

## TEK3-BSW Quickstart Guide



### 1 Safety Precautions

Thank you for purchasing a TechNexion TEK series device. This installation guide will be helpful in the installation, wiring and inspection of your TechNexion embedded fanless box PC. Before using the product, please read this guide to ensure correct use. You should thoroughly understand all safety precautions before proceeding with the installation, wiring, and operation. Place this instruction sheet in a safe location for future reference. The following suggestions will help you.

#### 1.1 Storage and Installation

- 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 or 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. This product is designed for specific applications and needs to be installed by qualified personnel.
- Do not drop, knock, or shake the device. Rough handling can break internal circuit boards and fine mechanics.
- 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.

#### 1.2 Wiring

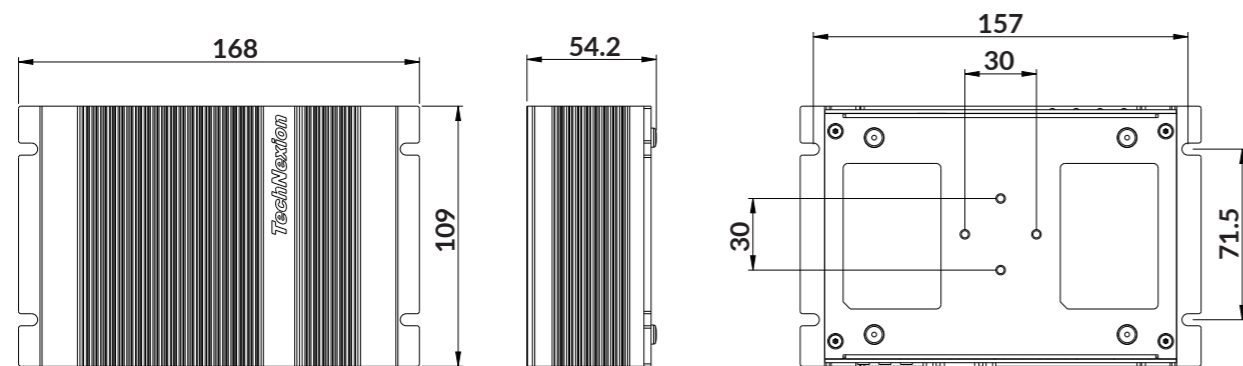
- Make sure that the available power source matches the required input power of the device. Failure to observe this caution may result in electric shock or fire.
- Do not power the unit by DC input when you apply power over the PoE (RJ45).

#### 1.3 Maintenance and Inspection

- Do not touch any internal or exposed parts of the device as electrical shock may result.
- Do not open the device while power is on. Otherwise electrical shock may result.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the device.
- Be sure the ventilation holes are not obstructed during operation. Otherwise malfunction may result due to bad ventilation or overheating.

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.

### 2 Dimensions



Unit : mm

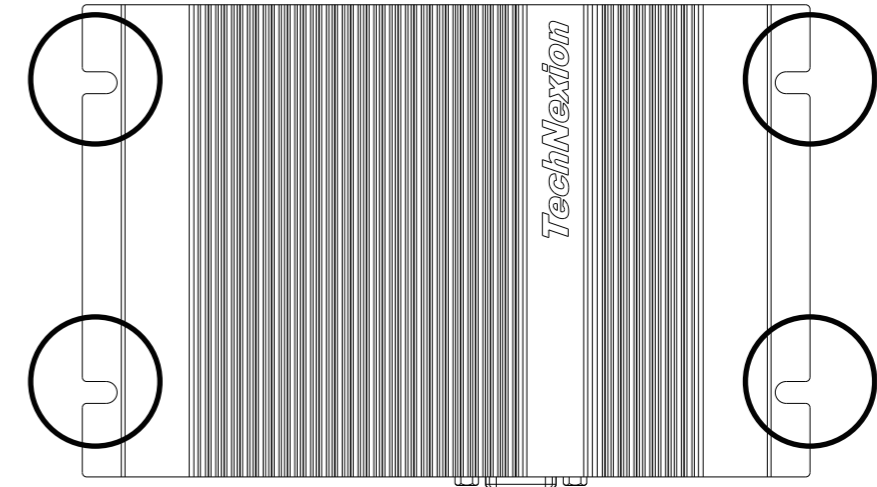
### 3 Installation Instructions

This section describes the mounting procedures for TEK series device. The material in the mounting area must provide sufficient strength for support of this embedded box PC.

#### 3.1 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.

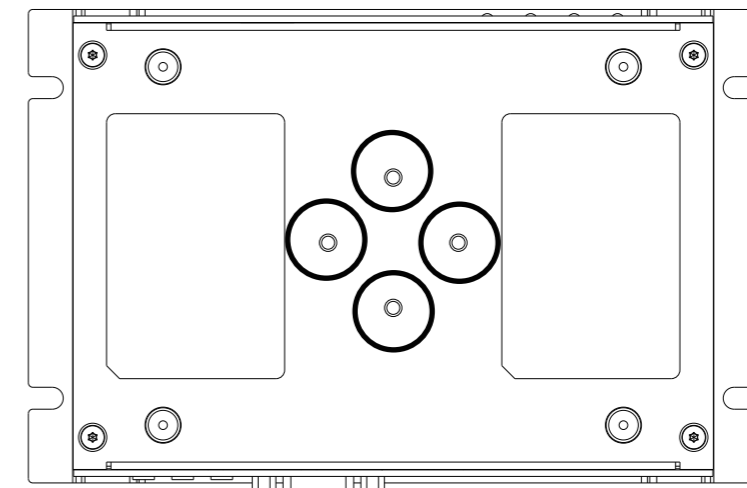
Top view:



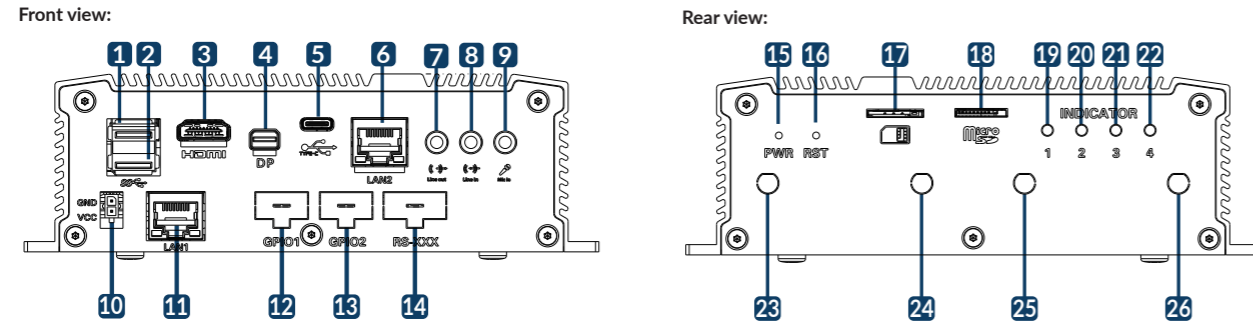
#### 3.2 DIN Mounting

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:



## 4 External Connectors



No.	Description	No.	Description
1	USB Host connector	14	RS-XXX (Serial Port) connector (optional)
2	USB Host connector	15	Power button
3	HDMI connector	16	Reset button
4	miniDP connector	17	Micro-SIM cardslot
5	USB OTG (Type-C) connector	18	MicroSD cardslot
6	LAN2 RJ45 connector	19	LED Light 1 indicator
7	3.5mm jack Line out	20	LED Light 2 indicator
8	3.5mm jack Line in	21	LED Light 3 indicator
9	3.5mm jack Mic in	22	LED Light 4 indicator
10	Power Input connector	23	Antenna hole
11	LAN1 RJ45 connector	24	Antenna hole
12	GPIO1 connector (optional)	25	Antenna hole
13	GPIO2 connector (optional)	26	Antenna hole

## 5 Additional I/O Connectors: GPIO1, GPIO2, and RS-XXX (optional)

This product is available with three optional connectors: GPIO1, GPIO2, and RS-XXX that can be ordered in either a galvanic isolated or non-galvanic isolated version.

### 5.1 Galvanic Isolated Connectors Pin Definition (TEK3-xxxx-Rxx-Lxxx-xxx-xxxx-XG21-xxxx-xxxx) (optional)

#### 5.1.1 Galvanic Isolated Serial Port Connector (RS-XXX) (optional)

The dual 4-wire galvanic isolated serial port is set by default as follows: The primary and secondary serial ports are both set as RS-232 during manufacturing. For setting details of TEK3-BSW serial ports in other modes, please refer to the TEK3-BSW HARDWARE MANUAL.

RS-XXX:

Port	Pin #	RS-232 + RS-232 (default)	RS-232 + RS-422	RS-232 + RS-485	Device
	1	GND	GND	GND	
	2	SERIAL1A_TXD	SERIAL1A_TXD	SERIAL1A_TXD	COM1
	3	SERIAL1A_RXD	SERIAL1A_RXD	SERIAL1A_RXD	COM1
	4	SERIAL1A_RTS	SERIAL1A_RTS	SERIAL1A_RTS	COM1
	5	SERIAL1A_CTS	SERIAL1A_CTS	SERIAL1A_CTS	COM1
	6	GND	GND	GND	
	7	SERIAL1B_TXD	SERIAL1B_TXD+	SERIAL1B+	COM2
	8	SERIAL1B_RXD	SERIAL1B_RXD-	NC	COM2
	9	SERIAL1B_RTS	SERIAL1B_RXD+	NC	COM2
	10	SERIAL1B_CTS	SERIAL1B_TXD-	SERIAL1B-	COM2

Header: Molex 43045-1012 (10-pin Micro-Fit 3.0).  
Cable receptacle: Molex 43025-1000 (10-pin Micro-Fit 3.0) plug with crimp contact Molex 43030-0007.

#### 5.1.2 Galvanic Isolated Digital I/O Connectors (GPIO1 / GPIO2) (optional)

For detailed settings information of the TEK3-BSW GPIO ports, please refer to the TEK3-BSW HARDWARE MANUAL.

GPIO1/GPIO2:

Port	Pin #	GPIO1 Signal	GPIO1 Description	GPIO2 Signal	GPIO2 Description	Voltage
	1	GPIO1A	DIG_IN1	GPIO2A	DIG_IN1	Max. 5.25V
	2	GPIO1B	DIG_IN2	GPIO2B	DIG_IN2	Max. 5.25V
	3	GND_DIO	Ground for digital I/O	GND_DIO	Ground for digital I/O	
	4	GND	Common Ground	GND	Common Ground	
	5	GPIO1C	DIG_OUT5	GPIO2C	DIG_OUT5	Max. 12.39V
	6	GPIO1D	DIG_OUT6	GPIO2D	DIG_OUT6	Max. 12.39V
	7	VCC_DIO	Supply input for digital I/O	VCC_DIO	Supply input for digital I/O	Max. 12.39V
	8	VCC	Supply output	VCC	Supply output	12V

Header: 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.

### 5.2 Non-Galvanic Isolated Connectors Pin Definition (TEK3-xxxx-Rxx-Lxxx-xxx-xxxx-XS21-xxxx-xxxx) (optional)

#### 5.2.1 Non-Galvanic Isolated Serial Port Connector (RS-XXX) (optional)

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

RS-XXX:

Port	Pin #	RS-232 + RS-232	Device
	1	GND	
	2	SERIAL1A_TXD	COM1
	3	SERIAL1A_RXD	COM1
	4	SERIAL1A_RTS	COM1
	5	SERIAL1A_CTS	COM1
	6	GND	
	7	SERIAL1B_TXD	COM2
	8	SERIAL1B_RXD	COM2
	9	SERIAL1B_RTS	COM2
	10	SERIAL1B_CTS	COM2

Header: 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.

#### 5.2.2 Non-Galvanic Isolated Digital I/O Connectors (GPIO1 / GPIO2) (optional)

For detailed settings information of the TEK3-BSW GPIO ports, please refer to the TEK3-BSW HARDWARE MANUAL.

GPIO1/GPIO2:

Port	Pin #	GPIO1 Signal	GPIO1 Description	GPIO2 Signal	GPIO2 Description	Voltage
	1	GPIO1A	DIG_IN1/OUT1	GPIO2A	DIG_IN1/OUT1	3.3V
	2	GPIO1B	DIG_IN2/OUT2	GPIO2B	DIG_IN2/OUT2	3.3V
	3	NC		NC		
	4	GND	Common Ground	GND	Common Ground	
	5	GPIO1C	DIG_IN5/OUT5	GPIO2C	DIG_IN5/OUT5	3.3V
	6	GPIO1D	DIG_IN6/OUT6	GPIO2D	DIG_IN6/OUT6	3.3V
	7	NC		NC		
	8	VCC	Supply Output	VCC	Supply Output	12V

Header: 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.

## 6 LED Light Indicators

The TEK3-BSW has four programmable LED Light indicators.

INDICATOR:

LED#	Color	PCB Location	Registered Address
1	Green	LED-D12	0xFED8C400_BIT1(Memory)
2	Green	LED-D11	0x99_BIT7(SIO)
3	Green	LED-D10	0x81_BIT0(SIO)
4	Green	LED-D9	0xE1_BIT4(SIO)

Note: LED Light 4 indicator is set as Power LED during manufacturing. The Power LED Light indicator is lit, when the system is powered on.

## 7 Software and Driver Installation

The unit is by default preloaded with software that can download and install a selection of Linux OS images over hardwired network. Simply connect a display to the unit through the miniDP or HDMI connector and a network through the Ethernet LAN RJ45 connector and power it up, then follow the steps on the screen to load the software. Local proxies will interfere with this process. For more information, go to our Knowledge Base at: <https://www.technexion.com/support/knowledge-base/>

To download drivers for the Windows operating systems, go to our Download Center at: <https://www.technexion.com/support/download-center/>  
For more information about installing and configuring the Windows operating systems, see: <https://msdn.microsoft.com/en-us/>

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