

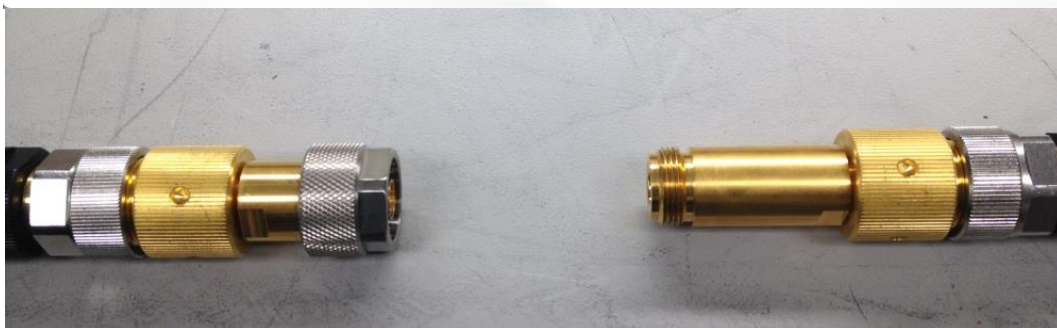
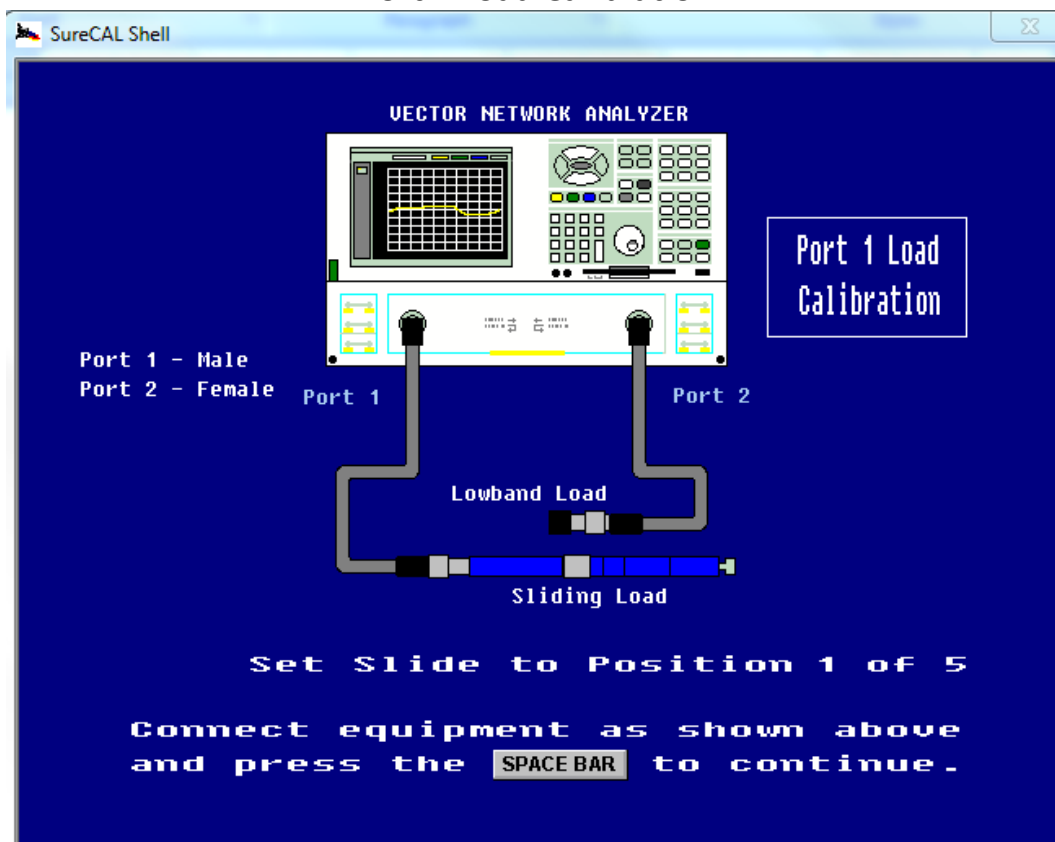
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Technical Note TN 10

SOURCE MATCH PORT 3 of SENSOR FEEDTHRU (POWER SPLITTER) EXAMPLE: VNA:E8362B, CAL KIT:HP85054B (Type N)

Port 1 Load Calibration



During the test set cal operation:

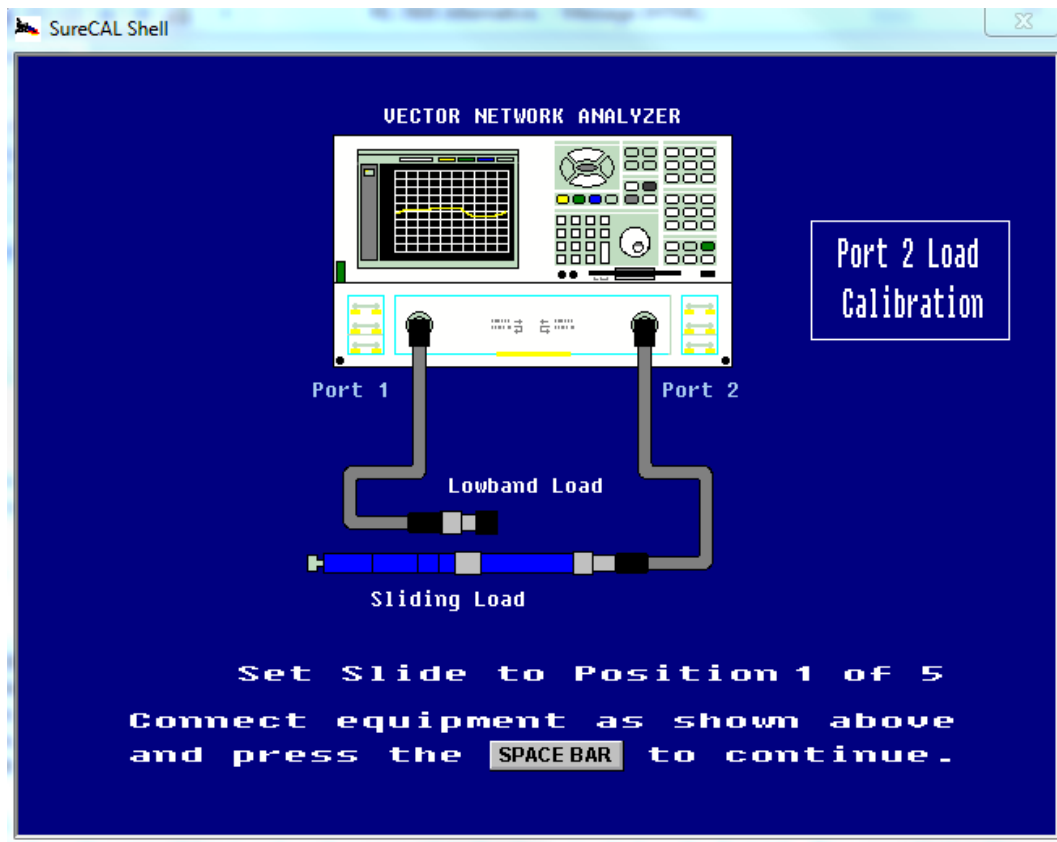
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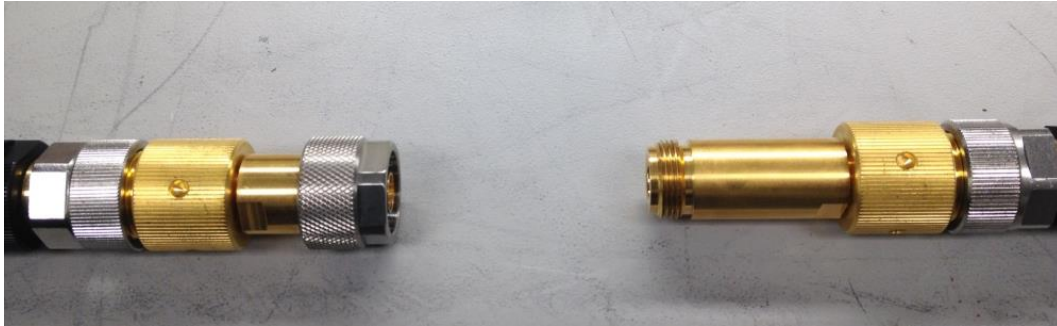
Use NO OTHER ADAPTERS than pictured above.
These gold type N to 7mm cal kit adapters are of “equal electrical length”
KEEP the male type N adapter connected to 7mm cable on port 1 (left)
KEEP the female type N adapter connected to 7 mm cable on port 2 (right).
DO NOT DISCONNECT 7mm CABLE CONNECTIONS DURING TEST SET CAL.

For Port 1 Load Calibration:
Use cal kit’s female type N Sliding Load on the left
Cal kit’s male type N Lowband Load (50 ohms) on the right.

Port 2 Load Calibration



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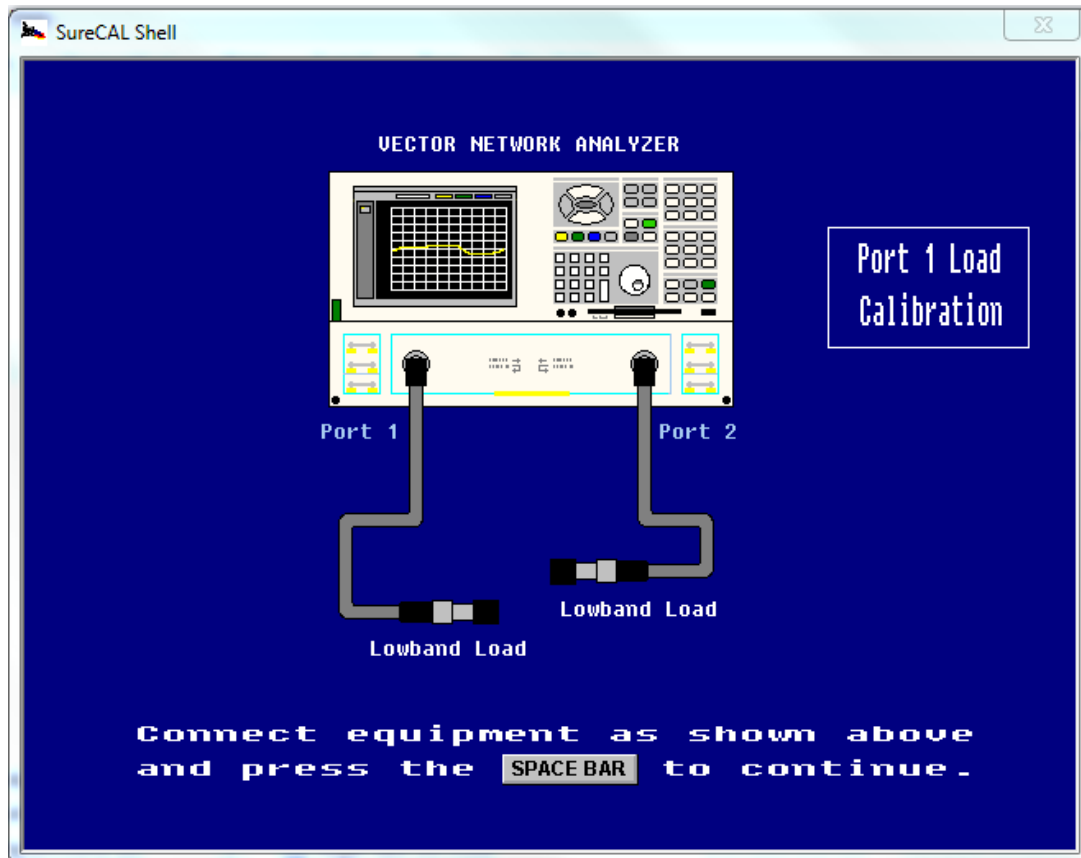
KEEP the male type N adapter connected to 7mm cable on port 1 (left)
KEEP the female type N adapter connected to 7 mm cable on port 2 (right)
DO NOT DISCONNECT 7mm CONNECTIONS DURING TEST SET CAL
OPERATION

For Port 2 Load Calibration:
Change to cal kit's female type N Lowband Load (50 ohms) on port 1 (left).
Change to cal kit's male type N Sliding Load on port 2 (right).

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Port 1 Load Calibration



KEEP the male type N adapter connected to 7mm cable on port 1 (left)
KEEP the female type N adapter connected to 7 mm cable on port 2 (right)
DO NOT DISCONNECT 7mm CONNECTIONS DURING TEST SET CAL
OPERATION

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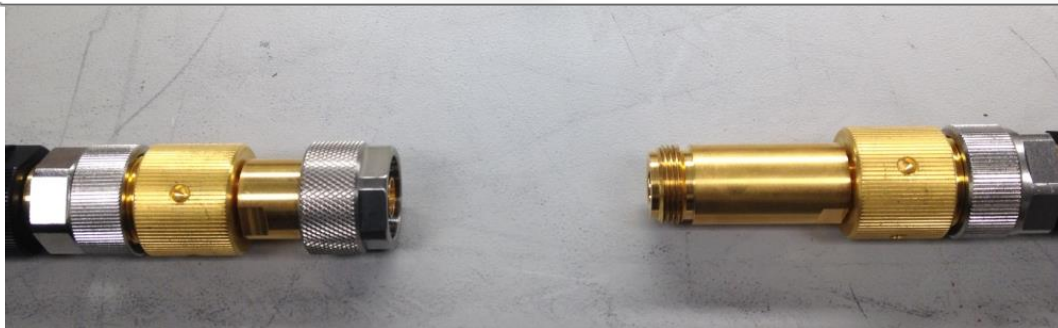
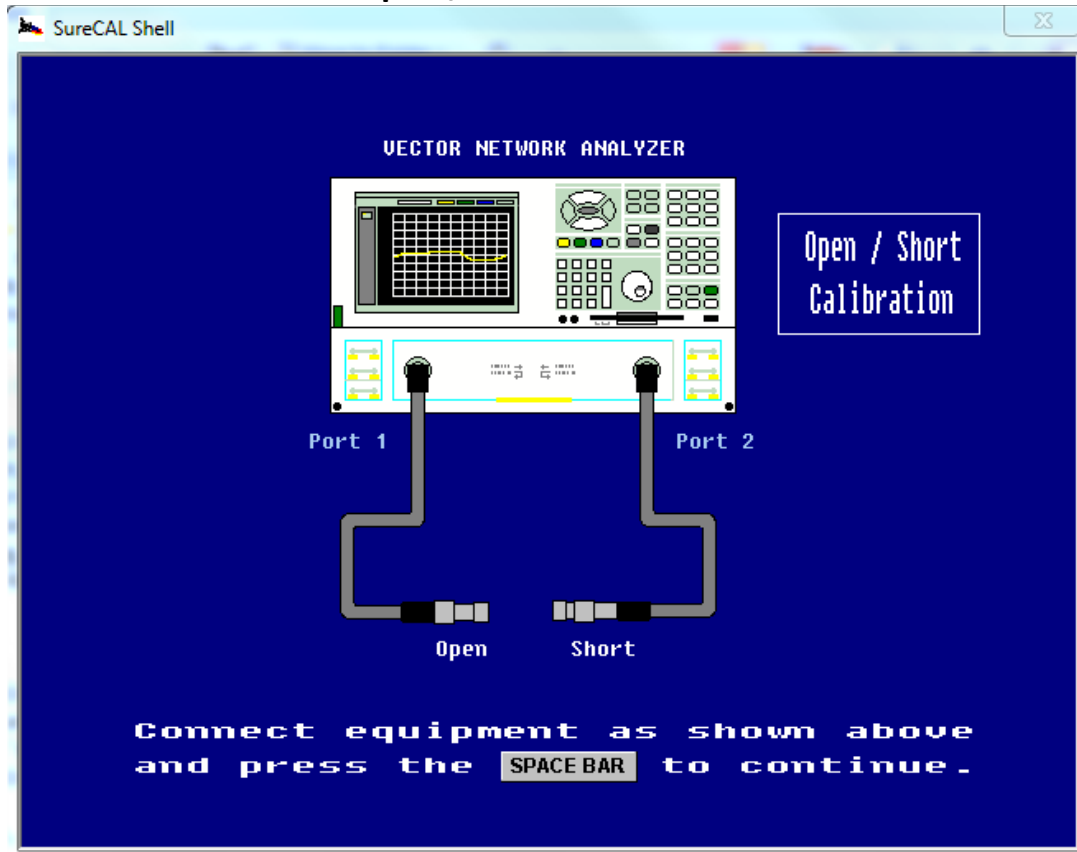
For Port 1 Load Calibration:

KEEP cal kit's female type N Lowband Load (50 ohms) on port 1 (left).
Change to cal kit's male type N Lowband Load (50 ohms) on port 2 (right).

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Open / Short Calibration



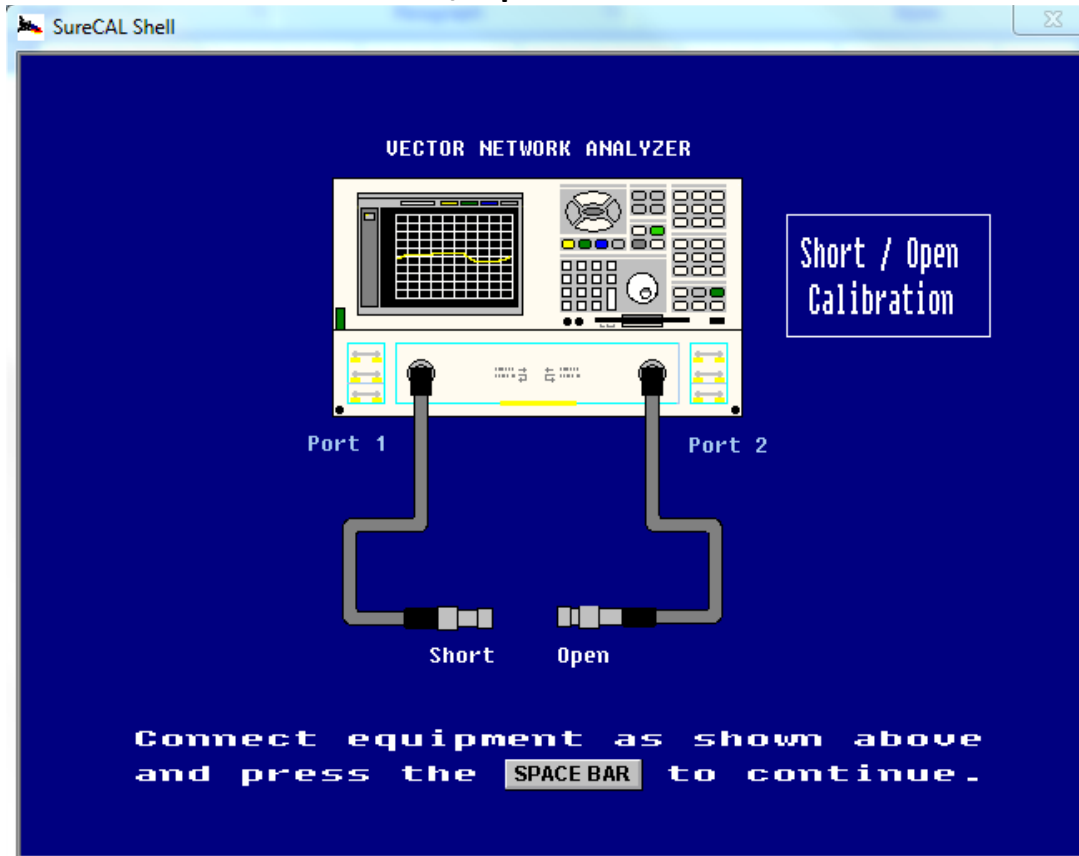
KEEP the male type N adapter connected to 7mm cable on port 1 (left)
KEEP the female type N adapter connected to 7 mm cable on port 2 (right)
DO NOT DISCONNECT 7mm CONNECTIONS DURING TEST SET CAL OPERATION

For Open/Short Calibration:
Change to cal kit's female type N open on port 1 (left).
Change to cal kit's male type N short on port 2 (right).

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Short / Open Calibration



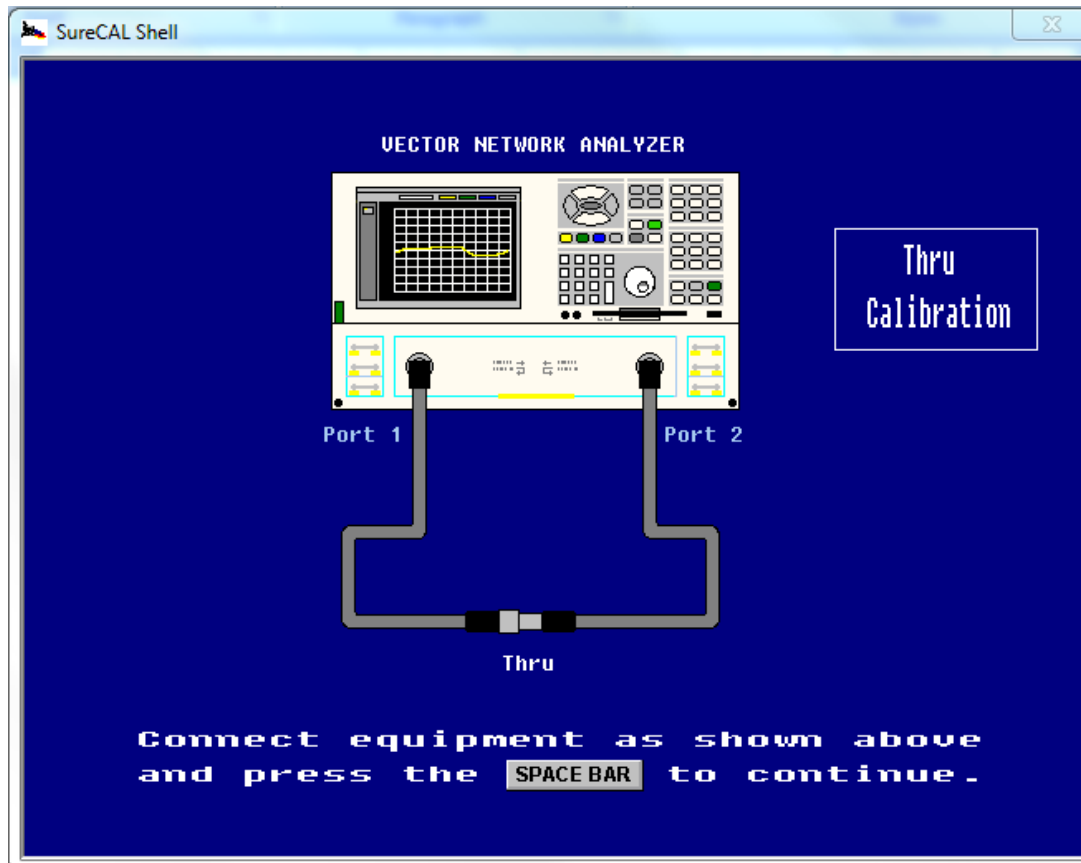
KEEP the male type N adapter connected to 7mm cable on port 1 (left)
KEEP the female type N adapter connected to 7 mm cable on port 2 (right)
DO NOT DISCONNECT 7mm CONNECTIONS DURING TEST SET CAL OPERATION

For Short/Open Calibration:
Change to cal kit's female type N short on port 1 (left).
Change to cal kit's male type N open on port 2 (right).

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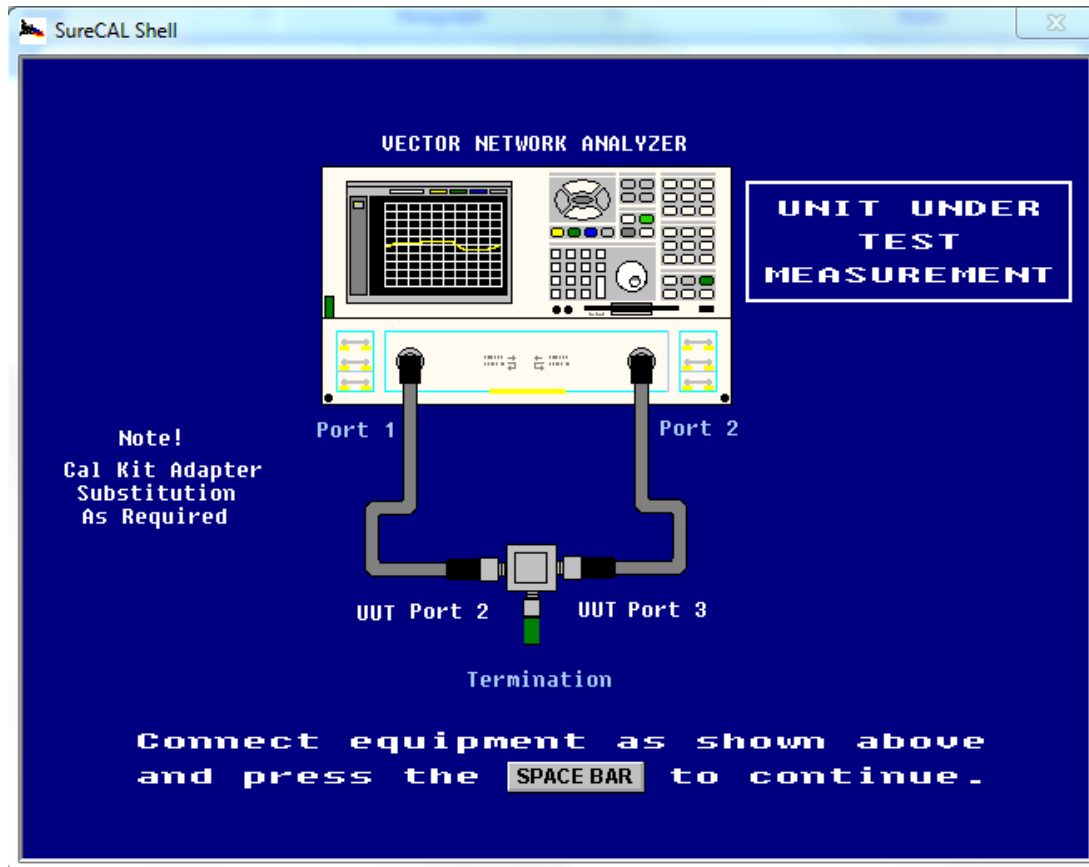
Thru Calibration



KEEP the male type N adapter connected to 7mm cable on port 1 (left)
KEEP the female type N adapter connected to 7 mm cable on port 2 (right)
DO NOT DISCONNECT 7mm CONNECTIONS DURING TEST SET CAL
OPERATION

For Thru Calibration:
Connect type N Equal Electrical Length adapters together.

Unit Under Test Measurement



"Cal Kit Adapter Substitution As Required" means:



KEEP the male type N Equal Electrical Length adapter on port 1 (left)
CHANGE from female to male type N Equal Electrical Length adapter on port
2 (right)

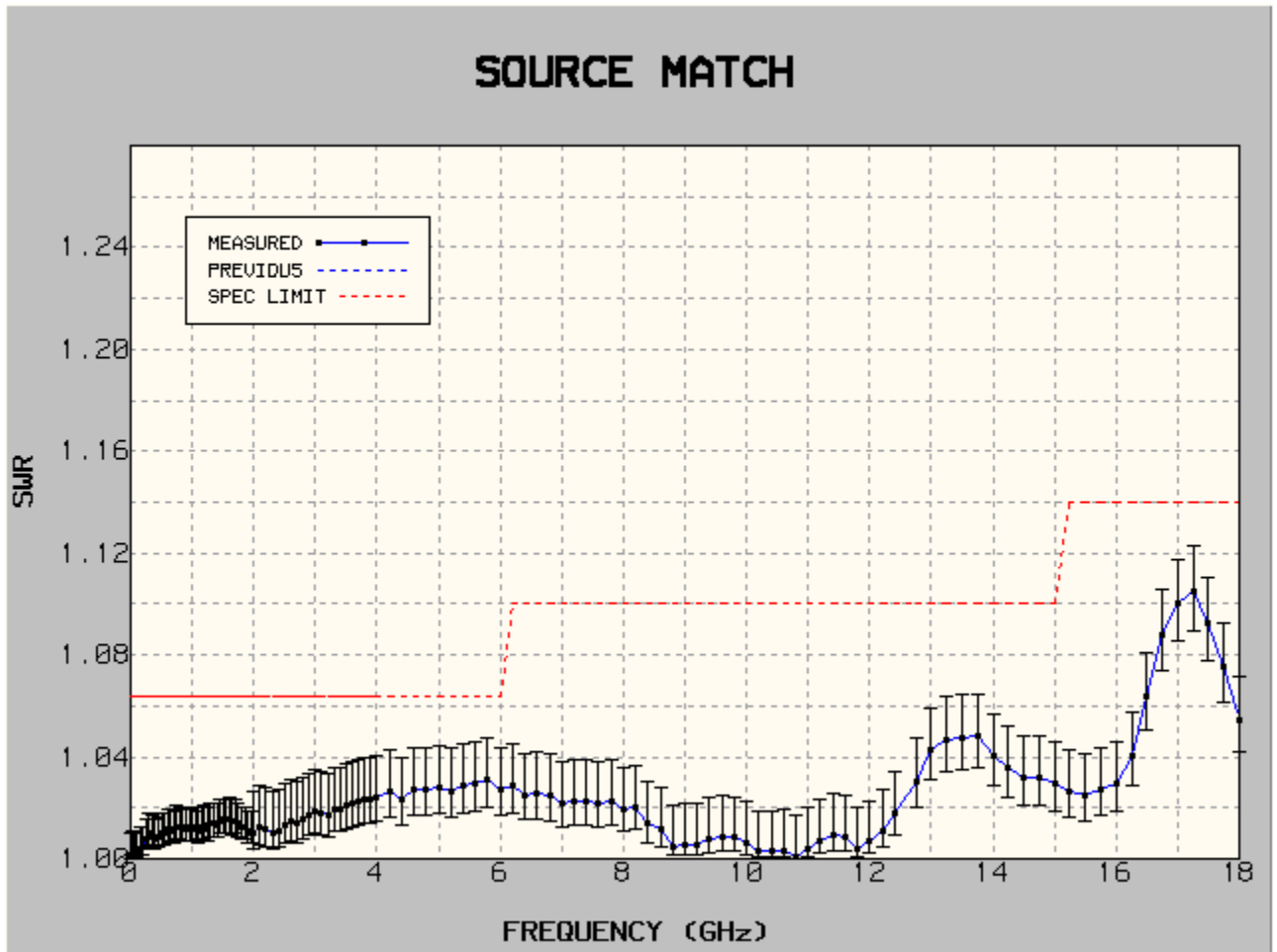
Now you can connect Unit Under Test, UUT port 2 & 3 to the male type N
adapters

Add 50 ohm termination on UUT port 1

Example of Typical Passing Measured Data

SOURCE MATCH PORT 3

PASS



FREQUENCY (MHz)	NOMINAL (SWR)	MINIMUM (SWR)	MAXIMUM (SWR)	MEASURED (SWR)	UNCERTAINTY (SWR)	PHASE (DEG)
10.000	N/A	N/A	1.0640	1.0018 P	+ .0080 - .0015	+29.79
20.000	N/A	N/A	1.0640	1.0022 P	+ .0080 - .0017	+26.67
30.000	N/A	N/A	1.0640	1.0021 P	+ .0080 - .0016	+27.29
40.000	N/A	N/A	1.0640	1.0027 P	+ .0080 - .0020	+40.78
50.000	N/A	N/A	1.0640	1.0026 P	+ .0080 - .0020	+29.24
60.000	N/A	N/A	1.0640	1.0026 P	+ .0080 - .0020	+25.75
70.000	N/A	N/A	1.0640	1.0026 P	+ .0080 - .0020	+21.97
80.000	N/A	N/A	1.0640	1.0027 P	+ .0080 - .0020	+21.37
90.000	N/A	N/A	1.0640	1.0028 P	+ .0080 - .0021	+21.59
100.000	N/A	N/A	1.0640	1.0030 P	+ .0080	+20.84

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150.000	N/A	N/A	1.0640	1.0041 P	-.0022 +.0080	+26.21
200.000	N/A	N/A	1.0640	1.0046 P	-.0027 +.0080	-10.18
250.000	N/A	N/A	1.0640	1.0075 P	-.0029 +.0081	-10.59
300.000	N/A	N/A	1.0640	1.0100 P	-.0039 +.0081	+12.61
350.000	N/A	N/A	1.0640	1.0087 P	-.0045 +.0081	+13.93
400.000	N/A	N/A	1.0640	1.0079 P	-.0042 +.0081	+12.97
450.000	N/A	N/A	1.0640	1.0086 P	-.0040 +.0081	+9.40
500.000	N/A	N/A	1.0640	1.0097 P	-.0041 +.0081	-4.51
550.000	N/A	N/A	1.0640	1.0102 P	-.0044 +.0081	+3.26
600.000	N/A	N/A	1.0640	1.0113 P	-.0045 +.0081	+5.67
650.000	N/A	N/A	1.0640	1.0116 P	-.0047 +.0081	-2.54
700.000	N/A	N/A	1.0640	1.0108 P	-.0047 +.0081	+5.36
750.000	N/A	N/A	1.0640	1.0127 P	-.0046 +.0081	-3.36
800.000	N/A	N/A	1.0640	1.0125 P	-.0049 +.0081	-4.16
850.000	N/A	N/A	1.0640	1.0114 P	-.0049 +.0081	+1.33
900.000	N/A	N/A	1.0640	1.0121 P	-.0047 +.0081	-13.18
950.000	N/A	N/A	1.0640	1.0117 P	-.0048 +.0081	-11.56
1000.000	N/A	N/A	1.0640	1.0116 P	-.0048 +.0081	-14.52
1050.000	N/A	N/A	1.0640	1.0123 P	-.0048 +.0081	-20.19
1100.000	N/A	N/A	1.0640	1.0108 P	-.0049 +.0081	-20.20
1150.000	N/A	N/A	1.0640	1.0121 P	-.0046 +.0081	-28.32
1200.000	N/A	N/A	1.0640	1.0129 P	-.0048 +.0081	-29.72
1250.000	N/A	N/A	1.0640	1.0118 P	-.0050 +.0081	-32.46
1300.000	N/A	N/A	1.0640	1.0140 P	-.0048 +.0081	-35.49
1350.000	N/A	N/A	1.0640	1.0140 P	-.0051 +.0081	-34.39
1400.000	N/A	N/A	1.0640	1.0134 P	-.0051 +.0081	-37.70
1450.000	N/A	N/A	1.0640	1.0151 P	-.0050 +.0081	-39.34
1500.000	N/A	N/A	1.0640	1.0152 P	-.0053 +.0081	-39.25
1550.000	N/A	N/A	1.0640	1.0154 P	-.0053 +.0081	-42.12
1600.000	N/A	N/A	1.0640	1.0158 P	-.0053 +.0081	-38.04
1650.000	N/A	N/A	1.0640	1.0149 P	-.0052 +.0081	-41.87
1700.000	N/A	N/A	1.0640	1.0150 P	-.0053 +.0081	-43.49
1750.000	N/A	N/A	1.0640	1.0140 P	-.0053 +.0081	-38.80
1800.000	N/A	N/A	1.0640	1.0123 P	-.0051 +.0081	-47.04
1850.000	N/A	N/A	1.0640	1.0123 P	-.0049 +.0081	-48.31
1900.000	N/A	N/A	1.0640	1.0107 P	-.0049 +.0081	-50.78
1950.000	N/A	N/A	1.0640	1.0105 P	-.0046 +.0081	-62.14
2000.000	N/A	N/A	1.0640	1.0103 P	-.0045 +.0162	-62.85
2100.000	N/A	N/A	1.0640	1.0126 P	-.0063 +.0162	-80.10
2200.000	N/A	N/A	1.0640	1.0117 P	-.0071 +.0162	-89.68
2300.000	N/A	N/A	1.0640	1.0102 P	-.0068 +.0162	-99.24
2400.000	N/A	N/A	1.0640	1.0108 P	-.0062 +.0162	-108.01
2500.000	N/A	N/A	1.0640	1.0134 P	-.0065 +.0162	-125.31

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2600.000	N/A	N/A	1.0640	1.0149 P	-.0073 +.0162	-133.64
2700.000	N/A	N/A	1.0640	1.0140 P	-.0078 +.0162	-139.59
2800.000	N/A	N/A	1.0640	1.0153 P	-.0075 +.0163	-139.78
2900.000	N/A	N/A	1.0640	1.0173 P	-.0079 +.0163	-141.91
3000.000	N/A	N/A	1.0640	1.0189 P	-.0084 +.0163	-153.03
3100.000	N/A	N/A	1.0640	1.0182 P	-.0087 +.0163	-156.07
3200.000	N/A	N/A	1.0640	1.0171 P	-.0086 +.0163	-156.26
3300.000	N/A	N/A	1.0640	1.0198 P	-.0083 +.0163	-157.15
3400.000	N/A	N/A	1.0640	1.0194 P	-.0089 +.0163	-167.72
3500.000	N/A	N/A	1.0640	1.0210 P	-.0088 +.0163	-177.67
3600.000	N/A	N/A	1.0640	1.0220 P	-.0091 +.0164	-175.50
3700.000	N/A	N/A	1.0640	1.0227 P	-.0093 +.0164	-175.20
3800.000	N/A	N/A	1.0640	1.0233 P	-.0095 +.0164	+177.66
3900.000	N/A	N/A	1.0640	1.0235 P	-.0096 +.0164	+170.32
4000.000	N/A	N/A	1.0640	1.0242 P	-.0096 +.0164	+170.10
4200.000	N/A	N/A	1.0640	1.0262 P	-.0097 +.0164	+166.56
4400.000	N/A	N/A	1.0640	1.0231 P	-.0101 +.0164	+162.37
4600.000	N/A	N/A	1.0640	1.0274 P	-.0095 +.0165	+153.66
4800.000	N/A	N/A	1.0640	1.0274 P	-.0102 +.0165	+147.72
5000.000	N/A	N/A	1.0640	1.0280 P	-.0102 +.0165	+145.99
5200.000	N/A	N/A	1.0640	1.0268 P	-.0103 +.0164	+137.55
5400.000	N/A	N/A	1.0640	1.0285 P	-.0101 +.0165	+130.18
5600.000	N/A	N/A	1.0640	1.0292 P	-.0104 +.0165	+117.70
5800.000	N/A	N/A	1.0640	1.0312 P	-.0105 +.0165	+115.54
6000.000	N/A	N/A	1.0640	1.0273 P	-.0107 +.0164	+112.71
6200.000	N/A	N/A	1.1000	1.0284 P	-.0102 +.0165	+104.69
6400.000	N/A	N/A	1.1000	1.0251 P	-.0104 +.0164	+96.10
6600.000	N/A	N/A	1.1000	1.0253 P	-.0099 +.0164	+82.95
6800.000	N/A	N/A	1.1000	1.0246 P	-.0099 +.0164	+74.20
7000.000	N/A	N/A	1.1000	1.0214 P	-.0098 +.0164	+69.02
7200.000	N/A	N/A	1.1000	1.0225 P	-.0092 +.0164	+63.64
7400.000	N/A	N/A	1.1000	1.0225 P	-.0094 +.0164	+55.94
7600.000	N/A	N/A	1.1000	1.0221 P	-.0094 +.0164	+44.21
7800.000	N/A	N/A	1.1000	1.0224 P	-.0094 +.0164	+40.65
8000.000	N/A	N/A	1.1000	1.0197 P	-.0094 +.0163	+37.56
8200.000	N/A	N/A	1.1000	1.0203 P	-.0089 +.0163	+38.10
8400.000	N/A	N/A	1.1000	1.0139 P	-.0090 +.0162	+30.43
8600.000	N/A	N/A	1.1000	1.0115 P	-.0074 +.0162	+15.53
8800.000	N/A	N/A	1.1000	1.0050 P	-.0067 +.0161	-12.16
9000.000	N/A	N/A	1.1000	1.0058 P	-.0038 +.0161	-38.53
9200.000	N/A	N/A	1.1000	1.0055 P	-.0043 +.0161	-66.79
9400.000	N/A	N/A	1.1000	1.0080 P	-.0041 +.0161	-92.72
9600.000	N/A	N/A	1.1000	1.0084 P	-.0053 +.0161	-133.07

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9800.000	N/A	N/A	1.1000	1.0082	P	-.0055	
						+.0161	-128.70
						-.0054	
10000.000	N/A	N/A	1.1000	1.0061	P	+.0161	-149.61
						-.0044	
10200.000	N/A	N/A	1.1000	1.0029	P	+.0161	-98.48
						-.0024	
10400.000	N/A	N/A	1.1000	1.0029	P	+.0161	-141.18
						-.0024	
10600.000	N/A	N/A	1.1000	1.0033	P	+.0161	-86.44
						-.0027	
10800.000	N/A	N/A	1.1000	1.0011	P	+.0160	+145.41
						-.0010	
11000.000	N/A	N/A	1.1000	1.0042	P	+.0161	+107.71
						-.0033	
11200.000	N/A	N/A	1.1000	1.0070	P	+.0161	+96.70
						-.0049	
11400.000	N/A	N/A	1.1000	1.0092	P	+.0162	+101.80
						-.0058	
11600.000	N/A	N/A	1.1000	1.0088	P	+.0161	+83.68
						-.0057	
11800.000	N/A	N/A	1.1000	1.0041	P	+.0161	+51.53
						-.0033	
12000.000	N/A	N/A	1.1000	1.0067	P	+.0161	-17.04
						-.0047	
12200.000	N/A	N/A	1.1000	1.0112	P	+.0162	-6.42
						-.0066	
12400.000	N/A	N/A	1.1000	1.0176	P	+.0163	-17.67
						-.0084	
12750.000	N/A	N/A	1.1000	1.0306	P	+.0165	-21.63
						-.0107	
13000.000	N/A	N/A	1.1000	1.0428	P	+.0167	-30.88
						-.0119	
13250.000	N/A	N/A	1.1000	1.0469	P	+.0168	-27.37
						-.0123	
13500.000	N/A	N/A	1.1000	1.0476	P	+.0168	-33.22
						-.0123	
13750.000	N/A	N/A	1.1000	1.0479	P	+.0168	-41.71
						-.0124	
14000.000	N/A	N/A	1.1000	1.0403	P	+.0167	-56.22
						-.0117	
14250.000	N/A	N/A	1.1000	1.0357	P	+.0166	-73.52
						-.0113	
14500.000	N/A	N/A	1.1000	1.0318	P	+.0165	-96.47
						-.0108	
14750.000	N/A	N/A	1.1000	1.0315	P	+.0165	-116.96
						-.0108	
15000.000	N/A	N/A	1.1000	1.0294	P	+.0165	-141.40
						-.0105	
15250.000	N/A	N/A	1.1400	1.0267	P	+.0164	-163.02
						-.0101	
15500.000	N/A	N/A	1.1400	1.0247	P	+.0164	+159.71
						-.0098	
15750.000	N/A	N/A	1.1400	1.0273	P	+.0165	+126.72
						-.0102	
16000.000	N/A	N/A	1.1400	1.0293	P	+.0165	+95.94
						-.0105	
16250.000	N/A	N/A	1.1400	1.0406	P	+.0167	+64.92
						-.0118	
16500.000	N/A	N/A	1.1400	1.0641	P	+.0171	+51.21
						-.0134	
16750.000	N/A	N/A	1.1400	1.0880	P	+.0175	+47.30
						-.0145	
17000.000	N/A	N/A	1.1400	1.1001	P	+.0177	+44.00
						-.0149	
17250.000	N/A	N/A	1.1400	1.1048	P	+.0178	+45.86
						-.0151	
17500.000	N/A	N/A	1.1400	1.0926	P	+.0176	+42.66
						-.0146	
17750.000	N/A	N/A	1.1400	1.0754	P	+.0173	+36.16
						-.0139	
18000.000	N/A	N/A	1.1400	1.0546	P	+.0169	+31.30
						-.0128	

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WHEN ADAPTERS ARE NOT EQUAL ELECTRICAL LENGTH

MATCHED:

SOURCE MATCH PORT 3

FAIL (Post-Adjust)

