


# 2JR02 (DATASHEET)

|                    |                                               |
|--------------------|-----------------------------------------------|
| <b>Type</b>        | GNSS receiver                                 |
| <b>Frequencies</b> | GPS (1575.42 MHz)<br>GLONASS(1592 - 1610 MHz) |
| <b>Mounting</b>    | Embedded                                      |
| <b>Revision</b>    | 00                                            |

High sensitivity  
Low Power Consumption  
Anti-Jamming technology  
RoHS Compliant  
USB 2.0 full speed



  
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# 1. PRODUCT SELECTOR

- 2JR02ba2** USB version with Telit SL869 receiver
- 2JR02ai2** USB version with Ublox Neo-7N receiver
- 2JR02ba1** UART (3.3V) version with Telit SL869 receiver
- 2JR02ai1** UART (3.3V) version with Ublox Neo-7N receiver

# 2. SPECIFICATION

## 2.1. General Specification

| Module                | Telit                                                                                  | Ublox                                                                                         |
|-----------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Frequencies           | GPS (1575.42 MHz)/ GLONASS(1592 - 1610 MHz)                                            |                                                                                               |
| Receiver type         | 32 Channels<br>GPS L1C/A<br>SBAS L1C/A<br>QZSS L1C/A<br>GALILEO E1B/C1<br>GLONASS L1OF | 56 search Channels<br>GPS L1C/A<br>SBAS L1C/A<br>QZSS L1C/A<br>GALILEO E1B/C1<br>GLONASS L1OF |
| Polarization          | RHCP                                                                                   |                                                                                               |
| Gain                  | 3dBiC                                                                                  |                                                                                               |
| Acquisition           | Cold starts: <35 s<br>Aided starts: 1 s<br>Hot starts: 1 s                             | Cold starts: <29 s<br>Warm starts: <28 s<br>Hot starts: <1 s                                  |
| Sensitivity           | Tracking: -162 dBm<br>Cold starts: -146 dBm<br>Hot starts: -160 dBm                    | Tracking: -162 dBm<br>Cold starts: -148 dBm<br>Hot starts: -156 dBm                           |
| Antenna element       | 25mm ceramic patch                                                                     |                                                                                               |
| Chip                  | Telit SL869                                                                            | Ublox NEO-7N                                                                                  |
| Protocols             | NMEA 0183, PST                                                                         | NMEA 0183, UBX                                                                                |
| Operating temperature | -40°C to +85°C                                                                         |                                                                                               |

## 2.2. Electrical Specifications –USB version

| Module              | Telit                             | Ublox          |
|---------------------|-----------------------------------|----------------|
| Voltage supply      | 3.7 V to 6V                       |                |
| Current consumption | Tracking: 57mA (GPS), 65mA (GNSS) | Tracking: 50mA |

## 2.3. Electrical Specifications –UART version

| Module              | Telit                             | Ublox          |
|---------------------|-----------------------------------|----------------|
| Voltage supply      | 3.7V to 30V                       |                |
| Current consumption | Tracking: 57mA (GPS), 65mA (GNSS) | Tracking: 32mA |



## 2.4. Connection Specifications

### USB:

|               |                 |
|---------------|-----------------|
| Cable:        | UL2725          |
| Cable length: | up to 10m       |
| Voltage:      | 5V              |
| Interface:    | USB version 2.0 |

### UART:

|               |                                                        |
|---------------|--------------------------------------------------------|
| Cable:        | UL2725                                                 |
| Cable length: | up to 10m (depends on cable quality and UART standard) |
| Voltage:      | 5V - 30V                                               |

|         |             |         |
|---------|-------------|---------|
| Pinout: | Red cable   | VCC     |
|         | Black cable | GND     |
|         | White cable | Rx data |
|         | Green cable | Tx data |
|         | Shielding   | GND     |

## 2.5. Comunication protocol

### 2.5.1. Telit

9600 Baud, 8 bits, no parity bit, 1 stop bit.

The module supports standard NMEA-0183 protocol and PST private protocol that can be used to provide extended capabilities for many applications. The module is capable of supporting the following NMEA formats: **GGA, GSA, GSV, RMC**

More specification at: [http://www.telit.com/en/products/satellite.php?p\\_ac=show&p=123](http://www.telit.com/en/products/satellite.php?p_ac=show&p=123)

### 2.5.2. UBLOX

9600 Baud, 8 bits, no parity bit, 1 stop bit.

Configured to transmit both NMEA and UBX protocols, but only following NMEA and no UBX messages have been activated at start-up:

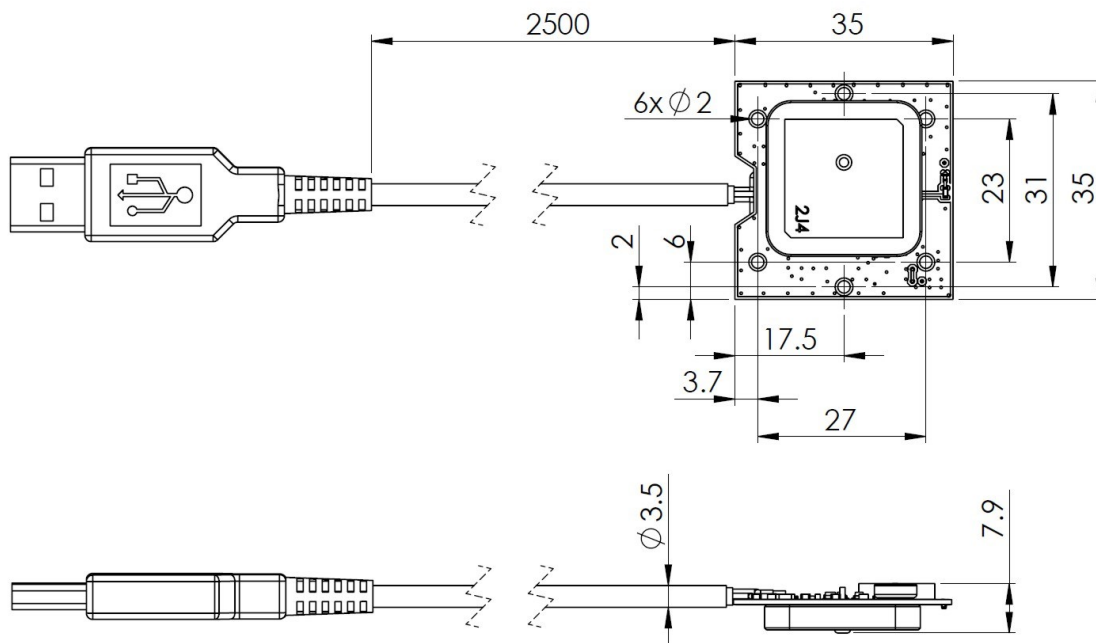
**DTM, GBS, GGA, GLL, GLQ, GNQ, GNS, GPQ, GRS, GSA, GST, GSV, RMC, VTG, TXT, ZDA**

More specification at: <http://www.u-blox.com/en/gps-modules/pvt-modules/neo-7.html>

## 2.6. Mechanical Specifications and Dimensions

PCB Material: FR4  
 Max. dimensions: 35mm x 35mm x 7.9mm

### 2.6.1. USB version



### 2.6.2. UART version

