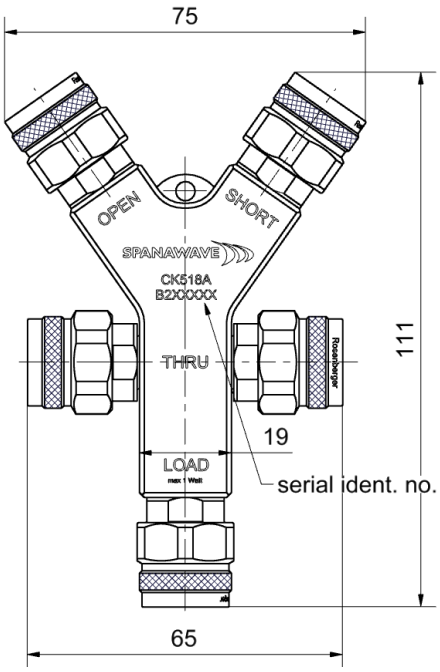
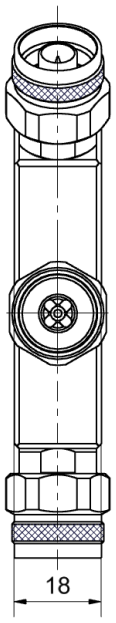
Technical Data Sheet

CK518A: 4-in-1 OSLT Calibration Kit, DC to 18 GHz, Type-N (m) 50 Ohm





Interface

According to	Type-N (m)

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**
- **Lanyard**
- **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
Coupling nut	Stainless steel	Passivated
Body	Aluminum	black anodized
Dielectric	PPE	
Substrate	Al_2O_3	

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Electrical data

Frequency range	DC to 18 GHz

Thru

Return loss	≥ 40 dB, DC to 6 GHz ≥ 36 dB, 6 GHz to 9 GHz ≥ 32 dB, 9 GHz to 18 GHz

Open

Error from nominal phase[1]	≤ 2.0°, DC to 6 GHz ≤ 3.0°, 6 GHz to 9 GHz ≤ 4.0°, 9 GHz to 18 GHz

Short

Error from nominal phase[2]	≤ 1.5°, DC to 6 GHz ≤ 2.0°, 6 GHz to 9 GHz ≤ 2.5°, 9 GHz to 18 GHz

Load

Return loss	≥ 42 dB, DC to 6 GHz ≥ 36 dB, 6 GHz to 9 GHz ≥ 30 dB, 9 GHz to 18 GHz
DC-Resistance	50 Ω ± 0.5 Ω
Power handling	≤ 1.0 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	1.10 Nm
Gauge	5.28 mm to 5.32 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	212.814 ps
Length (electrical) / Offset Length	63.80 mm
Offset Loss	2.20 GΩ/s
Loss	0.0407 dB/$\sqrt{\text{GHz}}$
Line Loss @ 1GHz	0.0006 dB/mm

Open

Offset Z_o / Impedance / Z_o	50 Ω
Offset Delay	73.384 ps
Length (electrical) / Offset Length	22.00 mm
Offset Loss	0.80 GΩ/s
Loss	0.0102 dB/$\sqrt{\text{GHz}}$
Fringing Capacitances	C_0 = -14.2000 x 10^{-15} F / -14.2000 fF
	C_1 = 400.000 x 10^{-27} F/Hz / 0.40000 fF /GHz
	C_2 = -16.0000 x 10^{-36} F/Hz^2 / -0.01600 fF /GHz^2
	C_3 = 1.00000 x 10^{-45} F/Hz^3 / 0.00100 fF /GHz^3

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Short

Offset Z_0 / Impedance / Z_0	50 Ω
Offset Delay	73.384 ps
Length (electrical) / Offset Length	22.00 mm
Offset Loss	0.80 GΩ/s
Loss	0.0102 dB/$\sqrt{GHz}$
Short Inductance	L_0 = -27.0000 x 10^{-12} H / -27.0000 pH
	L_1 = 7200.00 x 10^{-24} H/Hz / 7.20000 pH/GHz
	L_2 = -800.000 x 10^{-33} H/Hz^2 / -0.80000 pH/GHz^2
	L_3 = 26.0000 x 10^{-42} H/Hz^3 / 0.02600 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	9.28 oz.