



<b>Job Number</b> E 99.07.04.	<b>Project Number:</b> B 904442	<b>Date of issue:</b> August 1999
<b>Description:</b>  <b>Coaxicon series mobile phone</b>		<b>Part numbers:</b> 619013-3 619028

**Scope:**

To determine the performance of the SMD-Jack (PN 619013-3) and Cable Plug (PN 619028) when tested according to AMP Design Objectives 108-71008.

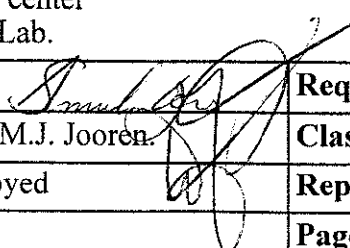
**Conclusions:**

All requirements were met, except for the visual aspects of the SMD-Jack after the salt mist test.

**Test Specification:** AMP Design Objectives 108-71008

**Test Carried Out:** 1 Dry heat  
2 Cold  
3 Damp heat, steady state  
4 Salt mist

**Distribution:** 1 S. Kempter  
2 Doc. center  
3 File Lab.

**Test Engineer:** A. Smulders  **Requested by:** Product Engineering

**Laboratory Manager:** D.M.J. Jooren.  **Classification:** Unrestricted

**Disposal of Samples:** Destroyed **Report Number:** 501-19031 **Rev. 0**

**Appendices:** **Page 1 of 9 Pages**



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SAMPLE DESCRIPTION

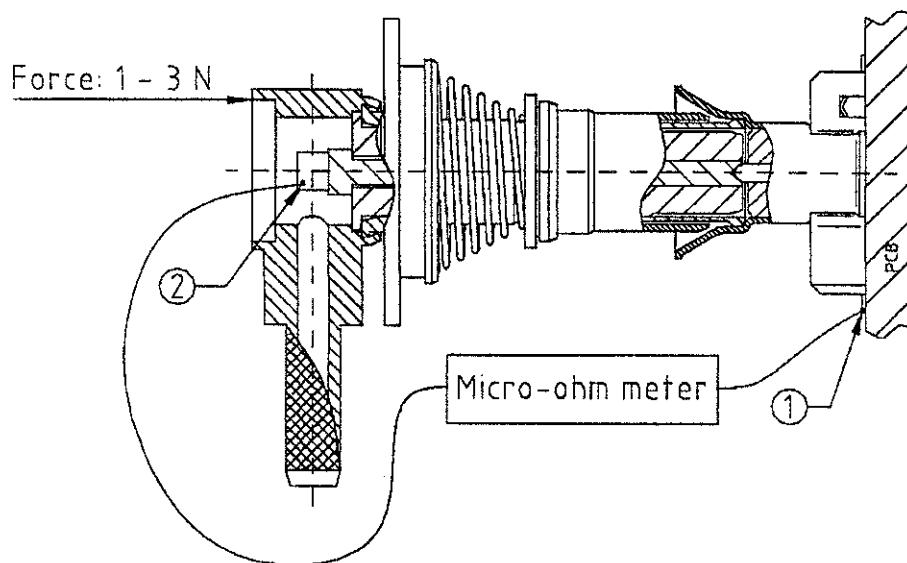
Tested were 4 groups, each consisting of 16 Coaxicon Series Mobile Phone Connector Switching SMD-Jacks and 16 Coaxicon Series Mobile Phone Protected Front Contact Cable Plug with High Spring Force.

TEST PROCEDURES

IEC 512-2-2a:

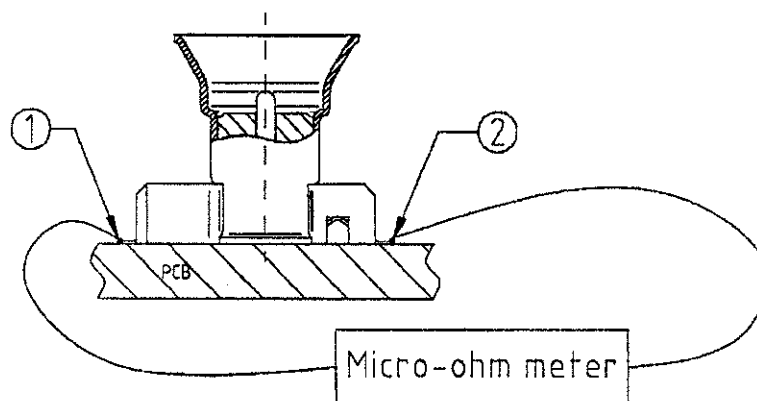
TERMINATION RESISTANCE:

The termination resistance was measured with an open circuit voltage of 20 mVolt and a maximum current of 100 mA DC.  
For measuring points see figures 1 to 3.



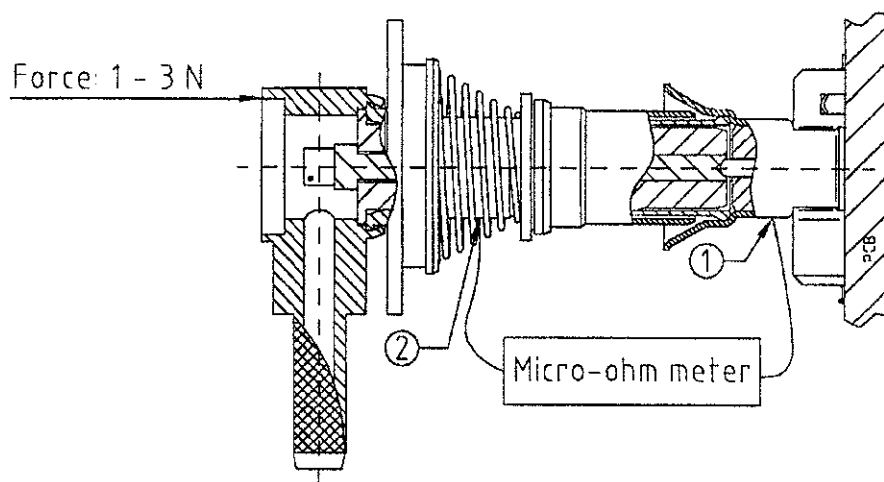
- ① : measurement point on spring
- ② : measurement point on center contact of CABLE PLUG

Figure 1 Contact resistance center contact Cable Plug and center contact of SMD-Jack



- ① : measurement point on spring
- ② : measurement point on contact switching function

**Figure 2 Contact resistance spring contact and second signal contact**



- ① : measurement point on SMD JACK outer-shell
- ② : measurement point on CABLE PLUG outer-shell

**Figure 3 Contact resistance outer contact Cable Plug connected**

IEC 512-6-11i:

**DRY HEAT:**

The samples were subjected to a dry heat test under the following conditions:

- Temperature : 85 °C.
- Condition : mated.
- Duration : 21 days.



IEC 512-6-11j:

**COLD:**

The samples were subjected to the following conditions:

Temperature : -40°C.  
Condition : mated.  
Duration : 21 days.

IEC 512-6-11c:

**DAMP HEAT, STEADY STATE:**

The samples were subjected to a damp heat steady state test under the following conditions:

Temperature : 40°C.  
Rel. humidity : 95%.  
Condition : unmated.  
Duration : 21 days.

IEC 512-6-11f:

**SALT MIST:**

The samples were placed in a salt spray chamber during 96 hours with a salt mist produced of a 5% salt solution.

**TEST SEQUENCE**

## Group 1

1. Examination of product
2. Contact resistance:  
center contact of Cable Plug and center contact of SMD-Jack  
spring contact and 2nd signal contact  
outer contact Cable Plug connected
3. Dry heat
4. Examination of product
5. Contact resistance:  
center contact of Cable Plug and center contact of SMD-Jack  
spring contact and 2nd signal contact  
outer contact Cable Plug connected

## Group 2

1. Examination of product
2. Contact resistance:  
center contact of Cable Plug and center contact of SMD-Jack  
spring contact and 2nd signal contact  
outer contact Cable Plug connected
3. Cold
4. Examination of product
5. Contact resistance:  
center contact of Cable Plug and center contact of SMD-Jack  
spring contact and 2nd signal contact  
outer contact Cable Plug connected



## Group 3

1. Examination of product
2. Contact resistance:  
center contact of Cable Plug and center contact of SMD-Jack  
spring contact and 2nd signal contact  
outer contact Cable Plug connected
3. Damp heat steady state
4. Examination of product
5. Contact resistance:  
center contact of Cable Plug and center contact of SMD-Jack  
spring contact and 2nd signal contact  
outer contact Cable Plug connected

## Group 4

1. Examination of product
2. Salt mist
3. Examination of product

## EQUIPMENT USED

<u>Equipment</u>	<u>Producer</u>	<u>Type</u>	<u>Series Nb</u>	<u>Cal Due.</u>
Micro-ohmmeter	Keithley	580	685125	12-99.
Climatic chamber	Weiss	125SBDU20	222/13128	12-99.
Climatic chamber (TS)	Weiss	64/80DUST	224/17413	12-99.
Oven	Heraeus	UT5042	8001606	12-99.
Saltmist chamber	Weiss	S450SSC	264347	12-99.

## SUMMARY OF TESTRESULTS

Required	Measured	
<b>Group 1</b>		
Contact resistance center contact of CABLE PLUG and center contact of SMD-JACK mated < 200 mΩ	Maximum: 94 mΩ	<b>OK</b>
Contact resistance spring contact and 2nd signal contact of SMD-Jack unmated < 250 mΩ	Maximum: 155 mΩ	<b>OK</b>
Contact resistance outer contact of CABLE PLUG and SMD-JACK mated < 14 mΩ	Maximum: 1.9 mΩ	<b>OK</b>
<b>Group 2</b>		
Contact resistance center contact of CABLE PLUG and center contact of SMD-JACK mated < 200 mΩ	Maximum: 97 mΩ	<b>OK</b>
Contact resistance spring contact and 2nd signal contact of SMD-Jack unmated < 250 mΩ	Maximum: 155 mΩ	<b>OK</b>
Contact resistance outer contact of CABLE PLUG and SMD-JACK mated < 14 mΩ	Maximum: 1.8 mΩ	<b>OK</b>

**Group 3**

Contact resistance center contact of CABLE PLUG and center contact of SMD-JACK mated  
< 200 m $\Omega$  Maximum: 88 m $\Omega$  **OK**

Contact resistance spring contact and 2nd signal contact of SMD-Jack unmated  
< 250 m $\Omega$  Maximum: 146 m $\Omega$  **OK**

Contact resistance outer contact of CABLE PLUG and SMD-JACK mated  
< 14 m $\Omega$  Maximum: 1.8 m $\Omega$  **OK**

**Group 4**

Visual examination after salt mist

Plug PN 619028:

Some light corrosion spots can be seen, but not in the contact areas.

No base material can be seen in the contact areas. **OK**

Switch PN 619013-3:

The stamped contacts are heavily corroded, also in the contact areas.

Some base material can be seen, also in the contact areas. **NOT OK**



TESTRESULTS

Group 1

All values represented in milli-ohms.

Product name:	COAXICON SERIES MOBILE PHONE
Lot #	Measurements after Dry Heat (C6) test

Column.	Measur.	Description
-1-:	C1a1	Contact resistance center contact of CABLE PLUG and center contact of SMD-JACK mated
-2-:	C1a2	Contact resistance spring contact and 2nd signal contact of SMD-Jack unmated
-3-:	C1a3	Contact resistance outer contact of CABLE PLUG and SMD-JACK mated

Part	(C1a1)		(C1a2)		(C1a3)	
	-1- Initial	-1- Final	-2- Initial	-2- Final	-3- Initial	-3- Final
1	75	82	137	142	1.6	1.7
2	78	86	137	140	1.8	1.8
3	85	90	128	128	1.6	1.6
4	87	79	112	116	1.7	1.6
5	84	92	136	145	1.6	1.5
6	81	80	114	119	1.5	1.5
7	79	89	139	143	1.4	1.7
8	77	90	115	115	1.8	1.6
9	83	85	134	136	1.8	1.7
10	83	87	125	128	1.7	1.8
11	82	89	132	133	1.7	1.7
12	65	74	109	133	1.9	1.6
13	79	86	139	148	1.5	1.7
14	86	94	116	125	1.5	1.6
15	76	94	142	155	1.7	1.6
16	73	93	111	112	1.6	1.5
<b>Max.</b>	<b>87</b>	<b>94</b>	<b>142</b>	<b>155</b>	<b>1.9</b>	<b>1.8</b>
<b>Min.</b>	<b>65</b>	<b>74</b>	<b>109</b>	<b>112</b>	<b>1.4</b>	<b>1.5</b>
<b>Mean.</b>	<b>79.6</b>	<b>86.9</b>	<b>126.6</b>	<b>132.4</b>	<b>1.7</b>	<b>1.6</b>



Group 2

All values represented in milli-ohms.

Product name: COAXICON SERIES  
MOBILE PHONE

Lot #: Measurements after Cold (C7) test

Column.	Measur.	Description
-1-	C1a1	Contact resistance center contact of CABLE PLUG and center contact of SMD-JACK mated
-2-	C1a2	Contact resistance spring contact and 2nd signal contact of SMD-Jack unmated
-3-	C1a3	Contact resistance outer contact of CABLE PLUG and SMD-JACK mated

Part	(C1a1)	(C1a1)	(C1a2)	(C1a2)	(C1a3)	(C1a3)
	-1-	-1-	-2-	-2-	-3-	-3-
	<i>Initial</i>	<i>Final</i>	<i>Initial</i>	<i>Final</i>	<i>Initial</i>	<i>Final</i>
1	74	79	123	123	1.8	1.6
2	76	79	123	121	1.6	1.7
3	90	86	135	136	1.7	1.6
4	84	91	103	109	1.6	1.5
5	95	90	146	150	1.5	1.6
6	79	97	136	141	1.5	1.6
7	76	92	111	125	1.6	1.5
8	73	74	137	144	1.7	1.6
9	80	82	136	132	1.7	1.6
10	70	81	127	125	1.7	1.6
11	82	81	116	128	1.5	1.7
12	84	85	122	122	1.4	1.4
13	77	79	134	155	1.3	1.4
14	80	82	142	144	1.6	1.3
15	76	94	116	121	1.7	1.5
16	76	74	111	113	1.6	1.6
<b>Max.</b>	<b>95</b>	<b>97</b>	<b>146</b>	<b>155</b>	<b>1.8</b>	<b>1.7</b>
<b>Min.</b>	<b>70</b>	<b>74</b>	<b>103</b>	<b>109</b>	<b>1.3</b>	<b>1.3</b>
<b>Mean.</b>	<b>79.5</b>	<b>84.1</b>	<b>126.1</b>	<b>130.6</b>	<b>1.6</b>	<b>1.6</b>





Group 3

All values represented in milli-ohms.

Product name:	COAXICON SERIES MOBILE PHONE
Lot #	Measurements after Damp Heat (C8) test

Column.	Measur.	Description
-1-:	C1a1	Contact resistance center contact of CABLE PLUG and center contact of SMD-JACK mated
-2-:	C1a2	Contact resistance spring contact and 2nd signal contact of SMD-Jack unmated
-3-:	C1a3	Contact resistance outer contact of CABLE PLUG and SMD-JACK mated

Part	(C1a1)		(C1a2)		(C1a3)	
	-1- Initial	-1- Final	-2- Initial	-2- Final	-3- Initial	-3- Final
1	74	78	105	104	1.6	1.5
2	74	77	121	126	1.7	1.5
3	76	74	130	128	1.5	1.5
4	73	72	113	110	1.7	1.3
5	74	76	119	122	1.8	1.6
6	88	81	113	125	1.7	1.7
7	83	80	108	146	1.7	1.6
8	74	78	120	124	1.5	1.6
9	82	79	124	121	1.5	1.5
10	72	74	111	110	1.7	1.4
11	63	75	114	114	1.8	1.6
12	79	72	108	108	1.6	1.7
13	73	!!!	110	110	1.5	!!!
14	69	69	121	123	1.3	1.5
15	75	78	141	145	1.6	1.5
16	75	74	135	135	1.4	1.5
Max.	88	81	141	146	1.8	1.7
Min.	63	69	105	104	1.3	1.3
Mean.	75.3	75.8	118.3	121.9	1.6	1.5

Cable Plug is missing !