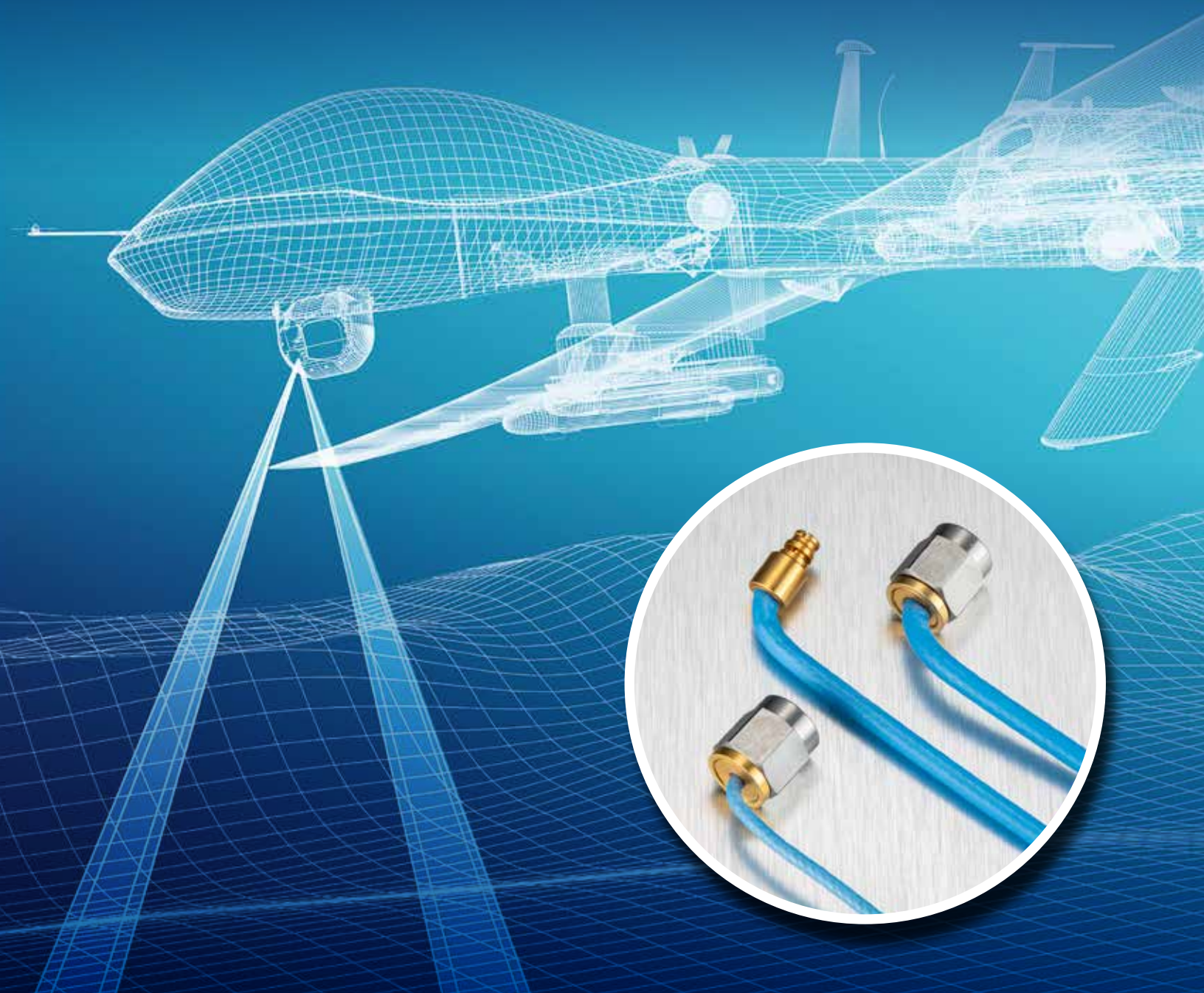
TIMES MICROWAVE SYSTEMS
AN AMPHENOL COMPANY

InstaBend®

High Performance Microwave Assemblies



InstaBend®

High Performance Microwave Assemblies

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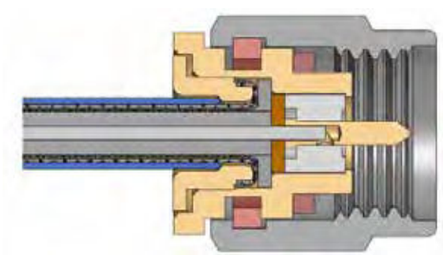
InstaBend® microwave cable assemblies are flexible, high-performance solutions designed to connect RF circuit cards, modules, and enclosure panels. Built to perform over a wide operating frequency range and with connectors designed to support low-profile bends, InstaBend simplifies cable routing for applications with space constraints. Readily available in a variety of lengths and connector types, InstaBend is the versatile choice for a wide range of applications.

Applications:

- Cellular base stations
- Radar systems
- Satellite communications
- Medical imaging
- Test and measurement equipment

CABLE-CONNECTOR OPTIMIZATION → Higher performance stability



→ Great connector retention (≥25 lbs)

→ No center conductor deformation when bent

→ Ready for harsh environment

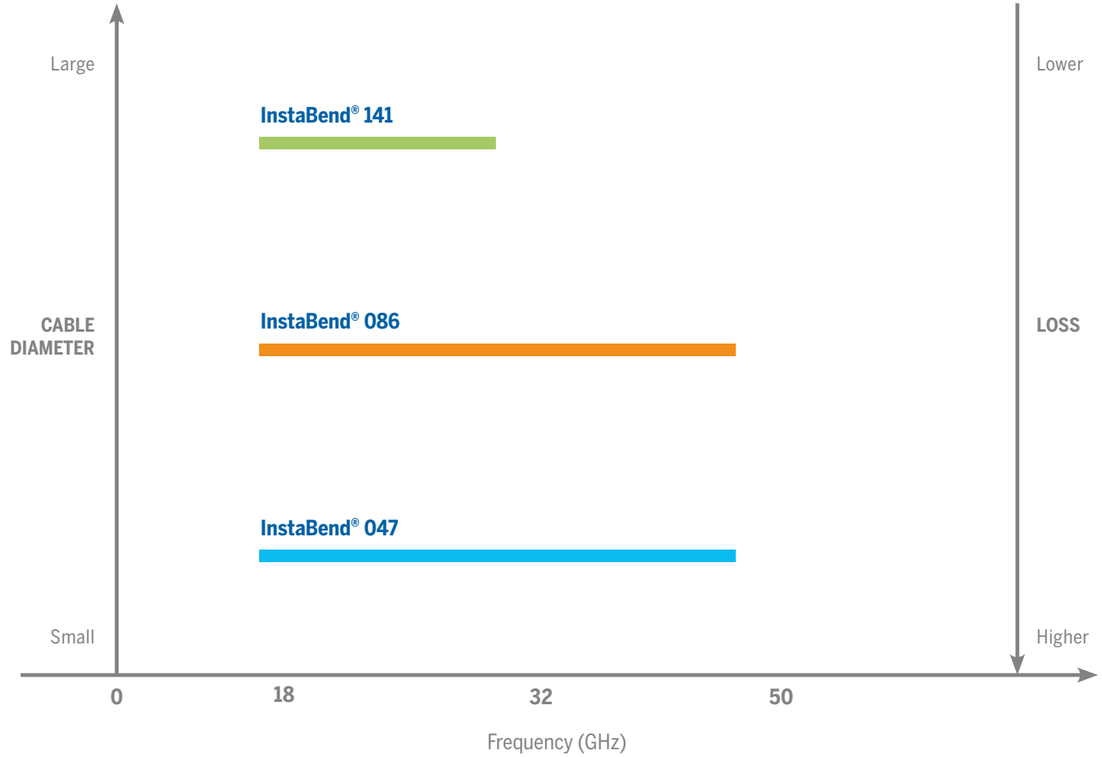
GROUND-UP RUGGEDIZATION → Excellent durability

Cable Assembly Comparison Chart

Cable	Max.Frequency	Cable Diameter	Flexure	Loss	Power Handling	Temperature Range
InstaBend® 047	50 GHz	0.061 in (1.55 mm)	■■■■■	■■■□□	■■■□□	■■■■□
InstaBend® 086	50 GHz	0.105 in (2.67 mm)	■■■■□	■■■■□	■■■■□	■■■■□
InstaBend® 141	32 GHz	0.163 in (4.14 mm)	■■■□□	■■■■■	■■■■■	■■■■□

Cable Assembly Guide

Selecting the correct assembly for the right application is not always an easy task.
Below are some considerations when selecting High Performance Microwave Assemblies.



InstaBend® 047

High Performance Microwave Assemblies

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InstaBend® 047 are flexible coaxial microwave assemblies designed for interconnects between RF circuit cards, medical equipment, and enclosure panels. This cable's low profile and flexure allows for bending close behind the connector which simplifies cable routing. IB-047 assemblies are available in a variety of lengths and connector types, making them a versatile solution for a wide range of applications.

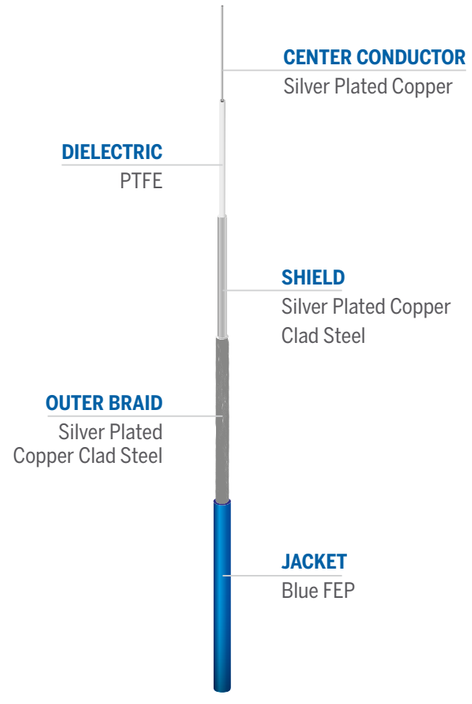
Features:

- Readily Available
- Low-profile bending close to the connector back-end for minimal footprint
- Lightweight

Specifications

Impedance 50 Ohms | Op Temp -85 to 257°F -65 to 125°C

Units		
Diameter	in (mm)	0.061 (1.55)
Weight	lb/ft (g/m)	0.004 (6.0)
Minimum Bend Radius	in (mm)	0.130 (3.30)
Maximum Frequency	GHz	50
Maximum Operating Voltage	VACrms	100
Capacitance	pF/ft (pF/m)	29.9 (98.1)
Delay	ns/ft (ns/m)	1.45 (4.76)
Shielding	dBc	-90



Calculation

IL = (K1 x v(f) + K2 x f) x Cable Length + Connector Loss

Cable Insertion Loss
f = Frequency (MHz)

Use K values with matching length unit

K values	dB/ft	dB/m
K1	0.01195	0.03920795
K2	0.000013	0.000042653

Typical Connector Loss

Frequency (MHz)	dB/pr	Frequency (MHz)	dB/pr
500	0.04	10000	0.19
1000	0.06	12000	0.21
2000	0.08	14000	0.22
4000	0.12	16000	0.24
6000	0.15	18000	0.25
8000	0.17		

Ordering Guide

IB047 -XX XX- XX.X XX

- Connector A | Connector B - | Length | in / ft / cm / m

Connectors	Code	Part-Number	Stock Code	Description	VSWR max
	KM	IB-047-KM	47425	2.92 mm, male, straight	1.35 @ DC-12.4 GHz 1.50 @ 12.4- 18 GHz
	SM	IB-047-SM	47396	SMA, male, straight	1.20 @ DC-6.0 GHz 1.35 @ 6.0-26.5 GHz
	SMPF	IB-047-SMPF	47432	SMP, female, straight	1.20 @ DC-6.0 GHz 1.35 @ 6.0-26.5 GHz 1.40 @ 26.5-40.0 GHz

InstaBend® 086

High Performance Microwave Assemblies

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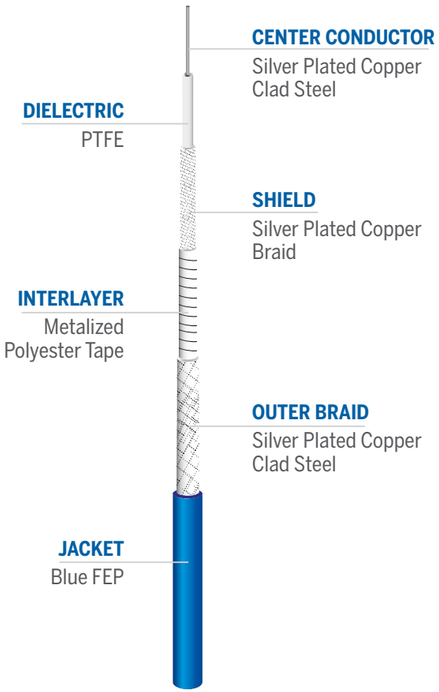
InstaBend®086 are flexible coaxial microwave assemblies designed for interconnects between RF circuit cards, modules, and enclosure panels. This cable is an optimal compromise between flexure, loss, and power handling.

Features:

- Readily available
- Extreme bending from the back of the connector for minimal footprint
- 90º torque resistance
- Highly stable VSWR
- Ruggedized backend



Specifications

Ω Impedance 50 Ohms

Op Temp -85 to 257°F -65 to 125°C

Units		
Diameter	in (mm)	0.105 (2.67)
Weight	lb/ft (g/m)	0.013 (19.3)
Minimum Bend Radius	in (mm)	0.25 (6.35)
Maximum Frequency	GHz	50
Maximum Operating Voltage	VACrms	100
Velocity of Propagation	%	70
Capacitance	pF/ft (pF/m)	29 (95.1)
Delay	ns/ft (ns/m)	1.45 (4.76)
Shielding	dB	>90

Calculation

IL = (K1 x √(f) + K2 x f) x Cable Length + Connector Loss

Cable Insertion Loss
f = Frequency (MHz)

Use K values with matching length unit

K values	dB/ft	dB/m
K1	0.006446	0.021148
K2	0.000013	0.000043

Typical Connector Loss

Frequency (MHz)	dB/pr	Frequency (MHz)	dB/pr
500	0.04	10000	0.19
1000	0.06	12000	0.21
2000	0.08	14000	0.22
4000	0.12	16000	0.24
6000	0.15	18000	0.25
8000	0.17		

Ordering Guide

IB086 -XX XX- XX.X XX

- Connector A | Connector B - | Length | in / ft / cm / m

Connectors	Code	Part-Number	Stock Code	Description	VSWR max
	KM	IB-086-KM	47393	2.92 mm, male, straight	1.25 @ DC-27 GHz 1.40 @ 27-40 GHz
	SM	IB-086-SM	47388	SMA, male, straight	1.25 @ DC-27 GHz
	SMPF	IB-086-SMPF	47389	SMP, female, straight	1.35 @ DC-12.4 GHz 1.50 @ 12.4- 18 GHz 1.70 @ 18- 40 GHz

InstaBend® 141

High Performance Microwave Assemblies

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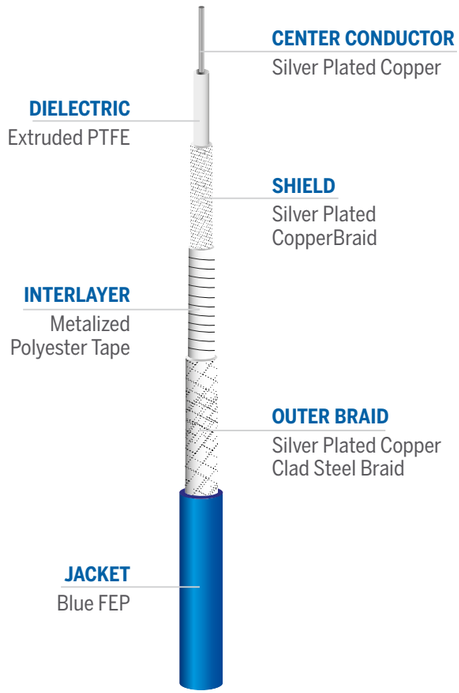
InstaBend®141 is a flexible, coaxial microwave assembly designed for interconnects between RF circuit cards, modules, and enclosure panels. This cable is best for applications requiring low loss and power handling.

Features:

- Readily available
- Low-profile bending for minimal footprint
- Weight savings vs. semi-rigid
- Highly ruggedized



Specifications

Ω Impedance 50 Ohms | Op Temp -85 to 257°F -65 to 125°C

	Units	
Diameter	in (mm)	0.163 (4.14)
Weight	lb/ft (g/m)	0.028 (41.7)
Minimum Bend Radius	in (mm)	0.5 (12.7)
Maximum Frequency	GHz	27
Maximum Operating Voltage	VACrms	250
Velocity of Propagation	%	70
Capacitance	pF/ft (pF/m)	29.3 (98.1)
Delay	ns/ft (ns/m)	1.45 (4.77)
Shielding	dB	>90

Calculation

IL = (K1 x √(f) + K2 x f) x Cable Length + Connector Loss

Cable Insertion Loss
f = Frequency (MHz)

Use K values with matching length unit

K values	dB/ft	dB/m
K1	0.003626	0.011897
K2	0.000013	0.000043

Typical Connector Loss

Frequency (MHz)	dB/pr	Frequency (MHz)	dB/pr
500	0.04	10000	0.19
1000	0.06	12000	0.21
2000	0.08	14000	0.22
4000	0.12	16000	0.24
6000	0.15	18000	0.25
8000	0.17		

Ordering Guide

IB141 -XX XX- XX.X XX

- Connector A | Connector B - | Length | in / ft / cm / m

Connectors	Code	Part-Number	Stock Code	Description	VSWR max
	SM	IB-141-KM	47426	SMA, male, straight	1.2 @ DC - 12 GHz 1.3 @ 12 - 27 GHz

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