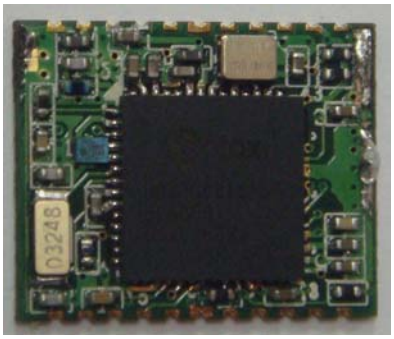
AMBO TECHNOLOGY CO.,LTD.

6F, No.788-1, Chung-Cheng Road, Chung-Ho City, Taipei Hsien, Taiwan.ROC

AMBO-1315 GPS Module



Version 1.3
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Introduction

AM-1315LP small form factor board is the newest generation of Ambo GPS module.
The module is powered by latest uBlox UBX-G6010-ST single chip and Ambo proprietary navigation technology that provides you with stable and accurate navigation data. The smallest form factor and miniature design is the best choice to be embedded in a device such as portable navigation device, personal locator, speed camera detector and vehicle locator.

Product Applications

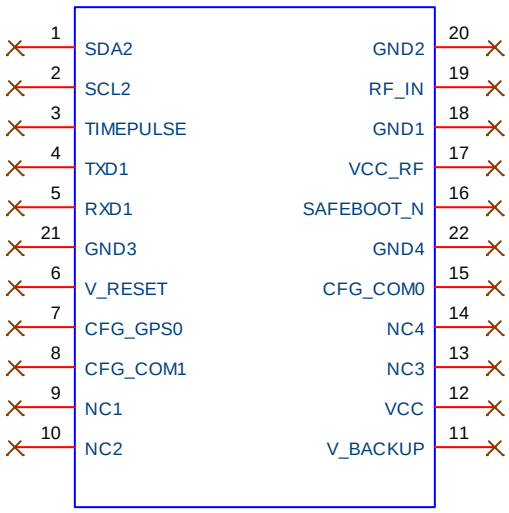
_ Automotive navigation
_ Personal positioning and navigation
_ Marine navigation
_ Timing application

Product Features

_ 50 parallel channels
_ SMT type with stamp holes
_ TCXO design
_ 0.1 second reacquisition time
_ Small form factor with embedded uBlox UBX-G6010-ST single chip technology.
_ NMEA-0183 compliant protocol
_ Enhanced algorithm for navigation stability
_ Excellent sensitivity for urban canyon and foliage environments.
_ Auto recovery while RTC crashes
_ Build-in LNA and saw filter

No	Function	Specification
1	Chipset	UBX-G6010-ST chip
2	Frequency	L1 1575.42MHz.
3	Channels	50 channels
4	Chipset Sensitivity	Tracking : -160dBm
		Reacquisition : -160dBm
		ColdStart(Autonomous) : -147dBm
5	Chipset cold start	35 sec @ open sky (avg.)
6	Chipset hot start	1 sec @ open sky (avg.)
7	Chipset warm start	35 sec @ open sky (avg.)
8	Position accuracy	<2.5m
9	Maximum altitude	50000 m
10	Maximum velocity	500 m/s
11	Update rate	2Hz
12	Protocol	NMEA,ASCII,0183,2.3(compatibleto3.0)
13	Operating temperature	-40 ~ 85℃

Pin Assignment



No	Name	I/O	Description	Remark
1	SDA2	I/O	Serial Data	Leave open if not used.
2	SCL2	I/O	Serial Clock	Leave open if not used.
3	TIMEPULSE	O	Time pulse (1PPS)	Accuracy of Timepulse signal
4	TXD1	O	Serial Port 1	
5	RXD1	I	Serial Port 1	
6	V_RESET	I	Module Reset	Leave open if not used.
7	CFG_GPS0	I/O	Configuration Pin	GPS Operation Configuration
8	CFG_COM1	I	Configuration Pin	Protocol and Baud Rate Configuration
9	NC		No Connection	
10	NC		No Connection	
11	V_BACKUP	I	Backup voltage supply	
12	VCC	I	Supply voltage	
13	NC		No Connection	
14	NC		No Connection	
15	CFG_COM0	I	Configuration Pin	Protocol and Baud Rate Configuration
16	SAFEBOOT_N	I	Safe Boot Mode	Leave open if not used.
17	VCC_RF	O	Output Voltage RF section	
18	GND	G	Ground	
19	RF_IN	I	GPS Signal Input	
20	GND	G	Ground	
21	GND	G	Ground	
22	GND	G	Ground	

Protocol and baud rate.

CFG_COM1	CFG_COM0	Protocol	Messages	Baud rate
1	1	NMEA	GSV, RMC, GSA, GGA, GLL, VTG, TXT	9600
1	0	NMEA	GSV, RMC, GSA, GGA, GLL, VTG, TXT	38400
0	1	NMEA	GSV, RMC, GSA, GGA, VTG, TXT	4800
0	0	UBX	NAV-SOL, NAV-STATUS, NAV-SVINFO, NAV-CLOCK, INF, MON-EXCEPT, AID-ALPSERV	57600

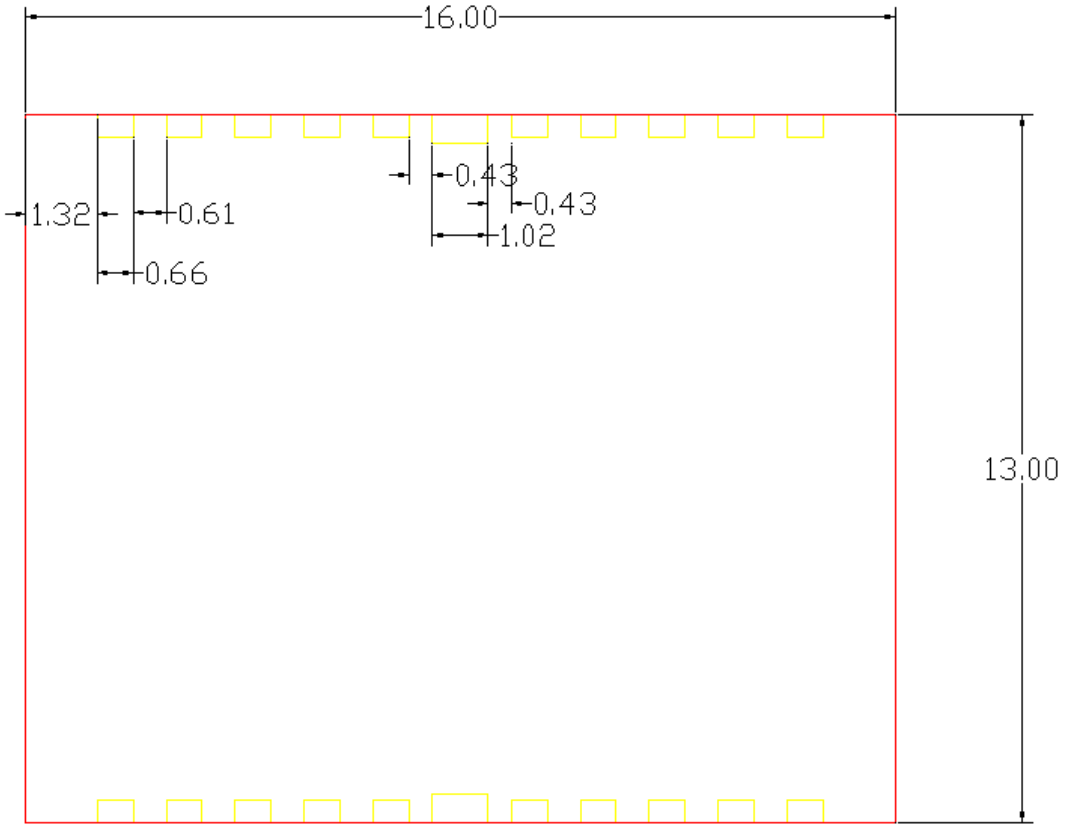
GPS operation configuration

CFG_GPS0	GPS mode
0	Maximum Performance Mode TCXO
1	Eco Mode TCXO

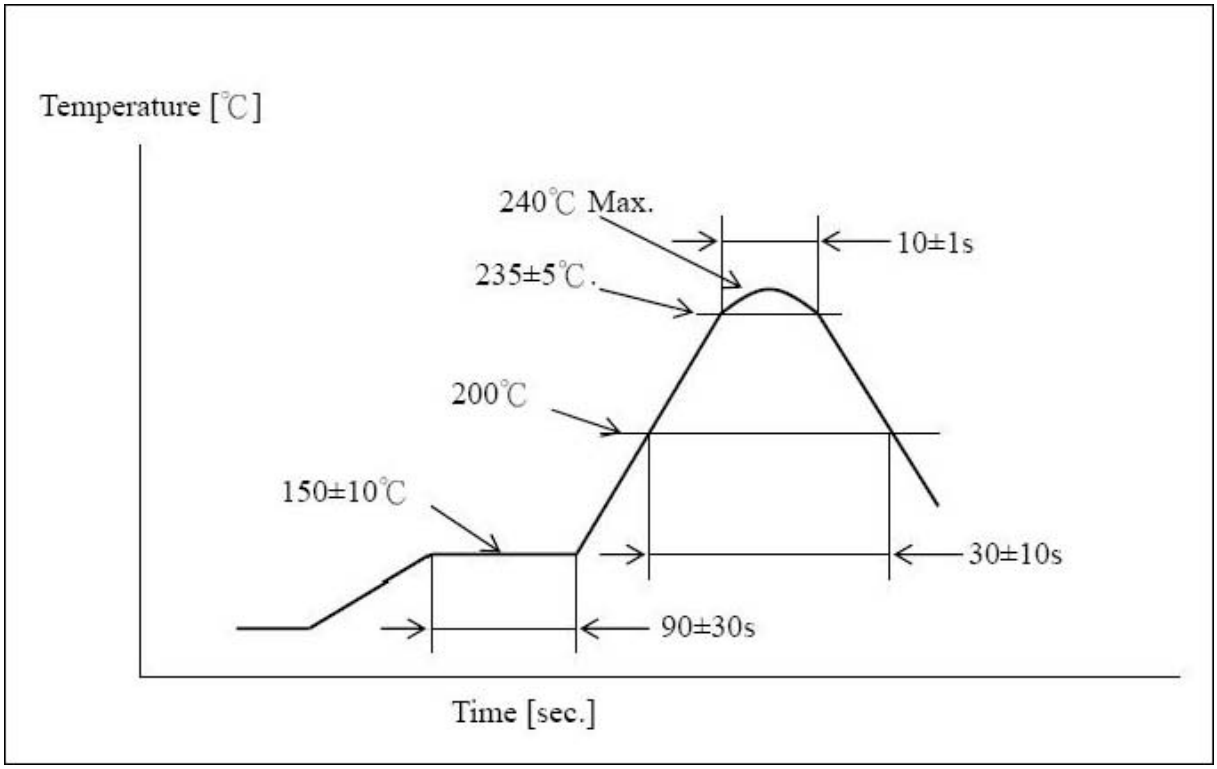
Electrical Specifications

Power	
Peak Supply Current	Max = 150mA
Max Performance Mode	Acquisition : 74mA
Eco Mode	Tracking : 43mA
Power Input	3.3VDC

Mechanical Dimensions



Recommended Reflow Profile:



Pre heating temperature: 150±10[℃] Pre heating time: 90±30[sec.]

Heating temperature: 235±5[℃] Heating time: 10±1[sec.] Peak temperature must not exceed 240℃ and the duration of over 200℃ should be 30±10 Seconds.