



Mini-Circuits



Coaxial Cable Kit

K086-12SMMCX1+

50Ω, 12 inch, DC to 6 GHz, SMA Male to MCX Male

THE BIG DEAL

- Kit of 4 phase matched cables, $\pm 2^\circ$ phase difference max
- Low loss, 0.67 dB typ. at 6 GHz
- Excellent return loss, 22 dB typ. up to 6 GHz
- Hand formable to almost any custom shape without special bending tools
- 6mm bend radius for tight installations
- Anti-torque nut prevents cable stress during installation
- Insulated outer jacket standard

APPLICATIONS

- Replacement for custom bent 0.086" semi-rigid cables
- Communication receivers and transmitters
- Radar, EW and ECM Defense Systems
- Environmental and test chambers



Generic photo used for illustration purposes only

Kit Model No.	K086-12SMMCX1+
Case Style	KP3378-12
Connectors	SMA-Male to MCX-Male
Qty.	4 cables

+RoHS Compliant

The +Suffix identifies RoHS Compliance.
See our website for methodologies and qualifications

PRODUCT OVERVIEW

K086-SMMCX+ series Hand-Flex™ coaxial cable kits consist of 4 identical, phase matched cables with a max phase difference of $\pm 2^\circ$. These semi-flex cables are ideal for interconnecting coaxial components and sub-assemblies in a wide range of systems, including communications, military and aerospace, environmental test chambers and more. The hand-formable cable provides a minimum bend radius of 6mm to accommodate tight layouts without the need for bending tools, adapters or brackets. SMA-Male and MCX-Male connectors make these cables ideal for connection of assemblies with SMA or MCX connector types. K086-SMMCX+ series cable kits are available in lengths of 8 and 12 inches to meet your system needs.

KEY FEATURES

Feature	Advantages
Hand-Flex™ (Hand-formable RF cables)	Facilitates the assembly of coaxial systems and sub-systems without the need for special cable-bending tools or adapters. Reduces the risk of damage during bending.
Phase Matched, $\pm 2^\circ$ phase difference max	When combining a number of amplifier modules it's important to have as little phase difference as possible. Delivering a group of phased matched cable assemblies allows them to easily be deployed in phase sensitive applications.
Tight bend-radius, 6mm	6 mm bend-radius makes the cable ideal for connections in tight spaces and crowded layouts.
Low insertion loss	Minimizes overall signal path loss.
Excellent return loss	Minimizes signal reflection and VSWR ripple contribution.
SMA-Male to MCX-Male connectors	Supports easy interconnection of components and equipment in systems with SMA and MCX connector types.
Good power handling, 95W at 1 GHz	Supports medium to high RF power levels used in transmit paths.





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ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Frequency (GHz)	Min.	Typ.	Max.	Units
Frequency range		DC	-	6	GHz
Impedance		50			Ohms
Length		12			inches
Insertion Loss	DC - 6	-	0.34	0.96	dB
Phase Match	DC - 6	-	±0.3	±2.0	°
Return Loss	DC - 6	17.7	34	-	dB

1. Kit contains 4 identical, phase matched cables.

MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-45°C to 85°C
Storage Temperature	-55°C to 105°C
Power Handling at 25°C, Sea Level	95W at 1 GHz

Permanent damage may occur if any of these limits are exceeded.

CABLE INFORMATION

Description	Connector 1	Connector 2
Type	SMA Male	MCX Male
Orientation	Straight	Straight
Mounting Type	Standard	Standard
Impedance	50 Ω	50 Ω
Contact Material & Plating	Gold Plated Brass	Center: Gold Plated Brass Outer: Gold Plated Beryllium Copper
Dielectric Type	PTFE	PTFE
Body Material & Plating	Gold Plated Stainless Steel	Gold Plated Brass
Coupling Nut Material & Plating	Passivated Stainless Steel	-
Hex Size	5/16 inch	-





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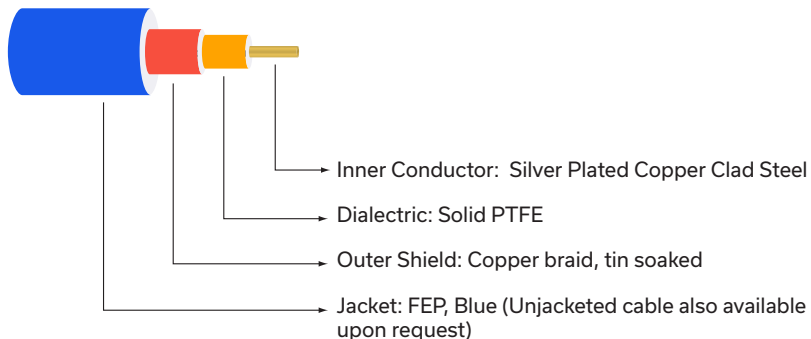
**HAND
FLEX™**

Coaxial Cable Kit

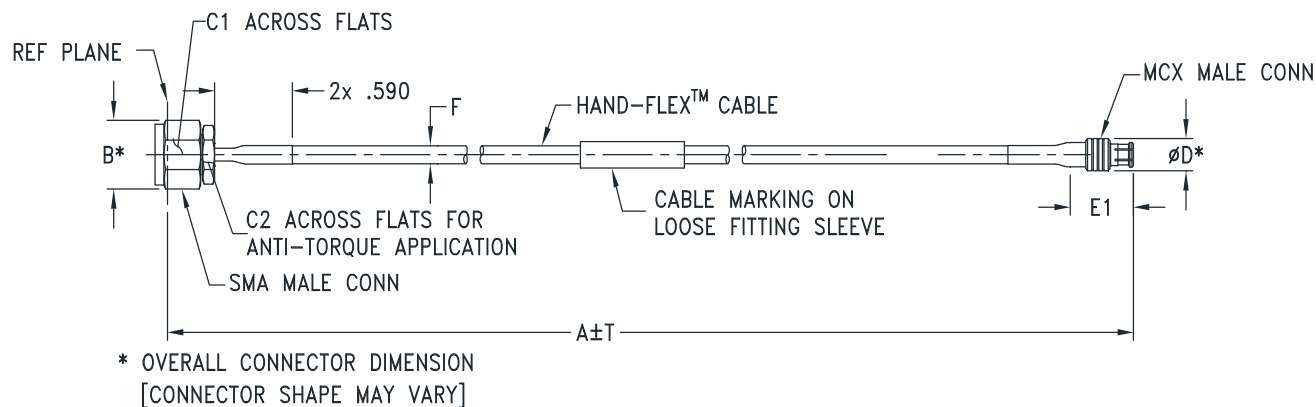
K086-12SMMCX1+

50Ω, 12 inch, DC to 6 GHz, SMA Male to MCX Male

CABLE CONSTRUCTION



OUTLINE DRAWING



OUTLINE DIMENSIONS

	A	B	C1	C2	D	E1	E2	F	T
inches	12.00	0.36	0.315	0.250	0.197	0.480	--	.089±.002	0.10
mm	304.80	9.14	8.00	6.35	5.00	12.2	--	2.26±.05	2.54

Total Weight: 10.18 grams





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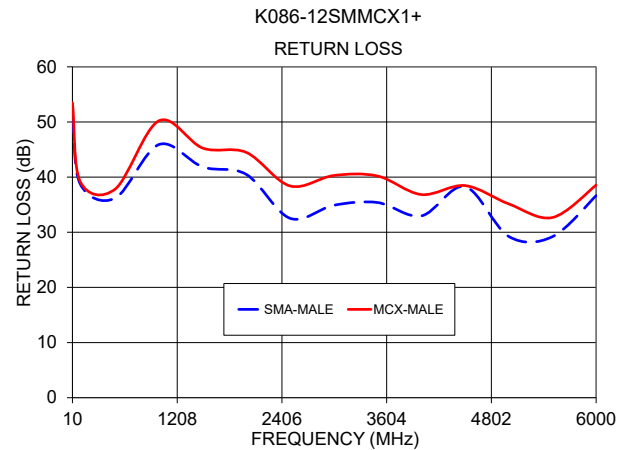
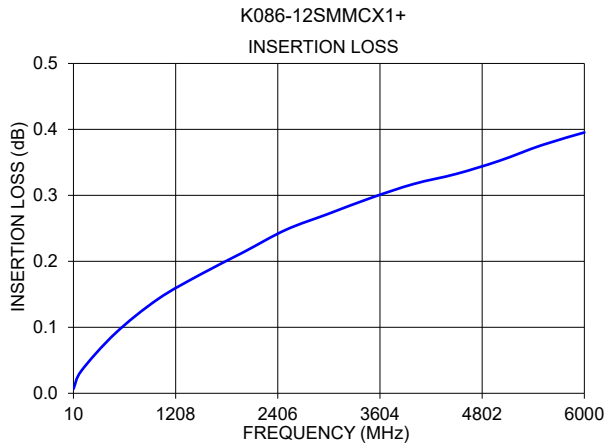
Coaxial Cable Kit

K086-12SMMCX1+

50Ω, 12 inch, DC to 6 GHz, SMA Male to MCX Male

TYPICAL PERFORMANCE DATA AND CHARTS

Frequency (MHz)	Insertion Loss (dB)	Phase Difference (± deg)	Return Loss (dB)	
			SMA-Male	MCX-Male
10	0.01	0.01	51.42	53.52
100	0.03	0.03	38.73	39.16
500	0.09	0.09	36.20	37.85
1000	0.14	0.14	45.92	50.22
1500	0.18	0.18	41.84	45.27
2000	0.21	0.21	40.48	44.47
2500	0.25	0.25	32.53	38.39
3000	0.27	0.27	34.90	40.30
3500	0.30	0.30	35.39	40.20
4000	0.32	0.32	32.97	36.84
4500	0.33	0.33	38.27	38.46
5000	0.35	0.35	29.25	35.15
5500	0.38	0.38	29.20	32.67
6000	0.40	0.40	36.64	38.55



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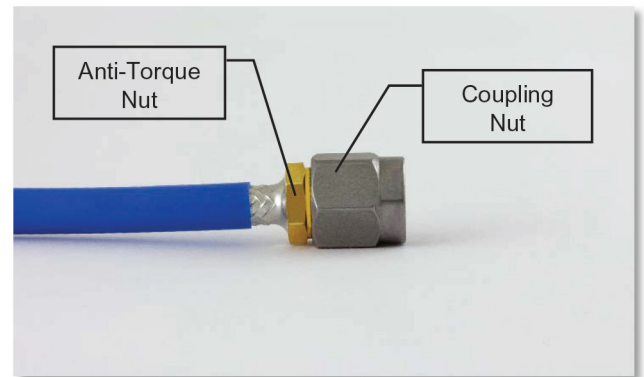
50Ω, 12 inch, DC to 6 GHz, SMA Male to MCX Male

PROPER CABLE CONNECTION USING ANTI-TORQUE NUT

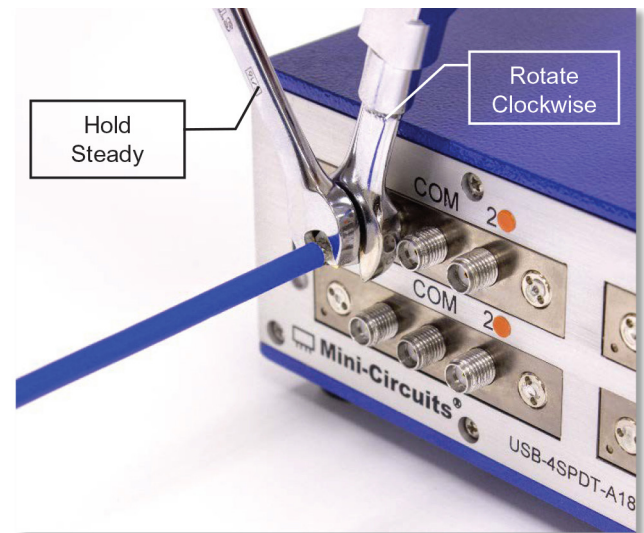
Mini-Circuits 086-series HandFlex™ interconnect cables are constructed with an anti-torque nut adjacent to the connector coupling nut. When used properly, this feature prevents possible damage to the cable due to torqueing and twisting when tightening the cable connector.

TO PROPERLY TIGHTEN THE CABLE CONNECTOR:

1) The cable connector includes a coupling nut which rotates to fasten the connector, and an anti-torque nut, which is fixed to prevent the cable from twisting during connection.



2) To properly tighten the cable, use a standard 1/4-inch open end wrench to brace the anti-torque nut.



3) Using a 5/16-inch open end wrench, rotate the coupling nut clockwise to tighten the cable connector.

*NOTE: Mini-Circuits recommends using a 5/16-inch open end wrench calibrated to 8 inch-pounds maximum torque to prevent damage due to over-torqueing the connector.

NOTES

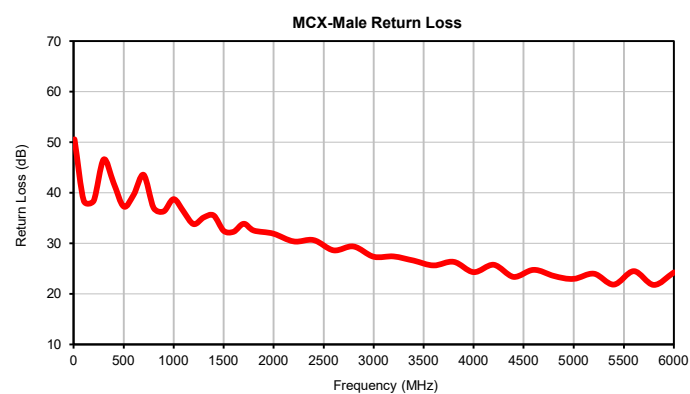
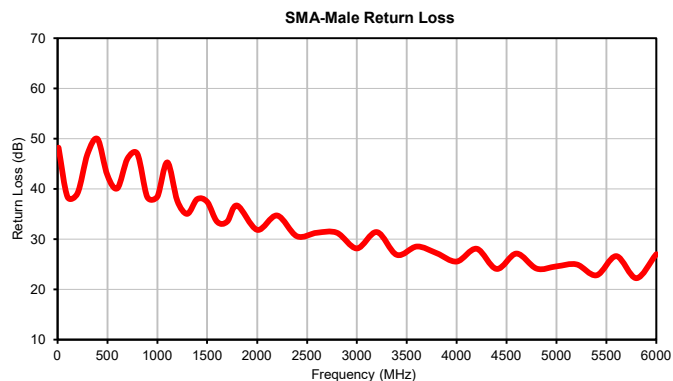
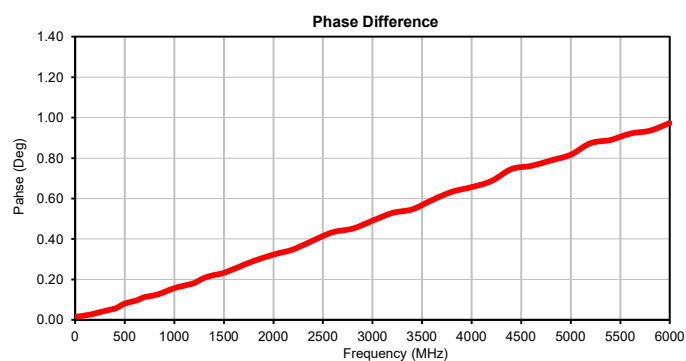
- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/terms/viewterm.html



Typical Performance Data

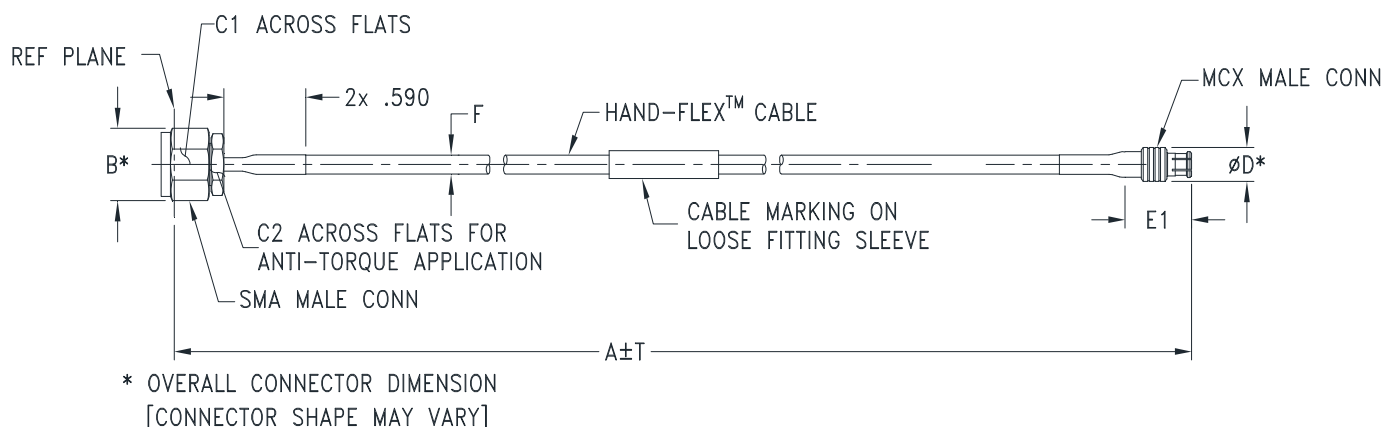
FREQUENCY (MHz)	INSERTION LOSS (dB)	Phase Difference ($\pm$ deg)	SMA-MALE RETURN LOSS (dB)	MCX-MALE RETURN LOSS (dB)
10	0.03	0.02	48.22	50.57
100	0.07	0.02	38.40	38.41
200	0.11	0.03	39.06	38.42
300	0.14	0.04	46.86	46.55
400	0.16	0.06	49.91	41.94
500	0.18	0.08	42.65	37.24
600	0.21	0.09	40.12	39.60
700	0.22	0.11	45.98	43.52
800	0.24	0.12	46.97	37.02
900	0.25	0.14	38.37	36.29
1000	0.27	0.16	38.49	38.73
1100	0.28	0.17	45.26	36.22
1200	0.30	0.18	37.60	33.77
1300	0.31	0.21	35.00	35.10
1400	0.32	0.22	37.93	35.50
1500	0.33	0.23	37.37	32.47
1600	0.34	0.25	33.42	32.28
1700	0.35	0.27	33.48	33.86
1800	0.37	0.29	36.70	32.54
2000	0.38	0.32	31.84	31.89
2200	0.40	0.35	34.69	30.34
2400	0.42	0.39	30.54	30.65
2600	0.44	0.43	31.29	28.59
2800	0.45	0.45	31.24	29.36
3000	0.47	0.49	28.14	27.31
3200	0.49	0.53	31.39	27.37
3400	0.50	0.55	26.83	26.55
3600	0.52	0.59	28.53	25.59
3800	0.53	0.63	27.17	26.34
4000	0.55	0.66	25.54	24.27
4200	0.56	0.69	28.06	25.72
4400	0.58	0.75	24.05	23.34
4600	0.59	0.76	27.13	24.75
4800	0.60	0.79	24.14	23.54
5000	0.62	0.82	24.58	22.93
5200	0.63	0.87	24.97	24.00
5400	0.65	0.89	22.80	21.82
5600	0.65	0.92	26.59	24.48
5800	0.67	0.94	22.20	21.77
6000	0.67	0.97	27.00	24.21

Typical Performance Curves



Outline Dimensions

KP3378



KP3378 SERIES

SMA MALE (CONN-1)

MCX MALE (CONN-2)

CASE STYLE #	A		B	C1	C2	D	E1	E2	F		T		WEIGHT GRAMS
	INCH	MM							086U- ASMMC+	086- ASMMC+	INCH	MM	
KP3378-8	8.00	203.20	.36 [9.14]	.315 [8.00]	.250 [6.35]	.197 [5.00]	.480 [12.2]	- -	.089 ± .002 [2.26 ± .05]	.108 NOM [2.74 NOM]	.10	2.54	8.36
KP3378-12	12.00	304.80									.10	2.54	10.18

Unless otherwise specified dimensions are in inches (mm).

Tolerances: 2Pl. ± .03; 3Pl. ± .015

Note:

- 086 Hand-Flex™ Coaxial Cable.
- "A" represents length of cable.



INTERNET <http://www.minicircuits.com>

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Mini-Circuits ISO 9001 & ISO 14001 Certified



All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-45° to 85°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 105°C Ambient Environment	Individual Model Data Sheet
Multiple Bend Radius	40 mm, 5 times for 141 series cables 30 mm, 5 times for 086 series cables	
Single Bend Radius	8 mm for 141 series cables 6 mm for 086 series cables	