

## Comcerto® 2000 Content-Aware Gigabit Communications Processor

The Comcerto 2000 product family addresses a wide variety of applications ranging from high-end VoIP and video-enabled home gateways, small-to-mid-sized business (SMB) high performance security appliances to Ethernet-powered 802.11n enterprise access points and consumer networked storage products

Building upon the field-hardened Comcerto 1000, the Comcerto 2000 series of system-on-chip (SoC) processors deliver vastly increased processing power and VoIP density, wire speed handling of small packets, DRM compliant security and enterprise grade VPN and SSL throughput. The new chip allows considerable system cost savings thanks to the integration of new features that are now emerging in the CPE market.

Comcerto 2000 leverages ARM's energy efficient core technology and Mindspeed's low-power design process to achieve the lowest power consumption in its class (<2W typical @ 900MHz). Additionally, the companion board support package software provides a rich set of power management features to address the energy saving goals of service providers and product manufacturers worldwide.

In addition to providing high throughput IPSec and SSL CPU offload, the Comcerto 2000's onboard security engine includes a powerful Deep Packet Inspection Engine with GZIP decompression capability. The device's three Ethernet interfaces allow for DMZ configuration providing further security for SOHO/SMB routers and gateways.

Comcerto 2000 I/O interfaces in conjunction with Mindspeed's innovative multi-layer bus architecture allows non-blocking concurrent transactions across all data interfaces, thus minimizing on-chip packet processing latency. The Comcerto 2000's SATA-2 interfaces, along with the powerful processing engine and integrated RAID controller, provide an ideal solution for Network Attached Storage applications.

In order to provide performance scalability and maximum flexibility the Comcerto 2000 family of processors includes single and dual Cortex ARM 9 core devices from 650 MHz to 1.2GHz delivering up to 6000 DMIPS.

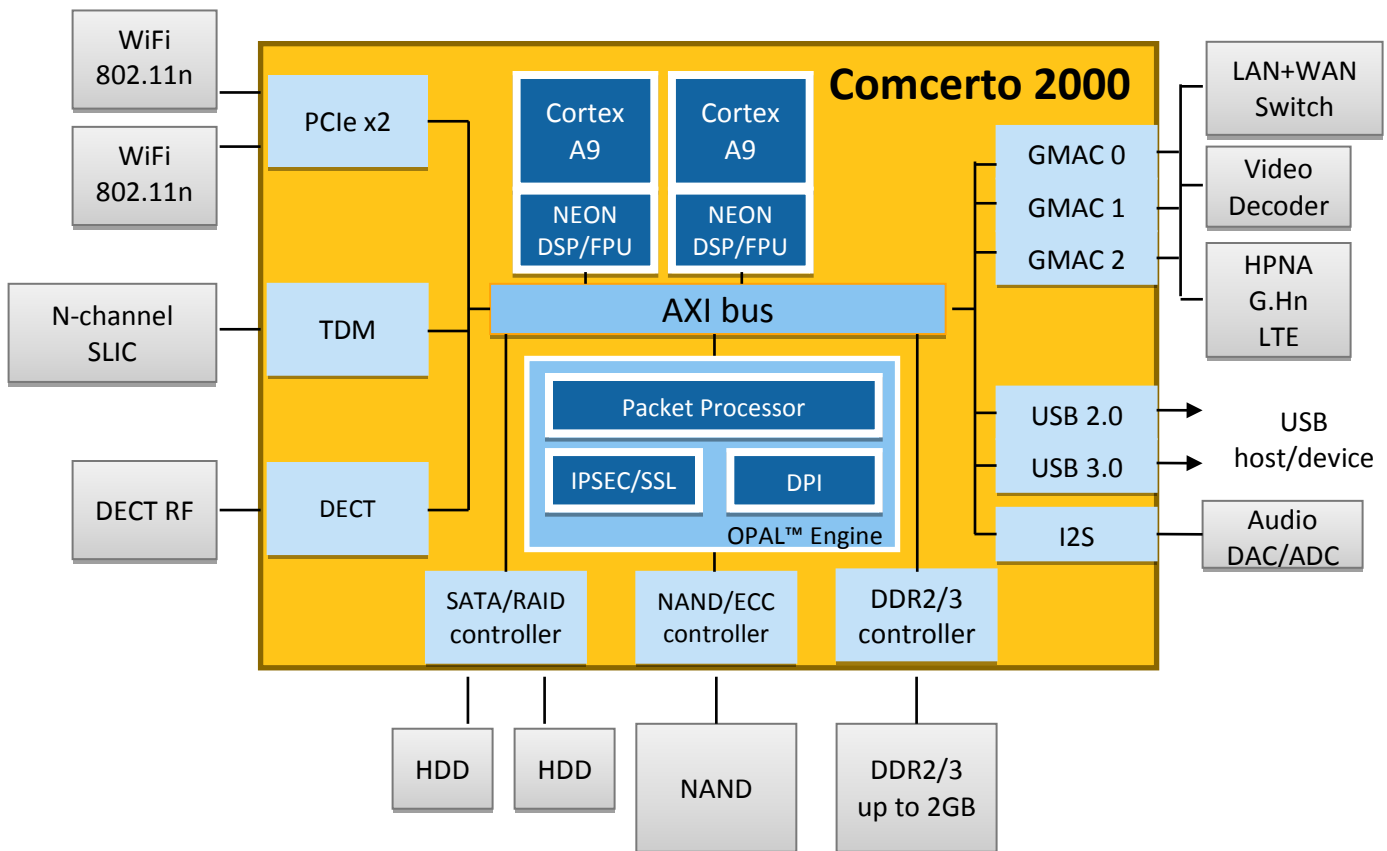
The Comcerto 2000 OpenWRT Linux-based SDK is optimized for both single- and dual-core operation. The software deliverables for the Comcerto 2000 dual core devices are backward compatible with the Comcerto 1000 and 100 line of products.

Additionally, Mindspeed's OpenMind™ rich ecosystem delivers turnkey solutions that reduce time-to-market and lower development costs for VPN/SSL SMB routers, home gateway, Consumer NAS, and enterprise access point manufacturers..



### The Ideal Solution for:

- Broadband Home Routers
- VoIP Residential Gateways
- SMB IP-PBX / VoIP Gateways
- SOHO and SMB VPN Routers
- Video distribution gateways
- High-Performance Wi-Fi Access Points (802.11n/ac)
- Network Attached Storage
- SMB VoIP Routers
- Secure Payment Terminals



Features	Benefits
Open Packet Acceleration Logic – OPAL™	Complete offload of packet handling
	Up to 6000 DMIPS of A9 core + 2 Neon DSPs available for user applications (OSGI& Android Apps, video transcoding, ...)
	Hardware security encryption for IPSEC and SSL
	Deep Packet Inspection Engine
Dual-core Cortex A9 core with cache coherence	Highly efficient multi-core processing with SMP Linux
Support for Mindspeed's voice software	VoIP for up to 16 carrier-grade VoIP channels
New SATA, USB3.0 DDR3 and NAND controller interfaces	Highly cost effective design for a wide variety of applications and high-bandwidth access to peripheral devices.
Comprehensive set of security features (Secure boot, TrustZone®, OTP, JTAG blocking, ...)	Complies with security requirements of business applications, digital media gateways and financial transaction devices
Integrated DECT and DECT-ULE baseband processor	Cost efficient design for DECT base stations and home-automation devices
OpenMind™ ecosystem of software partners	Accelerated time to market or turnkey solutions for designs involving advanced software features (OSGI, Java, DLNA, TR-69,...)

## Processing unit

- Dual ARM Cortex A9 SMP/AMP up to 1.2GHz with NEON DSP and FPU
- 32kB/32kB of I/D cache with 256 kB of L2 cache

## Data Interfaces

- 3 x RGMII or 2 x RGMII and 1 x SGMII
- IEEE Std. 1588-2007 PTP V2 and 802.1AS
- 1x USB3.0 + 1x USB2.0 (Host/Device) with PHYs
- 2x PCIe Gen2 (5 GHz)
- 2x SATA2 with RAID 0/1/5

## Memory Interfaces

- Glue-less boot from NOR & NAND with ECC
- MLC NAND support
- 16 or 32-bit DDR3-1066 with ECC

## Control I/Os

- 1x I2C, 1x I2S, 2x SPI (up to 50 MHz with DMA)
- 2x UARTs (1x BT-capable + 1x Regular)
- Watchdog/Timers, RTC
- 64 GPIOs, 6 PWM Capable

## Open Packet Acceleration Logic–OPAL™

### Packet processing

- Delivers 2Gbps of PPPoE/NAT routing with 64B packets
- HW QoS compliant to HG12.0 on all data interfaces
- TCP Offload Engine

### Security

- Full IPSec offload including SNOW and Kasumi
- Full SSL offload
- Secure Boot and ARM TrustZone®
- JTAG Blocking
- OTP Memory

### Deep Packet Inspection

- Antivirus
- Application specific QoS
- Advanced diagnostics

## Telephony functions

- DECT base station CAT-iq 2.0 compliant  
SW upgradeable to 2.1 and 3.0
- TDM support for wideband voice

## Power Management Features

- Power islands
- Extensive Power Management Features
- Dynamic CPU Clock Adjustment

	Speed	Security Engine	Part Number	VoIP channels	USB 2.0	USB 3.0	DPI	DECT
C2200	1.2GHz	SMB	M86208	16	1	1	Yes	Yes
			M86207	16	1	1	Yes	No
			M86206	16	1	1	No	Yes
		Home	M86204	8	1	1	Yes	Yes
			M86203	8	1	1	Yes	No
			M86202	8	1	1	No	Yes
			M86201	8	1	1	No	No
	900MHz	SMB	M86298	16	1	1	Yes	Yes
			M86297	16	1	1	Yes	No
			M86296	16	1	1	No	Yes
			M86295	16	1	1	No	No
		Home	M86294	8	1	1	Yes	Yes
			M86293	8	1	1	Yes	No
			M86292	8	1	1	No	Yes
	650MHz	Home	M86291	8	1	1	No	No
			M86262	8	1	1	No	Yes
			M86261	8	1	1	No	No
				M86260	8	2	0	No

For more product information, please visit [www.mindspeed.com](http://www.mindspeed.com)



[www.mindspeed.com/salesoffices](http://www.mindspeed.com/salesoffices)  
 General Information: (949) 579-3000  
 Headquarters – Newport Beach  
 4000 MacArthur Blvd., East Tower  
 Newport Beach, CA 92660-3007  
 862xx-BRF-001-M

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