

EmETXe-i2503

COM Express Compact Type 2 CPU Module

Quick Installation Guide

Version 1.0

Form Factor
COM Express Type 2 CPU Module

CPU
Intel® Atom™ N2600/ D2550 processors

Chipset
Intel® PCH NM10

Video
18/24-bit Single Channel LVDS, Analog RGB

LAN
Intel® 82583V PCIe Gigabit Ethernet

Audio
HD Audio Interface

I/O
USB/ SATA/ PCI Express/ PCI/ SPI/ LPC

◆ Technical Support

If you have any technical difficulties, please consult the user's manual first at:
<ftp://ftp.arbor.com.tw/pub/manual>

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

<http://www.arbor.com.tw>

E-mail: info@arbor.com.tw

FCC Class A

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.



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COM Express supports seven pin-out Type applying to Basic and Extended form factors:

Module Type 1 and 10 support single connector with two rows of pins (220 pins).

Module Type 2, 3, 4, 5 and 6 support two connectors with four rows of pins (440 pins).

EmETXe-i2503 is a Type 2 module. Connector placement and most mounting holes have transparency between Form Factors.

Connector difference between Standard Type 2 and EmETXe-i2503 is tabulated as below:

Module Type	Standard Type 2	EmETXe-i2503
Connectors	2	2
Connector Rows	A, B, C, D	A, B, C, D
PCIe Lanes (Max)	22	2
PEG (Max)	Yes	No
PCI Bus	Yes	Yes
PATA - IDE	Yes	No
Serial ATA (Max)	4	2
LAN (Max)	1	1
Serial Ports	No	No
Muxed SDVO (Max)	2	0

Packing List

Prior to installation, find the following items in the package:



1 x COM Express CPU Module



1 x Driver CD



1 x Quick Installation Guide

Specifications

Form Factor	COM Express Type 2 CPU Module
CPU	Soldered onboard Intel® Atom™ N2600 1.6GHz or D2550 1.86GHz processor
Chipset	Intel® PCH NM10
System Memory	1 x DDR3 SO-DIMM socket, supporting 1066MHz SDRAM up to 4GB (D2550)/ 2GB (N2600)
Graphics	• Integrated Intel® GMA 3650 (Gfx frequency 640MHz) for D2550 processor • Integrated Intel® GMA 3600 (Gfx frequency 400MHz) for N2600 processor
Display	• Support Analog RGB • LCD: Single Channel 18-bit for N2600 processor/ 24-bit for D2550 processor • Support dual independent displays
Ethernet controller	1 x Intel® 82583V PCIe Gigabit Ethernet controller
BIOS	AMI® UEFI BIOS
Storage	2 x Serial ATA ports with 300MB/s HDD transfer rate
Digital I/O	8-bit programmable Digital Input/Output
Universal Serial Bus	8 x USB 2.0 ports
Expansion Interface	• 2 x PCIe1 lanes • 4 x PCI masters • SPI and LPC (Low Pin Count) interfaces
Operating Temp.	-20°C ~ 70°C (-4°F ~ 158°F)
Operating Humidity	0 ~ 95% (non-condensing)
Watchdog Timer	1~ 255 levels reset
Dimension (L x W)	95 x 95 mm (3.7" x 3.7")

Ordering Information

EmETXe-i2503-N26	Intel® Atom™ N2600 1.6GHz COM Express Compact CPU module
EmETXe-i2503-D25	Intel® Atom™ D2550 1.86GHz COM Express Compact CPU module
HS-2503-F1	Heat spreader (95 x 95 x18mm)
HS-2503-W1	Heatsink wave type (95 x 95 x 40mm)
PBE-1700-F R1.3	COM Express Type 2 evaluation board in ATX form factor w/ F71869 Super IO
CBK-04-1700-00	Cable kit 1 x SATA cable 1 x COM port cable 1 x FDD cable 1 x IDE cable

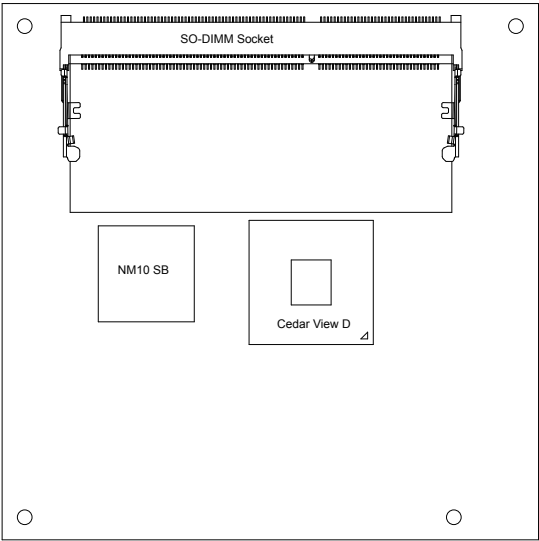
Paths to the Drivers on CD

Windows 7

Driver	Path
Chipset	\\EmETXe-i250x\\CHIPSET\\WIN7
LAN	\\EmETXe-i250x\\ETHERNET
VGA	\\EmETXe-i250x\\GRAPHICS
Audio	\\EmETXe-i250x\\AUDIO

Connectors Quick Reference

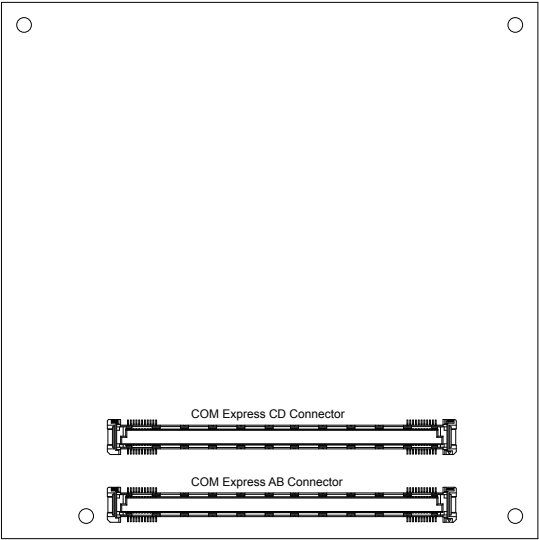
Top side



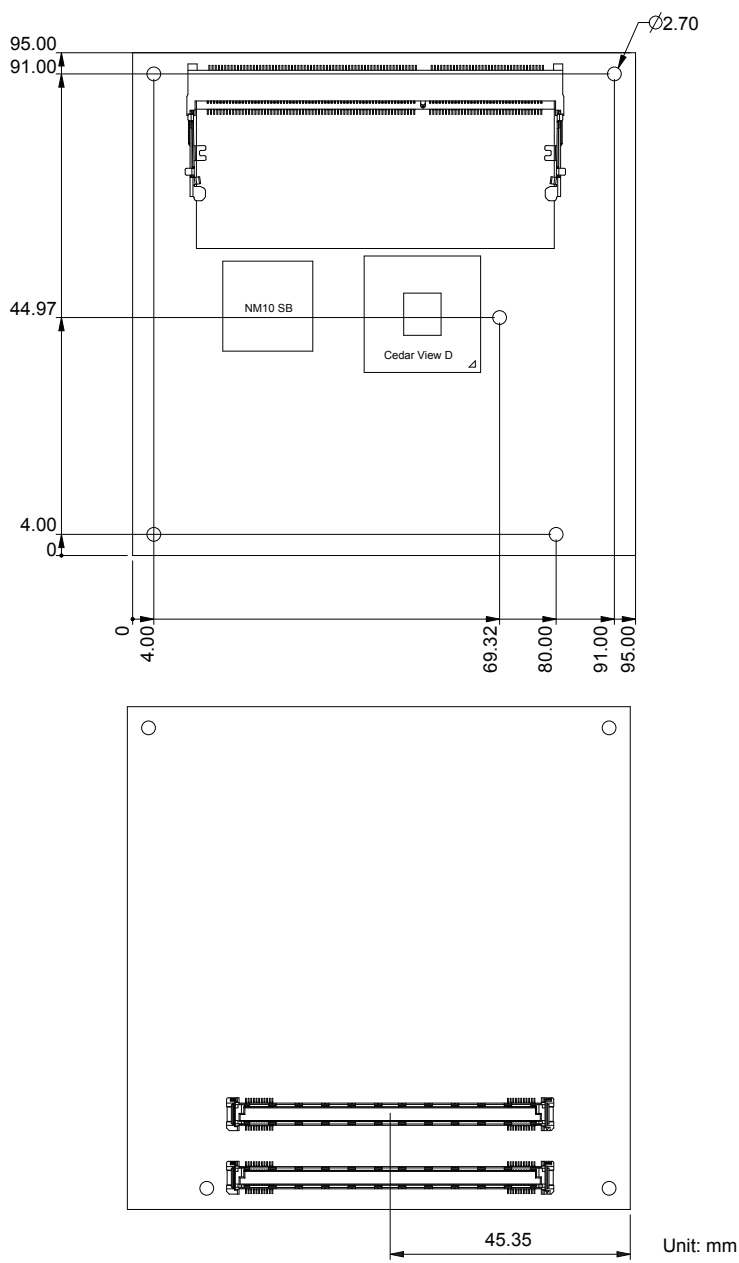
Bottom side

COM Express AB Connector

COM Express CD Connector



Board Dimensions



COM Express AB Connector (bottom side)

B1	GND	GND	A1	B56	N/C	N/C	A56
B2	GBE0_ACT#	GBE0_MDI3-	A2	B57	GND	GND	A57
B3	LPC_FRAME#	GBE0_MDI3+	A3	B58	N/C	N/C	A58
B4	LPC_AD0	GBE0_LINK100#	A4	B59	N/C	N/C	A59
B5	LPC_AD1	GBE0_LINK1000#	A5	B60	GND	GND	A60
B6	LPC_AD2	GBE0_MDI2-	A6	B61	N/C	N/C	A61
B7	LPC_AD3	GBE0_MDI2+	A7	B62	N/C	N/C	A62
B8	LPC_DRQ0#	GBE0_LINK#	A8	B63	GPO3	GPI1	A63
B9	LPC_DRQ1#	GBE0_MDI1-	A9	B64	PCIE_RX1+	PCIE_TX1+	A64
B10	LPC_CLK	GBE0_MDI1+	A10	B65	PCIE_RX1-	PCIE_TX1-	A65
B11	GND	GND	A11	B66	WAKE0#	GND	A66
B12	PWRBTN#	GBE0_MDI0-	A12	B67	WAKE1#	GPI2	A67
B13	SMB_CK	GBE0_MDI0+	A13	B68	PCIE_RX0+	PCIE_TX0+	A68
B14	SMB_DAT	GBE0_CTREF	A14	B69	PCIE_RX0-	PCIE_TX0-	A69
B15	SMB_ALERT#	SUS_S3#	A15	B70	GND	GND	A70
B16	SATA1_TX+	SATA0_TX+	A16	B71	N/C	LVDS_A0+	A71
B17	SATA1_TX-	SATA0_TX-	A17	B72	N/C	LVDS_A0-	A72
B18	SUS_STAT#	SUS_S4#	A18	B73	N/C	LVDS_A1+	A73
B19	SATA1_RX+	SATA0_RX+	A19	B74	N/C	LVDS_A1-	A74
B20	SATA1_RX-	SATA0_RX-	A20	B75	N/C	LVDS_A2+	A75
B21	GND	GND	A21	B76	N/C	LVDS_A2-	A76
B22	N/C	N/C	A22	B77	N/C	LVDS_VDD_EN	A77
B23	N/C	N/C	A23	B78	N/C	LVDS_A3+	A78
B24	PWR_OK	SUS_S5#	A24	B79	LVDS_BKLT_EN	LVDS_A3-	A79
B25	N/C	N/C	A25	B80	GND	GND	A80
B26	N/C	N/C	A26	B81	N/C	LVDS_A_CK+	A81
B27	WDT	BATLOW#	A27	B82	N/C	LVDS_A_CK-	A82
B28	AC_SDIN2	ATA_ACT#	A28	B83	CKLVDS_BKLT_CTRL	LVDS_I2C_CK	A83
B29	AC_SDIN1	AC_SYNC	A29	B84	VCC_5V_SBY	LVDS_I2C_DAT	A84
B30	AC_SDIN0	AC_RST#	A30	B85	VCC_5V_SBY	GPI3	A85
B31	GND	GND	A31	B86	VCC_5V_SBY	KBD_RST#	A86
B32	SPKR	AC_BITCLK	A32	B87	VCC_5V_SBY	KBD_A20GATE	A87
B33	I2C_CK	AC_SDOUT	A33	B88	BIOS_DISABLE1#	PCIE0_CK_REF+	A88
B34	I2C_DAT	BIOS_DISABLE0#	A34	B89	VGA_RED	PCIE0_CK_REF-	A89
B35	THRM#	THRMTRIP#	A35	B90	GND	GND	A90
B36	USB7-	USB6-	A36	B91	VGA_GRN	RSVD B91	A91
B37	USB7+	USB6+	A37	B92	VGA_BLU	RSVD	A92
B38	USB_4_5_OC#	USB_6_7_OC#	A38	B93	VGA_HSYNC	GPO0	A93
B39	USB5-	USB4-	A39	B94	VGA_VSYNC	RSVD	A94
B40	USB5+	USB4+	A40	B95	VGA_I2C_CK	RSVD	A95
B41	GND	GND	A41	B96	VGA_I2C_DAT	GND	A96
B42	USB3-	USB2-	A42	B97	N/C	VCC_12V	A97
B43	USB3+	USB2+	A43	B98	N/C	VCC_12V	A98
B44	USB_0_1_OC#	USB_2_3_OC#	A44	B99	N/C	VCC_12V	A99
B45	USB1-	USB0-	A45	B100	GND	GND	A100
B46	USB1+	USB0+	A46	B101	VCC_12V	VCC_12V	A101
B47	EXCD1_PERST#	VCC_RTC	A47	B102	VCC_12V	VCC_12V	A102
B48	EXCD1_CPPE#	EXCD0_PERST#	A48	B103	VCC_12V	VCC_12V	A103
B49	SYS_RESET#	EXCD0_CPPE#	A49	B104	VCC_12V	VCC_12V	A104
B50	CB_RESET#	LPC_SERIRQ	A50	B105	VCC_12V	VCC_12V	A105
B51	GND	GND	A51	B106	VCC_12V	VCC_12V	A106
B52	N/C	N/C	A52	B107	VCC_12V	VCC_12V	A107
B53	N/C	N/C	A53	B108	VCC_12V	VCC_12V	A108
B54	GPO1	GPI0	A54	B109	VCC_12V	VCC_12V	A109
B55	N/C	N/C	A55	B110	GND	GND	A110

COM Express CD Connector (bottom side)

D1	GND	GND	C1	D56	N/C	N/C	C56
D2	N/C	N/C	C2	D57	TYPE2#	TYPE1#	C57
D3	N/C	N/C	C3	D58	N/C	N/C	C58
D4	N/C	N/C	C4	D59	N/C	N/C	C59
D5	N/C	N/C	C5	D60	GND	GND	C60
D6	N/C	N/C	C6	D61	N/C	N/C	C61
D7	N/C	N/C	C7	D62	N/C	N/C	C62
D8	N/C	N/C	C8	D63	RSVD	RSVD	C63
D9	N/C	N/C	C9	D64	RSVD	RSVD	C64
D10	N/C	N/C	C10	D65	N/C	N/C	C65
D11	GND	GND	C11	D66	N/C	N/C	C66
D12	N/C	N/C	C12	D67	GND	RSVD	C67
D13	N/C	N/C	C13	D68	N/C	N/C	C68
D14	N/C	N/C	C14	D69	N/C	N/C	C69
D15	N/C	PCI_PME#	C15	D70	GND	GND	C70
D16	N/C	PCI_GNT2#	C16	D71	N/C	N/C	C71
D17	N/C	PCI_REQ2#	C17	D72	N/C	N/C	C72
D18	N/C	PCI_GNT1#	C18	D73	SDVO_CLK	SDVO_DATA	C73
D19	PCI_GNT3#	PCI_REQ1#	C19	D74	N/C	N/C	C74
D20	PCI_REQ3#	PCI_GNT0#	C20	D75	N/C	N/C	C75
D21	GND	GND	C21	D76	GND	GND	C76
D22	PCI_AD1	PCI_REQ0#	C22	D77	N/C	RSVD	C77
D23	PCI_AD3	PCI_RESE#	C23	D78	N/C	N/C	C78
D24	PCI_AD5	PCI_AD0	C24	D79	N/C	N/C	C79
D25	PCI_AD7	PCI_AD2	C25	D80	GND	GND	C80
D26	PCI_C/BE0#	PCI_AD4	C26	D81	N/C	N/C	C81
D27	PCI_AD9	PCI_AD6	C27	D82	N/C	N/C	C82
D28	PCI_AD11	PCI_AD8	C28	D83	RSVD	RSVD	C83
D29	PCI_AD13	PCI_AD10	C29	D84	GND	GND	C84
D30	PCI_AD15	PCI_AD12	C30	D85	N/C	N/C	C85
D31	GND	GND	C31	D86	N/C	N/C	C86
D32	PCI_PAR	PCI_AD14	C32	D87	GND	GND	C87
D33	PCI_SERR#	PCI_C/BE1#	C33	D88	N/C	N/C	C88
D34	PCI_STOP#	PCI_PERR#	C34	D89	N/C	N/C	C89
D35	PCI_TRDY#	PCI_LOCK#	C35	D90	GND	GND	C90
D36	PCI_FRAME#	PCI_DEVSEL#	C36	D91	N/C	N/C	C91
D37	PCI_AD16	PCI_IRDY#	C37	D92	N/C	N/C	C92
D38	PCI_AD18	PCI_C/BE2#	C38	D93	GND	GND	C93
D39	PCI_AD20	PCI_AD17	C39	D94	N/C	N/C	C94
D40	PCI_AD22	PCI_AD19	C40	D95	N/C	N/C	C95
D41	GND	GND	C41	D96	GND	GND	C96
D42	PCI_AD24	PCI_AD21	C42	D97	N/C	RSVD	C97
D43	PCI_AD26	PCI_AD23	C43	D98	N/C	N/C	C98
D44	PCI_AD28	PCI_C/BE3#	C44	D99	N/C	N/C	C99
D45	PCI_AD30	PCI_AD25	C45	D100	GND	GND	C100
D46	PCI_IRQC#	PCI_AD27	C46	D101	N/C	N/C	C101
D47	PCI_IRQD#	PCI_AD29	C47	D102	N/C	N/C	C102
D48	PCI_CLKRUN#	PCI_AD31	C48	D103	GND	GND	C103
D49	PCI_M66EN	PCI_IRQA#	C49	D104	VCC_12V	VCC_12V	C104
D50	PCI_CLK	PCI_IRQB#	C50	D105	VCC_12V	VCC_12V	C105
D51	GND	GND (FIXED)	C51	D106	VCC_12V	VCC_12V	C106
D52	N/C	N/C	C52	D107	VCC_12V	VCC_12V	C107
D53	N/C	N/C	C53	D108	VCC_12V	VCC_12V	C108
D54	N/C	TYPE0#	C54	D109	VCC_12V	VCC_12V	C109
D55	N/C	N/C	C55	D110	GND	GND	C110