

**TEST REPORT**  
**テストレポート**

**No. TR-07068**

**Mechanical and environmental testing of**  
**I-PEX MHF4 Connector and Murata HSC connector**

					Prepared by	Reviewed by	Approved by
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REVISION RECORD							

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Murata GSC/ HSC

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Test Report	Mechanical and environmental testing of I-PEX MHF4 and Murata HSC.	TR-07068

#### 1. Purpose

I-PEX MHF4 connector と Murata HSC connector との組合せで、機械的試験と環境試験を行う。  
To perform the mechanical testing and environmental testing of I-PEX MHF4 connector and Murata HSC connector.

#### 2. Conclusion

I-PEX MHF4 plug と Murata HSC receptacle の組合せは、製品規格 PRS-1402 の規格を満足していた。  
All the specimen of I-PEX MHF4 plug & Murata HSC receptacle met the requirements of PRS-1402.

#### 3. Specimen

- (1) Plug : I-PEX Part No.20448-001R-081
- (2) Receptacle : Murata receptacle Part No.MM4829-2700B
- (3) Cable : OD0.81 coaxial cable
- (4) SMA adaptor : I-PEX Part No. 90449-001

#### 4. Test method

製品規格(PRS-1402)参照。  
Refer to product specification,PRS-1402.

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Table 1: 試験順序及び評価数量 / Test sequence and Sample quantity

試験項目 / Test Item		Group													
		A	B	C	D	E	F	G	H	I	L	M	N	O	P
(1)	接触抵抗 Contact Resistance				1 3		1 3	1 3	1 3	1 4	1 4	1 3	1 3		
(2)	絶縁抵抗 Insulation resistance									2 5	2 5				
(3)	耐電圧 Dielectric withstanding voltage	1													
(4)	VSWR		1												
(5)	挿入力,抜去力 Mating &Unmating force			1											
(6)	耐久性 Durability				2										
(7)	Contact resistance with force on the cable					1									
(8)	耐振動性 Vibration						2								
(9)	耐衝撃性 Shock							2							
(10)	湿度(定常状態) Humidity steady state								2						
(11)	熱衝撃 Thermal shock									3					
(12)	高温寿命 High temperature life										3				
(13)	硫化水素ガス H <sub>2</sub> S Gas											2			
(14)	塩水噴霧 Salt Water Spray												2		
(15)	半田付け性 Solder ability													1	
(16)	半田耐熱性 Soldering Heat Resistance														1
Sample QTY pcs.	Plug	10	----	10	10	10	10	10	10	10	10	10	10	----	----
	Receptacle	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Test Board pcs.		10	10	10	10	10	10	10	10	10	10	10	10	10	10

グループに書かれている数字は試験順序を表す / The number of group is test sequence.

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## 5. Results

	試験項目	測定項目	規格	試料数	単位	結果				判定	
						平均	最大	最小	S		
						Data					
Test items	Measurements	Spec.	n	Unit	AVE.(X)	MAX.	MIN.	S	Judge		
A	Dielectric withstanding voltage	Initial	Spec : No creeping discharge,flashover,nor insulator breakdown shall occur. 規格:沿面放電,空中放電,絶縁破壊等の異常の無き事							.....	
			-----	10	-----	Results : No abnormality(異常無し)				OK	
B	VSWR of plug	Initial	0.1 ~ 3GHz	1.3 MAX.	10	-----	1.23	1.24	1.22	0.01	OK
		Initial	3 ~ 6GHz	1.5 MAX.	10	-----	1.41	1.44	1.40	0.02	OK
C	Un mating force	Initial		4 MIN.	10	N	13.26	15.1	11.0	1.23	OK
		30 cycles		2 MIN.	10	N	6.81	8.3	5.1	1.07	OK
D	Crimp strength	Initial		5 MIN.	10	N	7.79	8.4	7.1	0.37	OK
E	Durability	Contact resistance of inner contact	Initial	20 MAX.	10	milli-ohm	6.21	6.7	5.7	0.32	OK
			After testing	-----	10	milli-ohm	9.90	13.0	7.8	1.40	.....
			R	20 MAX.	10	milli-ohm	3.69	6.3	2.1	1.15	OK
		Contact resistance of ground contact	Initial	20 MAX.	10	milli-ohm	4.94	5.2	4.5	0.21	OK
			After testing	-----	10	milli-ohm	6.43	7.1	5.4	0.59	.....
			R	20 MAX.	10	milli-ohm	1.49	2.6	0.5	0.69	OK
Appearance	Initial	No abnormality	10	-----	No abnormality (異常無し)				OK		
	After testing	No abnormality	10	-----	No abnormality (異常無し)				OK		
F	Contact resistance with force on cable	Electrical discontinuity 電流瞬断	Spec. : No electrical discontinuity grater than 1 μ sec. shall occur. 規格:1 μ 秒以上の電流瞬断の無い事							.....	
			-----	10	-----	Results : No discontinuity				OK	
G	Vibration	Contact resistance of inner contact	Initial	20 MAX.	10	milli-ohm	6.23	6.8	5.8	0.33	OK
			After testing	-----	10	milli-ohm	7.12	8.1	6.2	0.56	.....
			R	20 MAX.	10	milli-ohm	0.89	1.8	0.4	0.39	OK
		Contact resistance of ground contact	Initial	20 MAX.	10	milli-ohm	4.88	5.2	4.6	0.20	OK
			After testing	-----	10	milli-ohm	5.74	6.5	4.9	0.47	.....
			R	20 MAX.	10	milli-ohm	0.86	1.5	0.3	0.40	OK
		Electrical discontinuity 電流瞬断	Spec. : No electrical discontinuity grater than 1 μ sec. shall occur. 規格:1 μ 秒以上の電流瞬断の無い事								.....
			-----	10	-----	Results : No discontinuity				OK	
Appearance	Initial	No abnormality	10	-----	No abnormality (異常無し)				OK		
	After testing	No abnormality	10	-----	No abnormality (異常無し)				OK		

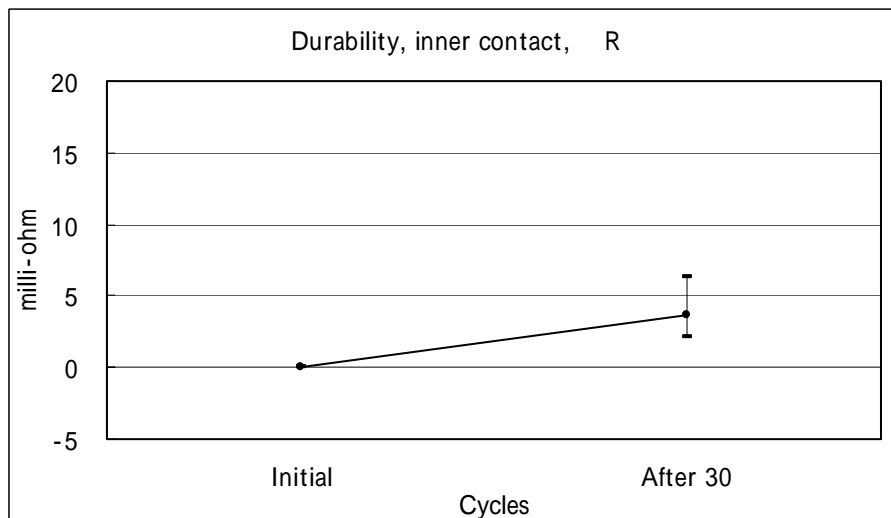
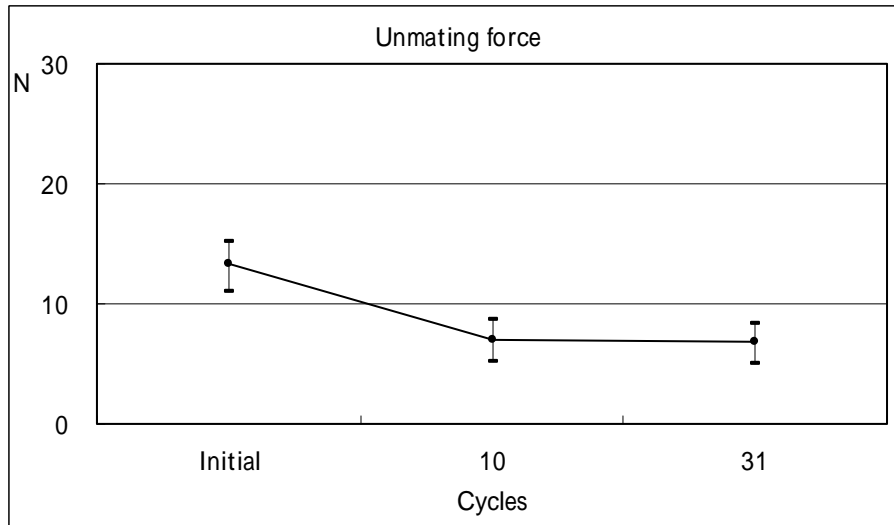
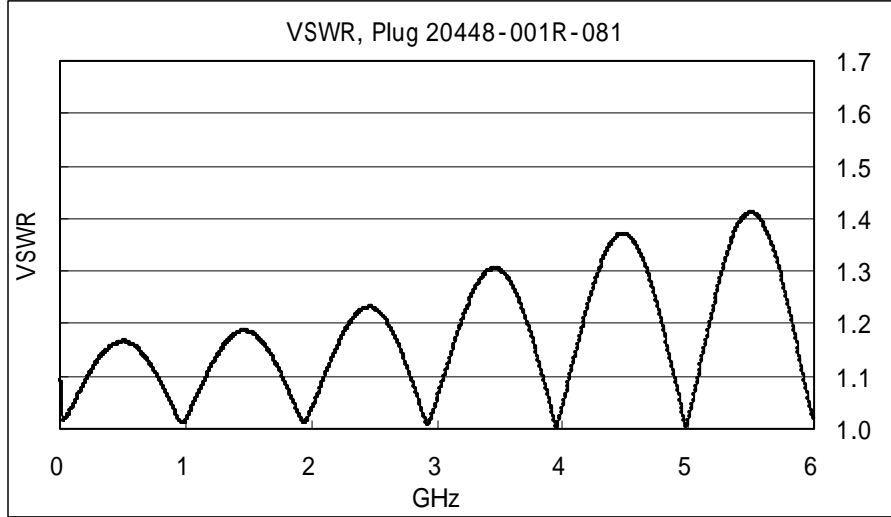
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	試験項目	測定項目	規格	試料数	単位	結果				判定		
						平均	最大	最小	S			
						Test items	Measurements	Spec.	n	Unit	Data	
						AVE.(X)	MAX.	MIN.	S			
H	Shock	Contact resistance of inner contact	Initial	20 MAX.	10	milli-ohm	6.26	6.7	5.8	0.31	OK	
			After testing	-----	10	milli-ohm	7.02	7.7	6.1	0.42	-----	
			R	20 MAX.	10	milli-ohm	0.76	1.1	0.1	0.34	OK	
		Contact resistance of ground contact	Initial	20 MAX.	10	milli-ohm	4.91	5.2	4.7	0.17	OK	
			After testing	-----	10	milli-ohm	5.62	6.5	4.7	0.49	-----	
			R	20 MAX.	10	milli-ohm	0.71	1.6	0.0	0.43	OK	
		Electrical discontinuity 電流瞬断	Spec. : No electrical discontinuity grater than 1 μ sec. shall occur. 規格:1 μ s以上の電流瞬断の無いこと									-----
		Appearance	Initial	No abnormality	10	-----	Results : No discontinuity				OK	
After testing	No abnormality	10	-----	No abnormality (異常無し)				OK				
I	Humidity	Contact resistance of inner contact	Initial	20 MAX.	10	milli-ohm	6.32	6.8	5.8	0.31	OK	
			After testing	-----	10	milli-ohm	6.69	7.3	5.9	0.56	-----	
			R	20 MAX.	10	milli-ohm	0.37	0.9	-0.2	0.40	OK	
		Contact resistance of ground contact	Initial	20 MAX.	10	milli-ohm	4.95	5.3	4.6	0.21	OK	
			After testing	-----	10	milli-ohm	5.56	6.8	4.9	0.55	-----	
			R	20 MAX.	10	milli-ohm	0.61	1.8	-0.2	0.57	OK	
		Appearance	Initial	No abnormality	10	-----	No abnormality (異常無し)				OK	
		After testing	No abnormality	10	-----	No abnormality (異常無し)				OK		
J	Thermal shock	Contact resistance of inner contact	Initial	20 MAX.	10	milli-ohm	6.12	6.6	5.7	0.32	OK	
			After testing	-----	10	milli-ohm	7.35	8.0	6.6	0.46	-----	
			R	20 MAX.	10	milli-ohm	1.23	1.8	0.9	0.32	OK	
		Contact resistance of ground contact	Initial	20 MAX.	10	milli-ohm	5.01	5.3	4.5	0.26	OK	
			After testing	-----	10	milli-ohm	6.85	8.0	5.6	0.66	-----	
			R	20 MAX.	10	milli-ohm	1.84	2.7	1.1	0.49	OK	
		Insulation resistance	Initial	500 MIN.	10	Mega-ohm	10,000 (minimum vale)				OK	
			After testing	100 MIN.	10	Mega-ohm	10,000 (minimum vale)				OK	
		Appearance	Initial	No abnormality	10	-----	No abnormality (異常無し)				OK	
			After testing	No abnormality	10	-----	No abnormality (異常無し)				OK	

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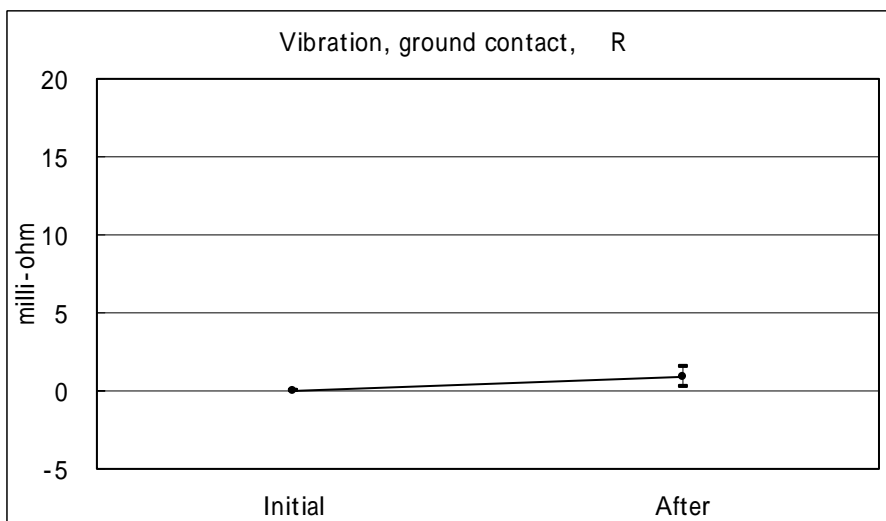
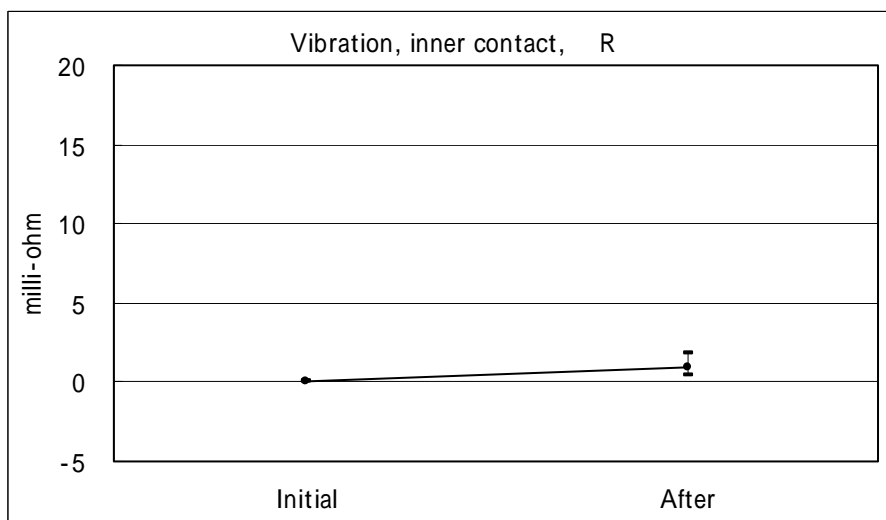
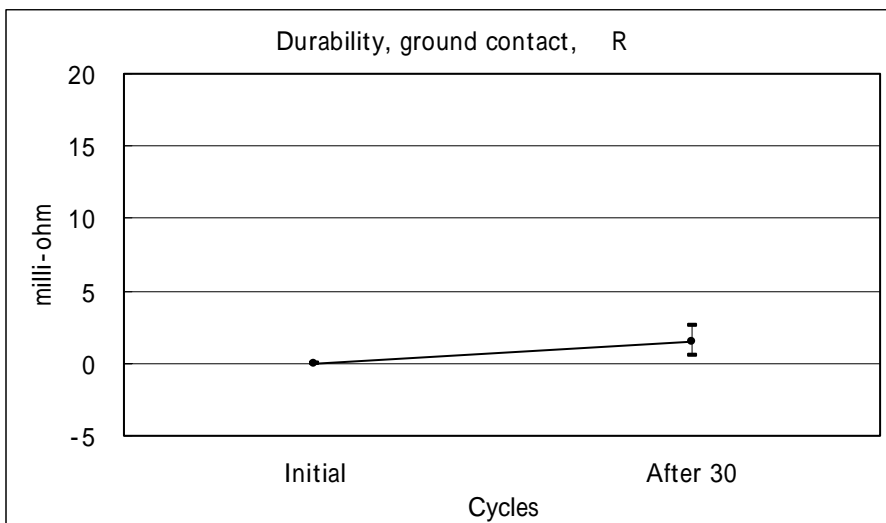
	試験項目	測定項目	規格	試料数	単位	結果				判定			
						平均	最大	最小	S				
						Test items	Measurements	Spec.	n	Unit	Data		
						AVE.(X)	MAX.	MIN.	S				
K	High temperature life	Contact resistance of inner contact	Initial	20 MAX.	10	milli-ohm	6.30	6.9	5.9	0.33	OK		
			After testing	-----	10	milli-ohm	7.99	8.9	6.5	0.66	-----		
			R	20 MAX.	10	milli-ohm	1.67	2.3	0.2	0.60	OK		
		Contact resistance of ground contact	Initial	20 MAX.	10	milli-ohm	4.91	5.2	4.5	0.26	OK		
			After testing	-----	10	milli-ohm	5.84	6.6	5.3	0.40	-----		
			R	20 MAX.	10	milli-ohm	0.93	1.6	0.1	0.47	OK		
		Insulation resistance	Initial	500 MIN.	10	Mega-ohm	10,000 (minimum vale)				OK		
			After testing	100 MIN.	10	Mega-ohm	10,000 (minimum vale)				OK		
		Appearance	Initial	No abnormality	10	-----	No abnormality (異常無し)				OK		
			After testing	No abnormality	10	-----	No abnormality (異常無し)				OK		
L	H2S gas	Contact resistance of inner contact	Initial	20 MAX.	10	milli-ohm	6.33	7.0	5.8	0.34	OK		
			After testing	-----	10	milli-ohm	7.58	9.0	6.4	0.90	-----		
			R	20 MAX.	10	milli-ohm	1.25	2.7	0.1	0.76	OK		
		Contact resistance of ground contact	Initial	20 MAX.	10	milli-ohm	4.96	5.3	4.7	0.19	OK		
			After testing	-----	10	milli-ohm	5.42	6.8	4.5	0.66	-----		
			R	20 MAX.	10	milli-ohm	0.46	1.5	-0.2	0.49	OK		
		Appearance	Initial	No abnormality	10	-----	No abnormality (異常無し)				OK		
			After testing	No abnormality	10	-----	No abnormality (異常無し)				OK		
		M	Salt water spray	Contact resistance of inner contact	Initial	20 MAX.	10	milli-ohm	6.21	6.8	5.7	0.33	OK
					After testing	-----	10	milli-ohm	6.68	7.5	5.5	0.59	-----
R	20 MAX.				10	milli-ohm	0.47	1.6	-0.2	0.50	OK		
Contact resistance of ground contact	Initial			20 MAX.	10	milli-ohm	4.89	5.2	4.4	0.26	OK		
	After testing			-----	10	milli-ohm	5.51	6.3	4.7	0.49	-----		
	R			20 MAX.	10	milli-ohm	0.62	1.5	-0.1	0.54	OK		
Appearance	Initial			No abnormality	10	-----	No abnormality (異常無し)				OK		
	After testing			No abnormality	10	-----	No abnormality (異常無し)				OK		

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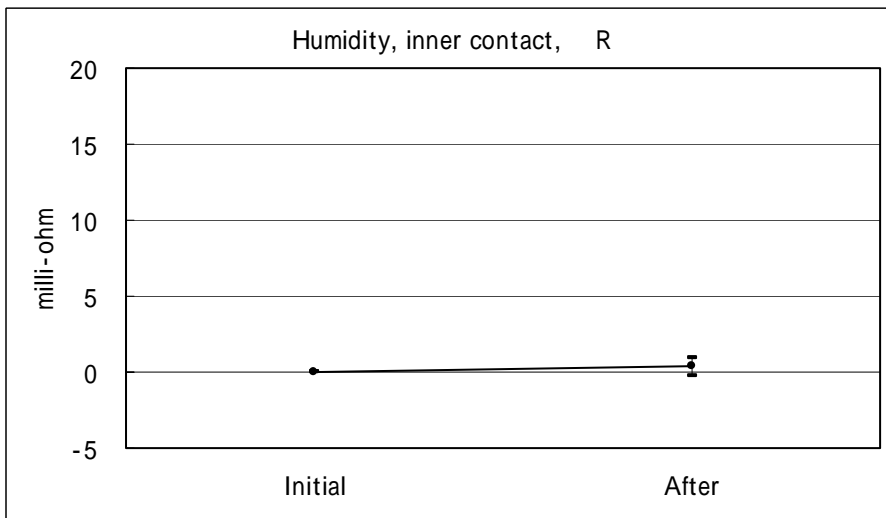
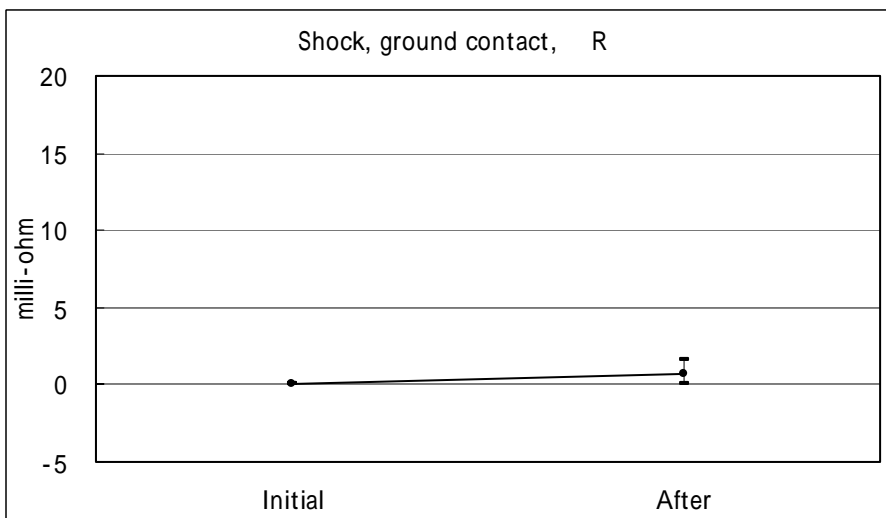
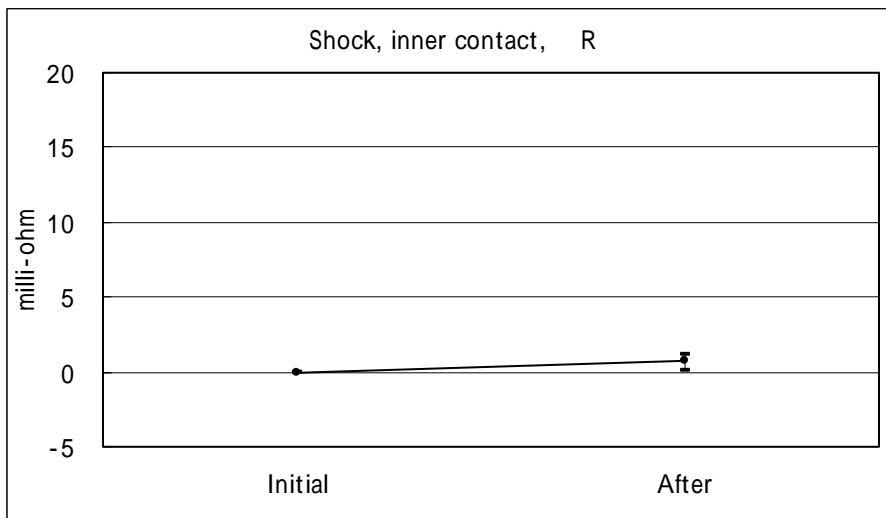




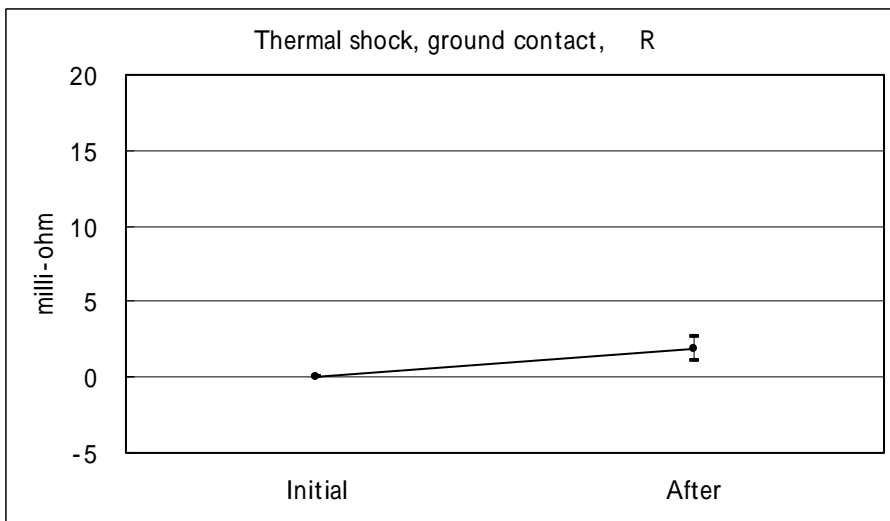
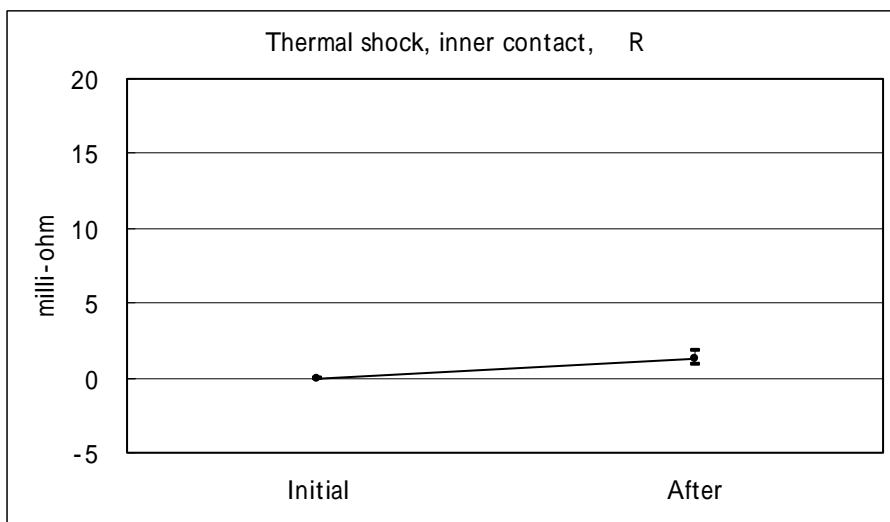
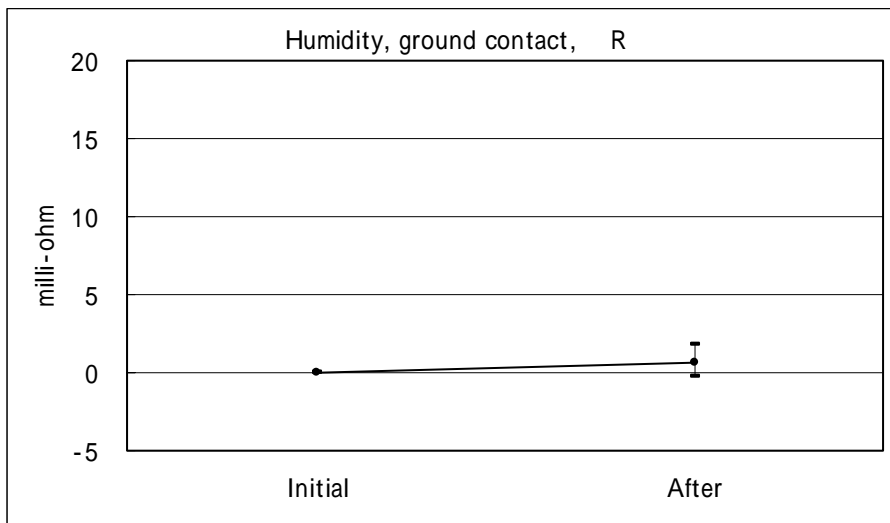
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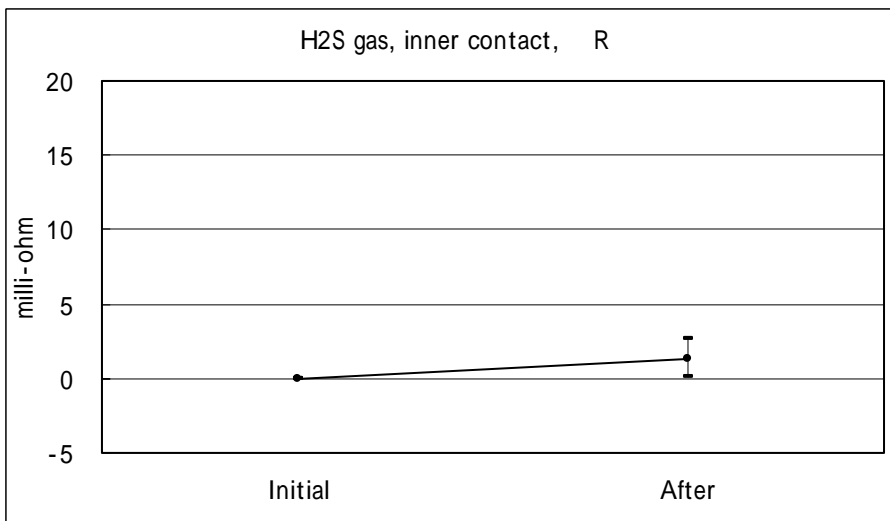
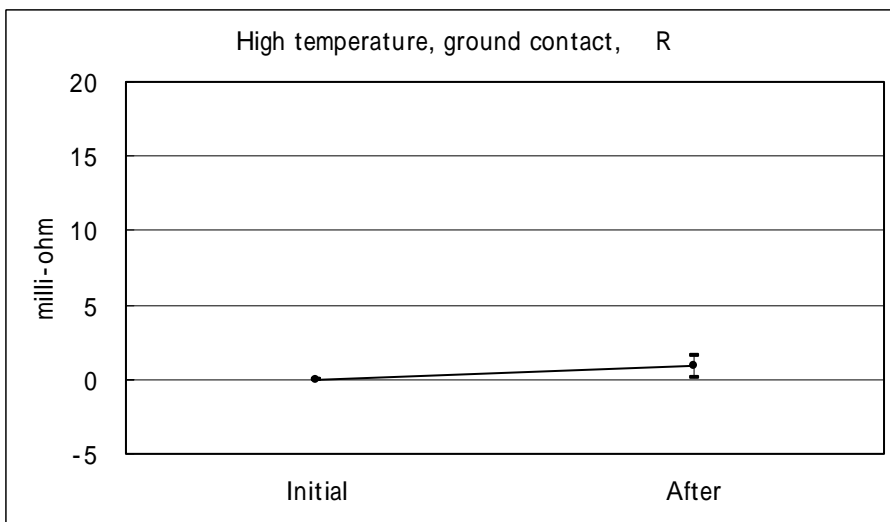
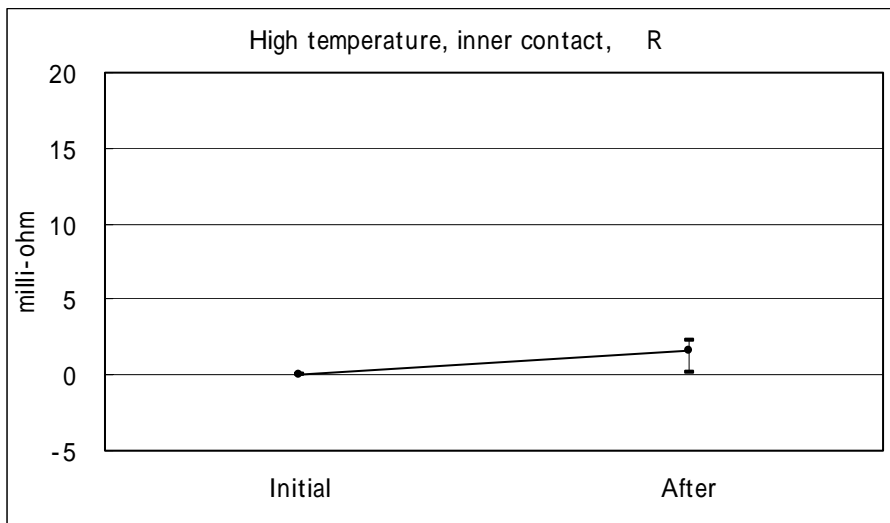
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