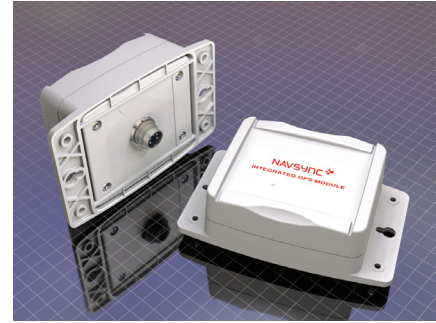


# CW47 GPS Synchronized Time Reference Module with Integrated Antenna

## Description

The CW47 GPS Synchronized Timing Reference is a fully integrated unit that includes the CW25 GPS receiver, DC/DC converter, RS232 and 2.048Mbps G.703 E1 signal output and an active GPS antenna — all housed in a small waterproof (IP67 rated) enclosure.



## Function

The CW47 unit delivers undisturbed Stratum 1 synchronization when locked to GPS in a telecoms format G703 E1 (2.048 Mbps) or T1 (1.544 Mbps) output.

The CW25 GPS receiver at the heart of the CW47 unit has been designed specifically for acquiring and tracking satellites in weak signal areas such as under dense foliage and in severe urban areas.

## G703 Output Signals

The unit delivers a G703 E1 2.048Mbps or a T1 1.544 Mbps output signal with different source impedance options such as 75 Ohm or 120 Ohm. The E1 version can also deliver a G703 part 10 2.048 MHz Clock signal.

## Applications

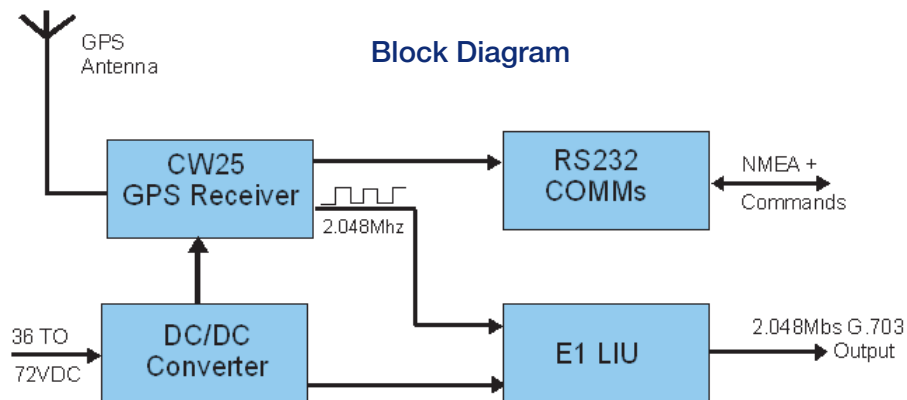
The CW47 is the perfect solution for precise timing and network synchronization needs, including broadband wireless applications. It provides a cost effective and independent timing source for any synchronization application.

## Features

- Stratum 1 Time Source
- G703 E1 2.048 Mbps Output
- G703 E1 2.048 MHz Clock Output
- G703 T1 1.544 Mbps Output Option
- IP67 Rated Waterproof Box
- 48V Power Supply
- Short Circuit Protected
- RoHS compliant

## Applications

- Synchronizing Wireless Networks
- Synchronizing Remote Switch sites



Bulletin **NS36-PB**  
 Revision **01**  
 Date **06 June 2009**

## CW47 GPS SENSOR SPECIFICATIONS

### SPECIFICATIONS<sup>1</sup>

Module Rating		IP67
Physical	Supply voltage	36.0-72.0 V DC (48VDC Typical)
	Operating Temp	-30°C to +80°C
	Storage Temp	-55°C to +85°C
	Humidity	5% to 95% non-condensing
	Max Velocity / Altitude	515ms-1 / 18,000m
Sensitivity	Acquisition/Tracking	-155dBm / -155dBm
Acquisition Time	Hot Start	Outdoor <2s Indoor (-155dBm): <5s
	Stand Alone (Outdoor)	
	Cold:	<45s
	Warm:	<38s
	Hot:	<5s
	Re-acquisition:	<0.5s (90% confidence)
Power	1 fix per second	1.5 W typically
Interfaces	Serial E1	RS232, Programmable baud - up to 115200 (default 38400) G.703 2.048Mbps Clock Signal (GPS Driven) 120 Ω balanced (default) see Build Options section
	Protocols	NMEA 0183, Proprietary ASCII and binary message formats
	Receiver Type	12 parallel channel x 32 taps up to 32 point FFT. Channels, taps and FFT can be switched off to minimize power or simulate simpler designs.
General	Processor	ARM 966E-S on a 0.18 micron process at up to 120 MHz.

### CW47 Output Format

The standard CW47 output is a 120 ohm balanced 2.048Mbps clock signal as per ITU-T G.703(E12). This output can be configured by the user to change the output to a 2.048 MHz synchronization signal as per ITU-T G.703 (T12). See the CW47 User Manual for details.

### CW47 Build Options:

This output can be configured, by the user (see SCLK command), to change the output to a 2.048 MHz synchronization signal as per ITU-T G.703 (T12).

A 75 ohm unbalanced E1 version of the CW47 is also available, along with a T1-1.544Mbps version:

#### Option Description

- 1 Standard CW47, E1-2.048Mbps G.703, 120ohm balanced Output
- 2 CW47 with E1, 2.048Mbps G.703, 75 ohms unbalanced Output
- 3 CW47 with T1, 1.544Mbps G.703, DSX-1 (0 to 133 feet) Output





# **CW47 GPS Synchronized Time Reference Module**

with Integrated Antenna

## **NavSync, Ltd. Europe**

Bay 143  
Shannon Industrial Estate  
Shannon, Co. Clare, Ireland  
Phone: +353 61 475 666  
E-mail: [sales@navsync.com](mailto:sales@navsync.com)

## **North America**

2111 Comprehensive Drive  
Aurora, IL 60505, USA  
Phone: 630.236.3026  
E-mail: [northamerica@navsync.com](mailto:northamerica@navsync.com)  
[www.navsync.com](http://www.navsync.com)