COM Express Rev 2.1 Mini Size Type 6 Module, Intel® 4th Generation Atom™ Processor, VGA, DDI, GbE, SATA 3Gb/s, USB and Audio, *-40℃ to +85℃ and   RoHS*

ICE-BT-T10

Quick Installation Guide
Version 1.0

Jan 12, 2015.

Package List

ICE-BT-T10 package includes the following items:

- 1 x ICE-BT-T10 single board computer
- 1 x Heatsink
- 1 x QIG (Quick Installation Guide)
- 1 x Utility CD

Specifications

- CPU:

  Intel® Atom™ E3845 on-board SoC (1.91GHz, quad-core, 2MB cache, TDP=10W)

  Intel® Atom™ E3827 on-board SoC (1.75GHz, dual-core, 1MB cache, TDP=8W)

  Intel® Atom™ E3826 on-board SoC (1.46GHz, dual-core, 1MB cache, TDP=7W)

  Intel® Atom™ E3825 on-board SoC (1.33GHz, dual-core, 1MB cache, TDP=6W)

  Intel® Atom™ E3815 on-board SoC (1.46GHz, single-core, 512KB cache, TDP=5W)

  Intel® Celeron® J1900 on-board SoC (2GHz, quad-core, 2MB cache, TDP=10W)

  Intel® Celeron® N2930 on-board SoC (1.83GHz, quad-core, 2MB cache, TDP=7.5W)

  Intel® Celeron® N2807 on-board SoC (1.58GHz, dual-core, 2MB cache, TDP=4.3W)

- BIOS: UEFI BIOS
- Memory：2GB soldered down 1066/1333 MHz DDR3L memory (4GB optional)
- Graphics Engine:

  Intel® HD Graphics Gen 7 Engines with 4 execution units, supports DX11.1, OpenGL 4.2 and OpenCL1.2

- Display Output:

  1 x VGA (2560x1600) (via reserved pin)

  1 x DDI (DP/HDMI, max. resolution 2560x1600/1920x1080)

  1 x eDP

- Ethernet: Intel® I210 GbE Ethernet
- Embedded Controller: IT8587VG-FX
- Storage:

  2 x SATA 3Gb/s signal to baseboard

  Optional soldered down 4GB SSD (SATA port 1)

- I/O Interface:

  4 x USB 2.0 signal to baseboard

  1 x USB 3.0 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
- SDIO: Yes, to baseboard
- SPI: Yes, to baseboard
- Internal Storage:

  The device shall have the capacity of at least 2 kbits, and shall have three address inputs. Suitable devices include the Atmel AT24C32C, ST M24C32 and other compatible devices.
- Serial Port:

  2 serial ports to baseboard (TX & RX from EC)
- Expansion: 3 x PCIe x1 signal to baseboard
- Watchdog Timer:

  Software programmable supports 1~255 sec. system reset

  (from EC)
- Power Consumption:

  +12V@0.43A, Vcore_12V@0.9 A (Intel® Atom™ E3845 CPU, 2GB 1333 MHz DDR3L memory)
- Operating Temperature:

  -20℃ ~ 60℃
- Storage Temperature:

  -30℃ ~ 70℃
- Operation Humidity: 5% ~ 95%, non-condensing
- Dimensions: 84 mm x 55 mm (mini size)
- Weight(GW/ NW): 300g / 150g

Ordering Information

- **ICE-BT-T10-E38451-R10:**
  COM Express Basic Type 10 module with Intel® Atom™ quad-core processor E3845 (10W), VGA, DDI, GbE, SATA, USB 3.0 and HD Audio, RoHS

- **ICE-BT-T10-E38251-R10:**
  COM Express Basic Type 10 module with Intel® Atom™ dual-core processor E3825 (6W), VGA, DDI, GbE, SATA, USB 3.0 and HD Audio, RoHS

- **ICE-BT-T10-E38151-R10:**
  COM Express Basic Type 10 module with Intel® Atom™ single-core processor E3815 (5W), VGA, DDI, GbE, SATA, USB 3.0 and HD Audio, RoHS

- **ICE-BT-T10-E38451W2-R10:**
  COM Express Basic Type 10 module with Intel® Atom™ quad-core processor E3845 (10W), VGA, DDI, GbE, SATA, USB 3.0 and HD Audio, -40℃ ~ 85℃ and RoHS

- **ICE-BT-T10-E38251W2-R10:**
  COM Express Basic Type 10 module with Intel® Atom™ dual-core processor E3825 (6W), VGA, DDI, GbE, SATA, USB 3.0 and HD Audio, -40℃ ~ 85℃ and RoHS

- **ICE-BT-T10-E38271 / E38261-R10:**
  COM Express Basic Type 10 module with Intel® Atom™ processor
  E3827 (8W) / E3826 (7W), VGA, DDI, GbE, SATA, USB 3.0 and HD
  Audio, RoHS (by request MOQ: 100pcs/lot)

- **ICE-BT-T10-J19001 / N29301/N28071-R10:**
  COM Express Basic Type 10 module with Intel® Celeron® processor
  J1900 (10W) / N2930 (7.5W) / N2807 (4.3W), VGA, DDI, GbE, SATA,
  USB 3.0 and HD Audio, RoHS (by request MOQ: 100pcs/lot)

- **ICE-BT-T10-E38271W2 / E38261W2/ E38151W2-R10:**
  COM Express Basic Type 10 module with Intel® Atom™ processor
  E3827 (8W) / E3826 (7W) / E3815 (5W), VGA, DDI, GbE, SATA,
  USB 3.0 and HD Audio, -40°C ~ 85°C and RoHS (by request MOQ:
  100pcs/lot)

- **ICE-DB-T10-R10:**
  Baseboard for COM Express Type 10 Module COM.0 Rev. 2.1,
  supports PICMG EAPI R1.0

Connector

COM Express Connector AB1 : COM Express Connector AB			
Pin	DESCRIPTION	Pin	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	RSVD
A9	GBE0_MDI1-	B9	RSVD
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	USB_SSRX0-	B22	USB_SSTX0-
A23	USB_SSRX0+	B23	USB_SSTX0-
A24	RSVD	B24	RSVD
A25	RSVD	B25	RSVD
A26	RSVD	B26	RSVD
A27	BATLOW#	B27	WDT
A28	ATA_ACT#	B28	RSVD
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	RSVD	B35	RSVD
A36	RSVD	B36	RSVD
A37	RSVD	B37	RSVD
A38	RSVD	B38	RSVD
A39	RSVD	B39	RSVD
A40	RSVD	B40	RSVD
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	RSVD
A48	RSVD	B48	RSVD
A49	RSVD	B49	SYS_RESET#
A50	LPC_SERIRQ	B50	CB_RESET#
A51	GND5	B51	GND20
A52	VGA_HSYNC	B52	RSVD
A53	VGA_VSYNC	B53	VGA_RED
A54	GPI0	B54	GPO1
A55	VGA_I2C_CK	B55	VGA_GRN
A56	VGA_I2C_DAT	B56	VGA_BLU
A57	GND6	B57	GPO2
A58	RSVD	B58	RSVD
A59	RSVD	B59	RSVD
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	RSVD
A68	PCIE_TX0+	B68	PCIE_RX0+
A69	PCIE_TX0-	B69	PCIE_RX0-
A70	GND9	B70	GND22
A71	DDI0_TXP2(eDP)	B71	DDI1_TXP0
A72	DDI0_TXN2(eDP)	B72	DDI1_TXN0
A73	DDI0_TXP1(eDP)	B73	DDI1_TXP1

A74	DDI0_TXN1(eDP)	B74	DDI1_TXN1
A75	DDI0_TXP0(eDP)	B75	DDI1_TXP0
A76	DDI0_TXN0(eDP)	B76	DDI1_TXN0
A77	DDI0_ENVDD(eDP)	B77	RSVD
A78	RSVD	B78	RSVD
A79	RSVD	B79	DDI0_ENBKL
A80	GND10	B80	GND23
A81	DDI0_TXP3(eDP)	B81	DDI1_TXP3
A82	DDI0_TXN3(eDP)	B82	DDI1_TXN3
A83	DDI0_AUXP(eDP)	B83	DDI0_PWM(eDP)
A84	DDI0_AUXN(eDP)	B84	VCC5SBY
A85	GPI3	B85	VCC5SBY
A86	RSVD	B86	VCC5SBY
A87	eDP_HPD	B87	VCC5SBY
A88	PCIE0_CK_REF+	B88	BIOS_DIS1#
A89	PCIE0_CK_REF-	B89	DDI0_HPD
A90	GND11	B90	GND24
A91	SPI_VCC	B91	RSVD
A92	SPI_MISO	B92	RSVD
A93	GPO0	B93	RSVD
A94	SPI_CLK	B94	RSVD
A95	SPI_MOSI	B95	DDI1_DDC_AUX_SEL
A96	RSVD	B96	RSVD
A97	TYPE10#	B97	SPI_CS#
A98	RS1_TX	B98	DDI1_CTRLCLK_AUXP
A99	RS1_RX	B99	DDI1_CTRLDATA_AUXN
A100	GND13	B100	GND25
A101	RS2_TX	B101	FAN_PWMOUT
A102	RS2_RX	B102	FAN_TACHIN
A103	LID#	B103	SLEEP#
A104	VCC_12V	B104	VCC_12V
A105	VCC_12V	B105	VCC_12V
A106	VCC_12V	B106	VCC_12V
A107	VCC_12V	B107	VCC_12V
A108	VCC_12V	B108	VCC_12V
A109	VCC_12V	B109	VCC_12V
A110	GND14	B110	GND26

Board Layout: Jumper and Connector Locations

(Unit: mm)