UM220-IV L

Multi-GNSS Single-frequency Timing Module

17.0 × 22.4 × 2.4 mm

Industrial Grade

Product Characteristics

» Multi-mode single-frequency timing, with the timing accuracy better than 20ns

» Supports GPS + BDS/GLONASS + Galileo, as well as BDS-3 constellation

» 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

Ordering Information

Supply at multiples of 500 pieces

Brief Introduction

UM220-IV L is a timing module developed for telecom timing and electrical power 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
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21	NC	VCC_OUT	8
22	NC	GND	7
23	NC	VCC	6
24	NC	NC	5
25	NC	RXD1	4
26	NC	TXD1	3
27	NC	RXD2	2
28	TIMEPULSE	TXD2	1

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 Specications

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

Interfaces

2 x UART
1 x 1PPS

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	64 channels, based on UFirebird
Frequency	GPS L1C/A
	BDS B1I
	GLONASS G1
	Galileo E1
Modes	Single-System Standalone Positioning
	Multi-System Joint Positioning
Positioning Accuracy (CEP)[1]	Horizontal: 2.0 m
	Vertical: 3.5 m
1PPS	Better than 20 ns (1σ)
Time to First Fix (TTFF)	Cold Start < 30 s
	Hot Start < 1 s
	Reacquisition < 1 s
Sensitivity	GNSS
	Tracking -160 dBm
	Cold Start -147 dBm
	Hot Start -155 dBm
	Reacquisition -155 dBm
Data Update Rate	1 Hz
Data Format	NMEA 0183, Unicore