

CW85 GPS Broadcaster

Description

The CW85 combines GPS technology with WiFi transport. Incorporating Navsync's own CW25 module with ultrasensitive GPS receiver, the CW85 provides an 802.11b transmission containing NMEA streams giving device location (longitude and latitude) and UTC time. The 802.11b supports WEP encryption and is fully configurable to a specific network.



Features

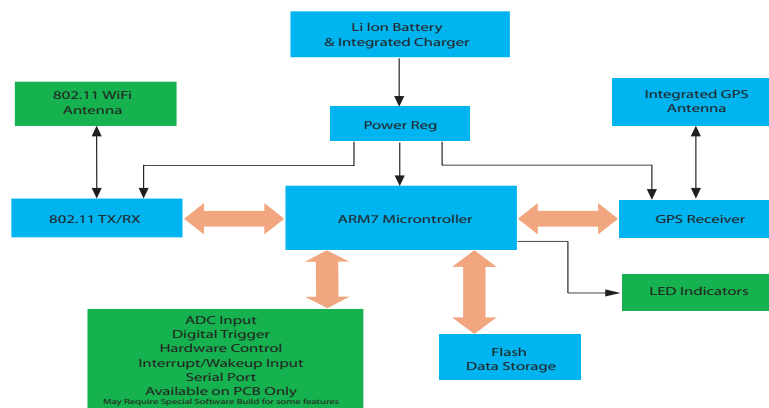
- Sensitive GPS receiver with tracking as low as -185dBW
- 802.11b compliant
- 128 bit-WEP encryption
- WPA encryption (not available in ADHOC mode)
- Portable – may operate on 6 AA alkaline batteries

Operation

Upon power up, the CW85 will initialize and then will attempt to obtain a valid GPS fix. The unit begins sending the GPGLL string prior to having an accurate fix and continues to send out this stream until it is powered down. The LED indicator is lit while the unit waits to receive a GPGLL string from the GPS receiver. The LED indicator then turns off briefly as the string is transmitted via the WiFi transmitter. This behavior is repeated as long as the CW85 remains on.

Cold start (ie - the first time the unit turns on and has no ephemeris or almanac data) requires 35db or higher signal strength and 15 minutes minimum on time to get current almanac and ephemeris data. After this data is received by the module, low-level signal testing may be done.

Block Diagram



Bulletin	NS14-PB
Revision	03
Date	14 March 2007

GPS BROADCASTER SPECIFICATION

Performance

GPS RECEIVER SPECIFICATIONS

Physical	Max Velocity / Altitude	515ms ⁻¹ / 18,000m (increased rating version available subject to export license)
	Max Acceleration / Jerk	4g / 1gs ⁻¹ (sustained for less than 5 seconds)
Sensitivity	Acquisition/Tracking	-173dBW / -185dBW
	Acquisition Time(Outdoor)	Cold: <60s
		Warm: <45s
		Hot: <2s
	Re-acquisition: <0.5s (90%confidence)	
Accuracy	Position: Outdoor / Indoor	<5m rms / <50m rms
	Velocity	<0.05ms ⁻¹
	Latency	<200ms
	Raw Measurement Accuracy	Pseudorange <0.3m rms, Carrier phase <5mm rms
	Tracking	Code and carrier coherent
General	Receiver Type	12 Parallel Channel x 32 taps up to 32 pointFFT. Channels, taps, and FFT can be switched off to minimize power or simulate simpler designs.
	Processor	ARM 966E-S on a 0.18μ process at 96MHz.
	User Memory	64K loaded from 24K on module EEPROM or external EEPROM.

GENERAL SPECIFICATIONS

Power (Avg.)	1.7W
Recommended Batteries	6 AA Alkaline Batteries
Minimum Transmission on Recommended Batteries	4 Hours
Minimum Voltage In	4.0 V
Maximum Voltage In	9.6V
Operating Temp Range (w/o Batteries)	TBD
Shock/Vibration	TBD
GPS Fix Rate	Once per 1.024 sec
Wireless Transmission Rate	Once per 1.024 sec

ANTENNA REQUIREMENTS

802.11b Antenna	50Ω, Reverse SMA connector
GPS Antenna	Internal Antenna Provided

The specifications refer to the standard software builds of the CW85. The performance and specification of the CW85 can be modified with the use of customized software builds.

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