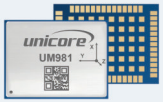
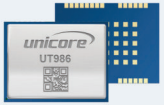
UNICORE NEBULAS SERIES PRODUCTS

							
		UB9A0 All-constellation GNSS High Precision Board	**UM980** GPS/BDS/GLONASS/Galileo/QZSS All-constellation Multi-frequency High Precision RTK Positioning Module	**UM982** GPS/BDS/GLONASS/Galileo/QZSS All-constellation Multi-frequency High Precision Positioning and Heading Module	**UM981** 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	**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	RoHS, REACH, RED
Application Areas		CORS; GBAS; High-precision Surveying and Mapping	Surveying and Mapping; Precision Agriculture	UAV; Precision Agriculture; Autonomous Machine	Surveying and Mapping; Precision Agriculture	Robotic Lawn Mower; Robots; Drone Light Show; GIS Handheld	Telecom Base Station Timing; Electrical Power Grid Timing; Network Time Synchronization
Dimensions, Packaging and Weight		60 × 100 × 11.4 mm 40 pin 46.5 ± 2.5 g	17.0 × 22.0 × 2.6 mm 54 pin LGA 1.88 ± 0.03 g	16.0 × 21.0 × 2.6 mm 48 pin LGA 1.82 ± 0.03 g	17.0 × 22.0 × 2.6 mm 54 pin LGA 1.91 ± 0.03 g	12.2 × 16.0 × 2.6 mm 24 pin LGA 1.11 ± 0.03 g	17.0 × 22.4 × 2.4 mm 28 pin LCC 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 BDS B1I, B2I, B3I, B1C, B2a, B2b GLONASS G1, G2, G3 Galileo E1, E5a, E5b, E6 QZSS L1C/A, L1C, L2C, L5 NavIC L5 SBAS L1C/A L-Band*	GPS L1C/A, L1C, L2C, L2P(Y), L5 BDS B1I, B2I, B3I, B1C, B2a, B2b GLONASS G1, G2, G3 Galileo E1, E5a, E5b, E6 QZSS L1C/A, L1C, L2C, L5 NavIC L5 SBAS L1C/A L-Band*	GPS L1C/A, L2C, L2P(Y), L5 BDS B1I, B2I, B3I,B1C*,B2b* GLONASS G1, G2 Galileo E1, E5a, E5b,E6* QZSS L1C/A, L2C, L5 SBAS L1C/A	GPS L1C/A, L1C, L2C, L2P(Y), L5 BDS B1I, B2I, B3I, B1C, B2a, B2b GLONASS G1, G2, G3 Galileo E1, E5a, E5b, E6 QZSS L1C/A, L1C, L2C, L5 NavIC L5 SBAS L1C/A	GPS L1C/A, L2C, L2P(Y), L5 BDS B1I, B2I, B3I, B1C, B2a GLONASS G1, G2 Galileo E1, E5a, E5b QZSS L1C/A, L2C, L5 SBAS L1C/A	GPS L1C/A, L2C, L5 BDS B1I, B1C, B2a GLONASS G1 Galileo E1, E5a, E5b 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	3 x LVTTL	3 x LVTTL	2 x LVTTL
	Ethernet Port (10/20 M)	1	–	–	–	–	–
	1PPS	1	1	1	1	1	1
	External Clock	1	–	–	–	–	1
Page		14	10	9	12	11	13

● Support; -N/A; * Optional

UNICORE UFIREBIRD SERIES PRODUCTS

Products	Applications	Grade		Dimensions	GNSS						Single frequency	Dual frequency	Ports				Functions						
		Industrial grade	Automotive grade		GPS	BDS	GLONASS	Galileo	NavIC	QZSS			UART1	UART2	SPI	I²C	Built-in Flash	Data Update Rate	DR	AGNSS	Timing	RTK	
Chip																							
UFirebird UC6226NAS	Factory-installed Navigation, Tracker, IoT, Smart Phone, Aftermarket Navigation		●	5.0 × 5.0 × 0.75 mm	●	●	○	●		●	●		●	●			●	1 Hz		●			25
UFirebird UC6226NIS		●		5.0 × 5.0 × 0.75 mm	●	●	○	●		●	●		●	●			●	1 Hz		●			25
UFirebird II UC6580A	GIS, UAV, Automated Delivery Vehicle, Sharing Bike/Scooter, Intelligent Driving, Smart Agriculture		●	5.0 × 5.0 × 0.85 mm	●	●	●	●	○	●		●	●	●	●	●	●	1 Hz / 5 Hz / 10 Hz		●			17
UFirebird II UC6580I		●		5.0 × 5.0 × 0.85 mm	●	●	●	●	○	●		●	●	●	●	●	●	1 Hz / 5 Hz / 10 Hz		●			17
Module																							
UM680A	Intelligent Driving, P-Box, T-Box		●	22.0 × 17.0 × 2.6 mm	●	●	●	●	○	●		●	●	●	○	○	●	1 Hz / 5 Hz / 10 Hz		●		●	18
UM681A	Intelligent Driving, V2X, T-Box		●	22.0 × 17.0 × 2.6 mm	●	●	●	●	○	●		●	●	●	○	○	●	1 Hz / 5 Hz / 10 Hz	●	●		●	19
UM670A	Intelligent Driving, P-Box, T-Box		●	22.0 × 17.0 × 2.6 mm	●	●	●	●	○	●		●	●	●	○	○	●	1 Hz / 5 Hz / 10 Hz		●			20
UM620A	Vehicle Navigation, T-BOX, Intelligent Cockpit		●	12.2× 16.0 × 2.4 mm	●	●	●	●	○	●		●	●	●	○	○	●	1Hz/5Hz*/10Hz*		●			21
UM620	Vehicle Navigation, T-BOX, Intelligent Cockpit	●		12.2× 16.0 × 2.4 mm	●	●	●	●	○	●		●	●	●	○	○	●	1Hz/5Hz*/10Hz*		●			22
UM621A	Vehicle Navigation, T-BOX, Intelligent Cockpit		●	12.2 × 16.0 × 2.4 mm	●	●	●	●	○	●		●	●	●	○	○	●	1Hz/5Hz*/10Hz*	●	●			23
UM621	Vehicle Navigation, T-BOX, Electric Scooter	●		12.2 × 16.0 × 2.4 mm	●	●	●	●	○	●		●	●	●	○	○	●	1Hz/5Hz*/10Hz*	●	●			24
UM220-INS NL	Vehicle Navigation, T-Box	●		12.2 × 16.0 × 2.6 mm	●	●	○	●		●	●		●	●			●	1 Hz / 5 Hz / 10 Hz	●	●			26
UM220-INS NF	Vehicle Navigation, T-Box		●	12.2 × 16.0 × 2.6 mm	●	●	○	●		●	●		●	●			●	1 Hz / 5 Hz / 10 Hz	●	●			27
UM220-IV NV	Vehicle Navigation, T-BOX		●	12.2 × 16.0 × 2.4 mm	●	●	○	●		●	●		●	●			●	1 Hz / 5 Hz		●			28
UM220-IV NL	Vehicle Navigation, Vehicle Monitoring	●		12.2 × 16.0 × 2.4 mm	●	●				●	●		●	●			●	1 Hz		●			29
UM220-IV M0	Tracker, Vehicle Navigation	●		9.7 × 10.1 × 2.2 mm	●	●	○	●		●	●		●				●	1 Hz		●			30
UM220-IV L	Telecom Timing, Electrical Power Grid Timing, LAN Time Synchronization	●		17.0 × 22.4 × 2.4 mm	●	●	●	●			●		●	●			●	1 Hz		●	●		31

● : support ○ : support after firmware upgrade