EmNANO-i2408

COM Express® Mini Type 10 CPU Module

Quick Installation Guide

Version 1.0

Form Factor	CPU	Video
COM Express® Mini Type 10 CPU Module	***Intel Apollo Lake series SoC processor***	***DDI port, LVDS***

LAN	Audio	I/O
Intel i210IT PCIe GbE controller	***HD Audio Link***	***USB/ SATA/ PCIex1 / I²C TPM***

♦ Technical Support

If you have any technical difficulties, please consult the user's manual first at:

http://www.arbor-technology.com

Please do not hesitate to call or e-mail our customer service when you still can not find out the answer.

http://www.arbor-technology.com/

E-mail: info@arbor.com.tw

♦ Declaration of Conformity

FCC Class B

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions : (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

4040240800100P

The Ultra-small COM Express® Mini Module

EmNANO-i2408 is a COM Express® Mini Type 10 module. The module size is 55 mm x 84 mm, which is the smallest in ARBOR's COM Express® product lineup, next to the Basic size (125 mm x 95 mm) and Compact size (95mm x 95mm) form factors.

The connector difference between Standard COM Express Mini type 10 and EmNANO-i2408 is tabulated as below:

Module Type	Type 10	EmNANO-i2408
Connectors	1	1
Connector Rows	A, B	A, B
PCIe Lanes (max)	4	4
LAN (Max)	1	1
DDI 0 (Max)	1	1
LVDS Channel A	1	1
USB 2.0 Ports (Max)	8	8
USB 3.0 Ports (Max)	2	2

Packing List

Before starting to install the single board, make sure the following items are shipped:

1 x EmNANO-i2408 COM Express® Mini CPU Module

1 x Quick Installation Guide

Specifications

Form Factor	COM Express® Mini Type 10 CPU Module
CPU	Soldered onboard Intel® Atom™ x7-E3950 1.6GHz/ x5-E3940 1.6GHz/ x5-E3930 1.3GHz processor
Memory	Soldered onboard 4GB DDR3L SDRAM, upgratable to 8GB
BIOS	AMI UEFI BIOS
USB Port	10 x USB ports: - 8 x USB 2.0 ports(Support USB2.0 only) - 2 x USB 3.0 SuperSpeed ports
Expansion Bus	4 x PCIex1 lanes up to 3 devices, I^2C Interface, SDIO
Storage	2 x Serial ATA ports Soldered onboard eMMC 5.0 up to 32GB (OEM Request)
Ethernet Chipset	1 x Intel® i210IT GbE controller
Audio	HD audio link
TPM	INFINEON SLB 9665XT2.0
Graphic Chipset	Intergrated in Intel® HD graphic
Graphic Interface	LCD: Single Channel 24-bit via eDP to LVDS NXP PTN3460
	1 x DDI port
Power Requirement	5V/12V Auto detect
Power Consumption	0.8A@12V with E3940 (Typical with PBN-9007)
Operating Temp.	-40 ~ 85°C (-40 ~ 185°F)
Humidity	10 ~ 95%@ 85ºC (non-condensing)
Dimension (L x W)	84 x 55 mm (3.30" x 2.17")

Driver (6.7A) Installatoin

To install the drivers, please visit our website at **www.arbor-technology.com** and download the driver pack from the product page.

The driver path is listed as below:

Windows 10 64-bit

Device	Driver Path
Audio	\Apollolake-i240x\Audio\7687_PG436_Win10_Win8.1_Win8_Win7_WHQLx64
Chipset	\Apollolake-i240x\Chipset
Ethernet	\Apollolake-i240x\LAN
Graphic	\Apollolake-i240x\Graphic
Serial IO	\Apollolake-i240x\Serial IO\SerialIO_30.100.1620.02_APL_PV_Win10\x64
TXE	\Apollolake-i240x\TXE

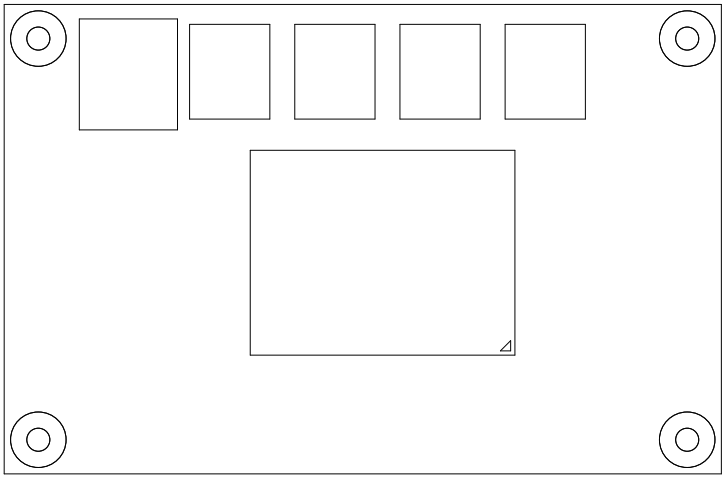
Ordering Information

EmNANO-i2408-WT-E3940-4G	Intel Atom x5-E3940 COM express Type 10 CPU module w/ 4GB memory soldered on module, -40°C~85°C
EmNANO-i2408-WT-E3950-4G (OEM request)	Intel Atom x7-E3950 COM express Type 10 CPU module w/ 4GB memory soldered on module, -40°C~85°C
EmNANO-i2408-WT-E3930-4G (OEM request)	Intel Atom x5-E3930 COM express Type 10 CPU module w/ 4GB memory soldered on module, -40°C~85°C

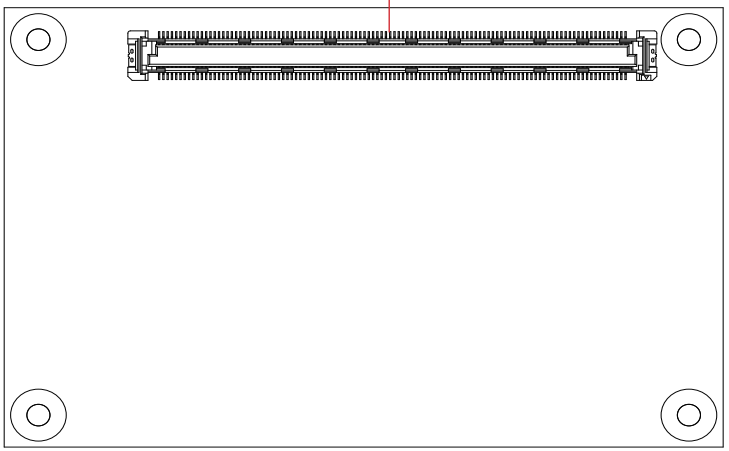
Optional Accessories

PBN-9007	PBN-9007 COM Express Mini Type 10 carrier board
HS-2402-F1-T (E Series)	Heat Spreader,AL,84*55*11mm,W/THREADED,W/ PAD,ACE (for EmNANO-i2408-E39x0)
HS-2402-F1-NT (E Series)	Heat Spreader,AL,84*55*11mm,THROUGH HOLE,W/ PAD,ACE (for EmNANO-i2408-E39x0)
CBK-05-9007-00	PBN-9007 cable kit 1 x USB cable 1 x Serial port cable 1 x SATA cable 1 x SATA Power cable 1 x PS/2 cable

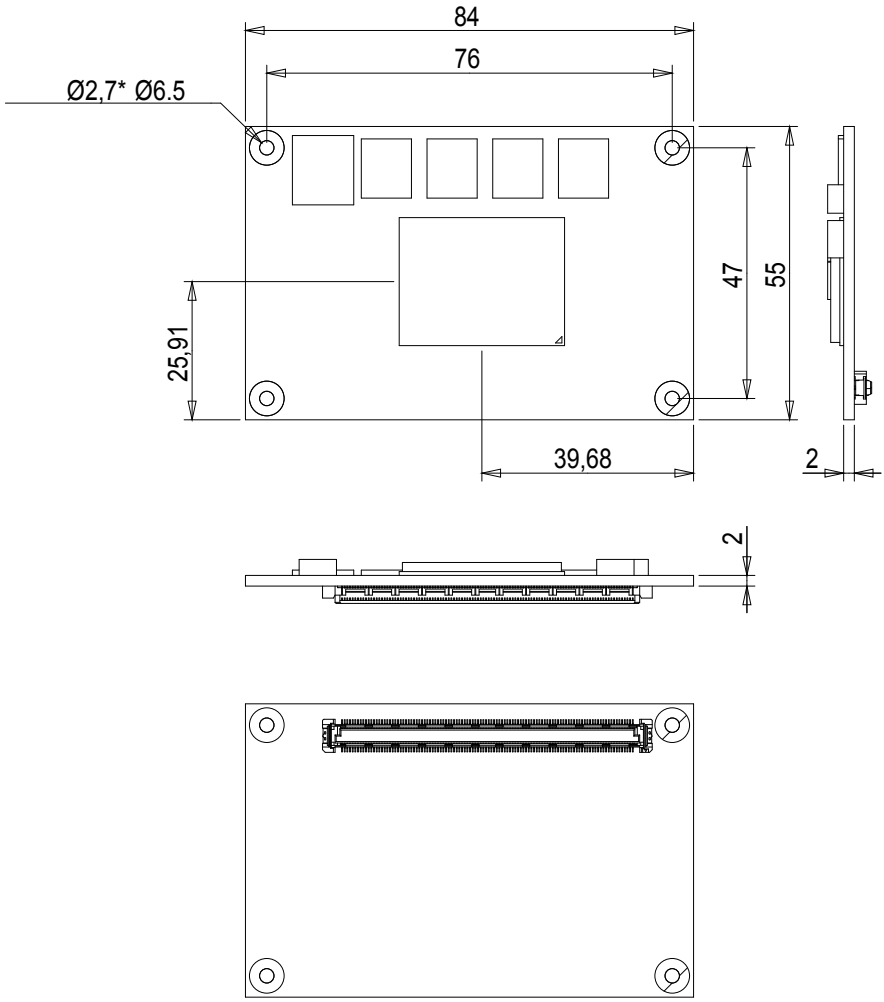
Connectors Quick Reference



COM Express Connector



Board Dimensions

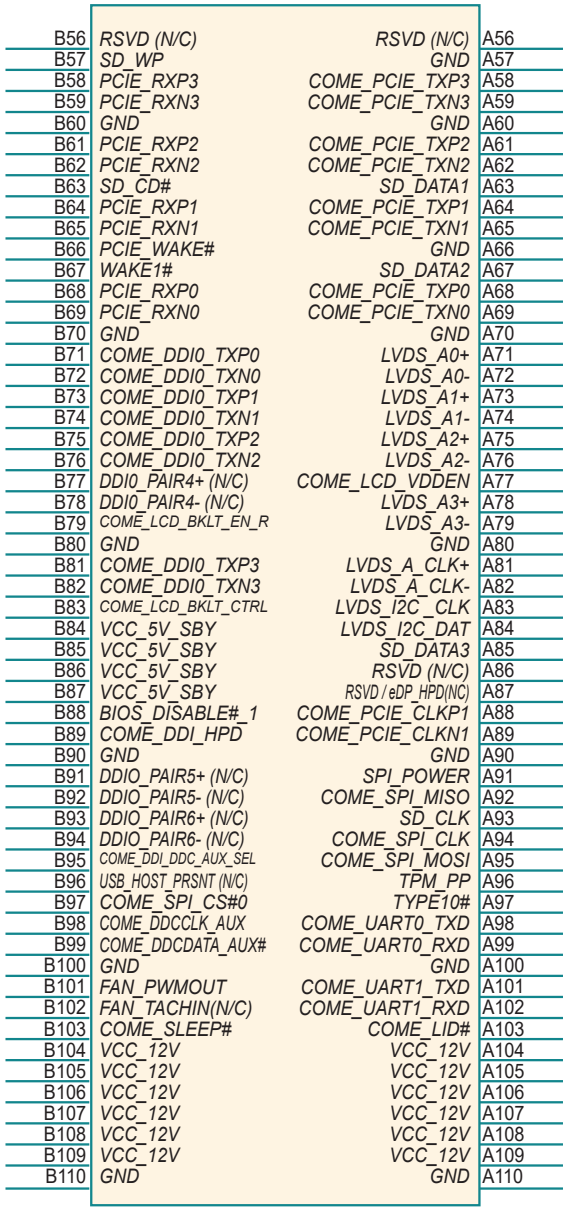


Unit：mm

COM Express® Mini Type 10 AB Connector

Note: A pin with a remark “(N/C)“ is a pin that the signal isn’t available on this board while the remark beyond the bracket delivers the consortium-specified definition.

B1	GND	GND	A1
B2	GBE0_ACT#	GBE0_MDI3-	A2
B3	LPC_FRAME#	GBE0_MDI3+	A3
B4	LPC_AD0	GBE0_LINK100#	A4
B5	LPC_AD1	GBE0_LINK1000#	A5
B6	LPC_AD2	GBE0_MDI2-	A6
B7	LPC_AD3	GBE0_MDI2+	A7
B8	LPC_DRQ0#(N/C)	GBE0_LINK#	A8
B9	LPC_DRQ1# (N/C)	GBE0_MDI1-	A9
B10	LPC_CLK1	GBE0_MDI1+	A10
B11	GND	GND	A11
B12	COME_PWR_BTN#	GBE0_MDI0-	A12
B13	SMB_CLK_RESUME	GBE0_MDI0+	A13
B14	SMB_DATA_RESUME	GBE0_CTREF (N/C)	A14
B15	SMB_ALERT#	SLP_S3#	A15
B16	SATA_TXP1	SATA_TXP0	A16
B17	SATA_TXN1	SATA_TXN0	A17
B18	SUS_STAT#	SLP_S4#	A18
B19	SATA_RXP1	SATA_RXP0	A19
B20	SATA_RXN1	SATA_RXN0	A20
B21	GND	GND	A21
B22	USB_SSTXN0	USB_SSRXN0	A22
B23	USB_SSTXP0	USB_SSRXP0	A23
B24	COME_PWRGD	SLP_S4#	A24
B25	USB_SSTXN1	USB_SSRXN1	A25
B26	USB_SSTXP1	USB_SSRXP1	A26
B27	WDT	BATLOW#	A27
B28	AC_SDIN2 (N/C)	SATA_ACT#	A28
B29	AC_SDIN1(N/C)	COME_AZ_SYNC	A29
B30	COME_AC_SDATA_IN0	COME_AZ_RST#	A30
B31	GND	GND	A31
B32	COME_SPKR	COME_AZ_BIT_CLK	A32
B33	I2C_CLK0	COME_AZ_SDATA_OUT	A33
B34	I2C_DATA0	BIOS_DISABLE#_0	A34
B35	THRM#	THRMTRIP#	A35
B36	USB_7N	USB_6N	A36
B37	USB_7P	USB_6P	A37
B38	TP33	TP36	A38
B39	USB_5N	USB_4N	A39
B40	USB_5P	USB_4P	A40
B41	GND	GND	A41
B42	USB_3N	USB_2N	A42
B43	USB_3P	USB_2P	A43
B44	TP34	TP35	A44
B45	USB_1N	USB_0N	A45
B46	USB_1P	USB_0P	A46
B47	PLTRST#_BUFF	VCC_RTC	A47
B48	EXCD1_CPPE#	PLTRST#_BUFF	A48
B49	COME_RSTBTN#	EXCD0_CPPE#	A49
B50	PLTRST#_BUFF	LPC_SERIRQ	A50
B51	GND	GND	A51
B52	RSVD (N/C)	RSVD (N/C)	A52
B53	RSVD (N/C)	RSVD (N/C)	A53
B54	SD_CMD	SD_DATA0	A54
B55	RSVD (N/C)	RSVD (N/C)	A55



B56	RSVD (N/C)	RSVD (N/C)	A56
B57	SD_WP	GND	A57
B58	PCIE_RXP3	COME_PCIE_TXP3	A58
B59	PCIE_RXN3	COME_PCIE_TXN3	A59
B60	GND	GND	A60
B61	PCIE_RXP2	COME_PCIE_TXP2	A61
B62	PCIE_RXN2	COME_PCIE_TXN2	A62
B63	SD_CD#	SD_DATA1	A63
B64	PCIE_RXP1	COME_PCIE_TXP1	A64
B65	PCIE_RXN1	COME_PCIE_TXN1	A65
B66	PCIE_WAKE#	GND	A66
B67	WAKE1#	SD_DATA2	A67
B68	PCIE_RXP0	COME_PCIE_TXP0	A68
B69	PCIE_RXN0	COME_PCIE_TXN0	A69
B70	GND	GND	A70
B71	COME_DDI0_TXP0	LVDS_A0+	A71
B72	COME_DDI0_TXN0	LVDS_A0-	A72
B73	COME_DDI0_TXP1	LVDS_A1+	A73
B74	COME_DDI0_TXN1	LVDS_A1-	A74
B75	COME_DDI0_TXP2	LVDS_A2+	A75
B76	COME_DDI0_TXN2	LVDS_A2-	A76
B77	DDI0_PAIR4+ (N/C)	COME_LCD_VDDEN	A77
B78	DDI0_PAIR4- (N/C)	LVDS_A3+	A78
B79	COME_LCD_BKLT_EN_R	LVDS_A3-	A79
B80	GND	GND	A80
B81	COME_DDI0_TXP3	LVDS_A_CLK+	A81
B82	COME_DDI0_TXN3	LVDS_A_CLK-	A82
B83	COME_LCD_BKLT_CTRL	LVDS_I2C_CLK	A83
B84	VCC_5V_SBY	LVDS_I2C_DAT	A84
B85	VCC_5V_SBY	SD_DATA3	A85
B86	VCC_5V_SBY	RSVD (N/C)	A86
B87	VCC_5V_SBY	RSVD / eDP_HPD(NC)	A87
B88	BIOS_DISABLE#_1	COME_PCIE_CLKP1	A88
B89	COME_DDI_HPD	COME_PCIE_CLKN1	A89
B90	GND	GND	A90
B91	DDIO_PAIR5+ (N/C)	SPI_POWER	A91
B92	DDIO_PAIR5- (N/C)	COME_SPI_MISO	A92
B93	DDIO_PAIR6+ (N/C)	SD_CLK	A93
B94	DDIO_PAIR6- (N/C)	COME_SPI_CLK	A94
B95	COME_DDI_DDC_AUX_SEL	COME_SPI_MOSI	A95
B96	USB_HOST_PRSNT (N/C)	TPM_PP	A96
B97	COME_SPI_CS#0	TYPE10#	A97
B98	COME_DDCCLK_AUX	COME_UART0_TXD	A98
B99	COME_DDCDATA_AUX#	COME_UART0_RXD	A99
B100	GND	GND	A100
B101	FAN_PWMOUT	COME_UART1_TXD	A101
B102	FAN_TACHIN(N/C)	COME_UART1_RXD	A102
B103	COME_SLEEP#	COME_LID#	A103
B104	VCC_12V	VCC_12V	A104
B105	VCC_12V	VCC_12V	A105
B106	VCC_12V	VCC_12V	A106
B107	VCC_12V	VCC_12V	A107
B108	VCC_12V	VCC_12V	A108
B109	VCC_12V	VCC_12V	A109
B110	GND	GND	A110