



ENGINEERING	PRODUCT SPECIFICATION For CRA1 RF I Plug connectors	SPEC.NO.: SPCR0261
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1. SCOPE:

This specification covers the requirement for product performance and test methods of RF III connector.

2. APPLICABLE STANDARDS:

Follow **EIA-364** specification.

3. APPLICABLE PART NO: CRA1 Plug Connectors

4. SHAPE, CONSTRUCTION AND DIMENSIONS

See attached drawings

5. MATERIALS

See attached drawings

6. ACCOMMODATED P.C.BOARD

P.C. Board Layout: See attached drawings



REVIEWED: David APPROVED: Esley VERIFIED: Esya

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#### 7. ELECTRICAL PERFORMANCE:

	ITEM	TEST CONDITION	REQUIREMENT
7.1	Rated voltage and current		60V AC 1A Max.
7.2	Nominal characteristic impedance		50 ohm.
7.3	Applicable Frequency		100MHz~6GHz
7.4	Contact resistance	Dry circuit of DC 20mV max. , 10mA max. Refer to Fig 1	Inner: Initial: 20 mΩ Max. Final: 25 mΩ Max. Ground: Initial: 10 mΩ Max. Final: 15 mΩ Max.
7.5	Dielectric strength	When applied AC 200 V 1 minute between adjacent terminal	No change Current leakage: 0.5mA Max.
7.6	Insulation resistance	When applied DC 100 V between adjacent terminal or ground	500 MΩ Min.( Initial) 100 MΩ Min.( Final)
7.7	Insertion Loss	Mate the connector and SMA connector together, then measure the insertion loss by the network analyzer	100MHz~6GHz: -6dB Min.
7.8	VSWR	Mate the connector and SMA connector together, then measure the VSWR by the network analyzer. Refer to Fig 2	0.1~3GHz: 1.3Max. 3G~6GHz: 1.5Max.

#### 8. MECHANICAL PERFORMANCE:

	ITEM	TEST CONDITION	REQUIREMENT
8.1	Connector Unmting Force	Operation Speed : 25±3mm/min. Measure the force required to unmate connector.	Initial : 0.51Kgf (5N) Min. After 30 times : 0.31Kgf (3N) Min.



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8.2	Crimp strength	Operation Speed : 25±3mm/min. Measure the pull out force of cable. Refer to Fig 3	Ø1.13 mm : 1.53Kgf (15N) Min. Ø1.32 & 1.37mm : 2.04Kgf (20N) Min. Ø1.80 mm : 3.06Kgf (30N) Min.
8.3	Durability	Operation Speed : 2~3cycle/min. Durability Cycles : 30 Cycles.	No damage and meet 7.4, 8.1
8.4	Cable retention force	Subject mated connectors, run 100mA and apply three direction force to check electrical discontinuity. Refer to Fig 4	No damage. No electrical discontinuity greater than 1µs shall occur and meet 7.4

#### 9. ENVIRONMENTAL PERFORMANCE:

	ITEM	TEST CONDITION	REQUIREMENT
9.1	Vibration	Mated the connector, then Impressed the 100mA DC. Frequency : 10Hz→100Hz→10Hz / approx 20 minutes. Half amplitude, peak value of acceleration : 1.5mm or 59m/s <sup>2</sup> (6G). Direction : 3 mutually perpendicular directions. Cycle : 3 cycles for each direction.	No electrical discontinuity greater than 1µs shall occur and meet 7.4
9.2	Shock	Peak value of acceleration : 735m/s <sup>2</sup> (75G) Duration: 11 msec. Wave Form: half sinusoidal No. of Drops : 3 drops each to normal and reversed directions of X, Y and Z axes, totally 18 drops, passing DC 1mA current during the test.	No electrical discontinuity greater than 1µs shall occur and meet 7.4
9.3	Heat aging	85°C , 96 hours	No damage and meet 7.4
9.4	Resistance to Cold	-40 ± 2°C , 96 hours	No damage and meet 7.4



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9.5	Humidity	$40 \pm 2^{\circ}\text{C}$ , 90-95% RH , 96 hours measurement must be taken within 30 min. after tested	No damage and meet 7.4, 7.5, 7.6
9.6	Temperature cycling	One cycle consists of : (1)- $40^{+0}_{-3}$ °C, 30 min. (2)Room temp. 5 min. (3) $85^{+3}_{-0}$ °C, 30 min. (4)Room temp. 5 min. Total cycles : 5 cycles	No damage and meet 7.4, 7.5, 7.6
9.7	Salt spray	Temperature: $35 \pm 2^{\circ}\text{C}$ Solution: $5 \pm 1\%$ Spray time: 24 hours Measurement must be taken after water rinse and recondition the temperature for 1 hour.	No damage and meet 7.4,

10. AMBIENT TEMPERATURE RANGE: -40 to + 85°C

11.

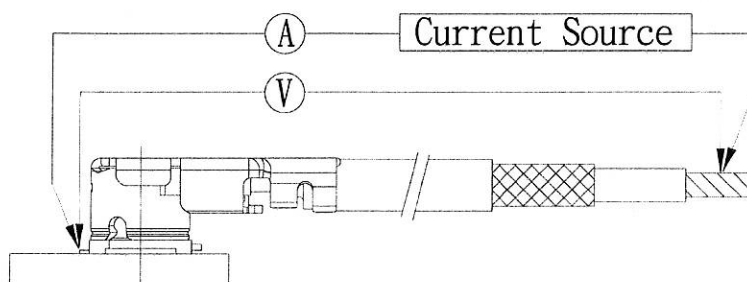


Fig.1 Contact Resistance

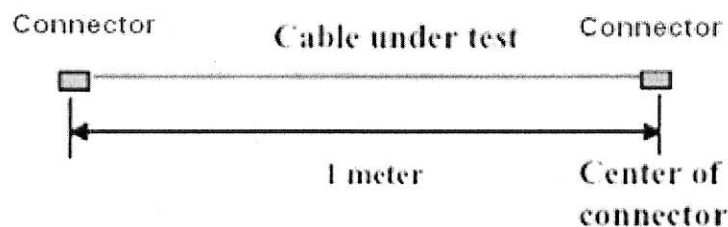
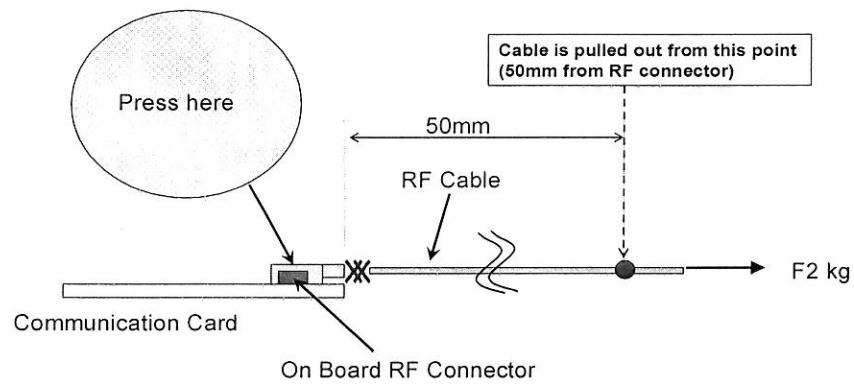


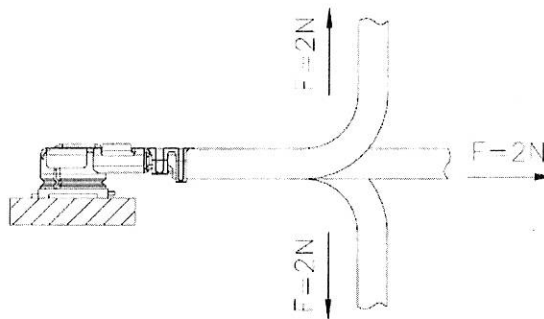
Fig.2 VSWR



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**Fig.3 Crimp strength**



**Fig.4 Cable retention force**