

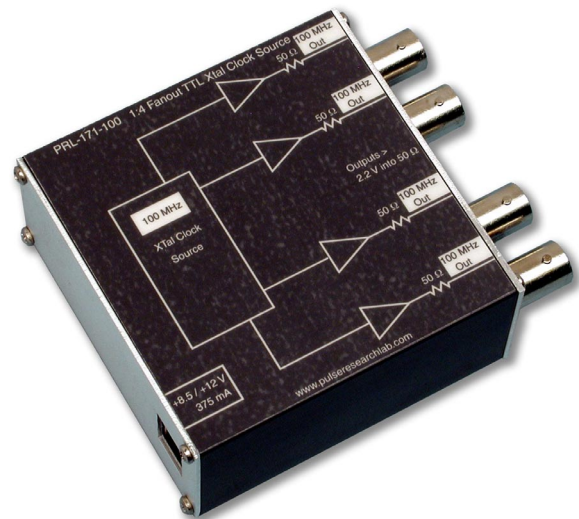
# PRL-171/172/173 TTL XTAL CLOCK GENERATORS

## APPLICATIONS

- Precision Clock Source for High Speed Digital systems
- 1:4 Fanout Clock Generator, PRL-171
- 4- $\phi$  Clock Generator, PRL-172
- 2- $\phi$  Clock Generator, PRL-173
- A Basic Lab Tool for Working with CMOS/TTL Circuits

## FEATURES

- 50 ps typical Edge Jitter
- 750 ps typical skew between any two outputs
- 2, 5, 10, 20, 50, and 100 MHz crystal frequencies in stock
- Custom crystal frequencies also available
- 50  $\Omega$  back matched Outputs drive 50  $\Omega$  loads or unterminated long lines
- DC-coupled Outputs
- BNC Output Connectors
- Ready-to-Use 1.3 x 2.9 x 2.9-in. Module includes a  $\pm 8.5V$  AC/DC Adaptor



**PRL-171-100**

## DESCRIPTION

The PRL-171, -172 and -173 are ready-to-use TTL crystal clock source modules with 50  $\Omega$  back terminated outputs. They are designed for driving long lines with or without 50  $\Omega$  terminations.

The PRL-171 buffers an internal crystal clock and fans out into four identical outputs. The PRL-172 converts the internal crystal clock frequency  $f$  into 4- $\phi$  clock outputs of  $f/2$ ,  $f/4$ ,  $f/8$ , and  $f/16$ . The PRL-173 has 2- $\phi$  clock outputs of  $f/2$  and  $f/10$ .

The maximum frequency output of the PRL-171 is 100MHz and those of the PRL-172 and PRL-173 are 50MHz. Standard crystal frequencies provided are 2MHz, 5MHz, 10MHz, 20MHz, 50MHz and 100MHz. Other crystal frequencies are also available.

To specify the output frequencies desired, a three digit number, -XXX should follow the model number, where XXX represents the maximum output frequency. For example, the PRL-171-100 has four 100 MHz outputs, the PRL-172-40 has 40 MHz, 20 MHz, 10 MHz and 5 MHz outputs. Similarly, the PRL-172-50 has 50 MHz and 10 MHz outputs.

Each clock source module is housed in a 1.3 x 2.9 x 2.9-in. extruded aluminum enclosure and is supplied with a  $\pm 8.5V$  AC/DC Adaptor.

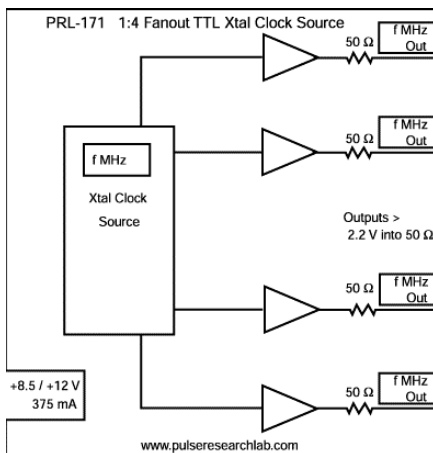
If mounting is desired, a pair of 35001420 mounting brackets can accommodate two PRL modules of the same length. A number of PRL modules can also share a single  $\pm 8.5V$  AC/DC adaptor using the PRL-730 or PRL-736 voltage distribution module. Please see the Accessories Section for more detail.



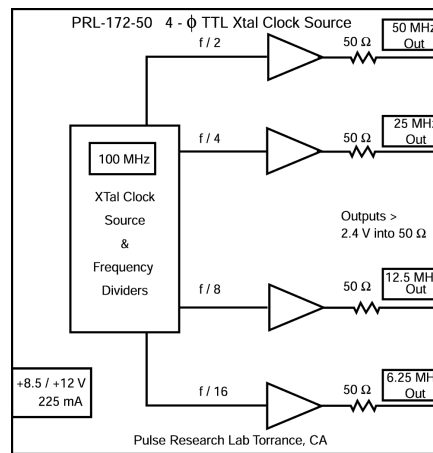
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**\*SPECIFICATIONS ( $0^{\circ}\text{C} \leq \text{TA} \leq 35^{\circ}\text{C}$ ) applies to all models unless otherwise specified. All measurements are made with all outputs terminated into  $50\Omega$**

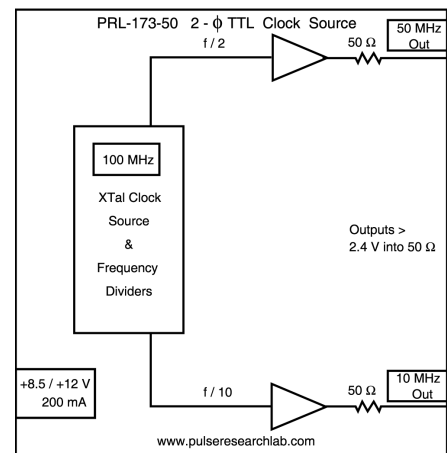
SYMBOL	Model No.	PARAMETER	Min	Typ	Max	UNIT	Comments
$I_{DC}$	PRL-171-100	DC Input Current		350	400	mA	
$I_{DC}$	PRL-172-50	DC Input Current		260	300	mA	
$I_{DC}$	PRL-173-50	DC Input Current		175	200	mA	
$V_{DC}$		DC Input Voltage	7.5	8.5	12	V	
$V_{AC}$		AC/DC Adaptor Input Voltage	103	115	127	V	
$t_r/t_f$		Rise/Fall Times (10%-90%)		2	3	ns	
$t_{SKEW}$		Skew between any two channels		750	1500	ps	
$f_{MAX}$	PRL-171	Max output frequency		100		MHz	Cable length $\leq$ 6ft
$f_{MAX}$	PRL-172	Max output frequency		50		MHz	
$f_{MAX}$	PRL-173	Max output frequency		50		MHz	
$\Delta f$		Frequency Stability		100		ppm	
		Frequency Jitter		50	200	ps	
		Duty Cycle		40/60			Measured @ 50 %
		Maximum cable length		100		ft	output frequency $\leq$ 80MHz
		Size	1 x 2.9 x 2.9			in.	
		Weight	3			Oz	
		Shipping weight incl. AC adaptor	3			lb	



**Fig 1: PRL-171 Block Diagram**



**Fig 2: PRL-172 Block Diagram**



**Fig 3: PRL-173 Block Diagram**