EWT550-7G9T10SP User Manual

Ultra-Wideband (UWB) Ranging and Positioning Module Test Kit



Chengdu Ebyte Electronic Technology Co.,Ltd.

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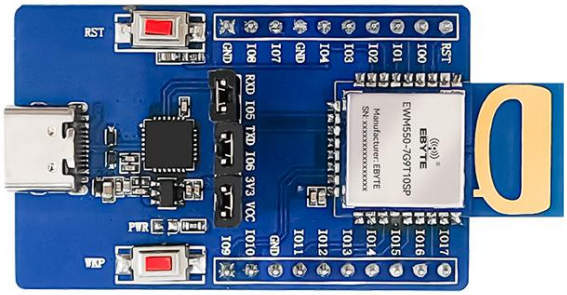
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1. Overview

1.1 Product Introduction

The EWT550-7G9T10SP is a test board designed for the EWM550-7G9T10SP module, significantly reducing the user's development and testing cycle.
For detailed information about the EWM550-7G9T10SP module, please visit the official website to download the relevant documentation.



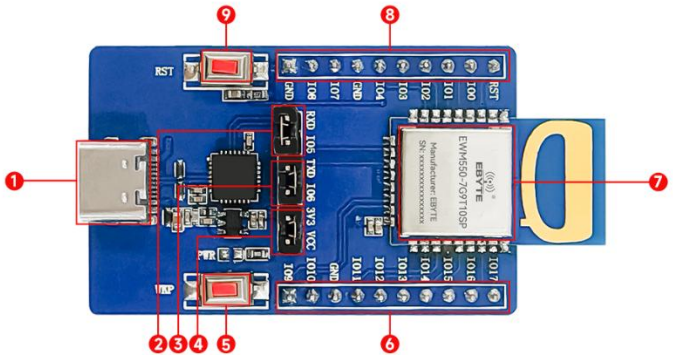
1.2 Module Features

- Pre-soldered EWM550-7G9T10SP module
- Size: 30 × 58 mm
- Two-way ranging
- Type-C interface for direct connection to a PC for debugging
- All module pins brought out
- Stable operation and easy development

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2.Hardware Description



No.	Name	Description
1	Type-C Interface	Power supply and data communication
2	RXD	UART RX jumper cap, connected by default
3	TXD	UART TX jumper cap, connected by default
4	3.3V	Power jumper cap, connected by default
5	WKP	Wake-up pin
6	Pin Header	Module pin breakout
7	EWM550-7G9T10SP Module	Pre-soldered module
8	Pin Header	Module pin breakout
9	RST	Reset button

3. Quick Start Guide

3.1 One-to-Many Ranging Configuration Example

Taking one base station and three tags as an example, each device can be configured using the following commands:

Base Station (Master)	Tag (Slave 1)	Tag (Slave 2)	Tag (Slave 3)
+++	+++	+++	+++
AT+ROLE=1	AT+ROLE=0	AT+ROLE=0	AT+ROLE=0
AT+RESPONDERR_NUM=3	AT+RESPONDER_NUM=3	AT+RESPONDER_NUM=3	AT+RESPONDER_NUM=3
AT+SRCADDR=0000	AT+SRCADDR=1111	AT+SRCADDR=2222	AT+SRCADDR=3333
AT+DSTADDR=1111222233334444	AT+DSTADDR=0000222233334444	AT+DSTADDR=0000222233334444	AT+DSTADDR=0000222233334444
5555	5555	5555	5555
AT+RESET	AT+RESET	AT+RESET	AT+RESET

Notes:

1、The configuration takes effect only after a restart;

2、When configured as a base station, destination addresses exceeding the configured number of tags will not take effect;

3、When configured as a tag, only the first four bytes of the destination address are valid.

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3.2 Ranging Data Packet Description

Role	Data Example	Data Description
Base Station (Master)	P0,AA00,10cm,20dB\r\n	P0 indicates the tag index; AA00 indicates the tag address; 10 cm indicates the ranging distance; 20 dB indicates the SNR value.
	LP1,2222,20cm,20dB\r\n	P1 indicates slave device 2; **L** indicates that the module is currently in sleep mode; 2222 indicates the slave address; 20 cm indicates the distance information; 20 dB indicates the SNR value.
Tag (Slave)	P,1111,10cm\r\n	**P** indicates the header; 1111 indicates the master address; 10 cm indicates the distance information.

3.3 Transparent Transmission Configuration Example

The following commands can be used to implement broadcast transparent transmission, taking three devices as an example:

Transmitter	Receiver 1	Receiver 2
+++ AT+ROLE=2 AT+SRCADDR=1111 AT+DSTADDR=11110000000000000000 AT+RESET	+++ AT+ROLE=2 AT+SRCADDR=1111 AT+DSTADDR=11110000000000000000 AT+RESET	+++ AT+ROLE=2 AT+SRCADDR=1111 AT+DSTADDR=11110000000000000000 AT+RESET

The following commands can be used to implement point-to-point transparent transmission, taking three devices as an example:

Transmitter	Receiver 1	Receiver 2
+++ AT+ROLE=2 AT+SRCADDR=1111 AT+DSTADDR=22220000000000000000 AT+RESET	+++ AT+ROLE=2 AT+SRCADDR=2222 AT+DSTADDR=11110000000000000000 AT+RESET	+++ AT+ROLE=2 AT+SRCADDR=3333 AT+DSTADDR=11110000000000000000 AT+RESET

Notes:

1、The configuration takes effect only after the module is restarted;

2、In transparent transmission mode, only the first four bytes of the destination address are valid;

3、After transparent transmission mode is enabled, the +++ command can be used to exit and return to AT command mode;

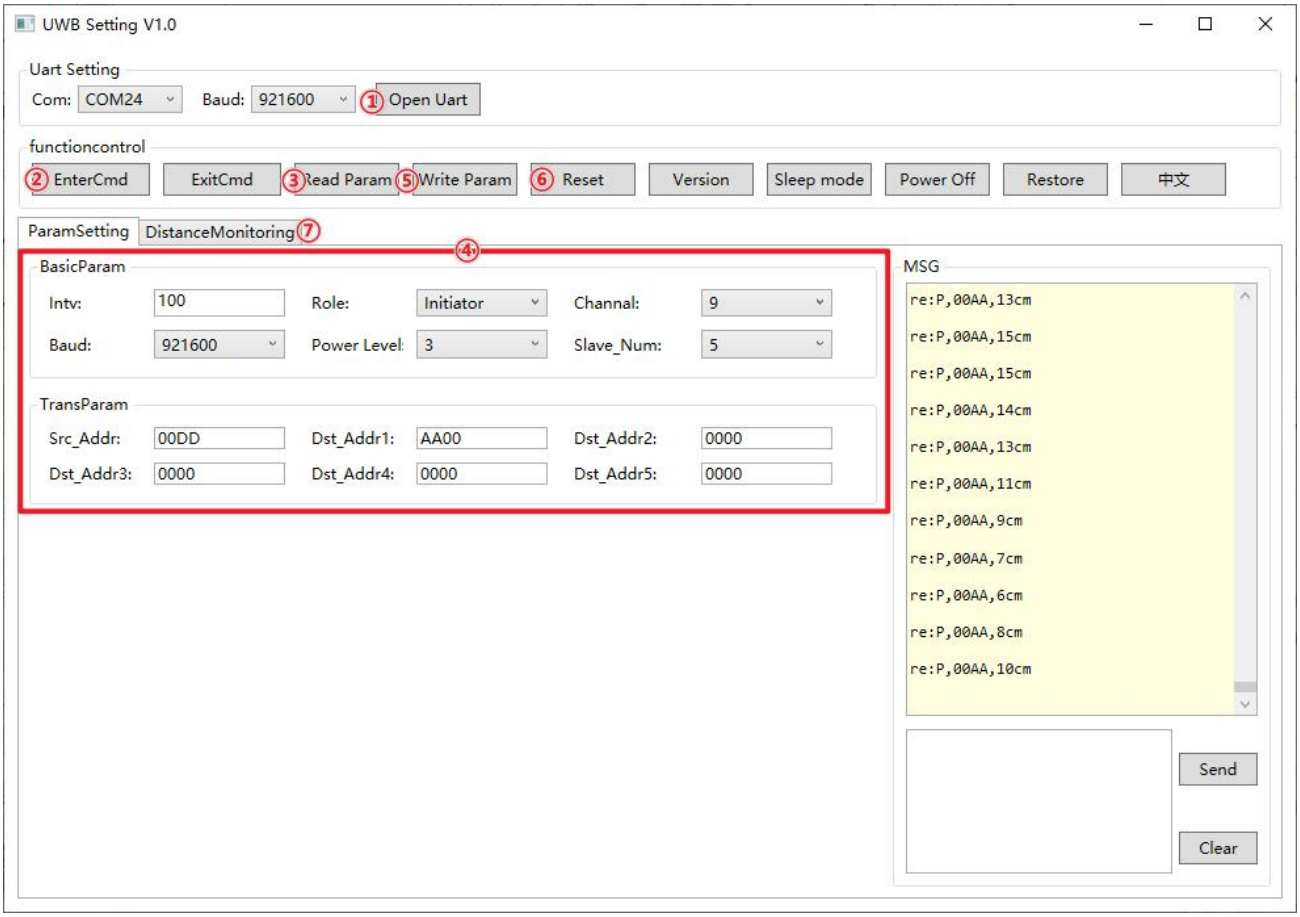
4、In transparent transmission mode, there is no distinction between master and slave devices.

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4. PC Software Operation

4.1 Communication Configuration



① Open the serial port: Select the correct serial port channel and baud rate, then open the serial port.

② Enter configuration mode: Click to enter configuration mode. The module will turn off distance printing and wait for the user to perform parameter reading, configuration, writing and other operations.

③ Read parameters: Read the working parameters of the current module;

④ Setting parameters: Please refer to the parameter introduction in the AT command section and set the parameters according to your needs;

⑤ Write parameters: After setting, the parameters need to be written to the module;

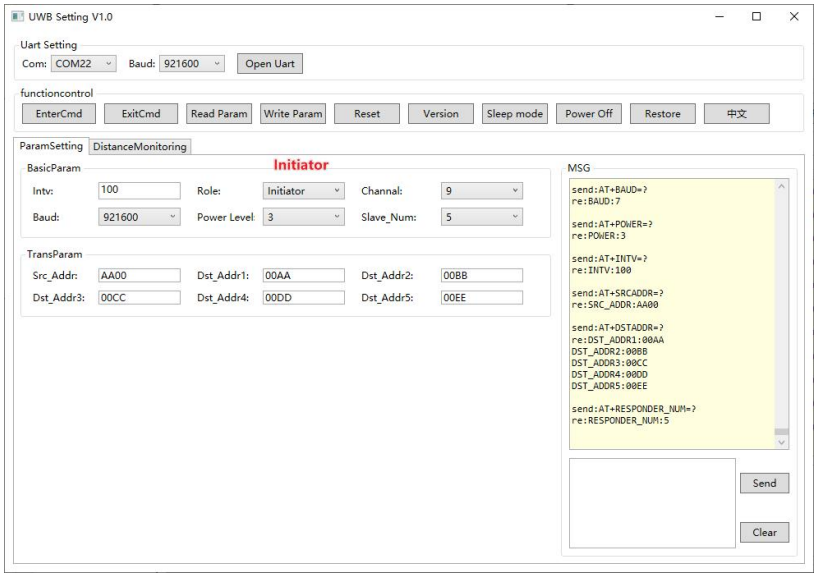
⑥ Module Reset: The parameters take effect after reset and the module automatically enters the distance printing state;

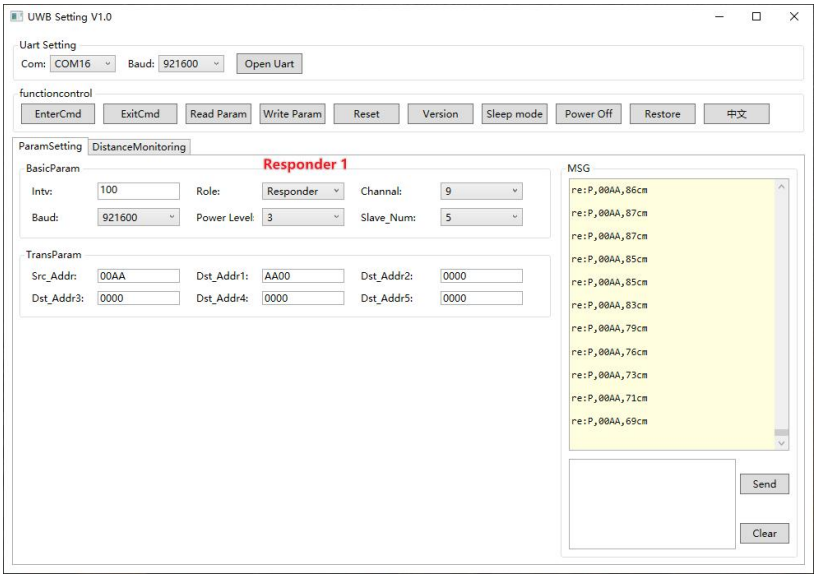
⑦ View distance monitoring curve: You can switch to the distance monitoring page.

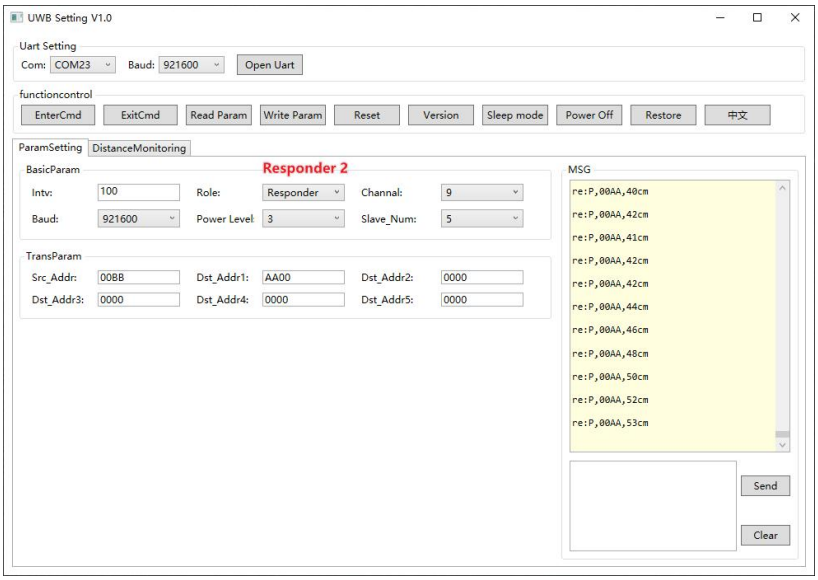
Settings reference:

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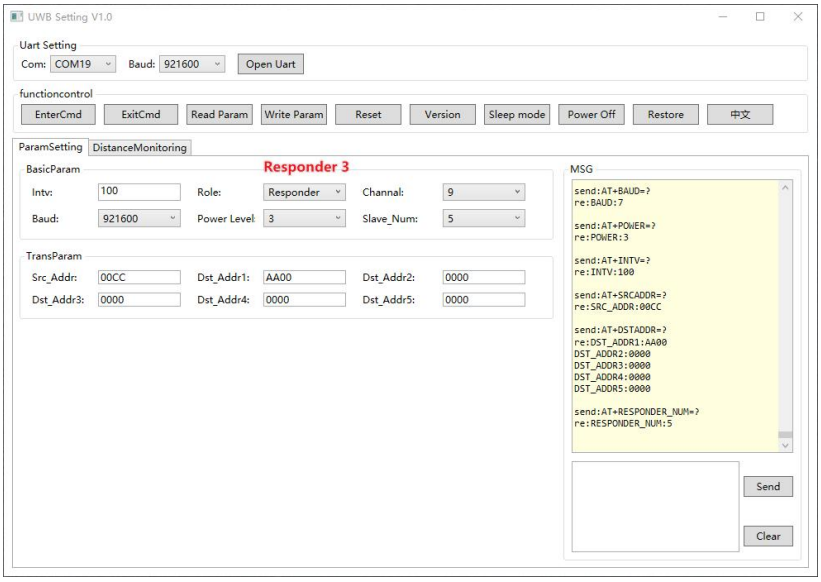


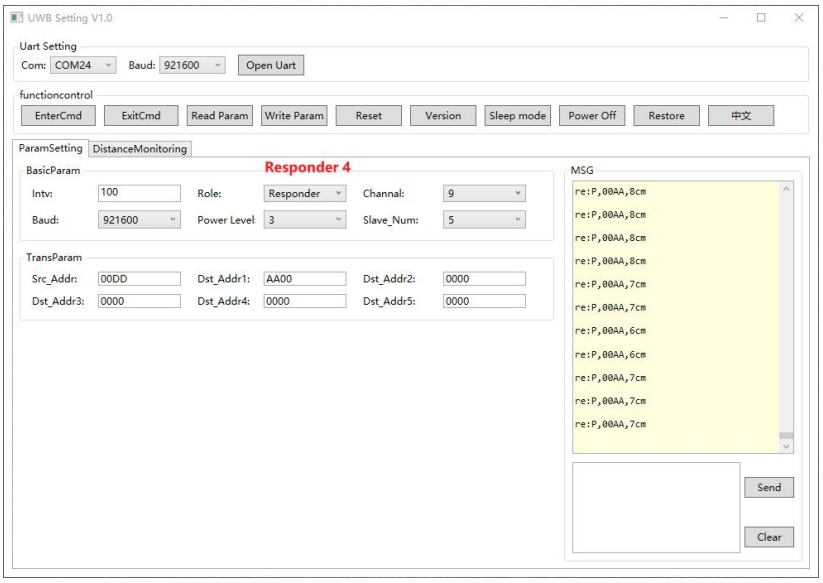


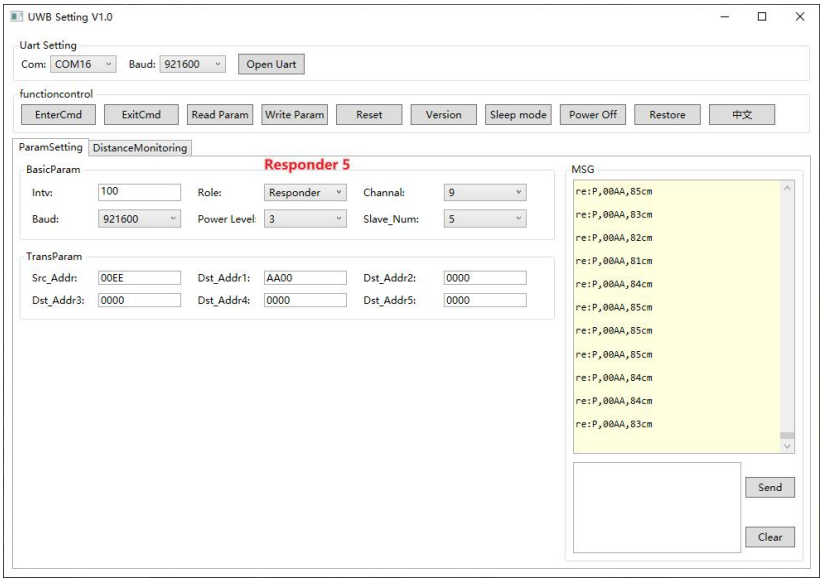


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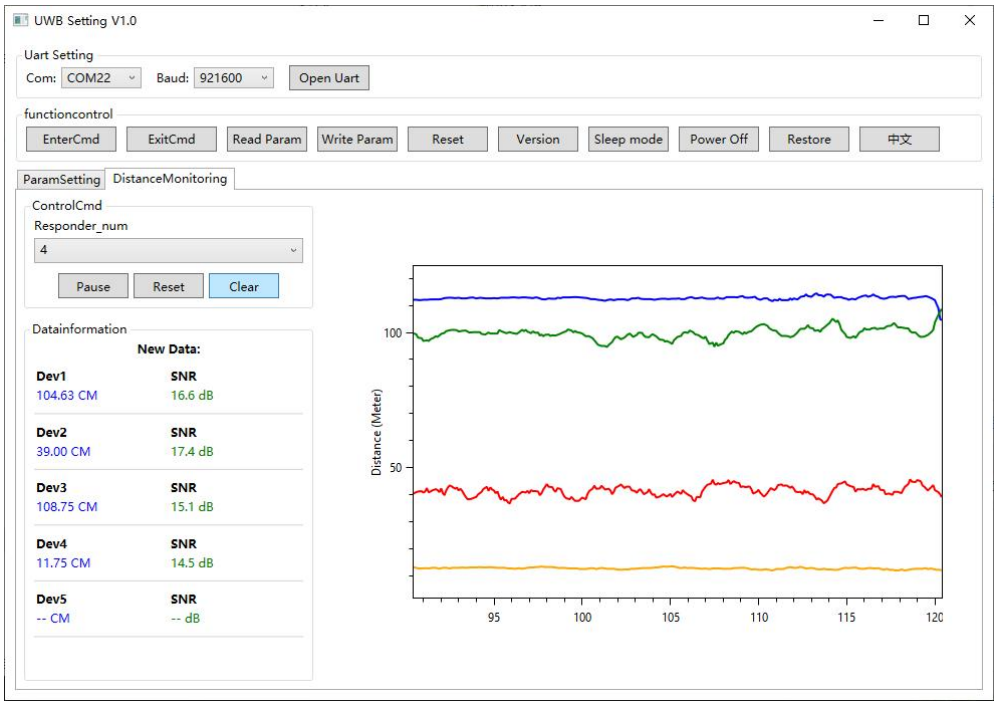


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4.2 Distance Monitoring

Select the correct number of slave devices to display, as shown in the figure:



Notice:

1. The best distance measurement effect can be obtained when the modules are horizontally facing each other.
2. Supports up to 1 to 5 bidirectional ranging; distance monitoring curves are only displayed on the base station (host) side.
3. If the ranging becomes choppy or fluctuates significantly, please adjust the module angle and remove any obstacles in the middle to ensure effectiveness;

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Revision History

Version	Date	Description	Author
1.0	2025-08-01	Initial version	Lei
2.0	2025-12-10	Added one-to-many ranging and PC software operation	Lei
2.1	2026-03-20	Correct the error description	Lei

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Website： https://www.cdebyte.com

Address: B5 Mould Industrial Park, 199# Xiqu Ave, High tech Zone, Chengdu, Sichuan, China

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