

INSTALLATION AND OPERATION

# QUICK GUIDE

WWW.UNICORECOMM.COM

# UM220-IV N

# Navigation and Positioning Module Evaluation Kit

Copyright© 2009-2023, Unicore Communications, Inc. Data subject to change without notice.



## **Revision History**

Version	Revision History	Date
R1.0	First release	Apr. 2023

#### Legal right notice

This manual provides information and details on the products of Unicore Communication, Inc. ("Unicore") referred to herein.

All rights, title and interest to this document and the information such as data, designs, layouts contained in this manual are fully reserved, including but not limited to the copyrights, patents, trademarks and other proprietary rights as relevant governing laws may grant, and such rights may evolve and be approved, registered or granted from the whole information aforesaid or any part(s) of it or any combination of those parts.

Unicore holds the trademarks of "和芯星通", "UNICORECOMM" and other trade name,

trademark, icon, logo, brand name and/or service mark of Unicore products or their product serial referred to in this manual (collectively "Unicore Trademarks").

This manual or any part of it, shall not be deemed as, either expressly, implied, by estoppel or any other form, the granting or transferring of Unicore rights and/or interests (including but not limited to the aforementioned trademark rights), in whole or in part.

#### Disclaimer

The information contained in this manual is provided "as is" and is believed to be true and correct at the time of its publication or revision. This manual does not represent, and in any case, shall not be construed as a commitments or warranty on the part of Unicore with respect to the fitness for a particular purpose/use, the accuracy, reliability and correctness of the information contained herein.

Information, such as product specifications, descriptions, features and user guide in this manual, are subject to change by Unicore at any time without prior notice, which may not be completely consistent with such information of the specific product you purchase.

Should you purchase our product and encounter any inconsistency, please contact us or our local authorized distributor for the most up-to-date version of this manual along with any addenda or corrigenda.

# Foreword

This document provides information of Unicore's UM220-IV N evaluation kit (EVK). It can be used together with *UPrecise\_User Manual*.

### **Target Readers**

This manual is written for technicians who are familiar with GNSS modules. It is not for general readers.



# Contents

1	Ove	rview .		1
2	EVK	Introd	uction	1
3	Interfaces & Indicators			2
4	Inst	allatio	۹ & Configuration	3
	4.1	Inst	allation	.3
	4.2	SD (	Card Instructions	.4
		4.2.1	Contents of the SD Card Folder	.4
		4.2.2	Data Storage Instructions	.5
		4.2.3	Firmware Upgrade Instructions	.6

# 1 Overview

UM220-IV N evaluation kit (hereinafter referred to as EVK) is mainly used to test and evaluate the function and performance of UM220-IV N module for user convenience.

The delivered package contains:

Table	1-1	UM220-	IV N	EVK	Package
		•••••••			

Туре	Contents	Number
Main device	UM220-IV N EVK Suite	1
Accessory	GNSS antenna - OSAnm10854G	1
Accessory	Micro-B USB cable	1

# 2 EVK Introduction

The figure below shows the appearance of UM220-IV N EVK Suite.



Figure 2-1 UM220-IV N EVK Suite



# 3 Interfaces & Indicators

The interfaces and indicators on UM220-IV N EVK is shown below. For the detailed description, see Table 3-1.



Figure 3-1 Interfaces & Indicators on UM220-IV N EVK

Interface/ Indicator	Туре	Description
S1	Reset	Reset the module by inserting and removing the jumper cap
S2	Antenna feed	Control the antenna feed on and off by the jumper cap
L1	Power/1PPS indicator	The indicator lights up when powered on, and flashes when the 3D positioning is effective.
ANT	RF signal input connector	Antenna signal input
FWD	Direction signal connector	Reserved for odometer directional signal input. UM220-IV N EVK does not support this interface.
L2	Speed pulse signal indicator	Reserved. The indicator flashes when receiving the speed pulse signal. <b>UM220-IV N EVK does not support this interface.</b>
SPD	Speed pulse signal connector	Reserved for odometer speed pulse signal input. UM220-IV N EVK does not support this interface.
USB	Micro-B USB connector	Power supply (+5V) and data communication
SD-card	SD card slot	Insert an SD card
UART	Communication DB9 connector	Backup serial communication interface with RS232

# 4 Installation & Configuration

## 4.1 Installation

Step 1: Make sure to take full anti-static measures, such as wearing anti-static wrist straps and grounding the workbench.

Step 2: Select the GNSS antenna with appropriate gain (the GNSS systems and frequencies supported by the antenna should be in line with the module), fix it in the non-blocking area, and connect the antenna to the ANT port on the EVK.

Step 3: Connect the EVK to the PC using the Micro-B USB cable.

Step 4: Open the UPrecise software on the PC.

Step 5: Configure the receiver through UPrecise to display the constellation view, data stream, tracking status, etc. For more information, please refer to *UPrecise\_User Manual.* 



Figure 4-1 Installation of the EVK



### 4.2 SD Card Instructions

There is an SD card slot on the UM220-IV N EVK, which is used for data storage and firmware upgrade.

You can also use UPrecise to store data and upgrade the firmware. For more information, see UPrecise\_User Manual.

#### 4.2.1 Contents of the SD Card Folder

Before using the SD card, you need to copy the zipped folder "UM220-IV-N\_EVK\_Suite\_V2.0\_sdcard" to the card. The folder contains the following items:

Name	Date modified	Туре	Size
📙 bootloader	4/24/2023 11:28 AM	File folder	
📙 firmware	4/24/2023 11:28 AM	File folder	
📜 Log	4/24/2023 11:28 AM	File folder	
🕤 config.ini	4/24/2023 6:24 PM	Configuration settings	1 KB

#### Figure 4-2 Contents of the SD Card Folder

1. The "bootloader" folder contains the loader file for firmware upgrade.

<sup>C</sup> Unicore has already provided the loader file, which can be used directly.

- 2. The "firmware" folder is used to store the firmware file.
- 3. The "Log" folder is used for data storage.
- 4. The "config.ini" is the configuration file, of which the contents are as follows:

#### UM220-IV N EVK Quick Guide

```
****
#Description of the configuration items:
#1. SingleFileSize: It specifies the size of a single file. If the file size exceeds the specified one, a
new file will be created.
# Notes: Hexadecimal format is not supported; please convert the size to a decimal number.
#
#2. StartRecordStyle: It defines the recording style after starting up, either to create a new file or
append to the existing file.
# When the value = append, the data will be logged in the existing file; when the value = new,
the data will be logged in a new file.
#3. The character '#' at the beginning of a line means that the line is a comment.
*********************
[config]
SingleFileSize = 51200000
#(new or append)
StartRecordStyle = new
WorkBaudrate = 115200
LogFileName = log
#When the value is 1, the firmware will be upgraded; otherwise, it will not be upgraded.
update = 0
```

#### Figure 4-3 Contents of the config.ini File

Contents	Description
[config]	/
SingleFileSize = 512000000	The size of a single file. If the file size exceeds the specified number, a new file will be created. (Hexadecimal format is not supported; please convert the size to a decimal number.)
StartRecordStyle = new	The recording style after starting up (new or append): Append = log data in the existing file; New = log data in a new file
WorkBaudrate = 115200	The working baud rate of UM220-IV N module
LogFileName = log	The name of the log file
update = 0	1 = Upgrade the firmware; 0 = Do not upgrade the firmware

#### 4.2.2 Data Storage Instructions

Step 1: Insert the SD card into the PC, and copy the zipped folder "UM220-IV-N\_EVK\_Suite\_V2.0\_sdcard" to the card.

Step 2: Unzip the folder and open the "config.ini" file, then set the "update" value to 0, set the "WorkBaudrate" the same as that of the UM220-IV N module and set other parameters as needed (see Table 4-1 for more information).



Step 3: Remove the SD card from the PC, insert it into the EVK, and power on the EVK<sup>1</sup>.

Step 4: Waiting for a while and you can get the logged data in the SD card. During the process, you may use the Micro-B USB cable to connect the EVK to PC in order to check the status of data transmission with a port monitor tool.

#### 4.2.3 Firmware Upgrade Instructions

Step 1: Insert the SD card into the PC, and copy the zipped folder "UM220-IV-N\_EVK\_Suite\_V2.0\_sdcard" to the card. Unzip the folder and open "bootloader" to make sure that it contains the loader file. Then, put the firmware file<sup>2</sup> in the "firmware" folder.

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

Step 2: Open the "config.ini" file, and set the "update" value to 1.

Step 3: Remove the SD card from the PC, insert it into the EVK, and power on the EVK.

Step 4: During upgrade, the indicator L1 is off. After the upgrade is finished, the light turns on. You may also use the Micro-B USB cable to connect the EVK to PC in order to check the status of upgrade with a port monitor tool.

<sup>&</sup>lt;sup>1</sup> If the antenna is not connected, the EVK will output debug information; if you need the positioning information, please connect the antenna before powering on.

<sup>&</sup>lt;sup>2</sup> Please contact Unicore to get the latest firmware.

### 和芯星通科技(北京)有限公司

Unicore Communications, Inc.

北京市海淀区丰贤东路 7 号北斗星通大厦三层 F3, No.7, Fengxian East Road, Haidian, Beijing, P.R.China, 100094 www.unicorecomm.com

Phone: 86-10-69939800

Fax: 86-10-69939888

info@unicorecomm.com



www.unicorecomm.com