

ICE-DB-T7-i2

Quick Installation Guide

Version 1.0

Sep 29, 2017.

Package List

ICE-DB-T7-i2 package includes the following items:

- 1 x COM Express Base Board
- 1 x Dual Ports RS232 Cable (P/N:19800-000051-RS)
- 2 x SATA Cable (P/N:32000-062800-RS)
- 1 x Mini Jumper Pack
- 1 x QIG (Quick Installation Guide)



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Specifications

- Form Factor:
ATX form factor base board
- CPU:
Supports COM Express Compact / Basic module using connector pin out Type 7
- Display Interfaces:
1 x VGA from iRIS-2400
- Audio: NA
- Expansions:
1 x PCIe x4 for 10GbE PHY card
1 x PCIe x16 (x 16 Gen 3 signal)
1 x PCIe x8 (x 8 Gen 3 signal)
1 x PCIe x4 (x 4 Gen 2 signal)
1 x PCIe x4 (x1 Gen 2) (x4 signal option)
2 x PCIe x1 (x1 Gen 2)
- Internal I/O Interface:
2 x SATA port
2 x RS-232 from COM Express (only TX, RX, GND)
2 x RS-232 from SIO
- Rear I/O Interface:
4 x USB 3.0
1 x RJ45 connector
1 x VGA
- TPM: 2 x 10-pin pin header
- 80 Port: 2 x 7 segment display
- Front Panel:
1 x Front Panel (Power LED, HDD LED, Speaker (Buzzer), Power Button, Reset Button)
- iRIS Remote Management Module: 1 x iRIS-2400 slot
- I²C: 1 x 4-pin wafer

- SMBus: 1 x 4-pin wafer
- Internal Storage: EEPROM (support EAPI R1.0)
- Watchdog Timer:
Software programmable supports 1~255 sec system reset
- GPIO: 8-bit GPIO
- Power Supply:
ATX / AT power supply
24+4 pin
- Fan Connector:
1 x 4-pin / 1 x 3-pin CPU module fan connector
1 x 3-pin system fan connector by SIO
- Operating Temperature: -40°C ~ 85°C
- Operation Humidity: 5% ~ 95%, non-condensing
- Dimensions: 304.8 mm x 243.8 mm (12" x 9.6")

Ordering Information

- **ICE-DB-T7-i2-R10:**
Base Board for COM Express Type 7 Module COM.0 Rev. 2.1,
support PICMG EAPI R1.0, iRIS-2400
- **iRIS-2400-R10:**
IPMI 2.0 adapter card with AST2400 BMC chip for DDR3 SO-DIMM
socket interface

Jumpers setting and connectors

LABEL	FUNCTION
ATX1	Power Input Connector
12V_ATX1	Power Input Connector
SATA1, SATA2	SATA HDD Connector
CPU_FAN1	CPU Fan Connector
F_PANEL1	Front Panel Pin Header
DIO1	Digital I/O Pin Header
J_I2C1	I2C Connector
J_SMB1	SMBUS Connector
RS1, RS2	UART Connector
PW1	Power Connector
MINI-PCIE1	Support (USB+PCIE Interface)
TPM1	TPM Pin Header
J1	COMEXPRESS Type7 CPU Board Pin Define
J2	CPU Card Board to Board Pin Define
10G_HOST_CON1	10G Connector

ATX1: Power Input Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC3.3	13	VCC3.3
2	VCC3.3	14	-VCC12
3	GND	15	GND
4	VCC5	16	PS-ON
5	GND	17	GND
6	VCC5	18	GND
7	GND	19	GND
8	PWR-OK	20	-VCC5
9	5VSB	21	VCC5
10	VCC12	22	VCC5
11	VCC12	23	VCC5
12	VCC3.3	24	GND

12V_ATX1: Power Input Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	3	VCC12
2	GND	4	VCC12

SATA1, SATA2: SATA HDD Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	5	SATA_RXN
2	SATA_TXP	6	SATA_RXP
3	SATA_TXN	7	GND
4	GND		

CPU_FAN1: CPU Fan Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	VCC12
3	FANIO	4	PWM

F_PANEL1: Front Panel Pin Header			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	PWR_LED+	2	SPKR+
3	NC	4	NC
5	PWR_LED-	6	NC
7	PWR_BTN+	8	SPKR-
9	PWR_BTN-	10	NC
11	HDD_LED+	12	RESET+
13	HDD_LED-	14	RESET-

DIO1: Digital I/O Pin Header			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	VCC3.3
3	DOUT3	4	DOUT2
5	DOUT1-	6	DOUT0
7	DIN3	8	DIN2
9	DIN1	10	DIN1

J_I2C1: I2C Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	I2C0_DATA
3	I2C0_CLK	4	VCC5

J_SMB1: SMBUS Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	SMB_SDA
3	SMB_SCL	4	VCC5

RS1, RS2: UART Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	TX	2	RX
3	SMB_SCL		

PW1: Power Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC12	2	GND
3	GND	4	VCC5

MINI-PCIE1: Support (USB+PCIE Interface)			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	WAKE#	2	VCC3
3	NC	4	GND
5	NC	6	VCC1.5
7	NC	8	NC
9	GND	10	NC
11	CLK_PCIE_CLK_N	12	NC
13	CLK_PCIE_CLK_P	14	NC
15	GND	16	NC
17	NC	18	GND
19	NC	20	NC
21	GND	22	PCIRST#
23	PCIE_RXN	24	VCC3
25	PCIE_RXP	26	GND
27	GND	28	VCC1.5
29	GND	30	SMB_CLK
31	PCIE_TXN	32	SMB_DATA
33	PCIE_TXP	34	GND
35	GND	36	USB_DATA_N
37	NC	38	USB_DATA_P
39	NC	40	GND
41	NC	42	NC
43	NC	44	WIFI_LED
45	NC	46	NC
47	NC	48	VCC1.5
49	NC	50	GND
51	NC	52	VCC3

TPM1: TPM Pin Header			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	CLK	2	GND
3	FRAME	4	NC
5	RESET	6	VCC5
7	LAD3	8	LAD2
9	VCC3.3	10	LAD1
11	LAD0	12	GND
13	SCL	14	SDA
15	3V_SB	16	SERIRQ
17	GND	18	CLKRUN
19	LPCPD	20	LDRQ

J1: COMEXPRESS Type7 CPU Board Pin Define			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
A1	GND	B1	GND
A2	MDI3_N	B2	ACT
A3	MDI3_P	B3	LPC_FRAME#
A4	LINK100	B4	LPC_AD0
A5	LINK1000	B5	LPC_AD1
A6	MDI2_N	B6	LPC_AD2
A7	MDI2_P	B7	LPC_AD3
A8	LINK	B8	SIO_DRQ#0
A9	MDI1_N	B9	NC
A10	MDI1_P	B10	LPC_CLK_REF
A11	GND	B11	GND
A12	MDI0_N	B12	PM_PWRBTN#
A13	MDI0_P	B13	SMB_CLK
A14	NC	B14	SMB_DATA
A15	PM_SLP_S3#	B15	SMB_ALERT#
A16	SATA0_TX+	B16	SATA1_TX+
A17	SATA0_TX-	B17	SATA1_TX-
A18	PM_SLP_S4#	B18	LPCPD_N
A19	SATA0_RX+	B19	SATA1_RX+
A20	SATA0_RX-	B20	SATA1_RX-

A21	GND	B21	GND
A22	PE2_TX_DP_7	B22	PE2_RX_DP_7
A23	PE2_TX_DN_#7	B23	PE2_RX_DN#_7
A24	PM_SLP_S5#	B24	PWR_OK
A25	PE2_TX_DP_6	B25	PE2_RX_DP_6
A26	PE2_TX_DN_#6	B26	PE2_RX_DN#_6
A27	NC	B27	WDTRST#
A28	SATA_LED#	B28	NC
A29	NC	B29	NC
A30	NC	B30	AC_SDIN0
A31	GND	B31	GND
A32	NC	B32	SPKR
A33	NC	B33	I2C_CLK
A34	BIOS_DIS	B34	I2C_DATA
A35	NC	B35	NC
A36	PE2_TX_DP_5	B36	PE2_RX_DP_5
A37	PE2_TX_DN_#5	B37	PE2_RX_DN#_5
A38	GND	B38	GND
A39	PE2_TX_DP_4	B39	PE2_RX_DP_4
A40	PE2_TX_DN_#4	B40	PE2_RX_DN#_4
A41	GND	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	+V3.3A_RTC	B47	NC
A48	NC	B48	NC
A49	NC	B49	SYS_RESET#
A50	INT_SERIRQ	B50	CB_RESET#
A51	GND	B51	GND
A52	PCIE_TX_DP_6	B52	PCIE_RX_DP_6
A53	PCIE_TX_DN#_6	B53	PCIE_RX_DN#_6
A54	DIN0	B54	DOU1
A55	PCIE_TX_DP_5	B55	PCIE_RX_DP_5
A56	PCIE_TX_DN#_5	B56	PCIE_RX_DN#_5

A57	GND	B57	DOUT2
A58	PCIE_TX_DP_4	B58	PCIE_RX_DP_4
A59	PCIE_TX_DN#_4	B59	PCIE_RX_DN#_4
A60	GND	B60	GND
A61	PCIE_TX_DP_3	B61	PCIE_RX_DP_3
A62	PCIE_TX_DN#_3	B62	PCIE_RX_DN#_3
A63	DIN1	B63	DOUT3
A64	PCIE_TX_DP_2	B64	PCIE_RX_DP_2
A65	PCIE_TX_DN#_2	B65	PCIE_RX_DN#_2
A66	GND	B66	WAKE0#
A67	DIN2	B67	NC
A68	PCIE_TX_DP_1	B68	PCIE_RX_DP_1
A69	PCIE_TX_DN#_1	B69	PCIE_RX_DN#_1
A70	GND	B70	GND
A71	PE2_TX_DP_0	B71	PE2_RX_DP_0
A72	PE2_TX_DN#0	B72	PE2_RX_DN#_0
A73	GND	B73	GND
A74	PE2_TX_DP_1	B74	PE2_RX_DP_1
A75	PE2_TX_DN#1	B75	PE2_RX_DN#_1
A76	GND	B76	GND
A77	PE2_TX_DP_2	B77	PE2_RX_DP_2
A78	PE2_TX_DN#2	B78	PE2_RX_DN#_2
A79	GND	B79	GND
A80	GND	B80	GND
A81	PE2_TX_DP_3	B81	PE2_RX_DP_3
A82	PE2_TX_DN#3	B82	PE2_RX_DN#_3
A83	GND	B83	GND
A84	NCSI_TC_EN	B84	+V5A
A85	DIN3	B85	+V5A
A86	NC	B86	+V5A
A87	NC	B87	+V5A
A88	CLK_PCIE_CLK_P	B88	NC
A89	CLK_PCIE_CLK_N	B89	NC
A90	GND	B90	GND
A91	NC	B91	NCSI_CLK
A92	SPI_MISO	B92	NCSI_RXD1

A93	DOUT0	B93	NCSI_RXD0
A94	SPI_CLK	B94	NCSI_CRS
A95	SPI_MOSI	B95	NCSI_TXD1
A96	NC	B96	NCSI_TXD0
A97	NC	B97	SPI_CS
A98	RS1_TX	B98	NC
A99	RS1_RX	B99	NC
A100	GND	B100	GND
A101	RS2_TX	B101	FAN_PWRROUT
A102	RS2_RX	B102	FAN_TACHIN
A103	LID#	B103	SLEEP
A104	VCC12	B104	VCC12
A105	VCC12	B105	VCC12
A106	VCC12	B106	VCC12
A107	VCC12	B107	VCC12
A108	VCC12	B108	VCC12
A109	VCC12	B109	VCC12
A110	GND	B110	GND

J2: CPU Card Board to Board Pin Define			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
C1	GND	D1	GND
C2	GND	D2	GND
C3	USB3_RXN_0	D3	USB3_TXN_0
C4	USB3_RXP_0	D4	USB3_TXP_0
C5	GND	D5	GND
C6	USB3_RXN_1	D6	USB3_TXN_1
C7	USB3_RXP_1	D7	USB3_TXP_1
C8	GND	D8	GND
C9	USB3_RXN_2	D9	USB3_TXN_2
C10	USB3_RXP_2	D10	USB3_TXP_2
C11	GND	D11	GND
C12	USB3_RXN_3	D12	USB3_TXN_3
C13	USB3_RXP_3	D13	USB3_TXP_3
C14	GND	D14	GND
C15	NC	D15	DDI1_CTRLCLK_AUX_P

C16	NC	D16	DDI1_CTRLCLK_AUX_N
C17	NC	D17	NC
C18	GND	D18	NC
C19	PCIE_RX_DP_7	D19	PCIE_TX_DP_7
C20	PCIE_RX_DN#_7	D20	PCIE_TX_DN#_7
C21	GND	D21	GND
C22	PCIE_RX_DP_8	D22	PCIE_TX_DP_8
C23	PCIE_RX_DN#_8	D23	PCIE_TX_DN#_8
C24	NC	D24	NC
C25	GND	D25	GND
C26	NC	D26	NC
C27	NC	D27	NC
C28	GND	D28	GND
C29	NC	D29	NC
C30	NC	D30	NC
C31	GND	D31	GND
C32	NC	D32	10GBE_SPI_CS_N_1P0V
C33	NC	D33	10GBE_SPI_DI_1P0V
C34	NC	D34	NC
C35	NC	D35	NC
C36	LAN_I2C_SDA_1P0V	D36	10G_SFP+_Present_N
C37	LAN_I2C_SCL_1P0V	D37	10G_BaseT_Present_N
C38	LAN_MDC_LED1_1	D38	10GBE_SPI_CLK_1P0V
C39	LAN_MDC_LED1_0	D39	10GBE_SPI_DO_1P0V
C40	LAN_SDP0_1_1P0V	D40	LAN_SDP0_0_1P0V
C41	GND	D41	GND
C42	GBE_KR_RX1_P	D42	GBE_KR_TX1_P
C43	GBE_KR_RX1_N	D43	GBE_KR_TX1_N
C44	GND	D44	GND
C45	LAN_MDC_LED0_1	D45	LAN_MDIO_DIR_CTL1
C46	LAN_MDC_LED0_0	D46	LAN_MDIO_DIR_CTL0
C47	SEL_I2C_1P0V	D47	LAN_SDP1_0_1P0V
C48	GND	D48	GND
C49	GBE_KR_RX0_P	D49	GBE_KR_TX0_P
C50	GBE_KR_RX0_N	D50	GBE_KR_TX0_N
C51	GND	D51	GND

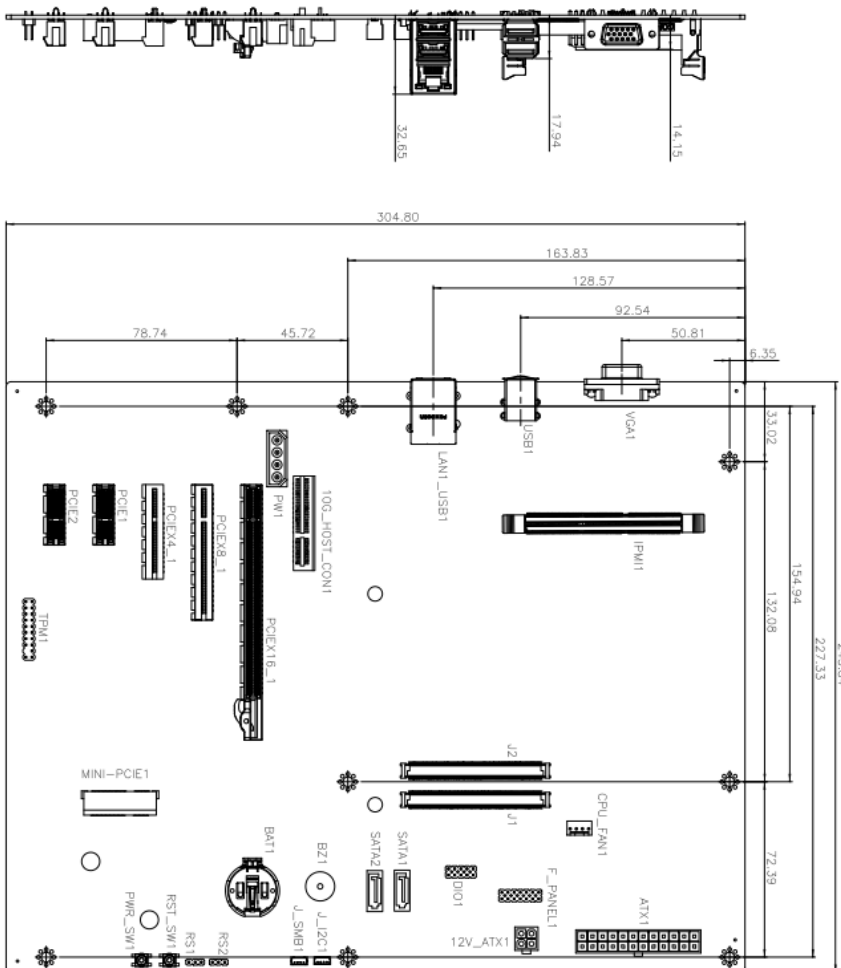
C52	PE1_RX_DP_0	D52	PE1_TX_DP_0
C53	PE1_RX_DN#_0	D53	PE1_TX_DN#_0
C54	NC	D54	NC
C55	PE1_RX_DP_1	D55	PE1_TX_DP_1
C56	PE1_RX_DN#_1	D56	PE1_TX_DN#_1
C57	NC	D57	NC
C58	PE1_RX_DP_2	D58	PE1_TX_DP_2
C59	PE1_RX_DN#_2	D59	PE1_TX_DN#_2
C60	GND	D60	GND
C61	PE1_RX_DP_3	D61	PE1_TX_DP_3
C62	PE1_RX_DN#_3	D62	PE1_TX_DN#_3
C63	NC	D63	NC
C64	NC	D64	NC
C65	PE1_RX_DP_4	D65	PE1_TX_DP_4
C66	PE1_RX_DN#_4	D66	PE1_TX_DN#_4
C67	NC	D67	GND
C68	PE1_RX_DP_5	D68	PE1_TX_DP_5
C69	PE1_RX_DN#_5	D69	PE1_TX_DN#_5
C70	GND	D70	GND
C71	PE1_RX_DP_6	D71	PE1_TX_DP_6
C72	PE1_RX_DN#_6	D72	PE1_TX_DN#_6
C73	GND	D73	GND
C74	PE1_RX_DP_7	D74	PE1_TX_DP_7
C75	PE1_RX_DN#_7	D75	PE1_TX_DN#_7
C76	GND	D76	GND
C77	NC	D77	NC
C78	PE1_RX_DP_8	D78	PE1_TX_DP_8
C79	PE1_RX_DN#_8	D79	PE1_TX_DN#_8
C80	GND	D80	GND
C81	PE1_RX_DP_9	D81	PE1_TX_DP_9
C82	PE1_RX_DN#_9	D82	PE1_TX_DN#_9
C83	NC	D83	NC
C84	GND	D84	GND
C85	PE1_RX_DP_10	D85	PE1_TX_DP_10
C86	PE1_RX_DN#_10	D86	PE1_TX_DN#_10
C87	GND	D87	GND

C88	PE1_RX_DP_11	D88	PE1_TX_DP_11
C89	PE1_RX_DN#_11	D89	PE1_TX_DN_#11
C90	GND	D90	GND
C91	PE1_RX_DP_12	D91	PE1_TX_DP_12
C92	PE1_RX_DN#_12	D92	PE1_TX_DN_#12
C93	GND	D93	GND
C94	PE1_RX_DP_13	D94	PE1_TX_DP_13
C95	PE1_RX_DN#_13	D95	PE1_TX_DN_#13
C96	GND	D96	GND
C97	NC	D97	NC
C98	PE1_RX_DP_14	D98	PE1_TX_DP_14
C99	PE1_RX_DN#_14	D99	PE1_TX_DN_#14
C100	GND	D100	GND
C101	PE1_RX_DP_15	D101	PE1_TX_DP_15
C102	PE1_RX_DN#_15	D102	PE1_TX_DN_#15
C103	GND	D103	GND
C104	VCC12	D104	VCC12
C105	VCC12	D105	VCC12
C106	VCC12	D106	VCC12
C107	VCC12	D107	VCC12
C108	VCC12	D108	VCC12
C109	VCC12	D109	VCC12
C110	GND	D110	GND

10G_HOST_CON1: 10G Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
B1	VCC12	A1	10GBE_SPI_CS_N_1P0V
B2	VCC12	A2	VCC12
B3	VCC12	A3	VCC12
B4	GND	A4	GND
B5	LAN_MDC_LED0_1	A5	LAN_MDC_LED1_1_1P0V
B6	LAN_MDC_LED0_0	A6	LAN_MDC_LED1_0_1P0V
B7	GND	A7	3.3VSB
B8	VCC3.3	A8	10GBE_SPI_DI_1P0V
B9	10GBE_SPI_CLK_1P0V	A9	VCC3.3
B10	VCC1.05	A10	VCC3.3

B11	10GBE_SPI_DO_1P0V	A11	LAN_SDP1_0_1P0V
B12	SEL_I2C_1P0V	A12	GND
B13	GND	A13	LAN_SDP0_0_1P0V
B14	GBE_KR_RX1_P	A14	LAN_SDP0_1_1P0V
B15	GBE_KR_RX1_N	A15	GND
B16	GND	A16	GBE_KR_TX1_P
B17	NC	A17	GBE_KR_TX1_N
B18	GND	A18	GND
B19	GBE_KR_RX0_P	A19	NC
B20	GBE_KR_RX0_N	A20	GND
B21	GND	A21	GBE_KR_TX0_P
B22	GND	A22	GBE_KR_TX0_N
B23	LAN_MDIO_DIR_CTL0	A23	GND
B24	LAN_MDIO_DIR_CTL1	A24	GND
B25	GND	A25	NC
B26	GND	A26	NC
B27	NC	A27	GND
B28	NC	A28	GND
B29	GND	A29	10G_BaseT_Present_N
B30	LAN_I2C_SCL_1P0V	A30	10G_SFP+_Present_N
B31	LAN_I2C_SDA_1P0V	A31	GND
B32	PWR-OK	A32	NC

Board Layout: Jumper and Connector Locations



(Unit: mm)