DLTX-1

Dalang Communication Technology Co., Ltd Product Specification

Product Name:	GMOUSE
Product Model:	DLTX-1
Version Number:	V 1.0
Revision Date:	2024.10.29

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1 Product Application Scenarios

The DLTX-1 module integrates the advanced u-blox UBX-M9140 module and is equipped with a high-performance ceramic antenna, capable of simultaneously tracking satellite signals from up to four GNSS constellations, ensuring precise positioning even in challenging environments such as complex urban canyons. The receiver excels in distinguishing positioning signals from environmental noise, effectively capturing location data even under weak satellite signal conditions. This module is particularly suitable for light unmanned aerial vehicles (UAVs), unmanned surface vessels (USVs), and unmanned ground vehicles (UGVs), making it ideal for applications such as aerial photography, remote monitoring, disaster monitoring, and security surveillance. See Figure 1for details.

Figure 1 Product Application Scenarios

2 Features

In this chapter, we will delve into and comprehensively elaborate on the functionalities and operating principles of the DLTX-1, detailing how it plays a pivotal role in various applications as follows:

1. progressiveness technology: The module is designed based on U-blox UBX-M9140 series products, which can ensure stable and high-precision positioning performance even in extreme environments.

2. Four mode joint solution: Supports the joint solution of Beidou, GPS, Galileo, and GLONASS four modes, demonstrating excellent compatibility with global positioning systems and fast, reliable initialization capabilities.

3.25Hz data output rate: The module has a high data output rate of 25Hz, demonstrating its high-performance processing capability, which can quickly respond and adapt to dynamically changing environments.

4. Compatibility: Supports A-GPS services such as Assist Now Online and Assist Now Offline.

5. Industrial noise reduction: Adopting industrial grade low-noise RF circuit design, it enhances the ability to resist multipath interference and ensures clear signal acquisition even in high noise environments.

3 Structural Characteristic

In this section, we will conduct an in-depth analysis of the product's design details, presenting its aesthetic features and precise interface specifications through detailed structural diagrams. This perspective aims to provide a comprehensive framework, thereby enhancing the understanding and perception of the product's architecture. Refer to Figure 2， Table 1。

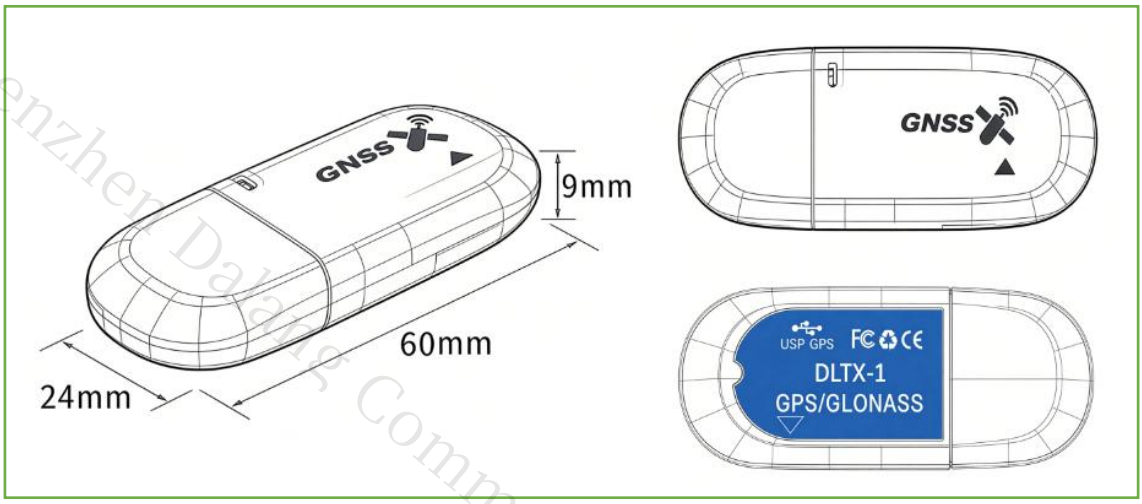

Figure 2 Product Appearance Image

Name	Describe
VCC	power supply
D-	Transmission data terminal-
D+	Transmission data terminal+
GND	grounding

Table 1 Wiring Definition

4 Specifications

In this section, we will provide a detailed list and explanation of the product's chip features, sensitivity, accuracy, operating principles, and other technical details, as detailed in Table 2.

Table 2 Product Specifications

Specification parameters			
Chip characteristics	1	chip	UBX-M9140
	2	Signal channel	92-channel
	3	working frequency	GPS: L1 C/A, QZSS: L1 C/A/S, GLONASS: L10F， BeiDou: B1I, Galileo: E1B/C ， SBAS L1 C/A: WAAS, EGNOS, MSAS, GAGAN
	4	Time pulse frequency	0.25 Hz-25 Hz (default 1Hz)
	5	Time pulse signal accuracy	RMS：30ns
			99%：60ns
	6	Horizontal position accuracy	1.5m CEP (with SBAS)
			2.5m CEP (without SBAS)
	7	Start Time	Cold start: 24 seconds
			Warm start: 2s
			Hot start: 2s
	8	sensitivity	Tracking:- 167 dBm
			Re capture:- 160 dBm
			Cold start:- 148 dBm
			Hot start:- 159 dBm
	9	Speed accuracy	0.05m/s
	10	Baud rate	38400bps (default) [Optional: 4800-921600]
	11	Output Protocol	NMEA-0183、RTCM 3.3、UBX
	12	Output level	USB
	13	Extreme working state	Gravity acceleration limit: 4g
			Height limit: 80,000m

			Speed limit: 500m/s
Antenna characteristics	1	Antenna specifications	18*18*4
	2	Maximum gain of antenna	2.5dBi
	3	Polarization mode	RHCP
	4	Noise coefficient	≤0.8dB
	5	LNA gain	L1：20±2dB
Working characteristics	1	working voltage	3V-5.5V DC(Typical value: 5.0v)
	2	power waste	<100mW @5V
	3	size	60*24*9mm
	4	weight	11g
	5	Connector	Standard USB interface
	6	working temperature	-35℃-75℃
	7	Storage temperature	-40℃-85℃

5 Product Photos

In this chapter, we will showcase real-life images of the product, as shown in Figure 3. These images provide a detailed view of our product from various angles and perspectives. We believe that through authentic representation, we can better convey the value and concept of the product, thereby enhancing your trust and satisfaction.

Figure 3Product Images