MHF®-SW23 SMA ADAPTER CABLE

Part No. 90582-0*00

Product Specification

Qualification Test Report No. TR-12131

2	S22090	March 8, 2022	K.Motomura	K.Yufu	Y.Hashimoto
1	S21533	October 26, 2021	K.Motomura	K.Yufu	M.Takemoto
0	S12533	November 29, 2012	H.Kon	K.Yotsutani	T.Takano
Rev.	ECN	Date	Prepared by	Checked by	Approved by

1. Scope

This Product Specification defines the test conditions and the performances of the MHF-SW23 SMA ADAPTER CABLE.

2. Product Name and Parts No.

2.1 Product Name

MHF-SW23 SMA ADAPTER CABLE

2.2 Parts No.

P/N : 90582-0300
P/N : 90582-0400

3. Rating

3.1 Applicable cable

AWG #30. RFMF50141/NISSEI

3.2 Operating Condition

Operating Temperature ：243～343K(-30℃～+70℃)
(Containing temperature rise by current)
Operating Humidity ： 85% max

3.3Storage Conditions

Storage Temperature ：243～343K(-30℃～+70℃)
Storage Humidity ： 85% max.
(Non-condensing)

4. Test and Performance

Test Condition

This initial test is equal to it's at shipping condition and unless otherwise specified, all tests and measurements shall be performed under the following conditions in accordance with MIL-STD-202.

Temperature ⋯ 288K～308K（15℃～35℃）
Pressure ⋯ 866hPa～1066hPa（650mmHg～800mmHg）
Relative Humidity ⋯ 45～75%R.H.

4.1. Electrical Performance

1. Contact resistance	
Reference standard:	MIL-STD-202, Method 307
Test conditions:	Solder the MHF-SW23 to the test board and mate the MHF-SW23 SNA ADAPTER CABLE together, then measure the contact resistance as shown in Fig.1 by the four terminal methods. Apply the low level condition of 20mV MAX. DC for the open circuit voltage and 10mA MAX. DC for the closed circuit current in accordance with MIL-STD-202, Method 307. Contact resistance of Main contact <resistance of A-D> - <resistance of ((A-B+C-D))> Contact resistance of Ground contact <resistance of A-D> - <resistance of ((A-B+C-D))>
Pass criteria:	[Inner contact(R1,R2)]: Initial 325mΩ MAX. , After test: 425mΩ MAX. [Ground contact(R3)]: Initial 60mΩ MAX. , After test: 160mΩ MAX.

2. Insulation resistance	
Reference standard:	MIL-STD-202 , Method 302, Condition A
Test conditions:	DC100V is applied and measured between a center contact and ground contact.
Pass criteria:	Initial: 1000MΩ MIN.

3. Dielectric withstanding voltage	
Reference standard:	MIL-STD-202 , Method 301
Test conditions:	Apply AC100V between the center contact and the ground contact for a minute.
Pass criteria:	Without damage such as arcing or breakdown etc.

4. VSWR (Voltage Standing Wave Ratio)	
Reference standard:	-
Test conditions:	Measure the VSWR by the network analyzer as shown in Fig. 2. Frequency: 300KHz ～ 11.0GHz
Pass criteria:	1.40 MAX. (300 KHz～3.0 GHz) 1.80 MAX. (3.0 GHz～6.0 GHz) 2.20 MAX. (6.0GHz～11.0GHz)

4.2. Mechanical Performance

1. Durability	
Reference standard:	-
Test conditions:	MHF-SW23 and MHF-SW23 SMA ADAPTER CABLE shall be mated and un-mated for 1000 cycles along the mating axis. MHF-SW23 shall be exchanged to an unmated new one at every 100th cycles, which is guaranteed for MHF-SW23.
Pass criteria:	[Contact Resistance] Shall meet 4.1.1 [Appearance] No abnormality adversely affecting the performance shall occur.

2. Cable Retention Force	
Reference standard:	-
Test conditions:	Pull the cable by tensile strength machine, then apply 30N force on the cable along the cable axis.
Pass criteria:	[Inner contact]: 425mΩ MAX. [Ground contact] : 160mΩ MAX. [Appearance] No abnormality adversely affecting the performance shall occur.

4.3 Test Sequence and Sample Quantity

Table1 Test Sequence and Sample Quantity

Test Item	Group			
	A	B	C	D
Contact Resistance			1,3,	
Insulation Resistance	1			
D. W. Voltage	2			
VSWR		1		
Durability			2	
Cable Retention Force				1
Sample QTY.	5 pcs.	5 pcs.	5 pcs.	5 pcs.

※The number of group is test sequence.

5. Measuring method

5.1 Measuring method of Contact Resistance

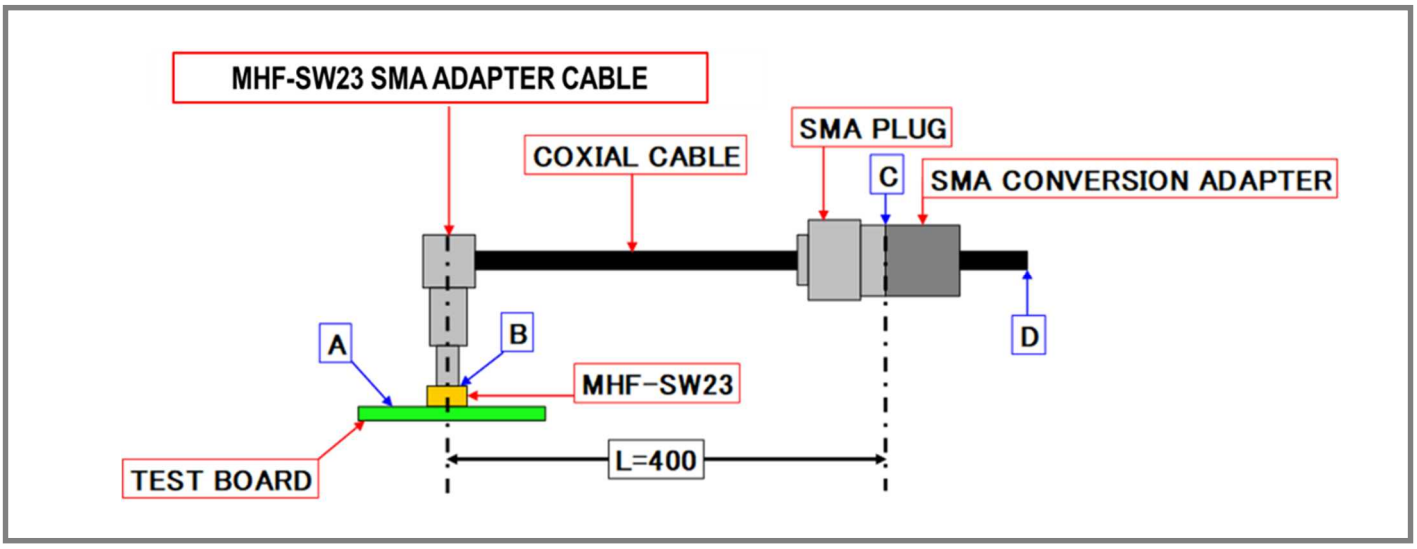

Fig.1 Contact Resistance

5.2 Measuring method of VSWR

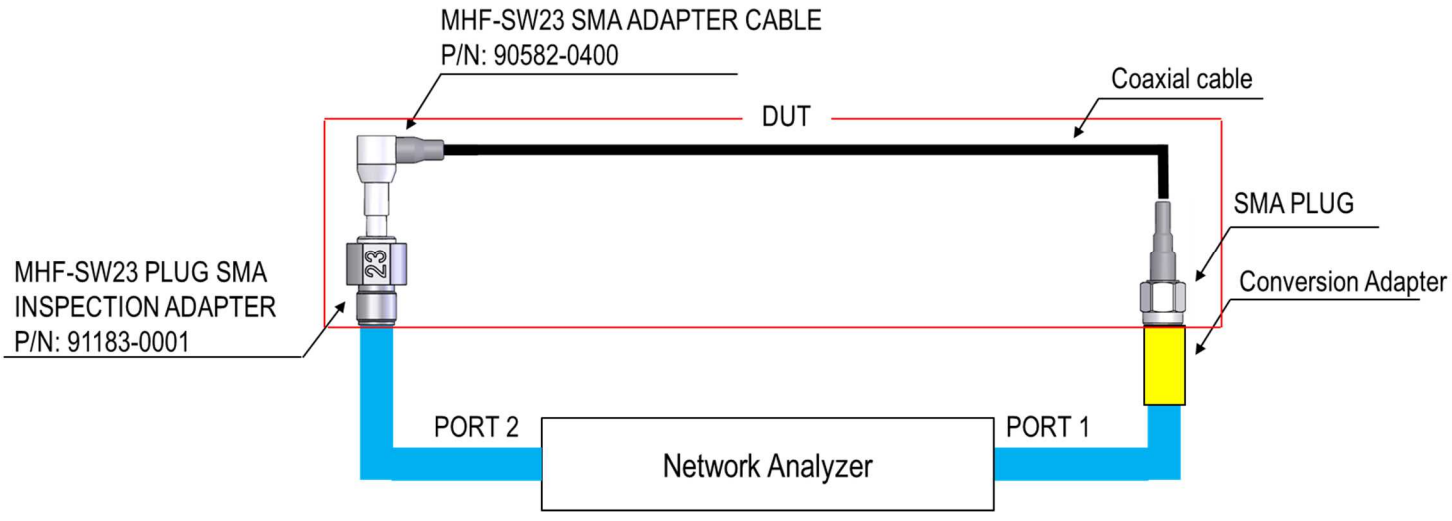

Fig.2 VSWR