# UNICORE NEBULASIV SERIES PRODUCTS

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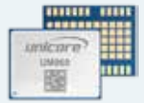
|---|---|---|---|---|---|---|
| |  **UB9A0**<br>All-constellation GNSS<br>High-Precision Board |  **UM980**<br>GPS/BDS/GLONASS/Galileo/QZSS<br>All-constellation Multi-frequency<br>High-Precision RTK Positioning Module |  **UM982**<br>GPS/BDS/GLONASS/Galileo/QZSS<br>All-constellation Multi-frequency<br>High-Precision Positioning and Heading Module |  **UM981/UM981S**<br>GPS/BDS/GLONASS/Galileo/QZSS<br>All-constellation Multi-frequency<br>RTK/INS Integrated Positioning Module |  **UM960**<br>GPS/BDS/GLONASS/Galileo/QZSS<br>All-constellation Multi-frequency<br>High-Precision RTK Positioning Module |  **UT986**<br>GNSS All-constellation Multi-frequency<br>High Accuracy Timing Module |
| **Quality Certificates** | RoHS, REACH, CE, FCC, IC, RED | RoHS, REACH, CE, FCC, IC, RED | RoHS, REACH, CE, FCC, IC, RED | RoHS, REACH, CE, FCC, IC, RED | RoHS, REACH, CE, FCC, IC, RED, POPs, TSCA | RoHS, REACH, RED |
| **Application Areas** | CORS; GBAS;<br>High-precision Surveying and Mapping | Surveying and Mapping;<br>Precision Agriculture | UAV; Precision Agriculture; Autonomous Machine | Surveying and Mapping;<br>Precision Agriculture | Robotic Lawn Mower; Robots;<br>Drone Light Show; GIS Handheld | Telecom Base Station Timing;<br>Electrical Power Grid Timing;<br>Network Time Synchronization |
| **Dimensions, Packaging and Weight** | 60 × 100 × 11.4 mm<br>40 pin<br>46.5 ± 2.5 g | 17.0 × 22.0 × 2.6 mm<br>54 pin LGA<br>1.88 ± 0.03 g | 16.0 × 21.0 × 2.6 mm<br>48 pin LGA<br>1.82 ± 0.03 g | 17.0 × 22.0 × 2.6 mm<br>54 pin LGA<br>1.91 ± 0.03 g | 12.2 × 16.0 × 2.6 mm<br>24 pin LGA<br>1.11 ± 0.03 g | 17.0 × 22.4 × 2.4 mm<br>28 pin LCC<br>1.9 g |
| **Single Point (RMS)** | Hor: 1.5 m Ver: 2.5 m | Hor: 1.5 m Ver: 2.5 m | Hor: 1.5 m Ver: 2.5 m | Hor: 1.5 m Ver: 2.5 m | Hor: 1.5 m Ver: 2.5 m | Hor: 1.5 m Ver: 2.5 m |
| **DGPS (RMS)** | Hor:0.4 m Ver:0.8 m | Hor: 0.4 m Ver: 0.8 m | Hor: 0.4 m Ver: 0.8 m | Hor: 0.4 m Ver: 0.8 m | Hor: 0.4 m Ver: 0.8 m | — |
| **RTK (RMS)** | Hor: 0.8 cm+1 ppm Ver:1.5 cm+1 ppm | Hor: 0.8 cm + 1 ppm Ver: 1.5 cm + 1 ppm | Hor: 0.8 cm + 1 ppm Ver: 1.5 cm + 1 ppm | Hor: 0.8 cm + 1 ppm Ver: 1.5 cm + 1ppm | Hor: 0.8 cm + 1 ppm Ver: 1.5 cm + 1 ppm | — |
| **Heading (RMS)** | — | — | 0.1° /1 m baseline | — | — | — |
| **Frequency** | GPS L1C/A, L1C, L2C, L2P(Y), L5<br>BDS B1I, B2I, B3I, B1C, B2a, B2b<br>GLONASS G1, G2, G3<br>Galileo E1, E5a, E5b, E6<br>QZSS L1C/A, L1C, L2C, L5, L6<br>NavIC L5<br>SBAS L1C/A<br>L-Band* | GPS L1C/A, L1C, L2C, L2P(Y), L5<br>BDS B1I, B2I, B3I, B1C, B2a, B2b<br>GLONASS G1, G2, G3<br>Galileo E1, E5a, E5b, E6<br>QZSS L1C/A, L1C, L2C, L5, L6<br>NavIC L5<br>SBAS L1C/A<br>L-Band* | GPS L1C/A, L2C, L2P(Y), L5<br>BDS B1I, B2I, B3I,B1C*,B2b*<br>GLONASS G1, G2<br>Galileo E1, E5a, E5b,E6*<br>QZSS L1C/A, L2C, L5, L6*<br>SBAS L1C/A | GPS L1C/A, L1C, L2C, L2P(Y), L5<br>BDS B1I, B2I, B3I, B1C, B2a, B2b<br>GLONASS G1, G2, G3<br>Galileo E1, E5a, E5b, E6<br>QZSS L1C/A, L1C, L2C, L5, L6<br>NavIC L5<br>SBAS L1C/A | GPS L1C/A, L2C, L2P, L5<br>BDS B1I, B2I, B3I, B1C, B2a, B2b*<br>GLONASS G1, G2<br>Galileo E1, E5a, E5b, E6*<br>QZSS L1C/A, L2C, L5<br>SBAS L1C/A | GPS L1C/A, L2C, L5<br>BDS B1I, B1C, B2a<br>GLONASS G1<br>Galileo E1, E5a, E5b<br>QZSS L1C/A, L2C, L5 |
| **IMU** | — | — | — | ● | — | — |
| **Dual Antenna** | — | — | ● | — | — | — |
| **RTK/Initialization Time (s)** | < 5 | < 5 | < 5 | < 5 | < 5 | — |
| **Cold Start (s)** | < 12 | < 12 | < 30 | < 12 | < 30 | < 30 |
| **Data Update Rate (Hz)** | 50 | 50 | 20 | 50* | 20 | 1 |
| **Output Latency (ms)** | < 25 | < 25 | < 20 | < 10 | < 20 | < 20 |
| **Interface** — **Serial Port** | 1 x RS-232 2 x LVTTL | 3 x LVTTL | 3 x LVTTL | 2 x LVTTL (UM981)<br>3 x LVTTL (UM981S) | 3 x LVTTL | 2 x LVTTL |
| **Interface** — **Ethernet Port (10/20 M)** | 1 | — | — | — | — | — |
| **Interface** — **1PPS** | 1 | 1 | 1 | 1 | 1 | 1 |
| **Interface** — **External Clock** | 1 | — | — | — | — | 1 |
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● Support; -N/A; * Optional