COM Express Rev 2.0 Basic/Compact Type 6 Module, Intel® Atom™ N2600/N2800/D2550 Processor, VGA/LVDS, DDI, GbE, SATA 3Gb/s, USB 3.0, Audio and RoHS

ICE-CV- N26001/ N28001/D25501 Quick Installation Guide

Version 1.0

Dec. 05, 2014

Package Contents

ICE-CV- N26001/N28001/D25501 package includes the following items:

- 1 x ICE-CV- N26001/N28001/D25501single board computer
- 1 x Heat Spreader
- 1 x Heatsink
- 1 x Utility CD
- 1 x One Key Recovery CD
- 1 x QIG (Quick Installation Guide)

Specifications

- Form Factor
  PICMG COM Express R2.0 Type 6 for compact size
  95 mm x 95 mm
  10 layers
- CPU
  Intel® Atom™ N2600 dual-core processor 1.6GHz
  Intel® Atom™ N2800/D2550 dual-core processor 1.86GHz
- PCH
  Intel® NM10
- Memory
  One 204-pin 1066/800MHz DDR3 SDRAM SO-DIMM supported
  (N2600 supports 800MHz DDR3, system max. 2GB)
  (N2800/D2550 supports 1066MHz DDR3, system max. 4GB)
  Supports 1.35V DDR3L
- BIOS
  UEFI BIOS
- Graphics Engine
  Intel® GMA 3600 with a 400MHz graphics core (for N2600)
  Intel® GMA 3650 with a 640MHz graphics core (for N2800/D2550)
  Supports DX9 and Blu-ray 2.0
  MPEG2, H.264, VC-1 and 1080p deconding
- Display Output
  VGA integrated in the Intel® N2600/N2800/D2550
  (signal to baseboard)
  1 x CRT (up to 2048 x 1536 @75Hz)
  LVDS integrated in the N2600/N2800/D2550
  Single-channel 24-bit LVDS by D2550, resolution support up to 1440x900 @60Hz
  Single-channel 18-bit LVDS by N2600 and N2800, resolution support up to 1366x768 @60Hz
  2 x DDI (up to 2560 x 1600 @60Hz)

- Ethernet

  RTL 8111E GbE
- USB 3.0

  Asmedia: asm1042
- Embedded Controller

  iWDD (ITE)
- 8 x USB 2.0 (signal to baseboard)
- 2 x SATA 3Gb/s (signal to baseboard)
- Audio

  High definition audio interface (to baseboard)
- GPIO

  Yes (to baseboard)
- SMBus

  Yes (to baseboard)
- I2C

  Yes (to baseboard)
- LPC

  Yes (to baseboard)
- SPI

  Yes (to baseboard)
- Serial port

  2 x Serial port (to baseboard)
- Expansions

  2 x PCIe x1 signal (to baseboard)
- Watchdog Timer

  Software programmable supports 1~255 sec. system reset (by EC)
- Power Consumption

  +12V@0.45A, Vcore _12V@1.0A
- Operating Temperature

  -10℃ ~ 60℃
- Operating Humidity

  5% ~ 95%, non-condensing
- Dimensions

95 mm x 95 mm

- Weight

  GW: 600g/NW: 200g

Ordering Information

ICE-CV-N26001-R10: COM Express Rev 2.0 Basic/Compact Type 6 module, Intel® Atom™ N2600 processor, VGA/LVDS, DDI, GbE, SATA 3Gb/s, USB 3.0, Audio and RoHS

ICE-CV-N28001-R10: COM Express Rev 2.0 Basic/Compact Type 6 module, Intel® Atom™ N2800 processor, VGA/LVDS, DDI, GbE, SATA 3Gb/s, USB 3.0, Audio and RoHS(by project support, MOQ 100pcs /lot)

ICE-CV-D25501-R10: COM Express Rev 2.0 Basic/Compact Type 6 module, Intel® Atom™ D2550 processor, VGA/LVDS, DDI, GbE, SATA 3Gb/s, USB 3.0, Audio and RoHS

ICE-DB-T6-R10: Baseboard for COM Express Type 6 modules

Table of Connectors

LABEL	FUNCTION
J1 **J2**	COM Express connector AB & CD

J2 : COM Express Connector CD			
Pin No.	**DESCRIPTION**	**Pin No.**	**DESCRIPTION**
C1	GND0	**D1**	GND15
C2	GND	**D2**	GND
C3	USB_SSRX0-	**D3**	USB_SSTX0-
C4	USB_SSRX0+	**D4**	USB_SSTX0+
C5	GND	**D5**	GND
C6	USB_SSRX1-	**D6**	USB_SSTX1-
C7	USB_SSRX1+	**D7**	USB_SSTX1+
C8	GND	**D8**	GND
C9	USB_SSRX2-	**D9**	USB_SSTX2-
C10	USB_SSRX2+	**D10**	USB_SSTX2+
C11	GND1	**D11**	GND16
C12	USB_SSRX3-	**D12**	USB_SSTX3-
C13	USB_SSRX3+	**D13**	USB_SSTX3+
C14	GND	**D14**	GND
C15	DDI1_PAIR6+	**D15**	DDI1_AUX+
C16	DDI1_PAIR6-	**D16**	DDI1_AUX-
C17	RSVD	**D17**	RSVD
C18	RSVD	**D18**	RSVD
C19	PCIE_RX6+	**D19**	PCIE_TX6+
C20	PCIE_RX6-	**D20**	PCIE_TX6-
C21	GND2	**D21**	GND17
C22	PCIE_RX7+	**D22**	PCIE_TX7+
C23	PCIE_RX7-	**D23**	PCIE_TX7-
C24	DDI1_HPD	**D24**	RSVD
C25	DDI1_PAIR4+	**D25**	RSVD
C26	DDI1_PAIR4-	**D26**	DDI1_PAIR0+
C27	RSVD	**D27**	DDI1_PAIR0-
C28	RSVD	**D28**	RSVD
C29	DDI1_PAIR5+	**D29**	DDI1_PAIR1+
C30	DDI1_PAIR5-	**D30**	DDI1_PAIR1-
C31	GND3	**D31**	GND18
C32	DDI2_AUX+	**D32**	DDI1_PAIR2+
C33	DDI2_AUX-	**D33**	DDI1_PAIR2-
C34	DDI2_CTRLCLK	**D34**	DDI2_CTRLDATA
C35	RSVD	**D35**	RSVD
C36	DDI3_AUX+	**D36**	DDI1_PAIR3+
C37	DDI3_AUX-	**D37**	DDI1_PAIR3-

Pin	DESCRIPTION	Pin	DESCRIPTION
C38	DDI3_CTRLCLK	**D38**	DDI3_CTRLDATA
C39	DDI3_PAIR0+	**D39**	DDI2_PAIR0+
C40	DDI3_PAIR0-	**D40**	DDI2_PAIR0-
C41	GND4	**D41**	GND19
C42	DDI3_PAIR1+	**D42**	DDI2_PAIR1+
C43	DDI3_PAIR1-	**D43**	DDI2_PAIR1-
C44	DDI3_HPD	**D44**	DDI2_HPD
C45	RSVD	**D45**	RSVD
C46	DDI3_PAIR2+	**D46**	DDI2_PAIR2+
C47	DDI3_PAIR2-	**D47**	DDI2_PAIR2-
C48	RSVD	**D48**	RSVD
C49	DDI3_PAIR3+	**D49**	DDI2_PAIR3+
C50	DDI3_PAIR3-	**D50**	GND20
C51	GND5	**D51**	DDI2_PAIR3-
C52	PEG_RX0+	**D52**	PEG_TX0+
C53	PEG_RX0-	**D53**	PEG_TX0-
C54	TYPE0#	**D54**	PEG_LANE_RV#
C55	PEG_RX1+	**D55**	PEG_TX1+
C56	PEG_RX1-	**D56**	PEG_TX1-
C57	TYPE1#	**D57**	TYPE2#
C58	PEG_RX2+	**D58**	PEG_TX2+
C59	PEG_RX2-	**D59**	PEG_TX2-
C60	GND7	**D60**	GND21
C61	PEG_RX3+	**D61**	PEG_TX3+
C62	PEG_RX3-	**D62**	PEG_TX3-
C63	RSVD1	**D63**	RSVD10
C64	RSVD2	**D64**	RSVD9
C65	PEG_RX4+	**D65**	PEG_TX4+
C66	PEG_RX4-	**D66**	PEG_TX4-
C67	RSVD3	**D67**	GND28
C68	PEG_RX5+	**D68**	PEG_TX5+
C69	PEG_RX5-	**D69**	PEG_TX5-
C70	GND9	**D70**	GND22
C71	PEG_RX6+	**D71**	PEG_TX6+
C72	PEG_RX6-	**D72**	PEG_TX6-
C73	DDI1_CTRLDATA	**D73**	DDI1_CTRLCLK
C74	PEG_RX7+	**D74**	PEG_TX7+
C75	PEG_RX7-	**D75**	PEG_TX7-
C76	GND8	**D76**	GND29
C77	RSVD4	**D77**	RSVD
C78	PEG_RX8+	**D78**	PEG_TX8+

Pin	DESCRIPTION	Pin	DESCRIPTION
C79	PEG_RX8-	**D79**	PEG_TX8-
C80	GND10	**D80**	GND23
C81	PEG_RX9+	**D81**	PEG_TX9+
C82	PEG_RX9-	**D82**	PEG_TX9-
C83	RSVD5	**D83**	RSVD8
C84	GND6	**D84**	GND30
C85	PEG_RX10+	**D85**	PEG_TX10+
C86	PEG_RX10-	**D86**	PEG_TX10-
C87	GND35	**D87**	GND31
C88	PEG_RX11+	**D88**	PEG_TX11+
C89	PEG_RX11-	**D89**	PEG_TX11-
C90	GND27	**D90**	GND24
C91	PEG_RX12+	**D91**	PEG_TX12+
C92	PEG_RX12-	**D92**	PEG_TX12-
C93	GND11	**D93**	GND32
C94	PEG_RX13+	**D94**	PEG_TX13+
C95	PEG_RX13-	**D95**	PEG_TX13-
C96	GND12	**D96**	GND33
C97	RSVD6	**D97**	PEG_ENABLE#
C98	PEG_RX14+	**D98**	PEG_TX14+
C99	PEG_RX14-	**D99**	PEG_TX14-
C100	GND13	**D100**	GND25
C101	PEG_RX15+	**D101**	PEG_TX15+
C102	PEG_RX15-	**D102**	PEG_TX15-
C103	GND	**D103**	GND34
C104	VCC_12V1	**D104**	VCC_12V7
C105	VCC_12V2	**D105**	VCC_12V8
C106	VCC_12V3	**D106**	VCC_12V9
C107	VCC_12V4	**D107**	VCC_12V10
C108	VCC_12V5	**D108**	VCC_12V11
C109	VCC_12V6	**D109**	VCC_12V12
C110	GND14	**D110**	GND26

J1 : COM Express Connector AB			
Pin No.	**DESCRIPTION**	**Pin No.**	**DESCRIPTION**
A1	GND	**B1**	GND15
A2	GBE0_MDI3-	**B2**	GBE0_ACT#
A3	GBE0_MDI3+	**B3**	LPC_FRAME#
A4	GBE0_LINK100#	**B4**	LPC_AD0
A5	GBE0_LINK1000#	**B5**	LPC_AD1
A6	GBE0_MDI2-	**B6**	LPC_AD2
A7	GBE0_MDI2+	**B7**	LPC_AD3
A8	GBE0_LINK#	**B8**	LPC_DRQ0#
A9	GBE0_MDI1-	**B9**	LPC_DRQ1#
A10	GBE0_MDI1+	**B10**	LPC_CLK
A11	GND1	**B11**	GND16
A12	GBE0_MDI0-	**B12**	PWRBTN#
A13	GBE0_MDI0+	**B13**	SMB_CK
A14	GBE0_CTREF	**B14**	SMB_DAT
A15	SUS_S3#	**B15**	SMB_ALERT#
A16	SATA0_TX+	**B16**	SATA1_TX+
A17	SATA0_TX-	**B17**	SATA1_TX-
A18	SUS_S4#	**B18**	SUS_STAT#
A19	SATA0_RX+	**B19**	SATA1_RX+
A20	SATA0_RX-	**B20**	SATA1_RX-
A21	GND2	**B21**	GND17
A22	SATA2_TX+	**B22**	SATA3_TX+
A23	SATA2_TX-	**B23**	SATA3_TX-
A24	SUS_S5#	**B24**	PWR_OK
A25	SATA2_RX+	**B25**	SATA3_RX+
A26	SATA2_RX-	**B26**	SATA3_RX-
A27	BATLOW#	**B27**	WDT
A28	ATA_ACT#	**B28**	AC_SDIN2
A29	AC_SYNC	**B29**	AC_SDIN1
A30	AC_RST#	**B30**	AC_SDIN0
A31	GND3	**B31**	GND18
A32	AC_BITCLK	**B32**	SPKR
A33	AC_SDOUT	**B33**	I2C_CK
A34	BIOS_DISABLE#	**B34**	I2C_DAT
A35	THRMTRIP#	**B35**	THRM#
A36	USB6-	**B36**	USB7-

Pin No.	DESCRIPTION	Pin No.	DESCRIPTION
A37	USB6+	**B37**	USB7+
A38	USB_6_7_OC#	**B38**	USB_4_5_OC#
A39	USB4-	**B39**	USB5-
A40	USB4+	**B40**	USB5+
A41	GND4	**B41**	GND
A42	USB2-	**B42**	USB3-
A43	USB2+	**B43**	USB3+
A44	USB_2_3_OC#	**B44**	USB_0_1_OC#
A45	USB0-	**B45**	USB1-
A46	USB0+	**B46**	USB1+
A47	VCC_RTC	**B47**	EXCD1_PERST#
A48	EXCD0_PERST#	**B48**	EXCD1_CPPE#
A49	EXCD0_CPPE#	**B49**	SYS_RESET#
A50	LPC_SERIRQ	**B50**	CB_RESET#
A51	GND5	**B51**	GND20
A52	PCIE_TX5+	**B52**	PCIE_RX5+
A53	PCIE_TX5-	**B53**	PCIE_RX5-
A54	GPI0	**B54**	GPO1
A55	PCIE_TX4+	**B55**	PCIE_RX4+
A56	PCIE_TX4-	**B56**	PCIE_RX4-
A57	GND6	**B57**	GPO2
A58	PCIE_TX3+	**B58**	PCIE_RX3+
A59	PCIE_TX3-	**B59**	PCIE_RX3-
A60	GND7	**B60**	GND
A61	PCIE_TX2+	**B61**	PCIE_RX2+
A62	PCIE_TX2-	**B62**	PCIE_RX2-
A63	GPI1	**B63**	GPO3
A64	PCIE_TX1+	**B64**	PCIE_RX1+
A65	PCIE_TX1-	**B65**	PCIE_RX1-
A66	GND8	**B66**	WAKE0#
A67	GPI2	**B67**	WAKE1#
A68	PCIE_TX0+	**B68**	PCIE_RX0+
A69	PCIE_TX0-	**B69**	PCIE_RX0-
A70	GND9	**B70**	GND22
A71	LVDS_A0+	**B71**	LVDS_B0+
A72	LVDS_A0-	**B72**	LVDS_B0-
A73	LVDS_A1+	**B73**	LVDS_B1+

Pin No.	DESCRIPTION	Pin No.	DESCRIPTION
A74	LVDS_A1-	**B74**	LVDS_B1-
A75	LVDS_A2+	**B75**	LVDS_B2+
A76	LVDS_A2-	**B76**	LVDS_B2-
A77	LVDS_VDD_EN	**B77**	LVDS_B3+
A78	LVDS_A3+	**B78**	LVDS_B3-
A79	LVDS_A3-	**B79**	LVDS_BKLT_EN
A80	GND10	**B80**	GND23
A81	LVDS_A_CK+	**B81**	LVDS_B_CLK+
A82	LVDS_A_CK-	**B82**	LVDS_B_CLK-
A83	LVDS_I2C_CK	**B83**	LVDS_BKLT_CTRL
A84	LVDS_I2C_DAT	**B84**	VCC5SBY1
A85	GPI3	**B85**	VCC5SBY2
A86	RSVD	**B86**	VCC5SBY3
A87	RSVD	**B87**	VCC5SBY4
A88	PCIE0_CK_REF+	**B88**	BIOS_DIS1#
A89	PCIE0_CK_REF-	**B89**	VGA_RED
A90	GND11	**B90**	GND24
A91	SPI_VCC	**B91**	VGA_GRN
A92	SPI_MISO	**B92**	VGA_BLU
A93	GPO0	**B93**	VGA_HSYNC
A94	SPI_CLK	**B94**	VGA_VSYNC
A95	SPI_MOSI	**B95**	VGA_I2C_CK
A96	PP_TPM	**B96**	VGA_I2C_DAT
A97	TYPE10#	**B97**	SPI_CS#
A98	RS1_TX	**B98**	RSVD
A99	RS1_RX	**B99**	RSVD
A100	GND13	**B100**	GND25
A101	RS2_TX	**B101**	FAN_PWMOUT
A102	RS2_RX	**B102**	FAN_TACHIN
A103	LID#	**B103**	SLEEP#
A104	VCC_12V7	**B104**	VCC_12V16
A105	VCC_12V8	**B105**	VCC_12V17
A106	VCC_12V9	**B106**	VCC_12V18
A107	VCC_12V10	**B107**	VCC_12V19
A108	VCC_12V11	**B108**	VCC_12V20
A109	VCC_12V12	**B109**	VCC_12V21
A110	GND14	**B110**	GND26

Board Layout: Jumper and Connector Locations