

# T-AMS P

## Vehicle-mounted IoT Terminal



### Highlights

- 4G Support
- OTA Upgrade
- Wi-Fi Hotspot
- Large Storage
- Data Recording
- Bluetooth Support
- Abnormal Alarm
- Low Consumption
- Precise Positioning
- Cloud Management
- Protocol Anti-Tamper

### Introduction

T-AMS P, developed by IROOTECH , is a vehicle-mounted IoT terminal specifically designed for construction machinery , which can implement the functions of vehicle information collection, storage, and data reporting.

### Application Field

It is mainly used in construction machinery including cranes, excavators, mining trucks, and pump trucks.

### Certifications

CCC, CE, ISED, FCC, IC.

## Features

Time and Date	Automatic Time Calibration	Capable of automatic time calibration, keeping the time error within $\pm 5$ seconds in 24 hours.	⦿
	Time Synchronization	Supports obtaining time from the cloud platform and performing time synchronization.	⦿
		Performs time synchronization on the ECU through the CAN network (requires support from the vehicle manufacturer protocol).	○
Positioning Service	GNSS	Supports GPS/GLONASS positioning, as well as combined positioning of any combination of multiple systems.	⦿
		TTF (Time To First Fix) $\leq 325$	⦿
	Antenna Detection	With antenna open circuit detection and antenna short circuit protection.	⦿
	Positioning Accuracy	Horizontal positioning accuracy is $< 2.5$ m under CEP50.	⦿
Communication	Network Communication	<p>Frequency band information (China Version):            LTE FDD: B1/B3/B5            CDMA: BC0</p> <p>Maximum data transmission rate (China Version):            LTE FDD: 10Mbps (downlink) / 5Mbps (uplink)            EVDO: 3.1Mbps (downlink) / 1.8Mbps (uplink)            1X Advanced: 307.2Kbps (downlink/uplink)</p>	⦿

Communication	Network Communication	<p>Frequency band information (International Version):            LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28            LTE-TDD: B38/B39/B40/B41            WCDMA: B1/B2/B4/B5/B6/B8/B19            GSM: B2/B3/B5/B8</p> <p>Maximum data transmission rate (International Version):            LTE-FDD: 150 Mbps (downlink) / 50 Mbps (uplink)            LTE-TDD: 130 Mbps (downlink) / 30 Mbps (uplink)            DC-HSDPA: 42 Mbps (downlink)            HSUPA: 5.76 Mbps (uplink)            WCDMA: 384 kbps (downlink) / 384 kbps (uplink)            EDGE: 296 kbps (downlink) / 236.8 kbps (uplink)            GPRS: 107 kbps (downlink) / 85.6 kbps (uplink)</p>	<input checked="" type="radio"/>
	SIM Card	M2M SIM card	<input checked="" type="radio"/>
	Cellular Wireless Communication	Multi-standard 4G all-network access (4G/3G/2G) / global modules.	<input checked="" type="radio"/>
	Bluetooth Communication	Bluetooth BLE 5.0	<input checked="" type="radio"/>
	Wi-Fi	2.4G Wi-Fi	<input checked="" type="radio"/>
Data Acquisition	CAN	Collects data through 2-channel high-speed CAN.	<input checked="" type="radio"/>
	RS485	Collects data through 2-channel high-speed RS485 (compatible/optional).	<input type="radio"/>

Data Acquisition	Digital Acquisition	Collects data through 2-channel digital input.	<input checked="" type="radio"/>
Data Processing	Real-time Data Storage	The default capacity is 16GB, with configurable capacity.	<input checked="" type="radio"/>
	Data Encryption	Hardware encryption, local key storage, optional encryption chip.	<input type="radio"/>
	Data Retransmission	Supports resumable transmission.	<input checked="" type="radio"/>
	Data Interaction	Supports data export, parameter configuration, and local upgrade via USB.	<input checked="" type="radio"/>
Power Management	Input Voltage	DC 9~36V	<input checked="" type="radio"/>
	Rated Power	Normal operation: < 100mA@24V	<input checked="" type="radio"/>
		Standby: < 10mA@24V (supports ACC, CAN, RTC wake-up)	<input type="radio"/>
		Sleep: < 20uA@24V (only supports ACC, RTC wake-up)	<input checked="" type="radio"/>
	Working Mode	Minimum 2 working modes: working mode and standby mode.	<input checked="" type="radio"/>
		Sleep mode is optional based on needs.	<input type="radio"/>
Independent Operation	With the built-in 700mAh or 3000mAh lithium battery, the device can operate independently for up to 1 hour (with 700mAh) or 7 hours (with 3000mAh) after the external power supply is disconnected.	<input checked="" type="radio"/>	

Terminal Management	OTA	Firmware can be remotely upgraded via OTA.	◎
	Remote Machine Lock	Supports remote unlocking/locking of vehicles via wireless network.	◎
	Anti-dismantling	The device can send a handshake protocol through the CAN network to prevent unauthorized dismantling (manufacturer's protocol needed).	◎
	Self-check	Self-check performed during device startup. The system enters normal operating mode after the self-check is completed. The self-check includes the status of the power voltage, memory, positioning module, communication module, real-time clock, accelerometer, etc.	◎

Note: "◎" represents standard configuration, "○" represents optional configuration.

## Specifications

Dimensions (Length * Width * Height)	186.3mm * 81mm * 43.5 mm
Protection Level	IP67
Material	ABS (Plastic) + ADC (Die Cast aluminum)
Flame Retardant Rating	V0
Temperature	<p>Working Temperature: -40°C ~ 85°C, -20°C ~ 80°C(with battery)</p> <p>Storage Temperature: -40°C ~ +85°C</p>

<b>Humidity</b>	<b>Working Humidity: 5%~95%RH</b> <b>Storage Humidity: 0%~95%RH</b>
<b>Voltage</b>	<b>Working Voltage Range: 9 ~ 36V</b> <b>Nominal DC Power Supply: 12V/24V</b>  <b>With low voltage cut-off and anti-polarity reversal function</b>
<b>Power Consumption</b>	<b>Normal Operation &lt; 2.5W</b> <b>Standby &lt; 0.5W</b>
<b>Battery</b>	<b>700mAh/3000mAh</b>