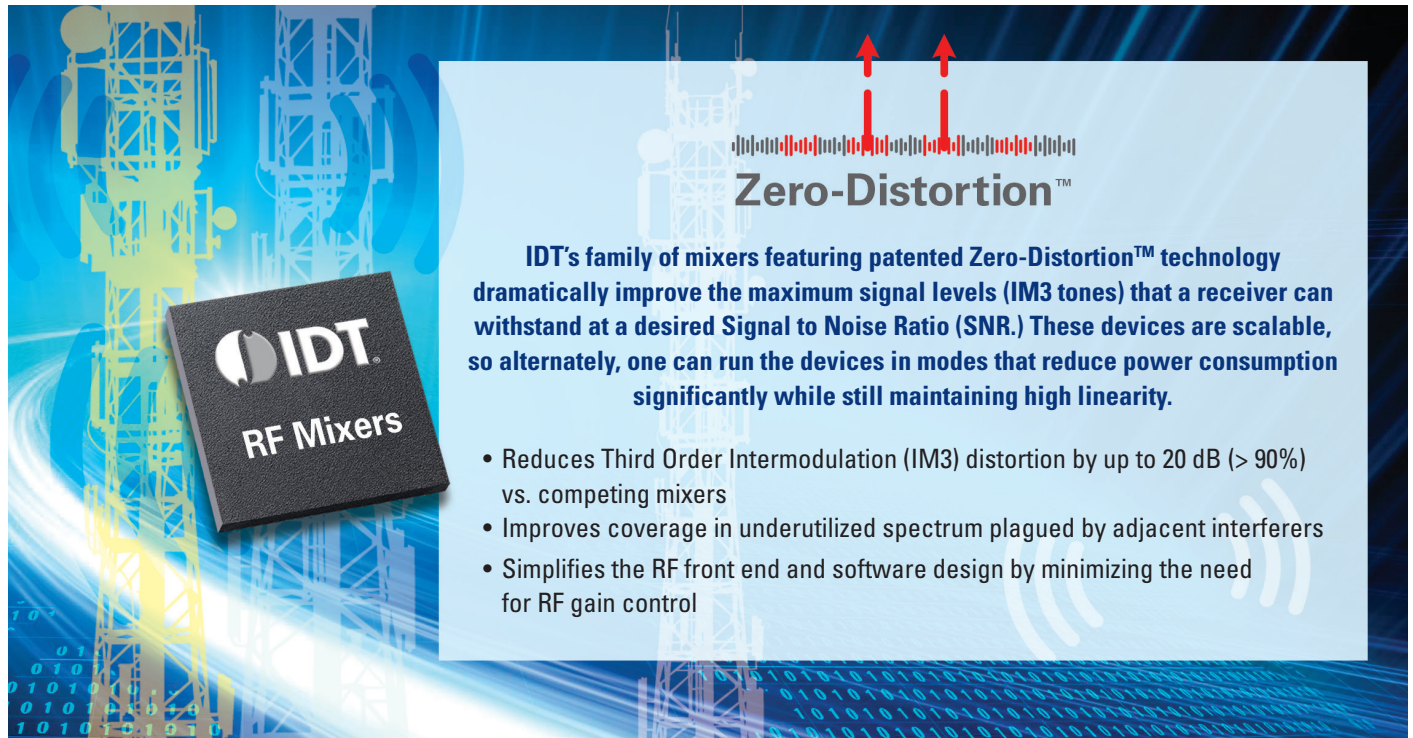


RF Mixer Family



Zero-Distortion™

IDT's family of mixers featuring patented Zero-Distortion™ technology dramatically improve the maximum signal levels (IM3 tones) that a receiver can withstand at a desired Signal to Noise Ratio (SNR.) These devices are scalable, so alternately, one can run the devices in modes that reduce power consumption significantly while still maintaining high linearity.

- Reduces Third Order Intermodulation (IM3) distortion by up to 20 dB (> 90%) vs. competing mixers
- Improves coverage in underutilized spectrum plagued by adjacent interferers
- Simplifies the RF front end and software design by minimizing the need for RF gain control

IDT mixers have excellent out-of-band spur performance which eases pre-filtering requirements. RF and LO baluns are internal allowing for simple 50 ohm interfaces. The IF ports are configured as differential 200 ohms to drive pre-ADC filters with low even-order distortion.

In-band 2x2 and 3x3 spurs cannot be filtered so the mixer must provide all of the rejection for the system. IDT's family of mixers provide very high rejection (> 70dB) to these critical spurs.

Robust power down modes in IDT mixers can be fully turned on and off in < 200nsec, and are ideal for modern TDD systems. The LO port impedance is practically unchanged in the off state minimizing the potential for synthesizer pulling.

In addition to multiple modes of operation, all IDT mixers include external resistor options to further down-scale power consumption vs. linearity. Application notes that describe how to reduce the current even further and still maintain > 32dBm OIP3 are available at idt.com/RF.

IDT ADVANTAGES

- Gain = 9dB, P1dB up to +13dBm
- NF < 10dB
- IIP3 up to +35dBm, OIP3 up to +44dBm
- 5V supply
- Power consumption as low as 850mW dual, 500mW single
- 50Ω SE RF & LO Z_{IN}
- 200Ω balanced IF Z_{OUT}
- Silicon-based semiconductor technology
- Wide IF bandwidths from 50 to 500 MHz
- VersaMixer™ family offers maximum performance and flexibility at minimum power consumption
 - IDT's FlatNoise™ technology achieves low noise figure at any gain setting

RF MIXER FAMILY

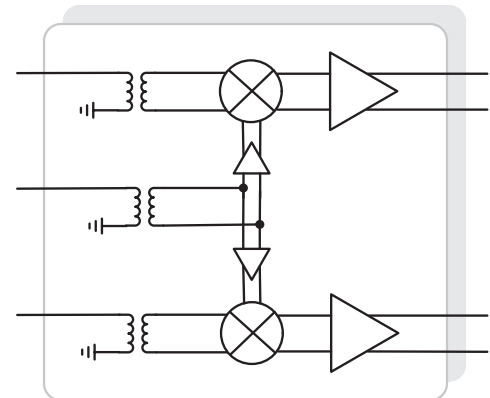
Device	Configuration	OIP3 (dBm)	Frequency (MHz)	Package
F1150	Dual	40	1700 to 2200	6 x 6 mm 36-TQFN
F1152	Dual	42	1400 to 2200	6 x 6 mm 36-TQFN
F1162	Dual	43	2300 to 2700	6 x 6 mm 36-TQFN
F1100	Dual	40	700 to 1000	6 x 6 mm 36-TQFN
F1102	Dual	42	400 to 1000	6 x 6 mm 36-TQFN
F1701	Single	42	700 to 1000	5 x 5 mm 20-TQFN
F1763	Single	43	2300 to 2700	5 x 5 mm 20-TQFN
F1751	Single	41	1700 to 2200	5 x 5 mm 20-TQFN
F1178	Dual	40	3300 to 3800	6 x 6 mm 36-TQFN
F1792	Single	35	400 to 3800	4 x 4 mm 24-TQFN
F1192B	Dual	35	400 to 3800	4 x 4 mm 24-TQFN

Silicon-based Semiconductor Technology

IDT's Mixers utilize silicon-based semiconductor technology, offering advantages over other technologies such as GaAs.

SILICON ADVANTAGES

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



To request samples, download documentation or learn more visit: [idt.com/rf](https://www.idt.com/rf)