

Integrated Synthesizer/Mixer Solutions

RFMD offers the widest portfolio of highly integrated frequency conversion devices designed to reduce development time, risk and size in modern RF transmitters and receivers. They combine a high-performance fractional-N phased locked loop, wideband VCOs, LO buffers and RF mixers on a single chip.

The RFFC207x and RFFC507x series take advantage of an advanced sigma-delta PLL modulator that delivers outstanding synthesizer phase noise performance with an rms integrated phase error as low as 0.18 degrees at 1 GHz. Designed to address the need for highly flexible and re-usable solutions, these devices offer an extended LO tuning range and RF mixer frequency range and can be configured to work as signal sources by bypassing the integrated mixers. For applications requiring the use of multiple frequency converters, the unique “Multi-Slice” mode allows up to 4 devices to share a common serial bus without the need for separate chip-select control lines between each device and the host controller.

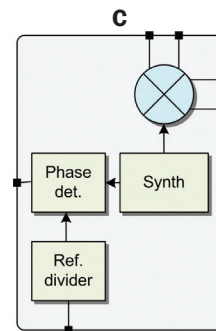
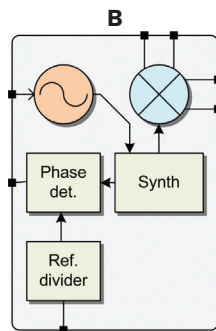
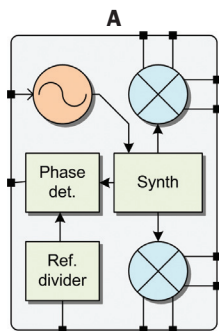
Typical applications include CATV head-ends, cellular repeaters, frequency band-shifters, diversity receivers, Point-to-Point radios, software defined radios, cellular jammers, Satellite Communications, VHF/UHF radios.

FEATURES

- Fractional-N synthesizer with ultra-fine 1.5 Hz step size and low spurious products
- Very wideband low noise VCOs
- 52 MHz phase detector frequency
- Programmable LO output dividers
- Active high-linearity RF mixers with adjustable bias for low power operation
- Full duplex mode (dual mixer versions) with 60 dB mixer-to-mixer isolation
- Up to 6 general purpose outputs
- 3 V supply voltage
- Low current consumption
- 3-wire serial programming interface
- Ultra compact 5.0 x 5.0 mm² QFN package

SPECIFICATIONS

Part Number	Architecture	Block Diagrams A, B, C	LO Freq (MHz)	Phase Noise at 2 GHz		Mixer RF/IF Port Freq Range (MHz)	Mixer IIP3 (dBm)	Supply Voltage (V)	Supply Current (mA) with one mixer active	Multi-Slice Mode
				1 kHz	10 kHz					
RF2051	Frac-N PLL, VCO, 2 mixers	A	300 to 2400	-85	-90	30 to 2500	18	2.7 to 3.6	55 to 75	—
RF2052	Frac-N PLL, VCO, 1 mixer	B	300 to 2400	-85	-90	30 to 2500	18	2.7 to 3.6	55 to 75	—
RF2053	Frac-N PLL, 1 mixer	C	external VCO	-85	-90	30 to 2500	23	2.7 to 3.6	45 to 65	—
RF2056	Frac-N PLL, VCO, 2 mixers	A	50 to 500	—	—	30 to 500	25	2.7 to 3.6	50 to 65	—
RF2057	Frac-N PLL, VCO, 2 mixers	A	1900 to 2400	-85	-90	30 to 2500	18	2.7 to 3.6	55 to 75	—
RF2059	Frac-N PLL, VCO, 2 mixers	A	1550 to 2050	-85	-90	30 to 2500	18	2.7 to 3.6	55 to 75	—
RFFC2071	Frac-N PLL, VCO, 2 mixers	A	85 to 2700	-95	-102	30 to 2700	23	2.7 to 3.3	100 to 130	✓
RFFC2072	Frac-N PLL, VCO, 1 mixer	B	85 to 2700	-95	-102	30 to 2700	23	2.7 to 3.3	100 to 130	✓
RFFC5071	Frac-N PLL, VCO, 2 mixers	A	85 to 4200	-95	-102	30 to 6000	23	2.7 to 3.3	100 to 135	✓
RFFC5072	Frac-N PLL, VCO, 1 mixer	B	85 to 4200	-95	-102	30 to 6000	23	2.7 to 3.3	100 to 135	✓



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