BS-MN30D-M-D6EC

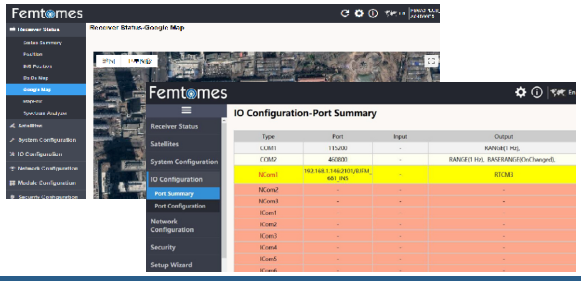
TRIPLE FREQUENCY GNSS RECEIVER DELIVERS CENTIMETER ACCURATE POSITIONS

Benefits

BS-MN30D-M-D6EC Receiver is a robust high precision GPS, BDS, GLONASS,QZSS dual-frequency support receiver which supports dual frequency from the GPS, BDS,GLONASS and QZSS constellations. This delivers the quickest and most reliable RTK initializations for centimeter level positioning and precise heading. Mainly facing to applications of high-precision positioning, navigation and mapping, etc. Customers benefit from the Ethernet connectivity available on the board, allowing high speed data transfer and configuration via standard web browsers. Serial port, USB and CAN are also supported.

Features

- High performance MEMS IMU integrated
- Integrated DTU supports 4G LTE connection
- Rich peripheral: Serial Port, USB 2.0 OTG, Ethernet, CAN/RS422, TF Card etc.
- International Protection code 67 (IP67)
- Support NMEA-0183 data output
- Support Femtomes ASCII/Binary data output,BINEX
- Easy Web GUI access, fast configuration, grachic display and firmware upgrade via web browsers
- Support NTP, FTP download, FTP Push, EMAIL abnormal alarm



Performance Specifications

Frequency	GPS	L1/L2
	BDS	B1/B2
	GLONASS	L1/L2
	QZSS	L1/L2
Single Point Position L1 (RMS)	Horizontal	1.5m
	Vertical	3.0m
Single Point Position L1+L2 (RMS)	Horizontal	1.2m
	Vertical	2.5m
DGNSS(RMS)	Horizontal	0.4m
	Vertical	0.8m
RTK (RMS)	Horizontal	10mm +1ppm
	Vertical	15mm +1ppm
Velocity Accuracy(RMS)	0.03m/s	
Time Accuracy (RMS)	20ns	
Heading Accuracy (RMS)	0.2°/1m baseline	

Measurement (RMS)	BDS	GPS	GLONASS	QZSS
B1/L1 C/A Code	10cm	10cm	10cm	10cm
B1/L1 Carrier Phase	1mm	1mm	1mm	1mm
B2/L2P(Y) Code	10cm	10cm	10cm	10cm
B2/L2 Carrier Phase	1mm	1mm	1mm	1mm

Initialization Time	< 10 s (Typical)
Time to First Fix	Cold Start : 40s (Typical)
	Warm Start: 30s (Typical)
	Hot Start: 5s (Typical)
Differential Data	RTCM2.x/3.x CMR CMR+
Data Format	NMEA-0183、BINEX
	Femtomes ASCII or Binary
GNSS Data Rate	1Hz / 5Hz / 10Hz / 20Hz
INS/RAW IMU Data Rate	up to 200Hz
Inertial Navigation Accuracy	< 5% x driving distance (No GNSS signal, within 30s)

IMU Performance

Gyroscope	
Range: Roll, Pitch	± 200 (°/sec)
Bias Instability	6 (°/hr)
Scale Factor Accuracy	<0.1 (%)
Angle Random Walk	0.3 (°/ √ hr)

Acceleration	
Range: X, Y, Z	± 4(g)
Bias Instability	0.02 (mg)
Scale Factor Accuracy	<0.1 (%)
Angle Random Walk	0.05 (m/s/ √ hr)

PERFORMANCE DURING GNSS OUTAGES

Outage Duration	Positioning Mode	POSITION ACCURACY (m) RMS		VELOCITY ACCURACY (m/s) RMS		ATTITUDE ACCURACY (DEGREES) RMS		
		Horizontal	Vertical	Horizontal	Vertical	Roll	Pitch	Heading
0S	RTK	0.02	0.03	0.02	0.02	0.02	0.02	0.09
	SP	1.00	0.60	0.02	0.02	0.02	0.02	0.09
	PP	0.01	0.02	0.01	0.01	0.01	0.01	0.04
10S	RTK	0.25	0.15	0.07	0.03	0.04	0.04	0.13
	SP	1.25	0.70	0.07	0.03	0.04	0.04	0.13
	PP	0.01	0.02	0.02	0.01	0.01	0.01	0.04

Physical Specifications

Dimensions	174 x 134 x 56 mm
Weight	950g
Antenna Connector	TNC-F
4G Antenna	SMA-F
I/O	10/12 Pin aviation plug
Protection Class	IP67

Temperature	Operating : -40℃ ~85℃
	Storage :-55℃ ~95℃
Humidity	95% non-condensing
Vibration	GJB150.18-2009, MIL-STD-810
Shock	GJB150.16-2009, MIL-STD-810

Electrical Specifications

Voltage	9-36VDC(Typical 12VDC)
Power Consumption	5.0W (Typical)

Impedance matching	50Ω

Functional Ports

Serial Port	2x UART
	UART 3.3V LV-TTL
	Up to 460800bps
USB	1x USB 2.0 OTG

CAN / RS422	1x CAN or 1x RS422
Communication	Internet、4G、Radio (optional)
PPS	1x LV-TTL 3.3V/5V
Event	1x LV-TTL 3.3V/5V

Version1.3

November 2020