

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 RF205x family has been optimized for low current consumption while providing a stable, low noise synthesizer with integrated upconversion and downconversion mixers.

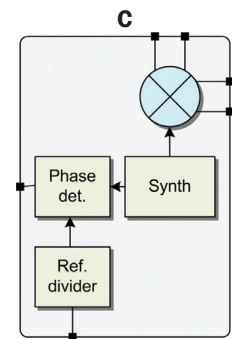
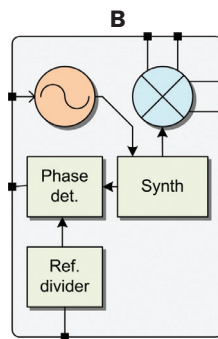
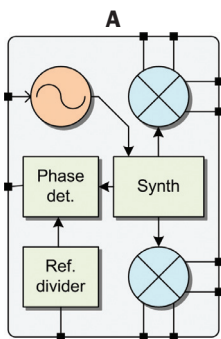
The RFFC207x and RFFC507x series take advantage of an advanced sigma-delta PLL modulator that delivers outstanding synthesizer phase noise performance with an RMS integrated phase error as low as 0.18 degrees at 1GHz. Designed to address the need for highly flexible and reusable solutions, these devices 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 novel “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, saving cost and simplifying the final design.

FEATURES

- Fractional-N synthesizer with ultra-fine 1.5Hz step size and low spurious products
- Very wideband low noise VCOs
- 52MHz 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 minimum 60dB mixer-to-mixer isolation
- Up to 6 general purpose outputs (RFFC family)
- 3V supply voltage
- Low current consumption
- 3-wire serial programming interface
- Applications include: CATV head-ends; multi-dwelling broadcast distribution systems; satellite IF channel stacking; point-to-point radios; GSM, CDMA, WCDMA, TD-SCDMA and LTE repeaters; frequency band-shifters; software defined radios

SPECIFICATIONS

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



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