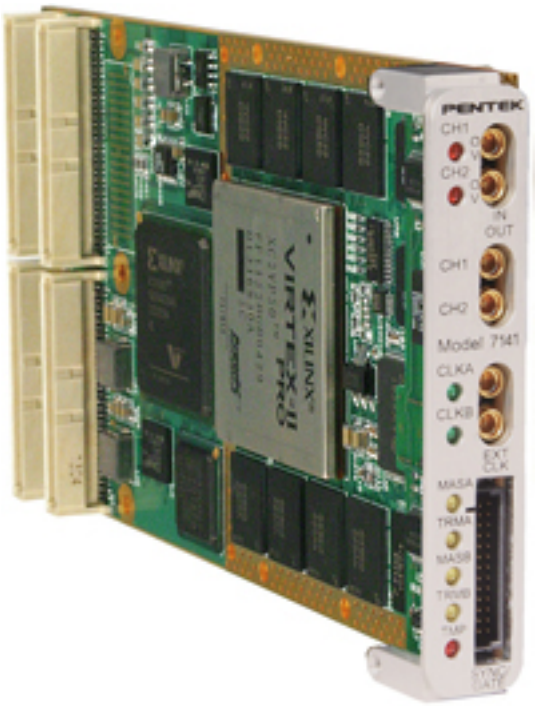
# Dual Multiband Transceiver with FPGA Offers Improved Signal-to-Noise, SFDR




Pentek released its Model 7141 Dual Multiband Transceiver with FPGA. It is a complete software radio system for connection to HF or IF ports of a communications system. The device's signal-to-noise ratio and the spurious free dynamic range are improved by 10 dB, when compared to many competitive products, according to the company. It accepts two full scale analog HF or IF inputs on front-panel MMCX connectors at +10 dBm into 50 ohms with transformer coupling into Linear Technology’s LTC2255 14-bit 125 MHz A/D converters. A/D output samples are delivered into the Virtex-II Pro FPGA for signal processing or for routing to other module resources. A TI/Graychip GC4016 quad digital downconverter accepts either four 14-bit inputs or three 16-bit digital inputs from the FPGA, which determines the source of GC4016 input data. These sources include the A/D converters, FPGA signal processing engines, SDRAM delay memory and data sources on the PCI bus. Each GC4016 channel may be set for independent tuning frequency and bandwidth. A TI DAC5686 digital upconverter (DUC) and dual D/A accepts baseband real or complex data streams from the FPGA with signal bandwidths up to 40 MHz. When operating as an upconverter, it interpolates and translates real or complex baseband input signals to any IF center frequency between DC and 160 MHz. It provides real or quadrature (I+Q) analog outputs through two 320 MHz, 16-bit D/A converters to two front-panel MMCX connectors at +4 dBm into 50 ohms. The Xilinx XC2VP50 Virtex-II Pro FPGA serves as a control and status engine with data and programming interfaces to each of the on-board resources including the A/D converters, GC4016 digital downconverter, digital upconverter and D/A converters.

**Pentek**
201-818-5900, www.pentek.com [1]

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