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OctoClock & OctoClock-G

FEATURES

- Fully Integrated Timing Source with 8-Way Distribution (10 MHz and 1 PPS)
- Convenient Solution for Multi-Channel Synchronization
- Use with MIMO-Capable USRP Devices for Coherent System
- User Selection between Internal GPSDO Or External 10 MHz & 1 PPS Source
- Source detection with automatic switch-over in case of failure or disconnect
- 19" 1U rack mountable



	8 Channel Clock Distribution	Integrated GPSDO
OctoClock	✓	
OctoClock-G	✓	✓

Product Overview

The OctoClock 8-channel clock distribution module can provide both frequency and time synchronization for up to eight Universal Software Radio Peripheral (USRP™) devices by amplifying and splitting an external 10 MHz reference and PPS (pulse per second) signal 8-ways through matched-length traces. The OctoClock-G adds an internal time and frequency reference using an integrated GPSDO (GPS-disciplined oscillator). A switch on the front-panel allows the user to choose between the internal GPSDO and an externally supplied reference. Both OctoClocks allow users to easily build MIMO systems and work with higher channel-count systems that might include MIMO research, direction finding, beamforming, transmitter geolocation, and more.

Octoclock

The Octloclock provides 10 MHz and PPS inputs on the front panel of the device that are then distributed to each of eight 10 MHz and PPS SMA outputs. Each output signal is amplified to maintain level and signal integrity after being divided eight ways.

Octoclock-G

The OctoClock-G distributes 10 MHz and 1 PPS signals generated from an internal GPS-disciplined oven-controlled oscillator (GPSDO) or an external source. The user can switch between these two sources with a front-panel switch, and there is automatic switch-over capability in case of failure or source disconnect.

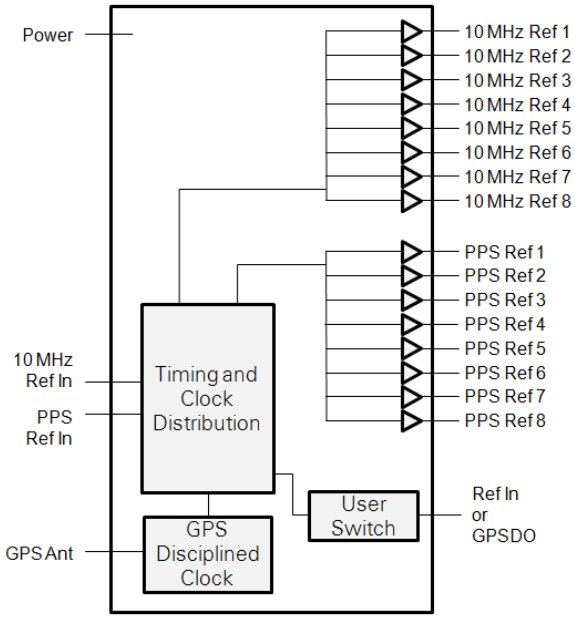
The GPSDO serves as an accurate reference that can be synchronized to the GPS timing standard. This allows developers to time-align multi-channel systems across the globe to within a few 100 ns. When the GPSDO is not locked to the GPS constellation, it still provides 10 MHz/1 PPS signals, with accuracy better than 25 ppb.

OctoClock & OctoClock-G

Spec	Typ.	Unit
Power		
DC Input	6-15	V
Current Consumption	< 1	A
Input		
10 MHz Input Range	0-20	dBm
1 PPS Input	2.5 – 5	V
GPSDO Specifications		
Active GPS Antenna (User supplied)	5	V
Frequency Accuracy w/ out GPS Lock	25	ppb
Frequency Accuracy with GPS Lock	<1	ppb
PPS Accuracy with GPS Lock	50	ns

Spec	Typ.	Unit
Output		
10 MHz Output	~1.4	Vpp
10 MHz Output Waveform	Square wave	
10 MHz Output Impedance	50	Ohm
1 PPS Output	5	V
1 PPS Waveform	Logic-level pulse	
Physical		
Dimension (1U Rackmount)	4 x 17.187x 1.75	inches
Weight	2.6	lbs

*All specifications are subject to change without notice.



Octoclock-G System Block Diagram

About Ettus Research

Ettus Research is an innovative provider of software defined radio hardware, including the original Universal Software Radio Peripheral (USRP) family of products. Ettus Research products maintain support from a variety of software frameworks, including GNU Radio. Ettus Research is a leader in the GNU Radio open-source community, and enables users worldwide to address a wide range of research, industry and defense applications. The company was founded in 2004 and is based in Mountain View, California. As of 2010, Ettus Research is a wholly owned subsidiary of National Instruments.

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