

Millimeter Wave Waveguide VNA Calibration Procedures vs OML Cal Kit Components

Detailed below are the OML Cal Kit components applicable to the most common waveguide VNA calibration procedures.

<u>Acronym</u>	<u>Description</u>	<u>OML Cal Kit Components (WR-12 example)</u>
<i>Two Port Calibrations</i>		
1) LRL	Line / Reflect (short) / Line	OS-12 / S-12 / OS1/4-12
2) LRM	Line / Reflect (short) / Match (Load)	OS-12 / S-12 / T-12
3) TRL	Thru / Reflect (short) / Line	Thru / S-12 / OS-12 or OS1/4-12
4) TRM	Thru / Reflect (short) / Match (Load)	Thru / S-12 / T-12
5) TSD	Thru / Short / Delay	Thru / S-12 / OS-12 or OS1/4-12 or W/G-12
6) OOLsT	Offset Short / Offset Short / Load (sliding) / Thru	S-12 & OS1/4-12 / S-12 & OS-12 / AL-12 / Thru
7) OOLfT	Offset Short / Offset Short / Load (fixed) / Thru	S-12 & OS1/4-12 / S-12 & OS-12 / T-12 / Thru
8) SSLsT	Offset Short / Short / Load (sliding) / Thru	S-12 & OS1/4-12 / S-12 & OS-12 / AL-12 / Thru
9) SSLfT	Offset Short / Short / Load (fixed) / Thru	S-12 & OS1/4-12 / S-12 & OS-12 / T-12 / Thru
<i>One Port Calibrations</i>		
10) OOLf	Offset Short / Offset Short / Load (fixed)	S-12 & OS1/4-12 / S-12 & OS-12 / T-12
12) OOLs	Offset Short / Offset Short / Load (sliding)	S-12 & OS1/4-12 / S-12 & OS-12 / AL-12
13) SSLs	Offset Short / Short / Load (sliding)	S-12 & OS1/4-12 / S-12 & OS-12 / AL-12
14) SSLo	Offset Short / Short / Load (fixed) / Offset Load (fixed)	S-12 & OS1/4-12 / S-12 & OS-12 / T-12 & OS-12 / T-12 & OS1/4-12
15) SSS	Three different offset shorts (<180 deg. total)	S-12 / S-12 & OS-12 / S-12 & OS1/4-12

Notes:

Offset Short / Short vs Offset Short / Offset Short: Both specify two shorts offset with $\frac{1}{4}$ wavelength difference

Thru vs Line vs Delay: Thru is a connection of two modules of zero length with Test Port Adapters in place.
Line inserts an additional waveguide section of precise known length. Delay is a Thru.

Load (fixed) or Match: Definition is the same, procedure assumes a load return loss of >40 dB for a good calibration