Wireless Platform Increases 3G Radio Channel Density

Blue Wave Systems launched the ComStruct&#153 CPCI/C6800, which will enable third generation (3G) developers to realize a greater than four times increase in base station transceiver (BTS) channel density, thereby enhancing network capacity and accelerating 3G rollout. The Commercial-Off-The-Shelf CompactPCI&reg platform is based on the recently launched TMS320C6415 and TMS320C6416 digital signal processors (DSPs) from Texas Instruments Incorporated (TI).
he CPCI/C6800 delivers a more than four times increase in channel density through a combination of higher performance DSPs and Blue Wave's specific architecture for wireless infrastructure.
The open architecture of the ComStruct CPCI/C6800 enables it to be closely coupled with a customer's ASIC technology, which allows wireless equipment suppliers to develop combined DSP/ASIC base station transceivers for optimum performance with a faster time to market and reduced risk compared with an all-ASIC design. 3G radio channel processing is complex and varies by air interface implementation, so an all-ASIC BTS design carries a relatively high risk and often lacks flexibility. Blue Wave has analyzed the tasks performed by the base station transceiver &#151 sometimes known as the Node B &#151 and designed a platform to harness the power of the ASIC and the flexibility of the DSP. This approach requires a greatly simplified ASIC design, accelerating time to market and reducing risk, as well as providing a more flexible, largely programmable architecture.
TI's TMS320C6416 DSP includes co-processors and I/O interfaces specifically targeted at 3G wireless base station design. On-chip co-processors for Viterbi and Turbo coding eliminate the need for external error correction co-processors, further increasing system density.
High bandwidth datapaths on the CPCI/C6800 can offer up to 6Gb/sec data rates to support multiple receivers. Flexible interprocessor communications enables the developer to specify a DSP for chip rate or symbol rate processing to ensure that the system is balanced, depending on the ratio of voice and data services being offered. Standard network interfaces include ATM, Ethernet and CompactPCI Packet Switched Backplane (CPSB) (PICMG 2.16) for maximum flexibility in implementation.
The CPCI/C6800 is available in a CompactPCI form factor as standard, enabling developers to start work on a proven platform. Its modular, self-contained design means that for high volume OEM customers with specific requirements, Blue Wave's Professional Services team can integrate customer ASICs and tailor the platform for proprietary backplanes or custom enclosures such as those used in a pico cell. The CPCI/C6800 is fully code-compatible with Blue Wave's other ComStruct platforms based on TI's TMS320C6000&#153 DSPs, ensuring the easy migration of existing applications.
Blue Wave Systems' ComStruct is a set of modular and scalable communications processing building blocks that includes hardware, software and DSP resources. ComStruct enables telecom infrastructure equipment manufacturers to develop, test and deploy carrier-class wireless and wireline technology for applications

ranging from 3G wireless to Voice over IP.

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