



USB4™ Transmitter Compliance and Debug Solution

Streamline the USB4 Validation Journey



USB4 compliance testing is the process of verifying that your design aligns with a variety of specifications set out by the official USB4 standard. Obtaining the USB4 certification involves testing the electrical layer, logical layer, and interoperability of your design. Without USB4 compliance testing, companies can not legally display the USB4 logo on their products.

Tektronix developed the USB4 Transmitter Solution to streamline the USB4 compliance testing journey. We designed our solution with custom test environments in mind so that designers can quickly and accurately test and debug USB4 silicon, systems, devices and hubs.

USB4™, USB Type-C® and USB-C® are trademarks of the Universal Serial Bus Implementers Forum (USB-IF).

Save Time and Reduce Errors



USB4 Designers face a number of challenges including increased test times, signal integrity challenges and complications related to Device Under Test (DUT) control. Tektronix's USB4 Transmitter Solution was designed to meet those challenges head-on:

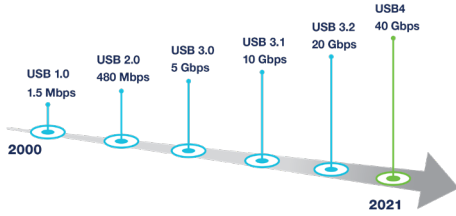
- Reduced test times with automated and optimized test sequencing
- Extensive debug tools for improved root cause analysis
- Automatic DUT control to capture all compliance test patterns and reduce the need for error-prone manual interventions

Full USB4 Compliance

Tektronix's USB4 Transmitter Solution is compliant with the USB4 specification and USB4 Router Assembly Electrical Compliance Test Specification (CTS). As an approved vendor for USB compliance solutions, we provide design engineers with a reliable path to the USB4 certification they need to go to market. Our unique Signal Validation feature verifies the compliance pattern so designers can be confident in the accuracy of results.

Test Name	Pass/Fail	Details	Value	Margin	Data R...
Minimum Unit Interval	Pass	MinimumUnitInterval Min	100.016 ps	LL: 45.805 10G fs, HL: NA	
High Limit	N.A		NA		
Low Limit	Pass		99.97 ps		
Minimum Unit Interval	Pass	MinimumUnitInterval Max	100.019 ps	LL: NA, HL: 10G 10.991 fs	
High Limit	Pass		100.03 ps		
Low Limit	N.A		NA		
SSC Down Spread Range	Pass	SSCDownSpreadRange Min	0.453 %	LL: 0.053 10G %, HL: NA	
High Limit	N.A		NA		
Low Limit	Pass		0.4 %		
SSC Down Spread Range	Pass	SSCDownSpreadRange Max	0.459 %	LL: NA, HL: 10G 0.041 %	
SSC Down Spread Rate	Pass	SSCDownSpreadRate Min	30.604 kHz	LL: 803.562 Hz, HL: NA	
SSC Down Spread Rate	Pass	SSCDownSpreadRate Max	30.922 kHz	LL: NA, HL: 10G 2.078 kHz	
SSC Phase Deviation	Pass	SSCPhaseDeviation p-p	18.774 ns	LL: 16.274 ns, HL: 3.226 ns	
SSC Slew Rate	Pass	SSCSlewRate Max	541.444 ppmus	LL: NA, HL: 10G 708.555	

Comprehensive Automated Test Solution



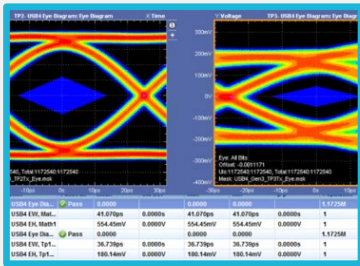
Tektronix offers a comprehensive automated solution for USB silicon, host, device, and hub testing and debugging. Tektronix’s certified USB4 Transmitter Solution is designed to streamline the USB4 validation process:

- Render eye diagrams with extrapolation and analyze channel effect on signals using worst-case channel models
- In-depth debugging insight including jitter, noise, eye height/width and visualization plots
- Offline waveform analysis to collaborate with your global teams and reduce time to market



DPO70000SX Oscilloscopes

DPO70000SX ATI Performance Oscilloscopes deliver the industry’s most accurate capture of high-speed signal behavior to verify, validate, and characterize your next generation designs



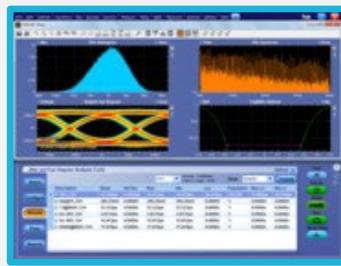
USB4 Tx Compliance /Debug Data Sheet

Explore this data sheet for a deeper dive into our USB4 Tx solution and how it can help you analyze and optimize complex USB4 designs with ease.



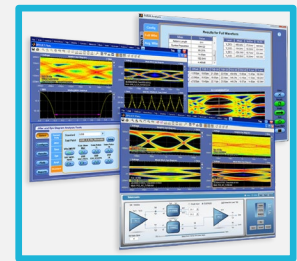
6 Series B MSO Oscilloscope

Troubleshoot and validate high-speed designs with bandwidth that goes up to 10 GHz . Get accurate measurements with low noise and sample rate up to 50 GS/s . See more with 6- and 8-channel models.



DPOJET Analysis Package Data Sheet

Explore this data sheet to learn about DPOJET, the premier eye-diagram, jitter, noise and timing analysis package available for real-time oscilloscopes.



Serial Data Link Analysis (SDLA)

Tektronix's advanced Serial Data Link Analysis solutions enable a seamless transition between characterization, compliance, and debug tasks required to bring your product to market.



USB4 Compliance Webinar

Watch our recent webinar on USB4 Compliance and Characterization Test Challenges.