



ARBOR EmETXe-i2309 COM Express Compact Type 6 CPU Module Installation Guide

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The Security Division of NETSCOUT

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EmETXe-i2309 COM Express Compact Type 6 CPU Module

Form Factor

COM Express® Compact Type 6 CPU Module

CPU

Intel® Atom™ processor E3845 1.91GHz

Video

24-bit Dual Channels LVDS/ DisplayPort/Analog RGB

I/O

USB 2.0/USB 3.0/SATA/PCIe x1/SPI/LPC/eMMC

LAN

Intel® i210X Series Controller

Video

24-bit Dual Channels LVDS/ DisplayPort/Analog RGB

Audio

HD Audio Interface

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

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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4041230900200P

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) Connector placement and most mounting holes have transparency between Form Factors.

The differences among the Module Type 6 and EmETXe-i2309 are summarized in table below:

Module Type	Standard Type 6	EmETXe-i2309
Connectors	2	2
Connector Rows	A, B, C, D	A, B, C, D
PCIe Lanes (Max)	24	8
LAN (Max)	1	1
Serial Ports (Max)	2	1
Digital Display I/F (Max)	3	1 (Standard default) 2 (OEM request)
USB 3.0 Ports (Max)	4	1

Packing List

Before you begin installing your single board, please make sure that the following materials have been shipped:

	1 x EmETXe-i2309 COM Express CPU Module
	1 x Driver CD 1 x Quick Installation Guide

If any of the above items is damaged or missing, contact your vendor immediately.

Specifications

System	
CPU	Soldered onboard Intel® Atom™ processor E3845 1.91GHz
Memory	1 x DDR3L SO-DIMM socket, supporting up to 8GB 1333MT/s SDRAM
BIOS	Insyde UEFI BIOS
Watchdog Timer	1~255 levels reset (function depends on carrierboard)
I/O	
USB Port*	8 x USB 2.0 ports*, 1 x USB 3.0 port
Expansion Bus	8 x PCIe1 lanes, SPI, LPC, SM_BUS, GPIO(Optional)
Storage	2 x Serial ATA ports with 300MB/s HDD transfer rate
	Soldered onboard 8GB eMMC 4.5 (Optional)
Ethernet Chipset	1 x Intel® i210X PCIe GbE controller
Serial Port	1 x UART (RX/TX)
TPM	Supports TPM (OEM Request)
Audio	HD audio link
Display	
Graphic Chipset	SoC integrated Intel® Gen7 Graphics
Graphic Interface	Analog RGB, with resolution up to 2048×1536
	LCD: Dual Channels 24-bit LVDS, with resolution up to 1920×1200
	1 x DDI port
Mechanical & Environmental	
Power Requirement	DC 12V, 5VSB
Power Consumption	1.05A@12V with E3825 (Typical, with PBE-1705)
Operating Temp.	-20 ~ 70°C (-4 ~ 158°F) -40 ~ 85°C (-40 ~ 185°F, WT series)
Operating Humidity	10 ~ 95% @ 70°C (non-condensing) 10 ~ 95% @ 85°C (non-condensing, WT series)
Dimensions (L x W)	95 x 95 mm (3.7" x 3.7")

* USB port 2~7 support USB2.0 only, USB port 0~1 work after driver installation.

Ordering Information

EmETXe-i2309-E3845	Intel® Atom™ processor E3845 1.91GHz COM Express® Compact CPU module
EmETXe-i2309-E3845-DIO	Intel® Atom™ processor E3845 1.91GHz COM Express® Compact CPU module, w/GPIO
EmETXe-i2309-WT-E3845	Intel® Atom™ processor E3845 WT COM Express® Compact Type 6 CPU module

Optional Accessories

HS-2309-F2-NT*	Heat spreader, non-threaded standoffs (bore hole) (95x95x11mm), not compatible with WT series
HS-0000-W4	Universal evaluation heatsink kit w/ thermal pad (dimensions: 125x95x22mm, only used on a flat type heat spreader)
PBE-1705-F1	COM Express® Type 6 evaluation carrier board with super I/O F71869ED in ATX form factor
CBK-03-1705-00	Cable kit 1 x SATA cable 2 x COM flat cables

*For Wide-Temperature series, it is suggested to use HS-2309-F2-NT in conjunction with HS-0000-W4. The user must cut the HS-0000-W4 thermal pad to the right size to fit the heat spreader.

Find Device Drivers on CD

The CPU module supports Windows 7 and 8. Find the necessary drivers on the CD that comes with your purchase. For different OS, the driver installation may vary slightly, but generally they are similar. DO install Chipset→Graphic→Audio before the rest to prevent errors.

Find the drivers on CD by the following paths:

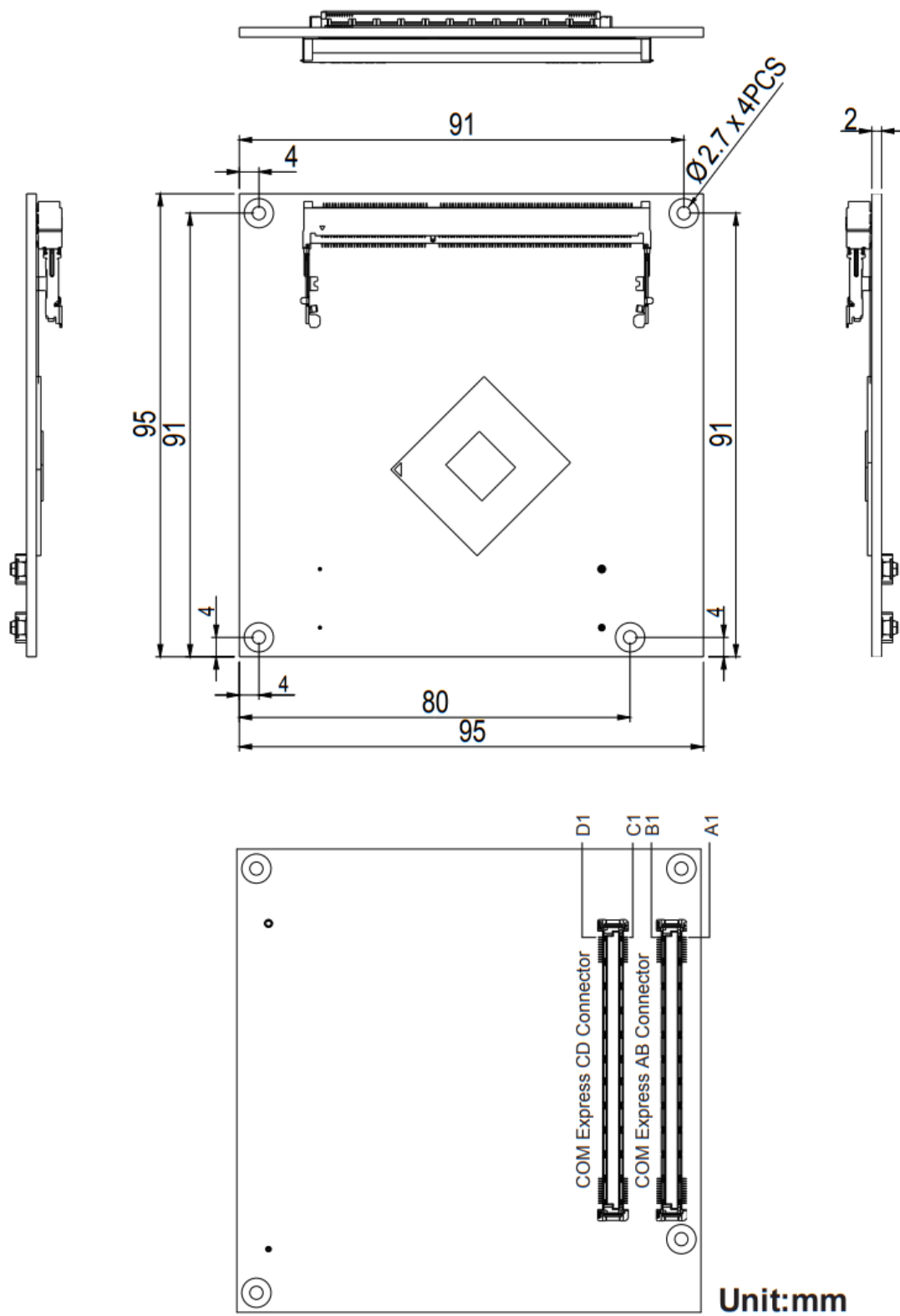
Windows 8.1

Driver	Path
Chipset	\Chipset\SetupChipset_10.0.13_PC
Graphic	\Graphics\WIN8_32\15.33.22.3621
	\Graphics\WIN8_64\15.33.22.64.3621
Audio	\Audio\32bit_Win7_Win8_Win81_R275
	\Audio\64bit_Win7_Win8_Win81_R275
Ethernet	\Ethernet\Intel
GPIO	\GPIO\Kit 100882 20140211 windows 8.1 64\GPIO
TXE	\TXE\Installers
Serial IO	\Serial IO\SerialIO_Installer_Win8.1_64bit_WW23
MBI	\MBI\MBI Kit 58443 20140106_windows 8_8.132_64
WINUSB	\WINUSB

Windows 7

Driver	Path
Chipset	\Chipset\SetupChipset_10.0.13_PC
Graphic	\Graphics\WIN7_32\Intel_EMGD.WIN7_PC_Version_36_15_0_1073
	\Graphics\WIN7_64\Intel_EMGD.WIN7_PC_Version_37_15_0_1073
Audio	\Audio\32bit_Win7_Win8_Win81_R275
	\Audio\64bit_Win7_Win8_Win81_R275
Ethernet	\Ethernet\Intel
TXE	\TXE\Installers
GPIO	\GPIO\windows 7 32_64\Intel Atom E3800 Win7 IO Drivers_Gold_v1.0 pack- age 501232_20140211
USB3.0	\USB3.0\Intel(R) USB 3.0 eXtensible Host Controller_Win7_32bit_64bit_ R3.0.0.33
Serial IO	\Serial IO\Intel Processor IO Drivers_Win7_32bit_64bit_Gold_v2.0
WINUSB	\WINUSB

Board Dimensions\Connectors Quick Reference



COM Express AB Connector (bottom side)

B1	GND (FIXED)	GND (FIXED)	A1	B56	PCIE_RX4-	PCIE_TX4-	A56
B2	GBE0_ACT#	GBE0_MDI3-	A2	B57	SD_WP(N/C)/GPO2	GND	A57
B3	LPC_FRAME#	GBE0_MDI3+	A3	B58	PCIE_RX3+	PCIE_TX3+	A58
B4	LPC_AD0	GBE0_LINK100#	A4	B59	PCIE_RX3-	PCIE_TX3-	A59
B5	LPC_AD1	GBE0_LINK1000#	A5	B60	GND	GND	A60
B6	LPC_AD2	GBE0_MDI2-	A6	B61	PCIE_RX2+	PCIE_TX2+	A61
B7	LPC_AD3	GBE0_MDI2+	A7	B62	PCIE_RX2-	PCIE_TX2-	A62
B8	LPC_DRQ0#(N/C)	GBE0_LINK#(N/C)	A8	B63	SD_CD#(N/C)/GPO3	SD_DATA1(N/C)/GPI1	A63
B9	LPC_DRQ1#(N/C)	GBE0_MDI1-	A9	B64	PCIE_RX1+	PCIE_TX1+	A64
B10	LPC_CLK	GBE0_MDI1+	A10	B65	PCIE_RX1-	PCIE_TX1-	A65
B11	GND (FIXED)	GND (FIXED)	A11	B66	WAKE0#	GND	A66
B12	PWRBTN#	GBE0_MDI0-	A12	B67	WAKE1#	SD_DATA2(N/C)/GPI2	A67
B13	SMB_CK	GBE0_MDI0+	A13	B68	PCIE_RX0+	PCIE_TX0+	A68
B14	SMB_DAT	GBE0_CTREF(N/C)	A14	B69	PCIE_RX0-	PCIE_TX0-	A69
B15	SMB_ALERT#	SUS_S3#	A15	B70	GND	GND	A70
B16	SATA1_TX+	SATA0_TX+	A16	B71	LVDS_B0+	LVDS_A0+	A71
B17	SATA1_TX-	SATA0_TX-	A17	B72	LVDS_B0-	LVDS_A0-	A72
B18	SUS_STAT#	SUS_S4#	A18	B73	LVDS_B1+	LVDS_A1+	A73
B19	SATA1_RX+	SATA0_RX+	A19	B74	LVDS_B1-	LVDS_A1-	A74
B20	SATA1_RX-	SATA0_RX-	A20	B75	LVDS_B2+	LVDS_A2+	A75
B21	GND (FIXED)	GND (FIXED)	A21	B76	LVDS_B2-	LVDS_A2-	A76
B22	SATA3_TX+(N/C)	SATA2_TX+(N/C)	A22	B77	LVDS_B3+	LVDS_VDD_EN	A77
B23	SATA3_TX-(N/C)	SATA2_TX-(N/C)	A23	B78	LVDS_B3-	LVDS_A3+	A78
B24	PWR_OK	SUS_S5#	A24	B79	LVDS_BKLT_EN	LVDS_A3-	A79
B25	SATA3_RX+(N/C)	SATA2_RX+(N/C)	A25	B80	GND	GND	A80
B26	SATA3_RX-(N/C)	SATA2_RX-(N/C)	A26	B81	LVDS_B_CK+	LVDS_A_CK+	A81
B27	WDT	BATLOW#	A27	B82	LVDS_B_CK-	LVDS_A_CK-	A82
B28	AC_SDIN2(N/C)	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	SD_DATA3(N/C)/GPI3	A85
B31	GND	GND	A31	B86	VCC_5V_SBY	RSVD(N/C)	A86
B32	SPKR	AC_BITCLK	A32	B87	VCC_5V_SBY	RSVD(N/C)	A87
B33	I2C_CK	AC_SDOOUT	A33	B88	BIOS_DIS1#	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	SPI_POWER	A91
B37	USB7+	USB6+	A37	B92	VGA_BLU	SPI_MISO	A92
B38	USB_4_5_OC#	USB_6_7_OC#	A38	B93	VGA_HSYNC	SD_CLK(N/C)/GPO0	A93
B39	USB5-	USB4-	A39	B94	VGA_VSYNC	SPI_CLK	A94
B40	USB5+	USB4+	A40	B95	VGA_I2C_CK	SPI_MOSI	A95
B41	GND	GND	A41	B96	VGA_I2C_DAT	TPM_PP	A96
B42	USB3-	USB2-	A42	B97	SPI_CS#	TYPE10#(N/C)	A97
B43	USB3+	USB2+	A43	B98	RSVD(N/C)	SERR0_TX	A98
B44	USB_0_1_OC#	USB_2_3_OC#	A44	B99	RSVD(N/C)	SERR0_RX	A99
B45	USB1-	USB0-	A45	B100	GND	GND	A100
B46	USB1+	USB0+	A46	B101	FAN_PWMOUT	SERR1_TX(N/C)	A101
B47	EXCD1_PERST#	VCC_RTC	A47	B102	FAN_TACHIN(N/C)	SERR1_RX(N/C)	A102
B48	EXCD1_CPPE#	EXCD0_PERST#	A48	B103	SLEEP#	LID#	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	PCIE_RX5+	PCIE_TX5+	A52	B107	VCC_12V	VCC_12V	A107
B53	PCIE_RX5-	PCIE_TX5-	A53	B108	VCC_12V	VCC_12V	A108
B54	SD_CMD(N/C)/GPO1	SD_DATA0(N/C)/GPI0	A54	B109	VCC_12V	VCC_12V	A109
B55	PCIE_RX4+	PCIE_TX4+	A55	B110	GND	GND	A110

COM Express CD Connector (bottom side)

D1	GND (FIXED)	GND (FIXED)	C1	D56	PEG_TX1-(N/C)	PEG_RX1-(N/C)	C56
D2	GND	GND	C2	D57	TYPE2#	TYPE1#(N/C)	C57
D3	USB_SSTX0-	USB_SSRX0-	C3	D58	PEG_TX2+(N/C)	PEG_RX2+(N/C)	C58
D4	USB_SSTX0+	USB_SSRX0+	C4	D59	PEG_TX2-(N/C)	PEG_RX2-(N/C)	C59
D5	GND	GND	C5	D60	GND (FIXED)	GND (FIXED)	C60
D6	USB_SSTX1-(N/C)	USB_SSRX1-(N/C)	C6	D61	PEG_TX3+(N/C)	PEG_RX3+(N/C)	C61
D7	USB_SSTX1+(N/C)	USB_SSRX1+(N/C)	C7	D62	PEG_TX3-(N/C)	PEG_RX3-(N/C)	C62
D8	GND	GND	C8	D63	RSVD	RSVD	C63
D9	USB_SSTX2-(N/C)	USB_SSRX2-(N/C)	C9	D64	RSVD	RSVD	C64
D10	USB_SSTX2+(N/C)	USB_SSRX2+(N/C)	C10	D65	PEG_TX4+(N/C)	PEG_RX4+(N/C)	C65
D11	GND (FIXED)	GND (FIXED)	C11	D66	PEG_TX4-(N/C)	PEG_RX4-(N/C)	C66
D12	USB_SSTX3-(N/C)	USB_SSRX3-(N/C)	C12	D67	RSVD	RSVD	C67
D13	USB_SSTX3+(N/C)	USB_SSRX3+(N/C)	C13	D68	PEG_TX5+(N/C)	PEG_RX5+(N/C)	C68
D14	GND	GND	C14	D69	PEG_TX5-(N/C)	PEG_RX5-(N/C)	C69
D15	DDI1_CTRLCLK_AUX+	DDI1_PAIR6+(N/C)	C15	D70	GND (FIXED)	GND (FIXED)	C70
D16	DDI1_CTRLCLK_AUX-	DDI1_PAIR6-(N/C)	C16	D71	PEG_TX6+(N/C)	PEG_RX6+(N/C)	C71
D17	RSVD	RSVD	C17	D72	PEG_TX6-(N/C)	PEG_RX6-(N/C)	C72
D18	RSVD	RSVD	C18	D73	GND	GND	C73
D19	PCIE_TX6+	PCIE_RX6+	C19	D74	PEG_TX7+(N/C)	PEG_RX7+(N/C)	C74
D20	PCIE_TX6-	PCIE_RX6-	C20	D75	PEG_TX7-(N/C)	PEG_RX7-(N/C)	C75
D21	GND(FIXED)	GND(FIXED)	C21	D76	GND	GND	C76
D22	PCIE_TX7+(N/C)	PCIE_RX7+(N/C)	C22	D77	RSVD	RSVD	C77
D23	PCIE_TX7-(N/C)	PCIE_RX7-(N/C)	C23	D78	PEG_TX8+(N/C)	PEG_RX8+(N/C)	C78
D24	RSVD	DDI1_HPD	C24	D79	PEG_TX8-(N/C)	PEG_RX8-(N/C)	C79
D25	RSVD	DDI1_PAIR4+(N/C)	C25	D80	GND (FIXED)	GND (FIXED)	C80
D26	DDI1_PAIR0+	DDI1_PAIR4-(N/C)	C26	D81	PEG_TX9+(N/C)	PEG_RX9+(N/C)	C81
D27	DDI1_PAIR0-	RSVD	C27	D82	PEG_TX9-(N/C)	PEG_RX9-(N/C)	C82
D28	RSVD	RSVD	C28	D83	RSVD	RSVD	C83
D29	DDI1_PAIR1+	DDI1_PAIR5+(N/C)	C29	D84	GND	GND	C84
D30	DDI1_PAIR1-	DDI1_PAIR5-(N/C)	C30	D85	PEG_TX10+(N/C)	PEG_RX10+(N/C)	C85
D31	GND(FIXED)	GND (FIXED)	C31	D86	PEG_TX10-(N/C)	PEG_RX10-(N/C)	C86
D32	DDI1_PAIR2+	DDI2_CTRLCLK_AUX+	C32	D87	GND	GND	C87
D33	DDI1_PAIR2-	DDI2_CTRLCLK_AUX-	C33	D88	PEG_TX11+(N/C)	PEG_RX11+(N/C)	C88
D34	DDI1_DDC_AUX_SEL	DDI2_DDC_AUX_SEL	C34	D89	PEG_TX11-(N/C)	PEG_RX11-(N/C)	C89
D35	RSVD	RSVD	C35	D90	GND (FIXED)	GND (FIXED)	C90
D36	DDI1_PAIR3+	DDI3_CTRLCLK_AUX+(N/C)	C36	D91	PEG_TX12+(N/C)	PEG_RX12+(N/C)	C91
D37	DDI1_PAIR3-	DDI3_CTRLCLK_AUX-(N/C)	C37	D92	PEG_TX12-(N/C)	PEG_RX12-(N/C)	C92
D38	RSVD	DDI3_DDC_AUX_SEL(N/C)	C38	D93	GND	GND	C93
D39	DDI1_PAIR0+	DDI3_PAIR0+(N/C)	C39	D94	PEG_TX13+(N/C)	PEG_RX13+(N/C)	C94
D40	DDI1_PAIR0-	DDI3_PAIR0-(N/C)	C40	D95	PEG_TX13-(N/C)	PEG_RX13-(N/C)	C95
D41	GND(FIXED)	GND(FIXED)	C41	D96	GND	GND	C96
D42	DDI1_PAIR1+	DDI3_PAIR1+(N/C)	C42	D97	RSVD	RSVD	C97
D43	DDI1_PAIR1-	DDI3_PAIR1-(N/C)	C43	D98	PEG_TX14+(N/C)	PEG_RX14+(N/C)	C98
D44	DDI2_HPD	DDI3_HPD(N/C)	C44	D99	PEG_TX14-(N/C)	PEG_RX14-(N/C)	C99
D45	RSVD	RSVD	C45	D100	GND (FIXED)	GND (FIXED)	C100
D46	DDI2_PAIR2+	DDI3_PAIR2+(N/C)	C46	D101	PEG_TX15+(N/C)	PEG_RX15+(N/C)	C101
D47	DDI2_PAIR2-	DDI3_PAIR2-(N/C)	C47	D102	PEG_TX15-(N/C)	PEG_RX15-(N/C)	C102
D48	RSVD	RSVD	C48	D103	GND	GND	C103
D49	DDI2_PAIR3+	DDI3_PAIR3+(N/C)	C49	D104	VCC_12V	VCC_12V	C104
D50	DDI2_PAIR3-	DDI3_PAIR3-(N/C)	C50	D105	VCC_12V	VCC_12V	C105
D51	GND (FIXED)	GND (FIXED)	C51	D106	VCC_12V	VCC_12V	C106
D52	PEG_TX0+(N/C)	PEG_RX0+(N/C)	C52	D107	VCC_12V	VCC_12V	C107
D53	PEG_TX0-(N/C)	PEG_RX0-(N/C)	C53	D108	VCC_12V	VCC_12V	C108
D54	PEG_LANE_RV#(N/C)	TYPE0#(N/C)	C54	D109	VCC_12V	VCC_12V	C109
D55	PEG_TX1+	PEG_RX1+(N/C)	C55	D110	GND (FIXED)	GND (FIXED)	C110



The Security Division of NETSCOUT
Version 2.0

Documents / Resources

