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PRODUCT SPECIFICATION

MODEL 4022 DIFFERENTIAL TDR/TDT SOURCE ENHANCEMENT MODULE

- **Provides differential and common mode 9ps TDR and 7 ps TDT incident pulses**
- **Produces very high-quality, flat pulses**
- **Enables increased resolution for TDR analysis of high-speed interconnects and circuits**
- **Connects to the outputs of either an Agilent or Tektronix TDR/TDT plug-in**
- **Compact, easy to use design that is quick to connect and set-up**



Main Driver Module



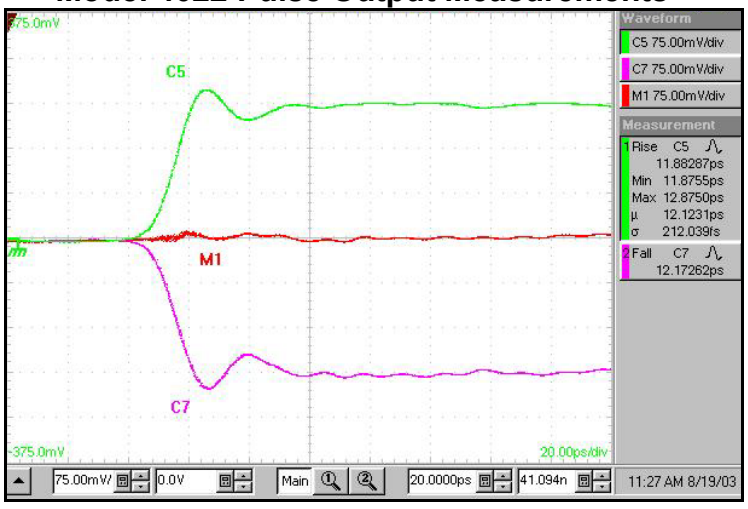
TDR Remote Head



TDT Remote Head

The Picosecond Pulse Labs (PSPL) Model 4022 is a differential TDR / TDT source enhancement module that connects to a differential or dual TDR/TDT plug-in and produces ultra-fast risetime pulses, enabling the world's highest resolution differential TDR analysis and the world's fastest differential TDT analysis. The 4022 consists of a dual-channel main driver module, small remote pulse heads, connecting cables, and an external power supply. The 4022 is capable of differential (one positive and one negative pulse) and common mode (two positive pulses) measurements. Configurations are also available for both TDR and TDT measurements (different remote heads are used for TDR and TDT).

Model 4022 Pulse Output Measurements



Measured PSPL Model 4022 incident differential (green and purple traces) TDR pulses and their difference (red trace)

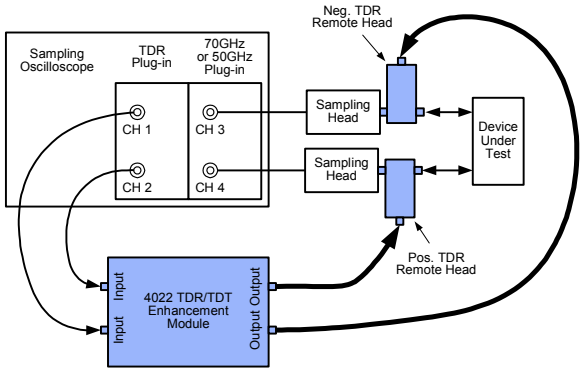
[measurements made using a Tektronix TDS8000 sampling oscilloscope, a Tektronix 80E04 dual TDR/T plug-in, and a Tektronix 80E06 70GHz sampling plug-in]

PRODUCT SPECIFICATION • MODEL 4022 • DIFFERENTIAL TDR/TDT SOURCE ENHANCEMENT MODULE

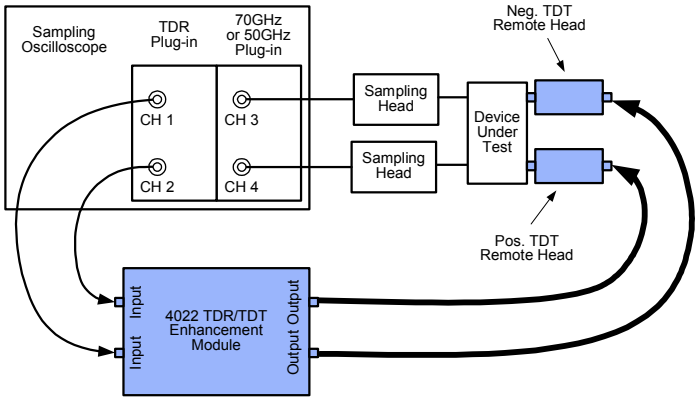
Specifications:

Output Parameters	**Min**	**Typ**	**Max**
TDR output step amplitude		200 mV	
TDR output incident raw rise time (deconvolved)		9 ps	
TDR output incident measured rise time (with 70 GHz sampling plug-in)		11 ps	
TDT output step amplitude		2 V - 2.5 V	
TDT output raw rise time (deconvolved)		7 ps	
TDT output measured rise time (with 70 GHz sampling plug-in)		10 ps	
Output step overshoot/undershoot (with 70 GHz sampling plug-in)		±15%	
Input Parameters	**Min**	**Typ**	**Max**
Input step amplitude (positive pulse from the TDR module or a similar pulse source)		200-250 mV_{pp}	1 V_{pp}
Input rise time (from the TDR module or a similar pulse source)		20-40 ps	
Input repetition rate (from the TDR module or a similar pulse source)		200 kHz	1 MHz
General Specifications			
Connectors: 2.4 mm on remote head outputs (one male, one female)			
Warranty: One year. See Terms and Conditions of Sale for details.			
Items included: Power supply and cords, driver module, 2 18" coaxial cable with SMA male connectors, remote head(s)			

Typical TDR and TDT system configurations with a digital sampling oscilloscope, a TDR/T plug-in, a dual-channel sampling plug-in (or 2 single-channel plug-in's), and a Model 4022 TDR/T Source Enhancement Module *(PSPL 4022 equipment is highlighted in blue)*.



Typical Model 4022 Differential TDR Measurement Set-up



Typical Model 4022 Differential TDT Measurement Set-up

Contact Information

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Ordering Information

4022-TDR: 4022 dual-channel driver module with TDR differential and common mode remote heads

4022-TDT: 4022 dual-channel driver module with TDT differential and common mode remote heads

4022-TDRT: 4022 dual-channel driver module with both TDR and TDT differential and common mode remote heads

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