

# VDB-811DR-M2-2242-B / VDB-810DR

*u-blox M9V Dead Reckoning GNSS Receiver*



VDB-811DR-M2-2242-B



VDB-810DR

- Concurrent Reception of GPS + QZSS, GLONASS, Galileo, BeiDou
- 92-channel u-blox M9 Engine
- Ultra Low Power Digital Accelerometer
- -158 dBm Acquisition & -159 dBm Tracking Sensitivity
- Dead Reckoning Support
- Operating Temp.: -40°C to 85°C

## Specifications



**VDB-811DR-M2-2242-B**



**VDB-810DR**

| Chipset          |                                     |                                     |
|------------------|-------------------------------------|-------------------------------------|
|                  | u-blox NEO-M9V-20B                  | u-blox NEO-M9V-20B                  |
| Channels         |                                     |                                     |
|                  | 92-channel                          | 92-channel                          |
| Receiver Type    |                                     |                                     |
| GPS              | L1 C/A                              | L1 C/A                              |
| QZSS             | L1 C/A/S                            | L1 C/A/S                            |
| GLONASS          | L1OF                                | L1OF                                |
| BeiDou           | B1I (1561.098 MHz) only             | B1I (1561.098 MHz) only             |
| Galileo          | E1B/C                               | E1B/C                               |
| SBAS             | L1 C/A: EGNOS, GAGAN, MSAS and WAAS | L1 C/A: EGNOS, GAGAN, MSAS and WAAS |
| Nav. Update Rate |                                     |                                     |
|                  | 50 Hz (4 concurrent GNSS)           | 50 Hz (4 concurrent GNSS)           |
| Accuracy         |                                     |                                     |
|                  | 1.5 m CEP (with SBAS)               | 1.5 m CEP (with SBAS)               |
|                  | 2.0 m CEP (without SBAS)            | 2.0 m CEP (without SBAS)            |
| Horizontal       | 1.5 m                               | 1.5 m                               |
| Vertical         | 3 m                                 | 3 m                                 |
| Acquisition      |                                     |                                     |
| Cold Start       | 24 s                                | 24 s                                |
| Aided Start      | 3 s                                 | 3 s                                 |
| Hot Start        | 2 s                                 | 2 s                                 |
| Sensitivity      |                                     |                                     |
| Tracking & Nav.  | -159 dBm                            | -159 dBm                            |
| Reacquisition    | -158 dBm                            | -158 dBm                            |
| Cold start       | -147 dBm                            | -147 dBm                            |
| Hot start        | -159 dBm                            | -159 dBm                            |
| Dead Reckoning   |                                     |                                     |
|                  | UDR, ADR                            | UDR                                 |

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| Interface              |  |   |
|------------------------|--|---|
| GNSS Chipset           | USB 2.0  | USB 2.0   |
| 2nd Accelerometer      | I2C  | I2C   |
| External I/O           | 1 x 1.0 mm 1x4-PIN JST<br>PIN 1: WHEELTICK+<br>PIN 2: WHEELTICK-<br>PIN 3: FWD+<br>PIN 4: FWD- | -   |
| Antenna Type           | 1 x MHF I Supports Active Antenna  | 1 x MHF I Supports Active Antenna                 |
| Protocol               |  |   |
|                        | NMEA 4.11 (default), 4.10, 4.0, 2.3, and 2.1, UBX  | NMEA 4.11 (default), 4.10, 4.0, 2.3, and 2.1, UBX |
| Power Requirement      |  |   |
| Power Input            | 3.3 VDC ±10%   | 3.3 VDC ±10%                                      |
| External I/O Input     | 30 VDC ±10% (Max.)   | -   |
| Power Consumption      | >0.6 watts (w/o active antenna)  | >0.5 watts (w/o active antenna)                   |
| Environmental          |  |   |
| Operating Temp.        | -40 ~ 85°C, ambient w/ air flow 0.6m/s   | -40 ~ 85°C, ambient w/ air flow 0.6m/s            |
| Storage Temp.          | -40 ~ 85°C   | -40 ~ 85°C  |
| Relative Humidity      | 10% RH – 90% RH (non-condensing)   | 10% RH – 90% RH (non-condensing)                  |
| Compliance             |  |   |
|                        | CE, FCC Class A, UKCA  | CE, FCC Class A, UKCA                             |
| Mechanical             |  |   |
| Form-factor            | M.2 2242 Key B   | PCIe Mini Card Full-Size                          |
| Dimensions (L x W x H) | 22 x 42 x 8 mm   | 30 x 51 x 10 mm                                   |
|                        |  |   |

Ordering Information

|                 |                     |   |
|-----------------|---------------------|---|
| Model Number    | VDB-811DR-M2-2242-B |   |
|                 | VDB-810DR           |   |
| Description     | VDB-811DR-M2-2242-B | u-blox NEO-M9V-20B w/ ADI ADXL346 M.2 GNSS Module   |
|                 | VDB-810DR           | u-blox NEO-M9V-20B w/ ADI ADXL346 mPCIe GNSS Module |
| State of Origin | Made in Taiwan      |   |

All specifications are subject to change without notice.