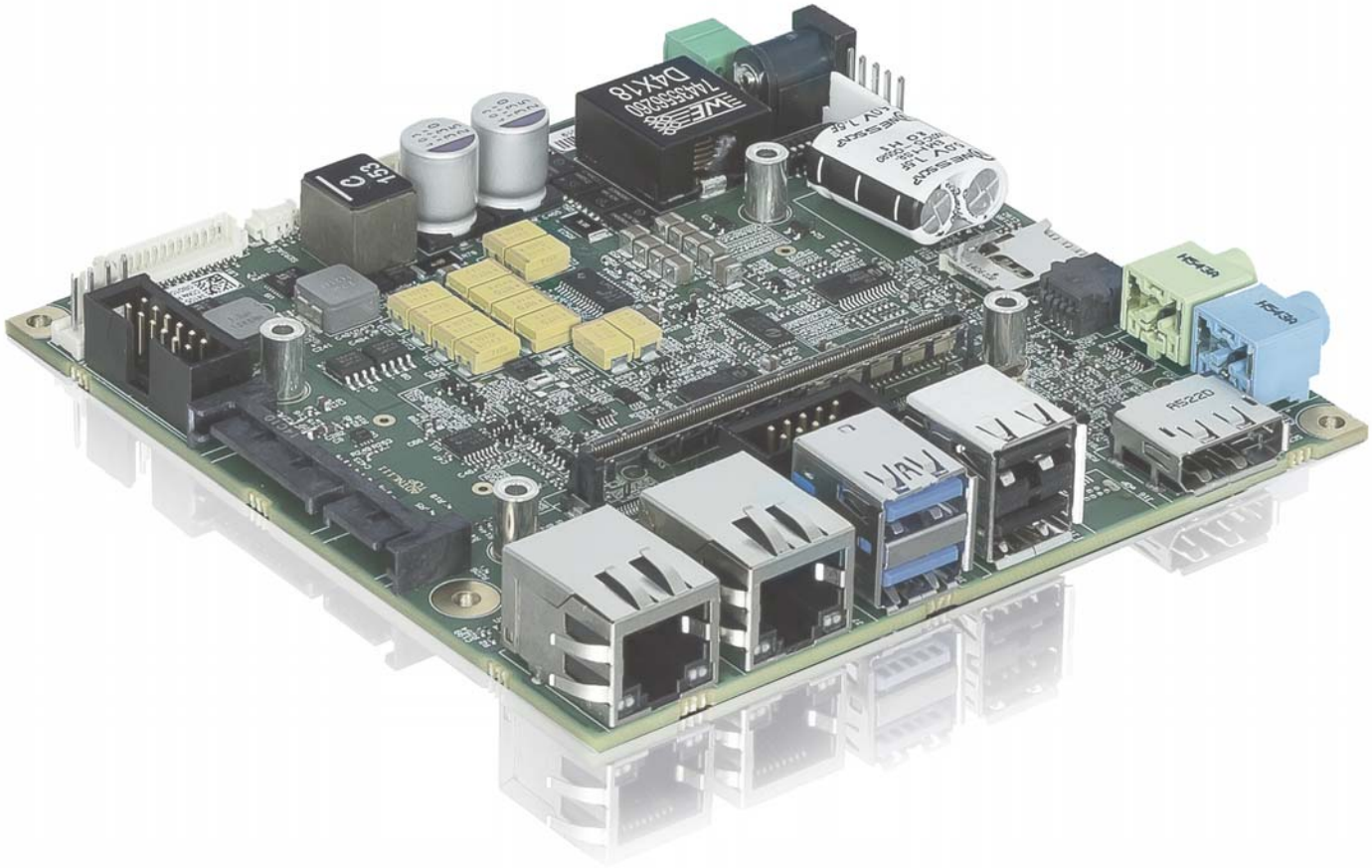
» User Guide «



COMe Ref. Carrier-i T10 TNIx

Doc. ID: 1060-3229, Rev. 1.2

Date: April 19, 2017

Revision History

Revision	Brief Description of Changes	Date of Issue
1.0	Initial issue	01-Aug-2016
1.1	2.1.1 SPI Flash update 2.3.13 DIP Switch, update of table 15, position 7	23-Aug-2016
1.2	2.3.14 Power Supply and Management	19-Apr-2017

Imprint

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Disclaimer

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1 Introduction

1.1 Carrier Overview

The COMe Reference Carrier-i Type 10 Thin-NanoITX (hereinafter referred to as COMe Ref. Carrier-i T10 TNI) is a COM Express® pinout Type 10, Thin-nITX form factor-compliant reference carrier designed to accommodate a mini Type 10 COM Express® Computer-on-Module compliant with the PICMG COM.0 specification Rev 2.1.

The COMe Ref. Carrier-i T10 TNI comes in three variants:

- COMe Reference Carrier-i Type 10 Thin-NanoITX Professional (COMe Ref. Carrier-i T10 TNIP),
- COMe Reference Carrier-i Type 10 Thin-NanoITX Value (COMe Ref. Carrier-i T10 TNIV), and
- COMe Reference Carrier-i Type 10 Thin-NanoITX Entry (COMe Ref. Carrier-i T10 TNIE).

The following table provides information about the features implemented on the COMe Ref. Carrier-i T10 TNI variants.

Table 1: COMe Ref. Carrier-i T10 TNI Variants

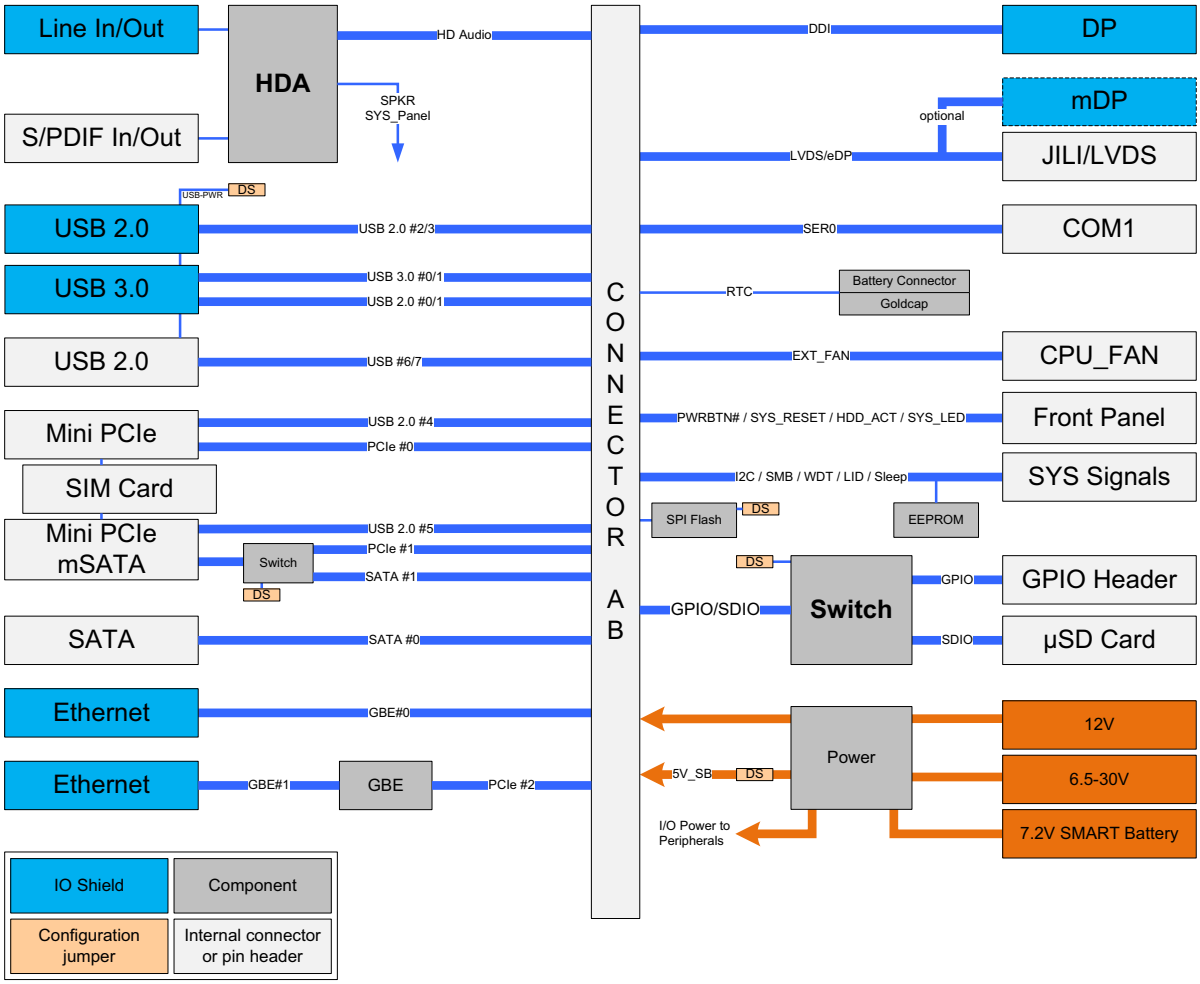
	COMe Ref. Carrier-i T10 TNIP (P/N 34105-0000-00-0)	COMe Ref. Carrier-i T10 TNIV (P/N 34105-0000-00-1)	COMe Ref. Carrier-i T10 TNIE (P/N 34105-0000-00-2)
SPI BIOS Socket	x	x	x
Carrier EEPROM	x	x	x
DDI0 - DP++	x	x	x
LVDS	x	x	x
mDP++ (eDP)	--	--	--
mPCIe0	x	x	--
mPCIe1 / mSATA	x	x	x
GBLan0 (Module)	x	x	x
GBLan1 (Carrier)	x	x	--
SATA0	x	x	x
USB 2.0 / 3.0 I/O	x	x	x
USB 2.0 Header	x	x	--
HDA Codec	x	x	--
Line-In/Out	x	x	--
S/PDIF	x	x	--
SER0	x	x	x
GPIO	x	x	x
microSD/SIM	x	x	--
Sys Signals	x	x	x
Sys Panel	x	x	x
CPU Fan	x	x	x
RTC connector	x	x	x
Goldcap 1.5F	x	x	--
SMART Battery	x	--	--
12V Input	x	x	x
6.5 - 30V Input	x	--	--
Rubber Feet	x	--	--

1.2 Board Diagrams

The following diagrams provide additional information concerning board functionality and component layout.

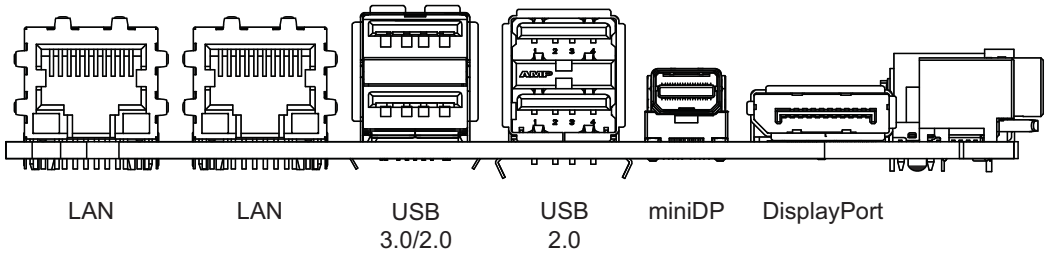
1.2.1 Functional Block Diagram

Figure 1: COMe Ref. Carrier-i T10 TNI Functional Block Diagram



1.2.2 Rear Panel

Figure 2: COMe Ref. Carrier-i T10 TNI Rear Panel



1.2.3 Board Layout

Figure 3: COMe Ref. Carrier-i T10 TNI Layout - Top View

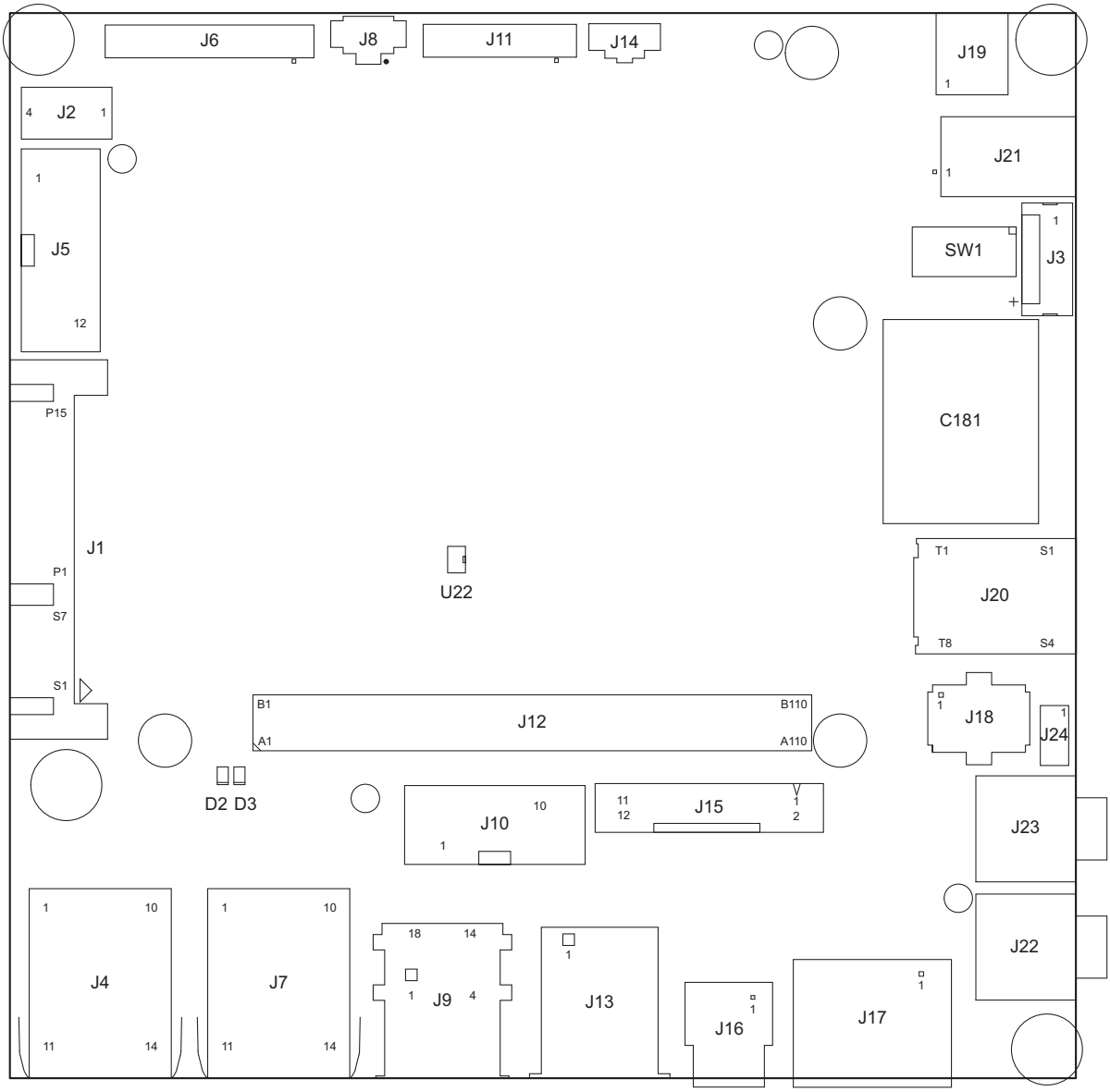
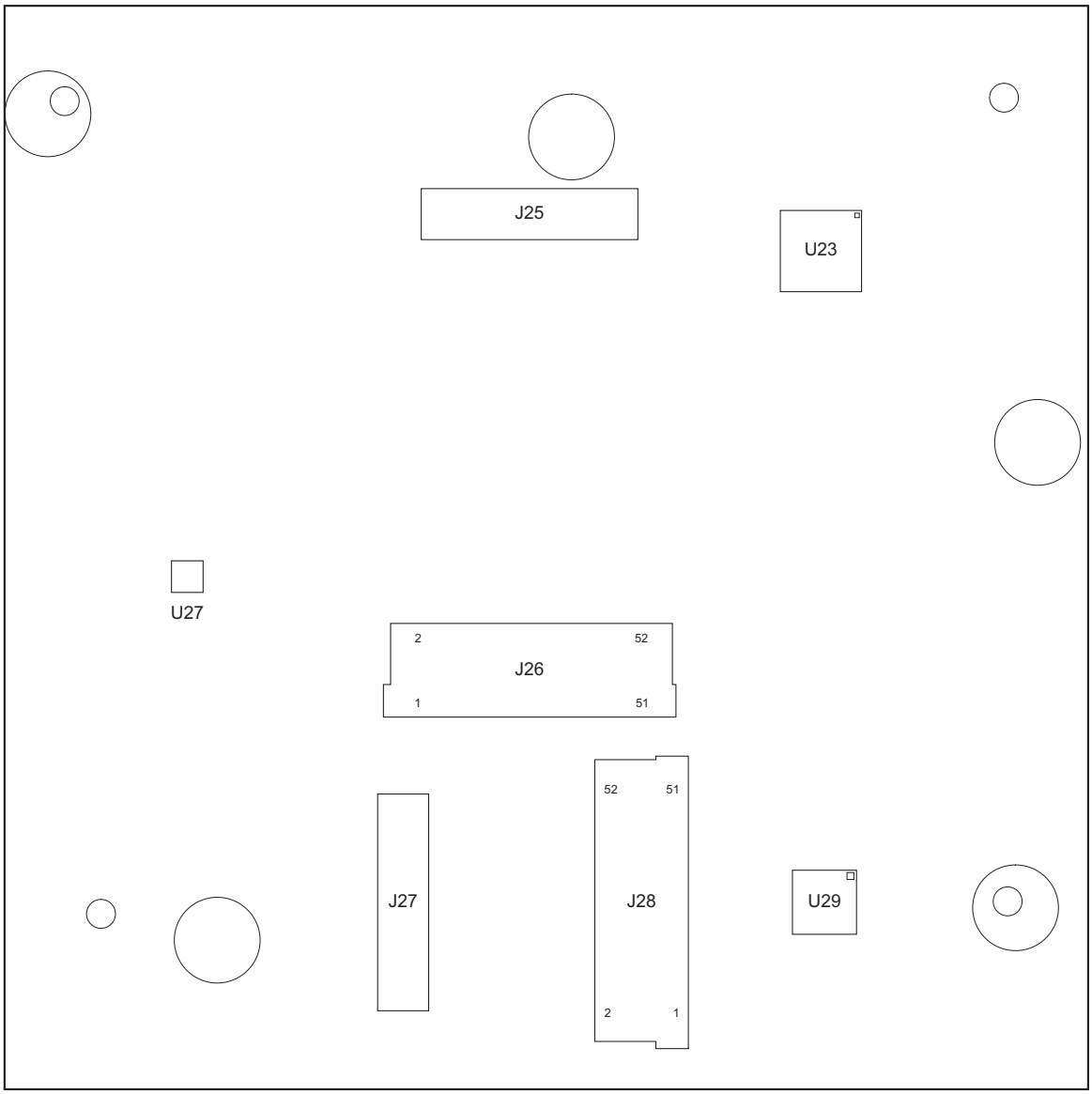


Figure 4: COMe Ref. Carrier-i T10 TNI Layout - Bottom View



1.2.3.1 Component Overview

Table 2: Component Overview

COMPONENT	DESCRIPTION
C181	Goldcap
D2	Status LED: V12_S0
D3	Status LED: V5.0_S5
J1	SATA plug connector (with power connector)
J2	PWM fan connector
J3	Smart Battery Input
J4	RJ45 Ethernet connector
J5	Front panel connector
J6	SYS_Signals / embedded interfaces pin header
J7	RJ45 Ethernet connector
J8	COM port pin header (COM1/SER0)
J9	USB 3.0/2.0 double-stack connector
J10	USB 2.0 header
J11	GPIO pin header
J12	COMe connector (Row A and B)
J13	USB 2.0 double-stack connector
J14	CMOS battery connector
J15	LVDS / JILI connector
J16	Mini DisplayPort++ connector (eDP option)
J17	DisplayPort++ connector (DDI0)
J18	SPI BIOS socket
J19	Power connector (6.5V – 30V input voltage)
J20	microSD/SIM combo connector
J21	DC jack (12V only)
J22	Rear panel line-in connector
J23	Rear panel SPK / line-out connector
J24	S/PDIF Header
J25	Mini PCIe card latch (full-size) / mSATA socket
J26	Mini PCIe card slot (full-size) / mSATA socket
J27	Mini PCIe card latch (half-size)
J28	Mini PCIe card slot (half-size)
SW1	DIP switch
U22	Carrier EEPROM (FRUPROM)
U23	Intel® Ethernet Controller I210-IT
U27	Smart Battery Controller TI BQ24725A
U29	HD Audio Codec IDT / Tempo Semi 92HD73C

1.3 Technical Specification

Table 3: COMe Ref. Carrier-i T10 TNI Main Specifications

FEATURES		SPECIFICATIONS
CPU	Processor & Chipset	Via COMe mini Type 10 module
Memory	System Memory	Via COMe mini Type 10 module
	Flash Memory	One SPI BIOS socket for an SPI flash IC with up to 8 MB flash memory
	EEPROM	EEPROM with 32 kbit on the carrier (FRUPROM)
Graphics Interfaces	Digital Display Interface	One digital display interface (DDI0): » DDI0: DisplayPort++ connector from COMe DDI0, J17
	LVDS	LVDS / JILI connector (24-bit, single-channel LVDS), J15
	Embedded DisplayPort	Mini DisplayPort++ connector via eDP (optional, instead of LVDS), J16
System Interfaces	PCI Express	Three PCIe interfaces: » PCIe#0 for Mini PCIe 2.0 half-size card slot connected to the microSD/SIM combo socket, J28 » PCIe#1 for Mini PCIe 2.0 full-size card slot muxed with SATA#1 (mSATA) and connected to the microSD/SIM combo socket, J26 » PCIe#2 for the onboard Gigabit Ethernet controller
	SATA	Two SATA 3 Gb/s interfaces: » SATA#0 via the 22-pin SATA plug connector, J1 » SATA#1 for the mSATA socket / Mini PCIe full-size card slot, J26
	Ethernet	Two Gigabit Ethernet interfaces: » GbE#0 on RJ45 connector, J4, via COMe mini Type 10 module » GbE#1 on RJ45 connector, J7, via the onboard GbE controller (Intel® Ethernet Controller I210-IT)
	USB 2.0	Eight USB 2.0 interfaces: » Two USB 2.0 interfaces (USB#[0;1]) for USB 3.0/2.0 double-stack connector, J9 » Two USB 2.0 interfaces (USB#[2;3]) for USB 2.0 double-stack connector, J13 » One USB 2.0 interface (USB#4) for PCIe#0 (Mini PCIe half-size interface) » One USB 2.0 interface (USB#5) for PCIe#1 (Mini PCIe full-size/mSATA interface) » Two USB 2.0 interfaces (USB#[6;7]) for USB 2.0 pin header, J10
	USB 3.0	Two USB 3.0 interfaces: » Two USB 3.0 interfaces (USB_SS#[0;1]) for USB 3.0/2.0 double-stack connector, J9
	HD Audio	Three HD Audio interfaces: » Rear panel line-in connector, J22 » Rear panel SPK/line-out connector, J23 » S/PDIF header, J24
	UART	One RS-232 COM port (RX/TX only) via pin header, J8 (COM1/SER0)
	GPIO/SDIO	Either four GPIs and four GPOs via the 10-pin GPIO pin header, J11, or alternatively SDIO usage via microSD/SIM combo socket

Table 3: COMe Ref. Carrier-i T10 TNI Main Specifications (Continued)

FEATURES		SPECIFICATIONS
System Interfaces	SIM	microSD/SIM combo socket, J20, connected to both Mini PCIe interfaces
	I^2C	I^2C interface via 15-pin SYS_Signals / embedded interfaces pin header, J6
	SMBus	SMBus interface via 15-pin SYS_Signals / embedded interfaces pin header, J6
	LID/SLEEP	LID/SLEEP signals via 15-pin SYS_Signals / embedded interfaces pin header, J6
	CPU Fan	One 4-pin PWM fan connector, J2
	LEDs	Two status LEDs available via the front panel connector, J5: » Power LED » HDD Activity LED
Switch	DIP Switch	One 8-position DIP switch, SW1, for board configuration
Power Supply and Management	Power Supply	Power input 1: 12V only Power input 2: 6.5V - 30V wide input range SMART battery: 7.2V - 8.4V
	Power / Reset Button	Available via the front panel connector, J5
	RTC	2-pin connector for external CMOS battery, J14 Goldcap for RTC backup, C181
General	BIOS	Via COMe mini Type 10 module
	Temperature Range	Operational: -40°C to +85°C Storage: -40°C to +85°C **Note:** When additional components are installed, refer to their operational specifications as this will influence the operational and storage temperature of the COMe Ref. Carrier-i T10 TNI.
	Climatic Humidity	93% RH at 40 °C, non-condensing (acc. to IEC 60068-2-78)
	Form Factor	COM Express® carrier, pinout Type 10, Thin-nITX form factor
	Dimensions	120 mm x 120 mm (nITX) Max. component height: Top side: 16.5 mm Bottom side: 4.0 mm

1.4 Accessories

The following accesssories are available for the COMe Ref. carrier-i T10 TNI.

Table 4: COMe Ref. Carrier-i T10 TNI Accessories

Part Number	Part Name	Description
96006-0000-00-1	COMe Post T10	NFCB POST Code / Debug card
38019-0000-00-1	ADA-COMe-Height-single	EERC Height Adapter
34017-0000-00-0	COMe mMount Kit 5/8 mm 1 set	Mountig Kit for 1 Module including screws for 5 mm and 8 mm connectors
9-5000-0352	ADA-LVDS_DVI 18 bit	18 bit LVDS to DVI converter
9-5000-0353	ADA-LVDS_DVI 24 bit	24 bit LVDS to DVI converter
96006-0000-00-8	ADA-DP-LVDS	DP to LVDS adapter
96082-0000-00-0	KAB-ADAPT-DP-DVI	DP to DVI adapter cable
96083-0000-00-0	KAB-ADAPT-DP-VGA	DP to VGA adapter cable
96084-0000-00-0	KAB-ADAPT-DP-HDMI	DP to HDMI adapter cable

1.5 Standards

This product complies with the requirements of the following standards.

Table 5: Standards

TYPE	ASPECT	STANDARD	REMARKS
CE	Emission	EN61000-6-3, EN55022	--
	Electrical Safety	Directive 2014/35/EU	Low Voltage Directive (LVD)
		EN60950-1	--
	Product Safety	Directive 2001/95/EC	General Product Safety Directive
	EMC	Directive 2014/30/EU	Electromagnetic Compatibility
Environmental	Climatic Humidity	IEC60068-2-78 (see note below)	--
	WEEE	Directive 2002/96/EC	Waste electrical and electronic equipment
	RoHS 2	Directive 2011/65/EU	Restriction of the use of certain hazardous substances in electrical and electronic equipment
Environmental	Vibration (Sinusoidal)	IEC60068-2-6	Test parameters: 9-150 (Hz) frequency range 1 (g) acceleration 1 (oct/min) sweep rate 10 cycles/axis 3 axes
	Single Shock	IEC60068-2-27	Test parameters: 15 (g) acceleration 11 (ms) shock duration half sine 3 number of shocks per direction (total: 18) 6 directions 5 (s) recovery time

Note: Customers desiring to perform further environmental testing of the COMe Ref. Carrier-i T10 TNI must contact Kontron for assistance prior to performing any such testing.

Boards **without conformal coating** must not be exposed to a change of temperature which can lead to condensation, as it may cause irreversible damage especially when the board is powered up again.

Kontron does not accept any responsibility for damage to products resulting from destructive environmental testing.

1.6 Related Publications

The following publications contain information relating to this product.

Table 6: Related Publications

PRODUCT	PUBLICATION
COM Express®	COM Express® Carrier Design Guide Rev 2.0 COM Express® Module Base Specification Rev 2.1
SATA	Serial ATA Specification Revision 3.0
PCI Express	PCI Express Base Specification Rev 2.0 PCI Express M.2 Specification Rev 1.0
DisplayPort	Display Port 1.1a Standard Display Port 1.2 Standard
USB	Universal Serial Bus (USB) 2.0 Specification Rev 2.0 Universal Serial Bus (USB) 3.0 Specification Rev 1.0
SD	SD Spec. Part A2 SD Host Controller Standard Spec. Version 2.00 SD Spec. Part E1 SDIO Spec. Version 2.00 SD Spec. Part 2 File System Spec. Version 3.00 SD Spec. Part 1 Physical Layer Spec. Version 3.00
I^2C	I2C Bus Specification Version 4.0
SMBus	SMBus Specification Version 2.0
ACPI	ACPI spec Rev 5.0

2 Functional Description

2.1 Memory

2.1.1 SPI Flash

The COMe Ref. Carrier-i T10 TNI provides one SPI BIOS socket, J18, for SPI flash ICs with up to 8 MB flash memory for use with an external Carrier BIOS. Recommended SPI flash ICs include Winbond W25Q64FVSSIG (8MB) and Atmel AT25DF321A-SH (4MB), depending on the COMe module used. Booting from the Carrier SPI flash can be enabled or disabled via the onboard DIP switch SW1.

2.1.2 Carrier EEPROM

The COMe Ref. Carrier-i T10 TNI comes with an onboard 32-kbit I²C EEPROM, U22, for storage of manufacturer records or COMe module information.

2.2 Graphics Interfaces

2.2.1 Digital Display Interfaces

The COMe Ref. Carrier-i T10 TNI provides the following digital display interface (DDI):

» DDI0 from the COMe module is directly mapped to the DisplayPort++ connector, J17

2.2.2 LVDS/eDP Interface

The COMe Ref. Carrier-i T10 TNI supports a 24-bit, single-channel LVDS interface via the LVDS/JILI connector, J15.

The following figure and table provide pinout information for the LVDS/JILI connector, J15.

Figure 5: LVDS/JILI Connector J15

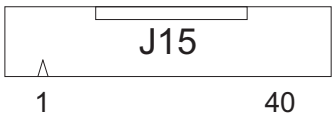


Table 7: LVDS/JILI Connector J15 Pinout

PIN	SIGNAL	PIN	SIGNAL
1	LVDS_BKLT_CTRL	21	NC
2	LVDS_A0-	22	GND
3	LVDS_A0+	23	NC
4	LVDS_VDD_EN	24	NC
5	LVDS_A1-	25	GND
6	LVDS_A1+	26	NC
7	NC	27	NC
8	LVDS_A2-	28	GND
9	LVDS_A2+	29	NC
10	GND	30	NC
11	LVDS_A_CK-	31	+5V
12	LVDS_A_CK+	32	+5V
13	GND	33	+5V
14	LVDS_A3-	34	+5V
15	LVDS_A3+	35	LVDS_BKLT_EN
16	LVDS_I2C_DAT	36	GND
17	NC	37	GND
18	NC	38	+12V
19	LVDS_IC2_CK	39	+12V
20	NC	40	+12V

If eDP support is required, the COMe Ref. Carrier-i T10 TNI may optionally be equipped with a Mini DisplayPort++ connector, J16, instead of the LVDS/JILI connector, J15.

Note: In order to use the eDP interface, the COMe module installed must also support eDP.

2.3 System Interfaces

2.3.1 PCI Express Interfaces

The COMe Ref. Carrier-i T10 TNI provides three general-purpose PCI Express (PCIe) lanes:

- PCIe#0 for the Mini PCIe half-size card slot, J28, connected to the microSD/SIM combo socket, J20
- PCIe#1 for Mini PCIe full-size card slot, J26, muxed with SATA#1 (mSATA), connected to the microSD/SIM combo socket, J20. Mini PCIe may be enabled via the onboard DIP switch SW1.
- PCIe#2 for onboard Gigabit Ethernet Controller, U23

Note: The MiniPCIe half-size card slot, J28, is available as a standard feature on the COMe Ref. COMe Ref. Carrier-i T10 TNIV (Value) and the COMe Ref. Carrier-i T10 TNIP (Professional) versions.

2.3.2 SATA Interfaces

The COMe Ref. Carrier-i T10 TNI supports up to two SATA 3 Gb/s interfaces:

- SATA#0 via the 22-pin SATA plug connector, J1
- SATA#1 for the mSATA socket / Mini PCIe full-size card slot, J26, muxed with PCIe#1 (Mini PCIe). mSATA may be enabled via the onboard DIP switch, SW1.

2.3.3 Gigabit Ethernet Interfaces

The COMe Ref. Carrier-i T10 TNI provides up to two Gigabit Ethernet interfaces via two single RJ45 connectors:

- GBE#0 on RJ45 Ethernet connector, J4, directly via the COMe mini Type 10 module
- GBE#1 on RJ45 Ethernet connector, J7, via the onboard Intel® Ethernet Controller I210-IT, U23 (on PCIe#2)

The Ethernet connector LEDs have the following states:

LINK (green):	Ethernet Link
ACT (green):	1000BASE-T Ethernet Speed
ACT (yellow):	100BASE-TX Ethernet Speed
ACT (off) + LINK(on):	10BASE-T Ethernet Speed

Note: The RJ45 Ethernet connector, J7, and the Intel® Ethernet Controller I210-IT, U23, are available as a standard feature on the COMe Ref. Carrier-i T10 TNIV (Value) and the COMe Ref. Carrier-i T10 TNIP (Professional) versions.

2.3.4 USB 2.0 Interfaces

The COMe Ref. Carrier-i T10 TNI supports eight high-speed USB 2.0 interfaces used as host by default:

- USB#[0;1] are used for USB 3.0/2.0 double-stack connector, J9.
  5V standby power for wake events may be enabled and disabled via the onboard DIP switch, SW1.
- USB#[2;3] are routed to the USB 2.0 double-stack connector, J13.
  5V standby power for wake events may be enabled and disabled via the onboard DIP switch, SW1.
- USB#[4] is used for the Mini PCIe half-size interface to enable usage of USB 2.0 high-speed Mini PCIe form factor devices.
- USB#5 is used for the Mini PCIe full-size / mSATA interface to enable usage of USB 2.0 high-speed Mini PCIe form factor devices.
- USB#[6;7] are used for the USB 2.0 pin header, J10. USB#7 can be used as host or client (switchable via the onboard DIP switch SW1).

The following figure and table provide pinout information for the USB 2.0 pin header, J10.

Figure 6: USB 2.0 Pin Header J10

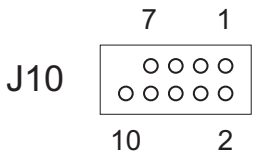


Table 8: Pinout of USB 2.0 Pin Header J10

PIN	SIGNAL	PIN	SIGNAL
1	Power	2	Power
3	USB6-	4	USB7-
5	USB6+	6	USB7+
7	GND	8	GND
9	--	10	NC

Note: The USB 2.0 pin header, J10, is available as a standard feature on the COMe Ref. Carrier-i T10 TNIV (Value) and the COMe Ref. Carrier-i T10 TNIP (Professional) versions.

2.3.5 USB 3.0 Interfaces

The COMe Ref. Carrier-i T10 TNI supports two super-speed USB 3.0 interfaces used as host:

- USB_SS#[0;1] are routed to the USB 3.0/2.0 double-stack connector, J9.

2.3.6 HD Audio Interfaces

The COMe Ref. Carrier-i T10 TNI provides HD Audio via the industrial grade HD Audio Codec IDT / Tempo Semi 92HD73C (U29) through the following analog and digital audio connectors:

- Rear panel line-in connector, J22
- Rear panel SPK / line-out connector, J23
- S/PDIF header, J24

The following figure and table provide pinout information for the S/PDIF header, J24.

Figure 7: S/PDIF Header J24

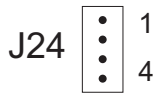


Table 9: S/PDIF Header J24 Pinout

PIN	SIGNAL
1	SPDIF_OUT
2	GND
3	SPDIF_IN
4	GND

Note: The HD Audio Codec including all of its functions is available as a standard feature on the COMe Ref. Carrier-i T10 TNIV (Value) and the COMe Ref. Carrier-i T10 TNIP (Professional) versions.

2.3.7 UART Interfaces

The COMe Ref. Carrier-i T10 TNI provides one RS232 COM port (RX/TX only) via the pin header J8 (COM1/SER0).

The following figure and table provide pinout information for the pin header J8 (COM1/SER0).

Figure 8: Pin Header J8

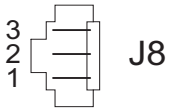


Table 10: Pinout of Pin Header J8

PIN	SIGNAL ON J8
3	GND
2	SER0_RX
1	SER0_TX

2.3.8 GPIO/SDIO Interfaces

The COMe Ref. Carrier-i T10 TNI provides four GPIs and four GPOs via a 10-pin GPIO pin header, J11.

The following figure and table provide pinout information for the GPIO pin header J11.

Figure 9: GPIO Pin Header J11

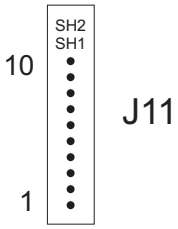


Table 11: GPIO Pin Header J11

PIN	SIGNAL
10	GND
9	GPO3
8	GPO2
7	GPO1
6	GPO0
5	GPI3
4	GPI2
3	GPI1
2	GPI0
1	VCC 3.3V

Note: The COMe Ref. Carrier-i T10 TNI alternatively provides SDIO usage via the microSD/SIM combo socket, J20. SDIO support may be enabled and disabled via the onboard DIP switch, SW1.

2.3.9 microSD/SIM Interface

The COMe Ref. Carrier-i T10 TNI provides a microSD/SIM combo socket, J20, connected to both Mini PCIe interfaces, PCIe#0 and PCIe#1, to support radio-based services on Mini PCIe.

Note: The microSD/SIM combo socket is available as a standard feature on the COMe Ref. Carrier-i T10 TNIV (Value) and the COMe Ref. Carrier-i T10 TNIP (Professional) versions.

2.3.10 SYS_Signals / Embedded Interfaces

On the COMe Ref. Carrier-i T10 TNI, a pin header for various SYS_Signals / embedded interfaces, J6, is available and provides access to the following I/Os:

- I2C
- SMBus
- Watchdog
- LID
- SLEEP

The following figure and table provide pinout information for the pin header J6.

Figure 10: Pin Header J6

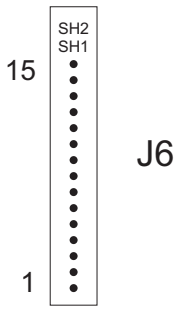


Table 12: Pin Header J6

PIN	SIGNAL
15	GND
14	GND
13	GND
12	NC
11	THRM#
10	LPC_SERIRQ
9	SLEEP#
8	LID#
7	WAKE1#
6	WDT
5	SMB_ALERT#
4	SMB_DAT
3	SMB_CK
2	I2C_DAT
1	I2C_CK

2.3.11 CPU Fan Interface

The COMe Ref. Carrier-i T10 TNI provides a 4-pin PWM fan connector, J2, directly controlled by the module fan output.

The following figure and table provide pinout information for the PWM fan connector J2.

Figure 11: PWM Fan Connector J2

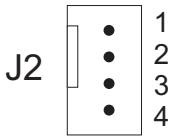


Table 13: PWM Fan Connector J2

PIN	SIGNAL
1	GND
2	12V
3	SENSE
4	PWM Control

2.3.12 Front Panel Interface

The COMe Ref. Carrier-i T10 TNI provides a front panel connector, J5, with access to the following signals:

- HDD activity LED
- Power LED
- Power button
- Reset button
- Speaker -out (Beep)

The following figure and table provide pinout information for the front panel connector J5.

Figure 12: Front Panel Connector J5

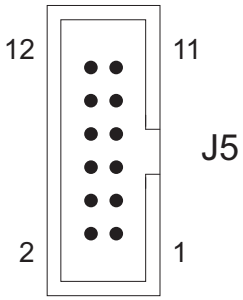


Table 14: Front Panel Connector J5 Pinout

PIN	SIGNAL	PIN	SIGNAL
12	BEEP#	11	GND
10	GND	9	SYS_RESET#
8	GND	7	GND
6	BEEP+	5	PWRBTN#
4	GND	3	ATA_ACT#
2	Power_LED+	1	HDD_LED+

2.3.13 DIP Switch

The COMe Ref. Carrier-i T10 TNI provides one 8-position DIP switch, SW1, for board configuration.

Figure 13: DIP Switch SW1

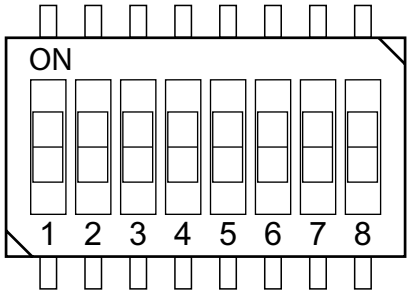


Table 15: DIP Switch SW1 Functionality

POSITION	SETTING	FUNCTIONALITY
1	ON	Enable GPIO support on GPIO pin header
	OFF	***Enable SDIO support for microSD/SIM combo socket***
2	***ON***	***Enable mSATA on full-size Mini PCIe / mSATA interface***
	OFF	Disable mSATA on full-size MiniPCIe / mSATA interface
3	***ON***	***Enable USB host port on USB#7***
	OFF	Enable USB client port on USB#7
4	***ON***	***Enable 5V standby power supply on COMe module for ATX function (S-States)***
	OFF	Disable 5V standby power supply on COMe module for ATX function (S-States)
5	***ON***	***Enable 5V standby power to USB ports USB#[0;1] for wake events***
	OFF	Disable 5V standby power to USB ports USB#[0;1] for wake events
6	***ON***	***Enable 5V standby power to USB ports USB#[2;3] for wake events***
	OFF	Disable 5V standby power to USB ports USB#[2;3] for wake events
7	***ON***	***Enable booting from COMe module SPI Flash***
	OFF	Disable booting from COMe module SPI Flash-Carrier BIOS enabled
8	ON	Wireless disable for Mini PCIe
	OFF	***Wireless enable for Mini PCIe***

The default setting is indicated by using italic bold.

2.3.14 Power Supply and Management

The COMe Ref. Carrier-i T10 TNI supports fixed input voltage (12V only) as a standard feature via the DC jack, J21.

Note: The COMe Ref. Carrier-i T10 TNIP (Professional) version also supports a wide input voltage range (6.5V - 30V) by default via a wired power connector, J19. The COMe Ref. Carrier-i T10 TNIP can be powered up either through the J19 or the J21 connector.

Warning: Powering up the COMe Ref. Carrier-i T10 TNIP through power both connectors (J19 and J21) at the same time may result in damage to the power supply unit/power adapter.

The following 12V power supply is recommended for use with the COMe Ref. Carrier-i T10 TNI:

» SDI65-12-U-P11

The following figure and table provide pinout information for the wired power connector, J19.

Figure 14: Power Connector J19

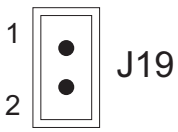


Table 16: Power Connector J19 Pinout

PIN	SIGNAL
1	V_IN
2	GND

Note: Smart battery support is only available on the COMe Ref. Carrier-i T10 TNIP (Professional) version via the smart battery connector, J3.

The following figure and table provide pinout information for the smart battery connector, J3.

Figure 15: Smart Battery Connector J3

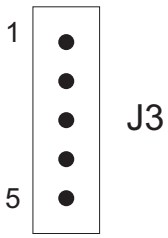


Table 17: Smart Battery Connector J3 Pinout

PIN	SIGNAL
1	GND
2	THERM
3	SMB_DAT
4	SMB_CLK
5	V_BATT

2.3.15 RTC

The COMe Ref. Carrier-i T10 TNI provides a 2-pin connector, J14, for an external CMOS battery. In addition, the COMe Ref. Carrier-i T10 TNIV (Value) and the COMe Ref. Carrier-i T10 TNIP (Professional) versions provide a 1.5F goldcap, C181, for RTC backup.