Symmetricom

8040C

Rubidium Frequency Standard

STANDARD FEATURES

- Six Configurable Outputs
- RF & Pulse Outputs
- AC Input
- Remote Monitoring & Control
- GPS Disciplining

OPTIONAL FEATURES

- Twelve Configurable Outputs
- Low Phase Noise

OVERVIEW

Today's precision test equipment requires a stable reference to make accurate frequency measurements. The equipment used varies depending on stability, accuracy and output signal format. All of these parameters can lead to a multitude of configurations, platforms and products that can be expensive to implement and maintain.

The Symmetricom 8040C solves this problem by providing a stable and accurate frequency reference with multiple output signal formats in an easy to install 1U rack mountable chassis.

Unlike other units, the 8040C offers configurable RF outputs, GPS disciplining and a RS-232 interface for command and control.

The 8040C has six outputs, each of which can be user configured to provide a 1, 5 or 10MHz sine or square wave or 1PPS output. The standard configuration for the 8040C has three 10MHz, one 5MHz, one 1MHz and one 1PPS output.

A 1PPS input allows the 8040C to be disciplined by a GPS receiver for improved frequency accuracy and long-term stability. The 8040C auto adaptive algorithm allows plug and play connectivity for easy GPS disciplining.

The 8040C is field configurable, allowing the instrument to support changing functionality in evolving systems.

If more outputs are required, the 8040C can be purchased with an option card that adds six additional outputs bringing the total output configuration to twelve. The option card, like the standard unit, can be configured for any combination of available frequency or format.

Also available is a low phase noise version that provides a greater than 20 dB improvement in close in phase noise.

The 8040C is designed around Symmetricom's award winning X72 rubidium oscillator, which is deployed worldwide as the reference oscillator in wireless base stations.

8040C Rubidium Standard

8040C Specifications

ELECTRICAL SPECIFICATIONS

- Frequency outputs

Frequency:	1, 5 & 10MHz
Format:	Sinewave
Amplitude:	1Vrms
Harmonic:	<-40dBc
Non-harmonic:	<-60dBc
Connector:	BNC
Load impedance:	50Ω
Location:	rear panel

Frequency:	1,5 & 10MHz
Format:	TTL
Amplitude:	>3V Peak
Pulse width:	50% duty cycle
Connector:	BNC
Load impedance:	50Ω
Location:	rear panel

- Timing outputs

Format:	1 PPS
Amplitude:	>3V
Pulse width:	400ns
Rise time:	<20nS
Jitter:	<10pS RMS
Connector:	BNC
Load impedence:	50Ω
Location:	rear panel

- Timing inputs

Sync input:	1 PPS
Amplitude:	TTL compatible
Connector:	BNC
Load impedence:	50Ω
Location:	rear panel

PERFORMANCE PARAMETERS

- Accuracy at shipment: <±5E-11
- Retrace: <±2E-11
- Control range: ±1E-6 with 1E-12 resolution
- Warm-up time

Time to lock:	<5 minutes
Time to <1E-9:	<8 minutes

- GPS Disciplining

Time for valid output:	<20 minutes
Frequency accuracy:	<1E-12

- Stability

Avg. Time (s)	Allan Deviation
1	<3.0E-11
10	<1.0E-11
100	<3.0E-12

- Aging

Monthly:	<5E-11
Yearly:	<5E-10

- SSB phase noise

	Standard	Low Noise
Offset (Hz)	10MHz	10MHz
1	-72dBc	-94dBc
10	-90dBc	-126dBc
100	-128dBc	-144dBc
1,000	-140dBc	-150dBc
10,000	-148dBc	-150dBc

- Remote system interface & control
  RS-232-C (DTE configuration)

Connector RS-232:	9-pin male rectangular D
Location:	rear panel
Protocol:	8 data bits 1 stop bit
Baud rate:	57600

ENVIRONMENTAL & PHYSICAL SPECIFICATIONS

- General environment (operating)

Temperature:	0°C to 50°C
Temperature coefficient:	<3E-10
Storage temperature:	-40°C to 70°C
Humidity:	95% up to 50°C
Magnetic field:	DC (±2 Gauss)
Magnetic sensitivity:	<4E-11/Gauss
Altitude (operating):	0 to 50,000 feet

- AC power requirements
  90 to 240 VAC
  47 to 63 Hz
  25W (operating)
  45W (warm-up)
- Dimensions/Weight
  19"W x 1.75"H x 12"D
  <6 lbs.

OPTIONS	Part No.
• 6 additional outputs	102
• Low phase noise	LPN

8040C connections (shown with 12 output option)

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