

TFi Gateway Data Hub System

The TFi Data Hub is a wireless solution for Industrial IoT (IIoT) sensors, enabling non-invasive sensor deployments by reducing the complexity of wiring infrastructure. This translates to 50% cost saving on cabling and installation and 80% less time for deployment. It is retrofittable to a variety of existing sensors in the market.

Technical Specifications

Gateway Data Hub, TURIN-1



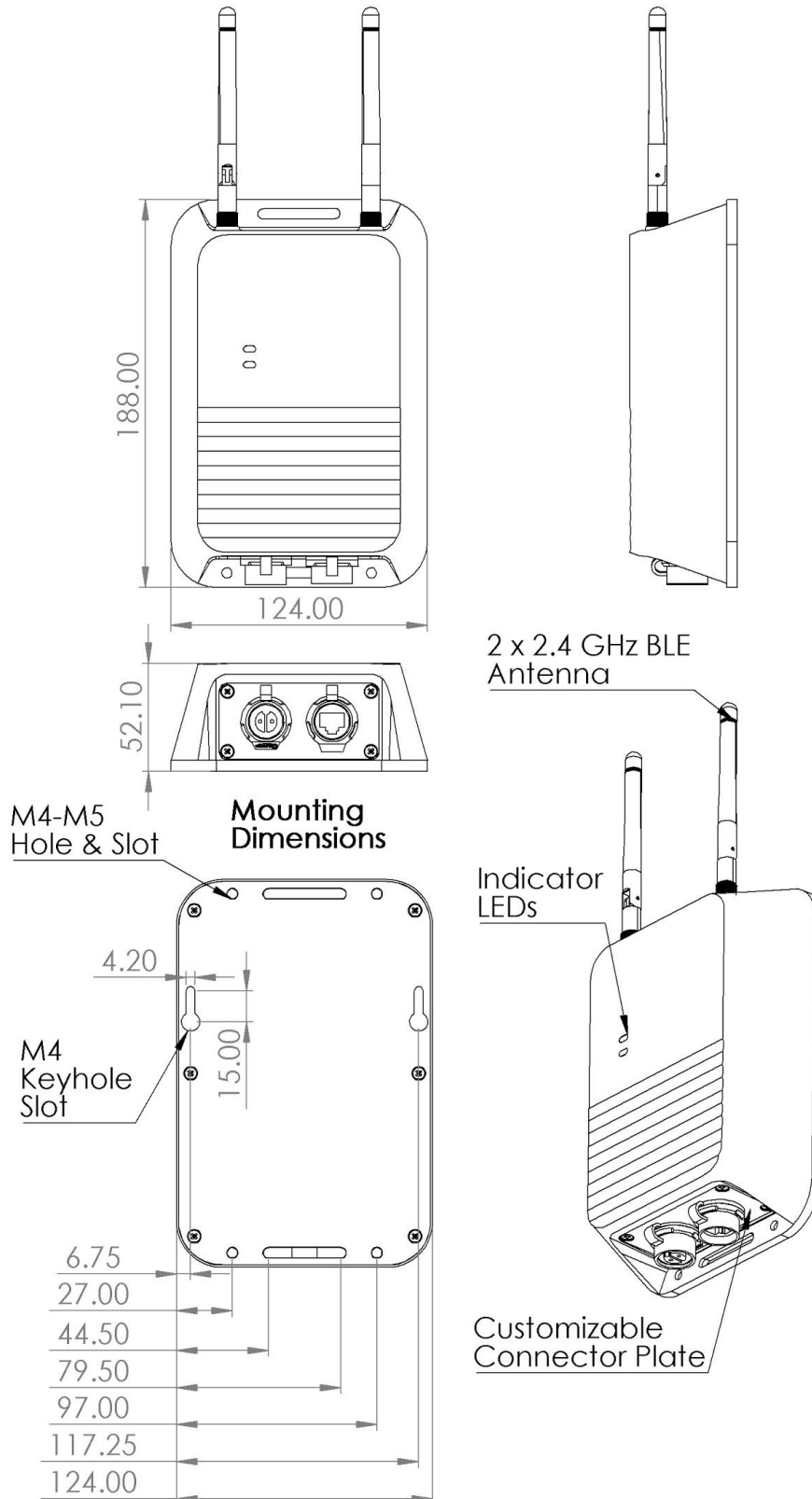
Connectivity	1x USB 2.0 ports (internal)	supporting peripherals such as 5G & WIFI dongles
	1x USB 3.0 ports (internal)	supporting peripherals such as 5G & WIFI dongles
	1x Gigabit Ethernet	supporting LAN connections & output protocols (MODBUS/Web Services etc.)
	WiFi	supporting LAN connections & output protocols (MODBUS/Web Services etc.)
	Sensors Supported	up to 32+ Sense Modules depending on communication rate (1 Hz)
	Encryption	HTTPS, AES 128 <i>*Customizable</i>
Edge Computing	MCU	Edge computing enabled, Linux Based Operating System
	Watchdog	Realtime hardware based+software watchdog feature
Input Power	DC Source	12VDC, 3A
Dimension	Main Body	188mm x 124mm x 52mm (0.4kgs)

**Data is not guaranteed, and is provided for reference purposes only.*

MECHANICAL SPECIFICATIONS

Gateway DataHub

All Dimensions in mm



Sense, TURIN-1



Power Performance

Power Source 2 x AA Battery (1.5V)

Built-in Sensors

3-axis Accelerometer LISDH12	<i>Max Sensor Sampling Rate Support: 1.34KHz</i> <i>Resolution Options: 8-bit, 10-bit, 12-bit</i> <i>Output Options: Acceleration/Velocity RMS, Standard Deviation, FFT Spectrum</i>
Noise Level Detection ICS-40310	<i>Max Audio Sampling Rate Support: 40KHz</i> <i>Resolution Options: 12-bit, 14-bit</i> <i>Output Options: Average, Standard Deviation, Peak-to-Peak, FFT Spectrum</i>
Environmental sensing BME280	<i>Max Sensor Sampling Rate Support: 10Hz</i> <i>Output Options: Average, Maximum, Minimum</i>
TVOC* SGPC3	*Optional <i>Maximum Sensor Sampling Rate Support: 0.1Hz</i>

External Expansion

Interface Analog I/O, digital I/O, I²C, and SPI

Connectivity

Frequency	2.4GHz ISM, with built-in high gain antenna
Protocol	BLE 4/5
Transmission Rate	Up to 5Hz
Encryption	Proprietary + AES 128

Edge Computation

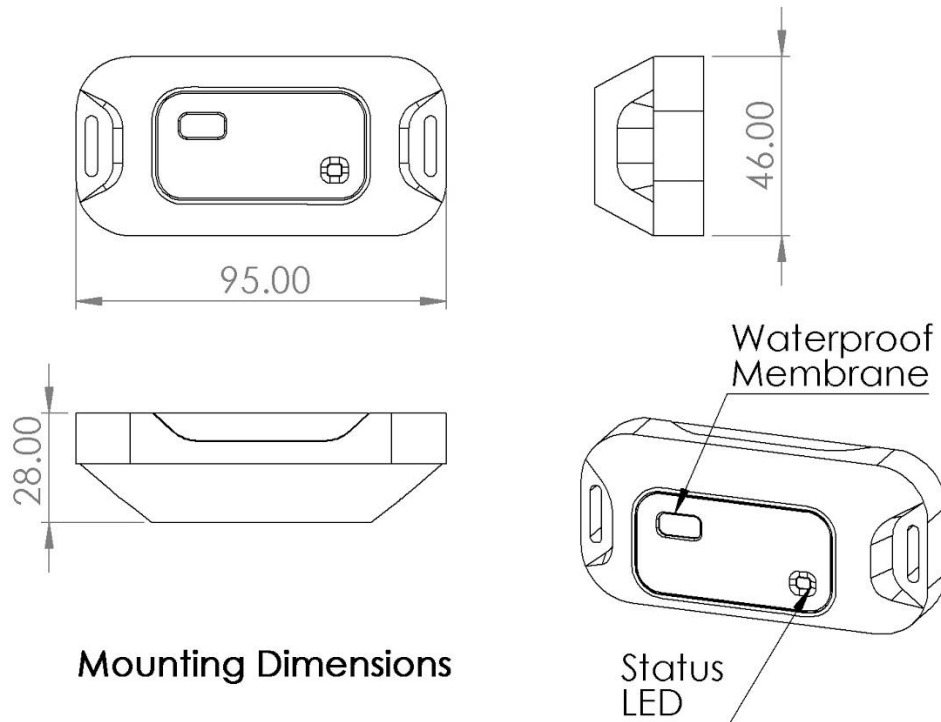
MCU ARM Cortex-M4, 512KB Flash, and 64KB RAM

Dimension

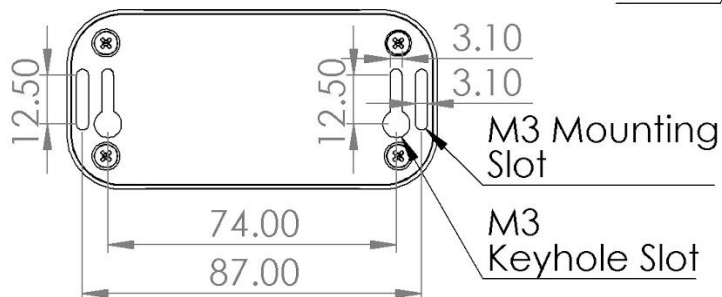
Main Body 95 x 46 x 28mm

Sense Dimensions

All dimensions in mm



Mounting Dimensions

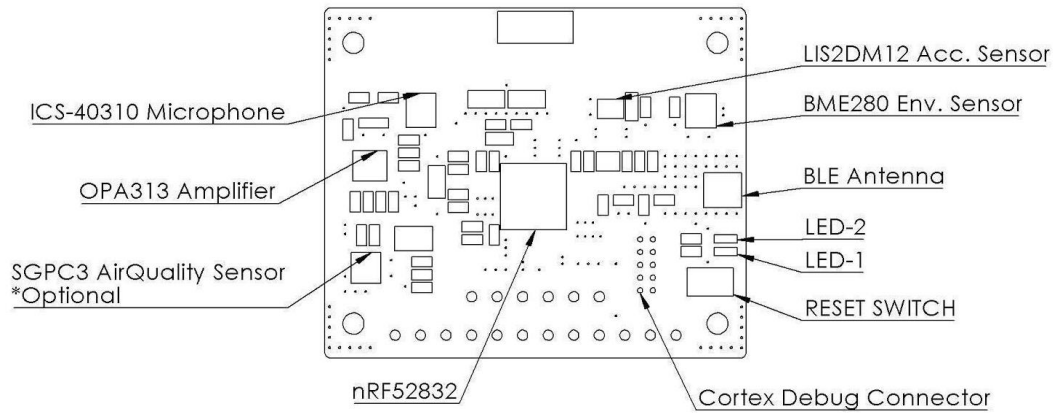


For unique mounting applications, adapter plates can be provided

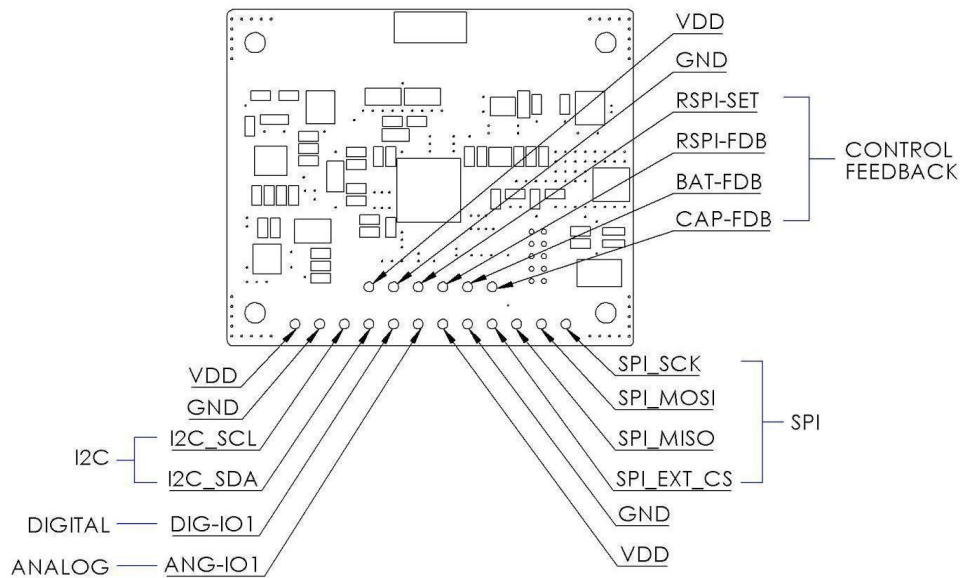
Mounting Considerations: Depending on the mounting surface, the sensor can be mounted using double sided adhesive tapes, zip ties or M3 bolts & screws (87mm pitch as shown in diagram above) Mounting brackets can be provided depending on the application.

SENSOR BOARD DIAGRAMS

SENSOR & COMPONENT LOCATIONS
TFi Sense PCB Top View



PINOUT DIAGRAM
TFi Sense PCB Top View



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SENSOR BOARD POWER CONSUMPTION

The power consumption of the TFi sensor board depends on its firmware configuration including the sampling rate of each sensor, BLE advisement rate, etc. For the **default firmware** [i.e., 25Hz 3-axis acceleration with standard deviation output, 1Hz environmental sensing with average output, 0.1Hz noise level detection with Max-Min output, and 1Hz BLE advisement @ 0dbm], the power consumption is 240 μ W [120 μ A @ 2V].