PI-41400 Dual Channel Clock Driver

Features:

- 80 MHz Clock Rate@ 8 V
- Output Levels -3 V to 8 V
- Amplitude 0.5 to 9 V
- Variable Rise & Fall Times
- Tri-State Operation

Applications:

- Device Characterization
- CMOS Testing
- FPA Testing
- Test Instrumentation
- Test Systems

Introduction:

The Pulse Instruments PI-41400 Dual Channel Clock Driver Card, along with other stimulus cards, is designed for the modular instrument platform CompactPCI®. This card is a 6U Eurocard size that will plug directly into the CompactPCIÒ chassis.

As a test or design engineer you must have state-of-the-art tools to test, characterize and verify your complex semiconductor devices and circuit boards. The PI-41400 Dual Channel Clock Driver Card is one of the high performance, low-cost test instrumentation tools being offered by Pulse Instruments.

Instrument Description:

The PI-41400 is a dual channel Clock Driver card capable of operating up to 190 MHz into a 50 Ω load and up to 80 MHz at an amplitude of 8 volts into a 1 MΩ load. Into a high impedance load the output voltage range is from a -3 V to 8 V with the output pulse amplitude ranging from 0.5 V to 9 V. When driving a 50 Ω load the voltage range is -1.5 V to 4.5 V with the output pulse amplitude ranging from 0.25 V to 4.5 V. The rise and fall times of the output pulse are variable from 1.2 ns to 9 ns into a 50 Ω load and <5 ns to 9 ns into a HiZ load. The output pulse amplitude and the load being driven determine the range of variability. The driver output can be set for tri-state operation and the output polarity can be set for 'Normal' or 'Inverted' operation through software.

The input drive signal, software selected, can be either TTL or single-ended ECL. There is also an 'Opto Input' SMA connector so the driver can be isolated from the input drive signal. Using the Opto Input for the stimulus signal limits the operating frequency to 30 MHz. For further noise immunity the PI-41400 has a separate connector that will allow the use of external laboratory type power supplies to power the critical circuitry on the board. Additionally there are banana jacks on the front panel to provide voltage and current sense measurements.

There are two monitoring features for the output signals. The first is a separate SMA connector for each channel that provides the same output signal as the main output. The second monitoring feature is an LED that gives an indication between active operation or tri-state mode operation.

PI-41400
Dual Channel
Clock Driver

Pulse Instruments

1234 Francisco Street Torrance CA 90502
Tel: (310) 515-5330 Fax: (310) 515-0068

Specifications:

DC Characteristics

Output:	1 MW Load	50 W Load
Hi-Level:	-2.5 V to + 8.0 V	-1.25 V to + 4.0 V
Resolution:	4 mV	2 mV
Accuracy:	0.1% Prog. Val $\pm$ 100 mV	4% Prog. Val $\pm$ 50 mV
Lo-Level:	-3.0 V to + 7.5 V	-1.5 V to + 3.75 V
Resolution:	4 mV	2 mV
Accuracy:	0.1% Prog. Val $\pm$ 100 mV	4% Prog. Val $\pm$ 50 mV
Amplitude:	0.5 V to 9 V max.	0.25 V to 4.5 V max.
B/M Resistance:	-----------------------	48 Ohms$\pm$ 5%
HiZ Leakage:	<7 μA (-3 V to 8 V)	
Shorted Range:	-4 V to +9 V	
Sense Range:	-3 V to +8 V	
Sense Accuracy:	0.5% of reading $\pm$ 10 mV	

AC Characteristics

Output:	8 Vp-p into 1 MΩ	2.5 V p-p into 50Ω	4.5 Vp-p into 50Ω
Min. Pulse Width:	5.5 ns	2.4 ns	4.0 ns
Rise/Fall Time:	<5 ns	<1.7 ns	<3.0 ns
Max. Rep. Rate	80 MHz	190 MHz	130 MHz
Rise/Fall Time Range	<5 ns to 8 ns	<1.7 ns to 5 ns	<3 ns to 9 ns
Prog. Accuracy	10% of setting $\pm$ 2 ns	same	same
Aberration:		5% of Amp$\pm$ 100 mV	5% of Amp $\pm$ 100 mV
Polarity:	Normal or Inverted	Normal or Inverted	Normal or Inverted

Propagation Time: 7 ns maximum - TTL input to main Output

Inputs:

TTL or ECL:	Software selectable. TTL input resistance 50 Ohms or 500 Ohms $\pm$ 10%.
	ECL single ended, 50 Ohms input resistance, referenced to -2 V.
Opto:	30 MHz maximum rep rate. Input signal >3.0 V to 5 V, Input resistance < 300 Ohms

Signal Connectors: SMA for all inputs and outputs.

External +/-12V: 9 pin D

Power Consumption:

Pwr. Supply	Min	Typical	Max.
5.0 V $\pm$ 5%		0.40 Amps	
3.3 V $\pm$ 5%		0.50 Amps	
12 V $\pm$ 5%		0.60 Amps	
-12 V $\pm$ 5%		0.90 Amps	

Mechanical:
- Size 6U Eurocard
- Dimensions 6.30" x 9.18" (160.00 mm x 233.35 mm)
- One card slot

Ordering Information:
Contact Pulse Instruments Sales at (310) 515-5330 or by email at sales@pulseinstruments.com

Rev 1.2 01/15/02 p.2 41400