

FRU-1030 FREQUENCY REFERENCE UNIT FOR CPCI/PXI BUS

Features:

- ❑ 3U CPCI/PXI module
- ❑ OCXO or Rubidium frequency reference
- ❑ 5 individually buffered outputs
- ❑ Low Phase Noise output buffers
- ❑ Optional built in GPS receiver to discipline rubidium oscillator

The FRU-1030 is a high performance frequency standard designed to mount within a 3U compact PCI/PXI chassis.

The FRU-1030 provides 5 output channels of a single reference frequency, typically 10MHz.

The FRU-1030 may be configured in a variety of ways to provide the required performance and accuracy:

- ❑ Free running Oven Controlled Quartz Oscillator
- ❑ Oven Controlled Quartz Oscillator Slaved to an external frequency Reference.
- ❑ Free Running Atomic rubidium frequency Standard.
- ❑ Oven Controlled Quartz Oscillator Slaved to an internal rubidium frequency Standard to provide low phase noise outputs
- ❑ GPS slaved rubidium oscillator reference. An internal GPS receiver provides a continuous calibration signal for the rubidium oscillator

The FRU-103 may also act as a master clock reference in PXI systems, where it drives PXI_CLK10



The Rubidium Oscillator provides exceptional long-term stability, while units fitted with the internal oven controlled crystal oscillator also provide clean, low

Related Brandywine Products

PTS:

High performance GPS disciplined frequency standard with Network interface.

GPS8 :

Standalone GPS Time and Frequency System

FTSU-100:

Distribution amplifier with up to 2 output frequencies, time code and 1PPS. Built in low noise OCXO for hitless switching

SYNCCLOCK board level products:

Advanced board level GPS and IRIG clocks for VME, PCI, ISA PMC and PC/104 bus Displays

NTA-100GM NTP Time Server

A GPS based network time protocol server

phase noise reference outputs.



FRU-1030 SPECIFICATIONS

Frequency Outputs

No of Outputs	5 outputs total 4 sine-wave, 1 square-wave
Frequency	10MHz standard Optional 1, 5, 10.492, 12.8, 13, 19.6608, 64.8 MHz
Level (sine)	1Vrms into 50 ohm (13dBm)
Level (square)	PECL compatible
Connector	SMA

Phase Noise (@10MHz)

1Hz
10Hz
100Hz
1000Hz
10000Hz

With Cleanup OCXO

-87dBc	-72dBc
-115dBc	-90dBc
-135dBc	-128dBc
-140dBc	-140dBc
-153dBc	-148dBc

Harmonics

<-40dB

Frequency Input

No of inputs	(Optional - in place of rubidium) One. (Replaces one output)
Frequency	10MHz standard
Level	0.8 to 1.2 V _{rms} standard
Connector	SMA

Environmental

Temperature

-0 to +50 °C

Humidity

95% non condensing

Power

+5 @100mA typ, +12 @2.3 A
warmup, 800mA typ., -
12@200mA typ.

Controls and Indicators

RB Lock	Amber LED
Power	Green LED

Dimensions

3U compact PCI, 1 slot
GPS option, 2 slots

Weight

1 lb. typical

Oscillator Options

Internal Reference Oscillator

OCXO

Stability	5x10 ⁻⁸ 0-50 °C
Aging	5x10 ⁻⁸ per year

Rubidium

Option AP3 Stability	<3x10 ⁻⁹ 0-50 °C
Aging	±3x10 ⁻¹⁰ per month
Option AP1 Stability	<1x10 ⁻¹⁰ 0-50 °C
Aging	±5x10 ⁻¹¹ per month

GPS disciplined rubidium Option (requires 2 slots)

No of Channels	8
Interface	RS232
Output	1PPS
Receiver type	C/A code 12 channel all in view
Frequency Accuracy	<1x10 ⁻¹² / 24 hours

Ordering Information:

Part Number	Rubidium AP3	Rubidium AP1	Quartz OCXO	External 10MHz	GPS
Primary Reference	01400001	01400002	01400003	NA	01400004
With cleanup OCXO	01400005	01400006	NA	01400007	01400008

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