HUAWEI ME906 Series LTE M.2 Module

GNSS Application Guide

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About This Document

Revision History

Document Version	Date	Chapter	Descriptions
01	2013-05-31		Creation

Scope

ME906V

ME906E

ME906J

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1 Introduction

This document is intended for customers who use the Global Navigation Satellite System (GNSS) of ME906 series (ME906V, ME906E and ME906J) module.

The ME906 series module supports two positioning methods:

- Standalone
- AGPS

This document describes the GNSS test procedure of ME906 series module on Windows 7 and Windows 8 system.

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2 GNSS Test Procedure

2.1 Enabling or Disabling GNSS

ME906 provides a hardware pin (GPS_DISABLE#) to enable or disable the GNSS function.

- To disable the GNSS function, pull down GPS_DISABLE# pin. If the module is in the process of positioning, the positioning is stopped automatically first and then the GNSS function is disabled.
- To enable the GNSS function, pull up GPS_DISABLE# pin. But the positioning can not be started automatically. If the module is required to position after the GNSS function is enabled, positioning should be started manually by users. For the detailed procedures of starting positioning, please refer to section 2.2 GNSS Test on Windows 7 or 2.3 GNSS Test on Windows 8.

The relation between GPS_DISABLE# pin, the GNSS switch (controlled by the software) and the positioning state of module are described as the following table.

GPS_DISABLE# pin	GNSS switch	The state of module
Low	OFF	Not positioning
Low	ON	Not positioning
High	OFF	Not positioning
High	ON	Positioning

NOTE

It is recommended to use GPS_DISABLE# pin only when the GNSS function is required to be disabled. And it is not recommended to control the GNSS function by the hardware and the software method at the same time.

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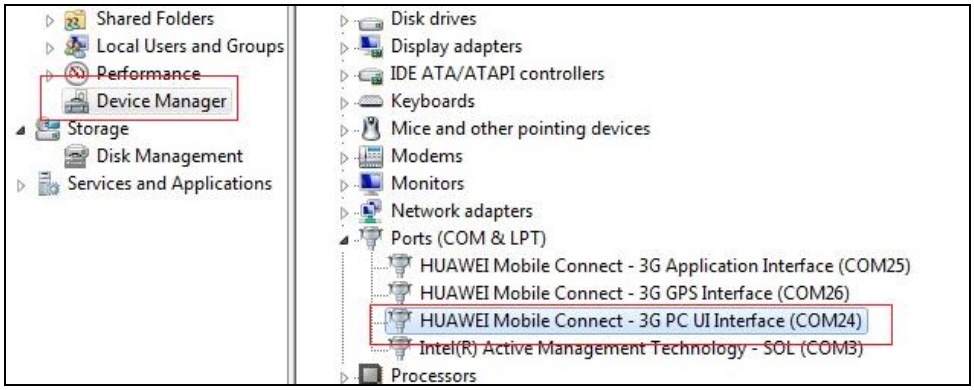
2.2 GNSS Test on Windows 7

In order to get high Quality of Service (QoS), please ensure that the ME906 module is in an open sky environment.

2.2.1 Standalone Positioning

Step 1 Right-click **My Computer**, and choose **Manage** from the shortcut menu. In the displayed **Computer Management** window, click **Device Manager** in the left pane, and check for **HUAWEI Mobile Connect-3G GPS Interface (COM 24)** under **Ports** in the right pane.



Step 2 Run a serial port application such as HyperTerminal to open the GPS port.

- 1) Click the icon .
- 2) Select **COM24** in the **Connect using** list, and then click **OK**.
- 3) Select **115200** in the **Bits per second** list, and then click **OK**.

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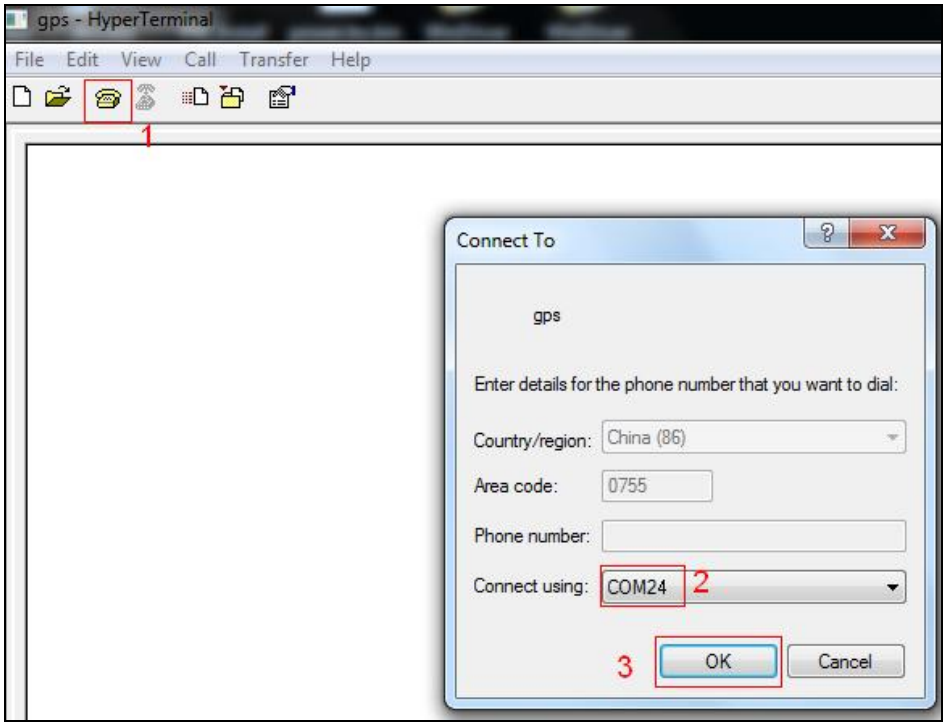

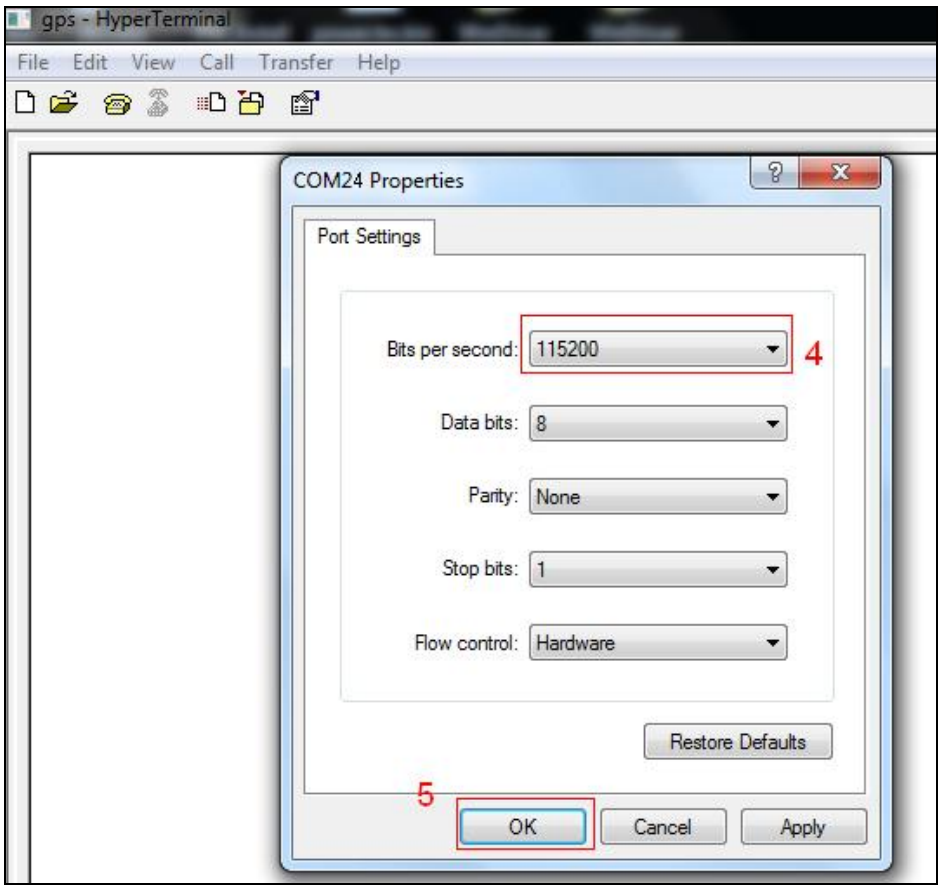

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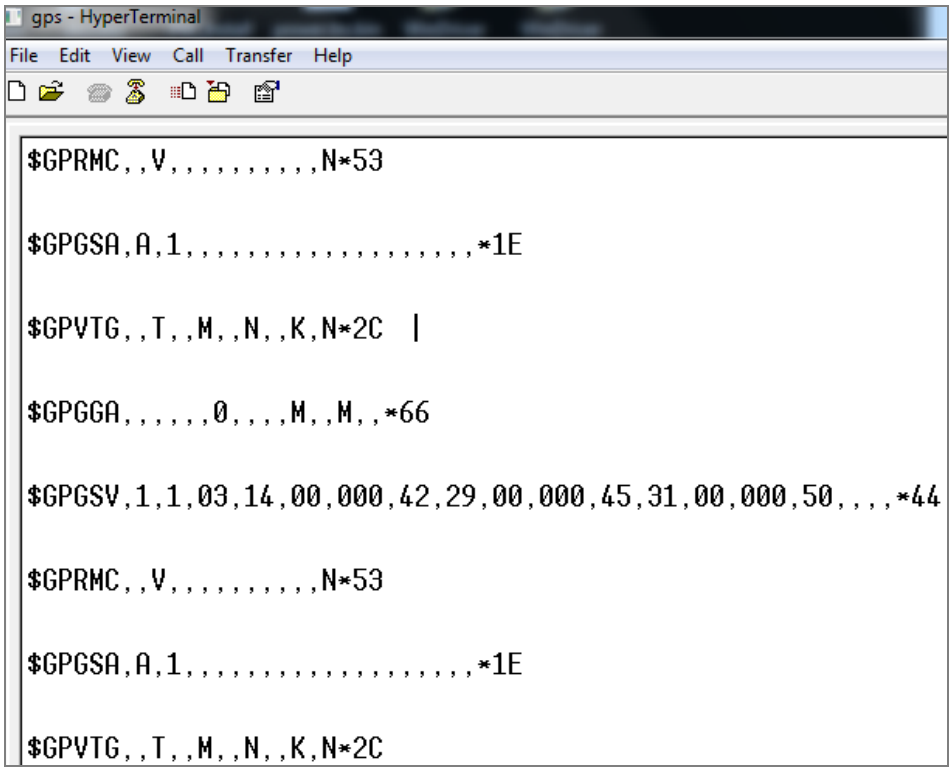
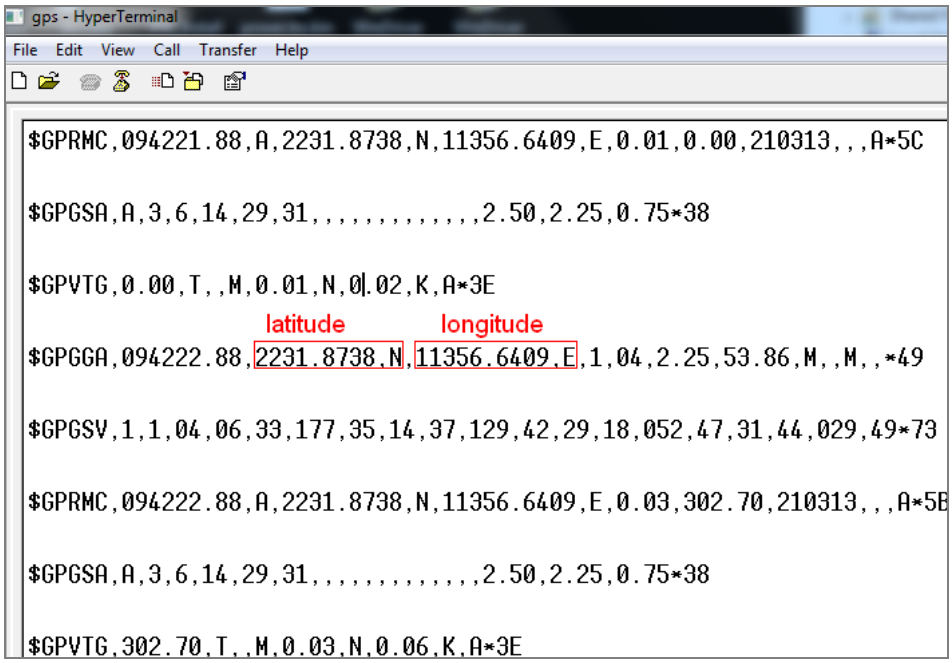
Step 3 The module starts a positioning session and reports NMEA data to PC with the frequency with 1 HZ.



If the NMEA data contains latitude and longitude values (for example, 2231.8378,N,11356.6409,E), it means that the module obtains the current location information.



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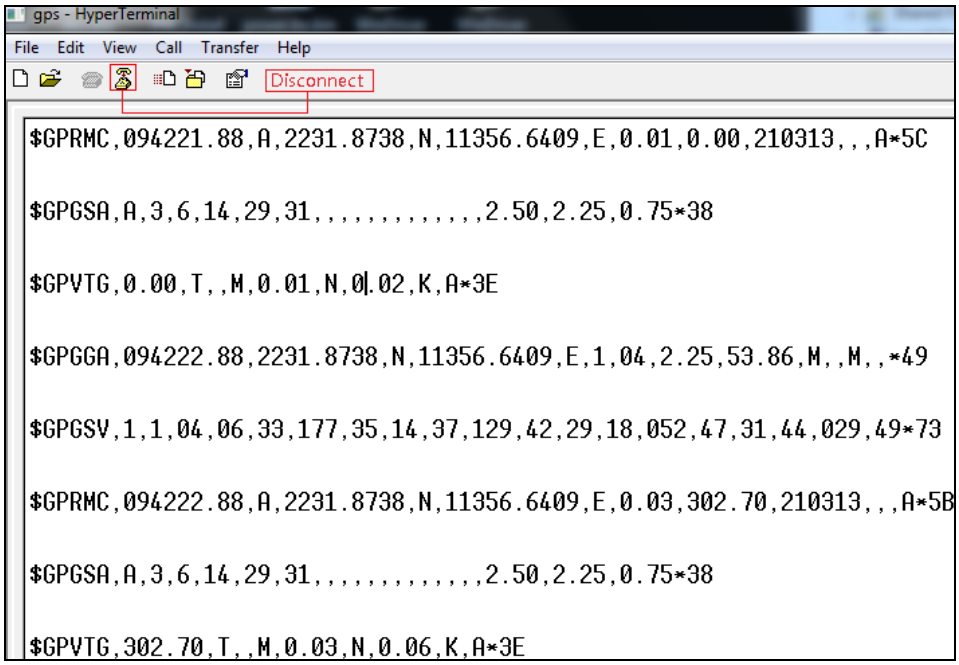
Step 4 Disconnect the GPS port on HyperTerminal to stop positioning session and NMEA data reporting.



2.2.2 AGPS Positioning

CAUTION

AGPS positioning needs to download the assistant data from the AGPS Server. It certainly causes data usage costs.

In the WCDMA/LTE network, before using AGPS positioning, please set AGPS APN (profile 15) by running the command **AT+CGDCONT=15,"IP","APN"** (the value of APN is set according to the current network state).

Step 1 The same as Step 1 in 2.2.1 Standalone Positioning.

Step 2 Insert a SIM card that has subscribed to network services into the ME906 module. Then set up a dial-up connection.

Step 3 The same as Step 2 to Step 4 in 2.2.1 Standalone Positioning.

NOTE

If the data link is disconnected, standalone positioning will be used instead of AGPS positioning.

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2.3 GNSS Test on Windows 8

2.3.1 Using the Sensor Diagnostic Tool

NOTE

The sensor diagnostic tool can be found in the Windows Driver Kit (WDK) of Microsoft, which is a GNSS test tool provided by Microsoft.

Standalone Positioning

Step 1 Right-click **My Computer**, and choose **Manage** from the shortcut menu. In the displayed **Computer Management** window, click **Device Manager** in the left pane, and check for **MBB GNSS Sensor** under **Sensors** in the right pane.

Step 2 Run Sensor Diagnostic Tool. In the left pane, select **MBB GNSS Sensor** under **Sensors**.

Initializing displayed in **State** indicates that GNSS positioning session is in progress.

Ready displayed in **State** indicates that the module obtains its current position information.

Under **Data,** the current position information is displayed. Before the module gets its position information, only the system time is displayed.

Under **Properties**, the HUAWEI GNSS port information is displayed.

When the content of **State** turns from **Initializing** to **Ready**, the module has obtained its current position information. Under **Data**, you can view the position information, including the latitude, longitude, altitude, and system time.

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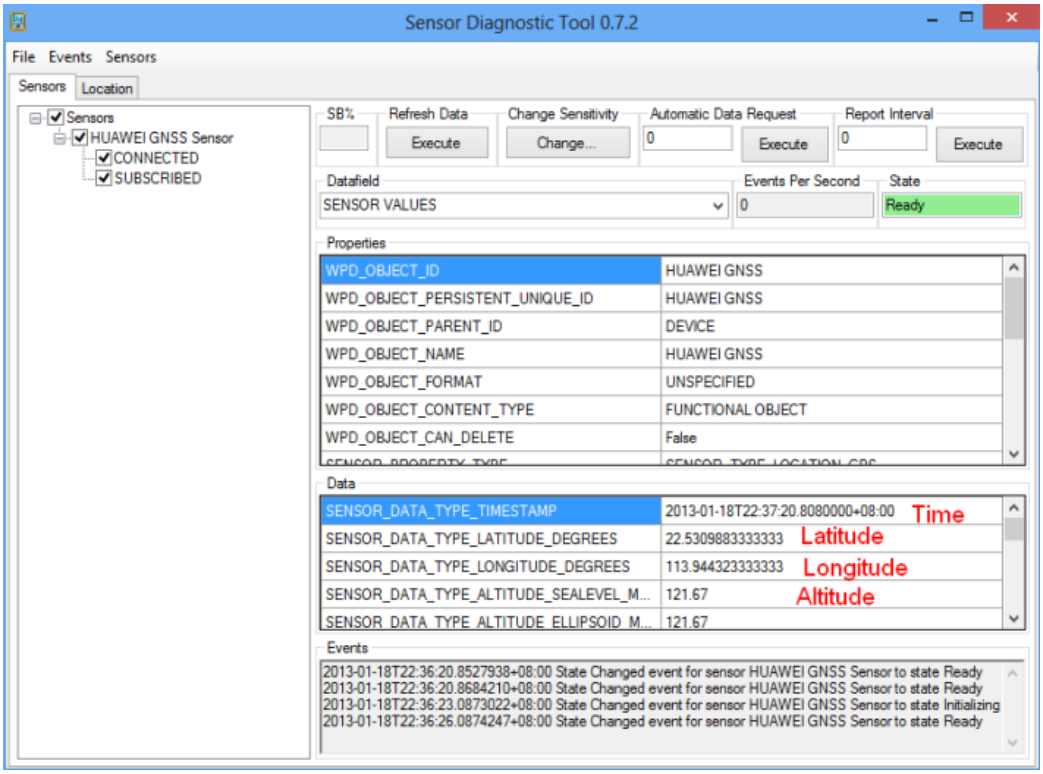

AGPS Positioning

CAUTION

AGPS positioning needs to download the assistant data from the AGPS Server. It certainly causes data usage costs.

In the WCDMA/LTE network, before using AGPS positioning, please set AGPS APN (profile 15) by running the command **AT+CGDCONT=15,"IP","APN"** (the value of APN is set according to the current network state).

Step 1 Insert a SIM card that has subscribed to network services into the ME906 module. Then set up a dial-up connection.

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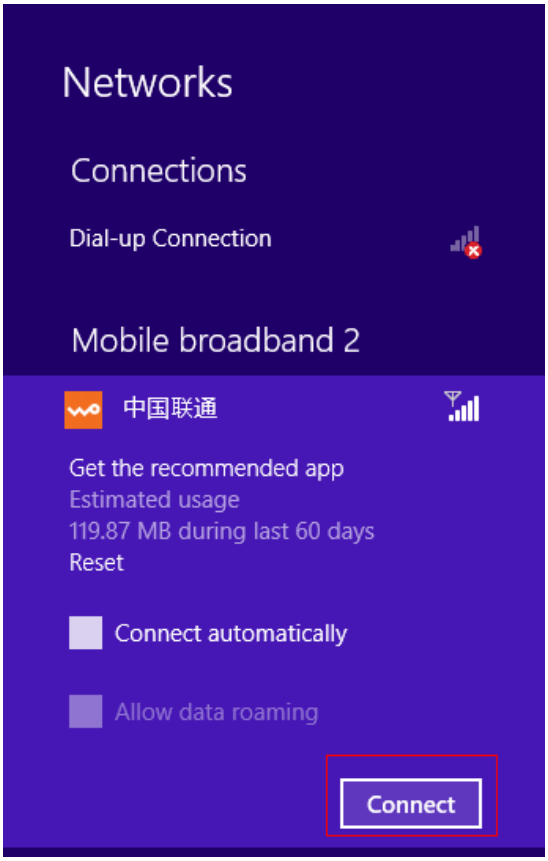

Step 2 The same as Step 1 in 2.3.1 Standalone Positioning.

Step 3 The same as Step 2 in 2.3.1 Standalone Positioning.

2.3.2 Using the Maps Application

Step 1 Press **windows** key in the keyboard and run the **Maps** application.

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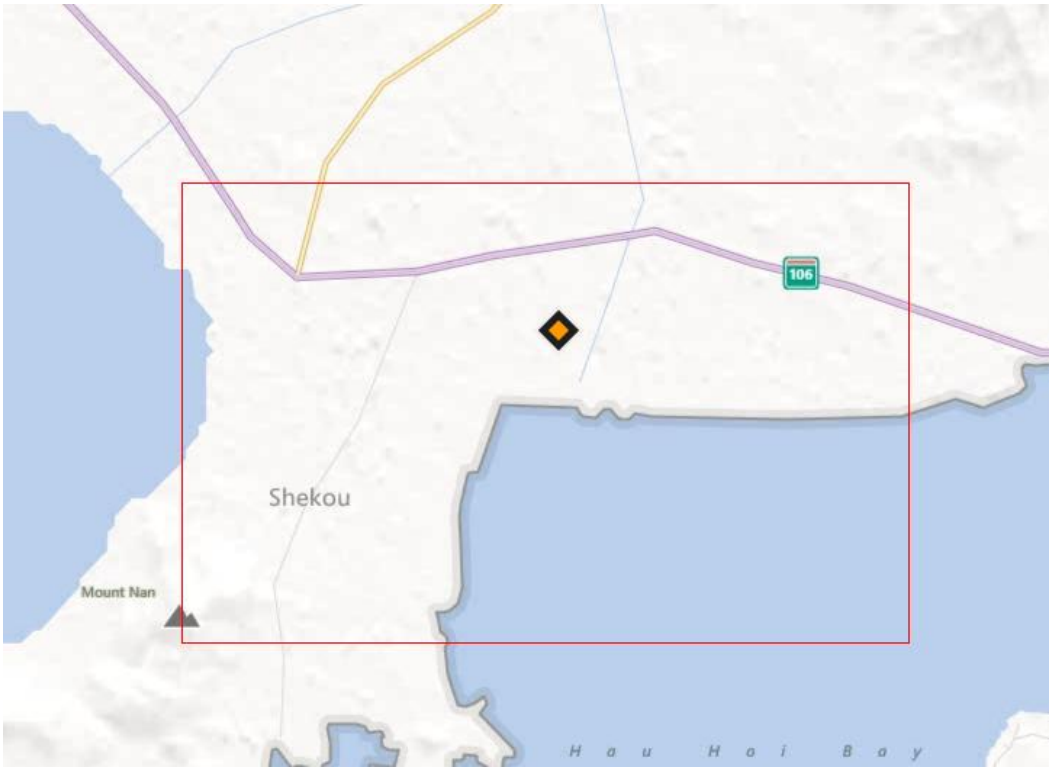
Your current location is displayed on the map within 1 minute. For example, the location of the Huawei Device building is displayed.



Step 2 To have a better view of the current location, click **Map style** at the bottom and select **Aerial view**.

The current location is updated per second.

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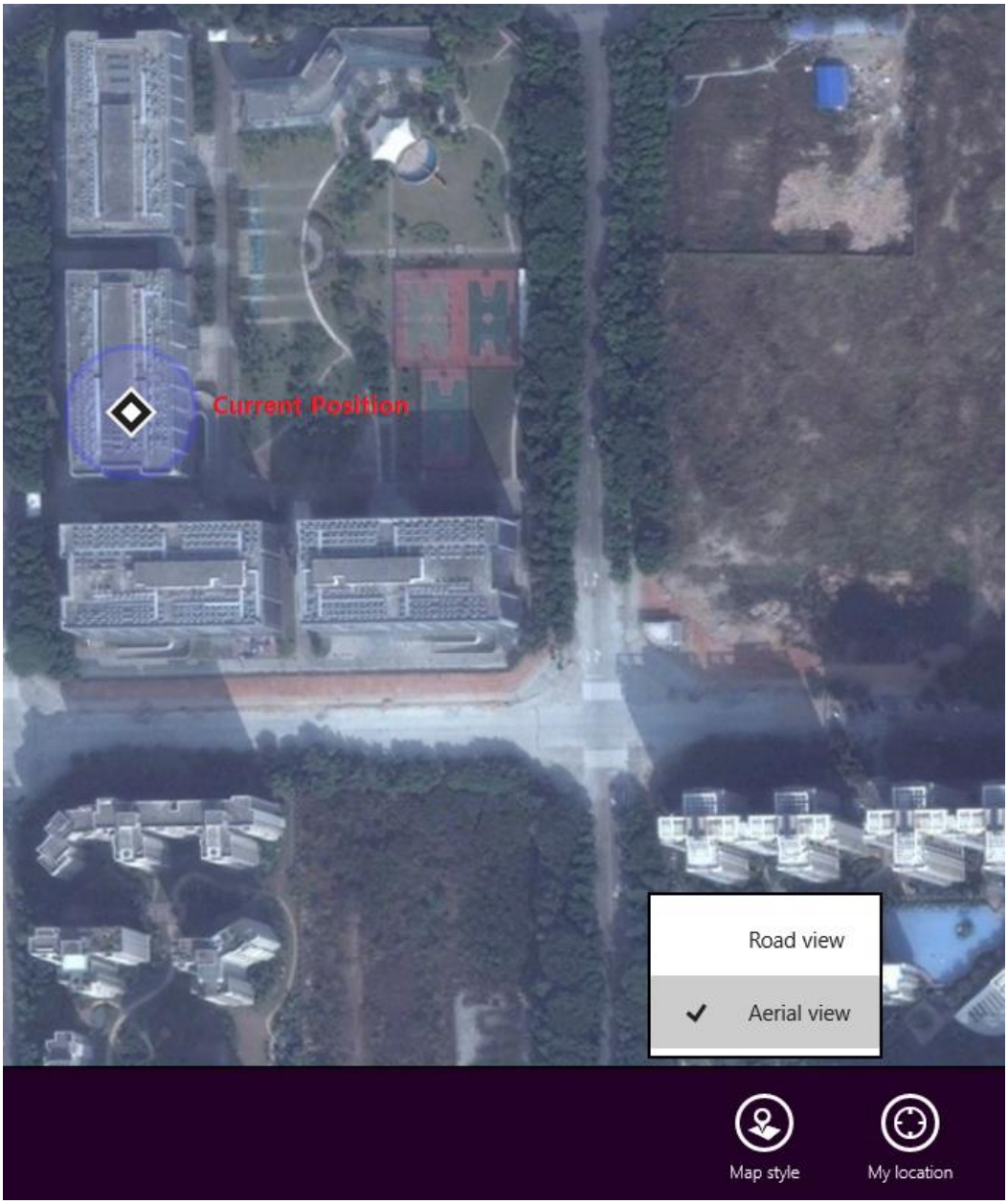

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3 Acronyms and Abbreviations

Acronym or Abbreviation	Expansion
A-GPS/AGPS	Assisted GPS
APN	Access Point Name
GNSS	Global Navigation Satellite System
GPS	Global Position System
NMEA	National Marine Electronics Association
QoS	Quality of Service
SIM	Subscriber Identity Module
SUPL	Secure User Plane Location
WDK	Windows Driver Kit

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