INSTALLATION AND OPERATION

QUICK GUIDE

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UM761 EVK

Integrated Navigation and Positioning Module Evaluation Kit

Foreword

About This Document

This document provides information about Unicore's UM761 EVK (evaluation kit). It can be used together with *UPrecise_User Manual*.

Target Readers

This document is intended for technical personnel familiar with GNSS receivers.

Statement

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Revision History

Version	Revision History	Date
R1.0	First release.	Mar. 2026

Document Status

Releases	Status Descriptions	Current Status
Primary	This is a pre-release version with target specifications that are subject to revision.	
Alpha release	This is an alpha release version, which has been preliminarily tested and verified. The content may undergo minor modifications based on user feedback and further testing.	
Production release	The document contains the complete and final specifications.	√

1 Overview

UM761 evaluation kit (hereinafter referred to as EVK) is mainly used to test and evaluate the function and performance of Unicore UM761 module for user convenience.

The delivered package contains:

Table 1-1 UM761 EVK Package

Type	Contents	Number
Main device	UM761 EVK	1
Accessory	GNSS antenna supporting L1 (1561~1602MHz)	1
Accessory	USB Type-C cable	1
Accessory	FC2.54 flat cable	1

2 EVK Introduction

The appearance of the UM761 EVK is shown in the following figure.

Figure 2-1 UM761 EVK

3 Interfaces

The connectors, buttons, and indicators of the UM761 EVK are shown as below:

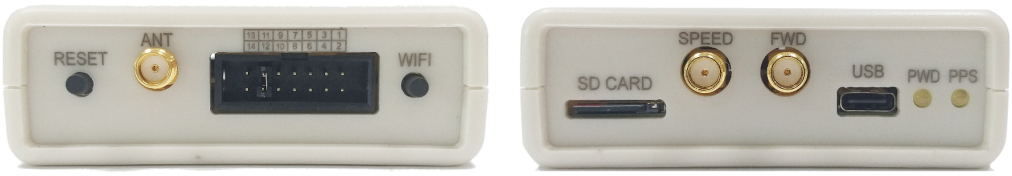

Figure 3-1 Interfaces of the UM761 EVK

Table 3-1 Interfaces of the UM761 EVK

Interface	Function	Description
RESET	Reset	Press the button to reset the module
ANT	RF signal input	Antenna RF signal input
RSV	Reserved	See Table Description of the Reserved Interfaces for more details.
WIFI	Reserved	/
SD CARD	SD card socket	SD card socket
SPEED	Odometer speed signal input	Odometer speed signal input
FWD	Odometer direction signal input	Odometer direction signal input
USB	USB Type-C connector	Power supply (+5V) and data communication
PWD	Power indicator	Upon power on, the PWD indicator stays constantly on. When calibration and positioning are not achieved, the PWD indicator flashes at 1Hz. If a file storage error occurs or data reception times out, the PWD indicator will flash at 5 Hz.
PPS	PPS signal indicator	Upon power on, the PPS indicator stays constantly on. Once calibration and positioning are achieved, the

Interface	Function	Description
		PPS indicator starts flashing.

Table 3-2 Description of the Reserved Interfaces

PIN Number	Interface	Description
1	PPS	PPS signal
2	RSV	Reserved
3	RSV	Reserved
4	RSV	Reserved
5	BOOT0_High	BOOT0 of MCU on the board
6	GND	Ground
7	RSV	Reserved
8	RXD_F_PC	Serial port input of MCU on the board (RS232)
9	GND	Ground
10	TXD_T_PC	Serial port output of MCU on the board (RS232)
11	V_BCKP	Backup power input to the module (connected to V_BAT via a jumper)
12	V_BAT	+3 V battery output from the board (connected to V_BCKP via a jumper)
13	RSV	Reserved
14	GND	Ground

4 Instructions

4.1 Hardware Installation

[Steps]

1. Make sure to take adequate anti-static measures, such as wearing an anti-static wrist strap and grounding the workbench.
2. Open the package box and take out the UM761 evaluation kit.
3. Use the GNSS antenna in the package or another antenna with appropriate gain (the GNSS frequencies supported by the antenna should be consistent with that of the Module) and fix it in a non-blocking area; connect the antenna to the ANT port on the UM761 EVK.
4. Connect the EVK to a PC through the USB Type-C cable.
5. Open the UPrecise software on the PC.
6. Control the receiver through UPrecise to display constellations view, log messages, receiver status, etc. For more information, please refer to *UPrecise_User Manual*.

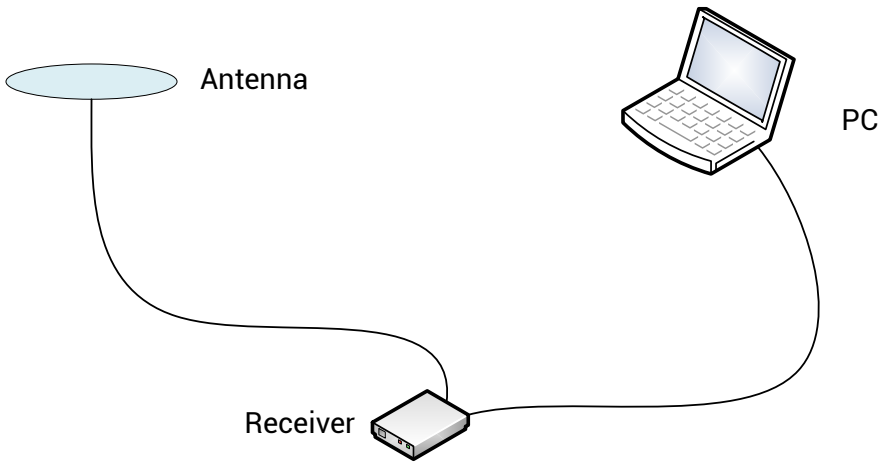

Figure 4-1 Installation of the EVK

4.2 Installation and Calibration

Installation

UM761 module must be firmly connected to the vehicle to prevent any offsets or vibrations between the module and the vehicle. The module should not be installed in the suspension part (or elastic part) of the vehicle. When the vehicle is moving, any change relative to the vehicle's coordinate system will seriously affect the performance of the module.

Calibration

By default, the module is in **free installation mode** and can be placed freely, provided that the above installation conditions are met. For more information, refer to *UM761 Series_User Manual*.

For the **manual installation mode**, the module needs to be placed according to the following coordinate system, and the installation angle needs to be manually configured into the module. For more information, refer to *UM761 Series_User Manual*.

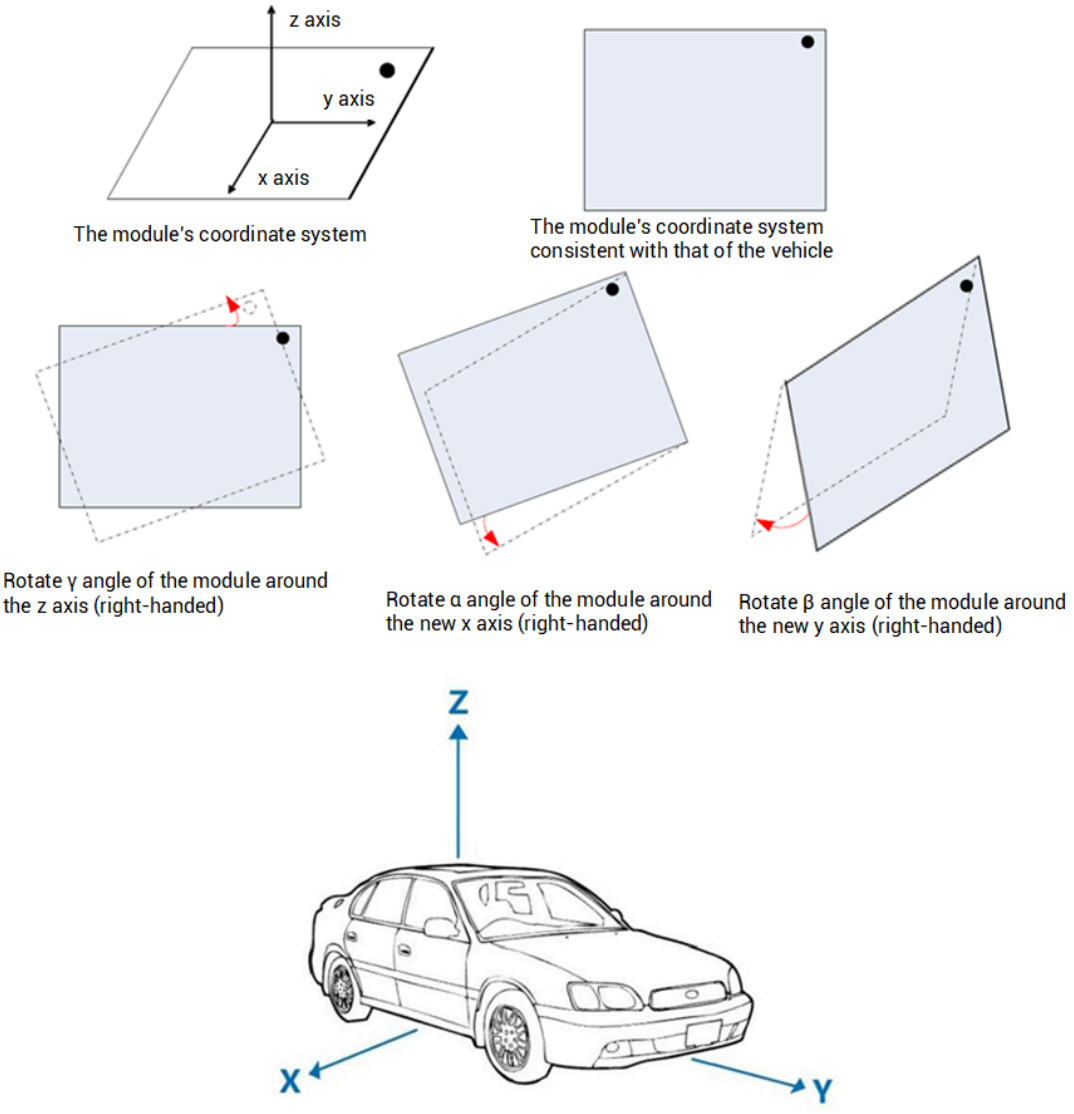

Figure 4-2 Coordinate System of the Module and the Vehicle

4.3 SD Card Instructions

An SD card socket is provided on the UM761 EVK, which is used for data storage and firmware upgrade.

> **Note:** You can also use UPrecise to store data and upgrade the firmware. For more information, see *UPrecise_User Manual*.

4.3.1 Contents in the SD Card Folder

Before using the SD card, copy the zipped folder **UM761_EVK_V2.0_sdcard** to the card. The folder contains the following items, as shown in the figure below.

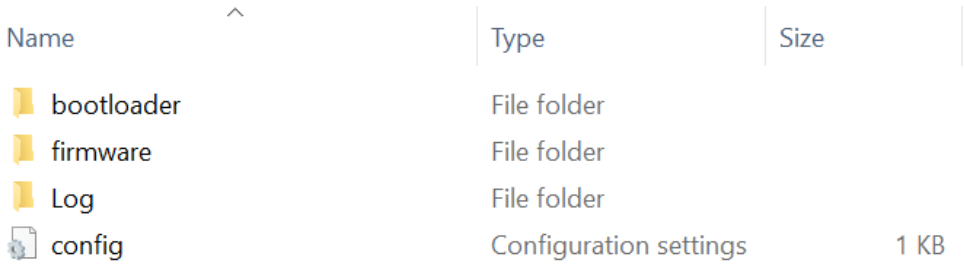

Figure 4-3 Contents in the SD Card Folder

- The “bootloader” folder contains the loader file for firmware upgrade.
- The “firmware” folder is used for storing the firmware file.
- The “Log” folder is used for data storage.
- The “config.ini” is the configuration file. For details, see the table below.

Table 4-1 Description of the config.ini File

Contents	Description
[config]	/
Update = 0	Firmware upgrade configuration: 0 = Do not upgrade the firmware (by default) 1 = Upgrade the firmware
WorkBaudrate = 115200	The working baud rate of UM761 module[1]. 115200 by default. The value needs to be the same as that of the module.
LogFileName = log	The name of the log file (English only)

Contents	Description
SingleFileSize = 512000000	Max single file size (bytes): If a log file reaches the size limit, logging continues in a new file. (Note: Use decimal values only – hexadecimal is not supported.)
StartRecordStyle = new	The recording style after starting up (new or append): New = log data in a new file (by default); Append = log data in the existing file.
BoardVersion = v2	EVK Version: Default: v2 Options: v1 or v2
ReceiveTimeOut = 30	Data receive timeout threshold (in seconds) Default value: 30 The system will trigger a timeout error if no data is received continuously for more than the specified duration.

[1] The baud rate may vary among different firmware versions.

4.3.2 Data Storage Instructions

[Steps]

1. Insert an SD card into the PC, and copy the zipped folder **UM761_EVK_V2.0_sdcard** to the card.
2. Unzip the folder and open the "config.ini" file. Set the "Update" value to 0 and set the "WorkBaudrate" the same as that of the UM761 module. Set other parameters as needed (see Table Description of the config.ini File for more information).
3. Remove the SD card from the PC, insert it into the EVK, and power on the EVK[1].
4. Wait for the SD card to record data. During the process, use a port monitor tool to check the status of data transmission.

[1] If the antenna is not connected, the EVK will only output debug information; if you need the positioning information, please connect the antenna before powering on.

4.3.3 Firmware Upgrade Instructions

[Steps]

1. Insert an SD card into the PC, and copy the zipped folder **UM761_EVK_V2.0_sdcard** to the card.
2. Unzip the folder and open “bootloader” to make sure that it contains the loader file. Then, put the firmware file[1] in the “firmware” folder.

   > **Caution:** For the bootloader and firmware folders, only one file can be stored in each folder.

3. Open the “config.ini” file, set the “Update” value to 1 and set the “WorkBaudrate” value to align with that of the new firmware.
4. Remove the SD card from the PC, insert it into the EVK, and power on the EVK.
5. Use a port monitor tool to check the status of upgrade.

[1] Please contact Unicore to get the latest firmware.

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