

SPEKIFIKASI IOT HARDWARE PLATFORM

# SIPORA



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# SIPORA

Sipora is a IoT controller box developed by Mertani to meet the challenges of industrial digitalization, providing flexibility for both on-site and remote monitoring via an application.

Designed with a minimalist and compact form, Sipora features an LCD touchscreen for effortless data monitoring. With hybrid monitoring capabilities—accessible both online via remote application and offline on-site—along with an expandable power capacity, Sipora ensures seamless, efficient, and adaptive industrial operations.

## Key features:

- Hybrid Monitoring
- Multi-Power Sourcing
- Multi Sensor-Connectivity
- Plug & Play
- Weather Resistance
- After Sales Support

## Plug and Play

We design our IoT product to be user-friendly for you.

- You don't need to do any coding/programming.
- No need for specialized technicians for installation or maintenance.
- It's already industrial and outdoor-grade, so there's no need to add special protection.



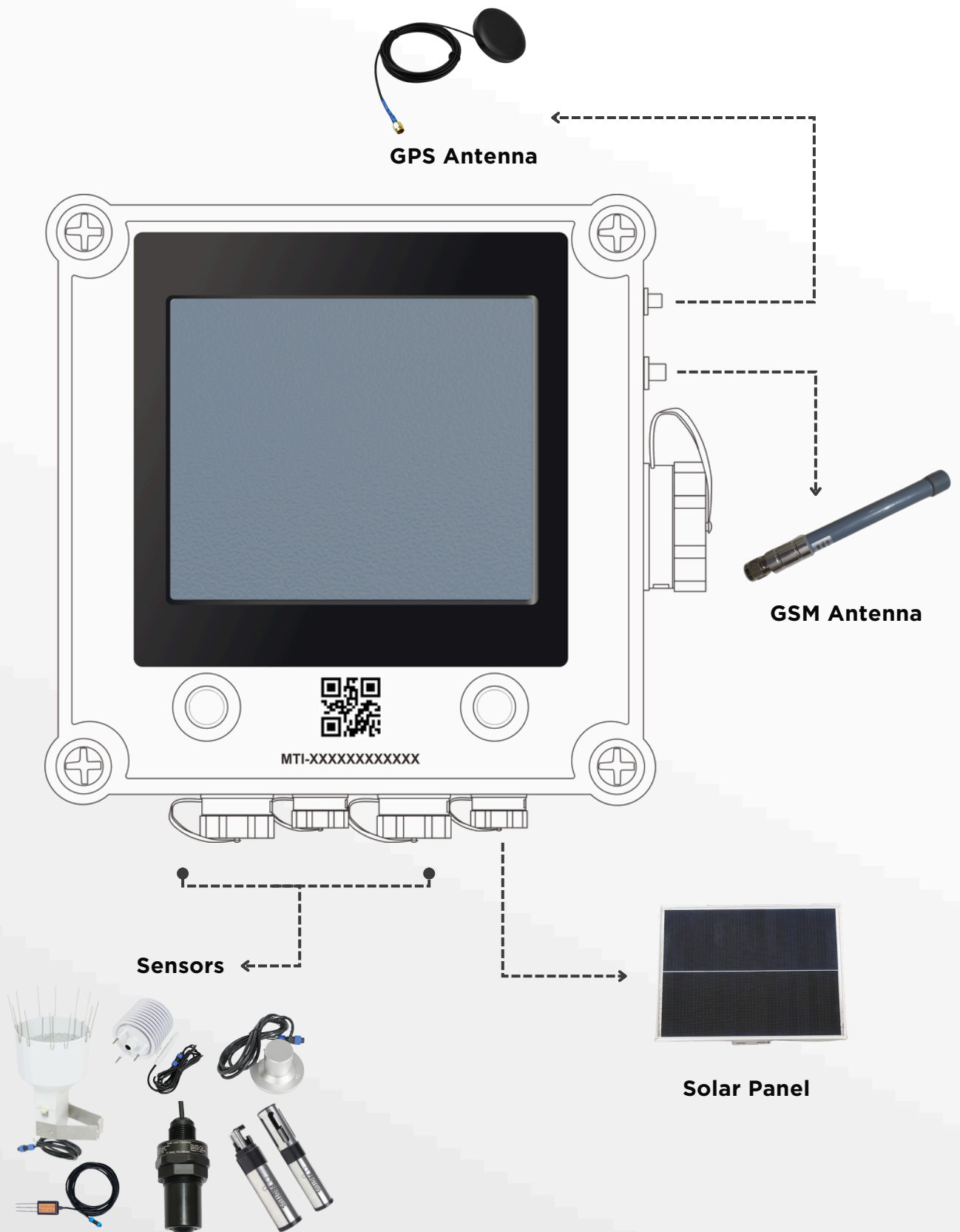
## DEVICE PART DETAILS



### Keterangan :

1. Antena GSM/LoRa (opsional)
2. QR code ID perangkat
3. LCD HMI 3.5 Inch
4. Tombol On/Off
5. Konektor output baterai
6. Konektor sensor rainfall
7. Konektor sensor universal (RS485, I2C, RS232, Serial TTL, One Wire, Grounding)
8. Konektor input baterai
9. Konektor 12 pin untuk akses perangkat
10. Tombol reset
11. Antena GPS/GNSS

## DEVICE SKETCH



## TECHNICAL SPESIFICATIONS

ENCLOSURE	
Protection	Weather resistant using additional panel box
Display	3.5 Inch LCD HMI
Material	ABS plastic
Temperature	From 0°C to +85°C
Dimension	15x14x9 cm
Weight	465.5 g
Button	<ul style="list-style-type: none"> <li>On/off button to turn the device on and off</li> <li>User button to reset the device</li> </ul>
Additional Feature	QR ID to make it easier to find the device

CONNECTIVITY	
GSM network	2G and 4G Frequency Bands: <ul style="list-style-type: none"> <li>LTE FDD:B1/B3/B5/B8/B40</li> <li>LTE TDD:B1/B3/B5/B8/B40</li> <li>GSM: 900/1800</li> <li>LTE Version: 3GPP E-UTRA Release 11</li> <li>GNSS GPS/GLONASS/BeiDou/Galileo/QZSS</li> </ul> Output Power: <ul style="list-style-type: none"> <li>Class 3 (23dBm±2dB) for LTE FDD</li> <li>Class 3 (23dBm±2dB) for LTE TDD</li> <li>Class 4 (33dBm ±2dB) for GSM 900MHz</li> <li>Class 1 (30dBm ±2dB) for GSM 1800MHz</li> </ul> Consumption: <ul style="list-style-type: none"> <li>20uA @Power off 3mA @Sleep, Typ. 22mA @Idle</li> </ul> Sensitivity: <ul style="list-style-type: none"> <li>FDD B1: -97dBm (10M)</li> <li>FDD B5: -95dBm (10M)</li> <li>FDD B3: -95dBm (10M)</li> <li>FDD B8: -94dBm (10M)</li> <li>TDD B41: -96dBm (10M)</li> <li>GSM 900: -109dBm</li> <li>GSM 1800: -109dBm</li> </ul>
LoRa	920-923 MHz for data transmission where signal is not available (optional)
Bluetooth	Bluetooth low energy for device setup or onsite data transfer
Wi-Fi	<ul style="list-style-type: none"> <li>802.11b/g/n</li> <li>Bit rate: 802.11n up to 150 Mbps</li> <li>A-MPDU and A-MSDU aggregation</li> <li>0.4 µs guard interval support</li> <li>Center frequency range of operating channel: 2412-2484 MHz</li> </ul>

PROCESSOR	
Main MCU	Cortex M4+ based low power

PORT	
Output Sensor	<ul style="list-style-type: none"> <li>3 port (default)</li> <li>&gt;10 (extend)</li> </ul>
Protocol	<ul style="list-style-type: none"> <li>RS485 modbus baud rate 2400bps-115.200bps (default)</li> <li>Digital pulse (default)</li> <li>I2C, RS232, serial TTL, and one-wire communication (additional feature)</li> </ul>

POWER	
Internal input/output	3.7V~4.2V, 2A
Internal baterai	3.7 Volt battery with a capacity of 6,000 mAh
Power supply	<ul style="list-style-type: none"> <li>Solar panel 20-50 WP</li> <li>External power supply DC 4.1 V</li> </ul>

ANTENNA	
Eksternal	<ul style="list-style-type: none"> <li>Main GSM antenna</li> <li>GNSS/GPS</li> </ul>
Internal	<ul style="list-style-type: none"> <li>GSM antenna</li> <li>2.4 GHz Wi-Fi antenna</li> </ul>
Optional	<ul style="list-style-type: none"> <li>LoRa antenna</li> <li>Wi-Fi external antenna</li> </ul>

MEMORY	
Internal	16 MB
External	up to 128 MB

DISPLAY	
Size	3.5 inch
Feature	Touchscreen
Mode Setting	2G/4G mobile network
Display	<ul style="list-style-type: none"> <li>Sensor parameters</li> <li>Signal strength and battery percentage</li> </ul>

MONITORING	
Data Transmission Interval	5 minutes, 10 minutes, 15 minutes, 30 minutes, 1 hour, and so on
Monitoring	Real-time monitoring

OTHER INFORMATIONS	
<ul style="list-style-type: none"> <li>Can be integrated with 20-50 WP solar panel</li> <li>Device warranty for 1 year (default)</li> </ul>	





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