KEYSIGHT TECHNOLOGIES (AGILENT HP)

85056D

The Keysight 85056D (formerly Agilent) is an economy mechanical calibration kit designed for 2.4 mm coaxial vector network analyzer systems operating from DC to 50 GHz. It contains precision standards—including offset opens, offset shorts, and broadband loads—as well as essential adapters and a torque wrench, providing a complete SOLT calibration solution for accurate microwave measurements.

SPECIFICATIONS

Physical

Operating Temperature	+15 °C to +35 °C °C
Weight	1.2 kg

General Specifications

Frequency Range	DC to 50 GHz
Nominal Impedance	50 Ω
Connector Type	2.4 mm
Calibration Kit Class	Economy Mechanical
Calibration Methods Supported	SOLT (Short-Open-Load-Thru)
Connector Interface Standard	IEEE Std 287 (2.4 mm)

Male Open Standard Specifications

Male Open Frequency Range	DC to 50 GHz
Male Open Phase Error (DC to ≤2 GHz)	±1.5° deviation from nominal
Male Open Phase Error (>2 to ≤20 GHz)	±1.5° deviation from nominal
Male Open Phase Error (>20 to ≤40 GHz)	±2.5° deviation from nominal
Male Open Phase Error (>40 to ≤50 GHz)	±3.5° deviation from nominal

Female Open Standard Specifications

Female Open Frequency Range	DC to 50 GHz
Female Open Phase Error (DC to ≤2 GHz)	±1.5° deviation from nominal
Female Open Phase Error (>2 to ≤20 GHz)	±1.5° deviation from nominal
Female Open Phase Error (>20 to ≤40 GHz)	±2.5° deviation from nominal
Female Open Phase Error (>40 to ≤50 GHz)	±3.5° deviation from nominal

Male Short Standard Specifications

Male Short Frequency Range	DC to 50 GHz
Male Short Phase Error (DC to ≤2 GHz)	±1.0° deviation from nominal
Male Short Phase Error (>2 to ≤20 GHz)	±1.0° deviation from nominal
Male Short Phase Error (>20 to ≤40 GHz)	±1.5° deviation from nominal
Male Short Phase Error (>40 to ≤50 GHz)	±2.0° deviation from nominal

Female Short Standard Specifications

Female Short Frequency Range	DC to 50 GHz
Female Short Phase Error (DC to ≤2 GHz)	±1.0° deviation from nominal
Female Short Phase Error (>2 to ≤20 GHz)	±1.0° deviation from nominal
Female Short Phase Error (>20 to ≤40 GHz)	±1.5° deviation from nominal
Female Short Phase Error (>40 to ≤50 GHz)	±2.0° deviation from nominal

Male Broadband Load Standard Specifications

Male Load Frequency Range	DC to 50 GHz
Male Load Return Loss (DC to ≤4 GHz)	≥ 42 dB
Male Load Return Loss (>4 to ≤20 GHz)	≥ 34 dB

Female Broadband Load Standard Specifications

Female Load Frequency Range	DC to 50 GHz
Female Load Return Loss (DC to ≤4 GHz)	≥ 42 dB
Female Load Return Loss (>4 to ≤20 GHz)	≥ 34 dB

Thru and Precision Adapter Specifications

Adapter Return Loss (>4 to ≤26.5 GHz)	≥ 30 dB (DC to ≤26.5 GHz)
Adapter Return Loss (>26.5 to ≤50 GHz)	≥ 26 dB
Adapter Configuration 1	2.4 mm female to 2.4 mm female
Adapter Configuration 2	2.4 mm male to 2.4 mm male
Adapter Configuration 3	2.4 mm male to 2.4 mm female

Mechanical & Connector Specifications

Connector Inner Conductor Material	Beryllium Copper (gold-plated)
Recommended Connection Torque	0.9 N-m (8 in-lb)
Torque Wrench Open Size	5/16 in (7.9 mm)

Environmental & Calibration Traceability

Calibration Reference Temperature Range	+20 °C to +26 °C
Storage Temperature Range	-40 °C to +75 °C
Calibration Definition Delivery Media	3.5-inch Floppy Disk (standard definitions)
Recommended Calibration Interval	12 Months

Kit Contents & Physical Properties

Included Male Open Standard	00902-60003 (2.4 mm male)
Included Female Open Standard	00902-60004 (2.4 mm female)
Included Male Short Standard	00902-60001 (2.4 mm male)
Included Female Short Standard	00902-60002 (2.4 mm female)
Included Male Broadband Load	00902-60005 (2.4 mm male)
Included Female Broadband Load	00902-60006 (2.4 mm female)
Included Female-to-Female Adapter Model	11900A
Included Male-to-Male Adapter Model	11900B
Included Male-to-Female Adapter Model	11900C
Included Torque Wrench Model	8710-1765 (0.9 N-m, 5/16 in)
Included Open-End Spanner Wrench	8710-1761 (5/16 in & 7/16 in open-end)
Commercial Calibration Certificate	Included
Protective Carrying Case Type	Custom foam-lined protective case

Kit Components

Male Open Part Number	00902-60003
Female Open Part Number	00902-60004
Male Short Part Number	00902-60001
Female Short Part Number	00902-60002
Male Broadband Load Part Number	00902-60005
Female Broadband Load Part Number	00902-60006
Included Female-to-Female Adapter Part Number	85056-60005
Included Male-to-Male Adapter Part Number	85056-60006
Included Male-to-Female Adapter Part Number	85056-60007
Included Torque Wrench Part Number	8710-1765
Included Open-End Wrench Part Number	8710-1761

Environmental

Operating Humidity Range	Non-condensing

Calibration Standard Definitions

Male Open Offset Delay	29.243 ps
Male Open Offset Loss	1.75 GΩ/s
Male Open Offset Z0	50 Ω
Male Open C0	16.0 fF
Male Open C1	170.0 * 10^-27 F/Hz
Male Open C2	-15.0 * 10^-36 F/Hz²
Male Open C3	0.3 * 10^-45 F/Hz³
Female Open Offset Delay	21.037 ps
Female Open Offset Loss	1.75 GΩ/s
Female Open Offset Z0	50 Ω
Female Open C0	13.0 fF
Female Open C1	340.0 * 10^-27 F/Hz
Female Open C2	-16.0 * 10^-36 F/Hz²
Female Open C3	0.45 * 10^-45 F/Hz³
Male Short Offset Delay	28.519 ps
Male Short Offset Loss	1.75 GΩ/s
Male Short Offset Z0	50 Ω
Male Short L0	0 pH
Male Short L1	0 pH/GHz
Male Short L2	0 pH/GHz²
Male Short L3	0 pH/GHz³
Female Short Offset Delay	22.012 ps
Female Short Offset Loss	1.75 GΩ/s
Female Short Offset Z0	50 Ω
Female Short L0	0 pH
Female Short L1	0 pH/GHz
Female Short L2	0 pH/GHz²
Female Short L3	0 pH/GHz³
Male Broadband Load Offset Delay	0 ps
Male Broadband Load Offset Loss	0 GΩ/s
Male Broadband Load Offset Z0	50 Ω
Female Broadband Load Offset Delay	0 ps
Female Broadband Load Offset Loss	0 GΩ/s
Female Broadband Load Offset Z0	50 Ω
Female-to-Female Adapter Offset Delay	41.355 ps
Female-to-Female Adapter Offset Loss	3.3 GΩ/s
Female-to-Female Adapter Offset Z0	50 Ω

Male-to-Male Adapter Offset Delay	56.402 ps
Male-to-Male Adapter Offset Loss	3.3 GΩ/s
Male-to-Male Adapter Offset Z0	50 Ω
Male-to-Female Adapter Offset Delay	48.730 ps
Male-to-Female Adapter Offset Loss	3.3 GΩ/s
Male-to-Female Adapter Offset Z0	50 Ω

Options

Option 100 Included Adapters	11904A, 11904B, 11904C, 11904D (2.4 mm to 3.5 mm adapters)

TECHNOLOGY

Coaxial RF/Microwave

APPLICATIONS

Vector Network Analyzer (VNA) Calibration