



Accurate
positioning

22°43'59.57617"N 114°03'03.61546"E



P7

4G Smart Badge



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Revision History

Version	Revision Date	Author	Revision Content
V1.0	2024-8-29	Chenxian	Initial Version
V1.1	2025-2-12	Chenxian	Template modified, product pic added
V1.2	2025-10-9	Chenxian	Product appearance update, pic added

1. Product Introduction

The P7 is a dual-frequency single BDS/GPS RTK positioning smart ID card, supporting UWB positioning and Bluetooth positioning, enabling personnel positioning indoors without satellite signals. The device supports the JT/T 808 - 2013 "Communication Protocol and Data Format for Satellite Positioning System Terminals of Road Transport Vehicles," transmitting data to the platform via 4G. It is equipped with a vibration sensor, allowing the device to enter sleep mode when stationary. It also supports SOS alarm, TTS voice broadcast, battery level and time broadcast, and other functions.

This product is suitable for Smart Sanitation, Smart Campus, Smart Construction Site, Smart Elderly Care, and Smart Scenic Spots.

2. Product Features

4G Cat.1	Single BDS、GPS /Bluetooth/UWB
SOS One-Key Alert	Sleep Mode
TTS Voice Broadcast	Ultrasonic Craftsmanship
Contact Charging	

3. Product Specifications

Category	Item	Description
Device Features	4G Bands	LTE FDD B1/ 3/ 5/ 8
		LTE TDD B34/ 38/ 39/ 40/ 41
	Communication Method	TCP, UDP
	Bluetooth Features	Transmission Distance ≤30 meters
		Positioning Accuracy ≤5 meters

	UWB Features	Positioning Accuracy ≤ 50 centimeters
Electrical Characteristics	Built-in Battery	2500mAh, Charging Time ≤ 2.5 hours
	Charging Interface	Contact type, Type-C
	Charger	5V2A (charger is not supplied)
	Operating Voltage	3.4V ~ 4.3V
	Operating Current	Operating Mode ≤ 200 mA; Standby ≤ 3 mA
Mechanical Characteristics	Operating Temperature	-20°C ~ +75°C
	Storage Temperature	-40°C ~ +75°C
	Operating Humidity	10% ~ 85%RH, non-condensing
	IP Rating	IP66
	Dimensions	127×67×12 mm
	Device Weight	116g
	Material	PC+ABS
	Wearing Method	Lanyard Type
GNSS Features	Supported Constellations & bands	L1: BDS B1I B1C L5: B2A B2B B2I GPS L1+L5 dual-frequency bands(custom)
	Single Point Accuracy	Horizontal ≤ 1.5 m CEP
		Vertical ≤ 2.5 m CEP

	RTK Accuracy	Horizontal $\leq 1.0 \text{ cm} \pm 1 \text{ ppm CEP}$
		Vertical $\leq 1.5 \text{ cm} \pm 1 \text{ ppm } 0.1$
	Velocity	0.1 m/s CEP
	Time to First Fix	Cold Start: $\leq 50\text{s}$
		Hot Start: $\leq 10\text{s}$
		Reacquisition $\leq 10\text{s}$
	Channels	150 tracking channels
	Sensitivity	Tracking Sensitivity: -165dBm
		Acquisition Sensitivity: -159dBm
	Update Rate	1 ~ 20Hz (default 1Hz)
	Baud Rate	115200 ~ 460800bps (default 115200bps)
	Data Format	NMEA 0183
	Differential Data	RTCM3.3/3.2/3.1/3.0
Others	Explosion-Proof Certification	Can assist customers with explosion-proof certification

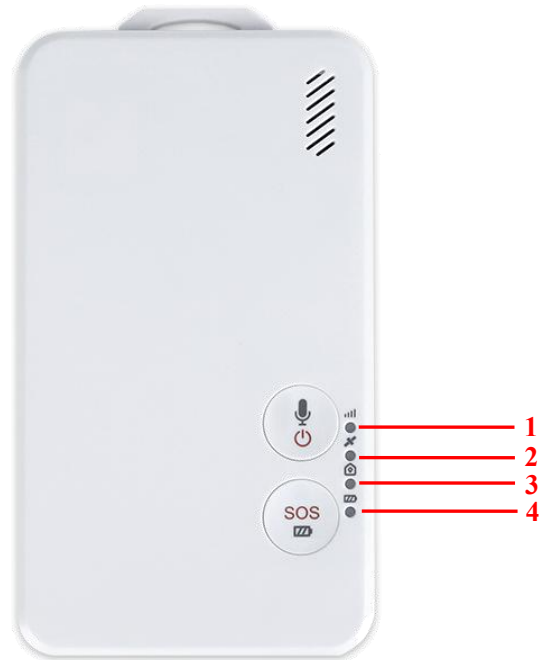
4. Main Functions

Classification	Item	Description	Status
Main Functions	RTK Positioning	This product supports the NTRIP protocol, achieving high-precision RTK positioning by receiving differential signals from base stations, with centimeter-level accuracy.	✓

	JT/T808	This product supports the Ministry of Transport industry standard JT/T 808-2013.	✓
	SMS Configuration	This product supports remote adjustment of device operating parameters via SMS, allowing users to easily configure the device without an internet connection, making operation convenient.	✓
	Serial Port Configuration	This product supports adjusting device working parameters via the external aviation head interface, providing a more flexible control method. (Requires the serial port tool provided by the manufacturer)	✓
	JT/T808 Configuration	This product supports adjusting device working parameters via the JT/T808 platform. Note: This function requires platform support.	✓
	Working Mode	Switch between two working modes: Enable Sleep / Disable Sleep.	✓
	Remote Upgrade	This product supports firmware remote upgrade.	✓
	Blind Zone Retransmission	When the device is offline, JT/T808 positioning data is saved locally. Once the network is restored, the data is automatically uploaded to the platform.	—

	Sleep Mode	The device supports vibration detection. It enters sleep mode by default after 120 seconds of no vibration, and automatically wakes up and starts working upon detecting vibration.	✓
	SOS Alarm	The product has an external SOS alarm button. Press and hold for 3 seconds to trigger the alarm and immediately send a data message to notify the platform.	✓
	Bluetooth Positioning	The product has a built-in Bluetooth module. When used with our company's Bluetooth beacons, it enables indoor Bluetooth positioning. (This function requires platform support)	✓
	UWB Positioning	The product has a built-in UWB module, enabling indoor positioning and reporting the location to the platform. (This function requires to work with our company's UWB beacons)	✓
	Note: Bluetooth and UWB can only be selected one at a time. (Status Description: ✓ indicates implemented, — indicates reserved)		

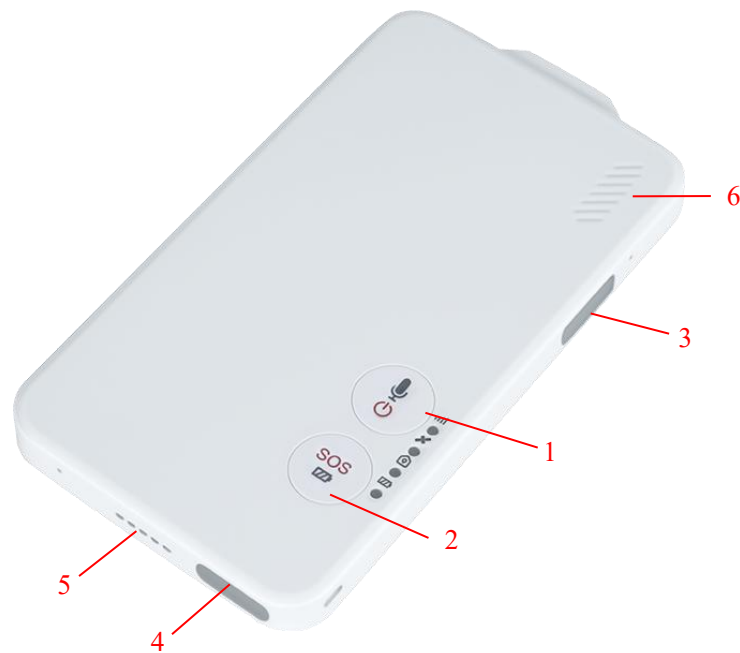
5. Indicator LED Definition



No.	Indicator LED	Color	Function Description	LED Status
1	Network LED	Blue	Searching Network/Arrears/No SIM Card	1 flash per second
			Network Registered Successfully	Steady On
			Connected to 808 Platform Successfully / or RTK Fixed Solution	1 flash every 5 seconds
2	Positioning LED	Green	2D Fix	Steady On
			No Fix	1 flash per second
			Single / Float / Fixed Solution	1 flash every 5 seconds
3	Bluetooth LED	Yellow	Reserved	—
			Reserved	—
4	PWR LED	Red	Charging	Steady On
			Charging Complete	Off

			Battery Level $\geq$ 20%	Off
			Battery Level $<$ 20%	1 flash per second
((Status Description: ✓ indicates implemented, — indicates reserved))				

6. External Interfaces

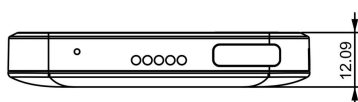
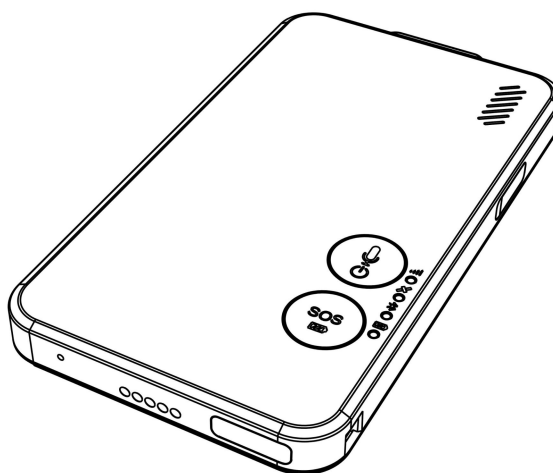
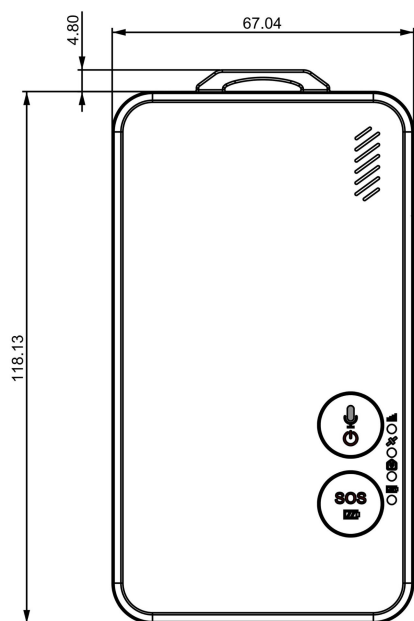


No.	Button Function	Trigger Condition	Status
1	Power OFF	Press and hold for 3 seconds	✓
	Power On	Press and hold for 3 seconds	✓
	TTS Voice Broadcast	Short Press	✓
2	Battery Level Broadcast	Short Press	✓
	SOS Alarm	Press and hold for 3 seconds	✓

No.	Interface Definition	Function Description	Status
3	SIM Card Slot	SIM card slot for communication	✓

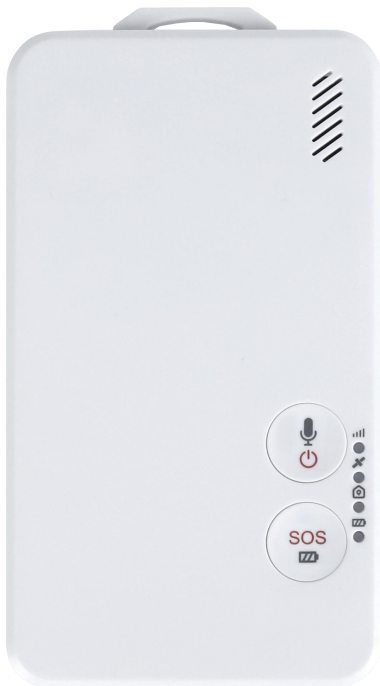
4	Type-C	Charging interface (Data transfer function requires manufacturer's hardware tool)	✓
5	Die thimble	Charging interface, Communication with charging	✓
6	Speaker Hole	Voice broadcast	✓

7. Dimension Diagram



名称: P7
单位: mm
误差: ± 0.2

8. Product Pictures



Front Viewo



Rear View



Side View



Bottom Side Veiw

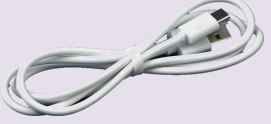


Third Angle View



Third Angle View

9. Packing List

No.	Item	Quantity	Unit	Remark	Pic
1	Smart Badge	1	Unit	Standard	
2	Type-C USB Cable	1	pcs	Optional	
3	Lanyard	1	pcs	optional	

10. After-Sales Service

(1) Within the warranty period, if the device is damaged due to non-human factors or product quality issues, please contact the agent promptly.

(2) Damage caused by customer disassembly or force majeure (such as floods, fires) will not be repaired.

(3) After the warranty period expires, repairs for product damage or malfunction due to use will require charging for the cost of repair materials.

(4) Free consultation and technical services are provided for product purchase, use, installation, etc.

11. Guide to Use

11.1 Insert SIM Card



After inserting the SIM card, press and hold the power button for 3 seconds to turn on the device.

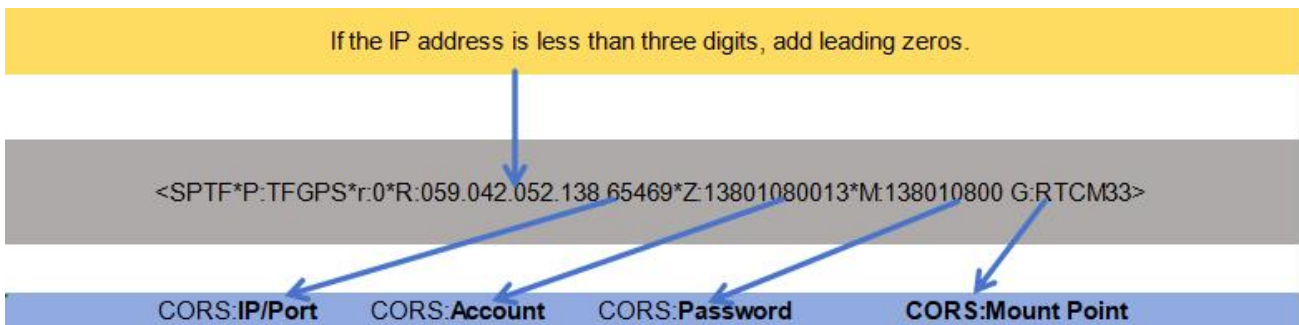
11.2 Charging Method

The device supports 5V2A charging.
The red light stays steady on while charging and turns off when fully charged. Full charge requires 2.5 hours.

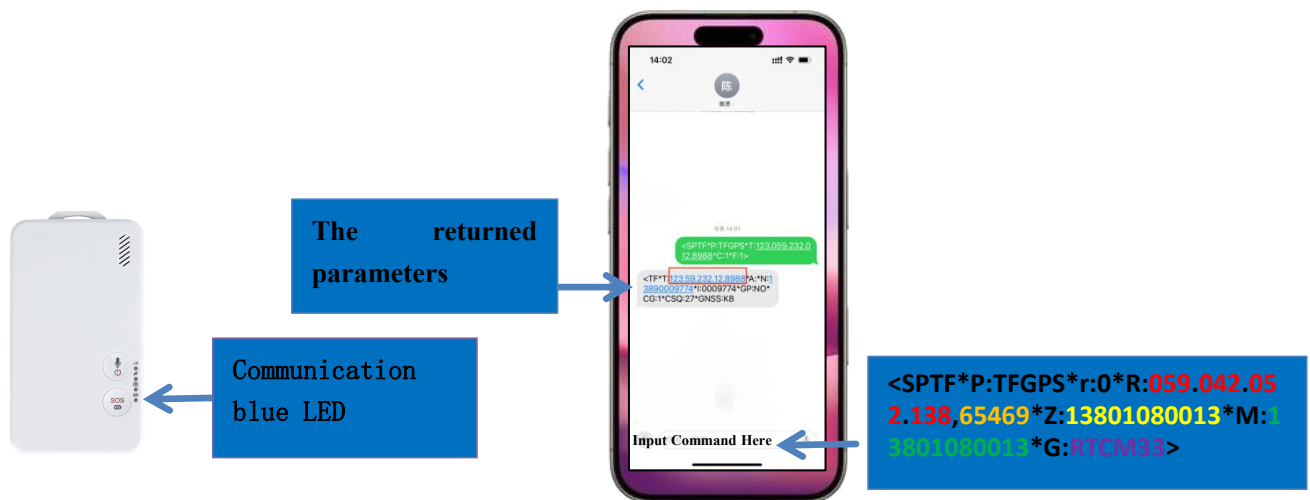


11.3 Setting NTRIP Account via Mobile SMS

- A. Press and hold the device's power button for 3 seconds until the device powers on. After the device starts, observe the communication blue light. If the blue light is steady on, it indicates the device has successfully recognized the SIM card and completed dial-up.
- B. Open the SMS editing interface on your phone. Send the command via SMS to the phone number of the SIM card in the device. After receiving the configuration command, the device will reply with a confirmation SMS, indicating the command was successfully received and executed.



"NTRIP Account Setting Command Format"



Example: The number of the SIM card inserted in the device is "1385555555". Use a mobile phone to edit the "NTRIP Account" setting command as the SMS content and send it to "1385555555". After receiving the SMS, the device will return a string of its own parameters, indicating successful configuration.

11.4 Setting JT/T808-2013 Platform via Mobile SMS

The method for configuring the data platform is the same as the operation in section "11.3".

Note: The platform needs to support the Ministry of Transport industry standard JT/T 808-2013 "Communication Protocol and Data Format for Satellite Positioning System Terminals of Road Transport Vehicles," otherwise the device cannot be online.

If the IP address is less than three digits, add leading zeros.

<SPTF*P:TFGPS*T:123.059.232.012,8988>

JT\T808 Platform:IP

JT\T808 Platform:Port

"JT\808 Platform Command Setting Format"

12. Troubleshooting

Fault Phenomenon	Cause Analysis	Solution
Device Off line	SIM card arrears / out of Service	Contact network operator for payment
	Poor SIM card contact	Re-insert the SIM card
	Incorrect parameters setting	Refer to section 11.4 for configuration
	SIM card locked	Contact network operator to unlock SIM card
	Device in basement/tunnel/weak signal area	Move away from the poor signal area
No positioning	Device installed indoors or obstructed area	Move to an open outdoor area
Not Fixed	SIM card arrears / out of Service	Contact network operator for payment
	Poor SIM card contact	Re-insert the SIM card
	Incorrect RTK account setting	Refer to section 11.3 for configuration
	Incorrect RTK mount point configuration	Use the default WGS84 coordinate system mount point