

- [Contact Us](#)
- [My Account](#)
  - [Register](#)
  - [Login](#)
- [Shopping Cart](#)
- [Checkout](#)



0 item(s) - £0.00

Your shopping cart is empty!

GPS Disciplined Reference Oscillators

- Categories
- News  
Kits/Components



Mini Low Jitter Precision GPSDO Reference Oscillator (1 Port)

A new mini version of Leo Bodnar's popular low jitter GPS Clock - designed for Users with a limited budget or space restrictions, whilst still delivering accuracy and performance.

- Programmable Frequency 450Hz - 800MHz
- Stability 1 ppb 1E-9 <60 sec Locktime
- 1 SMA Output Connector
- Ideal for use with SDR Receivers

Like its big brother, the Mini Precision GPSDO Reference Oscillator can be used as an Universal Reference Clock for most other Instruments and Applications which up to now would require a bulky and expensive Rubidium Clock.

- [PA0KLT Low Noise VFO Synthesized Kit](#)
- [QRP 2000 USB Controlled Synthesiser Kit](#)
- [R3500D ARDF Receiver Kit](#)
- [Silicon Labs Si570 Oscillators](#)
- [RF Power Fets](#)
- [DG8SAQ VNWA 3](#)
  - [Introducing the DG8SAQ VNWA 3](#)
  - [DG8SAQ VNWA 3 Specification](#)
  - [VNWA Models](#)
  - [Software & Documentation](#)
  - [Ordering & Shipping Information](#)
- [VNWA Accessories](#)
  - [Calibration Kits](#)
  - [GPS Disciplined Reference Oscillators](#)
  - [BNC Products](#)
  - [VNWA Tools](#)
  - [Testboard Kit](#)
  - [Guided Measurements Book](#)
- [FA-VA5 Antenna Analyzer](#)
  - [FA-VA5 Vector Antenna Analyzer Kit](#)
- [SDRplay RSP Rx](#)
  - [SDRplay RSP1A 1kHz - 2000Mhz Wideband SDR Receiver](#)
  - [SDRplay RSP2 and RSP2pro 1 kHz - 2000 MHz Wideband SDR Receiver](#)
  - [SDRplay RSPduo Dual Tuner 1 kHz-2000 Mhz Wideband SDR Receiver](#)
- [hupRF Products](#)
  - [Panoramic Adaptor Tap Boards](#)

SDR-Kits recommends either version as the ideal frequency standard for supplying an external reference clock signal to the DG8SAQ Vector Network Analyzer to make Frequency and Frequency Difference measurements with accuracy approaching  $1\text{e-}10$  and frequency measurements (**dF**) in the **mHz** (milli Hertz) and even down to the **uHz** (micro Hertz) region.

Also, the Mini GPSDO can be used as an external clock for the SDRplay RSP2 or RSP2pro with our [GPSDO - RSP2 External Clock Cable](#)

The Mini GPSDO offers:

- Long term stability of output signal is defined by high accuracy of GPS Caesium references and approaches  $1\text{x}10^{-12}$
- Short term signal quality is defined by internal TCXO clock source providing high-quality, low phase noise clock signal with sub-picosecond RMS jitter.
- Digital PLL allows main output reference frequency to have almost any value between 400Hz and 810MHz.
- Output signal is 3.3V CMOS levels with 50 Ohms characteristic impedance. Output drive level can be adjusted.
- Output power level (measured at 10MHz, fundamental power channel):
  - +13.3dBm, drive setting 32mA
  - +12.7dBm, drive setting 24mA
  - +11.4dBm, drive setting 16mA
  - +7.7dBm, drive setting 8mA
- Powered via mini USB connector from a PC, USB phone charger or USB power bank. USB connection to Windows PC is required only for one-off configuration.

[How to make high accurate precision frequency with the VNWA](#) Thanks to Kurt Poulsen for preparing this report and sharing his expertise.

[How to set up the Mini GPSDO as an External Clock Reference for the VNWA 3EC:](#) Guide to setting up Mini GPSDO as external

- **[Webshop](#)**
  - [DG8SAQ Low Cost Vector Network Analyzers \(6\)](#)
  - [VNWA Accessories \(39\)](#)
  - [Precise Frequency Standard \(5\)](#)
  - [Calibration Kits \(6\)](#)
  - [Tools \(4\)](#)
  - [SMA Connectors \(12\)](#)
  - [BNC Products \(9\)](#)
  - [Cables \(8\)](#)
  - [Instruction \(3\)](#)
  - [Other \(2\)](#)
  - [FA-VA5 Antenna Analyzer Kit \(10\)](#)
  - [FA-VA5 Adaptors \(5\)](#)
  - [SDRPlay RSP SDR Receivers \(14\)](#)
  - [RSP Accessories \(10\)](#)
  - [HupRF Products \(16\)](#)
  - [PAT Boards \(15\)](#)
  - [DG8 Masthead Pre-Amplifier \(1\)](#)
  - [Kits \(15\)](#)
  - [PAOKLT Kits \(9\)](#)
  - [QRP2000 Kits \(6\)](#)
  - [Tranceiver Kits \(0\)](#)
  - [Receiver Kits \(1\)](#)
  - [Components \(17\)](#)
  - [Silicon Labs Si570 Oscillator Parts \(6\)](#)
  - [RF Power FETS \(7\)](#)
  - [Other \(4\)](#)
- [Show All Webshop](#)



reference clock, instead of internal VNWA TCXO when taking VNWA measurements.



#### Contents:

- Mini Precision GPSDO Module (73mm x 40mm x 17mm 0.05 kg)
- GPS Magnetic Antenna with 3m Coax Cable and fitted SMA male plug
- 12 month Mfg Warranty
- Mfg Product Support info

#### Accessories also available from SDR-Kits:

- [RG223 20cm Coax Cable with BNC plug to SMA plug connectors \(GPSD - VNWA Ext Reference](#)

#### Cable)

- [GPSDO - RSP2 External Clock Cable](#)
- [GPS Antenna 3m Long SMA Plug](#)

*SDR-Kits is an Authorised Distributor for the Leo Bodnar Ltd Precison GPSDO Reference Oscillator*

*Also available from our Authorised Distributor for Japan: ICAS Enterprises [www.ICAS.to](http://www.ICAS.to)*

£83.50, incl VAT: £100.20

Indicative prices in EURO: €96.02, incl VAT: €115.23

Indicative prices in USD \$110.64

ADD TO CART

## Low Jitter Precision GPSDO Reference Oscillator (2 Port)

### Precision Frequency Clock for the VNWA 3EC and many other applications

- Programmable Frequency 450 Hz - 800 MHz
- Stability 1 ppb 1E-9 <60 sec Locktime
- 2 BNC Outputs
- Complete with storage case and GPS Antenna

Manufactured by Leo Bodnar LTD, the Low-jitter GPS-Locked Precision Frequency Reference Oscillator can be programmed to two output frequencies between 450 Hz up to



**800 MHz with a stability of better than 1e-9 (1 part per billion (ppb)) within 1 minute after achieving lock to the high accuracy GPS Satellite Network which is controlled by a Caesium Clock with accuracy approaching 1e-12**

USB powered, this instrument is the ideal frequency standard for supplying an external reference clock signal to the DG8SAQ Vector Network Analyzer to make Frequency and Frequency Difference measurements with accuracy approaching 1e-10 and frequency measurements (**df**) in the **mHz** (milli Hertz) and even down to the **uHz** (micro Hertz) region.

Light and portable, the Precision GPSDO Reference Oscillator can be used as an Universal Reference Clock for most other Instruments and Applications which up to now would require a bulky and expensive Rubidium Clock.

- Two synchronised low-jitter reference clocks locked to GPS signal, Digital PLL allows main output reference frequency to have almost any value between 450Hz and 800MHz.
- Two outputs can be individually enabled and set to different frequencies. Second output frequency depends on the first output. If both outputs have the same frequency their relative shift can be adjusted. This can be used, for example, to generate two signals with 90° phase shift for use in I/Q mixer.
- Both output signals are at 3.3V CMOS levels with 50 Ohms characteristic impedance. Their output drive levels can be adjusted.

Output power level (measured at 10 MHz, fundamental power channel):

+13.3dBm, drive setting 32mA

+12.7dBm, drive setting 24mA

+11.4dBm, drive setting 16mA

+7.7dBm, drive setting

- Short term signal quality is defined by internal 0.5 ppm TCXO clock source providing high-quality, low phase noise clock signal with sub-picosecond RMS jitter
- USB Powered or +5V External PSU. Current drawn: Max: 0.27 Amp

**How to make high accurate precision frequency with the VNWA** Thanks to Kurt Poulsen for preparing this report and sharing his expertise.

**How to set up the GPSDO as an External Clock Reference for the VNWA 3EC:** Guide to setting up GPSDO as external reference clock, instead of internal VNWA TCXO when taking VNWA measurements.



#### Contents:

- Precision GPSDO Module (100mm x 60mm x 27mm 0.13 kg)
- GPS Magnetic Antenna with 3m Coax Cable and fitted SMA male plug
- Plastic Storage Case (230mm x 190mm x 40mm 0.53 kg)
- 12 month Mfg Warranty
- Mfg Product Support info

#### Accessories also available from SDR-Kits:

**RG223 20cm Coax Cable with BNC plug to SMA plug connectors (GPSD - VNWA Ext Reference Cable)**

- **GPS Antenna 3m Long SMA Plug**

*SDR-Kits is an Authorised Distributor for the Leo Bodnar Ltd Precison GPSDO Reference Oscillator*

Also available from our Authorised Distributor for Japan: ICAS Enterprises [www.ICAS.to](http://www.ICAS.to)

£125.00, incl VAT: £150.00

Indicative prices in EURO: €143.75, incl VAT: €172.50

Indicative prices in USD \$165.63

 ADD TO CART

## Comparison Chart - GPS Disciplined Reference Oscillators

Feature	Mini GPSDO (One Output)	Standard GPSDO (Two Output)
Stability	+1E-9 within 1 min after GPS Lock	+1E-9 within 1 min after GPS Lock
Frequency Range	400Hz – 810MHz programmable	400Hz – 810MHz programmable
Reference Clock Outputs and Connector Type	1 SMA Output Connector	2 BNC Outputs programmable independently with restrictions
Output Level	4 step programmable +7.7 +13.3 dBm	4 step programmable +7.7 +13.3 dBm
USB Power Supply	5V USB-cable to PC or Charger	5V USB-cable to PC or Charger
External Power Supply	Not available	Ext DC +5V - 15VDC Power connector fitted
Dimensions	73mm x 40mm x 17mm 0.05 Kg	110mm x 60mm x 25mm 0.12 Kg
Package Contents	Mini GPSDO, GPS Antenna, USB Cable	Standard GPSDO, GPS Antenna, USB Cable, Plastic Storage Box
Typical Application	Clock Source for applications requiring a single Reference Clock	Ham Station Reference Clock Source 10 MHz for Test equipment and 24 MHz for RSP1 or K3 or other Rig

## Information

- [About Us](#)
- [Ordering Terms & Conditions](#)
- [Shipping Information](#)
- [Privacy Policy](#)

## Customer Service

- [Contact Us](#)
- [Returns](#)
- [Calibration Kit Models](#)
- [Site Map](#)

## My Account

- [My Account](#)
- [Order History](#)
- [Wish List](#)
- [Newsletter](#)

---

SDR-Kits © 2018 - SDR-Kits® , the SDR-Kits® Logo and DG8SAQ Vector Network Analyzer® are Registered Trademarks