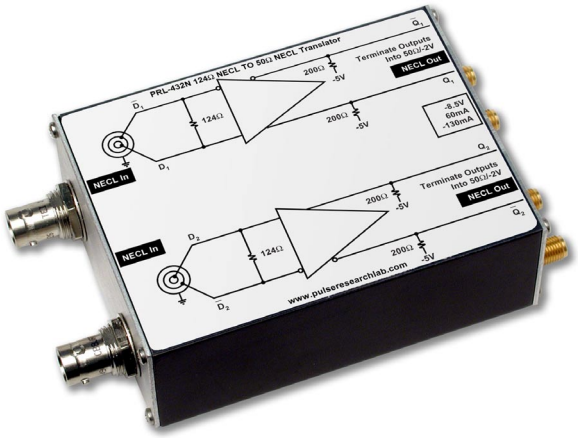
PRL-432N DUAL CH. UNIVERSAL DIFFERENTIAL 124 Ω INPUT TO COMPLEMENTARY 50 Ω NECL OUTPUT TRANSLATOR

PRL-433N DUAL CH. DIFFERENTIAL 50 Ω NECL INPUT TO DIFFERENTIAL 124 Ω NECL OUTPUT TRANSLATOR

APPLICATIONS

- Essential Lab Tools for interfacing with High Speed Recording Instruments
- The PRL-432N converts the 124 Ω differential Serial Data/ $\overline{\text{Data}}$ or CLK/ $\overline{\text{CLK}}$ Outputs from the SONY DFC-1800 Variable Rate Buffer into differential 50 Ω NECL outputs
- The PRL-433N converts single-ended or differential 50 Ω NECL inputs into differential 124 Ω NECL outputs for driving the Serial Data/ $\overline{\text{Data}}$ or CLK/ $\overline{\text{CLK}}$ Inputs in the DFC-1800



PRL-432N

FEATURES

- GHz 100K ECLinPS Technology
- 600 MHz maximum Clock Rate
- -2.5 V to +4 V CMR for PRL-432N differential 124 Ω Inputs
- Single Ended or Differential 50 Ω/-2 V Input terminations for PRL-433N
- Complementary 50 Ω NECL Outputs for PRL-432 N and Differential 124 Ω NECL Outputs for PRL-433N
- Ready-to-Use 1.3 x 2.9 x 3.9-in. Modules, each including a ±8.5 V AC/DC Adapter

DESCRIPTION

The PRL-432N and PRL-433N are a pair of dual channel NECL Interface Translators designed specifically for use with high speed recording instruments in satellite image transmission applications. The PRL-432N is the Recorder Playback Translator, and the PRL-433N is the Recorder Record Translator. They are especially suited for interfacing with the SONY DFC-1800 Variable Rate Buffer used in the DIR-1000 recording system.

The inputs of the PRL-432N consist of two triax connectors, each internally terminated with 124 Ω between the pin and the ring. They are designed to interface with the 124 Ω differential Serial Data/ $\overline{\text{Data}}$ and CLK/ $\overline{\text{CLK}}$ outputs from the SONY DFC-1800 Variable Rate Buffer. The improved design of the "N" version of the PRL-432N, however, enables the differential 124 Ω input to cover a CMR between -2.5 V and +4 V. Within this CMR, the PRL-432N inputs are compatible with NECL, PECL, LVPECL, RS422 or LVDS differential 124 Ω output drive circuits. The complementary NECL outputs have SMA connectors and are designed for driving 50 Ω loads terminated to -2 V or AC-coupled 50 Ω loads.

The differential inputs of the PRL-433N have SMA connectors. A switch selects either single-ended or differential inputs. In the differential input mode, both inputs D and $\overline{\text{D}}$ are terminated internally into 50 Ω/-2 V, and, therefore, 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. The $\overline{\text{D}}$ inputs are switched internally to V_{BB}, nominally -1.3 V, and termination resistors $\overline{\text{R}}_T$'s for the $\overline{\text{D}}$ input channels are changed to 62 Ω. The outputs of the PRL-433N have two triax connectors, and they are designed to interface with the 124 Ω differential Serial Data/ $\overline{\text{Data}}$ and CLK/ $\overline{\text{CLK}}$ inputs of the SONY DFC-1800. Internal pull-down resistors enable these outputs to drive differential 75 Ω loads as well.

The PRL-432N and PRL-433N are each housed in an attractive 1.3 x 2.9 x 3.9-in. extruded aluminum enclosure and supplied with a ±8.5 V AC/DC Adapter. 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 ±8.5 V AC/DC adapter using the PRL-730 or PRL-736 voltage distribution module. Please see our Accessories page for further details.

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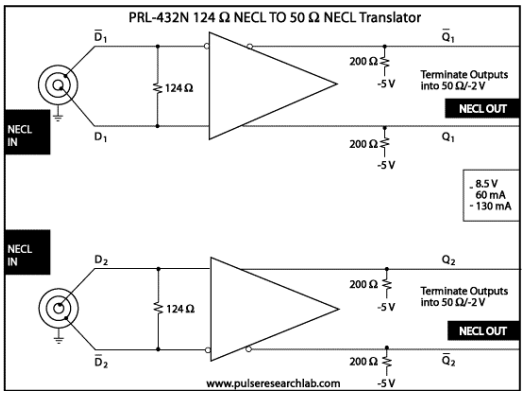
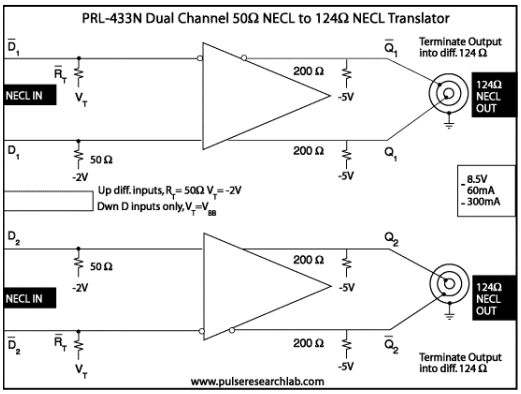
*SPECIFICATIONS (0^{o} C ≤ T_A ≤ 35^{o}C)

		PRL-432N			PRL-433N			
SYMBOL	PARAMETER	Min	Typ	Max	Min	Typ	Max	UNIT
R_{in}	Input Resistance	122	124	126	49.5	50	50.5	Ω
V_{TT}	D Input Termination Voltage		NA		-2.2	-2	-1.8	V
V_T	$\overline{D}$ Input Termination Voltage		NA		-1.17/-2.2	-1.3/-2	-1.43/-1.8	V
I_{DC}	DC Input Current		+30 -130	+60 -150		+30 -250	+45 -275	mA
V_{DC}	DC Input Voltage	±7.5	±8.5	±12	±7.5	±8.5	±12	V
V_{AC}	AC/DC Adapter Input Voltage	103	115	127	103	115	127	V
t_{PLH}	Propagation Delay to output ↑		1500			1500		ps
t_{PHL}	Propagation Delay to output ↓		1500			1500		ps
t_r/t_f	Rise/Fall Times[1] (20%-80%)		400	600		NA		ps
f_{max}	Maximum Clock Frequency[2]	400	600		400	600		MHz
t_{SKEW1}	Skew between outputs		20	100		20	100	ps
t_{SKEW2}	Skew from unit to unit		40	400		40	400	ps
	Input Connector		Triax[3]			SMA		
	Output Connector		SMA			Triax[3]		
	Input Cables		124 Ω TP[4]			50 Ω Coax		
	Output Cables		50 Ω Coax			124Ω TP[4]		
	Size		1.3 x 2.9 x 3.9			1.3 x 2.9 x 3.9		in.
	Weight		7			7		Oz





*Since the high frequency signals to and from the 124 Ω I/O ports can not be measured easily, the 124 Ω I/O ports of these adapters are first cascaded using shielded twisted pair cables, Trompeter P/N PCGOW10PCG-36 or equivalent. Input signals are then applied to the 50 Ω inputs of the PRL-433N, and outputs of the PRL-432N are terminated into 50 Ω/-2 V, using the PRL-550NQ4X, four channel NECL Terminators, connected to a 50 Ω input sampling 'scope.

Notes:

(1). The 50 Ω output rise and fall times were measured with both the Q and $\overline{Q}$ outputs terminated into 50 Ω/-2 V. An unused complementary 50 Ω output must either be terminated into 50 Ω/-2 V or AC-coupled into a 50 Ω load; otherwise, output waveform distortion and rise time degradation will occur. Use the PRL-550ND4X and PRL-550NQ4X, two and four channel NECL Terminators, respectively, for the 50 Ω/-2 V termination and for connection of ECL signals to 50 Ω input oscilloscopes.

(2). f_{MAX} is measured by AC-coupling a sine wave to the D input using the differential input mode (switch up). The differential outputs are first divided by eight, using the PRL-255N, and then measured using the PRL-550NQ4X, four channel NECL Terminators, connected to a sampling 'scope.

(3). Trompeter P/N CBBJR79.

(4). Trompeter PCB4W10PEA-36 cable is recommended for interfacing between the CBBJR79 triax connector in the PRL-432N/433N and the twinax connector in the SONY DFC-1800.

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