












UNICORE NEBULASIV SERIES PRODUCTS

	 UM980 GPS/BDS/GLONASS/Galileo /QZSS All-Constellation Multi-Frequency High-Precision RTK Positioning Module	 UM980C GPS/BDS/GLONASS/Galileo /QZSS All-Constellation Multi-Frequency High-Precision RTK Positioning Module (L-Band & CLAS Supported)	 UM982 GPS/BDS/GLONASS/Galileo /QZSS All-Constellation Multi-Frequency High-Precision Positioning and Heading Module	 UM982C GPS/BDS/GLONASS/Galileo /QZSS All-Constellation Multi-Frequency High-Precision Positioning & Heading Module (L-Band & CLAS Supported)	 UB9A0 All-Constellation GNSS High-Precision Board	 UM981 GPS/BDS/GLONASS/Galileo /QZSS All-Constellation Multi-Frequency RTK/INS Integrated Positioning Module	 UM981C GPS/BDS/GLONASS/Galileo /QZSS All-Constellation Multi-Frequency RTK/INS Integrated Positioning Module (L-Band & CLAS Supported)	 UM981S GPS/BDS/GLONASS/Galileo /QZSS All-Constellation Multi-Frequency RTK/INS Integrated Positioning Module	 UM960 GPS/BDS/GLONASS/Galileo /QZSS All-Constellation Multi-Frequency High-Precision RTK Positioning Module	 UM960E GPS/BDS/GLONASS/Galileo /QZSS All-Constellation Multi-Frequency High-Precision RTK Positioning Module	 UT986 GNSS All-Constellation Multi-Frequency 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, CE, FCC, IC, RED, POPS, TSCA	RoHS, REACH, RED	
Application Areas	Surveying and Mapping; Precision Agriculture		UAV, Precision Agriculture, Autonomous Machine		CORS, GBAS, High-Precision Surveying and Mapping	Precision Agriculture			Surveying and Mapping	Robotic Lawn Mower, GIS Handheld, Drone Light Show, Robots	Robotic Lawn Mower	Telecom Base Station Timing, Electrical Power Grid Timing, Network Time Synchronization
Dimensions	17.0 × 22.0 × 2.6 mm		16.0 × 21.0 × 2.6 mm		60.0 × 100.0 × 11.4 mm	17.0 × 22.0 × 2.6 mm			12.2 × 16.0 × 2.6 mm	12.2 × 16.0 × 2.6 mm	17.0 × 22.4 × 2.4 mm	
Packaging	54 pin LGA		48pin LGA		40 pin	54 pin LGA			24 pin LGA	24 pin LGA	28 pin LCC	
Weight	1.88 g ± 0.03 g		1.82 g ± 0.03 g		46.5 g ± 2.5g	1.91g ± 0.03g			1.11 g ± 0.03 g	1.08 g ± 0.03 g	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	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	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+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	—	
Heading (RMS)	—		0.1° /1 m baseline		—	—			—	—	—	
Frequency	BDS B1I, B3I, B1C, B2a, B2b, B3I GPS L1C/A, L1C, L2C, L2P(Y), L5 GLONASS G1, G2, G3 (UM980) GLONASS G1, G2 (UM980C) Galileo E1, E5a, E5b, E6 QZSS L1C/A, L1C/B, L1C, L2C, L5, L6 NAVIC L5 SBAS L1C/A L-Band (UM980C)		BDS B1I, B3I, B1C*, B2b* GPS L1C/A, L2C, L2P(Y), L5 GLONASS G1, G2 Galileo E1, E5a, E5b, E6* QZSS L1C/A, L1C/B, L2C, L5, L6* SBAS L1C/A L-Band (UM982C)		BDS B1I, B3I, B1C, B2a, B2b GPS L1C/A, L1C, L2C, L2P(Y), L5 GLONASS G1, G2, G3 Galileo E1, E5a, E5b, E6 QZSS L1C/A, L1C, L2C, L5, L6 NavIC L5 SBAS L1 C/A L-Band*	BDS B1I, B3I, B1C, B2a, B2b GPS L1C/A, L1C, L2C, L2P(Y), L5 GLONASS G1, G2, G3 Galileo E1, E5a, E5b, E6 QZSS L1C/A, L1C, L2C, L5, L6 NavIC L5 SBAS L1C/A L-Band (UM981C)			BDS B1I, B3I, B1C, B2a, B2b GPS L1C/A, L2C, L2P(Y), L5 GLONASS G1, G2 Galileo E1, E5a, E5b, E6 QZSS L1C/A, L2C, L5 SBAS L1C/A	BDS B1I, B3I, B1C, B2a, B2b GPS L1C/A, L2C, L2P(Y), L5 GLONASS G1, G2 Galileo E1, E5a, E5b, E6 QZSS L1C/A, L2C, L5	BDS B1I, B1C, B2a GPS L1C/A, L2C, L5 GLONASS G1 Galileo E1, E5a, E5b QZSS L1C/A, L2C, L5	
IMU	—		—		—	●			—	—	—	
Dual Antenna	—		●		—	—			—	—	—	
RTK Initialization Time (s)	<5		<5		<5	<5			<5	<5	—	
Cold Start (s)	<12		<30		<12	<12			<30	<35	<30	
Data Update Rate (Hz)	50		20		50	100Hz (IMU Raw Data) 50 Hz (RTK)			20	20	1	
Output Latency (ms)	<25		<20		<25	<10			<20	<20	<20	
Interface	Serial Port	3 x LVTTTL		3 x LVTTTL	1 x RS-232 2 x LVTTTL	3 x LVTTTL			3 x LVTTTL	3 x LVTTTL	2 x LVTTTL	
	Ethernet Port (10/20 M)	—		—	1	—			—	—	—	
	1PPS	1		1	1	1			1	1	1	
	External Clock	—		—	1	—			—	—	1	
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● Support; -N/A; * Optional