

# UT986

## GNSS All-Constellation Multi-Frequency High-Accuracy Timing Module



17.0 × 22.4 × 2.4 mm



### Features

- » Based on Unicore's proprietary GNSS SoC NebulasIV that integrates RF, baseband and high-precision algorithm
- » New-generation GNSS all-constellation multi-frequency high-accuracy timing module
- » Nanosecond-level PPS accuracy, with time quality indicator output
- » Excellent anti-jamming capability, tracking different signals by different RF channels
- » Supports jamming detection and spoofing detection
- » Supports single-satellite timing

### Applications



Telecom Base Station Timing



Electrical Power Grid Timing



Network Time Synchronization

UT986 is Unicore's new-generation proprietary GNSS high-accuracy timing module working on all systems and multiple frequencies. The module integrates filters and linear amplifiers, providing optimized RF structure and having interference suppression capability. Combining the adaptive anti-jamming technology and multi-path mitigation algorithm, it supports jamming 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.

### Physical Specifications

Packaging	28 pin LCC
Dimension	17.0 × 22.4 × 2.4 mm
Weight	1.9 g

### Power Supply

Voltage	3.0 V ~ 3.6 V DC
Power Consumption	700 mW (typical)

### Environmental Specifications

Operating Temperature	-40 °C ~ +85 °C
Storage Temperature	-40 °C ~ +95 °C

### I/O Interface

2 × UART LVTTL, baud rate: 9600 bps to 921600 bps

### RF Input

Input Impedance	50 Ω
Antenna Gain	5 dB ~ 35 dB

### Performance Specifications

Channel	1408 channels, based on NebulasIV				
	GPS L1C/A, L2C, L5				
Frequency	BDS B1I, B1C, B2a				
	GLONASS G1				
	Galileo E1, E5a, E5b				
	QZSS LC/A, L2C, L5				
TTFF	Cold Start	< 30 s			
	Reacquisition	< 3 s			
Positioning Accuracy (CEP)	Horizontal: 1.5 m (dual system, open sky)				
	Vertical: 2.5 m (dual system, open sky)				
Velocity Accuracy (RMS)	0.03 m/s (dual system horizontal, open sky)				
Sensitivity (RMS)	BDS	GPS	GLONASS	Galileo	
	Cold Start	-145 dBm	-147 dBm	-145 dBm	-145 dBm
	Tracking	-160 dBm	-161 dBm	-155 dBm	-155 dBm
1PPS Accuracy	< 5 ns (1σ)				
Data Update Rate	1 Hz Up to 10 Hz				
Differential Data	RTCM V3.X				
Data Format	NMEA-0183, Unicore				