



ESM-ZXE

PICMG COM R3.0 Type 6 module with Zhaoxin E KX-6000 series 4 core BGA CPU

- > Zhaoxin E KX-6000 series 4 core BGA CPU Up to 35W Max
- > Two 260-pin SODIMM DDR4 2666 SDRAM slot up to 32GB
- > Support Dual Channel LVDS, Display Port, HDMI, VGA
- > Flexible I/O up to 4 SATAIII (6.0GB/s), 4 USB 3.0, 8 USB 2.0, 8-bit GPIO, 5 PCIe x1, 1 PCIe x8
- > HD Audio Interface
- > 9~19V Wide Range Power Input
- > Intel 210AT Gigabit Ethernet
- > Type 6 Rev 3.0 Pin-out
- > Support TCM (Optional)

+ Spec

-System Information-	
Processor	Zhaoxin E KX-6000 series KX- 6640A 4core 2.6 GHz BGA CPU TDP 35W KX- 6640MA 4core 2.2 GHz BGA CPU TDP 25W
System Memory	2 x 260-Pin DDR4 2666MHz SO-DIMM, supports 8G/16G & up to 32GB (Non-ECC)
I/O Chipset	I/O extended IC ZX-200 (optional)
BIOS Information	AMI BIOS, 64 Mbit SPI Flash ROM (Not support BIOS Boot Selection (BIOS_DIS0#, BIOS_DIS1#))
Watchdog Timer	H/W Reset, 1sec. ~ 65535sec. and 1sec./step
H/W Status Monitor	Monitoring System Temperature, Voltage and FAN Status with Auto Throttling Control
TPM	TCM (Nations IC-Z32H330TC-SQN-611) Optional, support under Linux and from Windows 10 RS3 version
I/O	
USB Port	Max. 6 x USB 2.0 (*Up to Max. 8 x USB 2.0 only on models KX- 6640A & KX- 6640MA with ZX-200) Max. 2 x USB3.0 (*Up to Max. 4 x USB3.0 Gen.1 (5 Gbps) only on models KX- 6640A & KX- 6640MA with ZX-200)
SMBus	SMBus
SATA	Max.2x SATAIII 6.0Gb/s (*Max. 4 x SATAIII 6.0Gb/s (when KX- 6640A+ ZX-200 & KX- 6640MA+ ZX-200)
DIO	8bit GPIO, WDG/HW monitor/FAN
UART	2 x UART(2-wire)
PCIe	KX- 6640A Configuration1 : 5PCIEX1+1PCIEX8 (default) Configuration2 : 5PCIEX1+2PCIEX4 Configuration3 : 1PCIEX1+1PCIEX4+1PCIEX8 Configuration4 : 1PCIEX1+3PCIEX4 Configuration5 : 3PCIEX1+1PCIEX2+1PCIEX8 KX- 6640MA (CPU TDP will change from 25W to 26W when use PCIe x8) Configuration1 : 5PCIEX1+1PCIEX4 (default) Configuration2 : 1PCIEX1+1PCIEX4+2PCIEX4 Configuration3 : 3PCIEX1+1PCIEX2+1PCIEX4 KX- 6640A+ZX200 Configuration1 : 4PCIEX1 (Gen2) (default) Configuration2 : 1PCIEX4 (Gen2) KX- 6640MA+ZX200 Configuration1 : 4PCIEX1 (Gen2) (default) Configuration2 : 1PCIEX4 (Gen2)
Other	LPC, I2C
Display	
Graphic Chipset	N/A
Spec. & Resolution	HDMI 2.0: 4096 x 2160 @ 60Hz (only 3840x2160@60Hz is tested, 4096 x 2160 @ 60Hz needs to be further validated when device is available) DP 1.2a: 4096 x 2304 @60Hz, (only 3840 x 2160@60Hz is tested, 4096 x 2160 @ 60Hz needs to be further validated when device is available) LVDS (via eDP-to-LVDS 7511 IC): 1920x1080 @60Hz, Dual-channel 18/24-bit VGA: 1920x1080 @60Hz
Multiple Display	Supporting 3 display (2 display with clone mode, 1 display with extend mode)
Digital Display Interface	LVDS (HDMI or DP) + VGA + DDI (HDMI or DP)
Audio	
Audio Codec	Zhaoxin HD audio I/F
Ethernet	
LAN Chipset	1xIntel 210AT Gigabit Ethernet
Mechanical & Environmental	



Operating Temperature	0 ~ 60 °C (32 ~ 140 °F), with airflow 0.5m/s
Storage Temperature	-40°C ~ 75°C (-40°F ~ 167°F)
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
Weight	0.44lbs (0.2kg)
Power Requirement	+9~ +19V
ACPI	Single power ATX Support S0, S3, S5 ACPI 5.0 Compliant
Power Mode	AT/ATX
Dimension (L x W)	125 x 95 mm (3.74" x 4.92")
Software Support	
OS Information	Microsoft® Windows 10 64-bit/Windows 7 Linux (NeoKylin DT V7.0), Ubuntu 16.04.5
Ordering Information	
Ordering Information	ESM-ZXE-6640A-A1R Zhaoxin COM Express Module Type 6 on board KX-6640A CPU (0~+60 degrees), without TCM ESM-ZXE-6640MA-A1R Zhaoxin COM Express Module Type 6 on board KX-6640MA CPU (0~+60 degrees), without TCM ESM-ZXE-40AZ-A1R Zhaoxin COM Express Module Type 6 on board KX-6640A CPU+ZX-200 (0~+60 degrees), without TCM ESM-ZXE-40MAZ-A1R Zhaoxin COM Express Module Type 6 on board KX-6640MA CPU+ZX-200 (0~+60 degrees), without TCM EEV-EX16-A1R mATX Ev. Board for COMe Type 6 A1 ACC-ESMZXE-CL-1R Cooler for ESM-ZXE W/FAN H=61mm ACC-ESMZXE-CL-2R Cooler for ESM-ZXE W/FAN H=61mm with pad for board with ZX-200 ACC-ESMZXE-SD-1R Heatspreader for ESM-ZXE H=8 mm ACC-ESMZXE-SD-2R Heatspreader for ESM-ZXE H=8 mm with pad for board with ZX-200

Assured Systems

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US

sales@assured-systems.com

Sales: +1 347 719 4508

Support: +1 347 719 4508

1309 Coffeen Ave
Ste 1200
Sheridan
WY 82801
USA

EMEA

sales@assured-systems.com

Sales: +44 (0)1785 879 050

Support: +44 (0)1785 879 050

Unit A5 Douglas Park
Stone Business Park
Stone
ST15 0YJ
United Kingdom

VAT Number: 120 9546 28

Business Registration Number: 07699660