

INTRODUCTION

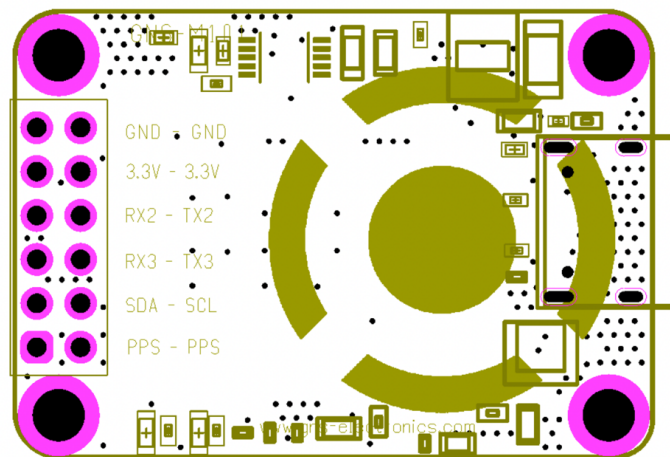
UI980 is a multi-band, multi-constellation GNSS RTK breakout board.



UI980 breakout board

Basic Information				
Channels	1408 channels, based on NebulasIV™			
Constellations	BDS/GPS/GLONASS/Galileo/QZSS			
Frequencies	BDS: B1I, B2I, B3I, B1C, B2a, B2b			
	GPS: L1 C/A, L1C, L2P (Y), L2C, L5			
	GLONASS: G1, G2, G3			
	Galileo: E1, E5a, E5b, E6			
	QZSS: L1, L2, L5			
Power				
Power Consumption	480 mW (Typical)			
Performance				
Positioning Accuracy	Single Point	Horizontal: 1.5 m Vertical: 2.5 m		
	DGPS (RMS)	Horizontal: 0.4 m Vertical: 0.8 m		
	RTK (RMS)	Horizontal: 0.8 cm + 1 ppm Vertical: 1.5 cm + 1 ppm		
Observation Accuracy (RMS)	BDS	GPS	GLONASS	GALILEO
B1I/B1C/L1C/L1 C/A/G1/E1 Pseudorange	10 cm	10 cm	10 cm	10 cm
B1I/B1C/L1C/L1 C/A/G1/E1 Carrier Phase	1 mm	1 mm	1 mm	1 mm
B3I/L2P(Y)/L2C/G2 Pseudorange	10 cm	10 cm	10 cm	10 cm
B3I/L2P(Y)/L2C/G2 Carrier Phase	1 mm	1 mm	1 mm	1 mm
B2I/B2a/B2b/L5/E5a/E5b Pseudorange	10 cm	10 cm	10 cm	10 cm
B2I/B2a/B2b/L5/E5a/E5b Carrier Phase	1 mm	1 mm	1 mm	1 mm
Time Pulse Accuracy (RMS)	20 ns			
Velocity Accuracy (RMS)	0.03 m/s			
Time to First Fix (TTFF)	Cold Start < 30 s			
	Warm Start < 20 s			
	Hot Start < 5 s			
Initialization Time	< 5 s (Typical)			
Initialization Reliability	> 99.9%			
Data Update Rate	50 Hz Positioning			
Differential Data	RTCM 3.X			
Data Format	NMEA-0183, Unicore			
Connectivity				
USB C connector	USB Interface (UART1)			
Interfaces (PIN Header)	I2C, UART2, UART3 (LVTTTL)			
PPS (PIN Header)	Pulse per second			
Antenna	IPEX			
Dimensions				
Dimensions	37 mm x 26 mm x 5 mm			
Weight	6 gr.			
Supply Voltage	4.5 V - 5.5 V			
Supply Current	< 150 mA typ (without antenna)			
Working temperature:	' -40°C to 80°C			
Storage temperature:	' -40°C to 80°C			
Other Features (UM980)				
Anti-jamming 60dB narrowband anti-jamming technology				
Active CW detection and removal				
Jamming status for each frequency				
Anti-spoofing Advanced anti-spoofing algorithms				
RTK technology Instantaneous RTK initialization				

1. PIN Header



Bottom view

Pin Number	Name	Function
1	GND	Ground connection
2	GND	Ground connection
3	3.3V	Power Supply
4	3.3V	Power Supply
5	RX2	Serial data input port 2
6	TX2	Serial data output port 2
7	RX3	Serial data input port 3
8	TX3	Serial data output port 3
9	SDA	I2C Serial Data
10	SCL	I2C Serial Clock
11	PPS	pulse per second
12	PPS	pulse per second



EUROPE

GNS Electronics GmbH
Adenauerstrasse 18
D – 52146 Würselen
Germany
www.gns-electronics.com
info@gns-electronics.com
+49 2405 41480

AMERICA

GNS Electronics corp.
80 Pine Street, 24th Floor
New York, NY 10005
USA
www.gns-electronics.com
info@gns-electronics.com
+1 (212) 974-8843

DOCUMENT REVISION HISTORY

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