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## Further contract successes for new HyperSpeed and HyperLength FFT cores from RF Engines.

*“Seeing all of the radio spectrum all of the time is becoming a reality...”*

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RF Engines Limited (RFEL), the provider of high performance signal processing solutions for FPGA, has announced two new contract successes for its recently released **HyperSpeed** and **HyperLength** Fast Fourier Transform (FFT) products.

In the first of these, a major, US defence, prime contractor has utilised the vast processing power of a HyperSpeed FFT core in a new low cost, low power, digital receiver design. Due to the nature of the application, precise details cannot be released, however the FFT core is performing continuous real-time processing of data at speeds in excess of 1 GigaSamples/second on a single Xilinx Virtex FPGA. The core has been highly optimised and uses less than 1 Watt in operation.

In the second contract, a UK government department has utilised a HyperLength FFT core in a signal monitoring application. The FFT core length has over 256,000 points, allowing the input spectrum to be split into very narrow frequency bins. This very fine resolution, coupled with the real-time processing, allows detailed signal analysis to be conducted. In this particular application, the core utilises approximately 50% of the resources of a Virtex II 3000 FPGA and four 16Mbyte SDRAMs.

John Summers, VP Sales and Business Development at RF Engines, commented, “These latest contracts are good examples of the demand for our extremely high performance cores, that also provide a low risk and cost-effective approach to signal processing design. Our customers can be confident about the performance and the quality of the delivered product, since our standard business approach is to provide a precise bit-true model of the required design, and the delivered product is then warranted to exactly match that model. Risk reduction and speed to market are definitely key factors with most of our customers. We are progressing well with even higher performance designs to meet other customer requirements and to meet our goal of being able to see all of the spectrum all of the time.”

The HyperSpeed and HyperLength cores provide silicon efficient implementations of the FFT algorithm, which is used for spectral analysis, and are designed for single chip FPGA implementation. The HyperSpeed architecture supports complex sample rates up to sample rates up to 3.2GHz and transforms lengths up to 32K-points. The HyperLength architecture uses external memory and enables FFT transforms with up to 256M-points.

The FFT cores use fixed-point arithmetic, and have been developed using a highly parallel architecture. Each core is factory configured to precise user specifications, ensuring maximum silicon efficiency and performance for each application. The designs are supplied in a netlist form as a component ready to be

combined with the customer's own IP or as part of an integrated design from RFEL. To complement this technology, RFEL also provides a range of signal processing building blocks for FPGA to build complete spectral analysis systems, including windowing functions, bit reversal, power calculation, averaging cores and half-band filters.

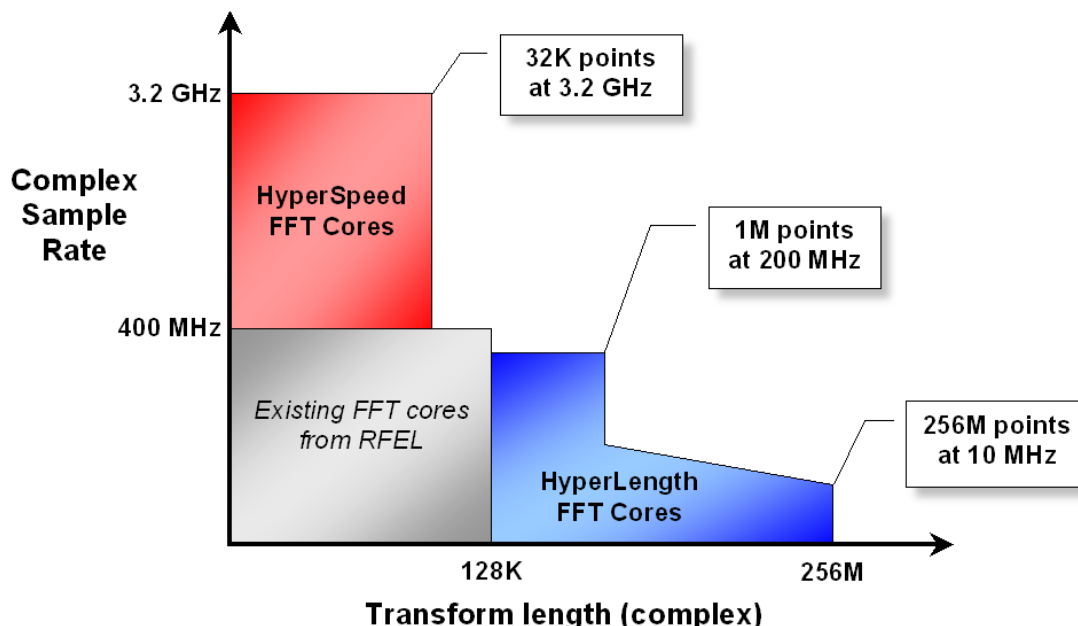


Figure 1 – Transform length and sample rate combinations for HyperLength and HyperSpeed FFT cores. Assumes a single Xilinx Virtex Pro 70 for HyperSpeed cores, and a single Virtex II 3000 with external memory for HyperLength cores

### RF Engines

RF Engines Limited (RFEL) is a UK based designer, providing high specification signal processing cores, system on chip designs, and FPGA based board solutions for applications in the defence, communications and instrumentation markets. These applications include base stations, wireless and wireline broadband communications systems, satellite communications systems, test and measurement instrumentation, as well as defence systems. More specifically, RFEL is a solutions provider for projects requiring complex front end, real time, wide and narrow band, flexible channelisation. RFEL provides a range of standard cores covering multiple FFT and unique PFT techniques, as well as system design services for specialist applications.

For further information, please see the website at [www.rfel.com](http://www.rfel.com) or contact RF Engines at Innovation Centre, St Cross Business Park, Newport, Isle of Wight, PO30 5WB, Great Britain. Tel +44 (0) 1983 550330. E-mail [info@rfel.com](mailto:info@rfel.com)

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