TEK3-IMX6 BOX PC PRODUCT MANUAL

(TEK3-IMX6)

VER. 1.00

September 18, 2018

REVISION HISTORY

Revision	Date	Originator	Notes
1.00	September 18, 2018	TechNexion	First public release

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1. Introduction

1.1. General Care and Maintenance

Your device is a product of superior design and craftsmanship and should be treated with care.

The following suggestions will help you.
- Keep the device dry. Precipitation, humidity, and all types of liquids or moisture can contain minerals that will corrode electronic circuits. If your device does get wet, allow it to dry completely.
- Do not use or store the device in dusty, dirty areas. Its parts and electronic components can be damaged.
- Do not store the device in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.
- Do not store the device in cold areas. When the device returns to its normal temperature, moisture can form inside the device and damage electronic circuit boards.
- Do not attempt to open the device.
- Do not drop, knock, or shake the device. Rough handling can break internal circuit boards and fine mechanics.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the device.
- Do not paint the device. Paint can clog the parts and prevent proper operation.
- Unauthorized modifications or attachments could damage the device and may violate regulations governing radio devices.

These suggestions apply equally to your device, battery, charger, or any enhancement. If any device is not working properly, take it to the nearest authorized service facility for service.
Regulatory information

Disposal of Waste Equipment by Users in Private Household in the European Union
This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

We hereby declare that the product is in compliance with the essential requirements and other relevant provisions of European Directive 1999/5/EC (radio equipment and telecommunications terminal equipment Directive).

2. TEK3-IMX6 Product Overview

2.1. Functional Block Diagram
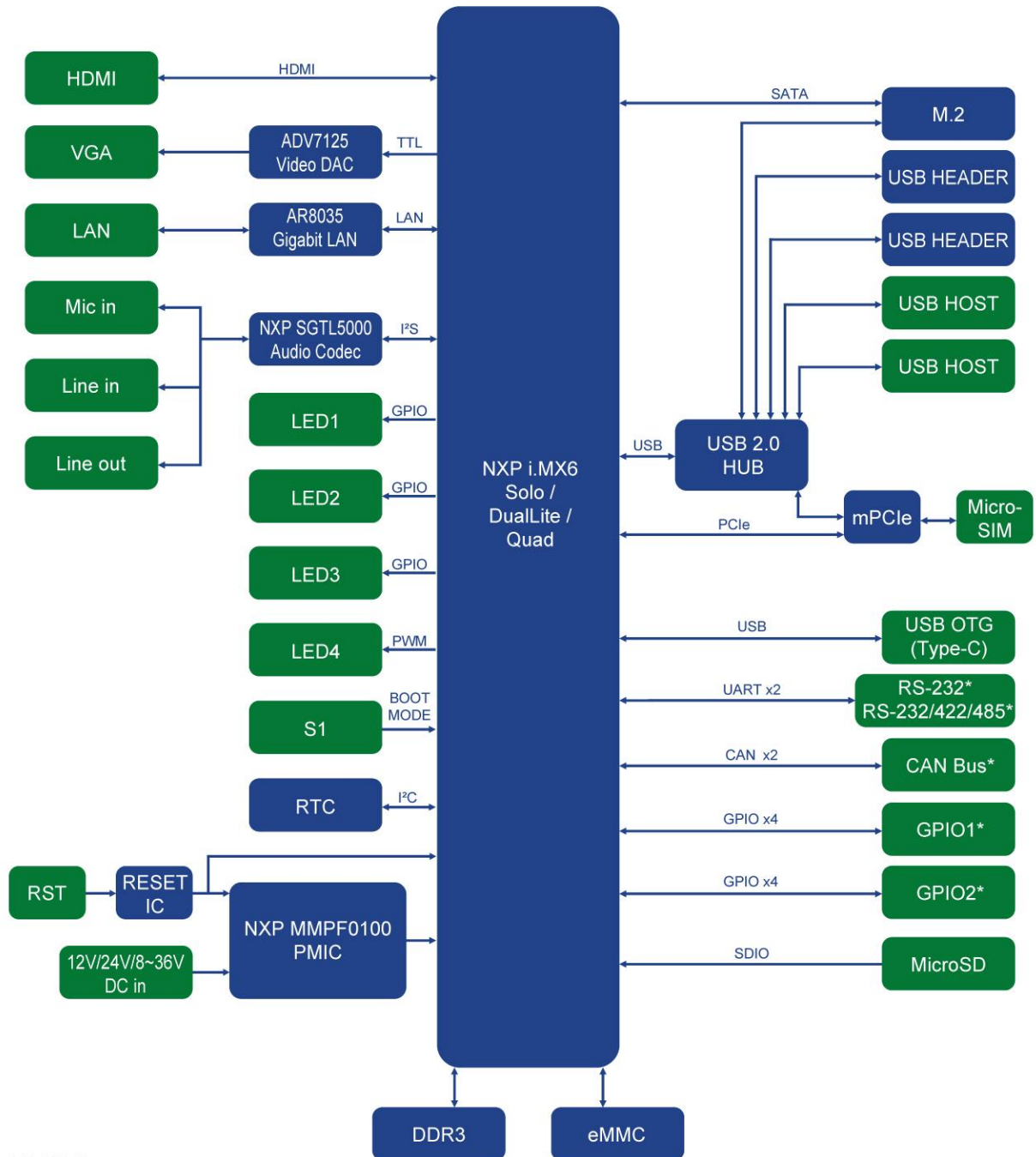
2.2. Dimensions

The following figure shows the TEK3-IMX6 dimensions (unit: mm):
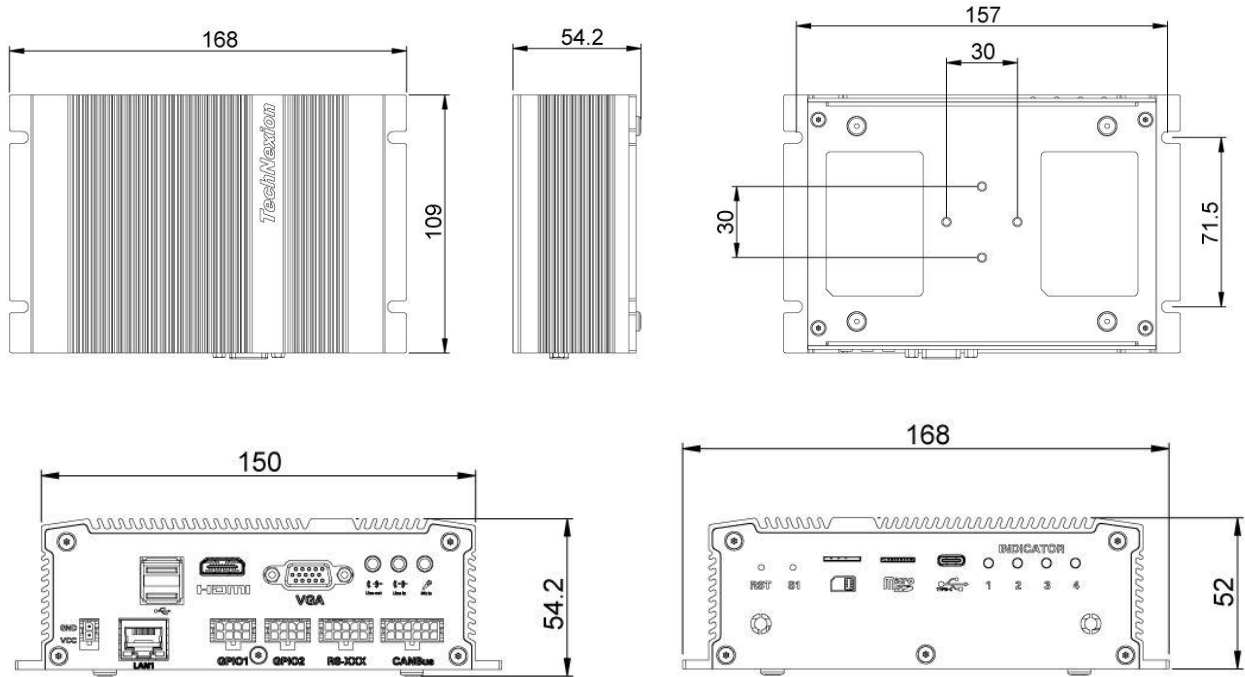
2.3. External Connectors

The TEK3-IMX6 has a number of external connectors.
Front view:
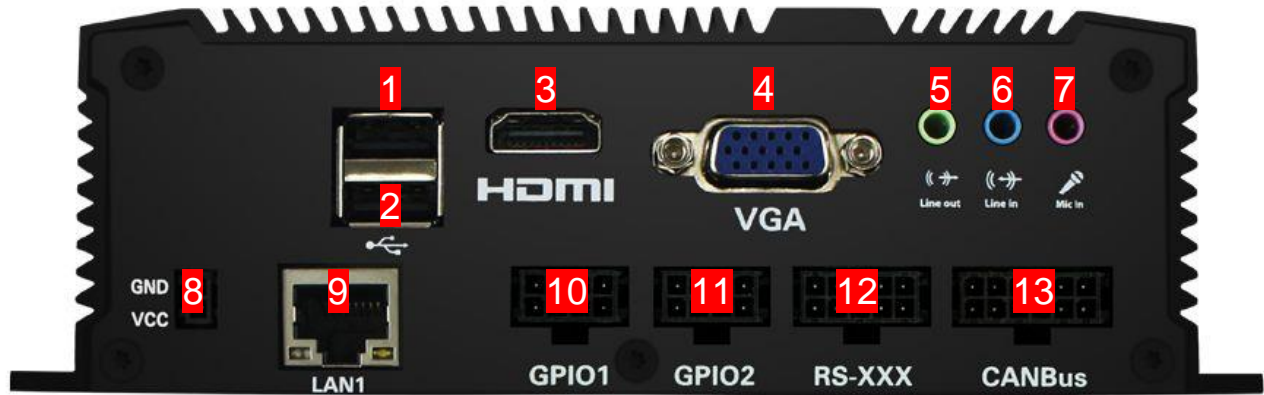
Rear view:

External Connectors:

No.	Description	No.	Description
1	USB Host connector	13	CAN Bus connector (optional)
2	USB Host connector	14	Reset button
3	HDMI connector	15	S1 Boot Select button
4	VGA (15-pin D-SUB) connector	16	Micro-SIM cardslot
5	3.5mm jack Line out	17	MicroSD cardslot
6	3.5mm jack Line in	18	USB OTG (Type-C) connector
7	3.5mm jack Mic in	19	LED Light 1 indicator
8	Power Input connector	20	LED Light 2 indicator
9	LAN RJ45 connector	21	LED Light 3 indicator
10	GPIO1 connector (optional)	22	LED Light 4 indicator
11	GPIO2 connector (optional)	23	Antenna hole
12	RS-XXX (Serial Port) connector (optional)	24	Antenna hole

2.4. Internal Board Connectors

The TEK3-IMX6 has several connectors, switches and internal expansion options.

2.4.1 Galvanic Isolated (TEK3-IMX6x-Rxx-Exx-Lxxx-XG20-xxxx)

Rear view (opened device) with the galvanic isolated I/0 Expansion and Power Expansion modules:
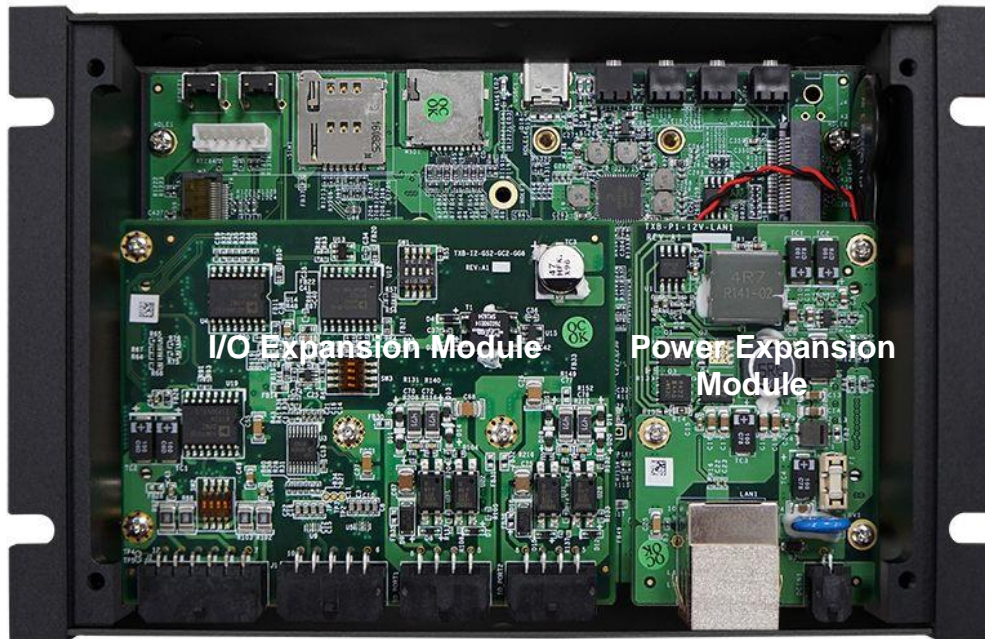
NOTE: Internal connectors and switches are accessible only after removing the I/O Expansion and Power Expansion modules.

2.4.2 Non-Galvanic Isolated (TEK3-IMX6x-Rxx-Exx-Lxxx-XS20-xxxx)

Rear view (opened device) with the non-galvanic isolated I/0 Expansion and Power Expansion modules:

NOTE: Internal connectors and switches are accessible only after removing the I/O Expansion and Power Expansion modules.

2.4.3 Board View Without the Power and I/O Expansion Modules

Rear view (opened device) without the I/O Expansion and Power Expansion modules:
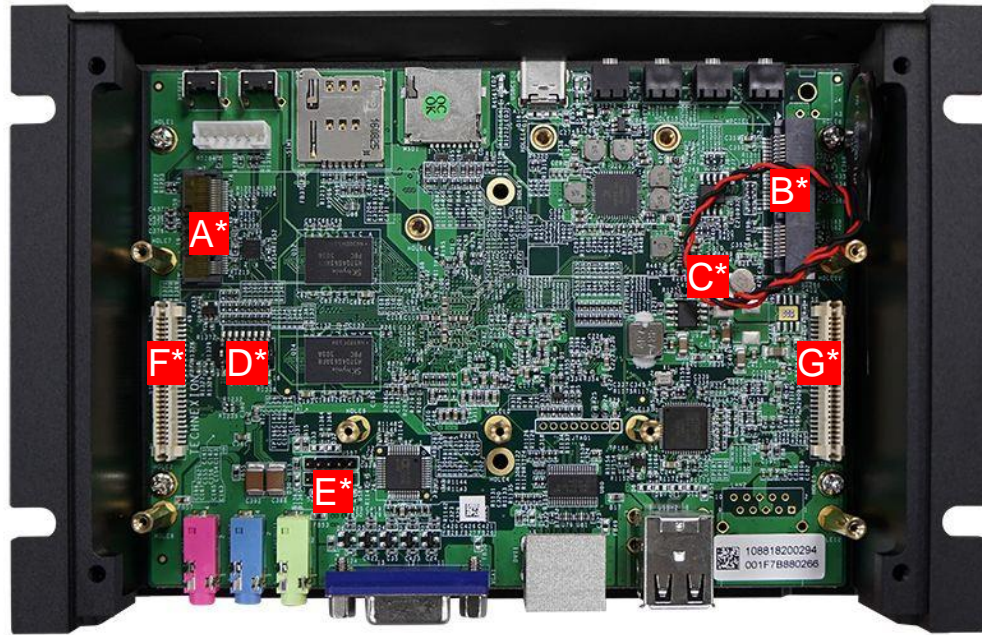
Internal Connectors and Switches:

No.	Description	No.	Description
A*	M.2 KEY-B slot (SATA + USB)	E*	USB (2 port) header
B*	mini-PCIe connector (PCIe + USB)	F*	I/O Expansion module connector
C*	RTC Battery connector	G*	Power Expansion module connector
D*	SWITCH1 Boot mode DIP switch		

NOTE: Items marked with * are accessible only after removing the I/O Expansion and Power Expansion modules.

3. External Connectors

3.1. USB Host Connectors

The TEK3-IMX6 has two USB Host connectors (USB 2.0 signals only) to connect to a USB peripheral such as a keyboard, mouse, USB storage device or USB hub.

3.2. HDMI (High Definition Multi-Media Interface) Connector

The HDMI interface available on the TEK3-IMX6 is based on the "HDMI transmitter" & "HDMI 3D TX PHY" integrated into the NXP i.MX6 processor and can be configured to support a secondary display.

The HDMI supports the following standards & features:
- High-Definition Multimedia Interface Specification, Version 1.4a
- Digital Visual Interface, Revision 1.0
- HDMI Compliance Test Specification, Version 1.4a
- Support for up to 720p at 100Hz and 720i at 200Hz or 1080p at 60Hz and 1080i/720i at 120Hz HDTV display resolutions and up to QXGA graphic display resolutions.
- Support for 4k x 2k and 3D video formats
- Support for up to 16-bit Deep Color modes

3.3. VGA (15-pin D-SUB) Connector

The VGA interface available on the TEK3-IMX6 can be configured to support a secondary display.

3.4. Audio Connectors

The TEK3-IMX6 has three external 3.5mm stereo audio jacks.

Color Code	Signal	Description
Green	L/R Line out	Audio output
Blue	L/R Line in	Audio input
Pink	Mic in	Microphone input

3.5. Power Input Connector

The TEK3-IMX6 can be powered either over the DC INPUT connector or PoE (optional) over the RJ45 LAN port.

NOTE: Do not power the unit by DC input when you apply power over the Power over Ethernet (RJ45)!
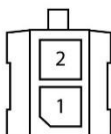
Pin #	Signal	Description
1	GND	Ground
2	VCC	DC Voltage input (12V/24V/8~36VDC)

Header on TEK3-IMX6: Molex 43045-0200 (2-pin Micro-Fit 3.0).
Cable receptacle: Molex 43025-0200 (2-pin Micro-Fit 3.0) plug with crimp contact Molex 43030-0007.

3.6. Gigabit Ethernet Interface

The TEK3-IMX6 by default comes with a single Gigabit Ethernet RJ45 connector. This connector can support 802.3at Power over Ethernet functionality if configured with the PoE power option (TEK3-IMX6x-Rxx-Exx-LPOE-xxxx-xxxx) by connecting it to an 802.3at compliant PoE switch or power injector.
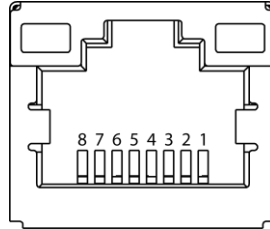
Pin #	1000 Mbps	100 Mbps	10 Mbps
1	MDI0+	Transmit Data+	Transmit Data+
2	MDI0-	Transmit Data-	Transmit Data-
3	MDI1+	Receive Data+	Receive Data+
4	MDI2+		
5	MDI2-		
6	MDI1-	Receive Data-	Receive Data-
7	MDI3+		
8	MDI3-		

3.7. Galvanic Isolated Connectors (TEK3-IMX6x-Rxx-Exx-Lxxx-XG20-xxxx) (optional)

This product is available with four optional connectors: GPIO1, GPIO2, RS-XXX and CAN Bus that can be ordered in either galvanic isolated or non-galvanic isolated versions. The TEK3-IMX6x-Rxx-Exx-Lxxx-XG20-xxxx has four optional galvanic isolated connectors: GPIO1, GPIO2, RS-XXX and CAN Bus.

Top view of the galvanic isolated I/0 Expansion module (TXB-I2-GS2-GC2-GG8):
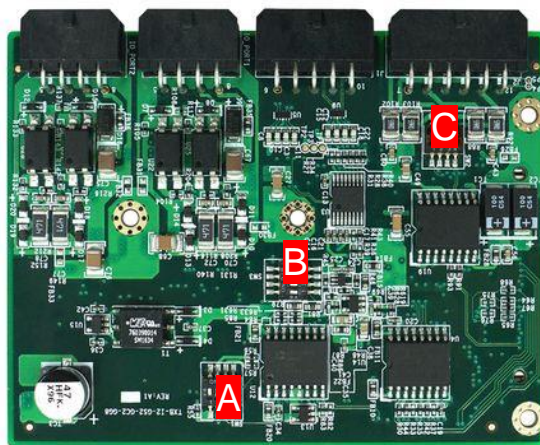
No.	Description	No.	Description
A	SW1 DIP switch	C	SW2 Terminator Resistor DIP switch
B	SW3 Terminator Resistor DIP switch		

3.7.1 Galvanic Isolated Digital I/O Connectors (optional)

The galvanic isolated GPIO Expansion headers have the following pinout:
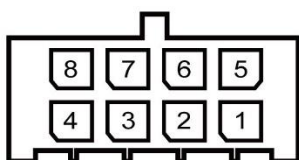
GPIO1:

Pin #	Signal	Description	Voltage			Current	GPIO Kernel	GPIO Bank/IO
			Min.	Typ.	Max.	Max.		
1	GPIO1A	DIG_IN1			6V	1A	161	6_1
2	GPIO1B	DIG_IN2			6V	1A	42	2_10
3	GND_DIO	Ground for digital I/O						
4	GND	Common Ground						
5	GPIO1C	DIG_OUT5			16V	1.7A	1	1_1
6	GPIO1D	DIG_OUT6			16V	1.7A	41	2_9
7	VCC_DIO	Supply input for digital I/O			16V			
8	VCC	Supply output		12V				

GPIO2:

Pin #	Signal	Description	Voltage			Current Max.	GPIO Kernel	GPIO Bank/IO
			Min.	Typ.	Max.			
1	GPIO2A	DIG_IN1			6V	1A	165	6_5
2	GPIO2B	DIG_IN2			6V	1A	164	6_4
3	GND_DIO	Ground for digital I/O						
4	GND	Common Ground						
5	GPIO2C	DIG_OUT5			16V	1.7A	162	6_2
6	GPIO2D	DIG_OUT6			16V	1.7A	163	6_3
7	VCC_DIO	Supply input for digital I/O			16V			
8	VCC	Supply output		12V				

Header on TEK3-IMX6: Molex 43045-0800 (8-pin Micro-Fit 3.0).
Cable receptacle: Molex 43025-0800 (8-pin Micro-Fit 3.0) plug with crimp contact Molex 43030-0007.

3.7.2 Galvanic Isolated Serial Port (RS-XXX) (optional)

The dual 4-wire galvanic isolated serial port can be configured as follows: the primary serial port can only be used as a standard RS-232. The secondary port can be configured either as RS-232, or RS-422 or RS-485. This serial port is set by default as RS-232. Setting the TEK3-IMX6 in other mode will require to open the device and adjust the internal SW1 DIP and SW3 Terminator Resistor DIP switch settings on the TEP I/O Expansion board. The SW1 DIP switch can be found at location "A" and SW3 DIP switch at location "B" in chapter 3.7. Galvanic Isolated Connectors (TEK3-IMX6x-Rxx-Exx-Lxxx-XG20-xxxx) (optional) of this manual.

SW1:

Pin #	RS-232 (default)	RS-422	RS-485
1-8	ON	OFF	OFF
2-7	OFF	ON	OFF
3-6	OFF	OFF	ON
4-5	-	-	-

SW3:

Pin #	ON	OFF
1-8	Enable RS-485 Terminator Resistor	Disable RS-485 Terminator Resistor
2-7	Enable RS-422 Terminator Resistor	Disable RS-422 Terminator Resistor
3-6	-	-
4-5	-	-
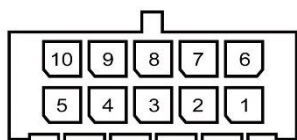
RS-232 + RS-232 (default setup):

Pin #	Signal	Description	Device
1	GND	Ground	
2	SERIAL1A_TXD	Port#1A Transmit data (output)	ttymxc0
3	SERIAL1A_RXD	Port#1A Receive data (input)	ttymxc0
4	SERIAL1A_RTS	Port#1A Request-to-send (output)	ttymxc0
5	SERIAL1A_CTS	Port#1A Clear-to-send (input)	ttymxc0
6	GND	Ground	
7	SERIAL1B_TXD	Port#1B Transmit data (output)	ttymxc1
8	SERIAL1B_RXD	Port#1B Receive data (input)	ttymxc1
9	SERIAL1B_RTS	Port#1B Request-to-send (output)	ttymxc1
10	SERIAL1B_CTS	Port#1B Clear-to-send (input)	ttymxc1

RS-232 + RS-422:

Pin #	Signal	Description	Device
1~5	SERIAL1A	Identical as above	ttymxc0
6	GND	Ground	
7	SERIAL1B_TXD+	RS-422 Transmit positive data signal (output)	ttymxc1
8	SERIAL1B_RXD-	RS-422 Receive negative data signal (input)	ttymxc1
9	SERIAL1B_RXD+	RS-422 Receive positive data signal (input)	ttymxc1
10	SERIAL1B_TXD-	RS-422 Transmit negative data signal (output)	ttymxc1

RS-232 + RS-485:

Pin #	Signal	Description	Device
1~5	SERIAL1A	Identical as above	ttymxc0
6	GND	Ground	
7	SERIAL1B+	RS-485 positive data signal	ttymxc1
8	NC		
9	NC		
10	SERIAL1B-	RS-485 negative data signal	ttymxc1

NOTE: SERIAL1A port can act by default as serial debug console.

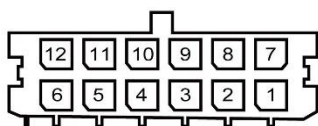Header on TEK3-IMX6: Molex 43045-1000 (10-pin Micro-Fit 3.0).
Cable receptacle: Molex 43025-1000 (10-pin Micro-Fit 3.0) plug with crimp contact Molex 43030-0007.

3.7.3 Galvanic Isolated CAN Bus Connector (CANBus) (optional)

The galvanic isolated CAN Bus interfaces can be configured as follows: enabling or disabling of CAN Bus terminator resistor will require to open the device and adjust the internal SW2 Terminator Resistor DIP switch settings on the TEP I/O Expansion board. The SW2 DIP switch can be found at location "C" in chapter 3.7. Galvanic Isolated Connectors (TEK3-IMX6x-Rxx-Exx-Lxxx-XG20-xxxx) (optional) of this manual.

SW2:

Pin #	ON	OFF (default)
1-8	Enable CAN1A Terminator Resistor	Disable CAN1A Terminator Resistor
2-7	Enable CAN1A Terminator Resistor	Disable CAN1A Terminator Resistor
3-6	Enable CAN1B Terminator Resistor	Disable CAN1B Terminator Resistor
4-5	Enable CAN1B Terminator Resistor	Disable CAN1B Terminator Resistor

CANBus:

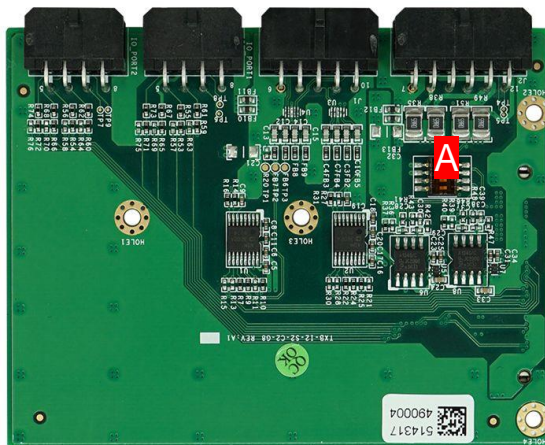| Pin #	Signal	Description	Interface
1	GND_CAN	Ground for CAN	
2	CAN1A_TERM_N	To enable CAN1A Termination, bridge with CAN1A_N	can0
3	CAN1A_P	CAN Bus 1A high (-24~+24V)	can0
4	CAN1A_N	CAN Bus 1A low (-24~+24V)	can0
5	CAN1A_TERM_P	To enable CAN1A Termination, bridge with CAN1A_P	can0
6	NC		
7	GND_CAN	Ground for CAN	
8	CAN1B_TERM_N	To enable CAN1B Termination, bridge with CAN1B_N	can1
9	CAN1B_P	CAN Bus 1B high (-24~+24V)	can1
10	CAN1B_N	CAN Bus 1B low (-24~+24V)	can1
11	CAN1B_TERM_P	To enable CAN1B Termination, bridge with CAN1B_P	can1
12	NC		

Header on TEK3-IMX6: Molex 43045-1200 (12-pin Micro-Fit 3.0).
Cable receptacle: Molex 43025-1200 (12-pin Micro-Fit 3.0) plug with crimp contact Molex 43030-0007.

3.8. Non-Galvanic Isolated Connectors (TEK3-IMX6x-Rxx-Exx-Lxxx-XS20-xxxx) (optional)

This product is available with four optional connectors: GPIO1, GPIO2, RS-XXX and CAN Bus that can be ordered in either galvanic isolated or non-galvanic isolated versions. The TEK3-IMX6x-Rxx-Exx-Lxxx-XS20-xxxx has four optional non-galvanic isolated connectors: GPIO1, GPIO2, RS-XXX and CAN Bus.

Top view of the non-galvanic isolated I/0 Expansion module (TXB-I2-S2-C2-G8):

No.	Description	No.	Description
A	SW1 Terminator Resistor DIP switch		

3.8.1 Non- Galvanic Isolated Digital I/O Connectors (optional)

The non-galvanic isolated GPIO Expansion headers have the following pinout:
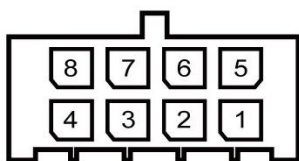
GPIO1:

Pin #	Signal	Description	Voltage			Current Max.	GPIO Kernel	GPIO Bank/IO
			Min.	Typ.	Max.			
1	GPIO1A	DIG_IN1/OUT1	1.65V	3.3V	3.6V	0.33mA	161	6_1
2	GPIO1B	DIG_IN2/OUT2	1.65V	3.3V	3.6V	0.33mA	42	2_10
3	NC							
4	GND	Common Ground						
5	GPIO1C	DIG_IN5/OUT5	1.65V	3.3V	3.6V	0.33mA	1	1_1
6	GPIO1D	DIG_IN5/OUT6	1.65V	3.3V	3.6V	0.33mA	41	2_9
7	NC							
8	VCC	Supply output		12V				

GPIO2:

Pin #	Signal	Description	Voltage			Current Max.	GPIO Kernel	GPIO Bank/IO
			Min.	Typ.	Max.			
1	GPIO2A	DIG_IN1/OUT1	1.65V	3.3V	3.6V	0.33mA	164	6_5
2	GPIO2B	DIG_IN2/OUT2	1.65V	3.3V	3.6V	0.33mA	165	6_4
3	NC							
4	GND	Common Ground						
5	GPIO2C	DIG_IN5/OUT5	1.65V	3.3V	3.6V	0.33mA	162	6_2
6	GPIO2D	DIG_IN5/OUT6	1.65V	3.3V	3.6V	0.33mA	163	6_3
7	NC							
8	VCC	Supply output		12V				

Header on TEK3-IMX6: Molex 43045-0800 (8-pin Micro-Fit 3.0).
Cable receptacle: Molex 43025-0800 (8-pin Micro-Fit 3.0) plug with crimp contact Molex 43030-0007.

3.8.2 Non- Galvanic Isolated Serial Port (RS-XXX) (optional)

The dual 4-wire non-galvanic isolated serial port are configured as follows: the primary and the secondary serial port can only be used as a standard RS-232.
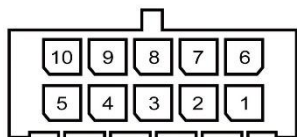
RS-232 + RS-232:

Pin #	Signal	Description	Device
1	GND	Ground	
2	SERIAL1A_TXD	Port#1A Transmit data (output)	ttymxc0
3	SERIAL1A_RXD	Port#1A Receive data (input)	ttymxc0
4	SERIAL1A_RTS	Port#1A Request-to-send (output)	ttymxc0
5	SERIAL1A_CTS	Port#1A Clear-to-send (input)	ttymxc0
6	GND	Ground	
7	SERIAL1B_TXD	Port#1B Transmit data (output)	ttymxc1
8	SERIAL1B_RXD	Port#1B Receive data (input)	ttymxc1
9	SERIAL1B_RTS	Port#1B Request-to-send (output)	ttymxc1
10	SERIAL1B_CTS	Port#1B Clear-to-send (input)	ttymxc1

NOTE: SERIAL1A port can act by default as serial debug console.

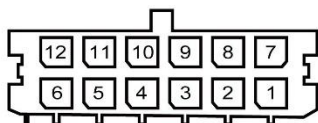Header on TEK3-IMX6: Molex 43045-1000 (10-pin Micro-Fit 3.0).
Cable receptacle: Molex 43025-1000 (10-pin Micro-Fit 3.0) plug with crimp contact Molex 43030-0007.

3.8.3 Non- Galvanic Isolated CAN Bus Connector (CANBus) (optional)

The non-galvanic isolated CAN Bus interfaces can be configured as follows: enabling or disabling of CAN Bus terminator resistor will require to open the device and adjust the internal SW1 Terminator Resistor DIP switch settings on the TEP I/O Expansion board. The SW1 DIP switch can be found at location "A" in chapter 3.8. Non-Galvanic Isolated Connectors (TEK3-IMX6x-Rxx-Exx-Lxxx-XS20-xxxx) (optional) of this manual.

SW1:

Pin #	ON	OFF (default)
1-8	Enable CAN1A Terminator Resistor	Disable CAN1A Terminator Resistor
2-7	Enable CAN1A Terminator Resistor	Disable CAN1A Terminator Resistor
3-6	Enable CAN1B Terminator Resistor	Disable CAN1B Terminator Resistor
4-5	Enable CAN1B Terminator Resistor	Disable CAN1B Terminator Resistor

CANBus:

Pin #	Signal	Description	Interface
1	GND_CAN	Ground for CAN	
2	CAN1A_TERM_N	To enable CAN1A Termination, bridge with CAN1A_N	can0
3	CAN1A_P	CAN Bus 1A high (-24~+24V)	can0
4	CAN1A_N	CAN Bus 1A low (-24~+24V)	can0
5	CAN1A_TERM_P	To enable CAN1A Termination, bridge with CAN1A_P	can0
6	NC		
7	GND_CAN	Ground for CAN	
8	CAN1B_TERM_N	To enable CAN1B Termination, bridge with CAN1B_N	can1
9	CAN1B_P	CAN Bus 1B high (-24~+24V)	can1
10	CAN1B_N	CAN Bus 1B low (-24~+24V)	can1
11	CAN1B_TERM_P	To enable CAN1B Termination, bridge with CAN1B_P	can1
12	NC		

Header on TEK3-IMX6: Molex 43045-1200 (12-pin Micro-Fit 3.0).
Cable receptacle: Molex 43025-1200 (12-pin Micro-Fit 3.0) plug with crimp contact Molex 43030-0007.

3.9. RST Button

The TEK3-IMX6 features a "RST" button for system reset.

3.10. S1 Button

The TEK3-IMX6 by default boots the unit from internal flash storage (eMMC). By pressing the "S1" button before applying power to the unit and keeping the button pressed for 10 seconds, the unit will boot from an alternative boot media, such as a microSD card. The primary and alternative booth media are determined by internal DIP switch settings. Please see section 4.5. SWITCH1 Boot Mode DIP Switch for more details.

3.11. Micro-SIM Connector

The TEK3-IMX6 features an external Micro-SIM cardslot for use by 3G/4G/LTE wireless module.

NOTE: This cardslot can be only used by a mini-PCIe 3G/4G/LTE module installed into the MPCIE1 connector. The MPCIE1 connector can be found at location "B" in chapter 4. Internal Connectors and Expansion Options of this manual. No mini-PCIe 3G/4G LTE module is included in this device (must be purchased separately, not sold by TechNexion).

3.12. MicroSD Connector

The TEK3-IMX6 features a standard microSD cardslot which is connected to the NXP i.MX6 integrated "Ultra Secured Digital Host Controller" (uSDHC).

The following main features are supported by uSDHC:
- Compatible with the MMC System Specification version 4.2/4.3/4.4/4.41/5.0.
- Conforms to the SD Host Controller Standard Specification version 3.0.
- Compatible with the SD Memory Card Specification version 3.0 and supports the "Extended Capacity SD Memory Card".
- Compatible with the SDIO Card Specification version 3.0.
- Supports 1-bit / 4-bit SD and SDIO modes

The MMC/SD/SDIO host controller can support a single MMC / SD / SDIO card or device.

3.13. USB OTG (Type-C) Connector

The TEK3-IMX6 has one USB Type-C connector (USB 2.0 signals only) that can be used to connect a host computer to the unit for programming and update purposes.
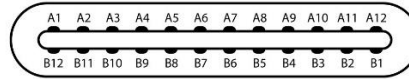
Pin #	Signal	Description	Pin #	Signal	Description
A1	GND	Ground	B1	GND	Ground
A2	NC		B2	NC	
A3	NC		B3	NC	
A4	VBUS	5V Universal Serial Bus Power	B4	VBUSD	5V Universal Serial Bus Power
A5	CC1	OTG detection signal	B5	CC2D	OTG detection signal
A6	USB_D+	USB differential pair signal port 1	B6	USB_D+	USB differential pair signal port 2
A7	USB_D-		B7	USB_D-	
A8	NC		B8	NC	
A9	VBUS	5V Universal Serial Bus Power	B9	VBUSD	5V Universal Serial Bus Power
A10	NC		B10	NC	
A11	NC		B11	NC	
A12	GND	Ground	B12	GND	Ground

3.14. LED Light Indicator

The TEK3-IMX6 has four programmable LED Light indicators.

LED #	Color	GPIO Kernel	GPIO Bank/IO
1	Green	GPIO 94	3_30
2	Green	GPIO 90	3_26
3	Green	GPIO 8	1_8
4	Green	PWM1 9	1_9

3.15. Antenna Holes

There are two antenna holes available (on the rear side). They come fitted with breakaway metal tabs. In order to utilize them, the tabs must be removed by carefully using pincers or pliers.

4. Internal Connectors and Expansion Options

Rear view (opened device) without the I/O Expansion and Power Expansion modules:
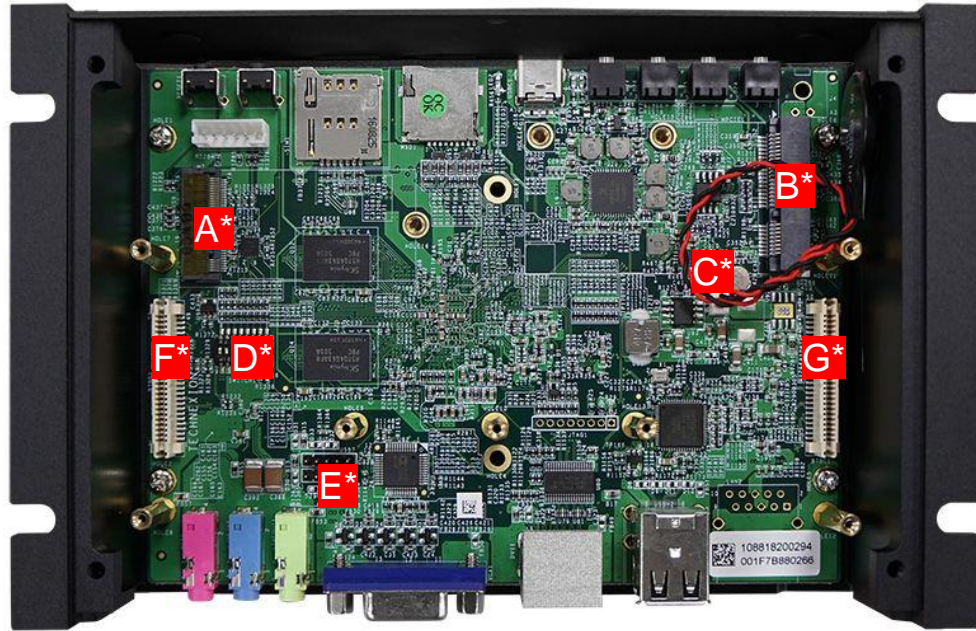
Internal Connectors and Switches:

No.	Description	No.	Description
A*	M.2 KEY-B slot (SATA + USB)	E*	USB (2 port) header
B*	mini-PCIe connector (PCIe + USB)	F*	I/O Expansion module connector
C*	RTC Battery connector	G*	Power Expansion module connector
D*	SWITCH1 Boot mode DIP switch		

NOTE: Items marked with * are accessible only after removing the I/O Expansion and Power Expansion modules.

4.1. M.2 KEY-B Slot

The TEK3-IMX6 has an internal M.2 connector (Marked A). TEK3-IMX6Q-Rxx-Exx-Lxxx-xxxx-xxxx supports SATA and USB signals. On the other hand, TEK3-IMX6S-Rxx-Exx-Lxxx-xxxx-xxxx or TEK3-IMX6U-Rxx-Exx-Lxxx-xxxx-xxxx support USB signals only.

4.2. Mini-PCIe Connector

The TEK3-IMX6 has an internal mini-PCIe connector for full or half size cards (Marked B). It supports PCIe and USB signals.

4.3. RTC Battery Connector

The TEK3-IMX6 features an internal RTC backup battery connector (Marked C).

Pin #	Signal	Description
1	GND	Ground
2	RTC_VCC	3V (connect to standard CR2032 battery)

4.4. USB Header

The TEK3-IMX6 has an internal USB (2 port) header (USB 2.0 signals only) (Marked E).

USB6 / USB7:

Pin #	Signal	Description
1	VBUS	5V Universal Serial Bus Power
2	USB_D-	Universal Serial Bus differential pair signal
3	USB_D+	port 1 / port 2
4	GND	Ground
5	GND	Ground

4.5. SWITCH1 Boot Mode DIP Switch

The TEK3-IMX6 has an internal SWITCH1 Default Boot Mode DIP switch for S1 boot select button (Marked D).

Pin #	eMMC	microSD (default)	SATA*
1-16	OFF	ON	OFF
2-15	OFF	ON	-
3-14	ON	OFF	ON
4-13	ON	OFF	-
5-12	ON	OFF	-
6-11	OFF	OFF	OFF
7-10	ON	ON	OFF
8-9	OFF	OFF	OFF

NOTE: SATA boot mode is available only on the TEK3-IMX6Q-Rxx-Exx-Lxxx-xxxx-xxxx.

5. Mounting

This section describes the mounting procedures for the TEK3-IMX6. The material in area of the mounting must provide sufficient strength for safe mounting of this device.

5.1. Surface Mounting

There are 4 mounting holes (M5) on the front side of the device required for surface mounting. Four M4 or M5 screws with at least 8mm head-to-tip length are required to secure this device to the surface.
Top view:

5.2. DIN Mounting

The device can be mounted on a DIN rail by using a DIN-rail bracket. There are four mounting holes (M3) on the rear side of the device required for DIN bracket mounting (30mm DIN rail standard). Secure the DIN bracket to the back of this device by using two M3 screws with at least 5mm head-to-tip length.
Bottom view:

6. Ordering Information

The TEK3-IMX6 is available in several configurations. Please contact your TechNexion sales contact window or distributor for options and availability details.

6.1. Custom Part Number Rule

The TEK3-IMX6 can be ordered in custom tailored configuration to meet special application requirements and conditions according to the following custom part number creation rules.
Custom part numbers carry minimum order quantities (MOQ). Please connect with your TechNexion distributor or account manager for conditions and availability. Part number format:

TEK3-IMX6x-Rxx-Exx-Lxxx-xxxx-xxxx

Interface	Code	Description
Processor	IMX6S	NXP i.MX6Solo
	IMX6U	NXP i.MX6DualLite
	IMX6Q	NXP i.MX6Quad
Memory	R05	512MB DDR3
	R10	1GB DDR3
	R20	2GB DDR3
	R40	4GB DDR3
Storage	E04	eMMC 4GB
	E08	eMMC 8GB
	EXX	eMMC other capacity
Power Expansion	L112	TXR-P1-12V-LAN1 (12V 3A)
	L124	TXR-P1-24V-LAN1 (24V 3A)
	L130	TXR-P1-1030V-LAN1 (8-36V 5A)
	LPOE	TXR-P1-12V-POE1 (12V 3A) or (PoE 802.3at)
I/O Expansion	-	-
	XS20	2x RS-232 + 2x CAN + 8x GPIO
	XG20	2x RS-232 + 2x CAN + 8x GPIO (Galvanic Isolated)
Custom ID	XXXX	Custom Part number ID for customized software loader and special component (BOM)

6.2. Standard Package Contents

Item	Partnumber	Description
1	TEK3-IMX6	Fanless box PC computing system with NXP i.MX6
2	Accessoires	1x plastic washer (for M.2 card)
		1x screw (M3) (for M.2 card)
		1x mini-PCIe screw (M2)
		1x hexagonal bolt
		1x rubber feet pad set
		1x DC power latch cable (2-pin Micro-Fit 3.0)

NOTE: Pack contents might vary depending on your ordered configuration.

7. Important Notice

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8. DISCLAIMER

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