

T3SPxx Data Sheet

Time Domain Reflectometer (TDR)

Calibrated True-Differential TDR

Rapid and Accurate Single-ended and Differential Impedance Profile Measurements

Three different mainframes available:
T3SP15D, High-Resolution TDR
T3SP15D-XR, High-Resolution, Extended-Range model optimized for cable manufacturing
T3SP01D, Ultra-Long-Range TDR with higher Dynamic Range



Affordable Tools for Precision Debugging

- True Differential TDR and Single-ended TDR – Best for cables, differential design and twisted pair.
✔ Accurate Impedance measurements, no ground connection required for differential.
- 30 ps Rise Time – Less than 3 mm impedance measurement spatial resolution (T3SP15D and T3SP15D-XR).
✔ Precisely locate and detect geometry dimensions and dielectric variation of cables and transmission lines.
- 50 KHz Repetition Rate and 360 mV @ 50 Ω Step Amplitude – Measure long cables (T3SP01D).
✔ Detect any imperfection on Mil-Spec and In Vehicle long cables up to 1,000 m.
- Instant Cable and Connector Testing – Verify the quality of your cables and connectors.
✔ Detect even on your premium cables any imperfection that might be the root cause of measurement artifacts.
- Small Form Factor and Battery Powered – Measure and analyze in the lab, factory floor or in the field.
✔ Measure and analyze everywhere you go without an AC requirement.
- Inter-pair and intra-pair skew Measurements – Automatically calculated from Impedance profile traces.
✔ Automatic Inter-Pair skew measurements (SE-SE and Diff-Diff) and Intra-Pair skew (+/- conductors of the same differential pair)
- Up to 50,000 points long memory – Long TDR response capture with high resolution.
✔ Characterize up to 30 m (15D), 50 m (15D-XR), and 1 km (01D) cables with higher-detail measurements
- Rapid MDI S-Parameter Return Loss and Mode-Conversion – Measurements for Automotive Ethernet Compliance.
✔ Easy and fast compliance Testing for 10BASE-T1, 100BASE-T1 and 1000BASE-T1.

Key Specifications

Model	T3SP15D	T3SP15D-XR	T3SP01D
Rise Time (20 % to 80 %)	35 ps	35 ps	280 ps
Step Amplitude	150 mV @ 50 Ω		360 mV @ 50 Ω
Pulse Repetition Rate	1 MHz to 10 MHz	500 KHz to 10 MHz	50 KHz to 400 KHz
Battery Operated	Yes (B-models)		Yes
Dimensions	220 x 210 x 82.5 mm		

ULTRA-PORTABLE AND BATTERY POWERED



The battery option give you the freedom to work where you require

Product Overview

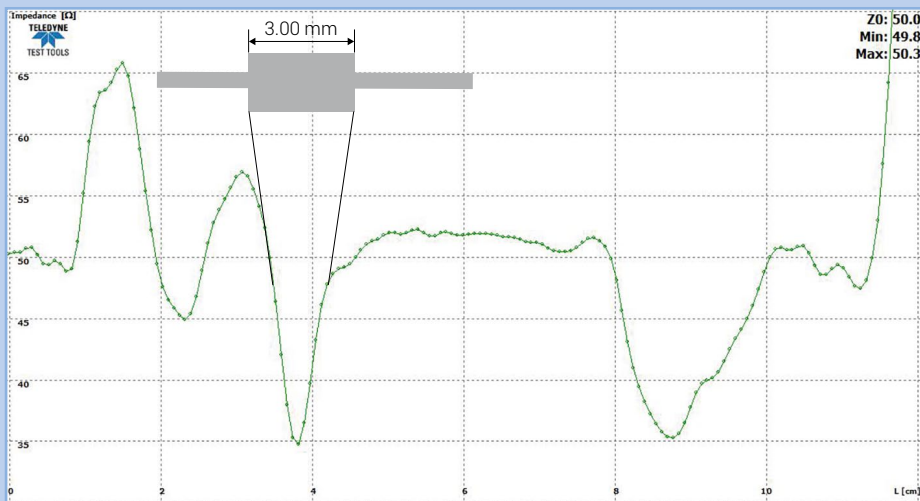
Today's modern fast bus speed designs make debugging signal integrity issues one of the most challenging tasks for engineers to perform efficiently and precisely. For example, take high operating frequencies and mix that with anything that affects your signal's rise time, pulse width, timing, jitter or noise content and you increase the risk of impacting reliability at the system level. If you want to ensure signal integrity you need to understand and control impedance within the transmission environment the signals travel through and the ideal tool to pinpoint those impedance problems are TDR instruments. The Teledyne Test Tools SP-series combines high resolution with a rapid refresh rate, quick data acquisition rate, ultra-portable design including a battery option all for a very attractive price. Use it out in the field and in the lab.

Key Benefits

Ultra-Portable and Battery Powered

Current TDR solutions for signal integrity measurements are based on sampling oscilloscopes which are designed to be used in electronics labs. The size and weight of a traditional sampling oscilloscope make it impossible to perform in the field TDR-measurements. The T3SP-series is designed as a portable and lightweight instrument that can easily be used wherever measurements have to be performed. The battery pack option allows up to 3 hours of operation.

HIGH-RESOLUTION CALIBRATED TRUE DIFFERENTIAL TDR



OSLT calibration in time domain avoid aberrations effects in impedance plots and let the user identify impedance anomalies with less than 3 mm resolution



Based on the true differential design, there is no need for a physical ground connection if differential lanes are measured

True differential TDR

Most of the modern high-speed designs are implemented with differential transmission lines. Using a true differential TDR simplifies the setup for signal integrity measurements in such designs. In some scenarios the ground connection could be difficult to connect or not accessible if you want measure unshielded twisted pair cables. Most of the time, when you take measurements using a true differential TDR a ground connection is not required and gives you the flexibility to use TDR-probes without a ground connection.

Fast TDR Repetition Rate

With up to 10 MHz repetition rate the T3SP-series is more than 300 times faster as conventional TDR-instruments which are based on sampling scopes. To achieve the highest possible dynamic range TDR-instruments need to acquire and average out hundreds of waveforms. The faster sampling rate delivers quicker and more accurate measurement results.

Full Calibrated Impedance Plot

Reference impedance in all TDR instruments are relative; they are made by comparing reflected amplitudes to an incident amplitude. Using full OSLT-calibration the T3SP-series is offering best accuracy for impedance measurements in time and frequency domain. Using four calibration standards (open, short, load and Thru) in the time domain instead of using a simple normalization

which is common in TDR-instruments offers vastly improved error correction for the setup. Using OSLT-calibration in the time domain avoids irregularities in impedance plots, such as ringing that occurs after the TDR incident step.

Full calibrated S-Parameter

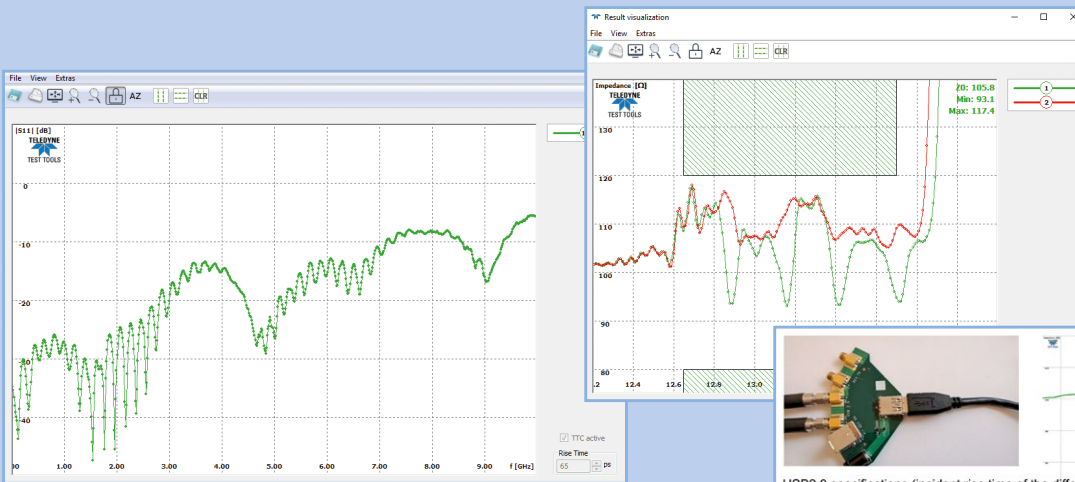
Many of the modern standards like Ethernet or USB require you to measure the impedance matching of the cables and connectors within the frequency domain (S-Parameter S_{11}). These are the measures commonly made with traditional VNA instruments. The T3SP-series offers fully calibrated Differential S_{11} and Full Single-ended (S_{11} , S_{21} , S_{12} , S_{22}) S-parameters measurements up to 15 GHz using the same OSLT-calibration standards used by VNAs.

Optimized time bases for cable production (T3SP15D-XR)

The T3SP15D-XR was created to provide a better alternative for production to the use of obsolete TDRs based on the sampling oscilloscope platform.

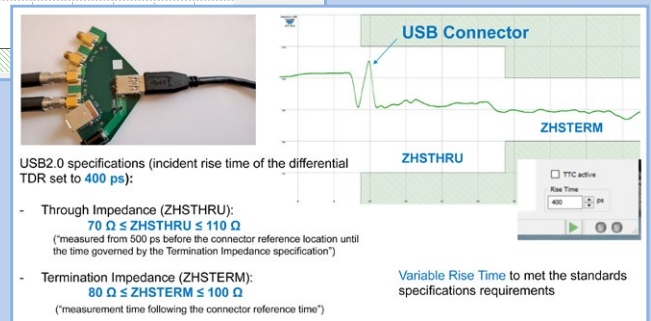
Four new time bases were added into T3SP15D-XR, achieving two results. First, the extension of measurements to cables up to 50 m, and second, the ability to make very fast acquisitions, which is a key requirement for production. We added a repetition rate of 500 KHz, suitable for longer cables, and sampling rates of 20 ps and 40 ps, suitable for ultrafast acquisition times. Full details can be found in the table on page 8.

HIGH-RESOLUTION CALIBRATED TRUE DIFFERENTIAL TDR



Less than 3 mm resolution on FR4 can show the effect of blind vias (red) vs. true vias (green)

The T3SP15D series offer S-parameter (S_{dd11} and Full Single-ended, i.e. S_{11} , S_{21} , S_{12} , S_{22}) measurements from DC up to 15 GHz



USB2.0 specifications: Impedance profile @400 ps risetime

ESD-protection

High-frequency measurement devices are extremely sensitive to electrostatic discharge (ESD) and can lead to permanent damage to your measurement device. In addition, many laboratories have a requirement to take special precautions to protect their electronic equipment from any damage caused by ESD. The SP-series mitigates this risk by providing a higher degree of protection from this happening. Every SP-series model comes equipped with an ESD-protection module based on high-performance coaxial RF-switches. The way this works is the RF input circuitry is protected by isolating the device's RF-signal detector from the input connector when the device is not being used to take measurements.

Measure Impedance, Return Loss and Insertion Loss

The high bit rates used in modern electronics design and future serial data standards extend well into the microwave region. For example, the High-speed Universal Serial Bus (USB3.1) supports transfer rates up to 10 GB/s over twisted-pair cables. These high bit rate transmissions through connectors and cables result in considerable distortion because of channel dispersion.

To keep the distortion to manageable levels, many standards specify the Impedance, return loss and insertion loss for cables and connectors. These measurements are represented by the S-parameter. The T3SP-series offer fully calibrated Differential S_{11} (S_{dd11}) and full single-ended (S_{11} , S_{21} , S_{12} , S_{22}) S-Parameter measurements up to 15 GHz. This gives you the flexibility to store your output files in a variety of formats (CSV, Matlab and Touchstone) which can be easily used in tools like SI-Studio, Matlab or other simulation programs.

Controlled Impedance Traces on Printed Circuit Boards (PCB)

Due to increasing clock rates in high speed digital systems the necessity of controlled impedance PCBs is growing rapidly. Additionally, cables and connectors must meet high frequency design specifications and controlled impedance specifications. The T3SP-series helps you to measure wave impedances of PCBs, cables, and connectors very accurately and comfortably. In contrast to other systems on the market, the T3SP-series is designed for measuring specific traces on a PCB and for on-board tests, the TDR-Probes ensure accurate measurement for qualification testing and debugging assembled PCBs.

T3SP01D APPLICATION EXAMPLES

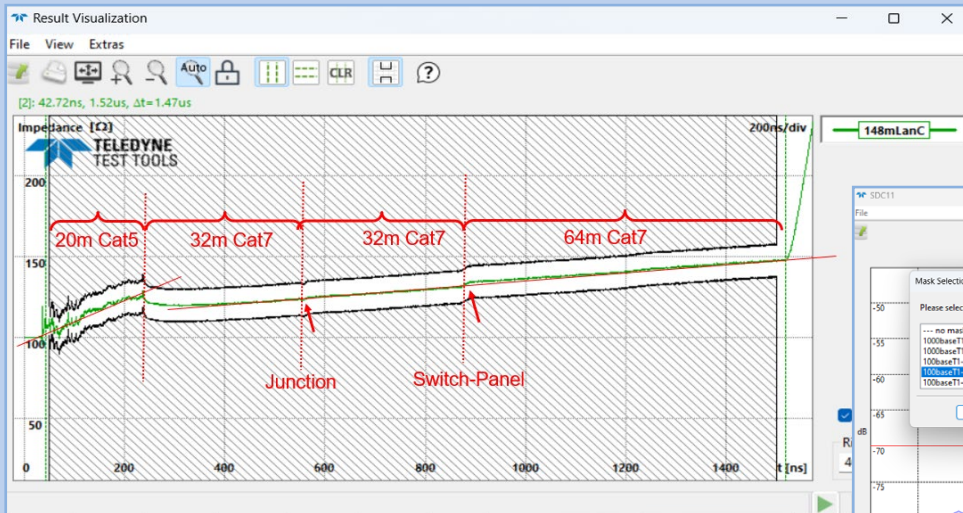


Figure 1

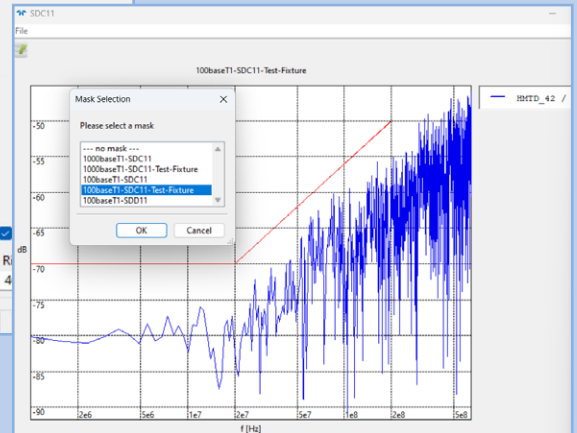


Figure 2

148 m Ethernet Cable Impedance Profile (Cat5 and Cat7)

Figure 1 shows the impedance profile of a 148-meter LAN cable measured with the T3SP01D. The differential-pair comparison mask immediately highlights any imbalance or deviation.

The initial Cat5 section clearly exhibits lower quality, with higher ohmic loss, while the Cat7 segment demonstrates lower loss, a cleaner structure, and a well-defined mid-span junction.

Even beyond 80 meters, the T3SP01D precisely identifies the switch-panel location, confirming its exceptional accuracy over long distances.

This example illustrates the T3SP01D's capability to characterize long cables, detect transitions and discontinuities, and expose hidden issues across the entire link.

100Base-T1 Mode Conversion measurement

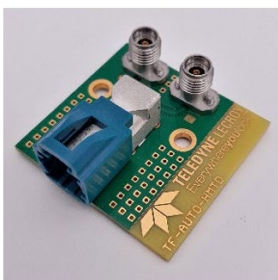
Figure 2 illustrates a 100Base-T1 Mode Conversion measurement performed with the T3SP01D.

For 10Base-T1 and 100Base-T1 Automotive Ethernet compliance, the T3SP01D provides ultra-fast, highly sensitive MDI Return Loss and Mode Conversion measurements.

Its exceptionally high dynamic range at low frequencies enables the instrument to measure well below the fixture limit lines, ensuring full visibility of DUT performance even in the presence of test-fixture constraints.

The example clearly shows how the T3SP01D captures the Mode Conversion response with ample margin relative to the fixture limits, confirming its suitability for precision Automotive Ethernet compliance testing.

Automotive Test Fixtures



TF-AUTO-HMTD



TF-AUTO-MINI50



TF-AUTO-MATENET

Teledyne LeCroy also offers dedicated Automotive Ethernet test fixtures covering the most common twisted pair connector interfaces. These fixtures integrate seamlessly with the TDRs for MDI Return Loss and Mode Conversion measurements per 10Base-T1, 100Base-T, 1000 Base-T1 and MultiGBase-T1 requirements.

TIME DOMAIN REFLECTOMETERS AND S-PARAMETER ANALYZER



WavePulser 40iX with the T3SP-family delivers a combination of complementary solutions for high-speed signal-integrity and compliance testing.

WavePulser adds advanced high-speed serial data analysis, automated measurement sequences, and full support for physical-layer compliance workflows, while the T3SP-family provides fast, high-resolution TDR/TDT

characterization of cables, connectors, backplanes, and PCB transmission lines. T3SP15D-XR models offer ultrafast acquisition times tailored to the throughput demands of cable manufacturers, enabling rapid screening and reliable detection of damaged or out-of-spec interconnects.

	High-Speed Interconnect Analyzer	T3SP Family		
Model	WavePulser40iX	T3SP15D	T3SP15D-XR	T3SP01D

Time

Impulse/Step Rise Time	8.5 ps (impulse)	35 ps (step)		280 ps (step)
Impedance Profile	Single-ended, Differential and Common-mode	Single-ended and Differential		
Pulse Repetition Rate	1 MHz to 10 MHz	1 MHz to 10 MHz	500 KHz to 10 MHz	50 KHz to 400 KHz

Frequency Range

Frequency Range	DC to 40 GHz	DC to 15 GHz		DC to 1.25 GHz
S- parameters Single-ended	Full S-parameters (S_{11} , S_{21} , S_{12} , S_{22})			
S-parameter Mixed-Mode	Mixed-Mode Reflection and Transmission Differential, Common & Conversion (all 16 terms: S_{DD11} , S_{DC11} , S_{CD11} , S_{CC11} , S_{DD21} ,...)	True Differential Reflection (S_{DD11})		True Differential S_{DD11} and Mixed-Mode Reflection: (S_{DD11} , S_{DC11} , S_{CD11} & S_{CC11})

Toolbox

S-parameter de-embedding	Yes (Single-ended, Differential and n-ports)	Yes (2x single-ended)		
Impedance Profile de-embedding (peeling)	Yes	No		
Advanced 2XThru and 1XReflect (IEEE-370)	Yes (Option)	No		
Eye Diagrams and Jitter Analysis	Yes	No		

Platform

Number of Ports	4	2		
USB-connected	Yes	Yes		
Battery-powered	No	Yes (-B model)		Yes

Applications

Application Testing Excellence	High-Speed Serial Data Interconnects and Channel Characterization, Connectors, Cables, PCBs troubleshooting and validation, PCIe 6.0 and PCIe 7.0 Compliance Fixture Characterization, USB4 Return Loss, Display Port Compliance, Automotive Ethernet Compliance and SPE (all speeds)	PCB Validation, Connectors and Cables (up to 30 m), Compliance Automotive Ethernet and SPE ≤ 1 Gbps	PCB Validation, Connectors and Cables (up to 50 m), Compliance Automotive Ethernet and SPE ≤ 1 Gbps	Very Long Cable (up to 1 km), Compliance Automotive Ethernet and SPE ≤ 100 Mbps, (High-Dynamic Mode Conversion)
--------------------------------	---	--	--	--

MODEL SPECIFICATIONS

Model	T3SP15D and T3SP15D-XR	T3SP01D
Operating Frequency	15 GHz	1.25 GHz
S-parameter Measurements	Full Single-ended S_{11} , S_{21} , S_{12} , S_{22} and True Differential S_{dd11}	Full Single-ended S_{11} , S_{21} , S_{12} , S_{22} , True Differential S_{DD11} and Mixed-Mode Reflection: (S_{DD11} , S_{DC11} , S_{CD11} & S_{CC11})
Calibration Method	OSL and OSLT	
Connector Type	2.92 mm	SMA

Standard Measurement Capability

Measurement Modes	TDR, DTDR	
Frequency Domain Displays	S_{xy} (Magnitude, Phase), VSWR, Smith Chart	
Insertion Loss Accuracy (max typ. @10 dB)	DC \leq f < 5 GHz: ± 0.5 dB 5 GHz \leq f < 10 GHz: ± 0.75 dB 10 GHz \leq f < 15 GHz: ± 1 dB	DC \leq f < 1 GHz: ± 0.5 dB 1 GHz \leq f < 1.25 GHz: ± 0.75 dB
Time Domain Displays	Oscilloscope Mode, Impedance Plot to specified rise time, Step Response	
File Outputs	CSV, Excel, Matlab, Touchstone, PDF-Report	

Pulsar / Sampler and Time base

Step Amplitude	150 mV Single-ended (50 Ω termination) / 300 mV differential V_{pp} (100 Ω termination)	360 mV Single-ended (50 Ω termination) / 720 mV differential V_{pp} (100 Ω termination)
Rise Time	35 ps (20 – 80 % typical – as measured by sampler) Rise Time could be limited by software (up to 1 ns)	280 ps
Input Voltage Range	+/-325 mV (+/-2 V non-destructive)	
Noise	< 500 μ VRMS typical	< 1 mVRMS typical
Repetition Rate	1, 2, 5 and 10 MHz (T3SP15D), 0.5, 1, 2, 5, 10 MHz (T3SP15D-XR)	50, 100, 200, 400 KHz
Acquisition Duration	50,000 Points	
Max DUT length (under matched condition)	30 meters @1 MHz (T3SP15D), 50 meters @500 kHz (T3SP15D-XR)	1 km @50 kHz
Equivalent Time Sample Rate (max)	100 GS/s	
Jitter	< 500 fs RMS typical	< 2,500 fs RMS typical

Internal ESD Protection Relays

Frequency Rating	>15 GHz	>6 GHz
Rated Life	2 million actuations per contact	1 million actuations per contact

Battery

Type	Internal Li-Ion-Battery, 2.2 Ah (-B models)	Internal Li-Ion-Battery, 2.2 Ah
Operational Time	> 3 hours (in ESD-protection mode)	
Recharging Time	3 hours	

MODEL SPECIFICATIONS

Model	T3SP15D and T3SP15D-XR	T3SP01D
-------	------------------------	---------

Physical Dimensions

Dimensions	Without connectors: 220 × 210 × 82.5 mm with connectors: 242 × 210 × 82.5 mm Coax connector spacing: 28 mm
Shipping Dimensions	500 mm x 400 mm x 200 mm
Weight	2600 g (2800 g with battery)
Shipping Weight	7300 g (including travel case and accessories)

Power Requirements

Voltage	100 – 240 VAC, 50 – 60 Hz, 1.7 A with distributed external power adapter
Max. Power Consumption	17 watt (42 watt with battery)

Temperature Range

Operation	0 °C – 40 °C
Store	-20 °C – 80 °C (0 °C – 40 °C with Battery)

Recommended PC Configuration

Operating System (64-bit)	Windows 10, Windows 11
Processor	Dual core or better recommended
Memory	Minimal 2 GB
Hard Drive	Minimal 250 GB
Display Resolution	1024 x 768 or larger
Connectivity	USB 2.0

TDR PROBES

T3SP-DPROBE



The high precision differential TDR Probe T3SP-DPROBE provides an 18 GHz, high performance solution for TDR circuit board impedance characterization and high-speed electrical signal analysis applications. The ergonomic and robust case design providing best ratio of thickness and width. The robust measuring tips guarantee a long life and high repeatability of the measurements.

Parameter	Value / Unit	Comments
Impedance	100 Ω	VSWR < 1.05
Electrical Length	690 ps	
Probe Tips	Fixed Blades	Copper beryllium (3 pairs of replacement tips included)
Pitch	0.1 – 5 mm	adjustable
Pin Configuration	Signal – Signal	
Connectors	SMA female	compatible with 2.92 mm and 3.5 mm connectors
Frequency Range	DC – 18 GHz	valid for probe without tips
Dimensions	130 × 34 × 14 mm	casing only
	157.5 × 34 × 14 mm	with connectors and tips
Material	Aluminum	
Specials		direct in-circuit TDR testing

T3SP-DPROBE-F



The economic differential TDR Probe T3SP-DPROBE-F provides an ideal solution for TDR circuit board impedance characterization on a very attractive price. It is the ideal probe for fast and accurate PCB impedance measurements up to 5 GHz.

Parameter	Value / Unit	Comments
Impedance	100 Ω	VSWR < 1.05
Electrical Length	830 ps	
Probe Tips	Spring-loaded pin	
Pitch	2.54 mm	fixed
Pin Configuration	Signal – Signal	
Connectors	SMA female	compatible with 2.92 mm and 3.5 mm connectors
Frequency Range	DC – 5 GHz	valid for probe without tips
Dimensions	131 × 32 × 13.2 mm	casing only
	131 × 32 × 15.6 mm	with connectors and tips
Material	Polystyrene	

T3SP-SEPROBE-F



The T3SP-SEPROBE-F Single-ended TDR probe provides an ideal solution for TDR circuit board impedance characterization at a very attractive price. It is the ideal single-ended probe for fast, accurate and repeatable accurate PCB impedance measurements up to 5 GHz.

Parameter	Value / Unit	Comments
Impedance	50 Ω ±1 Ω	
Electrical Length	850 ps	
Probe Tips	spring-loaded	
Pitch	2.54 mm	fixed
Pin Configuration	S-G	
Connectors	SMA female	compatible with 2.92 mm and 3.5 mm connectors
Frequency Range	DC – 5 GHz	valid for probe with tips
Dimensions	131 × 32 × 13.2 mm	casing only
	131 × 32 × 15.6 mm	with connectors and tips
Material	Polystyrene	

T3SP-SEP



The high precision Single-ended T3SP-SEP TDR probe provides a 10 GHz, high performance and repeatable solution for TDR circuit board impedance characterization for all the high-speed single-ended electrical signal analysis applications. The variable pitch combined with the compact dimension make this probe an ideal solution for high repeatable TDR single-ended measurements.

Parameter	Value / Unit	Comments
Impedance	50 Ω ±1 Ω	
Electrical Length	100 ps	
Probe Tips	spring loaded	
Pitch	1.0, 1.27, 1.65, 2.0 & 2.5 mm	variable
Pin Configuration	S-G	
Connectors	2.92 mm female	compatible with SMA and 3.5 mm connectors
Frequency Range	DC – 10 GHz	
Dimensions	29.8 × 9.0 mm	(length × diameter)
Material	Brass	
Specials		direct in-circuit TDR testing

TDR ACCESSORIES

T3SP-CASE included with the T3SP15D-BUNDLE, T3SP15D-B-BUNDLE, T3SP15D-XR-BUNDLE, T3SP15D-B-XR-BUNDLE and T3SP01D-B-BUNDLE models

The T3SP-CASE aluminum case is an ideal choice to safely store and transport your T3SP15D instrument and additional accessories.



Platform selection guide

Product Code	Max Cables Length	Mainframe and Phase Matched Cables	Calibration Kit and Torque wrench	Internal Battery	PCBs line impedance	MDI Automotive Ethernet	Inter-pair and intra-pair Skew	S-par (S_{dd11} and S_{11} , S_{21} , S_{12} and S_{22})
T3SP15D-BUNDLE	30 m	Yes, 3.5 mm cables	Yes, 3.5 mm OSLT	No	Yes	Yes	Yes	Yes
T3SP15D-B-BUNDLE	30 m	Yes, 3.5 mm cables	Yes, 3.5 mm OSLT	Yes	Yes	Yes	Yes	Yes
T3SP15D-XR-BUNDLE	50 m	Yes, 3.5 mm cables	Yes, 3.5 mm OSLT	No	Yes	Yes	Yes	Yes
T3SP15D-B-XR-BUNDLE	50 m	Yes, 3.5 mm cables	Yes, 3.5 mm OSLT	Yes	Yes	Yes	Yes	Yes
T3SP01D-B-BUNDLE	1 km	Yes, SMA cables	Yes, SMA OSTL	Yes	No	Yes	Yes	Yes*

* Included Mixed-Mode Reflection: (S_{DD11} , S_{DC11} , S_{CD11} , S_{CC11})

T3SP15D-XR includes new time bases optimized for cable manufacturing

Pulse Repetition Rate	Sampling Interval	Acquisition Time (s)	Comments	T3SP15D	T3SP15D-XR
10 MHz	10 ps			Yes	Yes
5 MHz	10 ps			Yes	Yes
2 MHz	10 ps			Yes	Yes
1 MHz	10 ps	6.4 s		Yes	Yes
1 MHz	20 ps	0.8 s	optimized for manufacturing	No	Yes
1 MHz	40 ps	0.4 s	optimized for manufacturing	No	Yes
500 KHz	20 ps	3.2 s	extended range (50 m) optimized for manufacturing	No	Yes
500 KHz	40 ps	1.6 s	extended range (50 m) optimized for manufacturing	No	Yes

Ordering information

Product Description	Product Code
Mainframes (T3SP15D)	
Differential High-Resolution TDR, 35 ps Rise Time, ESD protection, 2 phase matched 3.5 mm cables, 3.5 mm Cal. Kit, Aluminum Case, S_{dd11} and S_{11} , S_{21} , S_{12} and S_{22}	T3SP15D-BUNDLE
Differential High-Resolution TDR, 35 ps Rise Time, ESD protection, Internal Battery, 2 phase matched 3.5 mm cables, 3.5 mm Cal. Kit, Aluminum Case, S_{dd11} and S_{11} , S_{21} , S_{12} and S_{22}	T3SP15D-B-BUNDLE
Mainframes (T3SP15D-XR)	
Differential Extended Range, High-Resolution TDR, 35 ps Rise Time, ESD protection, 2 phase matched 3.5 mm cables, 3.5 mm Cal. Kit, Aluminum Case, S_{dd11} and S_{11} , S_{21} , S_{12} and S_{22}	T3SP15D-XR-BUNDLE
Differential Extended Range, High-Resolution TDR, 35 ps Rise Time, ESD protection, Internal Battery, 2 phase matched 3.5 mm cables, 3.5 mm Cal. Kit, Aluminum Case, S_{dd11} and S_{11} , S_{21} , S_{12} and S_{22}	T3SP15D-B-XR-BUNDLE
Mainframe (T3SP01D)	
Differential TDR Long Range ≤ 1 km, ESD protection, Internal Battery, 2 phase-matched SMA cables, OSLT SMA Cal Kit, Aluminum Case, S_{11} , S_{21} , S_{12} , S_{22} and Mixed-Mode S_{dd11} , S_{dc11} , S_{cd11} , S_{oc11}	T3SP01D-B-BUNDLE
TDR probes (all mainframes)	
Differential TDR-Probe (high precision, 18 GHz, 0.5 – 5.0 mm variable pitch)	T3SP-DPROBE
Differential TDR-Probe (economic, 5 GHz, 2.5 or 5 mm fixed pitch)	T3SP-DPROBE-F
Single-ended TDR-Probe (fixed pitch 2.54 mm)	T3SP-SEPROBE-F
Single-ended TDR-Probe (high precision, 10 GHz, variable pitch)	T3SP-SEP
Accessories	
OSLT Calibration Kit RPC-3.50 (Jack) with torque wrench, female*	T3SP-CALKIT-3.5MM
Phase Matched 3.5 mm cables (50 ± 1 Ohm, <1 ps skew)*	T3SP-CABLE-3.5MM
Storage and Travel Case (aluminum suitcase for TDRs and accessories)**	T3SP-CASE
Demo and Verification Board	T3SP-BOARD

* included with T3SP15D and T3SP15D-XR BUNDLE configurations, 3.5 mm connectors (or higher-quality compatible connectors, subject to availability)

** included with all BUNDLE configurations

Standard warranty is one year (for warranty extension please contact Teledyne LeCroy Service)

Included with T3SP15D-BUNDLE, T3SP15D-B-BUNDLE, T3SP15D-XR-BUNDLE and T3SP15D-B-XR-BUNDLE

T3SP15D or T3SP15D-B (internal battery) time-domain mainframe, 1 x pair of phase matched cables (± 2 ps), OSLT calibration Kit (@26.5 GHz, RPC-3.50 (Jack) with certificate), torque wrench, USB Hasp (to enable TDR application to run off-line), USB2.0 cable, Mini USB to USB-A, External Power Supply, Aluminum case (T3SP-CASE), Calibration and Performance Certificate, 1 year warranty.

Included with T3SP01D-B-BUNDLE

Internal battery, 1 x pair of phase SMA matched cables (± 2 ps), OSLT SMA calibration Kit, torque wrench, USB Hasp (to enable TDR application to run off-line), USB2.0 cable, Mini USB to USB-A, External Power Supply, Aluminum case (T3SP-CASE), Calibration and Performance Certificate, 1 year warranty

TELEDYNE | Test Tools

Company Profile

Teledyne LeCroy is a leading provider of oscilloscopes, protocol analyzers and related test and measurement solutions that enable companies across a wide range of industries to design and test electronic devices of all types. Since our founding in 1964, we have focused on creating products that improve productivity by helping engineers resolve design issues faster and more effectively. Oscilloscopes are tools used by designers and engineers to measure and analyze complex electronic signals in order to develop high-performance systems and to validate electronic designs in order to improve time to market.

The Teledyne Test Tools brand extends the Teledyne LeCroy product portfolio with a comprehensive range of test equipment solutions. This new range of products delivers a broad range of quality test solutions that enable engineers to rapidly validate product and design and reduce time-to-market. Designers, engineers and educators rely on Teledyne Test Tools solutions to meet their most challenging needs for testing, education and electronics validation.

Location and Facilities

Headquartered in Chestnut Ridge, New York, Teledyne Test Tools and Teledyne LeCroy has sales, service and development subsidiaries in the US and throughout Europe and Asia. Teledyne Test Tools and Teledyne LeCroy products are employed across a wide variety of industries, including semiconductor, computer, consumer electronics, education, military/aerospace, automotive/industrial, and telecommunications.

Distributed by:

Teledyne LeCroy (US Headquarters)

700 Chestnut Ridge Road
Chestnut Ridge, NY. USA 10977-6499

Phone: 800-553-2769 or 845-425-2000
Fax Sales: 845-578-5985
Phone Support: 1-800-553-2769
Email Sales: contact.corp@teledynelecroy.com
Email Support: support@teledynelecroy.com
Web Site: <http://teledynelecroy.com/>

Teledyne LeCroy (European Headquarters)

Teledyne GmbH

Im Breitspiel 11c
D-69126 Heidelberg, Germany

Phone: +49 6221 82700
Fax: +49 6221 834655
Phone Service: +49 6221 8270 85
Phone Support: +49 6221 8270 28
Email Sales: contact.gmbh@teledynelecroy.com
Email Service: service.gmbh@teledynelecroy.com
Email Support: support@teledynelecroy.com
Web Site: <http://teledynelecroy.com/germany>

World wide support contacts can be found at:
<https://teledynelecroy.com/support/contact/#>