RF, RECEPTACLE CONNECTOR GENERATION 1

- 1. Introduction
- 1.1 Testing was performed on the Receptacle for Micro Coaxial RF Receptacle Connector to determine if it meets the requirements of Product Specification, 108-140209 Rev. A.
- 1.2 Scope

This report covers the electrical, mechanical and environmental performance requirements of the Receptacle for RF, RECEPTACLE CONNECTOR GENERATION 1.

The qualification testing was performed between - 15 MAR, 2016 and 24 MAR, 2016.

1.3 Conclusion

The Receptacle for Micro Coaxial RF Receptacle Connector meets the electrical, mechanical and environmental performance requirements of Product Specification, 108-140209 Rev. A.

1.4 Test Samples

The test samples were randomly selected from normal current production lots, and the following

Part numbers were used for test:

Description	Part Number
RF, RECEPTACLE CONNECTOR GENRATION1	2337019-1



2. Test Contents

Para.	Test Items	Requirements	Procedures
2.1	Examination of Product	Meets applicable requirements specified, customer drawing, and application specification.	Visual inspection No physical damage.
		Electric Performance	
2.2	Insulation resistance (shielded version only)	Test voltage: 100 VDC. Duration: 1 minute.	100 VDC for 1 minute. Test between adjacent circuits of mated connectors.
2.3	Dielectric Withstand Voltage	Test voltage: 200 VAC. Duration: 1 minute.	200 VAC for 1 minute. Test between adjacent circuits of mated connectors.
2.4	Contact Resistance	Inner Contact Initial: 20 m Ω MAX. After: 25 m Ω MAX. Outer Contact Initial: 10 m Ω MAX. After: 15 m Ω MAX.	Solder the receptacle connector to the test board and mate the plug connector together.
2.5	V.S.W.R	VSWR<1.3 , at 0~6GHz	Measured 50Ω system of network analyzer under mating condition with plug connector. See Fig-1
		Meannical Performance	
2.6	Shock test	No electrical discontinuity greater than 1 µ sec. shall occur. Must be met the electrical spec(2.4) before and after the test	Peak acceleration 735m/s2, Duration of pulse: 11ms (Time), Waveform : Half-wave waveform, 6 Cycles In Each X-Y-Z axis
2.7	Vibration	No electrical discontinuity greater than 1 µ sec. shall occur. Must be met the electrical spec(2.4) before and after the test	Frequency:10-100Hz,single amplitude of 1.5mm,acceleration of 59m/s2.for 5cycles in the direction of each of the 3axis.
		Environment Performance	
2.8	Temperature & Humidity Cycling	Must be met the electrical spec (2.4) before and after the test.	TEM. : 60°C Relative Humidity : 95% RH Time : 96 hours
2.9	Solder ability	The Sn Immersed Area must beyond by 95%.	Solder Temperature: 250+/-5°C

Table. 1



3.0 Test plan and Results

	Test Group							
Test Examination	А	В	С	D	Е	F	G	Н
	(a)							
Contact resistance		1,3	1,3	1,3	1,5	1,5	1,3	
Withstanding Voltage					2,6	2,6		
Insulation resistance					3,7	3,7		
VSWR	1							
Mechanical life		2						
Attack			2					
vibration				2				
Steady heat					4			
Thermal shock						4		
Salt spray test							2	
Can solder								1
Number of test samples	5	5	5	5	5	5	5	5



4.0 Test Results

Group	Test Item	N	Condition		Test F	lesult		Requirement	Conclusion
				Max	Min	Ave	Unit		
	Examination of Product	5	Initial	No physic	al damage		1	No abnormalities	Meet spec
	Inner contact Resistance	5	Initial	8.45	8.02	8.21	mΩ	15mΩ Max	Meet spec
	Outer contact Resistance		iriuai	7.02	6.22	6.5	ms2	TOTI122 Max	weet spec
1	Vabration	5	Final	amplitu Peak value (i Direction & each of X	icy: 10-100 ide: 3mm g=9.8m/s2); durability: V, Z axis 0Hz/20min 1us, inuities mor at the testing	(P-P); ation: 6g 3 times at , 10-100- e than 1µ	1	No abnormalities	Meet spec
	Examination of Product			No physic	al damage	occurred			
	Inner contact Resistance	5	Final	0.78	0.0	0.35	mΩ	∆5m Max	Meet spec
	Outer contact Resistance	-		0.71	-0.62	0.00			
	Examination of Product	5	Initial		al damage		1	No abnormalities	Meet spec
	Inner contact Resistance	5	Initial	8.89	8.45	8.63	mΩ	15mΩ Max	Meet spec
	Outer contact Resistance			6.89	6.23	6.52			incer spee
2	Salt spray	5	Final	the m chamber te Salt wat Spray spe	following co ated connect mperature: er density: eed: 1~2m tion: 48 ho	ctors: 35+/-2°C 5+/-1% //h/8cm2	1	No abnormalities	Meet spec
	Inner contact Resistance			0.57	-0.40	0.13			
		5	Final				mΩ	Δ5mΩ Max	Meet spec
	Outer contact Resistance			0.63	-0.03	0.37			
	Examination of Product	5	Final		al damage		1	No abnormalities	Meet spec
	Examination of Product	5	Initial		al damage	occurred	1	No abnormalities	Meet spec
	Inner contact Resistance			8.56	8.12	8.3	mΩ	15mΩ Max	
	Outer contact Resistance	5	Initial	6.58	6.15	6.26			Meet spec
	Unmating force			1.5	1.07	1.24	kgf	0.4kgf min	
3				Fixate the samples on the test board, then mating & Un-mating 100 times at speed 25mm/s;					
3	Mechanical Durability	5	Final			Cable embly	I	No abnormalities	Meet spec
3	Mechanical Durability	5	Final			Cable embly MT	1	No abnormalities	Meet spec
3				No physic	ECT-R-S	Cable embly MT occurred		No abnormalities Δ5mΩ Max	
3	Examination of Product	5	Final Final	No physic	ECT-R-Si al damage	Cable embly MT occurred			Meet spec
3	Examination of Product Inner contact Resistance			No physic	ECT-R-SI al damage	Cable embly MT occurred			
3	Examination of Product Inner contact Resistance Outer contact Resistance			No physic 0.33 2.33 0.10	ECT-R-SI al damage -0.33 0.82	Cable embly MT occurred 0 1.6 0.06	mΩ	Δ5mΩ Max	
3	Examination of Product Inner contact Resistance Outer contact Resistance Unmating force Examination of Product	5	Final	No physic 0.33 2.33 0.10 No physic	ECT-R-SI ect-R-SI al damage -0.33 0.82 -0.03 al damage	Cable embly MT occurred 0 1.6 0.08 occurred	mΩ kgf	Δ5mΩ Max <u>Δ0.8kgf max</u> No abnormalities	Meet spec
3	Examination of Product Inner contact Resistance Outer contact Resistance Unmating force	5	Final	No physic 0.33 2.33 0.10	ECT-R-SI al damage -0.33 0.82 -0.03	Cable embly MT occurred 0 1.6 0.06	mΩ kgf	Δ5mΩ Max Δ0.8kgf max	Meet spec
3	Examination of Product Inner contact Resistance Outer contact Resistance Unmating force Examination of Product Inner contact Resistance	5	Final	No physic 0.33 2.33 0.10 No physic 8.59 8.89 8.89 8.89 9 8.89 8.89 8.89 9 8.80 8.80	ECT-R-SI ECT-R-SI al damage -0.33 0.82 -0.03 sal damage 8.12	Cable embly MT occurred 0 1.6 0.00 occurred 8.4 6.58 '35m/s2, ns te wave ts : Each 3 fX, Y, Z les, te than 1µ	mΩ kgf	Δ5mΩ Max <u>Δ0.8kgf max</u> No abnormalities	Meet spec
	Examination of Product Inner contact Resistance Outer contact Resistance Unmating force Examination of Product Inner contact Resistance Outer contact Resistance Mechanical Shock	5	Final Initial Initial	No physic 0.33 2.33 0.10 No physic 8.59 6.89 Peak acc Du Wave ty Shock dire times at sis axis No discont s,1tim	ECT-R-SI ECT	Cable embly MT occurred 0 1.6 0.06 occurred 8.4 6.58 735m/s2, ns te wave s: Each 3 fX, Y, Z tes, te than 1µ sting.	mΩ kgf / mΩ	Δ5mΩ Max Δ0.8kgf max No abnormalities 15mΩ Max	Meet spec Meet spec Meet spec
	Examination of Product Inner contact Resistance Outer contact Resistance Unmating force Examination of Product Inner contact Resistance Outer contact Resistance Mechanical Shock	5	Final Initial Initial	No physic 0.33 2.33 0.10 No physic 8.69 0.89 Peak acc Du Wave ty Shock dire times at sis axis, No discont s, 1tim 0.44	ECT-R-SI ECT	Cable embly MT occurred 0 1.6 0.06 0.06 0.06 0.06 0.06 0.06 0.0	mΩ kgf / mΩ	Δ5mΩ Max Δ0.8kgf max No abnormalities 15mΩ Max	Meet spec Meet spec Meet spec
	Examination of Product Inner contact Resistance Outer contact Resistance Unmating force Examination of Product Inner contact Resistance Outer contact Resistance Mechanical Shock Inner contact Resistance Outer contact Resistance	5	Final Initial Final Final	No physic 0.33 2.33 0.10 No physic 8.59 0.89 Peak acc Du Wave ty Shock dire times at sio axis, No discont s,1tim 0.44 0.36	ECT-R-SI ECT-R-SI ECT-R-SI al damage -0.33 0.82 -0.03 al damage 8.12 6.23 eleration: 7 rration: 11rr pe: Half-sir ction & time a surfaces o total 18 tim inuities mor es at the tes 0.09 -0.56	Cable embly MT 0 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0	mΩ / mΩ	Δ5mΩ Max <u>Δ0.8kgf max</u> No abnormalities 15mΩ Max No abnormalities Δ5mΩ Max	Meet spec Meet spec Meet spec Meet spec
	Examination of Product Inner contact Resistance Outer contact Resistance Unmating force Examination of Product Inner contact Resistance Outer contact Resistance Mechanical Shock	5 5 5 5	Final Initial Final Final Final	No physic 0.33 2.33 0.10 No physic 8.59 6.89 Peak acc Du Wave ty Shock dire times at sio axis, No discont s,1tim 0.44 0.36 No physic	ECT-R-SI ECT	Cable embly MT 0 0.06 0.06 0.06 0.06 0.06 0.06 0.08 0.08	mΩ / mΩ	Δ5mΩ Max Δ0.8kgf max No abnormalities 15mΩ Max No abnormalities Δ5mΩ Max No abnormalities	Meet spec Meet spec Meet spec Meet spec Meet spec Meet spec
	Examination of Product Inner contact Resistance Outer contact Resistance Unmating force Examination of Product Inner contact Resistance Outer contact Resistance Mechanical Shock Inner contact Resistance Outer contact Resistance Examination of Product	5	Final Initial Final Final	No physic 0.33 2.33 0.10 No physic 8.59 8.89 Peak acc Du Wave ty Shock dire times at sib axis. No discont s, 1tim 0.44 0.36 No physic No physic	ECT-R-SI ECT	Cable embly 0 0 1.6 0.08 0 cocurred 8.4 6.58 735m/s2, ns te wave tes : Each 3 f X, Y, Z les, te than 1µ sting. 0.20 -0.16 0 cocurred 0.20 -0.16 0 0.020 -0.16 0 0.020 -0.16 0 0.020 -0.16 0 0.020 -0.16 0 0.020 -0.16 0 0.020 -0.16 0 0.020 -0.16 0 0.020 -0.16 0 0.020 -0.16 0 0.020 -0.16 0 0.020 -0.16 0 0.020 -0.020 -0.16 0 0.020 -0.020 -0.16 0 0.020 -0.0	mΩ / mΩ	Δ5mΩ Max <u>Δ0.8kgf max</u> No abnormalities 15mΩ Max No abnormalities Δ5mΩ Max	Meet spec Meet spec Meet spec Meet spec
	Examination of Product Inner contact Resistance Outer contact Resistance Unmating force Examination of Product Inner contact Resistance Outer contact Resistance Mechanical Shock	5 5 5 5	Final Initial Final Final Final	No physic 0.33 2.33 0.10 No physic 8.59 6.89 Peak acc Du Wave ty Shock dire times at sio axis, No discont s,1tim 0.44 0.36 No physic	ECT-R-SI ECT	Cable embly MT 0 0.06 0.06 0.06 0.06 0.06 0.06 0.08 0.08	mΩ kgf / mΩ / mΩ	Δ5mΩ Max Δ0.8kgf max No abnormalities 15mΩ Max No abnormalities Δ5mΩ Max No abnormalities	Meet spec Meet spec Meet spec Meet spec Meet spec Meet spec

Fig. 4 (to be continued)



5	2			Apply the following environmen conditions to the mated connect 10 cycles and follow the conditi 7a;Remark: Measurements should be done within 1~2hours the room conditions.	or xn		
	Humidity test	5	Final		, ,	No abnormalities	Meet spec
	Inner contact Resistance		-	0.15 -0.33 -0.0	7 0		Connections
	Outer contact Resistance	- 5	Final	0.19 -0.81 -0.	16 mΩ	Δ5mΩ Max	Meet spec
	Examination of Product	5	Final	No physical damage occurred	1	No abnormalities	Meet spec
	Examination of Product	5	Initial	No physical damage occurred	1	No abnormalities	Meet spec
	Inner contact Resistance	- 5	Initial		43 mΩ	15mΩ Max	Meet spec
	Outer contact Resistance		intidat	6.59 6.22 6. Apply the following enviromen	48	CONTACT MICH	meet spee
6	Thermal Shook	5	Final	conditions to the mated connect 10 cycles and follow the conditi 7a;Remark: Measurements should be done within 1~2hours the room conditions.	at /	No abnormalities	Meet spec
	Inner contact Resistance	5	Final	0.25 -0.25 0.0	100	Δ5mΩ Max	Meet spec
	Outer contact Resistance	. 33	1219		DB		a set a s
	Examination of Product	5	Final	No physical damage occurred		No abnormalities	Meet spec
	Examination of Product	5	Initial	No physical damage occurred	1	No abnormalities	Meet spec
				1,Adjust the tin stove temperature to 245 + / - 2 °C			
7	Solderability	5	Final	 immersing the test samples scaling powder at a speed of 2 mm/s, keep 2 ~ 3 s; take out the samples to the natural state of vertical at room temperature keep 60 s (that fludrops dry); immersing test samples at a speed of about 25 mm/s in tim stove about 1 ~ 2 cm, and maintain 3 + / - 0.5 s; take out the test sample at a speed of 25 mm/s, natural coolinat room temperature; observed with 10 x microsco, on the test area which the surfadipping tin; 	n 5 x 1 19 xe	No abnormalities	Meet spec

Fig. 4 (End)