Tersus GeoBee20

Cost-effective Solution for Ntrip Corrections

Overview

The Tersus GeoBee20 is a dedicated and cost-effective solution to transmit or receive Ntrip corrections. With Tersus Ntrip Caster Service, Ntrip Modem and David20 GNSS Receiver, the GeoBee20 opens the possibility for users to transmit Real Time Kinematic (RTK) corrections via Internet (Ethernet or 2G/3G/4G) in a simple, user-friendly way, just using a SIM card or Ethernet cable without any need of a static IP. GeoBee20 can also work as GNSS Rover to receive RTK corrections from Tersus Ntrip Caster or any CORS service.

Ntrip server mode: use David20 GNSS receiver to create a base station. This temporary base or CORS are for surveying, agriculture, UAV, machine control, and etc. It is also ideal for deformation monitoring. Tersus GNSS Inc. provides Ntrip Caster to transfer data.

Ntrip client mode: connect David20 or other Tersus GNSS receivers to Tersus Ntrip Caster or any Ntrip/CORS service. David20 is mainly used for surveying, and also used as a GNSS sensor in various applications, such as mobile mapping, UAV, machine control, agriculture, and etc.

Key Features

Supports multi-constellation including BeiDou, GPS, GLONASS, Galileo, QZSS and SBAS

Supports 576 channels

Supports RTCM2.3/3.0/3.2, CMR corrections

Supports 4GB internal storage

Rapid RTK integer ambiguity resolution

Supports stable, high-precision measurement output

Supports Ethernet is default while 2G/3G/4G is hot standby

Supports Ntrip Server and Ntrip Client protocol

Supports RS232 and RS485

Supports remote access and operation

GeoBee20 System Structure

Technical Specifications
- David20 GNSS Receiver

Performance

Signal Tracking:	
BeiDou B1, B2, B5; GPS L1, L2, L5; GLONASS L1, L2; Galileo E1, E5a, E5b; QZSS L1, L2c, L5; SBAS L1	
GNSS Channels:	576
Single Point Positioning Accuracy (RMS):	
– Horizontal:	1.5m
– Vertical:	3.0m
Real Time Kinematic/RTK (RMS):	
– Horizontal:	10mm+1ppm
– Vertical:	15mm+1ppm
DGPS (RMS):	
– Horizontal:	0.4m
– Vertical:	0.8m
Observation Accuracy (zenith direction):	
– C/A Code:	10cm
– P Code:	10cm
– Carrier Phase:	1mm
Time To First Fix (TTFF):	
– Cold Start:	<25s
– Warm Start:	<10s
Reacquisition:	<1s
Timing Accuracy (RMS):	20ns
Velocity Accuracy (RMS):	0.03m/s
Initialization (typical):	<10s
Initialization Reliability:	>99.9%
Correction:	RTCM 2.3/3.0/3.2, CMR
Data format:	NMEA-0183
Max. Data Update Rate:	20Hz

Communication

Serial Ports:	RS232 x2
Serial Baud Rate:	Up to 460800bps
USB Ports:	USB 2.0 OTG x1
CAN Ports:	CAN x1
PPS Ports:	LVTTL x1
Event Ports:	LVTTL x1
Antenna Connector:	SMA female x1

Software Support

Tersus Nuwa	
Other Third Party Software Support NMEA-0183	

Electrical

Input Voltage:	5V~36V DC
Ripple voltage:	100mV p-p (max)
Power Consumption (at 25°C):	2.6W

Physical

Dimension:	104x65x31mm
Weight:	≈ 260g

Environmental

Operating temperature:	-40°C ~ +85°C
Storage temperature:	-40°C ~ +85°C
Humidity:	95% non-condensing
Dust- & Waterproof:	IP67

Note: It is recommended using 2A instead of 1A when the external power is 5V.

Technical Specifications
- Ntrip Modem TR600

Performance

Input Voltage:	12V~48V DC
Operating Current:	350mA @ +12V DC
Standby Current:	250mA @ +12V DC
Power Consumption (typical): 4.2W	

Physical

Dimension:	118x91x34mm (w/o connectors)
Weight:	335g
Operating Temperature:	-30℃ ~ +80℃
Relative Humidity:	95% @ +40℃

Interfaces

Serial Port:	RS232 x1, RS485 x1
Ethernet:	RJ45 x2 (LAN, LAN/WAN)
Antenna Connector:	SMA Female x2 (4G, WiFi)

Communication

Network:
Chinese version:
    2G: GSM/GPRS/EDGE/CDMA2000 1x
    3G: UMTS/WCDMA/HDSPA/HSPA+/TD-SCDMA
/CDMA2000 EVDO
    4G: TDD-LTE/FDD-LTE
Eurasian version (Europe, Middle East, Africa, South
Korea, Thailand):
    2G: GSM/GPRS/EDGE
    3G: UMTS/WCDMA/HDSPA/HSPA+
    4G: TDD-LTE/FDD-LTE
North American version:
    3G: UMTS/WCDMA/HDSPA/HSPA+
    4G: FDD-LTE
Australian version (New Zealand, Australia, South
America):
    2G: GSM
    3G: WCDMA
    4G: FDD-LTE/TDD-LTE

Operating Frequency:
Chinese version:
    TDD-LTE B38/B39/B40/B41
    FDD-LTE B1/B3/B8
    UMTS/HSDPA/HSPA+ B1/B8
    TD-SCDMA B34/B39
    CDMA2000 1x/EVDO BC0
    GSM/GPRS/EDGE 900/1800 MHz
Eurasian version:
    TDD-LTE B38/B40
    FDD-LTE B1/B3/B7/B8/B20
    UMTS/HSDPA/HSPA+ B1/B8
    GSM/GPRS/EDGE 900/1800 MHz
North American version:
    FDD-LTE B2/B4/B5/B17
    UMTS/HSDPA/HSPA+ B2/B5
Australian version:
    FDD-LTE B1/B2/B3/B4/B5/B7/B8/B28
    TDD-LTE B40
    WCDMA B1/B2/B5/B8
    GSM 850/900/1800/1900