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## Procelerant Z500

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

### FEATURE SUMMARY

- 1.6GHz and 1.1GHz Intel ATOM processor
- 85mm x 70mm MicroExpress size
- Up to 1GB DDR2 memory down
- Type 2 COM Express pinout
- MicroSD socket option
- Gigabit Ethernet and SATA port option

### PRODUCT DESCRIPTION

RadiSys Procelerant™ Z500 COM Module is the innovative combination of Intel's low power 1.6GHz ATOM processor on a 85mm x 70mm standardized pinout COM module. The ATOM processor delivers unprecedented performance and ultra low power in the smallest COM footprint possible the is compatible with a Type 2 COM Express pin out. The Procelerant Z500 delivers powerful performance with sub5watt power dissipation. Along with up to 1GB memory down, a MicroSD socket, gigabit Ethernet, extended voltage range and smart battery support to make it ideal for battery powered handheld or mobile applications.

### MICRO-SIZED COM

The Procelerant Z500 is the new 85mm x 70mm sized COM module that uses the COM Express Type 2 pin-out while optimizing onboard memory. The Procelerant Z500 provides 1GB of memory to alleviate memory bottlenecks when used with Intel's performance low power ATOM processors. The COM Express Type 2 connector specifies the connector for high speed serial differential signaling technologies such as PCI Express, Serial ATA, USB 2.0, LVDS, and Serial DVO while retaining some legacy support to ease migration from existing modular designs.

The Procelerant Z500 enables OEMs of handheld battery powered applications to start designing a 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 redesigns using the The Procelerant Z500 COM Module. The Procelerant Z500 COM modules 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 Carrier Design Guide, carrier schematics and Gerber files are available for customers committed to using RadiSys Procelerant CE processor 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.

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## Procelerant Z500 Specifications

<b>PHYSICAL</b>	Dimensions	85mm x 70mm		
	Compatibility	Utilizes PICMG COM Express R1.0 Type 2 pinout		
<b>ENVIRONMENT</b>	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	
		Non-operating	-40°C – +85°C	
	Shock	Operating	40g, half sine shock pulse, 11ms duration 3 times per face	
		Non-Operating/Unpacked	50g, 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, 12.07 grms, 1hr in each of 3 axes 5 – 40Hz 0.04 g2/Hz 40 – 100Hz 0.04 g2/Hz ramping up to 0.1g2/Hz (3dB/oct) 100Hz-1000Hz 0.1 g2/Hz 1000Hz-2000Hz: 0.1g2/Hz ramping down to 0.025g2/Hz (6dB/oct)	
		Non-Operating/Storage	Random 5Hz to 2KHz, 12.07 grms, 1hr in each of 3 axes 5 – 40Hz 0.04 g2/Hz 40 – 100Hz 0.04 g2/Hz ramping up to 0.1g2/Hz (3dB/oct) 100Hz-1000Hz 0.1 g2/Hz 1000Hz-2000Hz: 0.1g2/Hz ramping down to 0.025g2/Hz (6dB/oct) 5-500 Hz swept sine, 2.5g (0p), 25.4mm(p-p) MAX displacement, 5 min dwell at 3 resonances in each of 3 axes.	
	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) Up to 2300m (7500 ft), 0 to 60C Derated -1.1 C per 305 m (1000 ft) above 2300 m (7500 ft)		
	Non-Operating/Storage	To 40,000ft (12000m)		
<b>REGULATORY</b>	Safety	UL60950-1, EN60950-1, IEC60950-1		
		RoHS at time of production		
	EMC	EN55022, EN55024, and FCC Part 15, Subpart B, Class B		
<b>WARRANTY</b>	Standard	Two years, parts only		
<b>MODULE SPECIFICATIONS:</b>				
<b>PINOUT</b>		Type 2 COM Express Compatible		
<b>PROCESSOR</b>		Intel® Atom™ Processor Z530: 1.60GHz, 512K cache, 533MHz FSB Intel® Atom™ Processor Z510: 1.10GHz, 512K cache, 400MHz FSB		
<b>CHIPSET</b>		Intel System Controller Hub US15W		
<b>MEMORY</b>	Type	Eight (8) 400/533 DDR2 memory devices		
	Capacity	Up to 2GB memory		
<b>FLASH</b>		4MB SPI ROM		
<b>VIDEO</b>	US15W Integrated Graphics	Single channel LVDS interface with 18bit 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		
<b>NETWORKING</b>		Optional 10/100/1000 Base-T, requires one x1 PCI Express lane		
<b>AUDIO</b>		High Definition Audio		
		Speaker Out		
<b>STORAGE</b>	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		
<b>PCI EXPRESS</b>		Two x1 PCI Express link expansion ports, without Ethernet or SATA option		
<b>USB</b>		Eight USB 2.0 expansion ports		
<b>LPC</b>		One LPC interface		
<b>POWER</b>		+12 power rail, validated over 9V to 16.8V range		
<b>POWER MANAGEMENT</b>		ACPI 3.0 supporting states S0, S3, S4, S5, G3, and C0, C1, C2, C3, C4/C4E, C6		
<b>MISCELLANEOUS</b>		One SMBus		
		One I2C bus		
		Eight GPIO (four GPI and four GPO)		
<b>BIOS</b>		General Software		
<b>OPERATING SYSTEM</b>		Windows XP Embedded		
		Windows XP Professional		
		Windows Vista Ultimate Edition		
		Windows CE 6.0		
		Red Hat Linux		

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### Ordering Information

#### Module Order Codes:

CEUS15-Z53-1GBL0: Type 2, 1.6 GHz ATOM Z530, 1GB, LAN, Computer  
CEUS15-Z53-1GB0S: Type 2, 1.6 GHz ATOM Z530, 1GB, SATA Computer  
CEUS15-Z51-512L0: Type 2, 1.1 GHz ATOM C510, 512MB LAN Computer

#### Supporting Products:

CR200-PCI-E16: Type 2, ATX Development Carrier  
CEUS15-HSP: Z500 Heatspreader Assembly

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