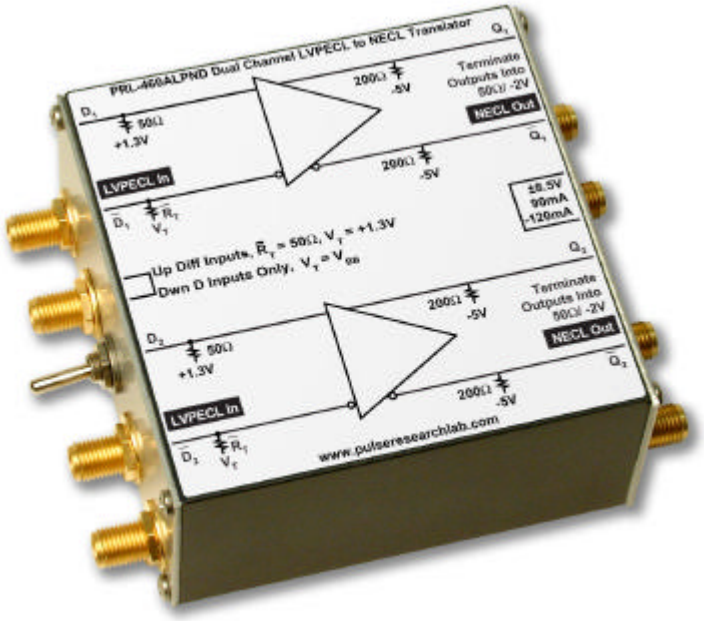
PRL-460ALPND DUAL CHANNEL LVPECL TO NECL TRANSLATOR

APPLICATIONS

- **Converting Single Ended or Differential LVPECL Signals to Differential NECL Signals**
- **High Speed Digital Communications systems Testing**
- **High Speed SONET Clock Level Translation**

FEATURES

- **f_{max} > 1.25 GHz**
- **750 ps t_r**
- **50 Ω/V_{TT} Input Terminations**
- **Single Ended or Differential Inputs**
- **Complementary NECL Outputs drive 50 Ω /-2V Terminations, AC-coupled or Floating 50 Ω Loads**
- **DC coupled I/O's with SMA Connectors**
- **Self-contained 1.3 x 2.9 x 2.9-in. unit including an AC/DC Adapter**



PRL-460ALPND
Dual Channel LVPECL to NECL Translator

DESCRIPTION

The PRL-460ALPND is a dual channel LVPECL to NECL Logic Level Translator module, intended for operation from DC to the GHz range. Maximum clock frequency is typically 1.5GHz. These modules can receive either single-ended or differential input signals, to be selected by a switch.

The complementary outputs of these modules are designed for driving 50 Ω loads terminated to -2 V, and they can also drive AC coupled or floating 50 Ω loads. These high speed translator modules facilitate testing and integration of high speed digital communications circuits and systems, where conversion of signals from LVPECL to NECL logic families is often required.

The PRL-460ALPND inputs are designed to interface with LVPECL circuits operating with a +3.3 V supply. In the differential input mode, both inputs D and $\overline{D}$ are terminated into 50 Ω/V_{TT}, where V_{TT} is +1.3 V for LVPECL. In this mode, either one or both inputs can accept AC-coupled signals as well. In the single-input mode, signals should be connected to the D inputs only. Inputs $\overline{D}$ are switched internally to V_{BB}, nominally +2 V for LVPECL, and termination resistors $\overline{R}_T$'s for the $\overline{D}$ input channels are changed to 62 Ω. A block diagram of the PRL-460ALPND is shown in Fig. 1.

The PRL-460ALPND is supplied with a ±8.5 V AC/DC Adapter and housed in a 1.3 x 2.9 x 2.9-in. extruded aluminum enclosure.

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*SPECIFICATIONS (0º C £ T_A £ 35º C)

Unless otherwise specified, dynamic measurements are made with all outputs terminated into 50 Ω/-2 V.

Symbol	Parameter	PRL-460ALPND			Unit
		Min	Typ	Max	
R_{in}	Input Resistance	49.5	50	50.5	Ω
R_{out}	Output Resistance (NPN emitter with 200 Ω pull down)		NA		Ω
V_{TT}	"D" Input Termination Voltage (fixed)	1.18	1.30	1.43	V
V_T	"$\overline{D}$" Input Termination Voltage (variable)	1.18/ 1.8	1.3/ 2.0	1.43/ 2.2	V
VOL	Output Low Level	-1.85	-1.7	-1.55	V
VOH	Output High Level	-1.0	-0.8	-0.7	V
Vop-p	Output voltage swing, f = 700 MHz Output voltage swing, f = 400 MHz		500 750		mV
I_{DC}	DC Input Current		+90 -120	100 -135	mA
V_{DC}	DC Input Voltage	±7.5	±8.5	±12	V
V_{AC}	AC/DC Adapter Input Voltage	103	115	127	V
t_{PLH}	Propagation Delay to output ↑		1.25		ns
t_{PHL}	Propagation Delay to output ↓		1.25		ns
t_r/t_f	Rise/Fall Times (20%-80%)*		750	950	ps
t_{SKEW}	Skew between any 2 outputs		50	120	ps
f_{max}	Max Clock Frequency	1.25	1.5		GHz
	Size		1.3 x 2.9 x 2.9		in.
	Weight		7		Oz

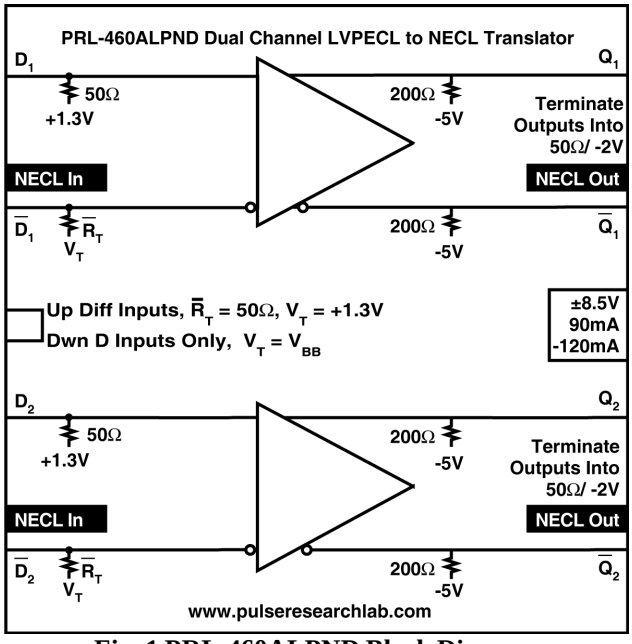

Fig. 1 PRL-460ALPND Block Diagram

*An unused complementary output must be either terminated into 50 Ω/V_{TT} or AC coupled into a 50 Ω load; otherwise, output waveform distortion and rise time degradation will occur. Use the PRL-ACT-50 dual channel AC coupled 50 Ω Termination for terminating unused complementary outputs and the PRL-SC-104 DC Block or PRL-ACX-12dB AC coupled attenuator for connection of NECL signals to 50 Ω input oscilloscopes, if DC information is not needed. Otherwise, use the PRL-550NQ4X four channel NECL Terminators for the 50 Ω/V_{TT} termination and for connection of NECL signals to 50 Ω input oscilloscopes.