

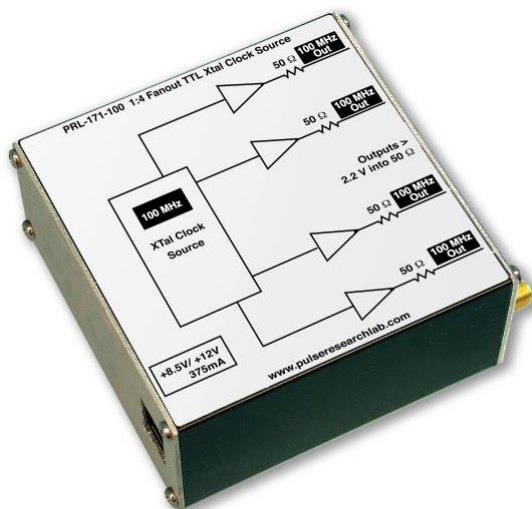
PRL-171/172/173 TTL XTAL CLOCK GENERATORS

APPLICATIONS

- Precision Clock Source for High Speed Digital systems
- 1:4 Fanout Clock Generator, PRL-171
- 4- ϕ Clock Generator, PRL-172
- 2- ϕ 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 Ω back matched Outputs drive 50 Ω 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 Ω back terminated outputs. They are designed for driving long lines with or without 50 Ω 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- ϕ clock outputs of $f/2$, $f/4$, $f/8$, and $f/16$. The PRL-173 has 2- ϕ 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.

*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 50Ω

SYMBOL	Model No.	PARAMETER	Min	Typ	Max	UNIT	Comments
I_{DC1}	PRL-171-100	DC Input Current		350	400	mA	
I_{DC2}	PRL-172-50	DC Input Current		260	300	mA	
I_{DC3}	PRL-173-50	DC Input Current		175	200	mA	
V_{DC}		DC Input Voltage	7.5	8.5	12.0	V	
V_{AC}		AC/DC Adapter Input Voltage	103		254	V	Auto-switching
t_r		Rise Times (10%-90%)		2	3	ns	
t_f		Fall Times (10%-90%)		2	3	ns	
t_{SKEW}		Skew between any two channels		750	1500	ps	
f_{MAX1}	PRL-171	Max output frequency		100		MHz	Cable length \leq 6ft
f_{MAX2}	PRL-172	Max output frequency		50		MHz	
f_{MAX3}	PRL-173	Max output frequency		50		MHz	
Δf		Frequency Stability		100		ppm	
		Frequency Jitter		50	200	ps	
		Duty Cycle		40/60			Measured @ 50%
		Maximum cable length		100		ft	$f_{\text{OUT}} \leq 80 \text{ MHz}$
		Size		1.0 x 2.9 x 2.9		in.	
		Weight		3		Oz	
		Shipping weight incl. AC adapter		3		lb	

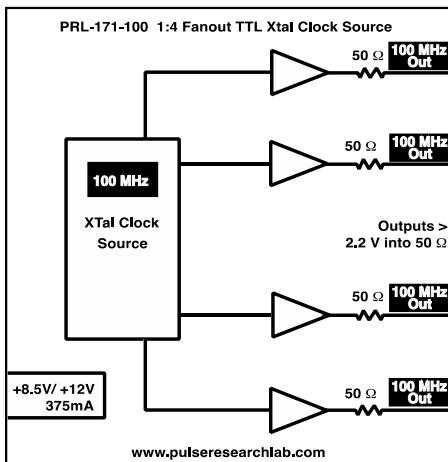


Fig 1: PRL-171 Block Diagram

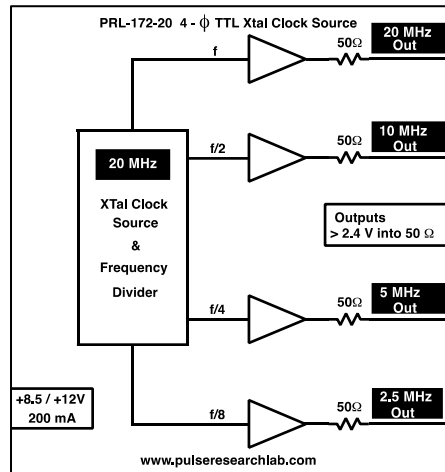


Fig 2: PRL-172 Block Diagram

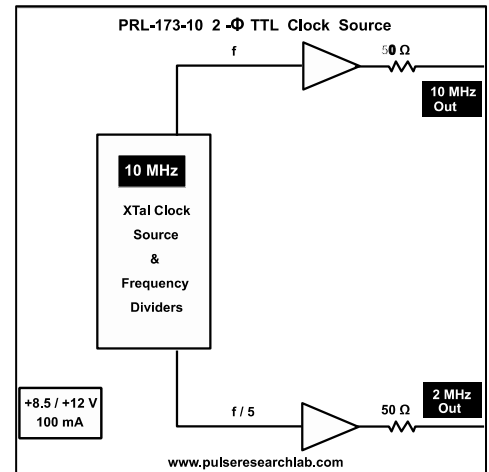


Fig 3: PRL-173 Block Diagram