Mistral launches an FPGA-based Radar Receiver

8-channel receiver with powerful FPGA based processing engine

December, 2009: Furthering its initiative in offering world class electronic solutions to meet the demanding requirements of the aerospace and defense applications, Mistral Solutions, a leading product realization company specializing in real-time embedded solutions, today announced the availability of its Radar Receiver.

The Radar Receiver, named 'SaraAmsh', is a 1U form-factor, 19" sub-rack mountable, compact unit; with an 8-channel receiver that supports direct IF sampling. The Radar Receiver is built around a Virtex-5 FPGA based processing engine with powerful processing and high bandwidth features that make it ideal for DSP applications including signal intelligence, electronic warfare and counter measures.

Features of the Radar Receiver:

1U form factor chassis
F8-channel receiver sampling between 10-250 MSPS
Direct IF sampling – all channels can be synchronized for the same sampling time
Minimum Detectable Signal (MDS): -88dBFS
Bandwidth: 700MHz (-3dB)
Dynamic Range: 2Vpp
Supports multiple I/O interfaces like FMC (VITA 57), GigE, optical and electrical serial standards like serial-FPDP, PCIe, Aurora, SRIO, XAUI
FPGA based processing at wire speed supports multiple algorithm running in parallel
PowerPC based Host interface with VxWorks/Linux BSP
High bandwidth I/O between FPGAs for optimizing/maximizing performance
Available in commercial and rugged industrial version

"The Radar Receiver designed by Mistral is unique as compared to most other COTS boards available in the market. Its integrates multiple ADCs, FPGA processing engines, Single Board Computer and various serial and parallel industry standard interfaces, to provide customers a complete solution. Customers can focus on their end-application instead of spending valuable time integrating multiple COTS boards

available in the market to build their own Radar Receiver solution," said A Venkatakrishna, Vice President-Hardware Design, Mistral Solutions. "One of the important requirements users look for in a Radar Receiver is synchronization between channels, and Mistral's Radar Receiver has been architected to achieve this," he added.

The scalable design for the Radar Receiver ensures that multiple 1U Radar Receiver units can be stacked together to provide additional receiving channels and enhanced processing

Customization

The Radar Receiver comes with a basic set of proven capabilities like optical sFPDP, GigE and memory controllers. It also provides remote configuration of FPGA PROM and the analog and digital sections of the complete solution, from a HOST PC. Based on customer requirements, Mistral can provide customization services, to help customers adapt the Radar Receiver for specific applications: like configuring it to work as a receiver and/or transceiver to adapt it for a DRFM/RTS or a Software Defined Radio application.

Mistral can also develop production-worthy drivers and application software in VxWorks and Linux.

Mistral's Solutions for Defense and Aerospace

Backed by several years of experience in supporting the technology needs of the Mil-Aero segment, Mistral offers high-performance, high-capability data acquisition and signal processing solutions that cater to the exacting requirements of surveillance, communication and radar applications.

Mistral's expertise includes designing, building and deploying customized solutions for defense electronics applications by integrating multi-vendor solutions with custom software and hardware.