Custom CPU Core Optimized for Networking
• cnMIPS™ CPU core (MIPS64/32 compatible) with MMU
• Available in 300MHz to 500MHz versions
• Enhanced MIPS64 integer (Release2) instruction set
• Dual-issue, five-stage pipeline, optimized latencies
• Auto instruction pre-fetching and advanced data pre-fetching features to minimize memory stalls

High Performance Coherent Memory Subsystem
• 64KB – 128KB ECC protected L2 cache with locking, partitioning features for optimal performance
• Integrated mainstream 16 – 32b DDR2 memory controller with ECC, up to DDR2-533

Integrated Coprocessors for Application Acceleration
• Packet I/O processing, QoS, TCP Acceleration
• Support for IPSec, SSL, SRTP, WLAN security (includes DES, 3DES, AES (up to 256 bit), SHA1, SHA-2 up to SHA-512, RSA, DH)

Integrated High-Performance Networking Interfaces
• Up to 3 Configurable Ethernet I/Os - 3x FE/GE MACs
• Integrated 32bit, 66MHz PCI host or slave
• TDM/PCM interface for glueless VoIP support
• USB 2.0, high-speed (480Mbps), host with integrated PHY

Low Power Consumption:
• 2W - 4W

Small Footprint Package:
• 564 HSBGA (CN30XX)
Multi-Core MIPS64® Processors

OCTEON™ CN30XX MIPS64 Broadband Communication Processors

Product Brief

OCTEON CN30XX Applications
- Wired and Wireless Broadband Gateway with security and packet processing
- Unified Threat Management (UTM) security appliances with Firewall, VPN (IPsec, SSL), IDS, IPS and Anti-virus scanning
- Triple-play voice, video and data wired and wireless gateways
- Integrated management and route processor cards
- Network acceleration cards for security, TCP, content processing, compression
- Switch/router line card and services card control and datapath processing
- Intelligent PCI NIC cards and motherboards

OCTEON Software Support
- Cavium Networks SDK includes:
  - LINUX support
  - Cavium Simple Executive for data plane apps
  - Complete GNU tool-chain, GDB, DDD and viewzilla for tuning
  - Optimized C libraries for security, regular expression, de/compression processing offload
- Complete production quality development toolkits for IP, IPsec, SSL, TCP, SSL-VPN available
- Comprehensive Ecosystem support
  - Popular third party Operating systems and toolchains, including MontaVista Linux, WindRiver VxWorks, ENEA OSE
  - Broad range of third-party application software vendors, including 6Wind, Intoto, D2 Technologies
- MIPS64/32 support enables thousands of MIPS and other C/C++ applications to be easily ported to OCTEON

OCTEON CN30XX - Product Family

<table>
<thead>
<tr>
<th>Device</th>
<th>Part Number *</th>
<th>cnMIPS cores</th>
<th>Performance Max. Available Instructions Per Second</th>
<th>Option</th>
<th>L2 Cache</th>
<th>Interfaces</th>
<th>PCI</th>
<th>Memory I/O</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>SCP</td>
<td>CP</td>
<td>USB 2.0</td>
<td>Ethernet</td>
<td>DDR2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CN3005</td>
<td>CN3005-XXXBG564-Option Code</td>
<td>1</td>
<td>800M</td>
<td>x</td>
<td>x</td>
<td>64KB</td>
<td>x</td>
<td>2x RGMII or 1x GMII/MII</td>
<td>32bit/66MHz</td>
</tr>
<tr>
<td>CN3010</td>
<td>CN3010-XXXBG564-Option Code</td>
<td>1</td>
<td>1.0G</td>
<td>x</td>
<td>x</td>
<td>128KB</td>
<td>x</td>
<td>1x RGMII/MII+2x RGMII or 1x RGMII/MII+1x GMII/MII</td>
<td>32/36 bit DDR2-533</td>
</tr>
</tbody>
</table>

* (Part Number Options):
XXX = Device Speed Grade (300 = 300MHz, 400 = 400MHz, 500 = 500MHz)
Option Code = Device Family (listed below):
SCP = Secure Communications Processor Includes: encryption, networking, TCP acceleration and QoS
CP = Communication Processor Includes: high performance packet processing, TCP acceleration and QoS

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