OSCILLOSCOPE PROBING SOLUTIONS

USB-C Chassis Probe

Probe USB-C Applications Seamlessly

Introspect Technology's USB-C Chassis Probe is an innovative solution that enables accurate waveform probing for USB-C streams up to 20 GHz. The primary passthrough path on the chassis probe creates a direct connection between a USB-C source and a USB-C sink. The secondary fanout path uses proprietary sensing technology to create a replica of the source signal, allowing for analog and digital analysis of live traffic on the bus without loading the primary USB-C signals. With a high impedance and a linear response, the replica waveforms produced by this device are highly accurate, making it an essential tool for any USB-C testing setup.

KEY FEATURES:

- **Bandwidth:** up to 20 GHz
- **Lane Count:** 4 *USB 20Gbps* differential lanes (ML 1-4) plus 2 *SBU* lanes (AUX)
- **Connectors Signal Path:** supports standard USB Type-C connector
- **Maintains Signal Integrity:** minimal capacitance loading and high impedance

KEY BENEFITS:

- **Uninterrupted Link Training:** With the passive through path, the source and sink devices train according to the real system characteristics and not the probe.
- **Replacement for Individual Oscilloscope Active Probes:** With a high impedance and linear response on the active probing path, this solution is ideal for real-time oscilloscope analysis.

Typical Application: Debugging a Live DP Alt-Mode System

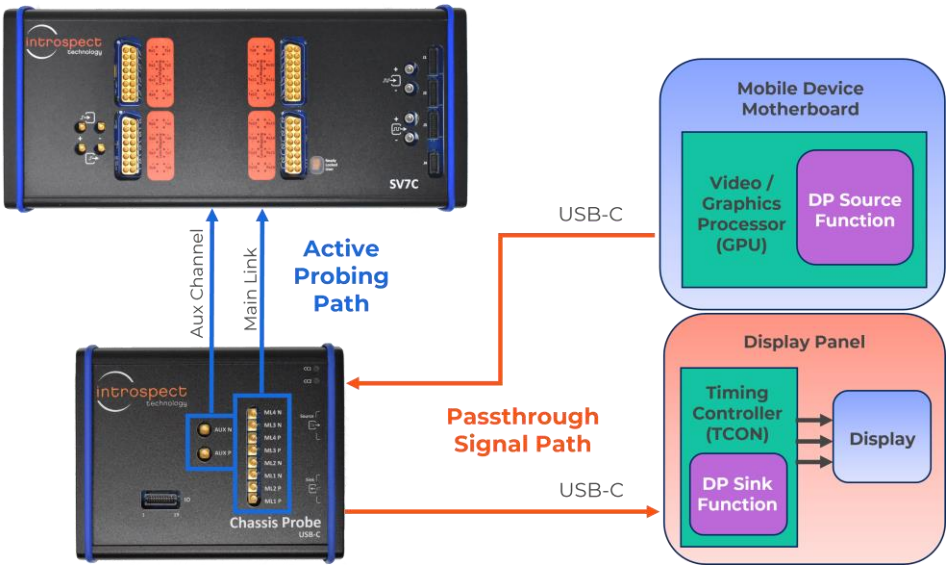


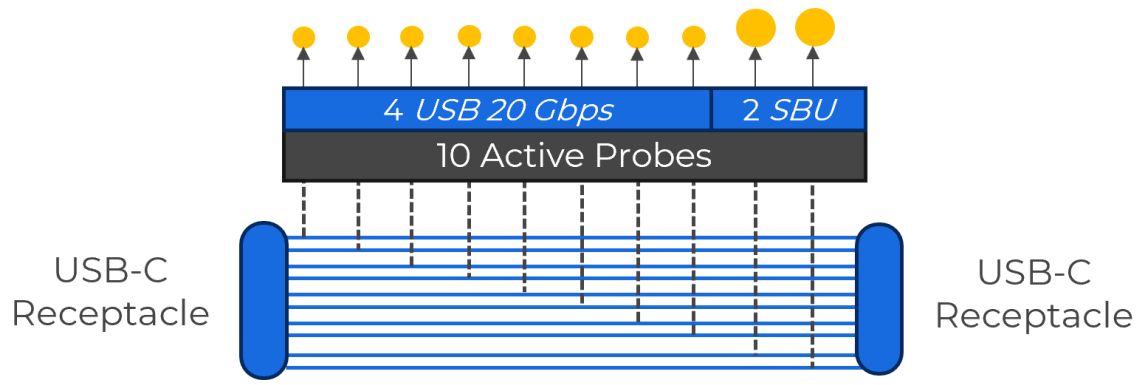
Diagram of the USB-C Chassis Probe and the SV7C-eDP Analyzer with a live DP Alt-Mode system.

Specifications

PARAMETER	VALUE	DESCRIPTION
Source-Side Through-Path Connector Type	Standard USB-C Receptacle	
Sink-Side Through-Path Connector Type	Standard USB-C Receptacle	
Connectors Probing Path	MMPX, SMP	
IO Connector Type	TFM-110-01-L-D	Used for monitoring configuration channels (CC1, CC2)
Through-Path Signal Risetime	18 ps*	20%-80% specification
Active Probe Path Signal Risetime	18 ps	20%-80% specification
Active Probe Path Linearity	50 dB	Spurious free dynamic range measured at 5 MHz and across entire voltage range
Active Probe Input Voltage Range	-0.8 V to 1.2 V	

* Source signal risetime of 7 ps (20%-80%)

USB-C Chassis Probe Block Diagram



Transparent probing capability is enabled by passive traces and proprietary active probe technology.