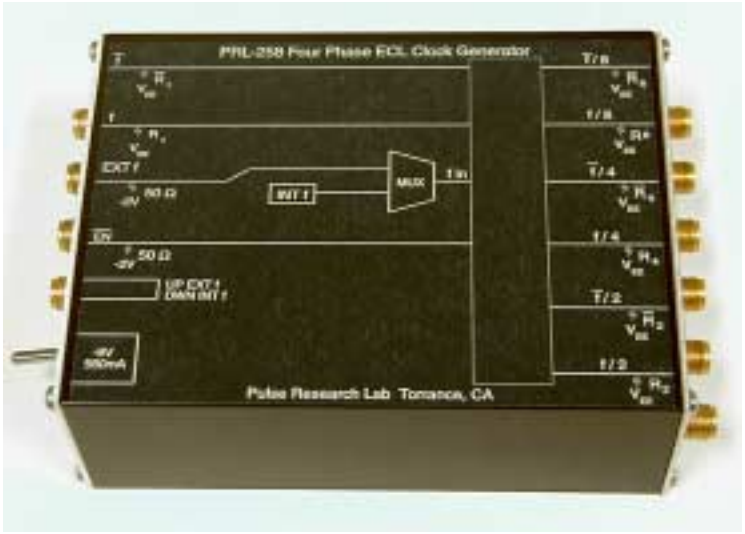
PRL-258 4-ϕ ECL CLOCK GENERATOR



APPLICATIONS

- Multi-Phase Clocks in High-Speed Digital systems
- Low Jitter Multi-Phase Clock Source
- SONET Clock Generator
- An Essential Lab Tool for Working with ECL Circuits

FEATURES

- 50ps typical Edge Jitter
- 100ps typical skew between f/n & $\overline{f/n}$ outputs
- 1.2 GHz maximum clock frequency
- f, $\bar{f}$, f/2 $\overline{f/2}$, f/4, $\overline{f/4}$, f/8, and $\overline{f/8}$ Outputs, Internal or External Clock
- User Specified Internal Xtal Clock Frequency
- Single-ended External Clock and Enable inputs with internal 50Ω/-2V Terminations
- Complementary Outputs drive 50Ω loads terminated to -2V
- DC coupled I/O's Compatible with ECLinPS or 100KH Devices
- SMA I/O Connectors
- Ready-to-Use 1.3 x 2.9 x 3.9-in. Module includes a -9V AC/DC Adapter

DESCRIPTION

The PRL-258 is a high speed, low skew and low jitter 4-ϕ ECL clock generator capable of running at clock speeds in excess of 1GHz. It has a pair of buffered complementary clock outputs and three pairs of synchronous f/2, f/4 and f/8 complementary outputs, suitable for driving 50Ω loads terminated to -2V. A switch selects ether the internal crystal clock source or external clock input. The synchronous enable (EN) input enables or disables the dividers when the clock is already in the LOW state.

Both the singled-ended External Clock and EN inputs are terminated internally to 50Ω/-2V. Standard internal crystal frequencies provided are 50MHz, 200MHz, 400MHz, 500MHz and 622.08MHz, and the specific model number designation is PRL-258-XXX, where "XXX" represents the user specified clock frequency, such as 200 or 622, etc. Other crystal frequencies are also available.

Applications of the PRL-258 include precision multi-phase clocks in high speed digital systems, low jitter clock source for testing A/D systems, SONET Clock generator, GHz frequency division and general purpose Lab Tool for working with high speed ECL circuits.

The PRL-258 is housed in a 1.3 x 2.9 x 3.9-in. extruded aluminum enclosure and is supplied with a -9V AC/DC Adapter.

*SPECIFICATIONS (0º C ≤ TA ≤ 35ºC)

SYMBOL	PARAMETER	Min	Typ	Max	UNIT	Comments
R_{in}	Input Resistance	49.5	50	50.5	Ω	
V_{TT}	Input Termination Voltage	-2.2	-2	-1.8	V	Ext Clk & EN inputs
I_{DC}	DC Input Current		-520	-550	mA	INT f=500MHz
V_{DC}	DC Input Voltage	-8	-9	-11	V	
V_{AC}	AC/DC Adapter Input Voltage	103	115	127	V	
t_{PLH1}	Propagation Delay to f output ↑		2100		ps	From Ext Clk input
t_{PLH2}	Propagation Delay to f/2, f/4, or f/8 output ↑		2500			From Ext Clk input
t_{PLH3}	Propagation Delay to f output ↑		2500			From EN input
$t_{r/tf1}$	Rise/Fall Times(20%-80%), f/$\overline{f}$ outputs		500	800	ps	Note (1)
$t_{r/tf2}$	Rise/Fall Times(20%-80%), f/n/$\overline{f/n}$ outputs		750	850	ps	Note (1)
t_{SKEW1}	Skew between f and $\overline{f}$ outputs		50	100	ps	
t_{SKEW2}	Skew f/2↔$\overline{f/2}$, f/4↔$\overline{f/4}$ or f/8, ↔ $\overline{f/8}$		100	150	ps	
t_{SKEW3}	Skew between f and any f/n or $\overline{f/n}$ outputs		400	550	ps	
T_{SKEW4}	Skew between f/n and any other $\overline{f/n}$ outputs		150	200	ps	n≠1
f_{MAX}	Max clock frequency	1	1.2		GHz	Note (2)
Δf	Frequency Stability		100		ppm	
	Frequency Jitter		20	50	ps	
	Size		1.3x2.9x3.9		in.	
	Weight		7		Oz	

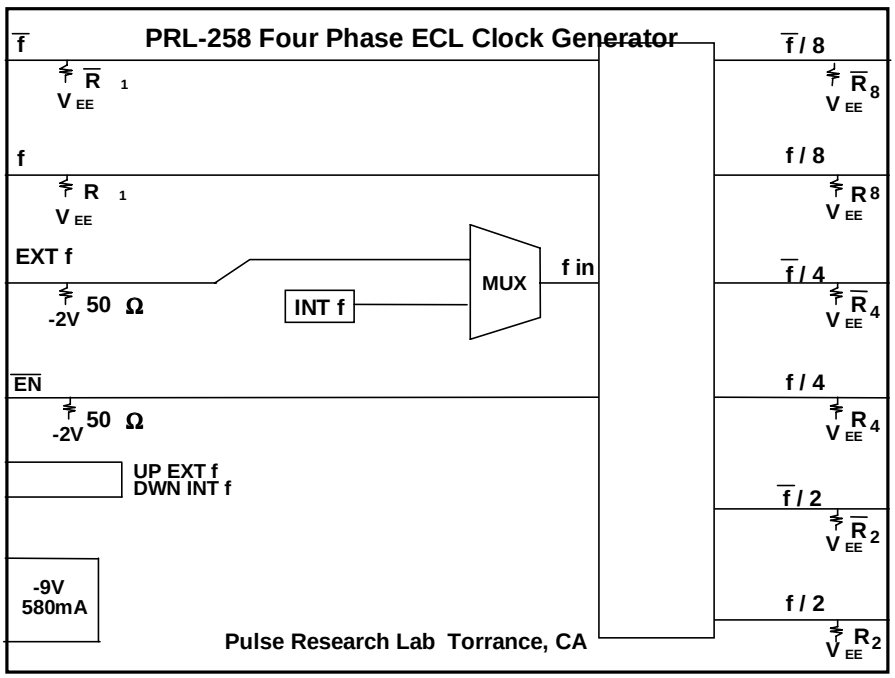


Fig. 1 PRL-258 Block Diagram

*All dynamic measurements are made with outputs terminated into 50Ω/-2V, using the PRL-550NQ5X, four channel ECL Terminators, connected to a 50Ω input sampling oscilloscope.

Notes:
(1). The output rise and fall times of each channel are measured with its complementary output terminated into 50Ω/-2V. An unused complementary 50Ω output must be either terminated into 50Ω/-2V or AC coupled into a 50 Ω load; otherwise, output waveform distortion and rise time degradation will occur. Use the PRL-504 or PRL-508, four and eight channel ECL Termination modules, respectively, for the

50Ω/-2V termination. Use the PRL-550ND4X and PRL-550NQ5X, two and four channel ECL Terminators, respectively, for the 50Ω/-2V termination and for connection of ECL signals to 50Ω input oscilloscopes.

(2). f_{MAX} is measured by dividing each pair of differential outputs by four, using the PRL-255, and then measured using the PRL-550NQ5X, four channel ECL Terminators, connected to a sampling 'scope.