# Configurable components perform multiple common RF functions in a reduced footprint


RF Micro Devices announced a new family of integrated configurable components for multiple markets. The highly integrated components, comprised of the RFFC207x and RFFC507x product families, perform multiple common RF functions in a reduced footprint while delivering the flexibility necessary to develop radio systems that operate over a wide dynamic range and across a broad range of frequencies and channel bandwidths.

The RFFC207x and RFFC507x product families integrate RFMD’s world-class fractional-N PLL/VCO combination with RF mixers to provide radio designers an elegant radio partitioning option with very high performance, superior integration and no compromise in flexibility. The RFFC207x and RFFC507x represent the second generation of RFMD’s innovative RF205x family of integrated configurable components, which enables radio designers across industries to shrink circuit board area, reduce risk and shorten product development time – all of which lower the total cost of radio implementation.

The RFFC207x and RFFC507x expand upon the capabilities of the RF205x family by enhancing performance and extending frequency range to serve even more industries and applications. General purpose in nature, RFMD’s newest family of integrated configurable components is applicable to fixed and mobile infrastructure, radio repeaters, super-heterodyne radios, diversity receivers, frequency band shifters, CATV, software-defined radios, point-to-point radios, satcom, VHF/UHF radios, military, industrial and other applications.

The product family’s wide bandwidth enables use in multiple systems and applications. The RFFC207x series has a local oscillator (LO) range from 85MHz to

2700MHz, with a 30MHz to 2700MHz mixer on-chip. The RFFC507x series has an LO range of 85MHz to 4500MHz with mixer range extending up to 6000MHz.

With industry-leading integrated phase noise of 0.18deg rms at 1GHz, the RFFC207x and RFFC507x improve system performance for radio designers. Additionally, the integrated fractional-N synthesizer features an advanced sigma-delta modulator to achieve ultra-fine step sizes and lower spurious products, while integrated mixers enable a smaller implementation (5mm x 5mm) than competing solutions. Finally, by integrating the entire LO path on-chip, the RFFC207x and RFFC507x eliminate the need for designers to work with the highly sensitive interface from VCO to mixer, saving valuable design time and improving end product manufacturing yields.

The RFFC207x and RFFC507x series also deliver industry-low power consumption. The components' bandwidth and phase noise specifications are achieved using only 125mA from a 3-volt supply (single-mixer, high linearity setting), and the current can be reduced to 100mA by reducing the programmable mixer linearity setting. Importantly, the 4500MHz components use only 10mA more than the 2700MHz components.

All of the components can be programmed through a simple 3-wire serial interface. They also feature a unique programming mode that allows up to four devices to be controlled from a common serial bus. By eliminating the need for separate chip-select control lines between devices and host controller, this lowers the cost of implementation and the risk of interference between RF and digital lines on the target PCB. Finally, two frequencies can be loaded into the device when it is initialized, allowing convenient switching between frequencies, and lock detect and general purpose pins are available, enabling control though the serial bus.

RFMD is showcasing its industry-leading integrated configurable components at the Electronica Tradeshow, in Munich, Germany, November 9-12 at booth #A4.135. Product brochures will be available at the show, or they can also be obtained online at www.rfmd.com [1] or by contacting RFMD at (336) 664-1233.

Availability

The single-mixer, 2700MHz RFFC2072 starts at $7.00 per 10,000 units, and the single-mixer, 5000MHz RFFC5072 starts at $9.00 per 10,000 units. Samples and evaluation boards are available now, and production quantities are expected to be available by the end of the December 2010 quarter.



**Links:**
[1] http://www.rfmd.com