes a wide range of gain, linearity, NF and bypass capability using a single layout.

This rapidly growing family effectively creates a modular RF design system, including single-stage, two-stage, bypass and failsafe bypass devices.

The products address the ever growing industry need for cost-effective, broadband, discrete amplifiers delivering strong, consistent performance over a wide range of operating conditions.



Product	Description
GRF2003 GRF2004	Broadband to X-Band Gain Blocks Tuning Range: 0.1 to 10.0 GHz
NEW! GRF2011 GRF2012 GRF2013 GRF2014	Flat Gain, High Linearity Gain Blocks Tuning Range: 0.05 to 3.8 GHz Tuning Range: 0.05 to 3.8 GHz Tuning Range: 0.05 to 8.0 GHz Tuning Range: 0.05 to 3.8 GHz
GRF2077*	Failsafe Bypass LNA
GRF2100	Low NF, Low Current Amplifier Tuning Range: 0.1 to 3.8 GHz
GRF2101	High Gain, Ultra-LNA 802.11ac Tuning Range: 4.0 to 7.0 GHz
GRF2103*	Broadband LNA/Linear Driver
GRF2105	Broadband, Flat Gain Linear LNA Tuning Range: 0.4 to 5.0 GHz
GRF2106 GRF2133* GRF2201	Ultra-High Gain, Low NF Amplifiers Tuning Range: 0.1 to 4.2 GHz Tuning Range: 0.1 to 2.7 GHz Tuning Range: 0.4 to 3.8 GHz
GRF2140	Low NF, Low Current Amplifier with Bypass Tuning Range: 0.1 to 3.8 GHz
NEW! GRF2171	High Gain Ultra LNA Tuning Range: 2.5 to 5.0 GHz
NEW! GRF2243*	LNA with Bypass
GRF2373	High Gain, Low Noise, Linear Driver Tuning Range: 0.1 to 3.8 GHz

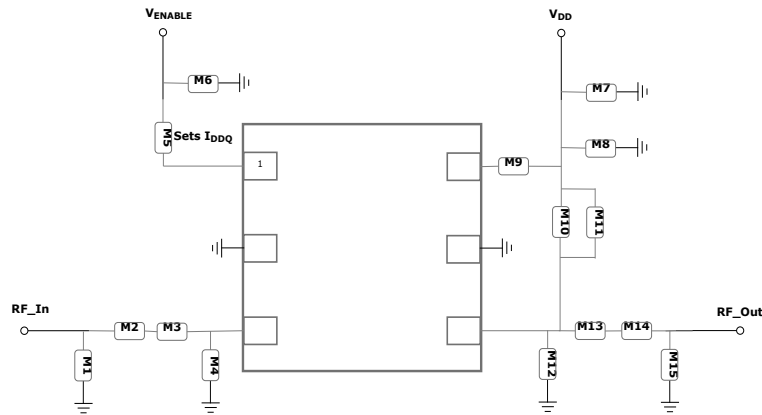
Product	Description
GRF2374	High Gain, Low Noise, Linear Driver with Bypass Tuning Range: 0.1 to 3.8 GHz
GRF2501	High Gain, Ultra-Low Noise Amplifier 802.11ac: 4.9 to 6.0 GHz
NEW! GRF2501-W	High Gain, Ultra-LNA
GRF2505	High Linearity, Low Noise Driver
GRF2541	Low Noise Amplifier with Bypass 802.11ac: 4.9 to 6.0 GHz
NEW! GRF2543*	High Gain, Ultra-LNA with Bypass
GRF2710	High Gain, Ultra-Low Noise Amplifier Tuning Range: 8.0 to 13.0 GHz
NEW! GRF3010*	Ultra-broadband Gain Block
NEW! GRF3012*	Ultra-broadband Gain Block
NEW! GRF3014*	Broadband Gain Block
NEW! GRF3016*	Broadband Gain Block
GRF3042	Broadband Gain Block Tuning Range: 10 MHz to 13.0 GHz
GRF3044	High Frequency Gain Block Tuning Range: 100 MHz to 12.0 GHz
GRF4001	Broadband LNA/Linear Driver Tuning Range: 0.1 to 6.0 GHz

* Product is in Pre-Production; Sampling Now. Contact sales@guerrilla-rf.com for production schedule and minimum order quantity.

Note: -W suffix denotes AEC-Q100 Class 2.



DFN-6 Package Product Portfolio



Generic Schematic

Product	Description
GRF4002	Broadband LNA/Linear Driver Tuning Range: 0.1 to 3.8 GHz
NEW! GRF4002-W	LNA-Driver: SDARS/Compenser/GPS
GRF4003 GRF4004	Broadband LNA/Linear Driver Tuning Range: 0.1 to 3.8 GHz
GRF4005 GRF4014	Broadband LNA/Linear Driver Tuning Range: 0.1 to 3.8 GHz
GRF4100*	Broadband Linear Driver
GRF4142	Broadband LNA/High Linearity Driver with Bypass Tuning Range: 0.1 to 3.8 GHz
GRF4200*	High Gain, Linear Driver
GRF6011	SPDT Failsafe Switch 0.1 to 6.0 GHz
GRF7001	RF Mixer

*Product is in Pre-Production; Sampling Now. Contact sales@guerrilla-rf.com for production schedule and minimum order quantity.

Note: -W suffix denotes AEC-Q100 Class 2.



Broadband LNAs

Low Noise Amplifiers that Operate Across Wide Bandwidths

Part Number	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Features	Package (mm)
GRF2003	0.1-10.0	5 V/55 mA/ 5.5 GHz	12.0	3.5	15.0	29.0	2.7-5.0	40-80	High frequency; internally matched; flexible bias	1.5 DFN-6
GRF2004	0.1-10.0	5 V/100 mA/ 4.0 GHz	16.5	1.9	18.0	31.0	1.8-5.0	60-120	High frequency; low noise; internally matched; flexible bias	1.5 DFN-6
GRF2013	0.05-8.0	5 V/90 mA/ 1.9 GHz	18.5	1.3	22.5	38.5	2.7-8.0	15-100	Flat gain; low noise; high linearity; internally matched; flexible bias	1.5 DFN-6
NEW! GRF2013-W	0.05-8.0	5 V/90 mA/ 1.9 GHz	18.5	1.3	22.5	38.5	2.7-8.0	15-100	Flat gain; low noise; high linearity; internally matched; flexible bias	1.5 DFN-6
		8 V/100 mA/ 1.9 GHz	18.5	1.4	25.3	41.0				
NEW! GRF2077*	0.7-3.8	5 V/70 mA/ 2.5 GHz	17.0	0.90	22.0	40.0	3.0-5.0	70	Low noise; failsafe bypass	2.0 DFN-8
GRF2100	0.1-3.8	3.3 V/ 15 mA/ 2500 MHz	16.5	0.8	10.0	19.0	1.8-5.0	6-30	High gain, low noise; low cost	1.5 DFN-6
NEW! GRF2103*	0.7-3.8	5 V/90 mA/ 2.5 GHz	17.0	0.72	23.2	40.0	2.7-5.0	30-90	High gain; low noise	1.5 DFN-6
GRF2105	0.4-5.0	5 V/70 mA/ 2.5 GHz	20.7	0.77	22.5	36.0	2.7-5.0	20-90	Low noise; high, flat gain; flexible bias	1.5 DFN-6
GRF2114	0.1-2.7	5 V/135 mA/ 830 MHz	17.9	0.93	24.3	40.2	1.8-5.0	30-150	High linearity; low noise; flexible bias	2.0 DFN-8
NEW! GRF2130*	0.7-3.8	3.3 V/ 25 mA/ 1.9 GHz	32.0	1.2	14.0	17.0	1.8-5.0	15-50	High gain; flexible biasing	1.5 DFN-6
GRF2133	0.4-2.7	5 V/60 mA/ 1950 MHz	28.5	0.65	20.3	30.0	1.8-5.0	30-160	Ultra-high gain; low noise; flexible bias	1.5 DFN-6
GRF2140	0.1-3.8	3.3 V/ 15 mA/ 1950 MHz	16.2	1.1	10.0	23.5	2.7-5.0	6-30	High gain, low noise; bypass	1.5 DFN-6
NEW! GRF2171	2.5-5.0	5 V/ 75 mA/ 3.6 GHz	29.5	0.75	18.7	41.5	5.0	75	Ultra-high gain, ultra-low noise	1.5 DFN-6

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Note: -W suffix denotes AEC-Q100 Class 2.



Broadband LNAs

Low Noise Amplifiers that Operate Across Wide Bandwidths (Continued)

Part Number	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Features	Package (mm)
NEW! GRF2243	0.1-5.0	3.3 V/ 15 mA/ 2.5 GHz	19.8	0.75	12.5	22.5	2.7-5.0	6-30	High gain, low noise; bypass	1.5 DFN-6
GRF2373	0.1-3.8	3.3 V/ 15 mA/ 1900 MHz	18.5	1.2	12.5	25.0	2.7-5.0	10-25	High gain, low noise; good linearity; low cost	1.5 DFN-6
GRF2374	0.1-3.8	3.3 V/ 15 mA/ 1.95 GHz	16.5	1.2	10.0	22.0	2.7-5.0	10-25	High gain, low noise; bypass	1.5 DFN-6
GRF2505	4.0-6.0	5 V/ 40 mA/ 5.5 GHz	12.5	1.2	19.0	30.0	1.8-5.0	20-60	High linearity; low noise	1.5 DFN-6
GRF2581*	2.4-6.0	LNA: 3.3 V/ 18 mA/ 5.5 GHz	15.5	1.6	14.5	22.0	2.7-5.0	18	Front-end module with T/R Switch	1.5 DFN-6
GRF2710	8.0-13.0	5 V/25 mA/ 11.0 GHz	13.9	2.1	13.0	21.0	3.0-8.0	20-40	High gain; low noise; flexible bias	1.5 DFN-6
GRF4001	0.1-6.0	3.3 V/ 45 mA/ 2.5 GHz	15.5	1.0	16.5	30.5	1.8-5.0	5-50	High gain; low noise; internal match; flexible bias	1.5 DFN-6
GRF4002	0.1-3.8	5 V/7 0 mA/ 2.5 GHz	15.0	0.85	23.5	36.5	1.8-5.0	20-80	High gain; low noise; internal match; flexible bias	1.5 DFN-6
NEW! GRF4002-W	0.1-3.8	5 V/ 70 mA/ 2.5 GHz	15.0	0.85	23.5	36.5	1.8-5.0	20-80	High gain; low noise; internal match; flexible bias	1.5 DFN-6
GRF4003	0.1-3.8	5 V/ 95 mA/ 2.5 GHz	13.0	0.85	25.0	41.0	1.8-5.0	30-120	High gain; low noise; internal match; flexible bias	1.5 DFN-6

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Broadband LNAs

Low Noise Amplifiers that Operate Across Wide Bandwidths (Continued)

Part Number	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Features	Package (mm)
GRF4004	0.1-3.8	5 V/ 135 mA/ 2.5 GHz	12.7	0.85	26.5	43.0	1.8-5.0	30-150	High linearity; low noise; flexible bias	1.5 DFN-6
GRF4014	0.1-6.0	5 V/60 mA/ 2.5 GHz 8 V/110 mA/ 2.5 GHz	16.5 17.0	0.80 0.83	24.0 28.3	39.0 44.0	3.0-8.0	30-130	High linearity; low noise; flexible bias	1.5 DFN-6
GRF4042	0.4-2.7	5 V/70 mA/ 1.9 GHz	16.0	0.9	22.0	36.0	1.8-5.0	20-180	High gain; low noise; internal match; flexible bias; bypass	2.0 QFN-12
GRF4142	0.1-2.7	3.3 V/ 50 mA/ 1.9 GHz	16.0	0.95	19.0	34.0	1.8-5.0	20-80	High gain; low noise; flexible bias; bypass; single logic control	1.5 DFN-6
GRF5010	0.05-6.0	8 V/95 mA/ 2.5 GHz 5 V/60 mA/ 2.5 GHz	17.0 17.0	0.85 0.82	28.5 24.5	45.0 38.5	4.5-9.0	50-150	Power-LNA™ high linearity; low noise; high gain; flexible bias	3.0 QFN-16
GRF5020	0.1-6.0	8 V/95 mA/ 2.5 GHz 5 V/65 mA/ 2.5 GHz	18.0 17.3	0.85 0.80	29.0 24.5	43.0 37.2	4.5-10.0	50-200	Power-LNA™ high linearity; low noise; high gain; flexible bias	3.0 QFN-16
GRF5040	0.1-3.8	10 V/ 170 mA/ 2.5 GHz 8 V/130 mA/ 2.5 GHz	15.0 15.0	0.85 0.85	31.0 29.8	47.0 46.3	4.5-10.0	100-250	Power-LNA™ high linearity; low noise; high gain; flexible bias	3.0 QFN-16



Failsafe Devices

Devices that Default to a Useful State During Total Power Loss

Part Number	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Features	Package (mm)
GRF2077*	0.7-3.8	5 V/70 mA/ 2.5 GHz	17.0	0.90	22.0	40.0	3.0-5.0	70	Low noise; failsafe bypass	2.0 DFN-8
GRF6011	0.1-6.0	RFC to RF1: (1.9 GHz) RFC to RF2: (1.9 GHz)	-0.43-0.33	NA	32.0 30.5	49.0 47.3	3.0-5.0	NA	SPDT switch Path 1: short; Path 2: open with power removed	1.5 DFN-6

* Product is in Pre-Production; Sampling Now. Contact sales@guerrilla-rf.com for production schedule and minimum order quantity.



High Frequency Gain Blocks

Internally Matched Amplifiers for Use at Frequencies > 6 GHz

Part Number	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Features	Package (mm)
GRF2003	0.1-10.0	5 V/55 mA/ 5.5 GHz	12.0	3.5	15.0	29.0	2.7-5.0	40-80	High frequency; internally matched; flexible bias	1.5 DFN-6
GRF2004	0.1-10.0	5 V/100 mA/ 4.0 GHz	16.5	1.9	18.0	31.0	1.8-5.0	60-120	High frequency; low noise; internally matched; flexible bias	1.5 DFN-6
GRF2710	8.0-13.0	5 V/25 mA/ 11.0 GHz	13.9	2.1	13.0	21.0	3.0-8.0	20-40	High gain; low noise; flexible bias	1.5 DFN-6
GRF3010*	0.001- 15.0	5 V/22 mA/ 5.0 GHz	14.3	5.0	5.0	17.5	5	17-22	High frequency; internally matched	1.5 DFN-6
GRF3012*	0.001- 12.0	5 V/22 mA/ 5.0 GHz	11.0	5.6	5.0	18.0	5	17-22	High frequency; internally matched	1.5 DFN-6
GRF3014*	0.001-9.0	5 V/45 mA/ 5.0 GHz	10.0	6.0	12.4	26.0	5	35-45	High frequency; internally matched	1.5 DFN-6
GRF3016*	0.001- 10.0	5 V/80 mA/ 5.0 GHz	13.5	5.2	17.0	26.5	5	65-80	High frequency; internally matched	1.5 DFN-6
GRF3042	0.01-13.0	4.0 GHz; Iddq: 45 mA	14.5	3.4	14.7	26.0	> 5.0	35-60	High frequency; internally matched	1.5 DFN-6
GRF3044	0.01-11.0	4.0 GHz; Iddq: 100 mA	16.9	2.1	19.6	31.5	> 5.0	60-120	High frequency; low noise; internally matched	1.5 DFN-6

* Product is in Pre-Production; Sampling Now. Contact sales@guerrilla-rf.com for production schedule and minimum order quantity.



High Linearity Gain Blocks

Broadband, Internally Matched Amplifiers with Excellent Linearity

Part Number	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Features	Package (mm)
NEW! GRF2011	0.05-3.8	5 V/ 90 mA/ 900 MHz	15.2	2.0	22.7	40.0	2.7-8.0	15-100	Broadband, low noise, internally matched	1.5 DFN-6
GRF2012	0.05-3.8	5 V/90 mA/ 900 MHz	15.0	2.7	22.5	40.0	2.7-5.0	30-120	Flat gain; low noise; high linearity; internally matched; flexible bias	1.5 DFN-6
NEW! GRF2012-W	0.05-3.8	5 V/90 mA/ 900 MHz	14.8	2.7	23.0	40.0	2.7-5.0	15-100	Flat gain; low noise; high linearity; internally matched; flexible bias	1.5 DFN-6
GRF2013	0.05-8.0	5 V/90 mA/ 1.9 GHz	18.5	1.3	22.5	38.5	2.7-8.0	15-100	Flat gain; low noise; high linearity; internally matched; flexible bias	1.5 DFN-6
NEW! GRF2013-W	0.05-8.0	5 V/90 mA/ 1.9 GHz 8 V/ 100 mA/ 1.9 GHz	18.5 18.5	1.3 1.4	22.5 25.3	38.5 41.0	2.7-8.0	15-100	Flat gain; low noise; high linearity; internally matched; flexible bias	1.5 DFN-6 NEW!
GRF2014	0.05-3.8	5 V/150 mA/ 900 MHz	15.9	3.3	24.0	43.5	2.7-5.0	50-180	Flat gain; low noise; high linearity; internally matched; flexible bias	1.5 DFN-6
NEW! GRF2171	2.5-5.0	5 V/ 75 mA/ 3.6 GHz	29.5	0.75	18.7	41.5	5.0	75	Ultra-high gain, ultra-low noise	1.5 DFN-6
GRF4001	0.1-6.0	3.3 V/ 45 mA/ 2.5 GHz	15.5	1	16.5	30.5	1.8-5.0	5-50	High gain; low noise; internal match; flexible bias	1.5 DFN-6
GRF4002	0.1-3.8	5 V/70 mA/ 2.5 GHz	15.0	0.85	23.5	36.5	1.8-5.0	20-80	High gain; low noise; internal match; flexible bias	1.5 DFN-6
NEW! GRF4002-W	0.1-3.8	5 V/70 mA/ 2.5 GHz	15.0	0.85	23.5	36.5	1.8-5.0	20-80	High gain; low noise; internal match; flexible bias	1.5 DFN-6
GRF4003	0.1-3.8	5 V/95 mA/ 2.5 GHz	13.0	0.85	25.0	41.0	1.8-5.0	30-120	High gain; low noise; internal match; flexible bias	1.5 DFN-6

Note: -W suffix denotes AEC-Q100 Class 2.



High Linearity Amplifiers for the Most Demanding Transmit Chains

Part Number	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Features	Package (mm)
NEW! GRF2011	0.05-3.8	5 V/ 90 mA/ 900 MHz	15.2	2.0	22.7	40.0	2.7-8.0	15-100	Broadband, low noise, internally matched	1.5 DFN-6
GRF2012	0.05-3.8	5 V/90 mA/ 900 MHz	15.0	2.7	22.5	40.0	2.7-5.0	30-120	Flat gain; low noise; high linearity; internally matched; flexible bias	1.5 DFN-6
NEW! GRF2012-W	0.05-3.8	5 V/90 mA/ 900 MHz	14.8	2.7	23.0	40.0	2.7-5.0	15-100	Flat gain; low noise; high linearity; internally matched; flexible bias	1.5 DFN-6
GRF2013	0.05-8.0	5 V/90 mA/ 1.9 GHz	18.5	1.3	22.5	38.5	2.7-8.0	15-100	Flat gain; low noise; high linearity; internally matched; flexible bias	1.5 DFN-6
NEW! GRF2013-W	0.05-8.0	5 V/90 mA/ 1.9 GHz 8 V/100 mA/ 1.9 GHz	18.5 18.5	1.3 1.4	22.5 25.3	38.5 41.0	2.7-8.0	15-100	Flat gain; low noise; high linearity; internally matched; flexible bias	1.5 DFN-6
GRF2014	0.05-3.8	5 V/150 mA/ 900 MHz	15.9	3.3	24.0	43.5	2.7-5.0	50-180	Flat gain; low noise; high linearity; internally matched; flexible bias	1.5 DFN-6
GRF2100	0.1-3.8	3.3 V/15 mA/ 2500 MHz	16.5	0.8	10.0	19.0	1.8-5.0	6-30	High gain, low noise; low cost	1.5 DFN-6
NEW! GRF2103*	0.7-3.8	5 V/90 mA/ 2.5 GHz	17.0	0.72	23.2	40.0	2.7-5.0	30-90	High gain; low noise	1.5 DFN-6
GRF2114	0.1-2.7	5 V/135 mA/ 830 MHz	17.9	0.93	24.3	40.2	1.8-5.0	30-150	High linearity; low noise; flexible bias	2.0 DFN-8
GRF2133	0.4-2.7	5 V/60 mA/ 1950 MHz	28.5	0.65	20.3	30.0	1.8-5.0	30-160	Ultra-high gain; low noise; flexible bias	1.5 DFN-6
GRF2373	0.1-3.8	3.3 V/ 15 mA/ 1900 MHz	18.5	1.2	12.5	25.0	2.7-5.0	10-25	High gain, low noise; good linearity; low cost	1.5 DFN-6
GRF2374	0.1-3.8	3.3 V/ 15 mA/ 1.95 GHz	16.5	1.2	10.0	22.0	2.7-5.0	10-25	High gain, low noise; bypass	1.5 DFN-6

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Note: -W suffix denotes AEC-Q100 Class 2.



High Linearity Amplifiers for the Most Demanding Transmit Chains (Continued)

Part Number	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Features	Package (mm)
GRF2505	4.0-6.0	5 V/40 mA/ 5.5 GHz	12.5	1.2	19.0	30.0	1.8-5.0	20-60	High linearity; low noise	1.5 DFN-6
GRF4001	0.1-6.0	3.3 V/ 45 mA/ 2.5 GHz	15.5	1	16.5	30.5	1.8-5.0	5-50	High gain; low noise; internal match; flexible bias	1.5 DFN-6
GRF4002	0.1-3.8	5 V/70 mA/ 2.5 GHz	15.0	0.85	23.5	36.5	1.8-5.0	20-80	High gain; low noise; internal match; flexible bias	1.5 DFN-6
NEW! GRF4002-W	0.1-3.8	5 V/70 mA/ 2.5 GHz	15.0	0.85	23.5	36.5	1.8-5.0	20-80	High gain; low noise; internal match; flexible bias	1.5 DFN-6
GRF4003	0.1-3.8	5 V/95 mA/ 2.5 GHz	13.0	0.85	25.0	41.0	1.8-5.0	30-120	High gain; low noise; internal match; flexible bias	1.5 DFN-6
GRF4004	0.1-3.8	5 V/135 mA/ 2.5 GHz	12.7	0.85	26.5	43.0	1.8-5.0	30-150	High linearity; low noise; flexible bias	1.5 DFN-6
GRF4005	0.1-3.8	5 V/170 mA/ 2.5 GHz	13.0	0.85	27.5	43.0	1.8-5.0	50-200	High linearity; low noise; flexible bias	1.5 DFN-6
GRF4014	0.1-6.0	5 V/60 mA/ 2.5 GHz 8 V/110 mA/ 2.5 GHz	16.5 17.0	0.80 0.83	24.0 28.3	39.0 44.0	3.0-8.0	30-130	High linearity; low noise; flexible bias	1.5 DFN-6
GRF4042	0.4-2.7	5 V/70 mA/ 1.9 GHz	16.0	0.9	22.0	36.0	1.8-5.0	20-180	High gain; low noise; internal match; flexible bias; bypass	2.0 QFN-12
NEW! GRF4100*	0.1-3.8	5 V/35 mA/ 1.9 GHz	16.5	3.4	22.5	31.5	2.7-5.0	20-40	High gain; internally matched	1.5 DFN-6
GRF4142	0.1-2.7	3.3 V/ 50 mA/ 1.9 GHz	16.0	0.95	19.0	34.0	1.8-5.0	20-80	High gain; low noise; flexible bias; bypass; single logic control	1.5 DFN-6

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Note: -W suffix denotes AEC-Q100 Class 2.



High Linearity Amplifiers for the Most Demanding Transmit Chains (Continued)

Part Number	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Features	Package (mm)
NEW! GRF4200*	0.1-3.8	5 V/ 35 mA/ 1.9 GHz	21.5	4.0	18.0	35.5	2.7-5.0	5-40	High gain; internally matched	1.5 DFN-6
NEW! GRF4205*	0.4-3.8	5 V/ 500 mA/ 1.95 GHz	20.0	5.0	30.5	51.0	3.0-5.0	500	High linearity, high reverse isolation	3.0 QFN-16
GRF5010	0.05-6.0	8 V/95 mA/ 2.5 GHz 5 V/60 mA/ 2.5 GHz	17.0 17.0	0.85 0.82	28.5 24.5	45.0 38.5	4.5-9.0	50-150	Power-LNA™ high linearity; low noise; high gain; flexible bias	3.0 QFN-16
GRF5020	0.1-6.0	8 V/95 mA/ 2.5 GHz 5 V/65 mA/ 2.5 GHz	18.0 17.3	0.85 0.80	29.0 24.5	43.0 37.2	4.5-10.0	50-200	Power-LNA™ high linearity; low noise; high gain; flexible bias	3.0 QFN-16
GRF5040	0.1-3.8	10 V/ 170 mA/ 2.5 GHz 8 V/130 mA/ 2.5 GHz	15.0 15.0	0.85 0.85	31.0 29.8	47.0 46.3	4.5-10.0	100-250	Power-LNA™ high linearity; low noise; high gain; flexible bias	3.0 QFN-16
GRF5109	0.4-1.5	5 V/160 mA/ 830 MHz	17.9	1.2	28.3	45.0	2.7-5.0	50-200	Power-LNA™ high linearity; low noise; high gain; flexible bias	3.0 QFN-16
GRF5110	1.5-2.7	5 V/160 mA/ 1.9 GHz	15.0	0.9	28.8	45.0	2.7-5.0	50-200	Power-LNA™ high linearity; low noise; high gain; flexible bias	3.0 QFN-16
GRF5115	0.1-2.7	5 V/250 mA/ 1.95 GHz	14.8	1.4	33.0	45.0	2.7-5.0	100-300	Power-LNA™ high linearity; low noise; high gain; flexible bias	3.0 QFN-16
GRF5511	0.7-6.0	5 V/130 mA/2.5 GHz 5 V/100 mA/5.5 GHz	20.1 15.4	1.5 1.7	26.1 25.8	39.6 44.0	4.5-9.0	50-200	Power-LNA™ High linearity; low noise; high gain; flexible bias	3.0 QFN-16

* Product is in Pre-Production; Sampling Now. Contact sales@guerrilla-rf.com for production schedule and minimum order quantity.



High Linearity Amplifiers for the Final Stage of a Transmit Chain

Part Number	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Features	Package (mm)
GRF4004	0.1-3.8	5 V/135 mA/ 2.5 GHz	12.7	0.85	26.5	43.0	1.8-5.0	30-150	High linearity; low noise; flexible bias	1.5 DFN-6
GRF4005	0.1-3.8	5 V/170 mA/ 2.5 GHz	13.0	0.85	27.5	43.0	1.8-5.0	50-200	High linearity; low noise; flexible bias	1.5 DFN-6
NEW! GRF4205*	0.4-3.8	5 V/500 mA/1.95 GHz	20.0	5.0	30.5	51.0	3.0-5.0	500	High linearity, high reverse isolation	3.0 QFN-16
GRF5040	0.1-3.8	10 V/ 170 mA/ 2.5 GHz	15.0	0.85	31.0	47.0	4.5-10.0	100-250	Power-LNA™ high linearity; low noise; high gain; flexible bias	3.0 QFN-16
		8 V/130 mA/ 2.5 GHz	15.0	0.85	29.8	46.3				
GRF5109	0.4-1.5	5 V/160 mA/ 830 MHz	17.9	1.2	28.3	45.0	2.7-5.0	50-200	Power-LNA™ high linearity; low noise; high gain; flexible bias	3.0 QFN-16
GRF5110	1.5-2.7	5 V/160 mA/ 1.9 GHz	15.0	0.9	28.8	45.0	2.7-5.0	50-200	Power-LNA™ high linearity; low noise; high gain; flexible bias	3.0 QFN-16
GRF5115	0.1-2.7	5 V/250 mA/ 1.95 GHz	14.8	1.4	33.0	45.0	2.7-5.0	100-300	Power-LNA™ high linearity; low noise; high gain; flexible bias	3.0 QFN-16
GRF5511	0.7-6.0	5 V/130 mA/ 2.5 GHz	20.1	1.5	26.1	39.6	4.5-9.0	50-200	Power-LNA™ high linearity; low noise; high gain; flexible bias	3.0 QFN-16
		5 V/100 mA/ 5.5 GHz	15.4	1.7	25.8	44.0				

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Low Current LNAs

Low Power Consumption Amplifiers with Great Noise Performance

Part Number	Description	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Features	Package (mm)
GRF2012	High Linearity Gain Block	0.05-3.8	5 V/ 90 mA/ 900 MHz	15.0	2.7	22.5	40.0	2.7-5.0	30-120	Flat gain; low noise; high linearity; internally matched; flexible bias	1.5 DFN-6
NEW! GRF2012-W	Broadband Linear Gain Block	0.05-3.8	5 V/ 90 mA/ 900 MHz	14.8	2.7	23.0	40.0	2.7-5.0	15-100	Flat gain; low noise; high linearity; internally matched; flexible bias	1.5 DFN-6
GRF2013	Broadband Linear Gain Block	0.05-8.0	5 V/ 90 mA/ 1.9 GHz	18.5	1.3	22.5	38.5	2.7-8.0	15-100	Flat gain; low noise; high linearity; internally matched; flexible bias	1.5 DFN-6
NEW! GRF2013-W	Broadband Linear Gain Block	0.05-8.0	5 V/90 mA/ 1.9 GHz 8 V/ 100 mA/ 1.9 GHz	18.5 18.5	1.3 1.4	22.5 25.3	38.5 41.0	2.7-8.0	15-100	Flat gain; low noise; high linearity; internally matched; flexible bias	1.5 DFN-6
GRF2100	General Purpose, Low Current LNA	0.1-3.8	3.3 V/ 15 mA/ 2500 MHz	16.5	0.8	10.0	19.0	1.8-5.0	6-30	High gain, low noise; low cost	1.5 DFN-6
GRF2101	5 GHz, High Gain LNA	4.0-7.0	3.3 V/ 18 mA/ 5.5 GHz	18.0	0.9	10.0	22.0	2.7-5.0	12-28	High gain, low noise; low cost	1.5 DFN-6

Note: -W suffix denotes AEC-Q100 Class 2.



Low Current LNAs

Low Power Consumption Amplifiers with Great Noise Performance (Continued)

Part Number	Description	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Features	Package (mm)
GRF2106	General Purpose, Low Current LNA	0.1-4.2	3.3 V/ 15 mA/ 2.5 GHz	20.5	0.8	12.0	26.0	2.7-5.0	8-30	Flexible bias; standard pinout	1.5 DFN-6
NEW! GRF2130*	Ultra-High Gain LNA	0.7-3.8	3.3 V/ 25 mA/ 1.9 GHz	32.0	1.2	14.0	17.0	1.8-5.0	15-50	High gain; flexible biasing	1.5 DFN-6
GRF2140	General Purpose LNA with Bypass	0.1-3.8	3.3 V/ 15 mA/ 1950 MHz	16.2	1.1	10.0	23.5	2.7-5.0	6-30	High gain, low noise; bypass	1.5 DFN-6
GRF2201	2.4 GHz, High Gain LNA	0.4-3.8	3.3 V/ 15 mA/ 2.45 GHz	20.5	0.8	12.0	26.0	2.7-5.0	10-30	High gain; low noise	1.5 DFN-6
NEW! GRF2243	LNA with Bypass	0.1-5.0	3.3 V/ 15 mA/ 2.5 GHz	19.8	0.75	12.5	22.5	2.7-5.0	6-30	High gain, low noise; bypass	1.5 DFN-6
GRF2373	General Purpose, Low Current LNA/Driver	0.1-3.8	3.3 V/ 15 mA/ 1900 MHz	18.5	1.2	12.5	25.0	2.7-5.0	10-25	High gain, low noise; good linearity; low cost	1.5 DFN-6
GRF2374	General Purpose LNA/Driver with Low-Loss, Linear Bypass	0.1-3.8	3.3 V/ 15 mA/ 1.95 GHz	16.5	1.2	10.0	22.0	2.7-5.0	10-25	High gain, low noise; bypass	1.5 DFN-6
GRF2501	5 GHz High Gain, LNA	4.9-6.0	3.3 V/ 15 mA/ 5.5 GHz	16.0	1	7.0	19.0	2.7-5.0	12-28	Internal match; high gain, low noise	1.5 DFN-6
NEW! GRF2501-W	High Gain, Ultra-LNA™	4.9-6.0	3.3 V/ 15 mA/ 5.5 GHz	16.0	1	7.0	19.0	2.7-5.0	12-28	Internal match; high gain, low noise	1.5 DFN-6

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Note: -W suffix denotes AEC-Q100 Class 2.



Low Current LNAs

Low Power Consumption Amplifiers with Great Noise Performance (Continued)

Part Number	Description	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Features	Package (mm)
GRF2541	5 GHz LNA with Bypass	4.9-6.0	3.3 V/ 18 mA/ 5.5 GHz	16.4	1.0	7.0	19.0	2.7-5.0	12-28	Internal match; high gain, low noise; bypass	1.5 DFN-6
NEW! GRF2543*	High Gain, Ultra-LNA™ with Bypass	4.9-6.0	3.3 V/ 15 mA/ 5.5 GHz	14.4	1.0	13.4	20.0	2.7-5.0	15	Low noise; bypass	1.5 DFN-6
GRF2581*	LNA + T/R Switch	2.4-6.0	LNA + T/R Switch	15.5	1.6	14.5	22.0	2.7-5.0	18	Front-end module with T/R Switch	1.5 DFN-6
GRF2806	Guerrilla Bloc™ LNA	0.7-0.96	3.3 V/ 15 mA/ 0.9 GHz	20.0	1.2	13.5	23.5	2.7-5.0	10-30	High gain, low NF, internally matched	4.0 Module
GRF2807	Guerrilla Bloc™ LNA	1.6-2.5	4 V/ 15 mA/ 1.9 GHz	18.2	0.8	13.4	23.0	2.7-5.0	10-30	High gain, low NF, internally matched	4.0 Module

* Product is in Pre-Production; Sampling Now. Contact sales@guerrilla-rf.com for production schedule and minimum order quantity.



Expanding Mixer Family

Guerrilla RF will soon feature an expanded passive mixer family based on our GRF7001 device. The new devices will include integrated IF amplifiers, offer double balanced image rejection, and perform with higher linearity at >6 GHz operation.

Please visit our web site to view our growing mixer product offering.

Frequency Converters with Low Power Consumption and High Linearity

Part Number	Description	RF/IF (GHz)	LO Drive (dBm)	Conv Loss (dB)	IP1dB (dBm)	IIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Features	Package (mm)
GRF7001	RF Mixer	0.1-5.0	0.1-4.0	6.0	>17.0	25.0	3.0-5.0	10-30	Linear mixer for Tx or Rx	1.5 DFN-6



Saturated PAs

High Efficiency, High Output Power Amplifiers for the Final Stage of a Transmit Chain

Part Number	Description	Frequency Range (GHz)	Reference Conditions	Gain (dB)	OP1dB (dBm)	P3dB (dBm)	PAE (%)	Vdd Range (V)	Iccq (mA)	Features	Package (mm)
NEW! GRF5504	High Efficiency, 2.5-Watt PA	0.4-0.5	5.0 V/ 460 MHz/ CW	41.5	34.0	36.0	59	3.5-5.0	120	High efficiency, high power	3.0 QFN-16
NEW! GRF5509	High Efficiency, 5-Watt PA	0.7-1.0	5.0 V/ 915 MHz/ CW	34.0	36.0	36.5	58	3.5-5.0	125	High efficiency, high power	3.0 QFN-16



Power LNAs

Low Noise Amplifiers with Exceptional Linearity

Part Number	Description	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Features	Package (mm)
GRF5010	Power-LNA™	0.05-6.0	8 V/95 mA/ 2.5 GHz	17.0	0.85	28.5	45.0	4.5-9.0	50-150	High linearity; low noise; high gain; flexible bias	3.0 QFN-16
			5 V/60 mA/ 2.5 GHz	17.0	0.82	24.5	38.5				
GRF5020	Power-LNA™	0.1-6.0	8 V/95 mA/ 2.5 GHz	18.0	0.85	29.0	43.0	4.5-10.0	50-200	High linearity; low noise; high gain; flexible bias	3.0 QFN-16
			5 V/65 mA/ 2.5 GHz	17.3	0.80	24.5	37.2				
GRF5040	Power-LNA™	0.1-3.8	10 V/ 170 mA/ 2.5 GHz	15.0	0.85	31.0	47.0	4.5-10.0	100-250	High linearity; low noise; high gain; flexible bias	3.0 QFN-16
			8 V/130 mA/ 2.5 GHz	15.0	0.85	29.8	46.3				
GRF5109	Power-LNA™	0.4-1.5	5 V/160 mA/ 830 MHz	17.9	1.2	28.3	45.0	2.7-5.0	50-200	High linearity; low noise; high gain; flexible bias	3.0 QFN-16
GRF5110	Power-LNA™	1.5-2.7	5 V/160 mA/ 1.9 GHz	15.0	0.9	28.8	45.0	2.7-5.0	50-200	High linearity; low noise; high gain; flexible bias	3.0 QFN-16
GRF5115	Power-LNA™	0.1-2.7	5 V/250 mA/ 1.95 GHz	14.8	1.4	33.0	45.0	2.7-5.0	100-300	High linearity; low noise; high gain; flexible bias	3.0 QFN-16
GRF5511	Power-LNA™	0.7-6.0	5 V/130 mA/ 2.5 GHz	20.1	1.5	26.1	39.6	4.5-9.0	50-200	High linearity; low noise; high gain; flexible bias	3.0 QFN-16
			5 V/100 mA/ 5.5 GHz	15.4	1.7	25.8	44.0				



Extremely Low Noise Amplifiers

Part Number	Description	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Features	Package (mm)
GRF2051	Ultra-LNA™ for Infrastructure	0.7-3.8	5 V/70 mA/ 1.9 GHz	19.0	0.37	21.0	36.0	2.7-5.0	20-100	Ultra-low noise; high gain; flexible bias	2.0 QFN-12
GRF2052	Ultra-LNA™ for Infrastructure	2.3-4.5	5 V/70 mA/ 2.5 GHz	19.2	0.5	21.0	38.0	2.7-5.0	20-100	Ultra-low noise; high gain; flexible bias	2.0 QFN-12
GRF2070	Ultra-LNA™ for Infrastructure	0.4-1.5	5 V/75 mA/ 900 MHz	20.8	0.35	20.0	39.5	2.7-5.0	20-100	Ultra-low noise; high gain; flexible bias	2.0 DFN-8
GRF2071	High Gain Ultra-LNA™ for Infrastructure	0.7-2.7	5 V/60 mA/ 1.9 GHz	19.0	0.35	21.0	38.0	2.7-5.0	20-100	Ultra-low noise; high gain; flexible bias	2.0 DFN-8
GRF2072	Ultra-LNA™ for Infrastructure	2.3-3.8	5 V/70 mA/ 2.5 GHz	19.8	0.55	20.0	37.5	2.7-5.0	20-100	Ultra-low noise; high gain; flexible bias	2.0 DFN-8
GRF2073	Ultra-LNA™ for Infrastructure	3.0-6.0	5 V/70 mA/ 3.6 GHz	18.6	0.65	18.0	35.0	2.7-5.0	20-100	Ultra-low noise; high gain; flexible bias	2.0 DFN-8
NEW! GRF2073-W	Ultra-LNA™: SDARS/Compens-er/GPS	3.0-6.0	5 V/70 mA/ 2332.5 MHz	20.5	0.40	19.8	35.0	2.7-5.0	20-100	Ultra-low noise; high gain; flexible bias	2.0 DFN-8
NEW! GRF2074*	Ultra-LNA™	2.0-6.0	5 V/60 mA/ 2332.5 MHz	20.5	0.35	17.5	35.5	2.7-5.0	20-100	Ultra-low noise; high gain; flexible bias	2.0 DFN-8

* Product is in Pre-Production; Sampling Now. Contact sales@guerrilla-rf.com for production schedule and minimum order quantity.

Note: -W suffix denotes AEC-Q100 Class 2.



Extremely Low Noise Amplifiers (Continued)

Part Number	Description	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Features	Package (mm)
GRF2077*	Failsafe Bypass LNA	0.7-3.8	5 V/70 mA/ 2.5 GHz	17.0	0.90	22.0	40.0	3.0-5.0	70	Low noise; failsafe bypass	2.0 DFN-8
GRF2078*	Dual-Channel Ultra-LNA™	0.7-2.7	5 V/ 150 mA/ 1.9 GHz	18.8	0.56	23.9	40.7	5.0	150	Dual channel, ultra-low noise	3.0 QFN-16
GRF2080	Ultra-LNA™ for Infra-structure	0.4-1.5	5 V/75 mA/ 900 MHz	20.8	0.35	20.0	39.5	2.7-5.0	20-100	Ultra-low noise; high gain; digital shutdown	2.0 DFN-8
GRF2081	Ultra-LNA™ for Infra-structure	0.7-2.7	5 V/75 mA/ 1.9 GHz	19.0	0.35	21.0	38.0	2.7-5.0	20-100	Ultra-low noise; high gain; digital shutdown	2.0 DFN-8
GRF2082	Ultra-LNA™ for Infra-structure	2.3-3.8	5 V/ 75 mA/ 2.5 GHz	19.8	0.55	20.0	37.5	2.7-5.0	20-100	Ultra-low noise; high gain; digital shutdown	2.0 DFN-8
GRF2083	Ultra-LNA™ for Infra-structure	3.0-6.0	5 V/ 65 mA/ 3.6 GHz	18.6	0.65	18.0	35.0	2.7-5.0	20-100	Ultra-low noise; high gain; digital shutdown	2.0 DFN-8
NEW! GRF2093	Ultra-LNA™	1.0-6.0	5 V/ 70 mA/ 2.5 GHz	21.0	0.38	19.0	36.0	2.7-5.0	30-100	Ultra-low noise; high gain; flexible bias	1.5 DFN-6
GRF2105	Broadband, Linear LNA for Small Cells	0.4-5.0	5 V/ 70 mA/ 2.5 GHz	20.7	0.77	22.5	36.0	2.7-5.0	20-90	Low noise; high, flat gain; flexible bias	1.5 DFN-6
GRF2133	Ultra-High Gain LNA	0.4-2.7	5.0 V/ 60 mA/ 1950 MHz	28.5	0.65	20.3	30.0	1.8-5.0	30-160	Ultra-high gain; low noise; flexible bias	1.5 DFN-6

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Note: -W suffix denotes AEC-Q100 Class 2.



Extremely Low Noise Amplifiers (Continued)

Part Number	Description	Frequency Range (GHz)	Reference Conditions	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vdd Range (V)	Idd Range (mA)	Features	Package (mm)
NEW! GRF2171	High Gain Ultra-LNA™	2.5-5.0	5 V/ 75 mA/ 3.6 GHz	29.5	0.75	18.7	41.5	5.0	75	Ultra-high gain, ultra-low noise	1.5 DFN-6
GRF2870	Guerrilla Bloc™ Ultra-LNA™	0.6-1.0	5 V/70 mA/ 0.9 GHz	20.0	0.35	20.0	40.0	2.7-5.0	20-80	Ultra-low noise; high gain	4.0 Module
GRF2871	Guerrilla Bloc™ Ultra-LNA™	1.5-2.2	5 V/70 mA/ 1.9 GHz	19.5	0.4	19.0	37.5	2.7-5.0	20-80	Ultra-low noise; high gain	4.0 Module
GRF2872	Guerrilla Bloc™ Ultra-LNA™	2.0-3.0	5 V/70 mA/ 2.5 GHz	19.0	0.55	21.0	37.5	2.7-5.0	20-80	Ultra-low noise; high gain	4.0 Module
GRF2873	Guerrilla Bloc™ Ultra-LNA™	3.0-4.2	5 V/70 mA/ 3.6 GHz	16.8	0.65	18.8	37.0	2.7-5.0	20-80	Ultra-low noise; high gain	4.0 Module

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Automotive Qualified (AEC-Q100) Products

Making Better Vehicle Networks

Vehicles are becoming more connected every day. To satisfy the exploding demand for automotive wireless communication, Guerrilla RF offers a wide assortment of RF amplifiers.

Refer to the tables below for our standard and automotive product processes and product qualification schedule.



AUTOMOTIVE

GPS, LTE, 802.11p, WiFi, SDARS, DAB

Please visit our web site to view our growing automotive product offering.

[VIEW NOW](#)

Standard and AEC-Q100 Processes

Process	Standard Products	Automotive Products
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Level and Assembly

Wafer Automated Optical (Die) Inspection (AOI)	■	■
Wafer Process Control Monitor Test (PCM)	■	■
Process Flow within IATF 16949 Facility with Standard Flow for Standard Products and Enhanced QA Flow for Automotive Products.	■	■

Reliability Tests

Qualification Follows JESD47 Methods	■	□
Qualification Follows Applicable AEC-Q100 Methods, Including Qualification by Similarity	□	■

Final Test, Tape and Reel

100% RF Functional Test	■	■
Vision	■	■

AEC-Q100 Qualification Schedule

Complete	In Progress
GRF4002-W GRF2012-W GRF2073-W GRF2501-W	GRF2013-W GRF2071-W GRF2093-W GRF2103-W GRF4014-W GRF6011-W

Note: -W suffix denotes AEC-Q100 Class 2.



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