HAND FLEX™
Coaxial Cable

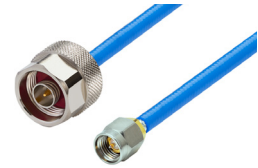## 141-8SMNM+

50Ω   8 inch   DC to 18 GHz

THE BIG DEAL
- Wideband frequency coverage, DC to 18 GHz
- Low Loss, 0.7 dB at 18 GHz
- Excellent Return Loss, 22 dB at 18 GHz
- Hand formable to almost any custom shape without special bending tools
- 8mm bend radius for tight installations
- Anti-torque nut prevents cable stress during installation
- Insulated outer jacket standard
- Ideal for interconnect of assembled systems

Generic photo used for illustration purposes only

Model No.	141-8SMNM+
Case Style	KQ1668-8
Connectors	SMA-Male to N-Male

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

APPLICATIONS
- Replacement for custom bent 0.141" semi-rigid cables
- Communication Receivers and Transmitters
- Military and Aerospace System
- Environmental and Test Chambers

PRODUCT OVERVIEW
141 SMNM+ series Hand-Flex coaxial cables are ideal for integrating coaxial components and sub-systems in tight spaces and dense system configurations. SMA to N-Type connection avoids need for an adapter between components with SMA-F and N-F connection ports, reducing system cost and improving reliability. Sturdy, hand-formable cable construction maintains shape after bending with bend-radius as small as 8mm. 141 SMNM+ coaxial cables have the advantages of wide frequency range and excellent return loss and insertion loss. Available in a variety of lengths.

KEY FEATURES

Features	Advantages
Hand-Formable	141 SMNM+ series Hand-Flex cables avoid the need for cable-bending tools, alleviating the risk of damage during bending processes typical of semi-rigid cable assemblies.
Tight Bend Radius	Capable of bending to radii as small as 8mm, the 141 SMNM+ series is ideal for making connections in tight spaces and dense system assemblies.
Excellent Return Loss	Typical return loss of 25 dB to 6 GHz and 18 dB to 18 GHz makes the 141 SMNM+ series ideal for interconnecting a wide variety of RF components while minimizing VSWR ripple contribution due to mating cables & connectors.
High Power Handling Capability: • 546W at 0.5 GHz • 90W at 18 GHz	Mini-Circuits 141 SMNM+ series cables can support medium to high RF power levels and can be used in the transmit path. (NOTE: power rating at sea-level).
Built-in Anti-torque Nut	Supports the connector bodies during installation, preventing stress to the connector/cable interface.
SMA-Male / N-Male connectors	Eliminates need for adapter when connecting to SMA-F and N-F connectors, reducing cost and improving reliability.

Mini-Circuits®

ELECTRICAL SPECIFICATIONS AT +25°C

Parameter	Frequency (GHz)	Min.	Typ.	Max.	Units
Frequency Range		DC		18	GHz
Length[1]			8		inches
Insertion Loss	DC - 2	—	0.18	0.31	dB
	2 - 6	—	0.42	0.56	
	6 - 10	—	0.54	0.74	
	10 - 18	—	0.86	1.04	
Return Loss	DC - 2	23	29	—	dB
	2 - 6	23	26	—	
	6 - 10	17	25	—	
	10 - 18	17	18	—	

1. Custom sizes available, consult factory.

ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-55°C to +105°C
Storage Temperature	-55°C to +105°C
Power Handling at 25°C, Sea Level	546W at 0.5 GHz
	387W at 1 GHz
	273W at 2 GHz
	156W at 6 GHz
	121W at 10 GHz
	90W at 18 GHz

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

CABLE CONSTRUCTION

Center Conductor: Silver Plated Copper Clad Steel

Dialectric: Solid PTFE

Outer Shield: Copper Braid, Tin Soaked
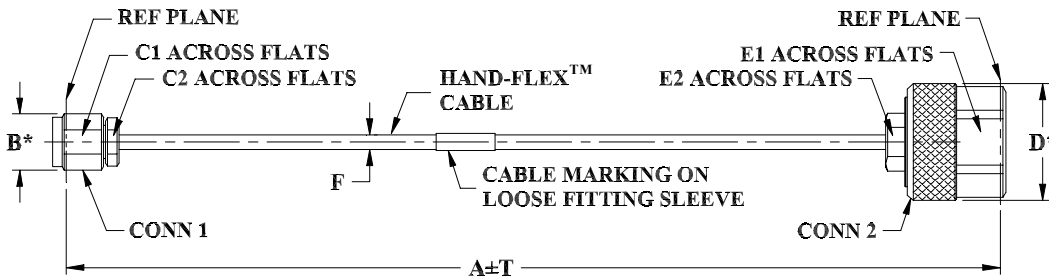
Jacket: FEP, Blue (Unjacketed cable also available upon request)
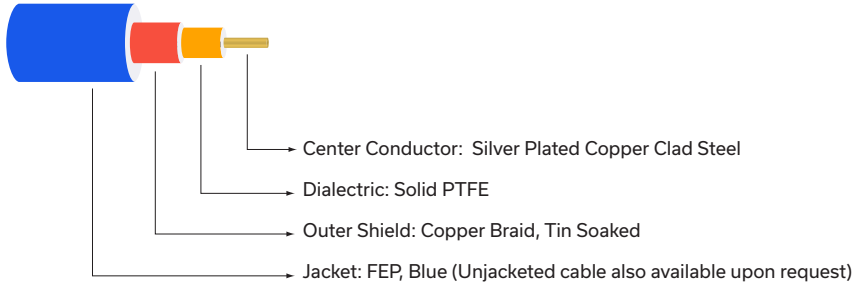
SMA-Male Connector:
    Coupling Nut: Stainless Steel Passivated
    Body: Stainless Steel Gold Plated
    Center Pin: Silver Plated Copper Clad Steel

N-Male Connector:
    Coupling Nut: Brass, Nickel Plated
    Body: Brass, Nickel Plated
    Center Pin: Brass, Gold Plated

OUTLINE DRAWING

REF PLANE
C1 ACROSS FLATS
C2 ACROSS FLATS
HAND-FLEX™ CABLE
B*
F
CONN 1
CABLE MARKING ON LOOSE FITTING SLEEVE
REF PLANE
E1 ACROSS FLATS
E2 ACROSS FLATS
D*
CONN 2
A±T

* OVERALL CONNECTOR DIMENSION
[CONNECTOR SHAPE MAY VARY]

OUTLINE DIMENSIONS (Inch / mm)

A	B	C1	C2	D	E1	E2	F	T	wt
8.0	.36	.313	.250	.88	.750	.375	.163±.004	.10	grams
203.20	9.14	7.95	6.35	22.35	19.05	9.53	4.14±0.10	2.54	42.44

Coaxial Cable

141-8SMNM+

50Ω   8 inch   DC to 18 GHz

TYPICAL PERFORMANCE DATA AND CHARTS

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	
		SMA-Male	N-Male
100	0.02	37.6	38.5
1000	0.09	33.3	33.1
1800	0.10	33.0	36.4
2404	0.14	30.5	31.5
4001	0.22	29.2	31.9
5000	0.23	31.2	31.2
6000	0.30	29.5	26.4
7001	0.33	38.2	41.1
8001	0.33	34.3	36.4
9000	0.43	35.0	32.2
10000	0.42	25.7	25.9
12001	0.56	29.3	30.0
14001	0.46	30.3	31.2
16242	0.62	23.6	26.2
18000	0.69	19.3	22.4

141-8SMNM+
INSERTION LOSS

141-8SMNM+
RETURN LOSS
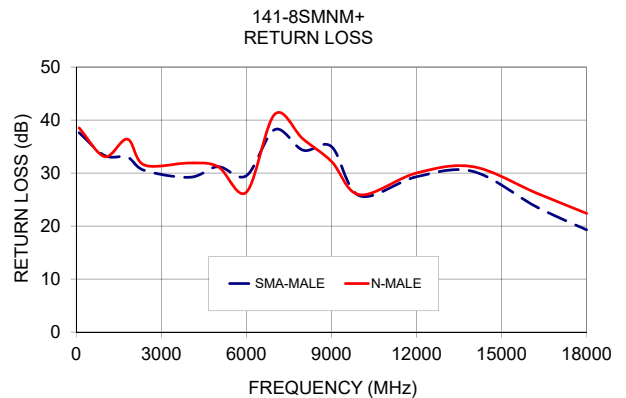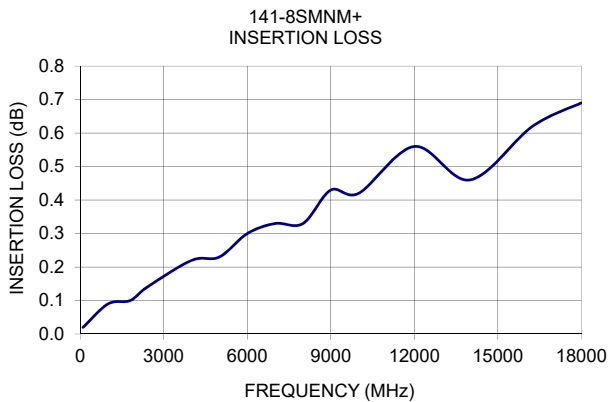
PROPER CABLE CONNECTION USING ANTI-TORQUE NUT

Mini-Circuits 141-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.
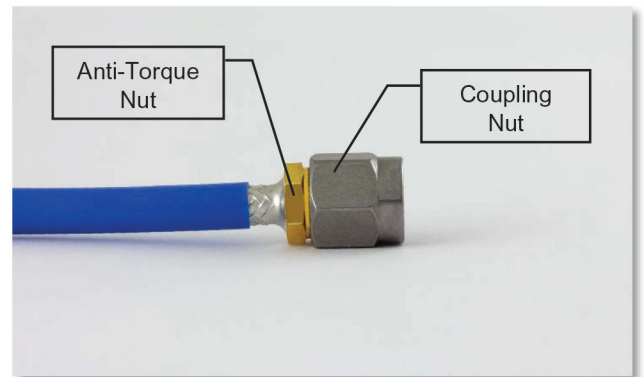
2) To properly tighten the cable, use a standard 1/4 inch open end wrench to brace the anti-torque nut.
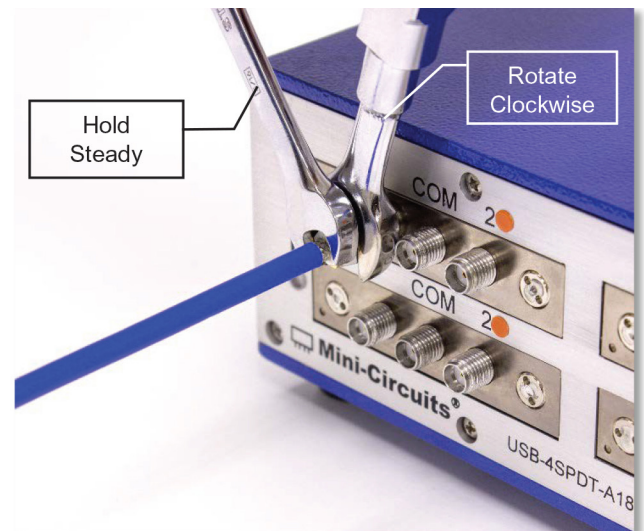
3) Using a 5/16-inch open end wrench, rotate the coupling nut clockwise to tighten the cable connector.

*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