

## Release note

**Topic** u-blox M8 ADR 4.50 firmware for ADR products  
UBX-21005690 C1-Public

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**Date** 5 March 2021

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## 1 General information

This firmware operates with UBX-M8030-KT-DR and UBX-M8030-KA-DR chips and NEO-M8L professional and automotive grade modules.

### 1.1 Scope

This release note covers the changes to the ADR 4.50 firmware compared to the ADR 4.31 firmware version. For a comprehensive list of changes with respect to earlier versions, this release note should be read in conjunction with the ADR 4.31 release note.

### 1.2 Released firmware image

#### 1.2.1 Chipset firmware

Image file for software-interfaced sensor data:

```
UBX_M8_301_ADR450_CHIPSET_SWIF.48d3cec41c3f1fe95c4b21f0e9df3891.bin
```

Image file pre-configured for directly-connected sensor (hardware sensor interface):

```
UBX_M8_301_ADR450_CHIPSET_HWIF.adb842c05c57c6a5733aca64ffcd5c.bin
```

FW ID string:           EXT CORE 3.01 (86c0ce)  
                          FWVER=ADR 4.50  
                          PROTVR=19.20

Supports ROM base:    2.01, 3.01

#### 1.2.2 Module firmware

Image file pre-configured for the NEO-M8L module:

```
UBX_M8_301_ADR450_NEO_M8L_HWIF.014779b371afb6cbecbb6b996862b532.bin
```

FW ID string:           EXT CORE 3.01 (86c0ce)  
                          FWVER=ADR 4.50  
                          PROTVR=19.20

Supports ROM base:    2.01, 3.01

### 1.3 Related documentation

- [1] u-blox M8 Receiver Description including Protocol Specification, UBX-13002887-C2-Restricted
- [2] GNSS firmware 3.01 release notes, [UBX-16000319](#)
- [3] ADR 4.31 firmware release notes, [UBX-20009341](#)

### 1.4 u-center

u-center for Windows v20.01 or later should be used together with this firmware.

### 1.5 Firmware update tool

The firmware update utility tool v. 2.01 supports this product.

 Earlier versions of the firmware update tool will not operate with this release.

## 1.6 USB drivers

- u-blox GNSS Standard Driver for Windows v. 1.2.0.8
- u-blox GNSS Sensor Device Driver for Windows v. 2.40 and later
- u-blox GNSS VCP Device Driver for Windows v. 3.10

The latest drivers are available in the Product resources section of the u-blox website - <http://www.u-blox.com>

## 1.7 USB identification u-blox M8

Vendor ID: 0x1546  
 Product ID: 0x01A8  
 Driver string: u-blox GNSS receiver

## 1.8 Built-in driver support for directly connected sensors

This release includes built-in support for the following sensors connected via a two-wire interface (hardware sensor interface). Additional sensors may be supported on request in the future firmware releases.

Sensor type	Address	Configuration	Notes
Bosch BMI160	0x68	SD0 connected to GND	Connect CSB to VDDIO
Bosch BMI055	0x18 and 0x68	SDO1 and SDO2 connected to GND	PS connected to VDDIO
Bosch SMI130	0x18 and 0x68	SDO1 and SDO2 connected to GND	PS connected to VDDIO
Bosch SMG130	0x18 and 0x68	SDO1 and SDO2 connected to GND	PS connected to VDDIO
Bosch SMI230	0x18 and 0x68	SDO1 and SDO2 connected to GND	PS connected to VDDIO
Invensense MPU6515	0x68	ADO/SDO to GND	PS connected to VDDIO
Invensense MPU6500	0x68	ADO/SDO to GND	PS connected to VDDIO
ST LSM6DSL	0x6A	SDO/SA0 to GND	PS connected to VDDIO
ST LSM6DS3	0x6A	SDO/SA0 to GND	PS connected to VDDIO
ST LSM6DS0	0x6A	SDO/SA0 to GND	PS connected to VDDIO
STm LSM6DSR	0xD4	SDO connected to GND	CSB connected to VDDIO
TDK ICM-42605	0xD0	SDO connected to GND	AP_CS connected to VDDIO

## 2 New features inside ADR 4.50

The only changes inside ADR 4.50 compared to previous release ADR 4.31 are two additional hardware drivers for the directly connected IMU sensor TDK ICM-42605 and STm LSM6DSR.

## 3 IMU axis rotation

To make it fully compatible with the existing NEO-M8L modules with Bosch BMI160, the axis of STm LSM6DSR and TDK ICM-42605 have been rotated 90 degree counterclockwise on the z-axis on the internal sensor driver. Note that the self-test values still refer to the original IMU axis. Customers not using the IMU self-test feature will not notice any difference with previous product types.

## **4 Specialties and known limitations**

### **4.1 Special vehicle types**

This release has been optimized and tested for light road vehicles including motorbikes. Performance and behavior has not been characterized for trains, trams or trolleybuses.