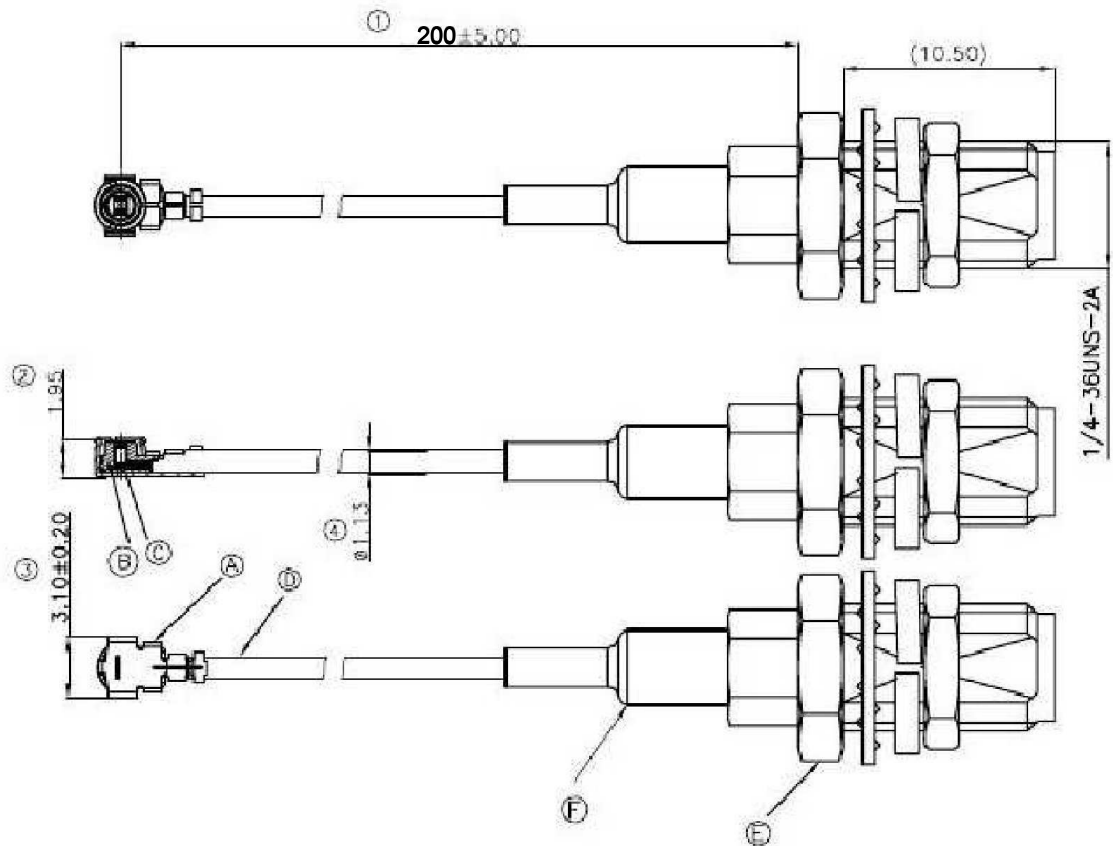


Rev.	ECN Number	Description	Date	Drawn	Checkd	Approved
X1		FIRST RELEASE	02/23'12			



- Note:
- Technology Parameter
    - Voltage Rating: 200VAC (R.M.S)
    - Frequency Range: 0~3G Hz
    - Nominal Characteristic Impedance: 50 ohms
    - Operating Temperature Range: -40°C~+85°C
    - Operating Humidity: 95%R.H.MAX
  - Electric Performance
    - Insulation Resistance: 500M ohms
    - Contact Resistance
      - Inner Contact: 20 mohms Max.
      - Outer Contact: 20 mohms Max.
    - Withstand Voltage: 200V AC 1 Min
    - VSWR\*:  $\leq 1.6 @ 0 \sim 3.0\text{GHz}$
  - Mechanism Performance
    - Durability: 30 Cycles
  - All the material followed the ROHS standard.

ITEM	PART NO.	Q'TY	DESCRIPTION	MATERIAL/FINISH
①		1	Heat shrink tube	PLASTIC
②		1	SMA receptacle	COPPER AND PLASTIC
③		1	CABLE(Ø1.13,Colour:GRAY)	COPPER/TIN PLATED OVER INNER
④		1	CONTACT	COPPER ALLOY/AU PLATED OVER NI
⑤		1	HOUSING	High Temp.Plastic UL94V-0/BLACK
⑥		1	SHELL	COPPER ALLOY/AU PLATED OVER NI

BOM LIST				SCALE:	DRAWN	DATE	DWG. NO.	TITLE	REV.
CONNTHERM	GENERAL TOLERANCE			1:1		02/23'12		RF PLUG I GENERATION SERIES TO SMA FEMALE	X1
	XX. ±0.50	X. ±0.35	X* ±2.0*	UNIT:	CHECK	DATE	PARTS NO.(INTENDED USE) GSM-IPX-SMA-1G-200		SHEET 1/1
	.X ±0.25	.X* ±1.0*	SIZE: A4	APPROVE	DATE				
	.XX ±0.15	.XX* ±0.5*							

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	USS RF I plug Connector series	Approved/Date	Check/Date	Design/date
		SAM 11/11-11'	Kenny 11/11-11'	LEI 11/11-11'

### 1. Application

This style products are designed for Mobile phones, Wireless LAN, Mini-PCI, Bluetooth, PDA, GPS, electronic measuring instruments, etc  
LAN, Mini-PCI ,PDA, GPS

### 2.Scope:

This specification covers the requirements for product performance, test methods and quality assurance provisions of USS RF Cable I Connectors.

### 3. Technology Parameters

3.1 Voltage Rating	60VAC (R.M.S)
3.2 Frequency Range	DC~6G Hz
3.3 Nominal Characteristic Impedance	50±5 ohm
3.4 Operating Temperature Range	-40℃~+85℃
3.5 Operating Humidity	95% R.H.MAX

### 4. Ratings

4.1 Insulation Resistance	500 M Ohm
4.2 Contact Resistance	
4.2.1 Inner Contact	20 m ohm Max.
4.2.2 Outer Contact	20 m ohm Max.
4.3 Withstand Voltage	200V AC 1 Min.
4.4 V .S .W. R*	

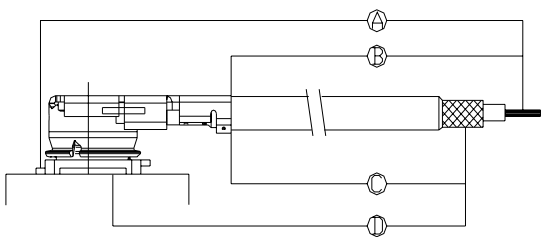
Specification	DC~3GHz	3~6GHz	Cable length
DIA=1.13mm Coaxial Cable Assembly	1.6 max	1.8 max	25~1000 mm

#### 4.5 Cable

ITEM		Unit	Details
Inner Conductor	Material	-	Silver Plated copper
	Composition	No/mm	7 X 0.08
	Nominal O.D.	mm	0.24
Dielectric Core	Material	-	Extruded FEP
	Nominal O.D.	mm	0.68
	Color	-	Natural
Outer Conductor	Material	-	Tin-coated Copper Wire
	Composition	-	16/4/0.05
	Nominal O.D.	mm	0.95
Outer Jacket	Material	-	Extruded FEP
	Outer diameter	mm	1.13±0.05
	Color	-	Black/White/Gray/Blue

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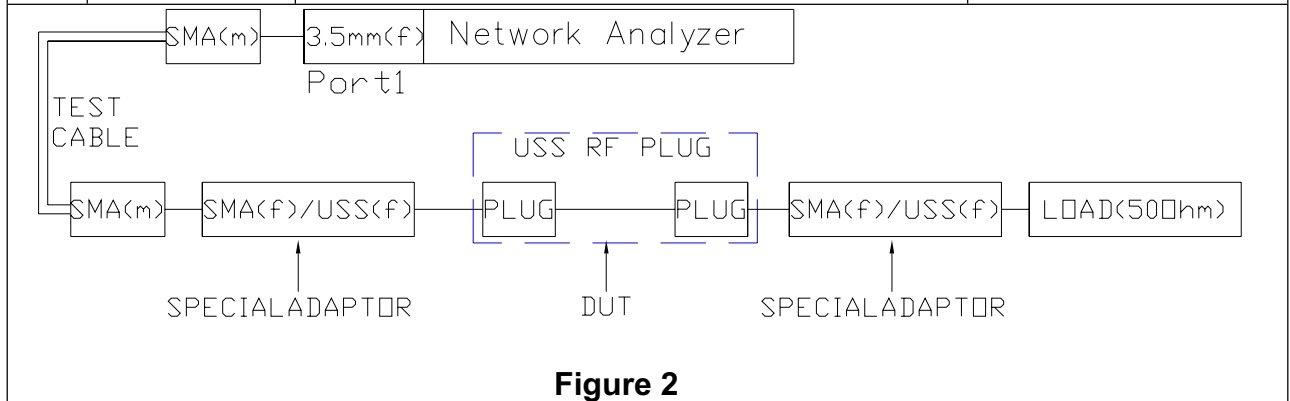
### 5. Electrical Performance

No	Items	Test Condition	Specifications
5.1	Contact Resistance	(EIA 364-23) Solder the receptacle connector to the test board and mate the plug connector together, then measure the contact resistance as shown in figure 1 by the four terminal method.	Inner contact:  Initial: 20mΩ MAX After: 25mΩ MAX Ground contact  Initial: 20mΩ MAX After: 25mΩ MAX
		Open circuit voltage: 20mV MAX Circuit current: 10mA MAX  	<u>Inner Contact</u> A - B <u>Ground Contact</u> - C
5.2	Insulation Resistance	Mate the plug and receptacle connector together, and then, apply DC 100 V Voltage between the inner contact and the ground contact in accordance with EIA 364-21	Initial: 500 MΩ MIN After : 100 MΩ MIN
5.3	Dielectric withstanding voltage	Mate the plug and receptacle connector together, and then apply AC 200 V between the inner contact and the ground contact in accordance with EIA 364-20	No flashover, No sparkover, No excess leakage, No breakdown

**Figure 1**

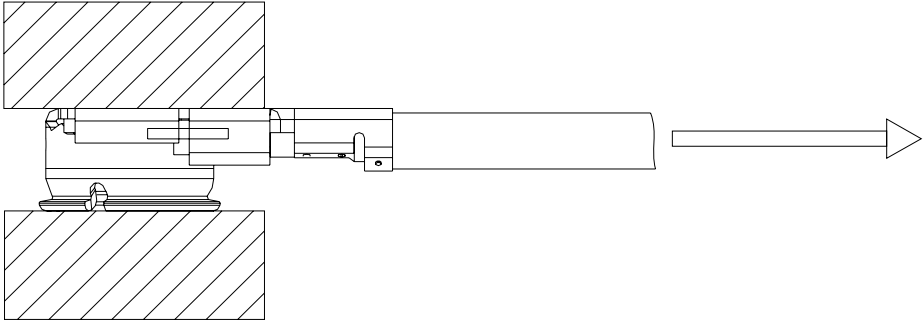
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No	Item	Test Condition	Specifications
5.4	V.S.W.R	<p>Measure the V.S.W.R as shown in figure 2 by the network analyzer Frequency: 0~6GHz</p> <p>Note: 1. Cable type connectors were measured with SMA conversion adapters attached to both ends of the harness product of a suitable 100mm cable.</p>	<p>DC~3GHz: 1.6MAX 3~6GHz: 1.8MAX</p>

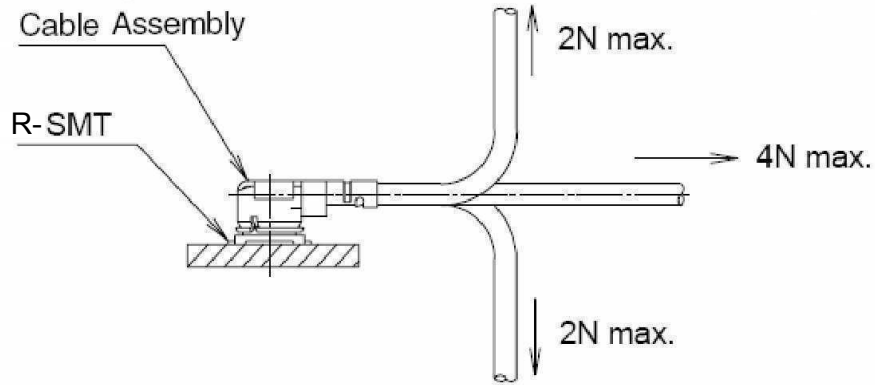


## 6. Mechanical Performance

No	Items	Test Condition	Specifications
6.1	Un-mating Force	Solder the receptacle connector to the test board and mate the plug connector, then measure the un-mating force at speed $25 \pm 3$ mm/minutes along by the push-push machine	<p>1.Initial: 5N MIN</p> <p>2.After 30 Cycle: 3N MIN</p>
No	Items	Test Condition	Specifications

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6.2	Crimp strength	Pull the cable as shown in Figure 3 at speed of $25 \pm 3$ mm/minute through tensile strength machine.				10N MIN	
							
		<b>Figure 3</b>					
6.3	Durability	Mate and un-mate the receptacle connector(soldered to the test board) and plug connector 30 cycles at the speed of $25 \pm 3$ mm/minutes along the mating direction by the push-push machine				Appearance: No abnormality Contact Resistance: Shall meet 5.5.1	
6.4	Cable retention force	After the connectors are mating, do not apply a load to the cable in excess of the values indicated in the diagram below.				No electrical discontinuity greater than $1 \mu s$ shall occur	

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**Figure 4**

6.5

Vibration

Apply the following vibration to the mating connector.

During the testing,run 100mA DC to check electrical discontinuity.

Frequency:10Hz→ 100Hz→ 10Hz/approx 20minutes.

Half amplitude,Peak value of acceleration: 1.5mm or 59m/s<sup>2</sup> (6G)

Directions,cycle:3 mutually perpendicular direction,

3 cycles about each direction

Appearance: No abnormality  
Contact Resistance: Shall meet 5.5.1  
No discontinuities of 1 μ s or longer duration

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6.6	Shock	<p>EIA 364-27 Condition A The object of this test procedure is to detail a standard method to assess the ability of a connector to withstand specified severity of mechanical shock.</p> <p>Peak value of acceleration: 735m/s<sup>2</sup> (75G) Duration : 11ms Wave form : half sinusoidal Directions, cycle : 6 mutually perpendicular direction, 3 cycles about each direction</p>	<p>Appearance: No abnormality Contact Resistance: Shall meet 5.5.1 No discontinuities of 1 μs or longer duration</p>
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## 7. Environmental Performance

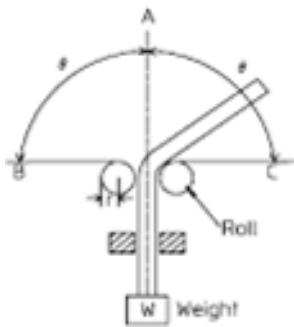
No	Items	Test Condition	Specifications
7.1	Humidity	<p>Apply the following environment to the mating connector in accordance with EIA 364-31 Method III Test Condition B Temperature : 25~65°C Humidity : 90~95%R.H Duration: 96 hours</p>	<p>Appearance: No abnormality Contact Resistance: Shall meet 5.5.1 Insulation Resistance: Shall meet 5.5.2 Dielectric withstanding voltage Shall meet 5.5.3</p>
7.2	Thermal Shock	<p>Apply the following environment to the mating connector in accordance with EIA 364-32 Test Condition I Temperature : -55~85°C Transition time: : 5min. MAX Cycles: 5 Cycles</p>	<p>Appearance: No abnormality Contact Resistance: Shall meet 5.5.1 Insulation Resistance: Shall meet 5.5.2</p>

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						Dielectric withstanding voltage Shall meet 5.5.3
7.3	High Temperature Life	Apply the following environment to the mating connector Temperature : $90 \pm 2^{\circ}\text{C}$ Duration : 96 hours				Appearance: No abnormality Contact Resistance: Shall meet 5.5.1 Insulation Resistance: Shall meet 5.5.2
7.4	Salt Spray	EIA 364-26 Test Condition A Apply the following environment to the mating connector Temperature : $35 \pm 2^{\circ}\text{C}$ Relative Humidity : 90~98%R.H Salt water density: $5 \pm 1\%$ Duration : 48 hours				Appearance: No abnormality Contact Resistance: Shall meet 5.5.1

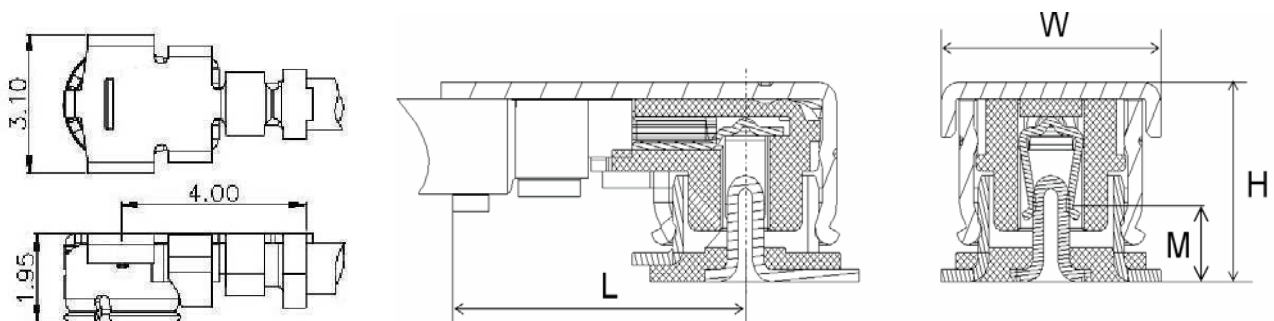


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### 8.Others

No	Items	Test Condition	Specifications
8.1	90° Bending Test.	<p>Make the cable assembly with 1kg load connected in the end stayed in the horizontal station by the bend testing tool, Then, let it free fall ride and stayed in the final position for one minute. finally, repeat the above-mentioned steps for 10cycles ,then having a open&amp;short test.</p> <p>Pls see the following figure 5 for details.</p>  <p style="text-align: center;">FIGURE 5</p>	<p>Appearance: No abnormality</p> <p>Open&amp;Short Requirement: Short</p>

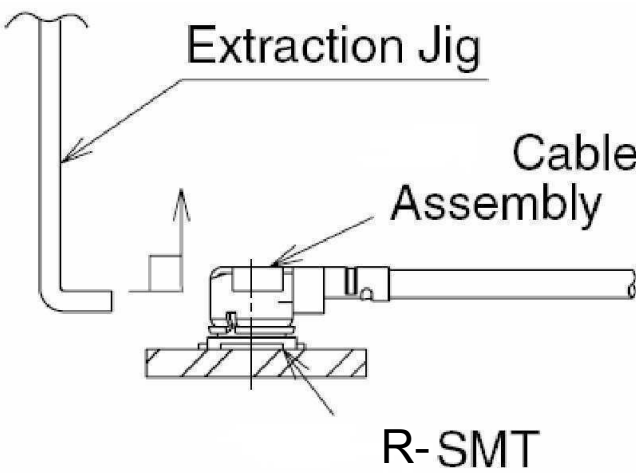
### 9. Plug Specification



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Item	L	H	W	M
DIA=1.13mm Coaxial Cable Assembly	4.00±0.2	2.50±0.1	3.1±0.2	0.9±0.20

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**10. Usage Precaution**

No	Items	Test Condition	Specifications
10.1	(1) Connection/ disconnection of connectors	<p>1).To disconnect connectors, insert the end portion of ECT Extraction jig under the connector flanges and pull off vertically, in the direction of the connector mating axis</p> <p>2).To mate the connectors, the mating axis of both connectors must be aligned and the connectors can be mated. The "click" will confirm fully mated connection. Do not attempt to insert on an extreme angle.</p>	
		 <p><b>Figure 6</b></p>	
10.2	Precautions	Do NOT forcefully twist or deform wires.	
10.3	Stockpile condition	Use this product within 6 months after receipt	