UT986

All-constellation Multi-frequency **High Precision Affordable** Timing Module

17.0 x 22.4 x 2.4 mm

Typical Applications

- Precision Timing
- Telecom

Features / Benefits

- Latest generation GNSS SoC – Nebulas IV™, with integrated RF, baseband, and high precision processing algorithm's
- 1PPS Accuracy of ***2.5ns*** (RMS)
- Small 17.0 x 22.4 x 2.4 mm surface-mount package
- Low power-consumption of ~700 mW
- Supports interference detection and spoofing detection
- Supports single-satellite timing
- Independent tracking of satellite frequencies and 60dB narrowband anti-jamming technology

UT986 is Unicore's new-generation proprietary GNSS high-precision timing module working on all systems and multiple frequencies.

The module integrates filters and linear amplifiers, providing optimized RF structure and interference rejection capability. Together with the adaptive anti-interference technology and multi-path suppression algorithm, it supports interference detection and spoofing detection, ensuring that the module continuously provides excellent performance even in complex electromagnetic environments.

UT986 delivers nanosecond-level PPS accuracy and allows multiple timing modes, including fixed-location timing, optimized-location timing, and positioning timing, enabling exceptional timing accuracy in complex signal environment.

UT986 – General Specifications

Basic Information

Channels:	1408 channels based on Nebulas IV™
Frequency:	GPS: L1C/A, L2C, L5 Galileo: E1, E5a, E5b Beidou: B1I, B1C, B2a Glonass: L1

Environmental Specifications

Working Temperature	-40C - +85C
Storage Temperature	-40C - +95C
Vibration	GJB150.16A-2009 MIL-STD-810F
Shock	GJB150.18A-2009 MIL-STD-810F
Humidity	95% N/C
RoHS 2.0	Compliant

Physical Characteristics

Packaging	28 pin LGA
Dimensions	17.0 x 22.4 x 2.4 mm
Weight	1.9+/- 0.03g

Electrical

Voltage	+3.0 - +3.6 VDC
Ripple Voltage	100mV p-p (max)
Power Consumption	700mW (typical)

GNSS Performance

Position Accuracy		Cold Start	30 s	1PPS Accuracy (RMS)[3]	2.5 ns
Horizontal (CEP)	1.5m	Reacquisition	~ 3 s	Velocity Accuracy	0.03 m/s
Vertical (CEP)	2.5m	Data Update	1 Hz		

Sensitivity[2]		GPS	Galileo	Beidou	Glonass
	Cold Start	-147 dBm	-145 dBm	-145 dBm	-145 dBm
	Tracking	-161 dBm	-155 dBm	-160 dBm	-155 dBm

I/O Data Interface

2 x UART (LV TTL), 9600 bps to 921600 bps

RF Input

VSWR	≤ 2.0
Input Impedance	50 Ω
Antenna Gain	5 dB to 35 dB

[1] **All satellites C/NO at 41 dB**
[2] **Tested with a good external LNA**
[3] **Open sky**