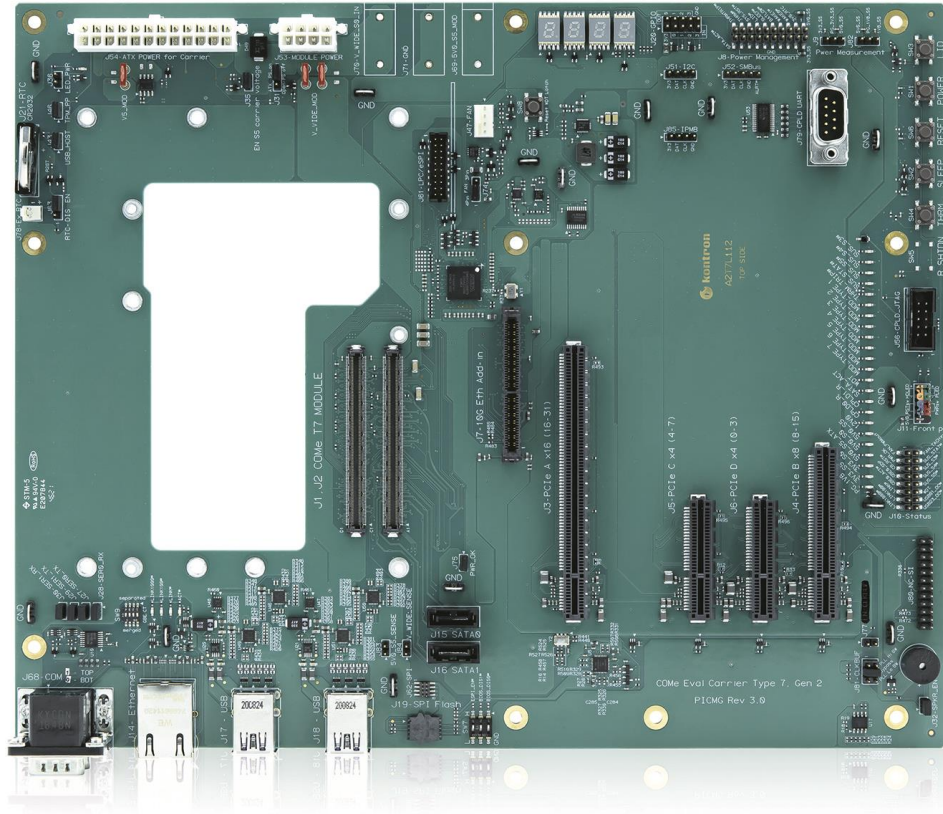




COMe Eval Carrier T7 (A2T7)

Rev 1.4

Doc.-ID: 1068-1349

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► COME EVAL CARRIER T7 (A2T7) - USER GUIDE

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⚠ CAUTION

Handling and operation of the product is permitted only for trained personnel within a work place that is access controlled. Please follow the “General Safety Instructions” supplied with the system.

NOTICE

You find the most recent version of the “General Safety Instructions” online in the download area of this product.

Revision History

Revision	Brief Description of Changes	Date of Issue	Author
1.0	Initial issue	2021-October-12	hjs
1.1	New Adapter card specified in chapter 9/, new RMA link,	2022-April-28	hjs
1.2	Minor updates	2022-August-29	ih
1.3	Photos updated	2023-March-10	ih
1.4	Additional comment for adapter cards	2023-March-24	ih

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As a trusted technology innovator and global solutions provider, JUMPttec extends its embedded market strengths into a services portfolio allowing companies to break the barriers of traditional product lifecycles. Proven product expertise coupled with collaborative and highly-experienced support enables JUMPttec to provide exceptional peace of mind to build and maintain successful products.

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If you have any difficulties using this user guide, discover an error, or just want to provide some feedback, contact JUMPtect Support. Detail any errors you find. We will correct the errors or problems as soon as possible and post the revised user guide on our website.

Symbols

The following symbols may be used in this manual

	DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.
	WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	NOTICE indicates a property damage message.
	CAUTION indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.
	Electric Shock! This symbol and title warn of hazards due to electrical shocks (> 60 V) when touching products or parts of products. Failure to observe the precautions indicated and/or prescribed by the law may endanger your life/health and/or result in damage to your material.
	ESD Sensitive Device! This symbol and title inform that the electronic boards and their components are sensitive to static electricity. Care must therefore be taken during all handling operations and inspections of this product in order to ensure product integrity at all times.
	HOT Surface! Do NOT touch! Allow to cool before servicing.
	Laser !

This symbol inform of the risk of exposure to laser beam and light emitting devices (LEDs) from an electrical device. Eye protection per manufacturer notice shall review before servicing.



This symbol indicates general information about the product and the user guide.

This symbol also indicates detail information about the specific product configuration.



This symbol precedes helpful hints and tips for daily use.

For Your Safety

Your new JUMPtéc product was developed and tested carefully to provide all features necessary to ensure its compliance with electrical safety requirements. It was also designed for a long fault-free life. However, the life expectancy of your product can be drastically reduced by improper treatment during unpacking and installation. Therefore, in the interest of your own safety and of the correct operation of your new JUMPtéc product, you are requested to conform with the following guidelines.

High Voltage Safety Instructions

As a precaution and in case of danger, the power connector must be easily accessible. The power connector is the product's main disconnect device.

⚠ CAUTION

Warning

All operations on this product must be carried out by sufficiently skilled personnel only.

⚠ CAUTION



Electric Shock!

This symbol and title warn of hazards due to electrical shocks (> 60 V) when touching products or parts of products. Failure to observe the precautions indicated and/or prescribed by the law may endanger your life/health and/or result in damage to your material.

disconnected or the first cable to be connected when performing installation or removal procedures on this product.

Special Handling and Unpacking Instruction

NOTICE



ESD Sensitive Device!

Electronic boards and their components are sensitive to static electricity. Therefore, care must be taken during all handling operations and inspections of this product in order to ensure product integrity at all times.

Do not handle this product out of its protective enclosure while it is not used for operational purposes unless it is otherwise protected.

Whenever possible, unpack or pack this product only at EOS/ESD safe work stations. Where a safe work station is not guaranteed, it is important for the user to be electrically discharged before touching the product with his/her hands or tools. This is most easily done by touching a metal part of your system housing.

It is particularly important to observe standard anti-static precautions when changing piggybacks, ROM devices, jumper settings etc. If the product contains batteries for RTC or memory backup, ensure that the product is not placed on conductive surfaces, including anti-static plastics or sponges. They can cause short circuits and damage the batteries or conductive circuits on the product.

Lithium Battery Precautions

If your product is equipped with a lithium battery, take the following precautions when replacing the battery.

⚠ CAUTION

Danger of explosion if the battery is replaced incorrectly.

- ▶ Replace only with same or equivalent battery type recommended by the manufacturer.
 - ▶ Dispose of used batteries according to the manufacturer's instructions.
-

General Instructions on Usage

In order to maintain Kontron's product warranty, this product must not be altered or modified in any way. Changes or modifications to the product, that are not explicitly approved by Kontron and described in this user guide or received from JUMPtec Support as a special handling instruction, will void your warranty.

This product should only be installed in or connected to systems that fulfill all necessary technical and specific environmental requirements. This also applies to the operational temperature range of the specific board version that must not be exceeded. If batteries are present, their temperature restrictions must be taken into account.

In performing all necessary installation and application operations, only follow the instructions supplied by the present user guide.

Keep all the original packaging material for future storage or warranty shipments. If it is necessary to store or ship the product then re-pack it in the same manner as it was delivered.

Special care is necessary when handling or unpacking the product. See Special Handling and Unpacking Instruction.

Quality and Environmental Management

JUMPtéc aims to deliver reliable high-end products designed and built for quality, and aims to complying with environmental laws, regulations, and other environmentally oriented requirements. For more information regarding Kontron's quality and environmental responsibilities, visit <http://www.JUMPtéc.com/about-JUMPtéc/corporate-responsibility/quality-management>.

Disposal and Recycling

Kontron's products are manufactured to satisfy environmental protection requirements where possible. Many of the components used are capable of being recycled. Final disposal of this product after its service life must be accomplished in accordance with applicable country, state, or local laws or regulations.

WEEE Compliance

The Waste Electrical and Electronic Equipment (WEEE) Directive aims to:

- ▶ Reduce waste arising from electrical and electronic equipment (EEE)
- ▶ Make producers of EEE responsible for the environmental impact of their products, especially when the product become waste
- ▶ Encourage separate collection and subsequent treatment, reuse, recovery, recycling and sound environmental disposal of EEE
- ▶ Improve the environmental performance of all those involved during the lifecycle of EEE



Environmental protection is a high priority with JUMPtéc
follows the WEEE directive

You are encouraged to return our products for proper disposal.

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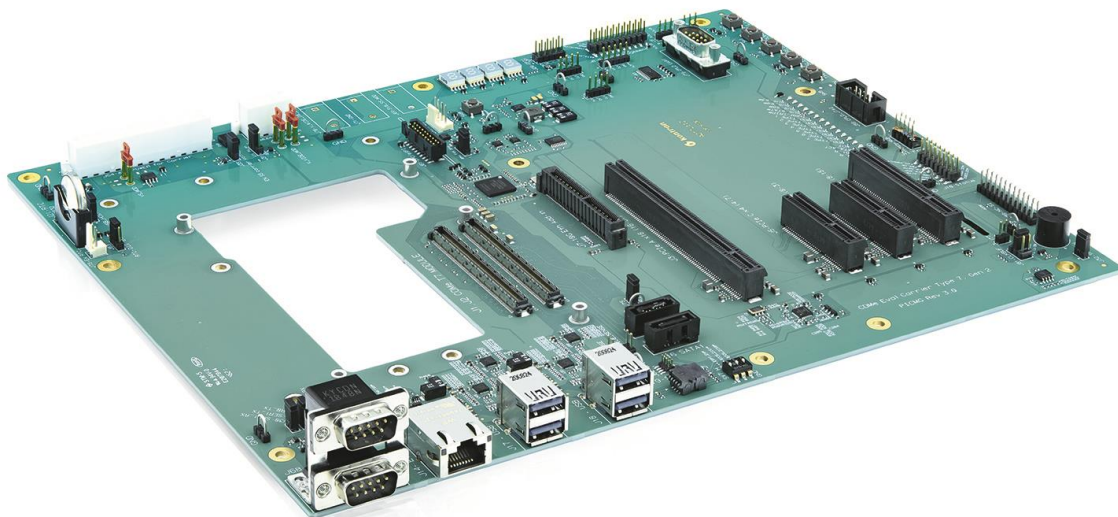
1/ Introduction

1.1. Product Description

The A2T7 is the successor of the already existing ADT7 COM Express Evaluation Carrier Type7. It is an evaluation, testing and validation carrier board (baseboard) for COM Express® Type 7 modules in ATX form factor. The A2T7 will allow more flexibility with respect to the 10 GbE configurations. Main purpose of this carrier board is to bring out all the signals from COM Express® connector of COMe Type7 modules to industry standard interfaces. The key features are:

- ▶ Compliant to PICMG COM Express COM.0 R3.0 and R3.1 – different P/Ns available
- ▶ Support of COM Express® basic and compact modules Pin-out Type 7 compliant with cutout area for 2x SODIMMs on the bottom side of the PCB
- ▶ Support of overall 32x PCIe lanes via different PCIe card slots: 4x PCIe slots (1x16 + 1x8 + 2x4)
- ▶ Support of 2x UART ports via DSUB-9 connector
- ▶ Flexible configuration of 4x 10 GB Eth interfaces from COMe module via pluggable expansion cards
- ▶ 1x 1000Base-T interface, directly from COMe module with basic EMI/ESD protection in RJ-45 integrated magnetic connector
- ▶ 4x USB 3.1 gen2 Interface, directly from COMe module with basic EMI/ESD protection and redrivers
- ▶ 2x SATA standard interface, directly from COMe module
- ▶ External fan connector
- ▶ Coin cell and options for external RTC
- ▶ BIOS POST Code display in the form of 7-Segment display array
- ▶ Pin headers for COM Express® specific signals enabling measurement like GPIOs, I2C, SMBus, Power management, Status signal
- ▶ External BIOS flash socket and header for emulator connection

Figure 1: COMe Eval Carrier T7 (A2T7) with four PCIe slots



1.2. Product Naming Clarification

The product names for JUMPtEC COM Express® Computer-on-Modules consist of a short form of the industry standard (COMe-), the form factor (b=basic, c=compact, m=mini), the capital letters for the CPU and Chipset Codenames (XX) and the pin-out type (#) followed by the CPU Name.

COM Express® defines a Computer-On-Module, or COM, with all components necessary for a bootable host computer, packaged as a super component.

- ▶ COMe-bXX# modules are JUMPtEC's COM Express® modules in basic form factor (125 mm x 95 mm)
- ▶ COMe-cXX# modules are JUMPtEC's COM Express® modules in compact form factor (95 mm x 95 mm)

1.3. Understanding COM Express® Functionality

All JUMPtEC COM Express® extended, basic and compact modules contain two 220pin connectors; each of it has two rows called Row A & B on primary connector and Row C & D on secondary connector. The COM Express® Computer-On-Module (COM) features the following maximum amount of interfaces according to the PCI Industrial Computer Manufacturers Group (PICMG) module Pin-out type.

Table 1: Features

Feature	COMe Eval Carrier T7 (A2T7)
10 Gbit Ethernet	4x
SFP+	2x or 4x
COMe Connec.	COMe Connectors 5mm / 8mm
USB	4x USB double stacked
COM	2x DSUB-9
SATA	2x standard slots
Feature Connector	Various control signals - such as WAKE, THRM, SMB, I2C – similar to COMe Eval Carrier Type 7 68300-0000-00-0
PCIe slots	1x x16, 1x x8, 2x x4 – supporting up to PCIe Gen4
Ethernet expansion slot	4x 10G KR signals + Ethernet sideband signals
LEDs	SMD LEDs e.g. for carrier activity, board status, LAN and power status (power good)

Feature	COMe Eval Carrier T7 (A2T7)
GPIO	GPIO Header for 8 GPIO signals similar to COMe Eval Carrier Type 7
SMBus header	5-pin header similar to COMe Eval Carrier Type 7
I2C	4-pin header similar to COMe Eval Carrier Type 7
Fan	4-pin fan connector, Voltage can be 5 V or 12 V (default)
IPMB support	4-pin header

1.4. COM Express® Documentation

The COM Express® Specification defines the COM Express® module form factor, pin-out, and signals. This document is available at the PICMG® website by filling out the order form.

1.5. COM Express® Benefits

COM Express® modules are compact and highly integrated computers. All modules feature a standardized form factor and connector layout which carry a specified set of signals. Each COM is based on the COM Express® specification. This standardization allows designers to create a single-system baseboard that can accept present and future COM Express® modules.

The baseboard designer can optimize exactly how each of these functions implements physically. Designers can place connectors precisely where needed for the application on a baseboard designed to optimally fit a system's packaging.

A single baseboard design can use a range of COM Express® modules with different sizes and pin-outs. This flexibility can differentiate products at various price/performance points. The modularity of a COM Express® solution also ensures against obsolescence when computer technology evolves. A properly designed COM Express® baseboard can work with several successive generations of COM Express® modules.

A COM Express® baseboard design has many advantages of a customized computer-board design and, additionally, delivers better obsolescence protection, heavily reduced engineering effort, and faster time to market.

2/ System specifications

2.1. Component Main Data

The table below summarizes the features of the motherboard.

Table 2: Component Main Data

COMe Eval Carrier T7 (A2T7)	
Form factor	Testing Hardware with 244.0 mm x 305.0 mm
Compliance	PICMG COM.0 R3.0 and R3.1
Memory	
EEPROM System (U17)	PICMG EEPROM
I/O	
LAN	1x RJ45 GbE port, expansion slot for 4x 10 GbE adapter cards
USB	4x USB 3.1 double stack
COM	2x DSUB-9
SATA	2x standard slots
Feature Connector	Various control signals - such as WAKE, THRM, SMB, I2C
PCIe	1x x16, 1x x8, 2x x4, supporting up to PCIe Gen4 (depending on module capabilities)
LEDs	SMD LEDs e.g. for carrier activity, board status, LAN and power status (power good)
GPIO	GPIO Header for 8 GPIO signals
SMBus header	5-pin header
I2C	4-pin header
Battery	CR2032 battery holder
Fan	4-pin fan connector, Voltage can be 5 V or 12 V (default)
NC-SI	24-pin Network controller sideband interface
Carrier Board Power	
Power input	Carrier is powered from standard ATX power supply with ATX 24-pin connector.
Single Supply Support	carrier requires ATX power
ACPI	ACPI 4.0

Single Supply Simulation Mode	yes
Misc Power Management	yes
JUMPtEC Features	
External I2C Bus	Fast I2C, MultiMaster capable

⚠ CAUTION

Danger of explosion if the lithium battery is incorrectly replaced.

- Replace only with the same or equivalent type recommended by the manufacturer
 - Dispose of used batteries according to the manufacturer's instructions
-

2.2. Environmental Conditions

Table 3: Environmental Conditions for the evaluation carrier A2T7

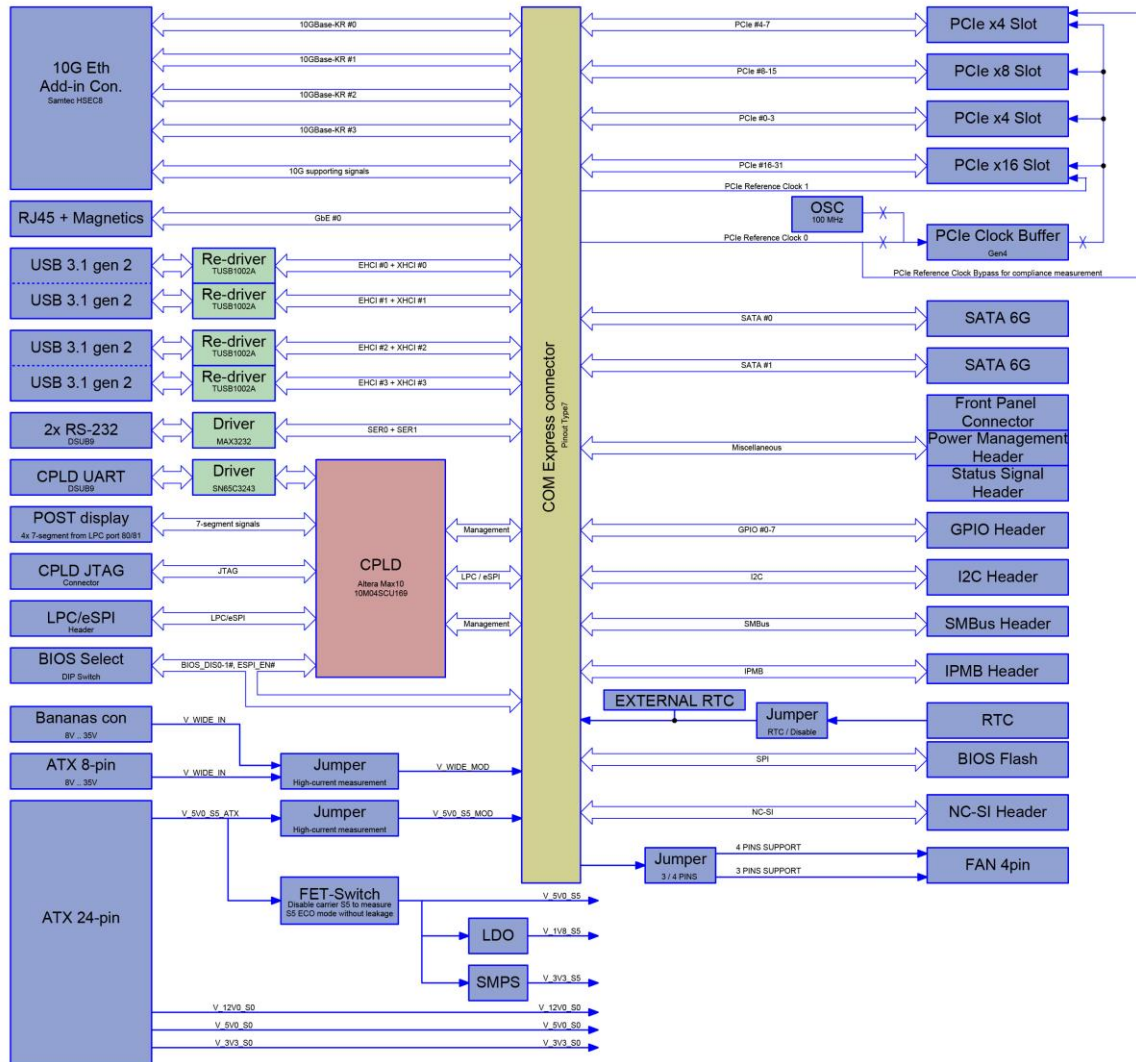
NOTICE

the adapter cards are intended for laboratory use only

Operating	-0°C to +60°C Some connectors and supercap has operating temperature only 0°C to +70°C, relative humidity (non-condensing) 10 % to 93 % at 40°C (acc. to IEC 60068-2-78)
Storage	-30°C to +85°C relative humidity (non-condensing) 10 % to 93 % at 40°C (acc. to IEC 60068-2-78)
Waste Electrical and Electronic Equipment (WEEE)	Components and materials of the product must not contain lead, mercury, cadmium, hexavalent, chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE). (Directive 2012/19/EU)
RoHS II Compliance	The product will comply with the European Council Directive on the approximation of the laws of the member states relating to Directive 2011/65/EU or the last status thereof.
MTBF	TBD
Compliance	EMC according to EN 55032 Class B, IEC/EN 61000-6-3 and EN 55024, IEC/EN 61000-6-2 Reach compliant (Regulation (EC) No 1907/2006) EN 62368-1:2014 - Safety for audio/video and information technology equipment

2.3. Block diagram

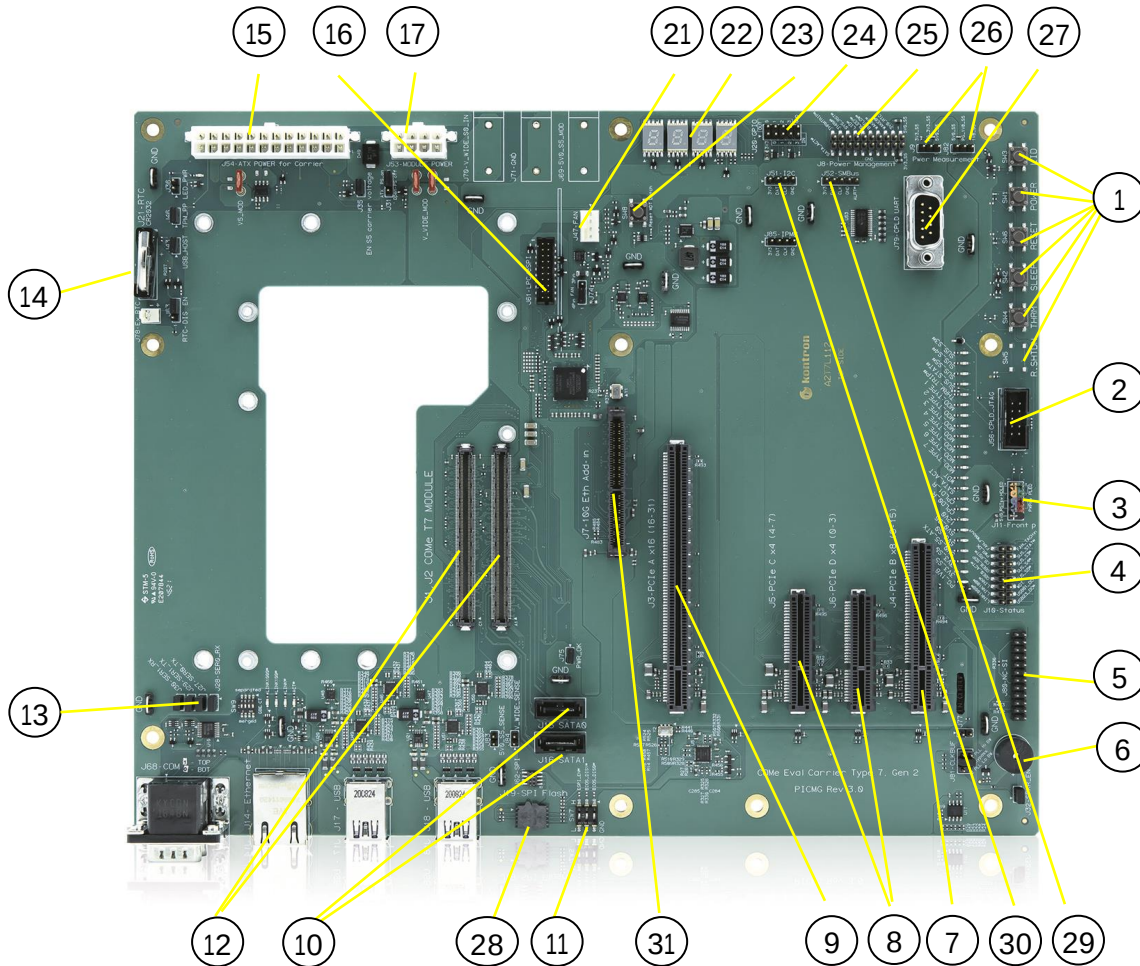
Figure 2: Block Diagram COMe Eval Carrier T7 (A2T7)



3/ Mainboard Views

3.1. Top View

Figure 3: Top View of COMe Eval Carrier T7 (A2T7)

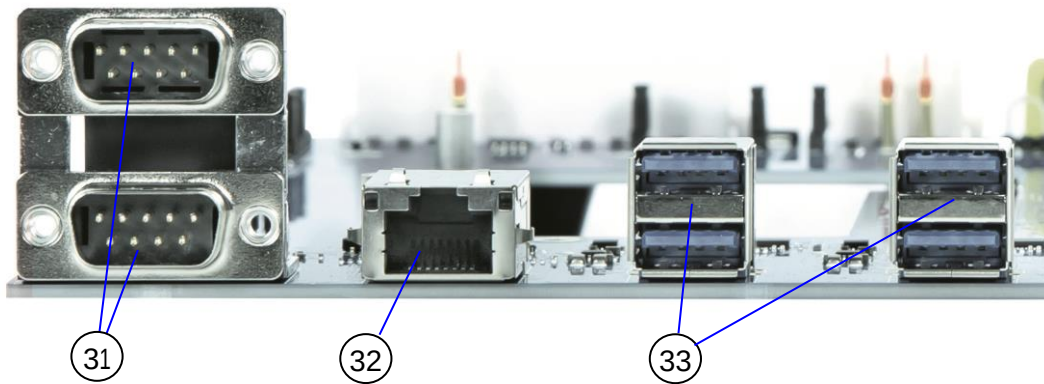


- | | |
|---------------------------------------|--------------------------------------|
| 1. 6x Button Switches (SW1-SW6) | 16. LPC/eSPI (J61) |
| 2. CPLD JTAG (2x5 pins, J56) | 17. ATX power connector 8 pins (J53) |
| 3. Front Panel Connector (J11) | 18. n/a |
| 4. Status Header (J10) | 19. n/a |
| 5. NC-SI (J80) | 20. n/a |
| 6. Speaker Enable/Disable (J32) | 21. Fan (J47) |
| 7. PCIe x8 (J4) | 22. POST Code Display |
| 8. 2x PCIe x4 (J5/J6) | 23. Button Switch Reset WDT (SW8) |
| 9. PCIe x16 (J3) | 24. GPIO (J20) |
| 10. 2x SATA (J15/J16) | 25. Power Management (J8) |
| 11. DIP Switch (SW7) | 26. 2x Power Measurement (J9, J82) |
| 12. 2x COMe interface (J1/J2) | 27. CPLD UART (8 pins, J79) |
| 13. Jumper (J27, J28, J29, J30) | 28. SPI Flash (J19) |
| 14. Battery (J21) | 29. SMBus (J52) |
| 15. ATX power connector 24 pins (J54) | 30. I2C (J51) |

31. 10G Ethernet Extension (J7)

3.2. Front panel

Figure 4: Front Panel



32. 2x UART ports (COM0-Top, COM1-Bot)

33. Ethernet (J14)

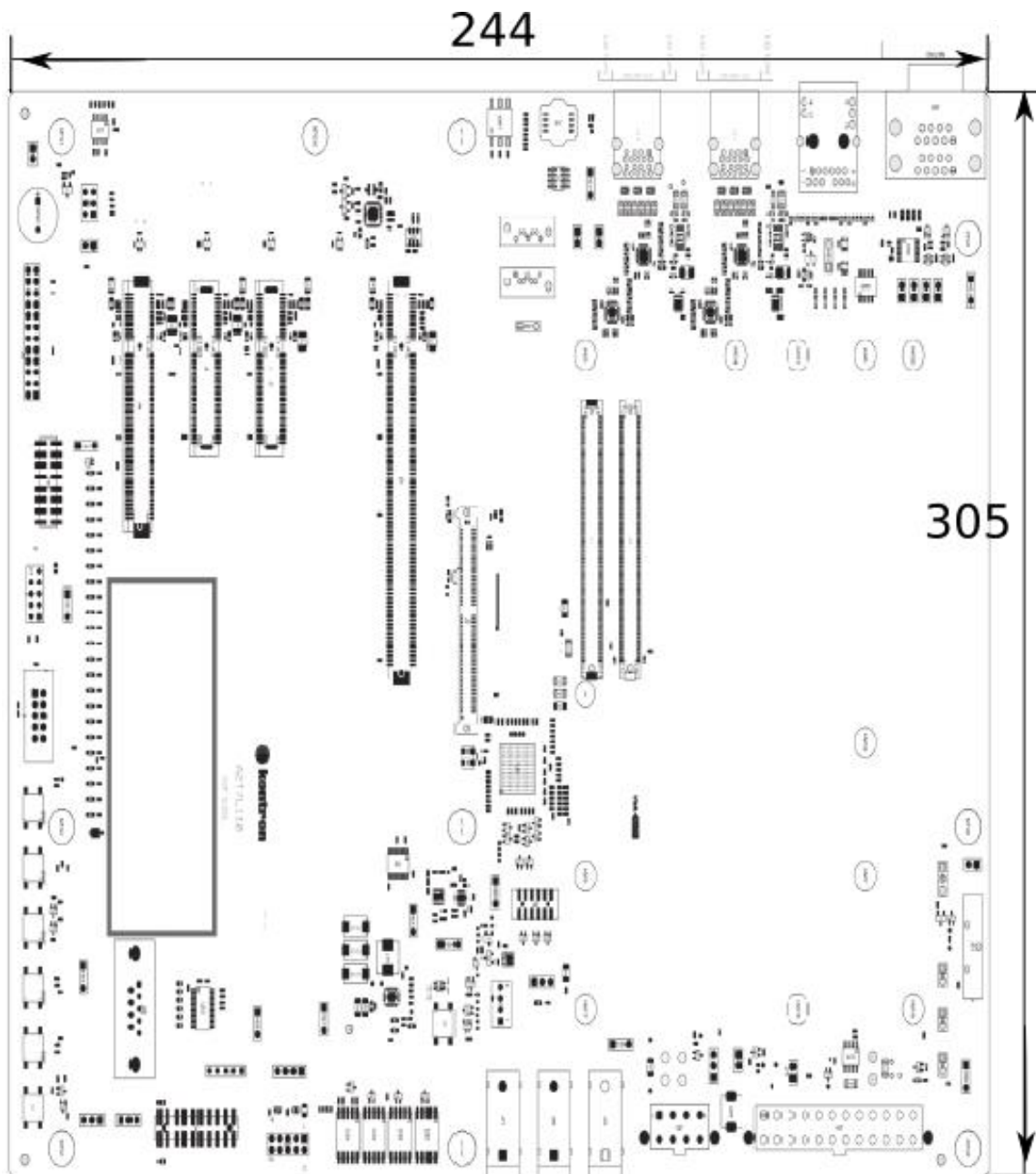
34. 4x USB (J17, J18)

4/ Mechanical Specification

4.1. Dimensions

The dimensions of the carrier board (see Figure 5) are 244.0 mm x 305.0 mm.

Figure 5: Board Dimensions



5/ Interfaces and Connectors

5.1. 1 GB Ethernet Connector (J14)

Figure 6: 1 GB Ethernet Connector

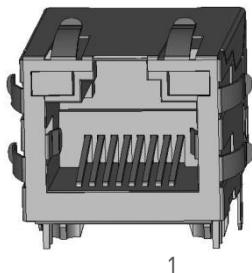


Table 4: 1 GB Ethernet Connector

Pin	Signal Name
1	CT_MDI1
2	GBE0_MDI1-
3	GBE0_MDI1+
4	GBE0_MDI2+
5	GBE0_MDI2-
6	CT_MDI2
7	CT_MDI0
8	GBE0_MDI0+
9	GBE0_MDI0-
10	GBE0_MDI3-
11	GBE0_MDI3+
12	CT_MDI3
13	GBE0_LED_ACT#
14	GBE0_LED_ACTPWR
15	GBE0_LED_R_Y
16	GBE0_LED_SPEEDPWR
17	GBE0_LED_R_G
S1	GND
S2	GND

Table 5: Signals

LED	Signal
1	green, activity
2	green, 100 MB/s
2	yellow, 1000 MB/s

5.2. USB 3.1 Double Connector (J68)

Figure 7: USB 3.1 Double Connector

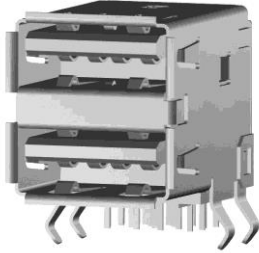


Table 6: USB 3.1 Double Connector

Pin	Signal Name - J17		Signal Name - J18	
1	V_5V0_M_USB1_CONN	BOTTOM SLOT	V_5V0_M_USB3_CONN	BOTTOM SLOT
2	USB20_D1_CONN-		USB20_D3_CONN-	
3	USB20_D1_CONN+		USB20_D3_CONN+	
4	GND		GND	
5	USB31_SSRX1_CONN-		USB31_SSRX3_CONN-	
6	USB31_SSRX1_CONN+		USB31_SSRX3_CONN+	
7	GND		GND	
8	USB31_SSTX1_CONN-		USB31_SSTX3_CONN-	
9	USB31_SSTX1_CONN+		USB31_SSTX3_CONN+	
10	V_5V0_M_USB0_CONN	TOP SLOT	V_5V0_M_USB2_CONN	TOP SLOT
11	USB20_D0_CONN-		USB20_D2_CONN-	
12	USB20_D0_CONN+		USB20_D2_CONN+	
13	GND		GND	
14	USB31_SSRX0_CONN-		USB31_SSRX2_CONN-	
15	USB31_SSRX0_CONN+		USB31_SSRX2_CONN+	
16	GND		GND	
17	USB31_SSTX0_CONN-		USB31_SSTX2_CONN-	
18	USB31_SSTX0_CONN+		USB31_SSTX2_CONN+	
19	GND		GND	
20	GND		GND	
21	GND		GND	
22	GND		GND	

5.3. COM Ports (J68)

Figure 8: Double COM Ports



Table 7: Double COM Ports

Pin	Signal Name	
1B	NC	BOTTOM SLOT
2B	SER0_RX_RS M0	
3B	SER0_TX_RS232_COM0	
4B	NC	
5B	GND	
6B	NC	
7B	NC	
8B	NC	
9B	NC	
S1B	GND	
S2B	GND	
1T	NC	TOP SLOT
2T	SER1_RX_RS232_COM0	
3T	SER1_TX_RS232_COM0	
4T	NC	
5T	GND	
6T	NC	
7T	NC	
8T	NC	
9T	NC	
S1T	GND	
S2T	GND	

5.4. CPLD UART (J79)

Figure 9: CPLD UART



Table 8: CPLD UART Connector

Pin	Signal Name
1	NC
2	SN65_UART_RXD
3	SN65_UART_TXD
4	SN65_UART_DTR
5	GND
6	SN65_UART_DSR
7	SN65_UART_RTS
8	SN65_UART_CTS
9	NC
S1	GND
S2	GND

5.5. 10 GB Ethernet Add-in Card Connector (J7)

The carrier board contains 10 GB Ethernet connector that supports copper and optical 10 GB interface via extended cards.

Figure 10: 10 GB Ethernet Add-in Card Connector



Table 9: Connector Pinning

Pin	Signal Name	Pin	Signal Name
1	V_12V0_S0	2	V_3V3_S5
3	V_12V0_S0	4	V_3V3_S5
5	V_12V0_S0	6	10G_PWR_OK
7	V_3V3_S0	8	GND
9	V_3V3_S0	10	10G_WAKE#
11	SMB_CLK	12	10G_PHY_CAP_01
13	GND	14	GND
15	SMB_DAT	16	10G_LED_SDA
17	10G_SFP_SDA1	18	10G_LED_SCL
19	GND	20	GND
21	10G_KR_RX1+	22	CB_RESET#
23	10G_KR_RX1-	24	10G_SFP_SCL1
25	GND	26	GND
27	NC	28	10G_KR_TX1-
29	10G_SFP_SDA0	30	10G_KR_TX1+
31	GND	32	GND
33	10G_KR_RX0+	34	NC
35	10G_KR_RX0-	36	10G_SFP_SCL0
37	GND	38	GND
39	NC	40	10G_KR_TX0-
41	10G_SFP_SDA3	42	10G_KR_TX0+
43	GND	44	GND

Pin	Signal Name	Pin	Signal Name
45	GND	46	GND
47	10G_KR_RX3+	48	NC
49	10G_KR_RX3-	50	10G_SFP_SCL3
51	GND	52	GND
53	NC	54	10G_KR_TX3-
55	10G_SFP_SDA2	56	10G_KR_TX3+
57	GND	58	GND
59	10G_KR_RX2+	60	NC
61	10G_KR_RX2-	62	10G_SFP_SCL2
63	GND	64	GND
65	NC	66	10G_KR_TX2-
67	10G_PHY_RST_23	68	10G_KR_TX2+
69	GND	70	GND
71	V_5V0_S5	72	V_5V0_S5
73	10G_PHY_RST_01	74	10G_PHY_CAP_23
75	GND	76	GND
77	10G_INT1	78	10G_INT3
79	10G_SDP1	80	10G_SDP3
81	GND	82	GND
83	10G_PHY_MDC_SCL1	84	10G_PHY_MDC_SCL3
85	10G_PHY_MDIO_SDA1	86	10G_PHY_MDIO_SDA3
87	GND	88	GND
89	10G_INT0	90	10G_INT2
91	10G_SDP0	92	10G_SDP2
93	GND	94	GND
95	10G_PHY_MDC_SCL0	96	10G_PHY_MDC_SCL2
97	10G_PHY_MDIO_SDA0	98	10G_PHY_MDIO_SDA2
99	GND	100	GND
M1	GND	M2	GND

5.6. SATA 6 GB (J15, J16)

Figure 11: SATA 6 GB



Table 10: SATA 6 GB Connector

Pin	Signal Name - J15	Signal Name – J16
1	GND	GND
2	SATA0_TX+	SATA1_TX+
3	SATA0_TX-	SATA1_TX-
4	GND	GND
5	SATA0_RX+	SATA1_RX+
6	SATA0_RX-	SATA1_RX-
7	GND	GND
M1	GND	GND
M2	GND	GND

5.7. PCIe Slots (J3 – J6)

Table 11: PCIe Slots

PCIe Slot	Connector	PCIe Lanes
PCIe A x16	J3	16 lanes PCIE[16..31]
PCIe B x8	J4	8 lanes PCIE[8..15]
PCIe C x4	J5	4 lanes PCIE[4..7]
PCIe D x4	J6	4 lanes PCIE[0..3]

5.8. NC-SI Connector (J80)

Figure 12: NC-SI Connector

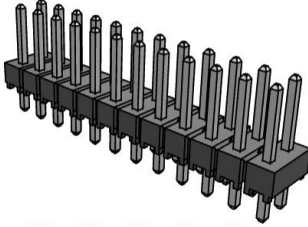


Table 12: NC-SI Connector Pinning

Pin	Signal Name
1	V_3V0_RTC
2	V_3V3_S5
3	NCSI_ARB_OUT
4	V_5V0_S5
5	NCSI_RXD1
6	V_5V0_S5
7	NCSI_RXD0
8	NCSI_TXD0
9	I2C_CLK
10	NCSI_TXD1
11	I2C_DAT
12	NCSI_TX_EN
13	NCSI_CRS_DV
14	NCSI_CLK_IN
15	NCSI_RX_ERR
16	NCSI_ARB_IN
17	SMB_ALERT#
18	SYS_RESET#
19	NCSI_SMB_CLK (build option)
20	GND
21	NCSI_SMB_DAT (build option)
22	GND
23	GND
24	GND

5.9. Fan Connector (J47)

Figure 13: Fan Connector with 4 pins

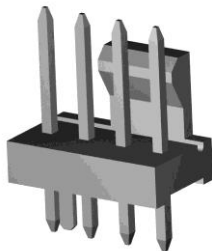


Table 13: Fan Connector

Pin	Description
1	GND
2	V_FAN
3	FAN_TACH_CON
4	FAN_PWM_CON

5.10. BIOS Flash Socket (J19)

Figure 14: BIOS Flash Socket

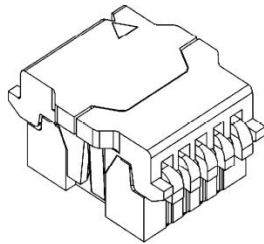


Table 14: BIOS Flash Socket Pinout

Pin	Signal	Pin	Signal
1	SPI_CS#	5	SPI_MOSI
2	SPI_MISO	6	SPI_CLK
3	SPI_WP#	7	SPI_HOLD#
4	GND	8	SPI_VCC

5.11. SPI Connector (J62)

Figure 15: SPI Connector with 8 pins



Table 15: SPI Connector

Pin	Signal Name
1	SPI_CS#
2	SPI_VCC
3	SPI_MISO
4	SPI_HOLD#
5	SPI_WP#
6	SPI_CLK
7	GND
8	SPI_MOSI

5.12. GPIO - General Purpose Input and Output (J20)

Figure 16: GPIO Header with 10 pins



Table 16: GPIO Header with 10 pins

Pin	Signal Name
1	V_3V3_S0_GPI O
2	GPIO_GPO0
3	GPIO_GPI0
4	GPIO_GPO1
5	GPIO_GPI1
6	GPIO_GPO2
7	GPIO_GPI2
8	GPIO_GPO3
9	GPIO_GPI3
10	GND

5.13. IPMB Header (J85)

Figure 17: IPMB Header with 4 pins



Table 17: Pinning IPMB Header

Pin	Description
1	V_3V3_S5
2	IPMB_DAT
3	IPMB_CLK
4	GND

5.14. Power Management Header (J8)

Figure 18: Power Management Header

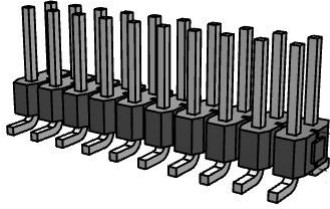


Table 18: Power Management Header

Pin	Signal Name
1	V_5V0_S5
2	V_3V3_S5
3	V_3V0_RTC
4	GND
5	WAKE0#
6	GND
7	WAKE1#
8	GND
9	BATLOW#
10	GND
11	SLEEP#
12	GND
13	LID#
14	GND
15	SYS_RESET#
16	GND
17	THRM#
18	GND
19	THRMTRIP#
20	SATA_ACT#

5.15. Status Signal Header (J10)

Figure 19: Status Signal Header

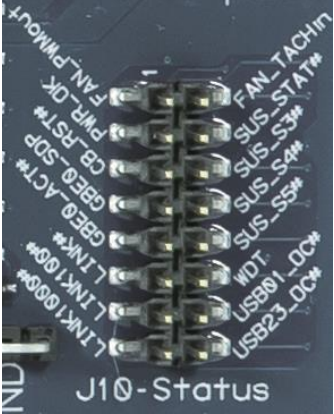


Table 19: Status Signal Header

Pin	Signal Name
1	FAN_PWMOUT
2	FAN_TACHIN
3	PWR_OK
4	SUS_STAT#_ESPI_RESET#
5	CB_RESET#
6	SUS_S3#
7	GBE0_SDP
8	SUS_S4#
9	GBE0_ACT#
10	SUS_S5#
11	GBE0_LINK#
12	WDT
13	GBE0_LINK100#
14	USB_0_1_OC#
15	GBE0_LINK1000#
16	USB_2_3_OC#

5.16. Front Panel Connector (J11)

Figure 20: Front Panel Connector



Table 20: Front Panel Connector

Pin	Signal Name
1	SATA_LED+
2	POWER_LED+
3	SATA_ACT#
4	GND
5	GND
6	PWRBTN#
7	SYS_RESET#
8	GND
9	V_5V0_S0

5.17. I2C (J51)

The I2C Interface supports clock from 127Hz to 400kHz (limited by on board devices and capacitive loading) and can be configured in Setup.

Figure 21: I2C header with four pins

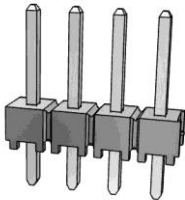


Table 21: I2C Header (J51)

Pin	Description
1	V_3V3_S5
2	I2C_DAT
3	I2C_CLK

Pin	Description
4	GND

5.18. SMBus (J52)

Figure 22: SMBus header with five pins



Table 22: SMBus Header (J52)

Pin	Description
1	V_V3V_S5
2	SMB_DAT
3	SMB_CLK
4	GND
5	SMB_ALERT#

5.19. ATX Power connector (J54)

Figure 23: ATX Power connector with 24 pins

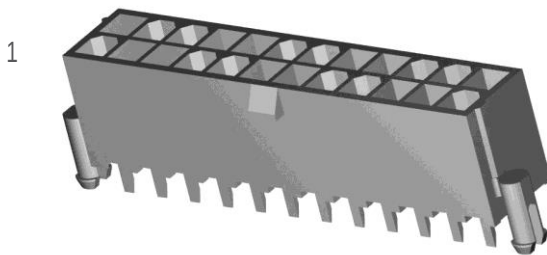


Table 23: ATX Power connector with 24 pins

Pin	Signal	Cable Colour
1	3,3 V	Orange
2	3,3 V	Orange
3	GND	Black

Pin	Signal	Cable Colour
4	5 V	Red
5	GND	Black
6	5 V	Red
7	GND	Black
8	PWR_OK	Grey
9	5 VSB	Purple
10	12 V	Yellow
11	12 V	Yellow
12	3,3 V	Orange
13	3,3 V	Orange
14	NC	Blue
15	GND	Black
16	PS ON	Green
17	GND	Black
18	GND	Black
19	GND	Black
20	NC	White
21	5 V	Red
22	5 V	Red
23	5 V	Red
24	GND	Black

5.20. ATX Power connector (J53)

Figure 24: ATX Power connector with 8 pins

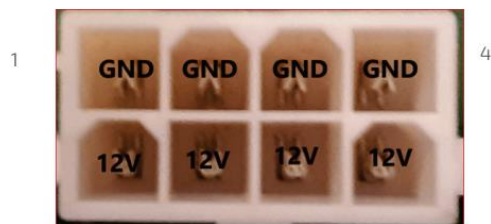


Table 24: ATX Power connector with 8 pins

Pin	Signal
1	GND
2	GND
3	GND
4	GND
5	+12 V
6	+12 V
7	+12 V
8	+12 V

5.21. RTC Socket (J21)

Figure 25: RTC Socket

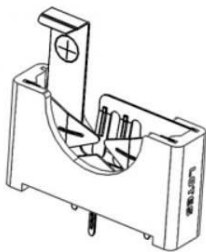


Table 25: RTC Socket

Pin	Signal Name
1	V_RTC_BAT
2	V_RTC_BAT
3	GND

5.22. DIP Switch (SW7)

Figure 26: DIP Switch (Default)

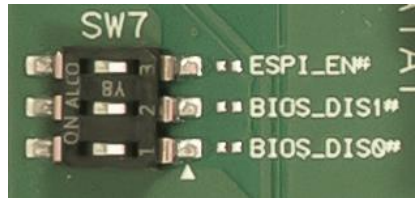


Table 26:Function Table DIP Switch

ESPI_EN	BIOS_DIS 1#	BIOS_DIS 0#	Boot Bus	BBS	Chipset ESPI CS0#	Chipset SPI CS1# Destinati	Chipset SPI CS0# Destinati	SPI Descript or	Notes
1	0	0	SPI	0	-	Carrier	Module	Module	MAFS on Module LPC bus enabled
1	0	1	SPI	0	-	Module	Carrier	Carrier	MAFS on Carrier LPC bus enabled
1	1	0	-	0	-	-	-	-	Not used
1	1	1	SPI	0	-	Module	Module	Module	MAFS on Module LPC bus enabled (Default)
0	0	0	SPI	0	-	Module	Module	Module	MAFS on Module ESPI bus enabled
0	0	1	SPI	0	-	Module	Carrier	Carrier	MAFS on Carrier ESPI bus enabled
0	1	0	eSPI	1	Module	-	-	Module	SAFS ans BMC on Module ESPI bus enabled
0	1	1	eSPI	1	Carrier	-	-	Carrier	SAFS ans BMC on Carrier ESPI bus enabled

5.23. Button Switches

Figure 27: Button Switches



Table 27: LEDs

Button Switch	Function
SW1	POWER
SW2	SLEEP
SW3	LID (Lid)
SW4	THRM (Thermal)
SW5	R.SHTON (Rapid Shutdown)
SW6	RESET

NOTICE

Rapid shutdown requires disconnecting V_WIDE_S0_MOD and V_5V0_S5_MOD rails externally.

5.24. Jumper

5.24.1. Jumper (J43, J46)

Figure 28: Jumper J43, J46



Table 28: Jumper J43, J46

Jumper Position (Default)	Function description
J43 (closed)	USB_HOST
J46 (closed)	TPM_PP

NOTICE

Module USB client may detect the presence of a USB host on USB0. A high value indicates that a host is present.

NOTICE

J46 signal is used to indicate physical presence to the TPM.

5.24.2. Jumper (J27, J28, J29, J30)

Figure 29: Jumper 27 to 30



Table 29: Jumper 27 to 30

Jumper Position (Default)	Function description
J27 (closed)	SER0_TX
J28 (closed)	SER0_RX
J29 (closed)	SER1_TX
J30 (closed)	SER1_RX

5.24.3. Connector (J36)

Figure 30: Connector J36



Table 30: Connector J36

Pin	Signal
1	LED_PWR_P
2	LED_PWR_N

5.24.4. Jumper (V5_MOD, J75, J31, J35, V_WIDE)

Figure 31: Jumper J22-23



Table 31: Jumper J22-23, J24-25, J31, J35, J75

Jumper Position (Default)	Function description
V_Wide_MOD (both closed)	V_WIDE_S0_IN
V5_MOD (closed)	V_WIDE_S0_MOD
J75 (closed)	PWR_OK to module
J31 (2-3)	1-2: PS-ON=0=ON => AT-Mode 2-3: PS-ON to ATX power supply (default); DNI (N.C.): OFF

Jumper Position (Default)	Function description
J35 (closed)	EN_5V0_S5_CARRIER J35=Closed: ATX S5 enabled (default) J35=DNI: No S5-Voltage (G3)

NOTICE

J35 - Enable S5 carrier voltage. Open to cut 5V0_S5 from carrier, short for normal operation.

6/ Electrical Specification

6.1. Supply Voltage

- ▶ one ATX Main Power 24pin



Power supply for the module: the ATX_12V P4 connector provides a wide range of input, depending on module specification.

6.2. Power Supply Rise time

- ▶ The input voltages shall rise from $\leq 10\%$ of nominal to within the regulation ranges within 0.1ms to 20ms.
- ▶ There must be a smooth and continuous ramp of each DC input voltage from 10% to 90% of its final set-point following the ATX specification

NOTICE

If any of the supply voltages drops below the allowed operating level longer than the specified hold-up time, all the supply voltages should be shut down and left OFF for a time long enough to allow the internal board voltages to discharge sufficiently.

If the OFF time is not observed, parts of the board or attached peripherals may work incorrectly or even suffer a reduction of MTBF.

The minimum OFF time depends on the implemented PSU model and other electrical factors and needs to be measured individually for each case.

6.3. Supply Voltage Ripple

- ▶ Maximum 100 mV peak to peak 0-20MHz

NOTICE

To protect external power lines of peripheral devices, make sure that the wires have the right diameter to withstand the maximum available current. The enclosure of the peripheral device has to fulfill the fire-protection requirements of IEC/EN62368.

7/ Features

7.1. Rapid Shutdown (SW5)

JUMPttec has implemented a rapid shutdown function. It works as follows:

1. An active-high shutdown signal is asserted by the COMe Eval Type T7 carrier board through button switch SW5. The characteristics of the shutdown signal are as follows:

- ▶ Amplitude 5.0V +/- 5%
- ▶ Source impedance ≤ 50 ohms
- ▶ Rise time $\leq 1 \mu\text{s}$
- ▶ Duration $\geq 20 \mu\text{s}$

The assertion of this signal causes all power regulators to be disabled and the internal power supply rails to be discharged by crowbar circuits. The shutdown circuitry provides internal energy storage that maintains crowbar activation for at least 2 ms following the de-assertion of the shutdown signal.

2. Simultaneously with the leading edge of shutdown, the 12 V (main) input power to the module is removed and these input power pins are externally clamped to ground through a crowbar circuit located on the COM Express carrier board. This external clamping circuit must maintain a maximum resistance of approximately 1 ohm and be activated for a minimum of 2 ms.
3. Simultaneously with the leading edge of shutdown, the 5 V (standby) input power to the module is removed, if present. External clamping on these pins is not necessary (but recommended) because it is clamped through the module by the main 12 V rail.

7.2. LEDs and Indicators

Indicators and LEDs indicate only presence of voltage on certain signal, but not necessarily a correct shape and level of the voltage. This is important especially for power supplies – power good signal would provide more accurate indication, but it is not possible to provide this for all signals (for example ATX power signals share one power good).

Table 32: LED Colors

LED color	Function
Green	Power rail
Red	Management
Yellow	Information/10 G Ethernet



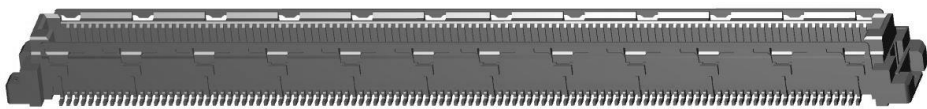
Figure 32: LEDs

Table 33: LEDs

Reference designator	Indicator	Color A	Color B
D20	ATX 5.0V STBY	[OFF] Rail off	[Green] Rail running
D18	Carrier 5.0V STBY	[OFF] Rail off	[Green] Rail running
D17	Carrier 3.3V STBY	[OFF] Rail off	[Green] Rail running
D14	Carrier 12.0V RUN	[OFF] Rail off	[Green] Rail running
D15	Carrier 5.0V RUN	[OFF] Rail off	[Green] Rail running
D19	Carrier 1.5V RUN	[OFF] Rail off	[Green] Rail running
D21	All RUN PSUs OK	[OFF] Rail off	[Green] Rail running
D48	Carrier 1.8V STBY	[OFF] Rail off	[Green] Rail running
D1	SUS S3#	[OFF] Signal inactive	[Red] Signal active (low)
D2	SUS S4#	[OFF] Signal inactive	[Red] Signal active (low)
D3	SUS S5#	[OFF] Signal inactive	[Red] Signal active (low)
D4	SUS STAT#	[OFF] Signal inactive	[Red] Signal active (low)
D51	THRMTRIP#	[OFF] Signal inactive	[Red] Signal active (low)
D5	WDT	[OFF] Signal inactive	[Red] Signal active (high)
D7	Type 1	[OFF] Signal inactive	[Red] Module is type 1
D8	Type 2	[OFF] Signal inactive	[Red] Module is type 2
D9	Type 3	[OFF] Signal inactive	[Red] Module is type 3
D10	Type 4	[OFF] Signal inactive	[Red] Module is type 4
D11	Type 5	[OFF] Signal inactive	[Red] Module is type 5
D12	Type 6	[OFF] Signal inactive	[Red] Module is type 6
D13	Type 7	[OFF] Signal inactive	[Red] Module is type 7
D22	SATA ACT#	[OFF] Signal inactive	[Yellow] SATA Activity
D23	CPLD LED0	[OFF] Debug inactive	[Yellow] Debug active
D24	CPLD LED1	[OFF] Debug inactive	[Yellow] Debug active

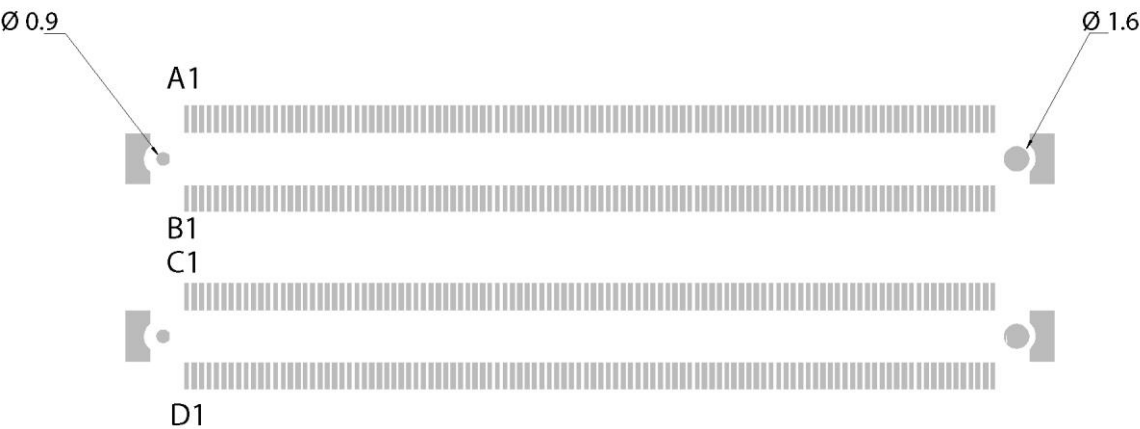
8/ COMe Connector Pin-out List

Figure 33: COMe Connector with 220 pins



This table lists the pins and signals according to the PICMG specification COM.0 Rev 3.0 Type 7 standard.

Figure 34: COMe Connector Pinout



NOTICE

To protect external power lines of peripheral devices, make sure that: the wires have the right diameter to withstand the maximum available current the enclosure of the peripheral device fulfills the fire-protection requirements of IEC/EN62368.

Table 34: Pin-out List

Pin	Signal Name	Pin	Signal Name	Pin	Signal Name	Pin	Signal Name
A1	GND	B1	GND	C1	GND	D1	GND
A2	GBE0_MDI3-	B2	GBE0_ACT#	C2	GND	D2	GND
A3	GBE0_MDI3+	B3	LPC_FRAME#_ES PI_CS0#	C3	USB31_SSRX0-	D3	USB31_SSTX0-
A4	GBE0_LINK100#	B4	LPC_AD0_ESPI_I O_0	C4	USB31_SSRX0+	D4	USB31_SSTX0+

Pin	Signal Name	Pin	Signal Name	Pin	Signal Name	Pin	Signal Name
A5	GBE0_LINK1000#	B5	LPC_AD1_ESPI_I O_1	C5	GND	D5	GND
A6	GBE0_MDI2-	B6	LPC_AD2_ESPI_I O_2	C6	USB31_SSRX1-	D6	USB31_SSTX1-
A7	GBE0_MDI2+	B7	LPC_AD3_ESPI_I O_3	C7	USB31_SSRX1+	D7	USB31_SSTX1+
A8	GBE0_LINK#	B8	LPC_DRQ0#_ESP I_ALERT0#	C8	GND	D8	GND
A9	GBE0_MDI1-	B9	LPC_DRQ1#_ESPI _ALERT1#	C9	USB31_SSRX2-	D9	USB31_SSTX2-
A10	GBE0_MDI1+	B10	LPC_CLK_ESPI_C LK	C10	USB31_SSRX2+	D10	USB31_SSTX2+
A11	GND	B11	GND	C11	GND	D11	GND
A12	GBE0_MDI0-	B12	PWRBTN#	C12	USB31_SSRX3-	D12	USB31_SSTX3-
A13	GBE0_MDI0+	B13	SMB_CLK	C13	USB31_SSRX3+	D13	USB31_SSTX3+
A14	GBE0_CTREF	B14	SMB_DAT	C14	GND	D14	GND
A15	SUS_S3#	B15	SMB_ALERT#	C15	10G_PHY_MDC _SCL3	D15	10G_PHY_MDIO_ SDA3
A16	SATA0_TX+	B16	SATA1_TX+	C16	10G_PHY_MDC _SCL2	D16	10G_PHY_MDIO_ SDA2
A17	SATA0_TX-	B17	SATA1_TX-	C17	10G_SDP2	D17	10G_SDP3
A18	SUS_S4#	B18	SUS_STAT#_ESP I_RESET#	C18	GND	D18	GND
A19	SATA0_RX+	B19	SATA1_RX+	C19	PCIE_RX6+	D19	PCIE_TX6+
A20	SATA0_RX-	B20	SATA1_RX-	C20	PCIE_RX6-	D20	PCIE_TX6-
A21	GND	B21	GND	C21	GND	D21	GND
A22	PCIE_TX15+	B22	PCIE_RX15+	C22	PCIE_RX7+	D22	PCIE_TX7+
A23	PCIE_TX15-	B23	PCIE_RX15-	C23	PCIE_RX7-	D23	PCIE_TX7-
A24	SUS_S5#	B24	PWR_OK	C24	10G_INT2	D24	10G_INT3
A25	PCIE_TX14+	B25	PCIE_RX14+	C25	GND	D25	GND
A26	PCIE_TX14-	B26	PCIE_RX14-	C26	10G_KR_RX3+	D26	10G_KR_TX3+
A27	BATLOW#	B27	WDT	C27	10G_KR_RX3-	D27	10G_KR_TX3-
A28	SATA_ACT#	B28	GND	C28	GND	D28	GND
A29	NC	B29	PCIE_CK_REF1+	C29	10G_KR_RX2+	D29	10G_KR_TX2+
A30	NC	B30	PCIE_CK_REF1-	C30	10G_KR_RX2-	D30	10G_KR_TX2-
A31	GND	B31	GND	C31	GND	D31	GND
A32	IPMB_CLK	B32	SPKR	C32	10G_SFP_SDA3	D32	10G_SFP_SCL3
A33	IPMB_DAT	B33	I2C_CLK	C33	10G_SFP_SDA2	D33	10G_SFP_SCL2
A34	BIOS_DIS0#_ESPI _SAFS	B34	I2C_DAT	C34	10G_PHY_RST_ 23	D34	10G_PHY_SEL_23
A35	THRMTRIP#	B35	THRM#	C35	10G_PHY_RST_ 01 / R3.1 CEI_RST#	D35	10G_PHY_SEL_01 / R3.1: CEI_PRSENT#
A36	PCIE_TX13+	B36	PCIE_RX13+	C36	10G_LED_SDA	D36	NC
A37	PCIE_TX13-	B37	PCIE_RX13-	C37	10G_LED_SCL	D37	NC
A38	GND	B38	GND	C38	10G_SFP_SDA1	D38	10G_SFP_SCL1
A39	PCIE_TX12+	B39	PCIE_RX12+	C39	10G_SFP_SDA0 / R3.1: CEI_SDA	D39	10G_SFP_SCL0 / R3.1: CEI_SCL

Pin	Signal Name	Pin	Signal Name	Pin	Signal Name	Pin	Signal Name
A40	PCIE_TX12-	B40	PCIE_RX12-	C40	10G_SDP0	D40	10G_SDP1
A41	GND	B41	GND	C41	GND	D41	GND
A42	USB20_D2-	B42	USB20_D3-	C42	10G_KR_RX1+	D42	10G_KR_TX1+
A43	USB20_D2+	B43	USB20_D3+	C43	10G_KR_RX1-	D43	10G_KR_TX1-
A44	USB_2_3_OC#	B44	USB_0_1_OC#	C44	GND	D44	GND
A45	USB20_D0-	B45	USB20_D1-	C45	10G_PHY_MDC_SCL1	D45	10G_PHY_MDIO_SDA1
A46	USB20_D0+	B46	USB20_D1+	C46	10G_PHY_MDC_SCL0 / R3.1: CEI_MDC	D46	10G_PHY_MDIO_SDA0 / R3.1: CEI_MDIO
A47	V_3V0_RTC	B47	ESPI_EN#	C47	10G_INT0 / R3.1: CEI_INT#	D47	10G_INT1 / R3.1: ETH_PHY_INT#
A48	NC	B48	USB_HOST_PRSENT	C48	GND	D48	GND
A49	GBE0_SDP	B49	SYS_RESET#	C49	10G_KR_RX0+	D49	10G_KR_TX0+
A50	LPC_SERIRQ_ESPI_CS1#	B50	CB_RESET#	C50	10G_KR_RX0-	D50	10G_KR_TX0-
A51	GND	B51	GND	C51	GND	D51	GND
A52	PCIE_TX5+	B52	PCIE_RX5+	C52	PCIE_RX16+	D52	PCIE_TX16+
A53	PCIE_TX5-	B53	PCIE_RX5-	C53	PCIE_RX16-	D53	PCIE_TX16-
A54	GPIO_GPIO0	B54	GPIO_GPO1	C54	TYPE0#	D54	GND
A55	PCIE_TX4+	B55	PCIE_RX4+	C55	PCIE_RX17+	D55	PCIE_TX17+
A56	PCIE_TX4-	B56	PCIE_RX4-	C56	PCIE_RX17-	D56	PCIE_TX17-
A57	GND	B57	GPIO_GPO2	C57	TYPE1#	D57	TYPE2#
A58	PCIE_TX3+	B58	PCIE_RX3+	C58	PCIE_RX18+	D58	PCIE_TX18+
A59	PCIE_TX3-	B59	PCIE_RX3-	C59	PCIE_RX18-	D59	PCIE_TX18-
A60	GND	B60	GND	C60	GND	D60	GND
A61	PCIE_TX2+	B61	PCIE_RX2+	C61	PCIE_RX19+	D61	PCIE_TX19+
A62	PCIE_TX2-	B62	PCIE_RX2-	C62	PCIE_RX19-	D62	PCIE_TX19-
A63	GPIO_GPI1	B63	GPIO_GPO3	C63	GND	D63	GND
A64	PCIE_TX1+	B64	PCIE_RX1+	C64	GND	D64	GND
A65	PCIE_TX1-	B65	PCIE_RX1-	C65	PCIE_RX20+	D65	PCIE_TX20+
A66	GND	B66	WAKE0#	C66	PCIE_RX20-	D66	PCIE_TX20-
A67	GPIO_GPI2	B67	WAKE1#	C67	RAPID_SHTDN_5V0	D67	GND
A68	PCIE_TX0+	B68	PCIE_RX0+	C68	PCIE_RX21+	D68	PCIE_TX21+
A69	PCIE_TX0-	B69	PCIE_RX0-	C69	PCIE_RX21-	D69	PCIE_TX21-
A70	GND	B70	GND	C70	GND	D70	GND
A71	PCIE_TX8+	B71	PCIE_RX8+	C71	PCIE_RX22+	D71	PCIE_TX22+
A72	PCIE_TX8-	B72	PCIE_RX8-	C72	PCIE_RX22-	D72	PCIE_TX22-
A73	GND	B73	GND	C73	GND	D73	GND
A74	PCIE_TX9+	B74	PCIE_RX9+	C74	PCIE_RX23+	D74	PCIE_TX23+
A75	PCIE_TX9-	B75	PCIE_RX9-	C75	PCIE_RX23-	D75	PCIE_TX23-
A76	GND	B76	GND	C76	GND	D76	GND
A77	PCIE_TX10+	B77	PCIE_RX10+	C77	GND	D77	GND
A78	PCIE_TX10-	B78	PCIE_RX10-	C78	PCIE_RX24+	D78	PCIE_TX24+
A79	GND	B79	GND	C79	PCIE_RX24-	D79	PCIE_TX24-

Pin	Signal Name	Pin	Signal Name	Pin	Signal Name	Pin	Signal Name
A80	GND	B80	GND	C80	GND	D80	GND
A81	PCIE_TX11+	B81	PCIE_RX11+	C81	PCIE_RX25+	D81	PCIE_TX25+
A82	PCIE_TX11-	B82	PCIE_RX11-	C82	PCIE_RX25-	D82	PCIE_TX25-
A83	GND	B83	GND	C83	GND	D83	GND
A84	NCSI_TX_EN	B84	V_5V0_S5_MOD	C84	GND	D84	GND
A85	GPIO_GPI3	B85	V_5V0_S5_MOD	C85	PCIE_RX26+	D85	PCIE_TX26+
A86	NC	B86	V_5V0_S5_MOD	C86	PCIE_RX26-	D86	PCIE_TX26-
A87	GND	B87	V_5V0_S5_MOD	C87	GND	D87	GND
A88	CLK_100M_PE_R EFCLK+	B88	BIOS_DIS1#	C88	PCIE_RX27+	D88	PCIE_TX27+
A89	CLK_100M_PE_R EFCLK-	B89	NCSI_RX_ERR	C89	PCIE_RX27-	D89	PCIE_TX27-
A90	GND	B90	GND	C90	GND	D90	GND
A91	V_SPI_POWER	B91	NCSI_CLK_IN	C91	PCIE_RX28+	D91	PCIE_TX28+
A92	SPI_MISO	B92	NCSI_RXD1	C92	PCIE_RX28-	D92	PCIE_TX28-
A93	GPIO_GPO0	B93	NCSI_RXD0	C93	GND	D93	GND
A94	SPI_CLK	B94	NCSI_CRS_DV	C94	PCIE_RX29+	D94	PCIE_TX29+
A95	SPI_MOSI	B95	NCSI_TXD1	C95	PCIE_RX29-	D95	PCIE_TX29-
A96	TPM_PP	B96	NCSI_TXD0	C96	GND	D96	GND
A97	TYPE10#	B97	SPI_CS#	C97	GND	D97	GND
A98	SER0_TX	B98	NCSI_ARB_IN	C98	PCIE_RX30+	D98	PCIE_TX30+
A99	SER0_RX	B99	NCSI_ARB_OUT	C99	PCIE_RX30-	D99	PCIE_TX30-
A100	GND	B100	GND	C100	GND	D100	GND
A101	SER1_TX	B101	FAN_PWMOUT	C101	PCIE_RX31+	D101	PCIE_TX31+
A102	SER1_RX	B102	FAN_TACHIN	C102	PCIE_RX31-	D102	PCIE_TX31-
A103	LID#	B103	SLEEP#	C103	GND	D103	GND
A104	V_WIDE_S0_MOD	B104	V_WIDE_S0_MOD	C104	V_WIDE_S0_MOD	D104	V_WIDE_S0_MOD
A105	V_WIDE_S0_MOD	B105	V_WIDE_S0_MOD	C105	V_WIDE_S0_MOD	D105	V_WIDE_S0_MOD
A106	V_WIDE_S0_MOD	B106	V_WIDE_S0_MOD	C106	V_WIDE_S0_MOD	D106	V_WIDE_S0_MOD
A107	V_WIDE_S0_MOD	B107	V_WIDE_S0_MOD	C107	V_WIDE_S0_MOD	D107	V_WIDE_S0_MOD
A108	V_WIDE_S0_MOD	B108	V_WIDE_S0_MOD	C108	V_WIDE_S0_MOD	D108	V_WIDE_S0_MOD
A109	V_WIDE_S0_MOD	B109	V_WIDE_S0_MOD	C109	V_WIDE_S0_MOD	D109	V_WIDE_S0_MOD
A110	GND	B110	GND	C110	GND	D110	
MTG1	GND			MTG3	GND		
MTG2	GND			MTG4	GND		

9/ Variants

Table 35: Variants

Product Number	Carrier	Description
68301-0000-00-8	COMe Eval Carrier T7 G2 R3.0 8mm stack-up	COM Express® Eval Carrier Type 7 Gen2 8mm stack-up according to COM.0 R3.0
68301-0001-00-8	COMe Eval Carrier T7 G2 R3.1 8mm stack-up	COM Express® Eval Carrier Type 7 Gen2 8mm stack-up according to COM.0 R3.1
Available on request:		
68301-0000-00-5	COMe Eval Carrier T7 G2 R3.0 5mm stack-up	COM Express® Eval Carrier Type 7 Gen2 5mm stack-up according to COM.0 R3.0
68301-0001-00-5	COMe Eval Carrier T7 G2 R3.1 5mm stack-up	COM Express® Eval Carrier Type 7 Gen2 5mm stack-up according to COM.0 R3.1

10/ Adapter Cards

Table 36: Adapter Cards

Product Number	Adapter Card	Description
68301-0000-04-4	Adapter Card ADA-COMe-T7-G2 4x 10G DAC – DEV-TOOL (A2DC)	Direct connection 10G SFP adapter card for COMe T7 Evaluation Carrier A2T7
68301-0000-01-4	Adapter Card ADA-COMe-T7-G2 4x 10G RJ45 - DEV-TOOL (A2X5)	4x 10GBase-T adapter card COMe T7 Evaluation Carrier A2T7 with 2x Intel PHY X557-AT2 according to PICMG COM-0 R3.0
68301-0000-03-2	Adapter Card ADA-COMe-T7-G2 2x 10G SFP+ - DEV-TOOL (A2IN)	2x 10G SFP+ adapter card for COMe T7 Evaluation Carrier A2T7 with Inphi PHY CS4227 according to PICMG COM-0 R3.0
68301-0000-03-4	ADA-COMe-T7-G2 4x 10G SFP+ - DEV-TOOL (A2IN)	4x 10G SFP+ adapter card for COMe T7 Evaluation Carrier A2T7 with Inphi PHY CS4223 according to PICMG COM-0 R3.0
68301-0000-05-4	ADA-COMe-T7-G2 4x10G SFP+ - C827 – DEV-TOOL (A2C8)	4x 10G SFP+ adapter card for COMe T7 Evaluation Carrier A2T7 with CEI Interface, PHY Intel C827-IM1 according to PICMG COM-0 R3.1

⚠ CAUTION

The adapter cards are custom built evaluation kits destined for professionals to be used solely at research and development facilities for such purposes

10.1. Adapter Card: ADA-COMe-T7-G2 4X10G DAC - DEV-TOOL (A2DC)

Figure 35: Top View Adapter Card A2DC

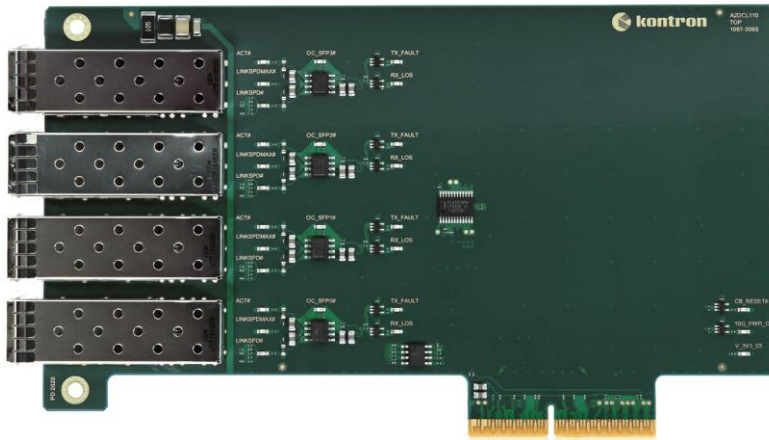
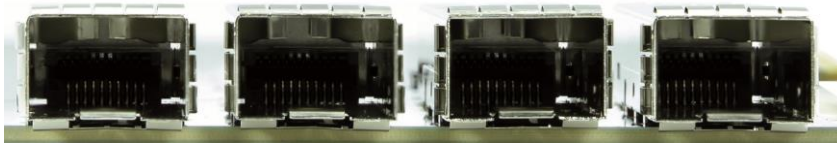


Figure 36: IOs



10.2. Adapter Card ADA-COMe-T7-G2 4x 10G RJ45 - DEV-TOOL (A2X5)

Figure 37: Top View Adapter Card A2X5

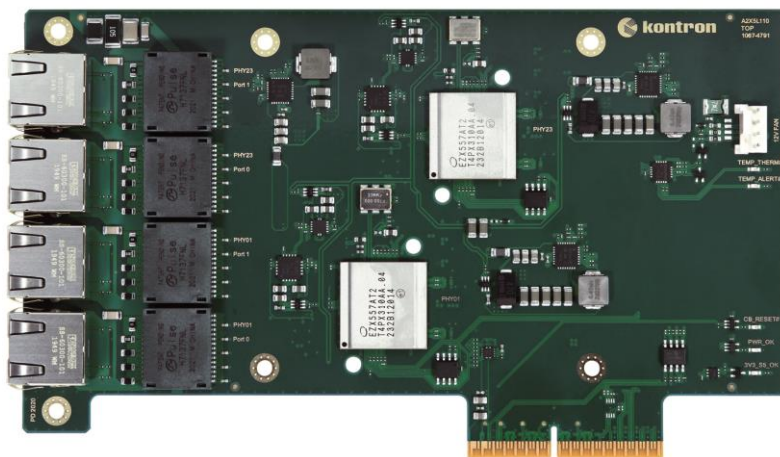


Figure 38: IOs



10.3. Adapter Cards: ADA-COMe-T7-G2 2x 10G SFP+ - DEV-TOOL (A2IN) / ADA-COMe-T7-G2 4x 10G SFP+ - DEV-TOOL (A2IN)

Figure 39: Top View Adapter Card A2IN

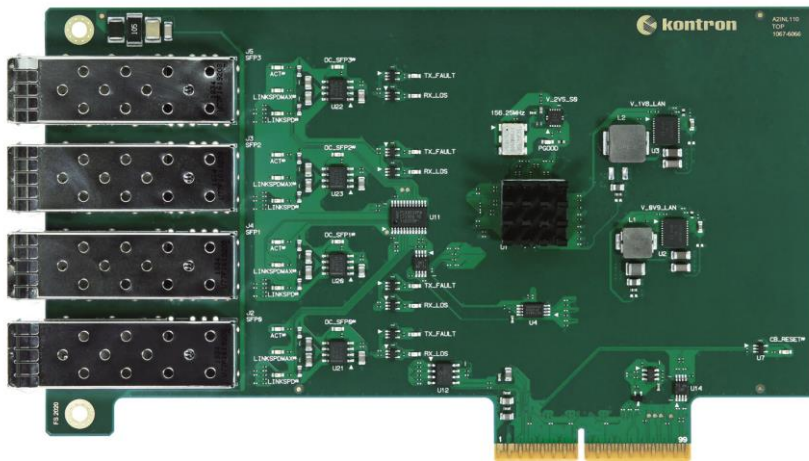


Figure 40: IOs



10.4. Adapter Card: ADA-COMe-T7-G2 4x 10G SFP+ C827 - DEV-TOOL (A2C8)

Figure 41: Top View Adapter Card A2C8

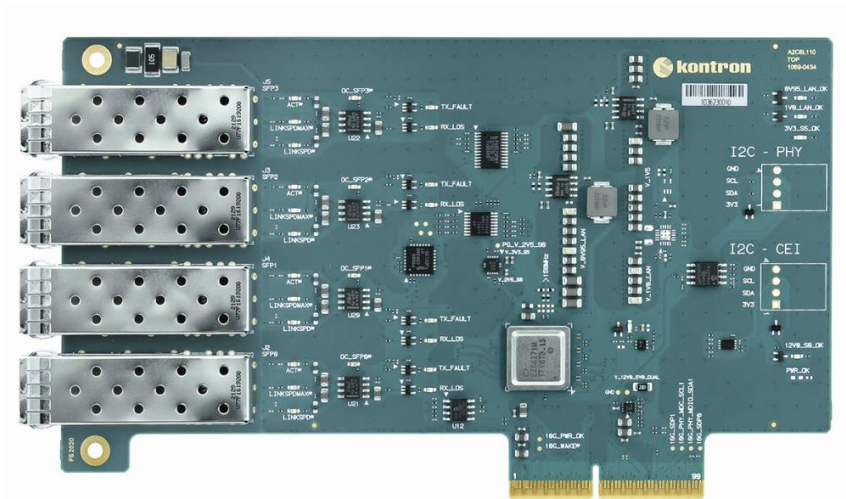


Figure 42: IOs



For more information such as block diagram and schematics see [Kontron's Customer Section.](#)

11/ Compatibility Eval-Carrier – Adapter Cards

COMe Type7 Eval Carrier Gen1	Description	PHY	Connectivity	COM.0 Rev	For
68300-0000-00-0	COMe Eval Carrier T7	no PHY	10G-KR - DAC	3.0	all COMe Type 7 Modules
			10G-SFI	3.0	COMe-bDV7 COMe-bID7 COMe-bEP7

COMe Type7 Eval Carrier Gen2	Description	PHY	Connectivity	COM.0 Rev	For
68301-0000-00-5 (av. on request)	COMe Eval Carrier2 T7-G2 5mm stackup PCIe Gen3 only	n/a		3.0	all COMe Type 7 Modules
68301-0000-00-8	COMe Eval Carrier2 T7-G2 8mm stackup PCIe Gen3 only	n/a		3.0	all COMe Type 7 Modules
68301-0001-00-5 (av. on request)	COMe Eval Carrier2 T7-G2 5mm stackup	n/a		3.1	COMe-bID7
68301-0001-00-8	COMe Eval Carrier2 T7-G2 8mm stackup	n/a		3.1	COMe-bID7
Adapter Cards for Type7 Eval Carrier Gen2	Description	PHY	Connectivity	COM.0 Rev	For
68301-0000-04-4	ADA-COMe-T7-G2 4X 10G DAC - DEV-TOOL	no PHY	10G-KR – DAC	n/a	all COMe Type 7 Modules
			10G-SFI native	3.0 – Legacy	COMe-bDV7 COMe-bID7 COMe-bEP7
68301-0000-01-4	ADA-COMe-T7-G2 4x 10G RJ45 - DEV-TOOL	2x Intel X557-AT2	10G-BASE-T	3.0 - Legacy	COMe-bDV7 COMe-bBD7 COMe-bID7
68301-0000-03-2	ADA-COMe-T7-G2 2x 10G SFP+ - DEV-TOOL	1x Inphi CS4227	10G-SFI	3.0 - Legacy	COMe-bBD7
68301-0000-03-4	ADA-COMe-T7-G2 4x 10G SFP+ - DEV-TOOL	1x Inphi CS4223	10G-SFI	3.0 - Legacy	COMe-bDV7
68301-0000-05-4	ADA-COMe-T7-G2 4x 10G SFP+ - C827-IM1 – DEV-TOOL	1x Intel C827-IM1	10G-SFI	3.1 - CEI	COMe-bID7

12/ Technical Support

For technical support contact our Support department:

E-mail: techsupport@jumptec.com

Make sure you have the following information available when you call:

Product ID Number (P/N)

Serial Number (SN) Module's revision

Operating System and Kernel/Build version

Software modifications

Additional connected hardware/full description of hardware set up



The serial number can be found on the Type Label, located on the product's rear panel.

Be ready to explain the nature of your problem to the service technician.

12.1. Warranty

Due to their limited service life, parts that by their nature are subject to a particularly high degree of wear (wearing parts) are excluded from the warranty beyond that provided by law. This applies to the CMOS battery, for example.



If there is a protection label on your product, then the warranty is lost if the product is opened.

12.2. Returning Defective Merchandise

All equipment returned to Kontron must have a Return of Material Authorization (RMA) number assigned exclusively by Kontron. Kontron cannot be held responsible for any loss or damage caused to the equipment received without an RMA number. The buyer accepts responsibility for all freight charges for the return of goods to JUMPtec's designated facility. Kontron will pay the return freight charges back to the buyer's location in the event that the equipment is repaired or replaced within the stipulated warranty period. Follow these steps before returning any product to Kontron.

1. Visit the RMA Information website:

<https://www.jumptec.com/en/support/rma-information>

2. Download the RMA Request sheet for JUMPtec GmbH and fill out the form. Take care to include a short detailed description of the observed problem or failure and to include the product identification Information (Name of product, Product number and Serial number). If a delivery includes more than one product, fill out the above information in the RMA Request form for each product.
3. Send the completed RMA-Request form to the email address given at JUMPtec GmbH. JUMPtec will provide an RMA-Number.
4. The goods for repair must be packed properly for shipping, considering shock and ESD protection.



Goods returned to JUMPtec GmbH in non-proper packaging will be considered as customer caused faults and cannot be accepted as warranty repairs

4. Include the RMA-Number with the shipping paperwork and send the product to the delivery address provided in the RMA form or received from Kontron RMA Support.

List of Acronyms

ACPI	Advanced Configuration & Power Interface
COMe	COM Express® - Computer on Module Express
EMC	ElectroMagnetic Compatibility
IPMB	Intelligent Platform Management Bus
ME	Management Engine
NC-SI	Network controller sideband interface
PCIe	PCI-Express
PICMG	PCI Industrial Computer Manufacturers Group
POR	Power-On Reset
PSU	Power Supply Unit
RTC	Real Time Clock
S0	ACPI OS System State 0. Indicates fully on operating state.
S3	ACPI OS System State 3. Indicates Suspend to RAM.
S5	ACPI OS System State 5. Indicates Soft Off operating state.
SIO	Super I/O
SSD	Solid-State Drive
SMB	System Management Bus.
SMBIOS	System Management BIOS
SMI	System Management Interrupt
SPD	Serial Presence Detect: A standardized way to automatically access information about a computer memory module.
WEEE	Waste Electrical and Electronic Equipment

About JUMPtec

JUMPtec specializes its technical expertise in designing both - standard and highly customized compute products. Our newly optimized structure enables us to take customers from prototyping and design through to mass production faster than ever before.

JUMPtec serves a diverse range of markets, providing innovative solutions tailored to the unique needs of each industry. Find out more about our offering!

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