

UM220-IV L

Single-frequency Multi-GNSS
Timing Module



17.0 × 22.4 × 2.4 mm

Product Characteristics

- » Multi-mode single-frequency timing, with the timing accuracy better than 20ns
- » Supports GPS + BDS/GLONASS + Galileo, as well as BDS-3 signals
- » Supports single satellite timing, ensuring high reliability even if there is only one visible satellite
- » Supports antenna open circuit warning and short circuit protection
- » Compatible with mainstream GPS timing modules and saving cost

Applications



Telecom Base Station Timing



Electrical Power
Grid Timing



Network Time
Synchronization

Brief Introduction

UM220-IV L is a timing module developed for telecom timing and electrical grid timing, supporting GPS, BDS, GLONASS, and Galileo. The module is based on Unicore's proprietary low power SoC - UFirebird UC6226, and supports multi-mode timing. It features high accuracy, high stability, high reliability, and is suitable for large-scale GNSS timing applications.

15	GND	GND	14
16	RF_IN	GND	13
17	GND	NC	12
18	VCC_RF	V_BCKP	11
19	V_ANT	nRESET	10
20	ANT_DET_N	NC	9
UM220-IV L			
21	NC	VCC_OUT	8
22	NC	GND	7
23	NC	VCC	6
24	NCI	NC	5
25	NC	RXD1	4
26	NC	TXD1	3
27	NC	RXD2	2
28	TIMEPULSE	TXD2	1

Ordering Information

Supply at multiples of 500 pieces

Physical Specifications

Dimensions	17.0 × 22.4 × 2.4 mm
Weight	1.7 g
Package	28 pin SMD
Operating Temperature	-40°C ~ +85°C
Storage Temperature	-40°C ~ +85°C

Electrical Specifications

Voltage	3.0 V ~ 3.6 V DC
LNA	3.0 V ~ 3.3 V, < 100 mA
Power Consumption ²	62 mW @3.3V

Functional Ports

2 × UART
1 × 1PPS
Data Format NMEA 0183, Unicore

Functional Characteristics

Passive antenna, active antenna
Single satellite timing mode

NOTE: The parts marked with * are supported by specific firmware.

- 1 Typical value, < 30 m/s open sky
- 2 Open sky, continuous tracking

Performance Specifications

Channel	Based on 64-Channel SoC - UFirebird
	BDS B1I
Frequency	GPS L1C/A
	GLONASS G1
	Galileo E1
Modes	Single-System Positioning
	Multi-System Positioning
	Cold Start < 28 s
Time to First Fix(TTFF)	Hot Start < 1 s
	Reacquisition < 1 s
Positioning Accuracy ¹	2.0 m CEP(Dual-System Horizontal)
	2.0 m CEP (SBAS Horizontal)*
1PPS	Better than 20 ns
Sensitivity	GNSS
Tracking	-147 dBm
Acquisition	-160 dBm
Hot Start	-155 dBm
Reacquisition	-158 dBm
Update Rate	1 Hz