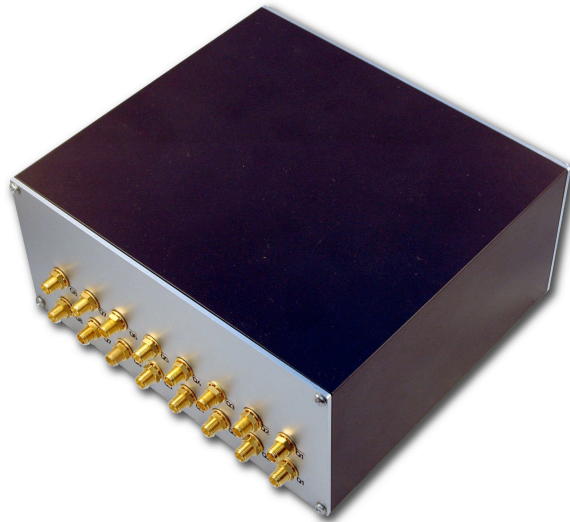


PRL-4108UT 1:8 DIFFERENTIAL FANOUT BUFFER, UNIVERSAL DIFFERENTIAL AND TTL INPUTS, COMPLEMENTARY TTL OUTPUTS



PRL-4108UT-SMA, Front View



PRL-4108UR-TR Rear View

APPLICATIONS

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

FEATURES

- 1:8 Fanout with Complementary TTL Outputs
- Channel-to-channel Skew < 500 ps
- $t_R = 1.4$ ns Typ. @ 2.5 V Output into 50 Ω
- Floating 100 Ω Input Compatible with RS-422, LVDS, NECL, or LVPECL
- BNC TTL Input has selectable 50 Ω or 1 k Ω Impedance
- Both TTL and Floating 100 Ω Inputs are Logically ORed
- Back-terminated 50 Ω Outputs Drive Long Lines into 50 Ω or Unterminated Loads
- AC/DC Adapter Included

GENERAL DESCRIPTION

The PRL-4108UT is a 1:8 differential fanout buffer system with eight complementary TTL outputs and two inputs. The Universal Differential input has a 100 Ω floating termination, and 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 k Ω by a toggle switch. The 1 k Ω input is desirable when interfacing with low power circuits. The TTL input threshold voltage is 1.0 V minimum.

The output swing is typically 0-2.5 V into 50 Ω or 0-5.0 V into high impedance.

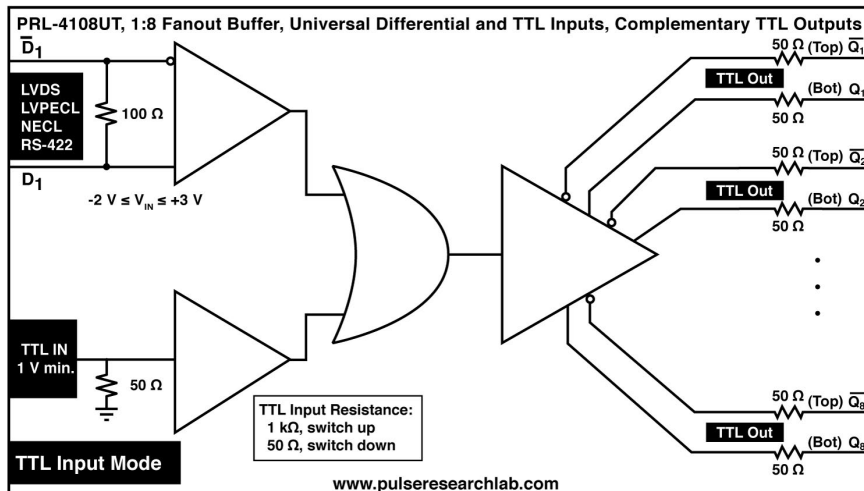
All I/Os are DC coupled with SMA or BNC I/O connectors except for the TTL input, which is always BNC. Order PRL-4108UT-BNC for BNC connectors or PRL-418-SMA for SMA connectors.

The PRL-4108UT is housed in a 6.8" x 6.0" x 3.0" extruded aluminum enclosure and is powered by an included AC/DC adapter, equivalent to model PRL-760C. Two DC input cables (included) must be used to power the PRL-4108. The PRL-4108UR-TR is part of the PRL-4108 series of differential fanout buffers, available with variety of options for input logic, output logic, and connector types.

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

Unless otherwise specified, dynamic measurements are made with all rear-panel outputs 50 Ω.

SYMBOL	PARAMETER	Min	Typ	Max	UNIT	Comment
R_{TI-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_{IHI}	TTL Input Hi Level	1.0		5.0	V	Internally limited to 3.5V
V_{ILI}	TTL Input Lo Level	-0.5		0.5	V	
R_{OUT}	Output Resistance	49.5	50.0	50.5	Ω	
V_{OH1}	Output High Level	2.2	2.5	2.6	V	R _{LOAD} = 50 Ω
V_{OH2}	Output High Level	4.4	5.0	5.2	V	R _{LOAD} = 1 MΩ
V_{OL}	Output Low Level	-0.25	0.00	0.25	V	
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		1250	1350	mA	
I_{DC2}	DC Input Current, -8.5 V Supply		-1200	-1300	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%)		1.4	2.0	ns	
T_F	Fall Time (10%-90%)		1.4	2.0	ns	
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	3.0H x 6.8W x 7.3L			in	Including connectors
	Weight	2			lbs	Excluding AC adapter
	Shipping weight	6			lbs	Including AC adapter



PRL-4108UT Block Diagram (simplified)