

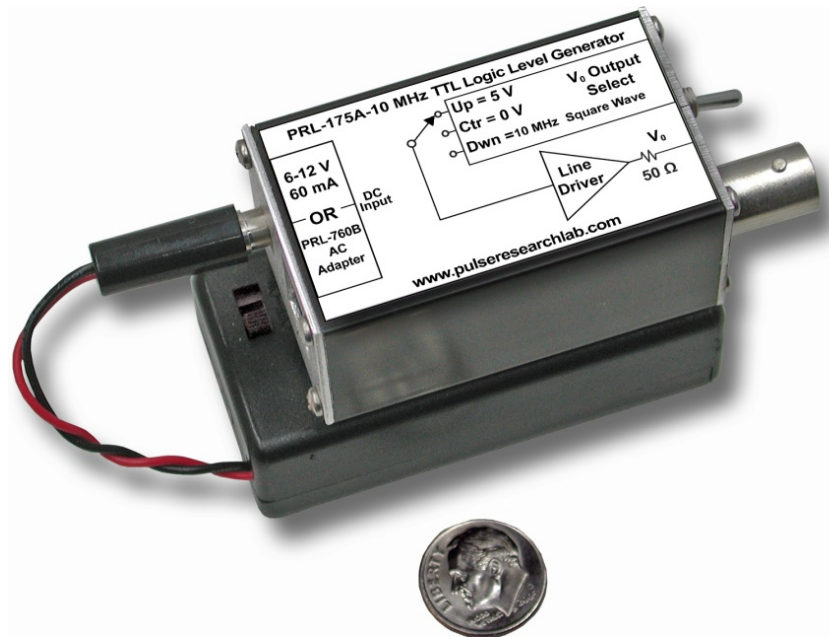
# PRL-175A-10, BATTERY OPERATED TTL LOGIC LEVEL GENERATOR and 10 MHz CLOCK SOURCE

## APPLICATIONS

- Pocket-sized Signal Source Outputs Valid TTL Hi/Lo or Square wave Signal
- Low Jitter TTL Xtal Clock Source
- Amplifier Response Testing
- Triggering or toggling TTL device
- TDR Testing, with PRL-812TDR Splitter
- Ideal Field Trouble Shooting Tool
- General Purpose Basic Lab Tool

## FEATURES

- 0 V/5 V DC or 10 MHz TTL Square Wave into Hi Z or 2.5 V into 50  $\Omega$ .
- 25 ppm Xtal stability
- 50  $\Omega$  Output drives long lines with or without 50  $\Omega$  load termination
- $t_R/t_F < 2$  ns typical into 50  $\Omega$
- Frequency jitter < 20 ps
- BNC Output Connector
- 9V Battery pack with On/Off switch included
- 10 Hr. typical battery life with continuous operation at 10 MHz/50  $\Omega$  load (longer at reduced duty cycle)
- Double the operating time with an optional 4-AA battery pack
- Optional 9 V AC Adapter available
- Other Xtal frequencies available on special order
- General Purpose Basic Lab Tool
- 1.0H x 1.3W x 2.2L-in. pocket-size module mounted on a 0.83H x 1.32W x 2.7L-in. battery pack (shown in photo)



## PRL-175A Module with 9V Battery Pack

## DESCRIPTION

The PRL-175A-10 is a battery operated, pocket-sized lab tool and troubleshooting aid. It outputs a 0 V/5V DC or 10 MHz Xtal controlled square wave signal into a Hi Z load, or 2.5 V into 50  $\Omega$ . These are the essential signals for troubleshooting TTL circuits, equipment, and systems. The PRL-175A-10 has a 50  $\Omega$  back-terminated output driver that can drive a 100' long line with or without load termination. It is an indispensable tool for engineers and technicians working in the field, in the lab or on the production floor.

The included 9 V battery pack can power the PRL-175A-10 in square wave mode into a 50  $\Omega$  load continuously for up to 10 hours, or for 25 hours into a 600  $\Omega$  load\*. An optional 4-AA battery pack or a +9V AC adapter is also available.

The output logic mode,  $V_{OH}$ ,  $V_{OL}$  or 10 MHz square wave, is selected by a 3-position toggle switch, and the status is indicated by an LED. The PRL-175A-10 module can be attached to the battery pack using a short strip of 3M Dual-Lock Fastener (included) and powered via a short cable terminated into a 2.1mm DC jack. The battery pack also includes an On/Off switch, as shown in the photo above. The assembled unit fits easily into a pocket.

Applications of the PRL-175A-10 include precision, low-jitter clock source for testing digital systems, ADCs and amplifiers, and for simple troubleshooting applications. The PRL-175A-10 is housed in a 1 x 1.3 x 2.2-in. extruded aluminum enclosure and includes a 0.83H x 1.3W x 2.7L-in. battery pack.

\* Run times are typical, and will vary depending on usage profile and environmental conditions.



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## SPECIFICATIONS\* (0° C ≤ T<sub>A</sub> ≤ 35°C)

Unless otherwise specified, all measurements are made with the output terminated into 50Ω.

SYMBOL	PARAMETER	Min	Typ	Max	UNIT	Comments
I <sub>DC1</sub>	DC Input Current		10		mA	R <sub>L</sub> = 1 MΩ
I <sub>DC2</sub>	DC Input Current			60	mA	V <sub>O</sub> = Hi, R <sub>L</sub> = 50 Ω
I <sub>DC3</sub>	DC Input Current		37	40	mA	V <sub>O</sub> = 10 MHz, R <sub>L</sub> = 50 Ω
V <sub>DC</sub>	DC Input Voltage	5.65	6	12	V	
V <sub>AC</sub>	AC/DC Adapter Input Voltage	103	120	132	V	
V <sub>OL1</sub> DC	Lo Level DC Out		0	0.2	V	R <sub>L</sub> = 1 MΩ
V <sub>OL2</sub> DC	Lo Level DC Out		0	0.1	V	R <sub>L</sub> = 50 Ω
V <sub>OH1</sub> DC	Hi Level DC Out	4.8	5		V	R <sub>L</sub> = 1 MΩ
V <sub>OH2</sub> DC	Hi Level DC Out	2.4	2.5		V	R <sub>L</sub> = 50 Ω
V <sub>OL1</sub> 10 MHz	Lo Level 10MHz Out		0	0.2	V	R <sub>L</sub> = 1 MΩ
V <sub>OL2</sub> 10 MHz	Lo Level 10MHz Out		0	0.1	V	R <sub>L</sub> = 50 Ω
V <sub>OH1</sub> 10 MHz	Hi Level 10MHz Out	4.8	5		V	R <sub>L</sub> = 1 MΩ
V <sub>OH2</sub> 10 MHz	Hi Level 10MHz Out	2.4	2.5		V	R <sub>L</sub> = 50 Ω
t <sub>r</sub>	Rise Time (10% - 90%)		1.8	2.5	ns	R <sub>L</sub> = 50 Ω
t <sub>r</sub>	Fall Time (10% - 90%)		1.4	2.5	ns	R <sub>L</sub> = 50 Ω
f	Xtal Frequency		10		MHz	
Δf	Frequency Stability, 20 °C ≤ T <sub>A</sub> ≤ 35 °C		±25		ppm	
	Frequency Jitter peak to peak		20		ps	
	Single 9 V Alkaline Battery		9		V	9 V Battery Pack
	Battery life under continuous operation*		10		hr	V <sub>O</sub> = 10 MHz, R <sub>L</sub> = 50 Ω
	Battery life under continuous operation		25		hr	V <sub>O</sub> = 10 MHz, R <sub>L</sub> = 600 Ω
	Size	1.0H x 1.3W x 2.7L			In.	Battery Pack
	Weight	3			Oz	Battery Pack
	Size	1.0H x 1.3W x 2.2L			in.	PRL-175A
	Weight	2			Oz	PRL-175A

\*Battery life depends on battery type and manufacturer and on duty cycle. Battery life can be extended up to two hours by reducing the usage duty cycle, as the battery voltage recovers during the off cycles. When battery operating time longer than 10 hours is desired, replacing the 9 V battery pack by a 4-AA alkaline battery pack will nearly double the operating time. A 4-AA lithium battery pack (non-rechargeable) can extend the continuous operating time up to 80 hours.

