RENESAS
BIG IDEAS FOR EVERY SPACE

RF AMPLIFIERS WITH ZERO-DISTORTION™ TECHNOLOGY

Renesas's RF amplifier portfolio offers a variety of gain, noise figure and linearity features, in either differential or single-ended input impedances. The products feature innovative Zero-Distortion™ technology, enabling high output IP3 with very low current consumption – setting them apart from simple gain block amplifiers.

In addition, the RF amplifiers feature built-in broadband baluns to support wideband applications with differential inputs and outputs. The products are designed for high-reliability operation, using a SiGe amplifier die together with an integrated passive device (IPD) die and proven, high-volume QFN packaging.

Features

- Silicon-based for improved ΘJC and Class 2 ESD
- Flat gain across wide bandwidths
- Zero-Distortion™ technology
- Consistent performance over operating conditions
- Narrow gain variation over voltage and temperature

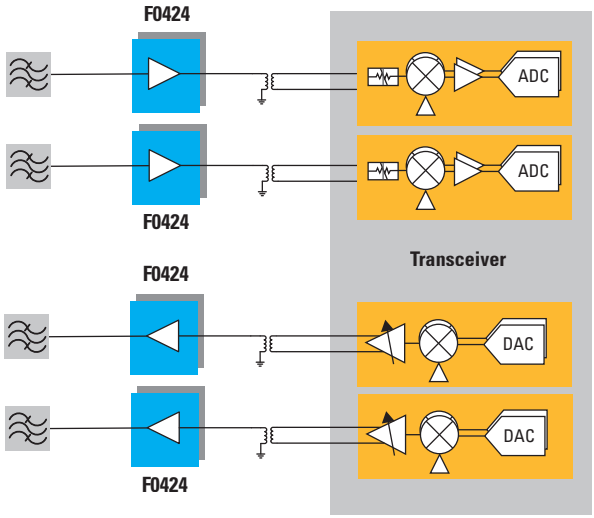
Silicon advantages

Renesas RF Amplifiers utilize advanced RF silicon semiconductor technology offering advantages over other technologies such as GaAs

- Manufacturing robustness with:
  - Higher electrostatic discharge (ESD) immunity
  - MSL1 moisture sensitivity-level performance
- Excellent RF performance over temperature with low current drain
- Higher reliability
- Higher levels of integration with simpler packaging assemblies that lower total cost

Applications

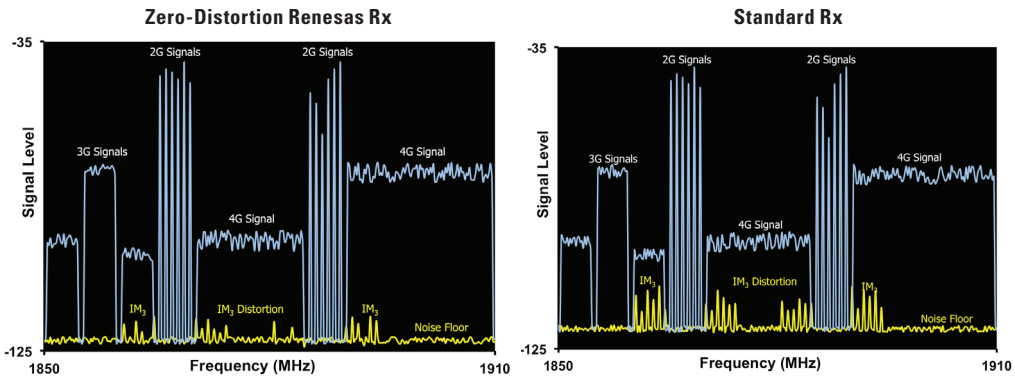
- Wireless base stations
- Repeaters and DAS
- Point-to-point infrastructure
- Public Safety infrastructure
- Military communication
- Industrial equipment



ZERO-DISTORTION™

Renesas RF Mixers and IF Variable Gain Amplifiers

Renesas devices improve SNR by reducing the noise floor and IM3 intermodulation distortion.



Driver Amplifiers

Part Number	Frequency (GHz)	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Voltage (V)	Current (mA)	Package (mm)
F0424	0.6 – 5.0	17	2.3	21	40	3.3 / 5	70	2 x 2, 8–Pin
F1420	0.7 – 1.1	17.4	4.5	23.2	42	5	105	4 x 4, 24–Pin
F1421	1.7 – 2.2	20.3	5.5	23	40	5	138	4 x 4, 24–Pin
F1471	0.4 – 4.2	17	4.3	28.5	39	5	130	3 x 3, 16–Pin
F1475	3.3 – 4.2	21	5	30	–	5	120	3 x 3, 16–Pin
F1478	1.8 – 5	30.3	1.6	23.6	35.7	5	140	3 x 3, 16–Pin
F1490	1.8 – 5	39.5 / 35.5 [1]	2.5	24	38	5	75	3 x 3, 16–Pin
F1491	3.3 – 5.0	39.5 / 35.5 [1]	2.5	24	34	5	75	3 x 3, 16–Pin
F1495	3.3 – 4.2	40	5	30	–	5	120	3 x 3, 16–Pin

Interface Amplifiers

Part Number	Frequency (GHz)	Input	Output	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Voltage (V)	Current (mA)	Package (mm)
F1129LB	1.4 – 3.2	50Ω SE	100Ω DIFF	20	1.6	20.5	36	3.3 / 5	61	2 x 2, 12–Pin
F1129MB	3 – 4.2	50Ω SE	100Ω DIFF	19	1.8	18	32	3.3 / 5	60	2 x 2, 12–Pin
F1129HB	4 – 6	50Ω SE	100Ω DIFF	18	2.3	18	32	3.3 / 5	70	2 x 2, 12–Pin
F1423	0.6 – 3.0	50Ω DIFF	50Ω SE	13.1	5.1	21.5	41.8	5	120	4 x 4, 24–Pin
F1429LB	1.4 – 3.2	100Ω DIFF	50Ω SE	21.5	1.9	22	40	3.3 / 5	64	2 x 2, 12–Pin
F1429MB	3.0 – 4.2	100Ω DIFF	50Ω SE	21	1.8	21	40	3.3 / 5	73	2 x 2, 12–Pin
F1429HB	4 – 6	100Ω DIFF	50Ω SE	18	2	20	36	3.3 / 5	70	2 x 2, 12–Pin

To request samples, download documentation or learn more visit: **idt.com/amps**

RENESAS

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