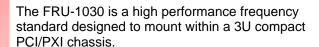


# FRU-1030 FREQUENCY REFERENCE UNIT FOR CPCI/PXI BUS

#### 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 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 longterm 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

Frequency Input (Optional - in place of rubidium)

No of inputs One. ( Replaces one output)

Frequency 10MHz standard

Level 0.8 to 1.2 V<sub>rms</sub> standard

Connector SMA

Controls and Indicators

RB Lock Amber LED Power Green LED

**Oscillator Options** 

Internal Reference Oscillator

OCXO

Stability  $5x10^{-8} 0-50 \, ^{\circ}\text{C}$ Aging  $5x10^{-8} \text{ per year}$ 

Rubidium

 $\begin{array}{lll} \mbox{Option AP3 Stability} & <3x10^{.9} \ 0\text{-}50 \ ^{\circ}\mbox{C} \\ \mbox{Aging} & \pm 3x10^{.10} \mbox{ per month} \\ \mbox{Option AP1 Stability} & <1x10^{.10} \ 0\text{-}50 \ ^{\circ}\mbox{C} \\ \end{array}$ 

Aging  $\pm 5x10^{-11}$  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

Phase Noise (@10MHz) With Cleanup

OCXO

 1Hz
 -87dBc
 -72dBc

 10Hz
 -115dBc
 -90dBc

 100Hz
 -135dBc
 -128dBc

 1000Hz
 -140dBc
 -140dBc

 10000Hz
 -153dBc
 -148dBc

Harmonics <-40dB

Environmental

Temperature -0 to +50 °C

Humidity 95% non condensing

Power +5 @100mA typ, +12 @2.3 A

warmup, 800mA typ., - 12@200mA typ.

Rubidium

Dimensions 3U compact PCI, 1 slot

GPS option, 2 slots

Weight 1 lb. typical

## 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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