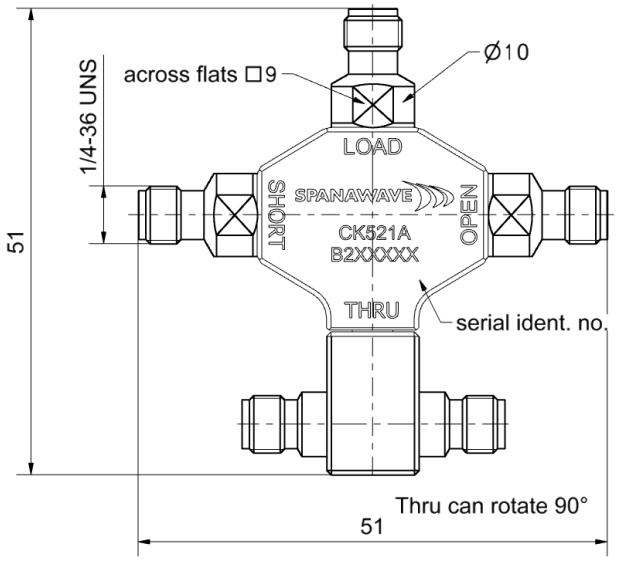
Technical Data Sheet

CK521A: 4-in-1 OSLT Calibration Kit, DC to 26.5 GHz, Type-3.5 mm (f) 50 Ohm



Interface

According to	3.5 mm (f)
Mechanically compatible with	2.92 mm and SMA

Contents and Documentation

This kit is delivered with

- **Standard Definitions Card**
  Printed Standard Definitions that can be used on nearly all Vector Network Analyzers
- **Test Results Documentation**
- **Hard Shell Case**

Material and plating

Connector parts	**Material**	**Plating**
Center conductor	Beryllium copper	Gold, min. 1.27 µm, over nickel
Outer conductor	Stainless steel	Passivated
Body	Aluminum	black anodized
Dielectric	PS	
Substrate	Al_2O_3	

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Electrical data

Frequency range	DC to 26.5 GHz

Thru

Return loss	≥ 34 dB, DC to 4 GHz ≥ 32 dB, 4 GHz to 8 GHz ≥ 30 dB, 8 GHz to 26.5 GHz

Open

Error from nominal phase[1]	≤ 1.0°, DC to 4 GHz ≤ 2.0°, 4 GHz to 8 GHz ≤ 3.0°, 8 GHz to 26.5 GHz

Short

Error from nominal phase[2]	≤ 1.0°, DC to 4 GHz ≤ 2.0°, 4 GHz to 8 GHz ≤ 3.0°, 8 GHz to 26.5 GHz

Load

Return loss	≥ 40.0 dB, DC to 4 GHz ≥ 35.0 dB, 4 GHz to 8 GHz ≥ 30.0 dB, 8 GHz to 26.5 GHz
DC Resistance	50 Ω ± 0.5 Ω
Power handling	≤ 0.5 W

[1] The nominal phase is defined by the Offset Delay, the Offset Loss and the Fringing Capacitances.

[2] The nominal phase is defined by the Offset Delay, the Offset Loss and the Short Inductance.

Mechanical data

Mating cycles	≥ 500
Maximum torque	1.70 Nm
Recommended torque	0.90 Nm
Gauge	0.00 mm to 0.08 mm

General standard definitions

For proper operation the vector network analyzer (VNA) needs a model describing the electrical behavior of this calibration standard. The different models, units, and terms used will depend on the VNA type and they will have to be entered into the VNA. All values are based on typical geometry and plating.

Thru

Offset Z_o / Impedance / Z_o	50 Ω
Offset Delay	84.058 ps
Length (electrical) / Offset Length	25.20 mm
Offset Loss	2.51 GΩ/s
Loss	0.0183 dB/ $\sqrt{GHz}$
Line Loss @ 1GHz	0.0007 dB/mm

Open

Offset Z_o / Impedance / Z_o	50 Ω
Offset Delay	33.356 ps
Length (electrical) / Offset Length	10.00 mm
Offset Loss	2.20 GΩ/s
Loss	0.0127 dB/ $\sqrt{GHz}$
Fringing Capacitances	C_0 = -17.500 x 10^{-15} F / -17.500 fF
	C_1 = -2000.0 x 10^{-27} F/Hz / -2.0000 fF /GHz
	C_2 = 140.00 x 10^{-36} F/Hz / 0.1400 fF /GHz^2
	C_3 = -2.7000 x 10^{-45} F/Hz / -0.0027 fF /GHz^3

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Short

Offset Z_0 / Impedance / Z_0	50 Ω
Offset Delay	33.356 ps
Length (electrical) / Offset Length	10.00 mm
Offset Loss	2.36 GΩ/s
Loss	0.0137 dB/$\sqrt{GHz}$
Short Inductance	L_0 = -44.000 x 10^{-12} H / -44.000 pH
	L_1 = 3700.0 x 10^{-24} H/Hz / 3.7000 pH /GHz
	L_2 = -250.00 x 10^{-33} H/Hz^2 / -0.2500 pH /GHz^2
	L_3 = 5.0000 x 10^{-42} H/Hz^3 / 0.0050 pH /GHz^3

Load

Offset Z_0 / Impedance / Z_0	50 Ω
Offset Delay	0.0000 ps
Length (electrical) / Offset Length	0.000 mm
Offset Loss	0.00 GΩ/s
Loss	0.0000 dB/$\sqrt{GHz}$

Environmental data

Operating temperature range[3]	+20 °C to +26 °C
Rated temperature range of use[4]	0 °C to +50 °C
Storage temperature range	-40 °C to +85 °C
RoHS	compliant

[3] Temperature range over which these specifications are valid.

[4] This range is underneath and above the operating temperature range, within the calibration kit is fully functional and could be used without damage.

Includes

Standard delivery for this kit includes Test Results. The documentation issued reports which quantities were tested individually, traceable to national / international standards. Model based standard definitions of the calibration standards are reported in Agilent / Keysight, Rohde & Schwarz and Anritsu compatible VNA format.

Calibration interval

Recommendation	12 months

Packing

Standard	1 per bag
Weight	1.24 oz.

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