

ENGINEERING	PRODUCT SPECIFICATION For CRA4 RF IV Plug connectors	SPEC.NO.: SPCR0291
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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: CRA4 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: Eisley VERIFIED: Fuzya



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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~12GHz
7.4	Contact resistance	Dry circuit of DC 20mV max. , 10mA max. Refer to Fig 1	Inner: Initial: 10 mΩ Max. Final: 20 mΩ Max. Ground: Initial: 10 mΩ Max. Final: 20 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	Ø 0.81 mm : 100MHz to 6GHz : -10dB Min. Ø 1.13 mm : 100MHz to 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. 6G~12GHz: 2.0Max.

8. MECHANICAL PERFORMANCE:

	ITEM	TEST CONDITION	REQUIREMENT
8.1	Connector Mting Force	Operation Speed : 25±3mm/min. Measure the force required to mate connector.	3.06Kgf (30N) Max.



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8.2	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. 2.04Kgf (20N)Max.
8.3	Crimp strength	Operation Speed : 25±3mm/min. Measure the pull out force of cable. 0 Degree Refer to Fig 3 30 Degree Refer to Fig 4	0 Degree: Ø0.81 mm : 0.71Kgf (7N) Min. Ø1.13 mm : 2.04Kgf (20N) Min. 30 Degree: Ø1.13 mm : 1.02Kgf (10N) Min.
8.4	Durability	Operation Speed : 2~3cycle/min. Durability Cycles : 30 Cycles.	No damage and meet 7.4, 8.1, 8.2
8.5	Cable retention force	Subject mated connectors, run100mA and apply three direction force to check electrical discontinuity. Refer to Fig 5	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 ² (6G). Direction : 3 mutually perpendicular directions. Cycle : 3 cycles for each direction.	No electrical discontinuity greater than 1µs shall occur and meet 7.4



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9.2	Shock	Peak value of acceleration : $735\text{m/s}^2(75\text{G})$ 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 $1\mu\text{s}$ 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	$-40 \pm 2^\circ\text{C}$, 96 hours	No damage and meet 7.4
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) $-40^{+0}_{-3}^\circ\text{C}$, 30 min. (2)Room temp. 5 min. (3) $85^{+3}_{-0}^\circ\text{C}$, 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 $+85^\circ\text{C}$

11.

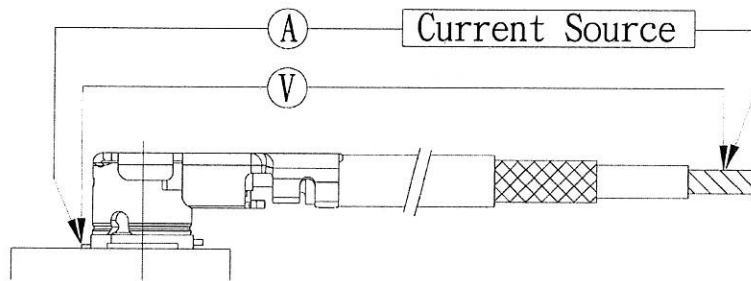


Fig.1 Contact Resistance

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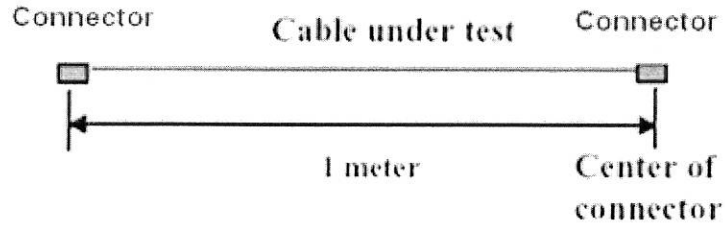


Fig.2 VSWR

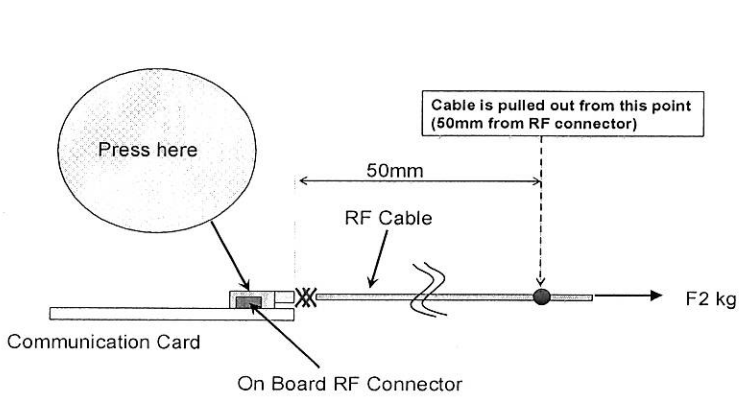


Fig.3 Crimp strength (0 Degree)

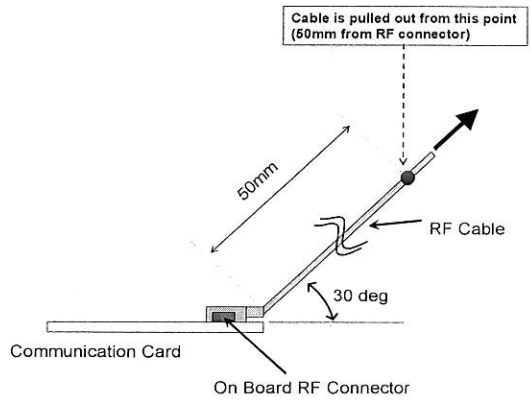


Fig. 4 Crimp strength (30 Degree)

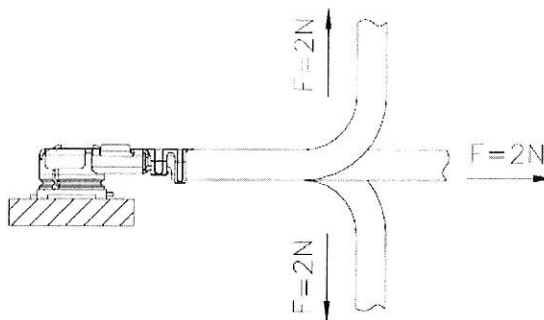


Fig.5 Cable retention force