

GPS Frequency And Timing Module

GMM1002

DESCRIPTION:

The Bliley GMM1002 GPS module is a small form factor time and frequency reference module. This modules compact size, simple interface and excellent holdover makes it ideal for WiMAX and LTE wireless systems.



FEATURES:

- Provides 10MHz and 1pps
- Outputs synchronized to GPS
- Excellent Phase Noise
- Excellent holdover capability
- Takes two external references.
- UART Port with NMEA protocol for monitoring
- Supply Options 3.3VDC and 5VDC

Electrical Performance			
Parameter	Conditions	Specification	Unit
Frequency Output 1 ⁽¹⁾	Into 50Ω	10	MHz
Frequency Output Signal ⁽¹⁾	Into 50Ω	5±2	dBm
Frequency Output 3 ⁽¹⁾	differential LVDS	10	MHz
Frequency Accuracy Locked	24-hours average when locked to GPS	≤1E-12	
Frequency Accuracy Initial ⁽¹⁾	After power on, without GPS	≤2	Hz
Frequency Output 1 Phase Noise ⁽¹⁾	-10Hz	-120	dBc/Hz
	-100Hz	-140	dBc/Hz
	-1KHz	-150	dBc/Hz
	-10KHz	-150	dBc/Hz
	-100KHz	-150	dBc/Hz
Frequency Output Spurious	Non-Harmonic	≤-60	dBc
Time Output 2	TTL Into 50Ω	1	PPS
Time Output 4	differential LVDS, duty cycle 50%	1	PPS
Time Output Accuracy Locked	Over any 20-min. interval @ constant temperature	±50	nS RMS
Time Output Accuracy Holdover ⁽¹⁾	Over 8-Hours, under limited temperature variations	≤10	μS
Communications Interface ⁽²⁾	9600 bauds, 8 bits, 1 stop bit, Odd parity	UART	
Communications Protocol ⁽²⁾	Custom commands to support module control	NMEA-0183	
Status Indicators	HOLD, LOCKED, FREERUN, ALARM and GPSLOCK indicators (LED, LVCMOS output)	Active High	
GPS Input	L1 GPS C/A code from active antenna,	1575.42	MHz
GPS Antenna Power ⁽⁴⁾	100mA max, short circuit protection	+3.3	VDC
GPS Receiver	Independent tracking channels	12	
	TTF Cold Start	36	s
	TTF Hot Start:	4	s
	Sensitivity Acquisition (cold)	-141	dBm
	Sensitivity Acquisition (hot, warm)	-149	dBm
	Sensitivity Tracking	-156	dBm
	Sensitivity Navigation	-155	dBm
External Reference 1	LVCMOS logic	1	PPS
External Reference 2	LVCMOS logic, frequency programmable	10	MHz
Supply Voltage ⁽⁴⁾		3.3	VDC
Power	Start-up (max)	3	W
	Steady State Power @ Room Temperature	2	W
Warm-up Time	Room Temperature	3	Min

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Environmental Specifications				
<i>Parameter</i>	<i>Conditions</i>		<i>Specification</i>	<i>Unit</i>
Operating Temperature ⁽³⁾	Ambient		-40 to +85	°C
Operating Altitude			-200 to 40,000 -60 to 12,000	ft m
Operating Humidity	non-condensing		90	%
Physical Specifications				
<i>Parameter</i>	<i>Conditions</i>		<i>Specification</i>	<i>Unit</i>
Package Size	L x W x H		1.9x1.4x0.87 48x36x22	in mm
Antenna Input			MCX	
34 Pin Header Connections ⁽⁵⁾	Pin 1 VCC Pin 2 EX REF1 Pin 3 N/C Pin 4 EX REF2 Pin 5 N/C Pin 6 N/C Pin 7 RESET Pin 8 VCON Pin 9 GND Pin 10 N/C Pin 11 RX0 Pin 12 TX0 Pin 13 GND Pin 14 OUT2 Pin 15 GND Pin 16 OUT1 Pin 17 GND	Pin 34 VCC Pin 33 N/C Pin 32 HOLD Pin 31 LOCKED Pin 30 FREERUN Pin 29 ALARM Pin 28 GPSLOCK Pin 27 GND Pin 26 TDI Pin 25 TDO Pin 24 TMS Pin 23 TCK Pin 22 COUT4 Pin 21 OUT4 Pin 20 COUT3 Pin 19 OUT3 Pin 18 GND		
34 Pin Header I/O Voltage Levels	LVCMOS V_{IH} (Min) V_{IL} (Max) V_{OH} (Min) V_{OL} (Max) LVDS V_{ID} (Min) V_{IDL} (Min) V_{OD} (Min) V_{OCM} (Min)		2.0 0.8 3.0 0.8 100 300 250 1125	V V V V mV mV mV mV

- (1) Others available on request. Performance varies with temperature variations and selected oscillator.
- (2) Other communication protocols available on request.
- (3) Other operating temperatures available upon request
- (4) +5V or +3.3V versions available
- (5) All N/C (Not Connected) programmable on request

Consult factory for ordering instructions