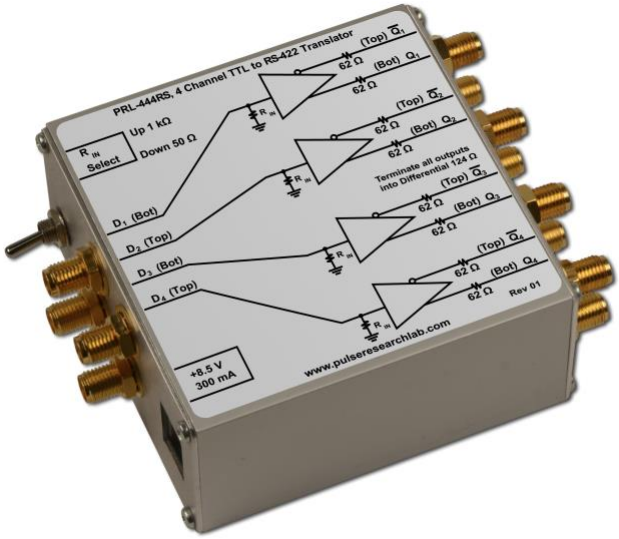
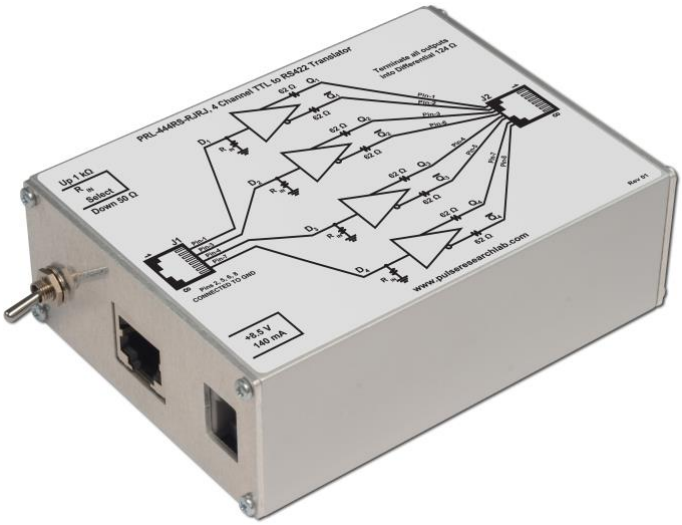
PRL-444RS, FOUR CHANNEL TTL TO RS-422 TRANSLATOR



PRL-444RS-SMA, 4-Ch. TTL to RS422 Translator



PRL-444RS-RJRJ, 4-Ch. TTL to RS422 Translator

APPLICATIONS

- Converting TTL Inputs to RS-422 Outputs
- Conversion of Single-Ended TTL Signals to Differential Signals for Driving Long Lines
- High Speed Digital Communications Systems Testing
- Satellite Telemetry/Ground Station System Integration

FEATURES

- 40 MHz Typical Maximum Clock Rate
- 4 Single Ended Inputs with Selectable 50 Ω or 1 kΩ Termination
- 4 RS-422 Outputs Drive 50 Ohm or Ethernet Cables into 124 Ω Floating Loads
- 700 ps Channel to Channel skew, typical
- SMA or RJ45 I/O Connectors
- Operates from single +8 to +12 VDC power supply
- Ready-to-Use 1.3 x 2.9 x 2.9-in. or x 3.9-in Module includes a ±9.0 V/1.7 A AC/DC Adapter

DESCRIPTION

The PRL-444RS is a series of 4 Channel TTL to RS-422 translator modules. The input resistance of the PRL-444RS inputs can be selected to be either 50 Ω or 1 kΩ by a common toggle switch. The 1 kΩ inputs are desirable when interfacing with low power circuits. The four pairs of complementary outputs are designed for driving floating 124 Ω loads, normally the configuration used in RS-422 input circuits. The output swing is typically 1.40 V with a common mode voltage of 1.50 V.

All I/Os are DC coupled and have either SMA or RJ45 connectors. Block diagrams are shown in Figs. 1 and 2. The PRL-444RS-SMA has SMA I/Os and is housed in a 1.3 x 2.9 x 2.9-in. extruded aluminum enclosure, while the PRL-444RS-RJRJ has RJ45 I/Os and is 3.9-in in length. A future variant (PRL-444RS-SRJ) will have SMA inputs and RJ45 outputs.

All models are supplied with a ±9.0 V/±1.7 A AC/DC Adapter, but may also be ordered without the power supply by appending "-OEM" to the base part number, e.g. PRL-444RS-SMA-OEM.

A complementary series, the PRL-425QRT, performs the opposite conversion of 4 RS-422 signals to 4 TTL signals.

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*PRELIMINARY SPECIFICATIONS (0° C ≤ T_A ≤ 35° C)

Unless otherwise specified, dynamic measurements are made with all outputs terminated into floating 124 Ω, with the signals measured via the PRL-860D-SMA Inline Signal Monitor.

SYMBOL	PARAMETER	Min	Typ	Max	UNIT	Comment
R_{IN1}	Input Resistance (50 Ω)	49.5	50.0	50.5	Ω	Switch Down
R_{IN2}	Input Resistance (1 kΩ)	990	1000	1010	Ω	Switch Up
V_{IL}	TTL input Low Level	-0.5	0.0	0.5	V	
V_{IH}	TTL input High Level	2.0	2.4	5.0	V	
V_{DC}	DC Input Voltage	7.5	8.5	12.0	V	
V_{AC1}	AC/DC Adapter Input Voltage	103		254	V	
I_{DC1}	DC Input Current @ 20 MHz	194	220	246	mA	
I_{DC2}	DC Input Current @ 40 MHz			290	mA	
V_{OPP}	Output Differential Voltage, peak-to-peak		1.40		V	
V_{CMO}	Output Common mode voltage[1]	1.48	1.50	1.52	V	
t_{PLH}	Propagation Delay to output↑		12		ns	
t_{PHL}	Propagation Delay to output ↓		12		ns	
t_r/t_f	Rise/Fall Times (10%-90%)	1.4	2.0	2.6	ns	
f_{max}	Max Clock Frequency	40	44		MHz	
t_{SKEW1}	Skew between any 2 rising edges		700		ps	
t_{SKEW2}	Skew between rising/falling edges		250		ps	Same channel
DTY	Positive Duty Cycle @ 40 MHz		45		%	
	Size (W x H x L)		1.3 x 2.9 x 2.9		in.	PRL-425QRT-SMA
	Size (W x H x L)		1.3 x 2.9 x 3.9		in.	PRL-425QRT-RJRJ
	Weight w/o AC Adapter		5		Oz	
	Shipping Weight w/AC adapter		3		lb	

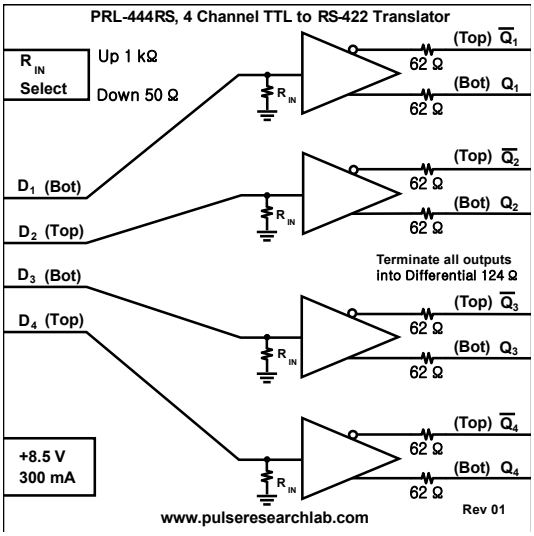


Fig. 1: PRL-444RS-SMA Block Diagram

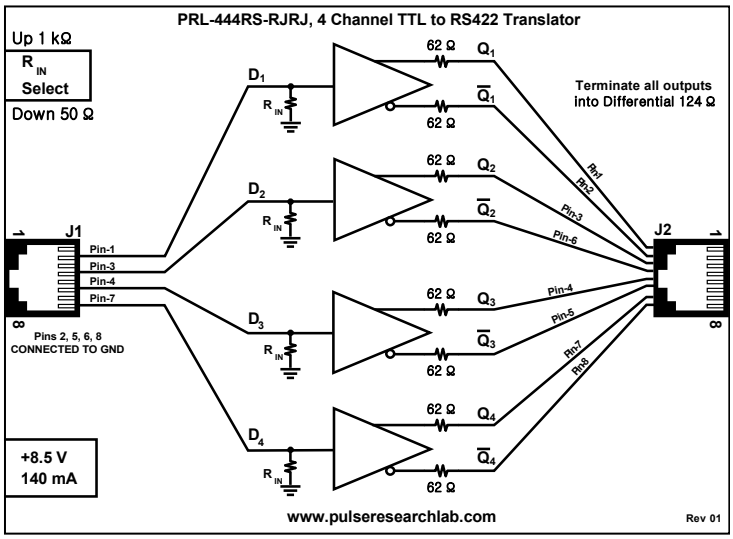


Fig. 1: PRL-444RS-RJRJ Block Diagram

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