HAND FLEX™

Coaxial Cable

086 Model Series

50Ω DC to 18 GHz



CASE STYLE: KP1505-XX

XX= cable length in inches

The Big Deal

- Hand Formable
- Tight Bend Radius
- Excellent Return Loss and Insertion Loss
- Ideal for interconnect of assembled systems

Product Overview

The 086 Series Hand-Flex Coaxial Cables are ideal for interconnection of coaxial components or sub-systems. The construction includes a silver-plated copper-clad steel center conductor which maintains the shape after bending. The outer shield is copper braid, tin soaked, which minimizes signal leakage and at the same time flexible for easy bend. Dielectric is low loss PTFE. Connectors have passivated stainless-steel coupling nut over a gold plated connector body and gold plated, brass center conductor.

Key Features

Feature	Advantages
Hand-Formable RF Cables	The 086 Series Hand-Flex cables are hand formable making them ideal for use integrating coaxial components and sub-assemblies without the need for special cable-bending tools and alleviating the risk of damage during the bending process typical of semi-rigid coaxial cable assemblies.
Tight Bend Radius	Capable of only 6mm bend radius, the 086 Hand Flex series is able to make connections in tight spaces making these cables ideal for dense system integration
Excellent Return loss	Supporting typical return loss of 33 dB to 6 GHz and 21 dB to 18 GHz, the 086 Series Hand-Flex Cables are ideally suited for interconnecting a wide variety of RF components while minimizing VSWR ripple contribution due to mating cables & connectors.
Good Power Handling Capability: • 211W at 0.5 GHz • 35W at 18 GHz	Mini-Circuits 086 Cable series can support medium to high RF power levels enabling these cables to be used in the transmit path. NOTE: power rating is at sea-level altitudes.
Built in Anti-torque nut	Mini-Circuits 086 Series Hand Flex cables include an anti-torque feature to support the connector body during installation alleviating risk of stress to the connector/cable interface.
Jacketed and Unjacketed options	Standard 086 Series cables include a blue FEP insulator jacket reducing the risk of accidental shorting of DC power lines or active pins during installation and operation. Un-jacketed versions are available upon request.

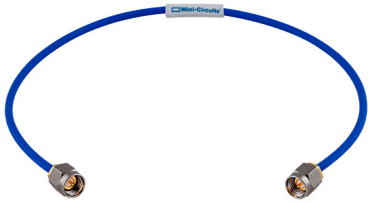
Notes
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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HAND FLEX™

Coaxial Cable

086-18SM+

50Ω 18 inch DC to 18 GHz



CASE STYLE: KP1505-18

Connectors	Model
SMA-Male	086-18SM+

+RoHS Compliant

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

Maximum Ratings

Operating Temperature	-55°C to 105°C
Storage Temperature	-55°C to 105°C
Power Handling at 25°C, Sea Level	211W at 0.5 GHz 150W at 1 GHz 104W at 2 GHz 59W at 6 GHz 45W at 10 GHz 35W at 18 GHz

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

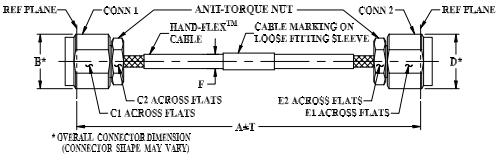
Features

- Wideband frequency coverage, DC to 18 GHz
- Low Loss, 1.75 dB at 18 GHz
- Excellent Return Loss, 24 dB at 18 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
- Connector interface, meets MIL-STD-348
- **Ideal for interconnect of assembled systems**

Applications

- Replacement for custom bent 0.086" semi-rigid cables
- Communication receivers and transmitters
- Military and aerospace system
- Environmental and test chambers

Outline Drawing

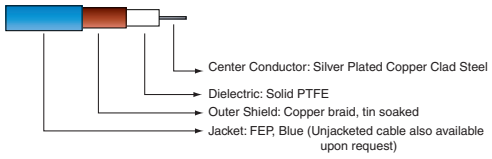


Outline Dimensions (inch / mm)

A	B	C1	C2	D
18.0	.36	.313	.250	.36
457.20	9.14	7.95	6.35	9.14

E1	E2	F	T	wt
.313	.250	.108	0.15	grams
7.95	6.35	2.74	3.81	13.43

Cable Construction



Connectors: Coupling Nut: Stainless Steel Passivated
Body: Stainless Steel Gold Plated
Center Pin: Brass, Gold Plated

Typical Bending Capability



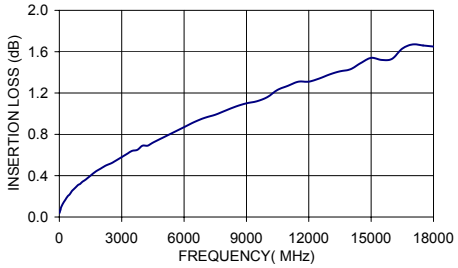
Electrical Specifications at 25°C

Parameter	Condition (GHz)	Min.	Typ.	Max.	Unit
Frequency Range		DC		18	GHz
Length[1]			18		inches
Insertion Loss	DC - 2	—	0.20	0.61	dB
	2 - 6	—	0.65	1.11	
	6 - 10	—	0.97	1.49	
	10 - 18	—	1.41	2.07	
Return Loss	DC - 2	23	44	—	dB
	2 - 6	23	39	—	
	6 - 10	17	34	—	
	10 - 18	16	27	—	

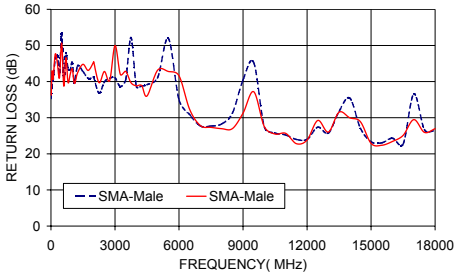
Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	
		SMA-Male	SMA-Male
10.0	0.04	35.31	36.24
1000.0	0.32	45.34	43.48
2000.0	0.47	41.31	45.42
2500.0	0.52	39.88	42.80
4000.0	0.69	38.62	38.84
5000.0	0.77	41.09	43.16
6000.0	0.87	34.96	41.62
7000.0	0.96	27.71	27.82
8000.0	1.03	28.26	26.95
9000.0	1.10	40.45	31.26
10000.0	1.16	27.40	27.51
12000.0	1.31	24.00	23.81
14000.0	1.43	35.45	29.98
15000.0	1.54	23.34	22.89
18000.0	1.65	26.43	26.96

086-18SM+
INSERTION LOSS



086-18SM+
RETURN LOSS



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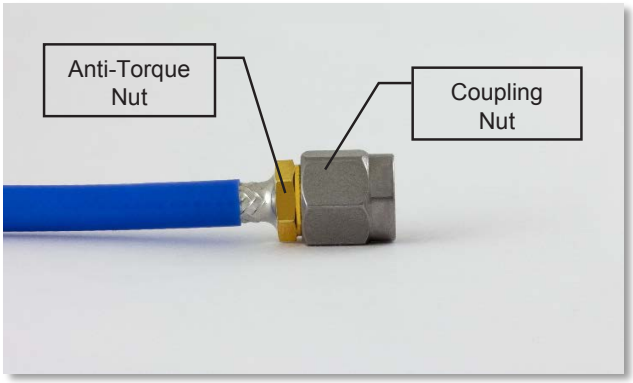
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Proper Cable Connection Using Anti-Torque Nut

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.

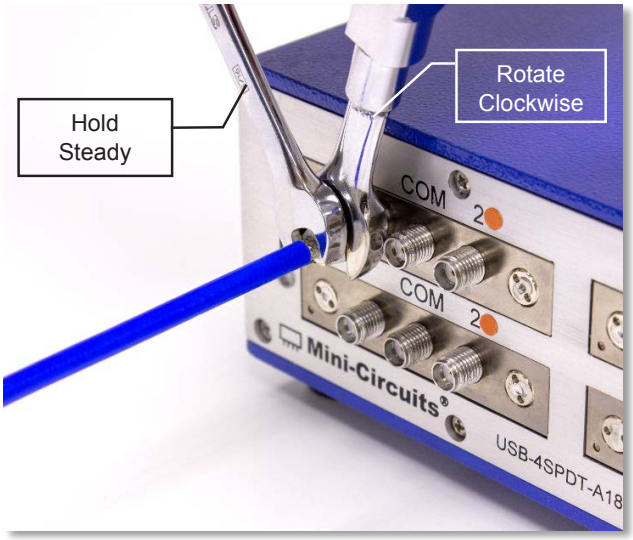
To properly tighten the cable connector:

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.

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