RadiSys®

DATASHEET

FEATURE SUMMARY

- 1.6GHz and 1.1GHz Intel® ATOM™ processor

- 85mm x 70mm MicroExpress size

- Up to 2GB DDR2 memory down

- Type 2 COM Express pinout

- Onboard microSD socket

- Gigabit Ethernet or SATA option

Procelerant Z500

85mm x 70mm COM based on Intel® ATOM™ Processor

The RadiSys Procelerant® Z500 COM Module is the innovative combination of Intel's low power 1.6GHz ATOM™ processor on a 85mm x 70mm standardized Type 2 COM Express module. The ATOM™ processor delivers unprecedented performance and ultra low power in the smallest COM footprint possible. The Procelerant® Z500 delivers powerful performance with sub-5watt power dissipation. Along with up to 2GB memory down, a microSD socket, Gigabit Ethernet and extended voltage range make it ideal for battery-powered handheld or mobile applications.

MICRO-SIZED FORM FACTOR

The Procelerant® Z500 is smaller than the COM Express basic form factor, while still providing 1GB of onboard memory to alleviate memory bottlenecks when used with Intel's performance low power ATOM processors. The COM Express Type 2 connector board-to-board interconnectors specify for high speed serial differential signaling technologies such as PCI Express, Serial ATA, USB 2.0, LVDS, and Serial DVO. To ease migration from existing modular designs, the Procelerant® Z500 retains legacy support with Phoenix® EmbeddedBIOS® with StrongFrame Technology® .

The Procelerant® Z500 enables OEMs of handheld battery powered applications to start designing at the same time as processor release, saving months of development time and resources. OEM focus can remain on core competencies such as software and application development rather than high speed circuit design. Planned feature changes, demand fluctuations and performance upgrades can be handled without product re-designs using the Procelerant® Z500. The Procelerant® Z500 can reduce service repair inventories, and simplify upgrades, contributing to the success of the product over its lifetime.

DESIGN SERVICES BY THE COM EXPERTS AT RADISYS

OEMs can depend on RadiSys to support their design at every stage, whether it is carrier board design or services such as schematic reviews, debug assistance and custom BIOS generation. Carrier design tools such as the Procelerant® COM Express Design Guidelines, carrier schematics and Gerber files are available for customers committed to using RadiSys Procelerant® CE modules. Carrier design consulting and debug services are also available to support OEM product development at any stage. Ask your RadiSys Sales Manager for more information.

COM EXPRESS STARTER KITS ACCELERATE PRODUCTION

Kickstart your application development with Procelerant® COM Express Starter Kits. Accelerate a

product's development, improve its time to market and reduce overall pre-market cost by minimizing the design team's installation requirements and maximizing their efficiency. Procelerant® COM Express Starter Kits arrive integrated onto a CR202 development carrier board with all hardware needed for quick prototyping using only a single order code.

Procelerant Z500 Specifications

FEATURE	FUNCTION	DESCRIPTION
PINOUT	Type 2 COM Express Compatible	
PROCESSOR	Intel® ATOM™ Processor Z530: 1.60GHz, 512K cache, 533MHz FSB Intel® ATOM™ Processor Z510: 1.10GHz, 512K cache, 400MHz FSB	
CHIPSET	Intel System Controller Hub US15W	
MEMORY	Type	Eight (8) 400/533 DDR2 memory devices
	Capacity	Up to 2GB memory
FLASH	4MB SPI flash ROM (3MB reserved)	
VIDEO	US15W Integrated Graphics	Single channel LVDS interface with 18-bit or 24-bit format Support resolutions up to 1366x768 pixels at 85Hz Integrated PWM interface for LCD backlight inverter control
		One SDVO interface Supports resolutions up to 1280x1024 pixels at 85Hz
NETWORKING	Optional 10/100/1000 Base-T, requires one x1 PCI Express lane	
AUDIO	High Definition Audio	
	Speaker Out	
STORAGE	SATA	Optional SATA interfaces capable of supporting one SATA device, requires one x1 PCI Express lane Supports both 1.5 and 3.0 Gbps operation
	IDE	One IDE interface capable of supporting two Ultra ATA/100 devices
	SDIO	microSD socket
PCI EXPRESS	One x1 PCI Express link expansion ports	
USB	Eight USB 2.0 expansion ports Supports USB Client mode on port 2	
LPC	One LPC interface	
POWER	+12 power rail, validated over 9V to 16.8V range	
POWER MANAGEMENT	ACPI 3.0 supporting states S0, S3, S4, S5, G3, and C0, C1, C2, C3, C4/C4E	
MISCELLANEOUS	One SMBus interface	
	One I2C bus interface	
	Eight GPIO (four GPI and four GPO)	

BIOS	Phoenix® EmbeddedBIOS® with StrongFrame Technology®		
OPERATING SYSTEM	Windows XP® Embedded		
	Windows XP® Professional		
	Windows Vista® Ultimate Edition		
	Windows Vista® Embedded Edition, as available		
	Windows CE® 6.0		
	Red Hat® Embedded Linux		
	RadiSys® Microware® OS-9		

PHYSICAL SPECIFICATIONS

PHYSICAL	Dimensions	85mm x 70mm	
	Compatibility	Compliant with the PICMG COM 1.0 COM Express, Type 2 pinouts	
ENVIRONMENT	Cooling	Forced air	Class EAC1 as defined in the ANSI/VITA 47-2005
		Conduction	Class ECC1 as defined in the ANSI/VITA 47-2005
	Temperature	Operating	0°C – 60°C, derated 1.1°C per 300m over 2300m
		Non-operating	-40°C – +85°C
	Shock	Operating	30G, half sine shock pulse, 11ms duration 3 times per face
		Non-Operating/Unpacked	40G, half sine shock pulse, 11ms duration 3 times per face
		Transportation/Packaged	Fictured assembly: 50G, 17.4 ms trapezoidal pulse Drop test, 10-up bulk packaging, 30in free-fall, one drop each of six faces
	Vibration	Operating	Random 5Hz to 2KHz, 7.7 grms, 10min in each of 3 axes 5 – 20Hz 0.004g2/Hz ramping up to 0.04g2/Hz 20 – 1000Hz 0.04g2/Hz 1000Hz - 2000Hz 0.04g2/Hz ramping down to 0.01g2/Hz
		Non-Operating/Storage	Random 5Hz – 2KHz, 9.7 grms, 10min in each of 3 axes 5 – 20Hz 0.006g2/Hz ramping up to 0.06g2/Hz 20Hz – 1000Hz 0.06g2/Hz 1000Hz – 2000Hz 0.06g2/Hz ramping down to 0.02g2/Hz

	Humidity	Operating	5% to 95% non-condensing. 95% RH@30C, linear derating to 25% RH@70C
		Non-Operating/Storage	5% to 95% non-condensing
	Altitude	Operating	To 15,000ft (4570m)
		Non-Operating/Storage	To 40,000ft (12000m)
REGULATORY	Safety		UL60950-1, EN60950-1, IEC60950-1
			RoHS at time of production
	EMC		EN55022, EN55024, and FCC Part 15, Subpart B, Class B
WARRANTY	Standard		Two years, parts only

Ordering Information

MODULE ORDER CODES:

CEUS15-Z53-1GBL0: Type 2, 1.6 GHz ATOM Z530, 1GB, LAN
CEUS15-Z53-1GB0S: Type 2, 1.6 GHz ATOM Z530, 1GB, SATA
CEUS15-Z51-512L0: Type 2, 1.1 GHz ATOM Z510, 512MB, LAN
CEUS15-Z51-1GB00: TYPE 2, 1.1GHz ATOM Z510, 1GB

SUPPORTING PRODUCTS:

CR202-PCIE16: Type 2, ATX Development Carrier
CEUS15-HSP: Z500 Heatspreader Assembly

STARTER KITS:

All starter kits include the following:

- 100V - 220V input voltage, 350W, ATX-compliant power supply

- 3.5" 160GB IDE hard disk drive

- 5.25" 9GB 20X IDE DVD+RW combination drive

- Dual-DVI MEC card

- 40-pin IDE cable

- Two power cords for use in North America and Europe

- CEUS15-HSP heatspreader

- Microware® Hypervisor Product CD for Intel x86 multicore processors. Please contact RadiSys for a 30-day trial license key and passwords for your preferred operating systems.

S-CE-Z531GBL0-KIT

- CEUS15-Z53-1GBL0: Type 2, 1.6GHz ATOM, LAN, 1 PCIe x1

- CR202-PCIE16: Type 2 carrier board with x16 PCI Express

S-CE-Z531GB0S-KIT

- CEUS15-Z53-1GB0S: Type 2, 1.6GHz ATOM, SATA, 1 PCIe xl

- CR202-PCIE16: Type 2 carrier board with x16 PCI Express

S-CE-Z51512L0-KIT

- CEUS-Z51-512L0: Type 3, 1.1GHz ATOM, LAN, 1 PCIe x1

- CR202-PCIE16: Type 2 carrier board with x16 PCI Express