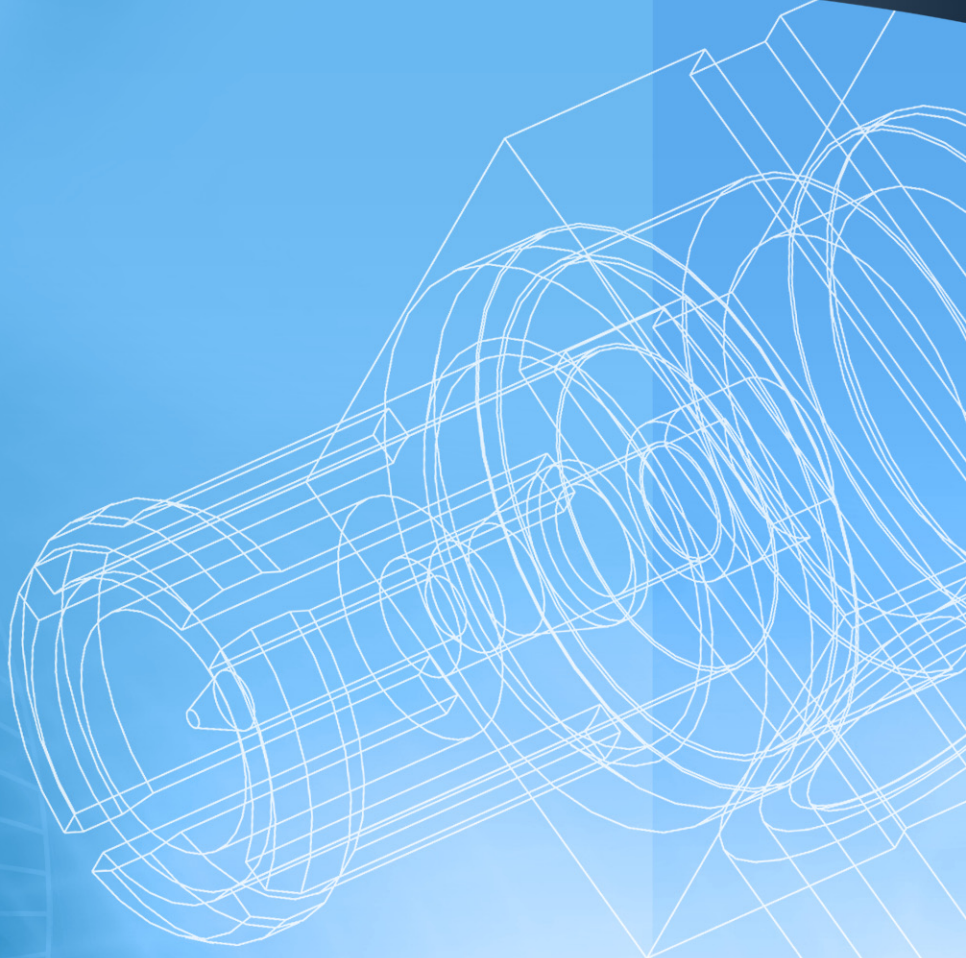


# MCX



**MCX Connectors**

## **MCX Connectors**

### **Description**

MCX connectors conform to the European CECC 22000 spec and were introduced in the 1980's. While the MCX uses identical inner contact and insulator dimensions as the SMB, the outer diameter of the plug is .140 inches, which is 30% smaller than the SMB. This series provides designers with options where weight and physical space are limited. MCX provides broadband capability though 6 GHz with a snap-on connector design. A range of connectors are available, including printed circuit board and cable connectors and they are all used in the Automotive, Wireless LAN, Broadband and Wireless Infrastructure markets.

### **Features/Benefits**

- Broadband performance with low reflection DC to 6 GHz
- Quick connect/disconnect snap-on mating reduces installation time
- Accommodates a wide range of miniature RG flexible semi-rigid coaxial cables

### **Applications**

- Base Stations
- Components
- GPS
- Head End Equipment
- Instrumentation
- PC/LAN
- Radios
- Telecom
- Wireless Network Antennas

**50 Ω MCX Specifications**

**Electrical** **CECC 22000**

Impedance	50 Ω	
Frequency range	DC - 6 GHz	
VSWR	1.06 max. DC - 2.5 GHz (straight) 1.1 max. DC - 2.5 GHz (right-angle)	
RF-leakage	60 dB minimum @ 1 GHz (flexible cable) 70 dB minimum @ 1 GHz (semi-rigid cable)	4.4.8
Voltage rating (at sea level)	≥ 335 Vrms (depending on cable)	
Contact resistance	center contact: ≤ 5 mΩ outer contact: ≤ 2.5 mΩ	4.4.2 4.4.3
Insulation resistance	10,000 MΩ minimum	4.4.4
Insertion loss maximum	0.10 dB @ 1 GHz	
Dielectric withstanding voltage	1,000 Vrms (at sea level)	4.4.5

**Mechanical**

Mating	Snap-on coupling per CECC 22220	
Braid/Jacket cable affixment	Hex crimp	
Center conductor cable affixment	Solder	
Captivated contacts	All, unless noted otherwise	
Contact Captivation	≥ 2.3 lbs (10N)	4.5.2
Engagement force	≤ 5.6 lbs (25N)	4.5.1
Disengagement force	≥ 2.3 lbs (10N)	4.5.1
Durability (matings)	500 cycles minimum	4.7.1

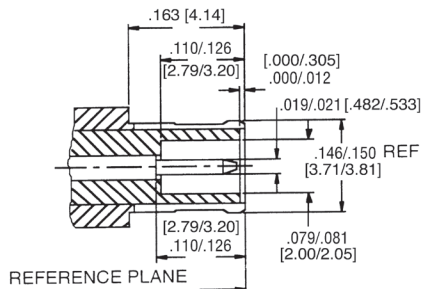
**Environmental**

Temperature range	-55°C to +155°C	
Thermal shock	MIL-STD-202, method 107, cond. F	4.6.7
Moisture resistance	MIL-STD-202, method 106	4.6.6
Corrosion	MIL-STD-202, method 101, cond. B	4.6.10
Vibration	MIL-STD-202, method 204, cond. D	4.6.3
Mechanical shock	MIL-STD-202, method 213, cond. B	

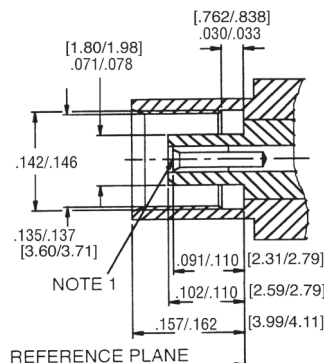
**Material**

Male contact	Brass, gold plated
Female contact	Beryllium copper, gold plated
Crimp ferrule	Copper or brass, nickel plated
Other metal parts	Brass, nickel or gold plated
Insulator	PTFE

**Plug**



**Jack**



**75 Ω MCX Specifications**

**Electrical** **CECC 22000**

Impedance	75 Ω	
Frequency range	DC - 6 GHz	
VSWR	1.06 max. @ DC - 2.5 GHz (straight) 1.1 max. @ DC - 2.5 GHz (right-angle)	
RF-leakage	60 dB minimum @ 1 GHz (flexible cable) 70 dB minimum @ 1 GHz (semi-rigid cable)	4.4.8
Voltage rating (at sea level)	≥ 170 Vrms (depending on cable)	
Contact resistance	center contact: ≤ 5 mΩ outer contact: ≤ 2.5 mΩ	4.4.2 4.4.3
Insulation resistance	10,000 MΩ minimum	4.4.4
Insertion loss maximum	0.10 dB @ 1 GHz	
Dielectric withstanding voltage	500 Vrms (at sea level)	4.4.5

**Mechanical**

Mating	Snap-on coupling per CECC 22220	
Braid/Jacket cable affixment	Hex crimp	
Center conductor cable affixment	Solder	
Contact Captivation	≥ 2.3 lbs (10N)	4.5.2
Engagement force	≤ 5.6 lbs (25N)	4.5.1
Disengagement force	≥ 1.8 lbs (8N)	4.5.1
Durability (matings)	500 cycles minimum	4.7.1

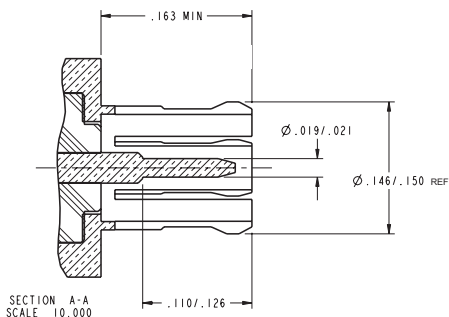
**Environmental**

Temperature range	-55°C to +165°C	
Thermal shock	MIL-STD-202, method 107, cond. F	4.6.7
Moisture resistance	MIL-STD-202, method 106	4.6.6
Corrosion	MIL-STD-202, method 101, cond. B	4.6.10
Vibration	MIL-STD-202, method 204, cond. D	4.6.3
Mechanical shock	MIL-STD-202, method 213, cond. B	

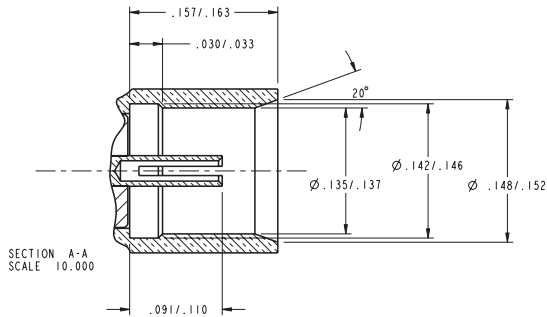
**Material**

Male contact	Brass, gold plated
Female contact	Beryllium copper, gold plated
Crimp ferrule	Copper or brass, nickel plated
Other metal parts	Brass, nickel or gold plated
Insulator	PTFE
Gasket	Silicone rubber

**Plug**



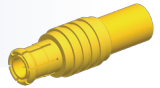
**Jack**



## 50Ω Cable Connectors

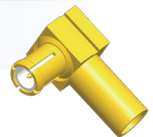
### Straight Plugs

Cable Group	Part Number	Plating		Termination	
		Body	Contact	Body	Contact
A	919-121P-51SX	Gold	Gold	Solder	Crimp
B	919-101P-51SX	Gold	Gold	Crimp	Crimp
B	919-101P-51S1X	Nickel	Gold	Solder	Crimp
B2	919-130P-51SX	Gold	Gold	Crimp	Crimp
L2	919-120P-51SX	Gold	Gold	Solder	Solder



### Angle Plugs

Cable Group	Part Number	Plating		Termination	
		Body	Contact	Body	Contact
A	919-122P-51AX	Gold	Gold	Crimp	Crimp
B	919-104P-51AX	Gold	Gold	Crimp	Solder
B	919-104P-51A1X	Nickel	Gold	Crimp	Solder
L	919-103P-51AX	Gold	Gold	Solder	Solder
L2	919-102P-51AX	Gold	Gold	Solder	Solder



### Straight Jacks

Cable Group	Part Number	Plating		Termination	
		Body	Contact	Body	Contact
A	919-131J-51SX	Gold	Gold	Crimp	Solder
B	919-107J-51SX	Gold	Gold	Crimp	Solder
B	919-107J-51S1X	Nickel	Gold	Crimp	Solder
B2	919-129J-51SX	Gold	Gold	Crimp	Solder
L2	919-114J-51SX	Gold	Gold	Solder	Solder



## 50Ω Printed Circuit Board Connectors

### Straight Jacks

Part Number	Plating		Description
	Body	Contact	
919-109J-51PX	Gold	Gold	Blunt Post Terminal



### Angle Jacks

Part Number	Plating		Description
	Body	Contact	
919-119J-51AX	Gold	Gold	Blunt Post Terminal



### Surface Mount Jacks

Part Number	Plating		Description
	Body	Contact	
919-118J-51P	Gold	Gold	Tape & Reel- 75 Pieces
919-118J-519T	Gold	Gold	





## 75Ω Cable Connectors

### Straight Plugs



Cable Group	Part Number	Body	Plating		Termination	
			Contact		Body	Contact
B1	919-137P-71SX	Gold	Gold	Gold	Crimp	Solder
B3	919-137P-71S2X	Gold	Gold	Gold	Crimp	Solder

### Angle Plugs



Cable Group	Part Number	Body	Plating		Termination	
			Contact		Body	Contact
B1	919-136P-71AX	Gold	Gold	Gold	Crimp	Solder
B3	919-136P-71A2X	Gold	Gold	Gold	Crimp	Solder

## 75Ω Printed Circuit Board Connectors

### Surface Mount Jacks



Part Number	Body	Plating		Description
		Contact		
919-132J-71P	Gold	Gold	Gold	Tape & Reel, 75 Pieces
919-132J071PT	Gold	Gold	Gold	

# Notes

Cable Group	Cable Type
A	RG-178, 196
B	RG-174, 188A, 316, Belden 7805
B1	RG-179, 187, Belden 9221
B2	RD-188/U, RD-316/U
B3	RD-179/U, AT&T 19224L2
C	RG-58, 58A, 58C, 141, 303, LMR195, Belden 7806A, 9907
C1	RG-55, 142, 223, 400
C2	LMR200, Belden 7807A
D	RG-58/U Plenum, Thinnnet, RG-122/U, Belden 88240, 89907
E	RG-59, 62, 140, 210, Belden 8241, 8263, 8279, 9209
E1	RG-59/U 20 AWG center conductor, Belden 1426A, 1505A, 9100, 9278
E2	RD-59/U, Belden 8281, 9141, 9231
E3	RG-59/U Quad Shield, Belden 1152A
F	RG-59/U Plenum, Belden 1560A, 9259, 82259, 89259, 88241
F1	RG-59/U Plenum 20 AWG center conductor, Belden 82108
G1	RG-6, 143, 212
G2	8X, LMR240, Belden 7808A, 9258
G3	LMR400, Belden 7810A, 8214, 9913
G4	RG-8, 8A, 9, 87A, 213, 214, 225, 393
G5	RD-6/U
H	RG-11
H1	Belden 1694A, 9248
H2	Belden 1859A, 7731, 8213, 9292
H3	RG-54A/U
I	AT&T 734A, Belden 1505A
I2	AT&T 735A, Belden 735A1
J	Quad 59 headend cable
K	LMR600
K2	Belden 1695A
K3	RG-122, 180, 195, Belden 1855, 1865A, 8218
L	.141 semi-rigid, RG-402/U
L2	.085, .086, .087 semi-rigid, RG-405/U
L3	.250 semi-rigid
L4	.047 semi-rigid, Belden 1674
M	1/2 inch annular corrugated
M1	1 1/4 inch annular corrugated
M2	1 5/8 inch annular corrugated
M3	7/8 inch annular corrugated
N	1/4 Helical
N1	3/8 Helical
N2	1/2 Helical
N3	7/8 inch SFC
P1	.81 mm OD micro-cable
P2	1.13 mm OD micro-cable, TCB-068
P3	1.32 mm OD micro-cable
P4	1.37 mm OD micro-cable