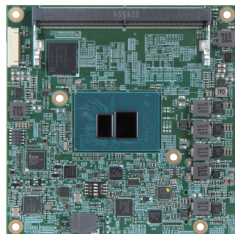
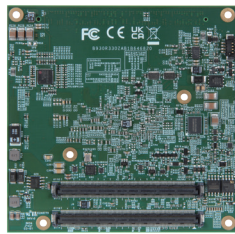


PCOM-B646

COM Express® Type6 Compact size module with
Intel® Atom® x7000E/RE Series SoC
DDR5 SO-DIMM, DDI, PCIe Gen 3, USB 3.2 Gen2, 2.5 Gigabit
TSN Ethernet, discrete TPM 2.0, eDP, SATA



FEATURES

- Intel Atom® x7000E/RE series SoC & Intel® i3 N-Series SoC
- DDR5 SO-DIMM up to 48GB 4800 MT/s (non-ECC)
- Support 3 independent displays 3x DDI / eDP(LVDS) / VGA
- Options for Industrial Temperature Range -40°C up to +85°C
- Options for CAN bus



PCOM-B646 is COM Express® module based on Intel Atom® x7000E/RE Series Processor. It is compatible with COM Express Rev3.1 standard. The platform adopt Intel 7 lithography and VNNI instruction set, offers advance computing power up to 15W thermal and embedded use condition for wide range application. It use AVX2 and VNNI to fulfill AI inference performance improvement and upgraded to eight cores for high computing efficiency in the Atom product line. PCOM-B646 supports PCIe Gen3 lanes, and 1x Non-ECC DDR5 SO-DIMM, which is suit for mission critical use conditions and AI edge computing. This module also provides (up to) 6x PCIe Gen3 x1 lanes, (up to) 4x USB 3.2 Gen 2, and 2x SATA. The complete and flexible I/O capacity also mapped to wide range of embedded/industrial applications.

General

General								
Model Name	PCOM-B646							
Form Factor	COM Express Type6 Compact Size (95 X 95mm)							
CPU Series	PC Client N series	Embedded E Series			Industrial RE Series			
Core	i3-N305	x7211E	x7213E	x7425E	x7211RE	x7213RE	x7433RE	x7835RE
	8	2	2	4	2	2	4	8
Frequency	1.0/1.8 GHz	1.0 GHz	1.7 GHz	1.5 GHz	1.0 GHz	2.0 GHz	1.5 GHz	1.3 GHz
Turbo Frequency	3.8 GHz	3.2 GHz	3.2 GHz	3.4 GHz	3.2 GHz	3.4 GHz	3.4 GHz	3.6 GHz
Intel® Smart Cache	6 MB							
Intel® Gfx EU	32EU	16EU	16EU	24EU	16EU	16EU	32EU	32EU
Graphics Max Freq.	1.25 GHz	1.0 GHz	1.0 GHz	1.0 GHz	800 MHz	800 MHz	800 MHz	1.0 GHz
Processor TDP	9W/15W	6W	10W	12W	6W	9W	9W	12W
Storage	256G	32G	32G	64G	32G	32G	64G	256G
Support Temperature	0°C to 60°C				-40°C~85°C			
PCH	SoC							
Memory Type/Speed	DDR5 SO-DIMM up to 48GB 4800MT/s							
ECC Memory Support	Non-ECC SO-DIMM							

I/O Interface

I/O Interface			
SATA	2x SATA III share with PCIe lane		
USB	Up to 4x USB 3.2 Gen2 (2 lanes share with PCIe) 8x USB 2.0		
Ethernet	Intel® I226 series		
Serial I/O	GPIO	8 bit GPIO (default 4 input/4 output)	
	I ² C	Baud Rate : 400KHz	
	SMBus	Baud Rate : 100KHz	
	UART	TX/RX signal only	
PCI Express	Up to 6x Gen 3.0 x1 (2 lanes share with SATA / 2 lanes share with USB)		
Display	Module display interface	Carrier output options	
	eDP / LVDS (default eDP)	eDP up to HBR3	3840 x 2160@120Hz
		LVDS (24bit, dual channel)	1920 x 1200@60Hz
	DDI	DP up to HBR3	3840 x 2160@120Hz
	VGA	HDMI 2.1	3840 x 2160@120Hz
VGA		VGA	1920 x 1200@60Hz
Security	TPM 2.0		

MECHANICAL & ENVIRONMENT

Dimension	95 x 95mm
Power DC IN	Normal: +12V DC AT/ATX mode
Storage Temperature	-40°C to 85°C
Operating Temperature	0°C to 60°C -40°C to 85°C(Industrial SKU)
Certification	Contact us
MTBF	TBD
Vibration	TBD
OS	Windows 10/11 Ubuntu

ORDERING GUIDE

Product	Ordering P/N	Status
PCOM-B646-N305-256G	AB1-3S21	Available
PCOM-B646-x7211E-32G	AB1-3T03	Available
PCOM-B646-x7213E-32G	AB1-3T04	Available
PCOM-B646-x7425E-64G	AB1-3S22	Available
PCOM-B646-x7211RE-32G	AB1-3T05	Available
PCOM-B646-x7213RE-32G	AB1-3T06	Available
PCOM-B646-x7433RE-64G	AB1-3S86	Available
PCOM-B646-x7835RE-256G	AB1-3S85	Available

Accessory	Ordering P/N	Status
Cooler (Copper)	B9972370	Available
Cooler (Aluminum)	B9972380	Available
Heatsink (Copper)	B830C810	Available
Heatsink (Aluminum)	B830C840	Available
Heatspreader (Copper)	B830C820	Available
Heatspreader (Aluminum)	B830C830	Available
PCOM-C605R Mini-ITX Carrier	AB1-3P78	Available
PCOM-C60B ATX Evaluation Carrier	AB1-3G22	Available

BLOCK DIAGRAM

PCOM-B646

