PRL-4108UR 1:8 DIFFERENTIAL FANOUT BUFFER, UNIVERSAL DIFFERENTAL AND TTL INPUTS, RS-422 OUTPUTS

APPLICATIONS

- Long Line Driver/Level Translator
- Reference Clock Distribution/Translation
- 1 PPS/IRIG-B Signal Distribution
- Telemetry and Avionics Distribution
- Test and System Integration



PRL-4108UR-TR Front View



PRL-4108UR-TR Rear View

FEATURES

- 1:8 Fanout with RS-422 Outputs
- Channel-to-channel Skew < 500 ps
- t_R= 1.6 ns Typ. @ 1.6 V Output into 50 Ω
- TTL and Floating 100 Ω Inputs are Logically ORed
  - Floating 100 Ω Input Compatible with RS-422, LVDS, NECL, or LVPECL
  - Triax or dual SMA connectors
  - BNC TTL Input has selectable 50 Ω or 1 kΩ Impedance
- Back-terminated Differential 124 Ω Outputs Drive Long Lines into Floating 124 Ω Loads
  - Triax, dual BNC, or dual SMA connectors
- AC/DC Adapter Included

GENERAL DESCRIPTION

The PRL-4108UR is a series of 1:8 differential fanout buffer modules with two inputs and eight RS-422 outputs. The single-ended TTL input has a selectable 50 Ω or 1 kΩ termination to ground. The Universal Differential input can be driven by differential RS-422, LVDS, NECL, or LVPECL signals (ECL signals must be source-biased). The TTL and Differential inputs are logically ORed; therefore a Hi level applied to either input can be used as a gate signal.

The input resistance of the TTL input can be selected to be either 50 Ω or 1 kΩ by a toggle switch. The 1 kΩ input is desirable when interfacing with low power circuits. The TTL input threshold voltage is 1.0 V minimum. The output swing is typically 2.3V_{PP} with a 1.1 V_{CMV} into a 124 Ω floating load. The product suffix specifies the input and output connectors, e.g. BNC, SMA, or TR (Triax):

Model No.	Differential Input	TTL Input	Each Differential Output
PRL-4108UR-BNC	Dual SMA	BNC	Dual BNC
PRL-4108UR-SMA	Dual SMA	BNC	Dual SMA
PRL-4108UR-TR	Triax	BNC	Triax

The PRL-4108UR is housed in a 6.8” x 6.0” x 3.0” extruded aluminum enclosure and is powered by an included AC/DC adapter.

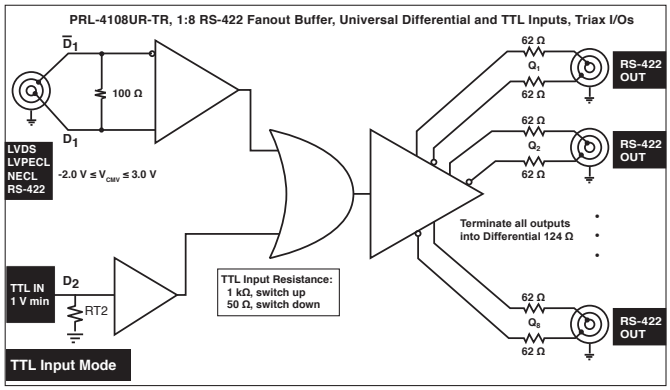
The PRL-4108UR is part of the PRL-4108 series of differential fanout buffers, available with variety of options for input logic, output logic, and connector types.

1234 Francisco Street, Torrance, CA 90502
Tel: 310-515-5330 Fax: 310-515-0068
Email: sales@pulseresearchlab.com
www.pulseresearchlab.com

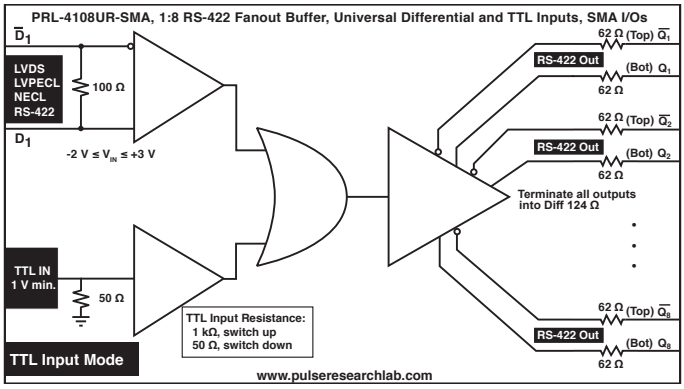
*SPECIFICATIONS ($0\ ^{\circ}C \le T_A \le 35\ ^{\circ}C$)

Unless otherwise specified, dynamic measurements are made with all rear-panel outputs terminated into floating 124 Ω. Channel to channel skew and propagation delay measurements are made using a PRL-425N or PRL-425NTR Differential Receiver with NECL outputs. Triax rise and fall time measurements are made using a Triax to SMA adapter and connecting the SMA outputs to a 50 Ω input scope.

SYMBOL	PARAMETER	Min	Typ	Max	UNIT	Comment
R_{T1-1}	Differential Input Resistance	95	100	105	Ω	
R_{INC}	Common Mode Input Resistance		5		kΩ	
R_{T2-1}	Input Resistance, TTL 50 Ω	49	50	51	Ω	
R_{T2-2}	Input Resistance, TTL 1 kΩ	0.95	1.00	1.05	kΩ	
V_{CMR}	Input Common Mode Voltage	-2.0		3.0	V	
V_{IH1}	TTL Input Hi Level	1.0		5.0	V	Internally limited to 3.5V
V_{IL1}	TTL Input Lo Level	-0.5		0.5	V	
R_{OUT1}	Output Resistance	61.4	62.0	62.6	Ω	Single-ended
R_{OUT2}	Output Resistance	122.8	124.0	125.2	Ω	Differential
V_{OH1}	Output High Level		3.6		V	No Load
V_{OH2}	Output High Level	2.2	2.4	2.6	V	Terminated to 124 Ω
V_{OL1}	Output Low Level		-1		V	No Load
V_{OL}	Output Low Level	-0.10	0.10	0.25	V	Terminated to 124 Ω
V_{AC1}	AC Adapter Input Voltage, 120	108	115	127	V	
V_{AC2}	AC Adapter Input Voltage, 220	216	230	254	V	
I_{DC1}	DC Input Current, +8.5 V Supply		625	650	mA	
I_{DC2}	DC Input Current, -8.5 V Supply		-960	-1000	mA	
T_{PROP1}	Prop. Delay to Output ↑, Diff. Input		2.5		ns	
T_{PROP2}	Prop. Delay to Output ↑, TTL Input, 50 Ω		2.5		ns	
T_R	Rise Time (10%-90%)		1.6	2.2	ns	See Note 1
T_F	Fall Time (10%-90%)		1.6	2.2	ns	See Note 1
T_{SKEW1}	Ch./Ch. skew between any 2 True Outputs		250	500	ps	
F_{MAX1}	Max Clock Frequency, Diff. Input	150	175		MHz	
F_{MAX2}	Max Clock Frequency, TTL Input	100	125		MHz	
	Size	3.0"H x 6.8"W x 7.3"L			in	Including connectors
	Weight	2			lbs	Excluding AC adapter
	Shipping weight	6			lbs	Including AC adapter



PRL-4108UR-TR Block Diagram (simplified)



PRL-4108UR-SMA/BNC Block Diagram (simplified)

Notes:

1. Due to lack of suitable equipment with floating differential 124 Ω input termination, T_R and T_F are measured using a 50 Ω input scope.

PULSE RESEARCH•LAB

1234 Francisco Street, Torrance, CA 90502
Tel: 310-515-5330 Fax: 310-515-0068
Email: sales@pulseresearchlab.com
www.pulseresearchlab.com