

DOCUMENT NAME: PRODUCT SPECIFICATION	SUBJECT: RF III BOARD END CONNECTOR	DOCUMENT NO: SPEC-ANB-3001			
		PAGE	1 OF 9	REV	C

PRODUCT SPECIFICATION

NO.SPEC-ANB-3001

RF III BOARD END CONNECTOR
(Product NO. ANB0140*-321)

	APPROVED	CHECKED	PREPARED	ISSUED BY :
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Date	2019-07-29	2019-07-29	2019 07-29	

DOCUMENT NAME: PRODUCT SPECIFICATION	SUBJECT: RF III BOARD END CONNECTOR	DOCUMENT NO: SPEC-ANB-3001			
		PAGE	2 OF 9	REV	C

***** REVISION HISTORY *****

Rev.	Date	Revision Page No.	Notes
A	2012-08-15	New Reversion	初次发行
B	2017-07-18	Update	更新发行
C	2019-07-29	Update parametr	更新发行
D			
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DOCUMENT NAME: PRODUCT SPECIFICATION	SUBJECT: RF III BOARD END CONNECTOR	DOCUMENT NO: SPEC-ANB-3001			
		PAGE	3 OF 9	REV	C

1. SCOPE

This product described in this paper is a SMT Type Micro Coaxial RF Receptacle, whose part name in our comply is USS RF REC. It is special for micro strip-to -Coaxial adapter in RF circuit, such as Mobile Phone, Wireless Net, Mini PCI, Bluetooth, PDA, GPS, Electric Measurement Instruments and so on.

2. REQUIREMENT

2.1. PRODUCT DIMENSION

Product shall be intermateable with industry standard product of opposite gender. This connector shall have the dimensions as shown in Drawing .

2.2. PCB/PANEL LAYOUT

The recommended PCB layout are shown in Drawing .

2.3. BILL OF MATERIAL

The bill of material and product number of Connectors are described in Drawing .

2.4. MECHANICAL & ELECTRICAL CHARACTERISTIC

The connector shall have the mechanical and electrical performance as described in **Table I**.

2.5. PACKAGING

Parts shall be packaged according to requirements specified in purchase order for safe delivery. Connector container and the packing specification are shown in Drawing .

2.6. HARMFUL MATERIAL CONTROL

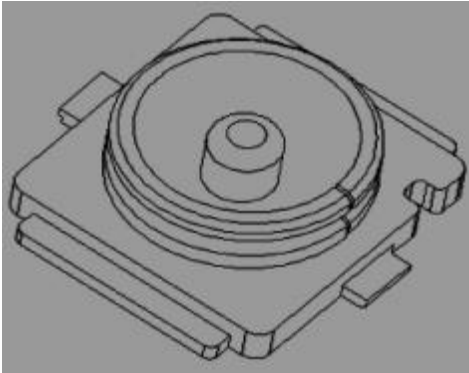
Harmful material controls please follow the **Doc. No. QW-QA-10**.

3. Part No., construction, material and finish

- (1) Part No. Receptacle: ANB0140*-12* Plug: ANCZ1***-***,
- (2) Construction, material and finish of the connector are covered as each drawing.
- (3) The plug side application cable requirements
 - Characteristic impedance: $50 \pm 2 \Omega$ by TDR method
 - Nominal capacitance (Reference value) : 96 pF/m
 - Conductor resistance of inner conductor at 293K (20°C) (Reference value) : 1400 ohm/km
 - Insulation resistance: 1000 mega-ohm.km MIN.
 - Dielectric withstand voltage: no breakdown at AC1000V for 1 minutes.

DOCUMENT NAME: PRODUCT SPECIFICATION	SUBJECT: RF III BOARD END CONNECTOR	DOCUMENT NO: SPEC-ANB-3001			
		PAGE	4 OF 9	REV	C

4. PRODUCT PICTURE



5. Ratings

Rated voltage	AC60Vrms	
Nominal characteristic Impedance	50 ohm	
Frequency	DC~8GHz	
VSWR	Plug: 0.1~3GHZ 1.3Max. 3~6GHZ 1.5Max. 6~8GHZ 1.6Max. Receptacle: 0.1~3GHZ 1.3Max. 3~6GHZ 1.4Max. 6~8GHZ 1.5Max.	
Service Temperature	233K~363K(-40°C~90°C)	
Storage condition	Tempereature:248K~333K(-25°C~+60°C) Humidity:85% Max. (No condensation)	

6. Test and Performance

Test Condition

Unless otherwise specified, all tests and measurements shall be performed under the following condition in accordance with MIL-STD-202G.

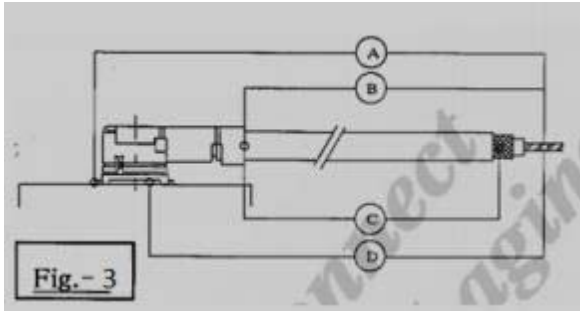
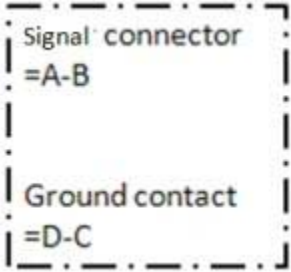
Temperature -----288K~308K(15°C~35°C)

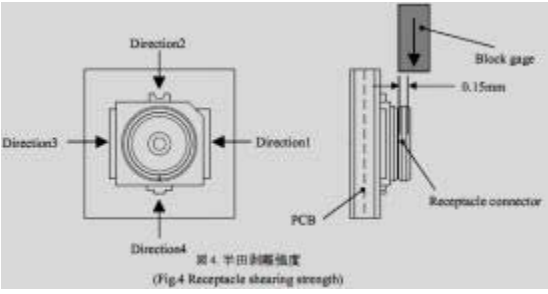
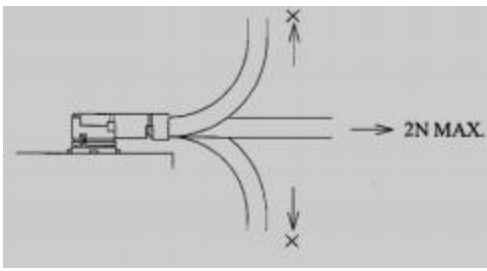
Humidity -----45~75%R.H.

DOCUMENT NAME: PRODUCT SPECIFICATION	SUBJECT: RF III BOARD END CONNECTOR	DOCUMENT NO: SPEC-ANB-3001			
		PAGE	5 OF 9	REV	C

FIG2

Table I: Performance Requirements

Items	Test Conditions	Specifications
1. Contact Resistance	<p>Solder the receptacle connector to the test board and mate the plug connector together, then measure the contact resistance as shown in Fig3 by the four terminal methods. Apply the low level conditions in accordance with MIL-STD-202G, Method 307.</p> <p>Open circuit voltage : 20 mV Max. Circuit current : 10 mA Max.</p> 	<p>[Signal contact] Initial : 20m Ω Max. After testing : Δ R20 m Ω Max.</p> <p>[Ground contact] Initial : 20m Ω Max. After testing : Δ R20 m Ω Max.</p> 
2. Insulation Resistance	Mate the receptacle and plug connector together, and then apply DC 100V between the signal contact and the ground contact in accordance with MIL-STD-202G, Method 302.	Initial :500M Ω Min. After testing :100 M Ω Min.
3. Dielectric Withstanding Voltage	Mate the receptacle and plug connector together, and then apply AC 200V rms between the signal contact and the ground contact for a minute in accordance with MIL-STD-202G, Method 301.	No creeping discharge, flashover, no insulator breakdown shall occur.
4. VSWR	Measure the VSWR as shown in FIG2 by the network analyzer. Frequency: 100M~8GHz	1.3MAX. at 0.1~3GHz 1.4MAX. at 3~6GHz 1.5MAX. at 6~8GHz
5. 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 ± 3mm/minutes along by the push-pull machine.	[Total un-mating force] Initial :4N Min. After 30 :2N Min.
6. Receptacle shearing strength	Solder the receptacle connector to the test board, Push the receptacle connector from each directions as Shown in Fig.4. Measure the strength when the connector is broken.	20N Min.

DOCUMENT NAME: PRODUCT SPECIFICATION		SUBJECT: RF III BOARD END CONNECTOR		DOCUMENT NO: SPEC-ANB-3001	
		PAGE	6 OF 9	REV	C
	Fig. 4	 <p style="text-align: center;">(Fig.4 Receptacle shearing strength)</p>			
7. Durability	Mate and un-mate the receptacle connector(soldered to the test board) and plug connector 30 cycles at speed 25 ± 3 mm/minutes along the mating by the push-pull machine.	[Appearance] No abnormality [Contact Resistance] Shall meet Table I.1			
8. Contact resistance with force on the cable	Apply force on the cable as shown in Fig.5 During the testing, run 100mA DC to check electrical discontinuity.	 <p style="text-align: center;">Fig5</p> [Appearance] No abnormality [Electrical discontinuity] No electrical discontinuity grater than $1 \mu s$ shall occur. [Contact Resistance] Shall meet Table I.1			
9. Vibration	Apply the following vibration to the mating connector. During the testing, run 100mA DC to check electrical discontinuity. Frequency: 10Hz → 100 Hz → 10Hz/approx 20 minutes. Half amplitude, Peak value of acceleration : $1.5mm$ or $59m/s^2$ (6G) Directions , cycle: 3 mutually perpendicular direction,3 cycles about each direction.	[Appearance] No abnormality [Contact Resistance] Shall meet Table I.1 [Electrical discontinuity] No electrical discontinuity grater than $1 \mu s$ shall occur.			
10. Shock	Apply the following vibration to the mating connector. During the testing, run 100mA DC to check electrical discontinuity. Peak value of acceleration: $735 m/s^2$ (75G) Duration :11msec Wave Form :half sinusoidal Direction, cycle :6 mutually perpendicular direction,3cycle about each direction.	[Appearance] No abnormality [Contact Resistance] Shall meet Table I.1 [Electrical discontinuity] No electrical discontinuity grater than $1 \mu s$ shall occur.			
11. Humidity (Steady State)	Apply the following environment to the mating connector in accordance with MIL-STD-202G,Method 103, Condition B. Temperature : $313 \pm 2K$ ($40 \pm 2^\circ C$) Humidity : 90~95%RH Duration : 96 hours	[Appearance] No abnormality [Contact Resistance] Shall meet Table I.1 [Insulation Resistance] Shall meet Table I.2 [Dielectric Withstanding Voltage] Shall meet Table I.3.			

DOCUMENT NAME: PRODUCT SPECIFICATION	SUBJECT: RF III BOARD END CONNECTOR	DOCUMENT NO: SPEC-ANB-3001			
		PAGE	7 OF 9	REV	C

12. Thermal Shock	<p>Apply the following environment to the mating connector in accordance with MIL-STD-202G, Method 107G, Condition A.</p> <p>Temperature : 218K (-55°C) → 358K(85°C): 30min Transition time : 5min. MAX No. of cycles : 5 cycles</p>	<p>[Appearance] No abnormality [Contact Resistance] Shall meet Table I.1 [Insulation Resistance] Shall meet Table I.2 [Dielectric Withstanding Voltage] Shall meet Table I.3.</p>
13. High Temperature Life	<p>Apply the following environment to the mating connector</p> <p>Temperature : 363±2K (90±2°C) Duration : 96 hours</p>	<p>[Appearance] No abnormality [Contact Resistance] Shall meet Table I.1 [Insulation Resistance] Shall meet Table I.2 [Dielectric Withstanding Voltage]</p>
14. H ₂ S Gas	<p>Apply the following environment to the mating connector</p> <p>Temperature : 313±2K (40±2°C) Relative Humidity : 80±5%RH Gas : H₂S 3±1ppm Duration : 96 hours</p>	<p>[Appearance] No abnormality [Contact Resistance] Shall meet Table I.1 [Insulation Resistance] Shall meet Table I.2 [Dielectric Withstanding Voltage]</p>
15. Salt Water Spray	<p>Apply the following environment to the mating connector in accordance with MIL-STD-202G, Method 101E, Condition B.</p> <p>Temperature : 308±2K (35±2°C) Relative Humidity : 95~98%RH Salt water density : 5±1%(by weight) Duration : 48 hours</p>	<p>[Appearance] No abnormality [Contact Resistance] Shall meet Table I.1</p>
16. Solder ability	<p>Dip the solder tine of the contacts in the solder bath at 518±5K(245±5°C) for 5 ±0.5seconds after immersing the tine in the flux of RMA type for 5 to 10 seconds.</p>	<p>More than 95%of the dipped surface shall be wet and less than 5%of the pinhole than shall not gather at a point.</p>

DOCUMENT NAME:
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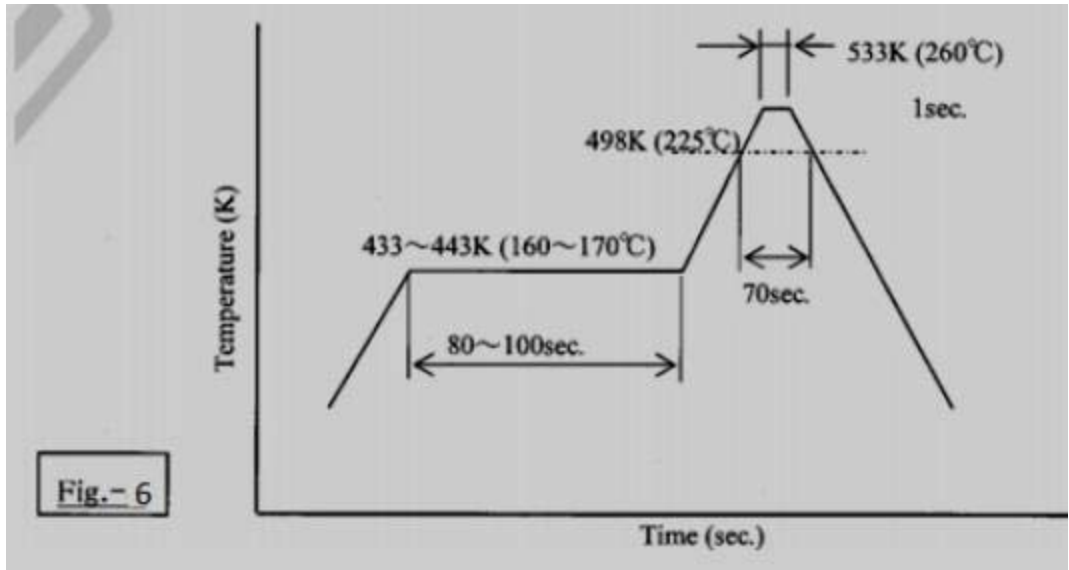
DOCUMENT NO:
SPEC-ANB-3001

PAGE 8 OF 9 **REV** C

- (1) Reflow part : 533+0/-5K(260+0/-5°C) Peak 498K MIN .(225°C MIN) 70sce.MIN
- (2) Pre-heat part: 433~443K(160~170°C) 80~100sec
 - * Refer to reflow temperature profile.(Fig6)
 - * The number of reflow is within 2 times.

No abnormality adversely affecting the performance shall not occur.

17.
Soldering Heat
Resistance



DOCUMENT NAME: PRODUCT SPECIFICATION	SUBJECT: RF III BOARD END CONNECTOR	DOCUMENT NO: SPEC-ANB-3001			
		PAGE	9 OF 9	REV	C

Table II: Test Sequence and Sample Quantity

Test: Measurement or Examination	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1.Contact Resistance				1,3	1,3	1,3	1,3	1,5	1,5	1,3	1,3	1,3		
2.Insulation Resistance								2,6	2,6					
3.Dielectric Withstanding Voltage								3,7	3,7					
4.VSWR	1													
5.Un-mating force		1												
6. Receptacle shearing strength			1											
7.Durability				2										
8.Contact resistance with force on the cable					2									
9.Vibration						2								
10.Shock							2							
11.Humidity (Steady State)								4						
12. Thermal Shock									4					
13. High Temperature Life										2				
14.H ₂ S Gas											2			
15. Salt Water Spray												2		
16. Solder ability													1	
17.Soldering Heat Resistance														1
Sample QTY.	10	10	10	10	10	10	10	10	10	10	10	10	10	10