UM980

GNSS MODULE

For Your Versatile GNSS Integration

CENTIMETER POSITIONING

As a full-constellation GNSS module, UM980 tracks GPS, BDS, GLONASS, Galileo and QZSS for stable satellite signals. Embedded multi-frequency anti-jamming technology and enhanced RTK engine solution significantly improve RTK initialization speed, accuracy and reliability in complex environments such as urban blocks and tree shade.

EASY INTEGRATION

Measuring only 17mm x 22mm x 2.6mm, with a 54-pin surface mount design and low power consumption of 480mW, the UM480 can be easily embedded into most devices. In addition, the abundant interfaces of UART, I2C and SPI, industry-standard data formats & protocols of UM480 provides huge possibilities for user integrations.

WIDE APPLICATIONS

Designed as a functional module provide high accuracy positioning information for horizontal and vertical applications, such as land surveying, GIS, monitoring, UAV, USV, robotics, personnel positioning, machine control, autonomous vehicles, precision agriculture, etc.

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SATELLITE TRACKING

Channels	1408
BDS	B1I, B2I, B3I, B1C, B2a, B2b[1]
GPS	L1 C/A, L1C[1], L2P(Y), L2C, L5
GLONASS	L1, L2
Galileo	E1, E5a, E5b
QZSS	L1, L2, L5

PERFORMANCE

Cold start	<30 s
RTK Initialization Time	<5 s (typical)
RTK initialization reliability	>99.9%
Re-acquisition	<1s

ACCURACY

Standalone	1.5m Horizontally 2.5m Vertically
DGPS	0.4m Horizontally 0.8m Vertically
RTK	8mm+1ppm Horizontally 15mm+1ppm Vertically
Velocity Accuracy	0.03m/s
Time Accuracy	20ns

DATA FORMAT

Data output format	- NMEA-0183 - Binary format
Data update rate	Up to 50Hz[2]
Correction data format	RTCM v3.3/3.2/3.1/3.0

COMMUNICATIONS

UART × 3

I2C[3] × 1

SPI[3] × 1, slave

CAN[3] × 1, shared with UART3

ELECTRICAL

Voltage	+3.0 V~+3.6 V DC
Power consumption	480 Mw (typical)

PHYSICAL

Dimensions	22 × 17 × 2.6 mm
Hardware interface	54 pin LGA
Weight	1.88 g ±0.03 g

ENVIRONMENTAL

Working temperature	-40 ℃ to + 85 ℃
Storage temperature	-55 ℃ to + 95 ℃
Humidity	95% no condensation
Vibration	GJB150.16-2009，MIL-STD-810
Shock	GJB150.18-2009，MIL-STD-810

1. The B2b and L1C are reserved for future upgrade.
2. 50Hz is supported after firmware upgrade.
3. I2C, SPI, CAN: Reserved interfaces.

All specifications are subject to change without notice.

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