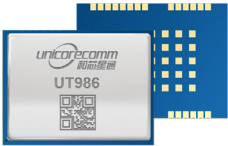


# UT986

GNSS All-constellation Multi-frequency  
High Precision Timing Module



17.0× 22.4 × 2.4 mm

## Features

- » Based on the new generation GNSS SoC - NebulasIV, which integrates RF, baseband, and high precision algorithm
- » New-generation GNSS all-system multi-frequency high-precision timing module, supporting BeiDou-3 signals
- » Nanosecond-level PPS accuracy
- » Adaptive anti-interference technology and multi-path mitigation technology
- » Supports interference detection and spoofing detection
- » Supports single-satellite timing

## Applications



Telecom Timing

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 suppression capability. Together with the adaptive anti-interference technology and multi-path mitigation 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.

## Physical Specifications

Packaging	SMT
Dimension	17.0× 22.4 × 2.4 mm
Weight	1.9g

## Power Supply

Voltage	3.0 V~3.6 V DC
Power consumption	700mW

## Environmental Specifications

Working temperature	-40°C ~ +85°C
Storage temperature	-40°C~+95°C
RoHS2.0	Compliant

## I/O Interface

UART x 2	LVTTTL level, Baud rate 9600 bps ~921600 bps
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## RF Input

SWR	≤2.0
Input impedance	50 Ω
Antenna gain	5 dB~35 dB

## Performance Specifications

Channel	1408 channels, based on NebulasIV				
Frequency	BDS B1I/B1C/B2a	Cold start: < 30 s			
	GPS L1C/A/L2C/L5				
	GLONASS G1	Reacquisition: <3 s			
	Galileo E1/E5a/E5b				
Positioning accuracy (CEP)	1.5 m (dual system horizontal, open sky) 2.5 m (dual system vertical, open sky)				
Velocity accuracy (RMS)	0.03 m/s (dual system horizontal, open sky)				
Observation accuracy (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 (RMS)	2.5 ns				
Data update rate	1Hz raw measurements				
Data format	NMEA 0183, Unicore Protocol, RTCM V3.2				