PRL-550NQ4X-S16 SIXTEEN CHANNEL NECL TERMINATOR

APPLICATIONS

- Allow direct connection of NECL signals to 50 Ω input instruments
- Provide standard 50 Ω/-2 V terminations for NECL signals and Ground-Referenced Outputs
- Testing and monitoring GHz NECL signals in digital and wireless communication applications

PRL-550NQ4X-S16 Front View

PRL-550NQ4X-S16 Rear View

FEATURES

- 70 ps Typical Rise Time (5 GHz bandwidth)
- 50 Ω/-2 V Standard NECL Input Terminations
- Ground Referenced 50 Ω Outputs protect sensitive instruments
- SMA I/O Connectors
- 4X Attenuation
- Self-contained 5.25 x 19 x 14-in. Rack-Mountable unit includes an internal Power Supply

INTRODUCTION

NECL logic levels are offset from ground. Without proper level shifting, NECL logic signals can not be connected to ground-referenced 50 Ω input instruments, such as sampling scopes, network analyzers, scanners and counters, etc. Otherwise, either the NECL equipment outputs or the measurement instrument inputs may be damaged.

An NECL Terminator converts NECL signals into ground-referenced signals that can be connected directly to 50 Ω input instruments and, at the same time, provides standard 50 Ω/-2 V terminations required by NECL signals.

DESCRIPTION

The PRL-550NQ4X-S16 is a sixteen-channel, rack-mountable NECL Terminator intended for monitoring NECL signals in telecommunications test systems. It is designed to interface with NECL circuits operating with a -5.2 V or -4.5 V supply. Each input has a 50 Ω/-2 V termination. The 4X attenuated output is level shifted so that it is compatible with ground referenced 50 Ω input instruments, such as scopes, counters, etc. The block diagram of a typical channel is shown in Fig. 1. These near-ground-level output signals* protect sensitive instruments and also enhance measurement accuracy when these instruments are used.

Once an NECL signal is translated through an NECL Terminator, it can be routed through 50 Ω scanners and other high frequency measuring instruments for processing.

The PRL-550NQ4X-S16 is housed in a 5.25 x 19 x 14-in. rack-mountable chassis and has an internal power supply for connection to 120 V AC supply.

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

SYMBOL	PARAMETER	Min	Typ	Max	UNIT
R_{in}	Input Resistance	49.5	50	50.5	Ω
V_{TT}	Input Termination Voltage	-2.2	-2	-1.8	V
Vos	Output Offset Voltage*	-25	0	25	mV
	Signal Attenuation	11.8	12 (4X)	12.2	dB
I_{DC}	DC Input Current		+240, -500	+340, -600	mA
V_{DC}	DC Input Voltage(internal)	±7.5	±8.5	±12	V
V_{AC}	AC Input Voltage	103	115	127	V
I_{AC}	AC Input Current			0.5	A
t_{PLH}	Propagation Delay to output ↑		2.6	3	ns
t_{PHL}	Propagation Delay to output ↓		2.6	3	ns
t_r/t_f	Rise/Fall Times		70	100	ps
t_{SKEW}	Skew between outputs		30	100	ps
	Cross Talk ↔ chs @ 2 GHz		40	34	dB
	Size		5.25 x 19 x 14		in.
	Weight		13		lb
	Shipping Weight		17		lb

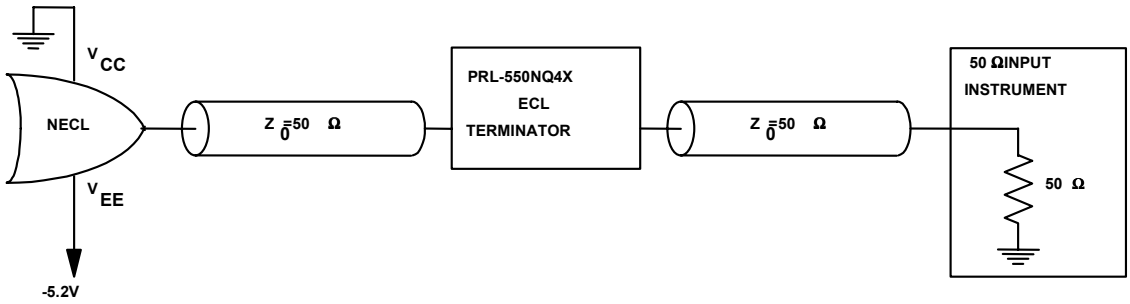

Fig. 1 NECL driving a 50 Ω input instrument using the PRL-550NQ4X-S16 Terminator

*The output offset and input termination voltages are factory set to 0 V and –2 V, respectively, with all the inputs and outputs unloaded. When an input is connected to an NECL device, the output low level will be slightly offset from ground depending on the low level output voltage of the connected device. For a typical NECL output Low Level of -1.8V, the Terminator output Low level will be approximately +50 mV.