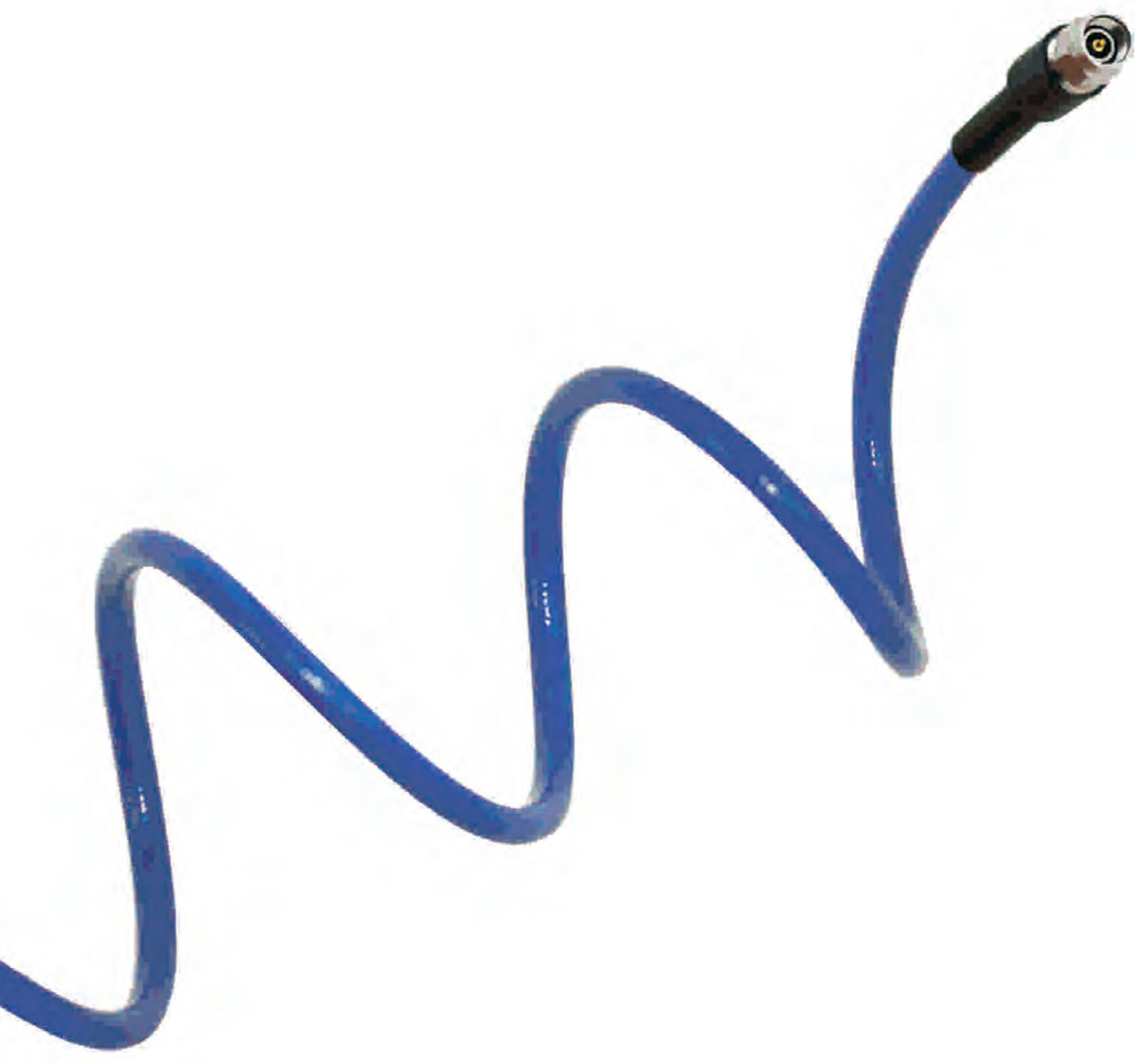
V6

Microwave Coaxial Cable &Cable Assembly

A Leading Coax Cable Innovater



Juncoax RF Technologies Inc.

INTRODUCTION

Juncoax Inc. was established in 2011 , as a company designs and manufactures high performance RF and microwave coaxial cables,connectors and cable assemblies for a broad range of RF transmission applications. We are located in Shanghai,China. with convenient transportaion access. All our products comply with internatioal quality standards and are greatly appreciated in a variety of different markets throughout the world.

Based on years of experience and high level technical expertise in transmission line technology, We provide the broadest range of connection solutions from DC to 110GHz for wireless communications ,industrial and defence applications.

Our team have profound knowledge of manufacturing and material application of coaxial cables and cable assemblies. we select and design the right product for customer application.

Our company runs on the principles of being innovative and customer oriented, providing the customer with needed quality and striving for excellence.

Juncoax Inc. is an ISO9001 certified company, with operations that also meet the requirements of MIL-DTL-17H Standard.

Core Products:

*Bulk Cable

* Cable Assembly

*Test Cable

Features:

- ■High Power
- ■Large Production
- ■Custom Available
- ■Environmentally Friendly
- ■DC-110GHz
- ■Ultra Low Loss
- ■Low VSWR
- ■Temp. vs. Phase Stable
- ■Phase Stable vs. Flex

Application:

- ■Telecommunications
- ■Test & Measurement
- ■Automotive
- ■Defence
- ■Space
- ■Aviation

Contents

High Performance Microwave Coaxial Cables

Juncoax Guaranties Quality

DC-110GHz Low Loss Phase Stable.

- ■Ultra Low Loss, Low VSWR
- ■Excellent Shielding Performance
- ■ Excellent Phase Stability
- ■ Good Mechanical Stability
- ■ Good Amplitude Stability Performance
- ■ Low Smoke Halogen Free
- ■ Environmentally Friendly

Microwave Cable Assembly Ability

Applications:

▲Instrument Calibration Test
▲Laboratory Test Measurement
▲Production Line
▲Field Fault Detection
▲Mobile Phone Test
▲RF Microwave System
▲Radar Phase T/R Interconnection

Features & Benefits:

●Phase Stability
●Super Flexible
●Armor Protection Options
●Durable
●Reciprocal Phase
●Standardizing Products
●Fast Delivery
●Quality Promise
●Rich Connector Selection
●Reduce Cost
●Consistent Performance
●Military Quality

Test & Measurement Capabilities

■ VSWR (DC-67GHz)
■ Insertion Loss
■ Electrical Length
■ Phase Match
■ Electrical Length vs. Temp.
■ Electrical Length vs. Flexure
■ Impedance
■ Jacket & Dielectric Shock
■ Insertion Loss Vs. Temp.
■ Insertion Loss vs. Flex
■ Flex Life
■ Vibration
■ Shock
■ Intermodulation
■ Others

JA Series

*Ultra Low Loss
*Phase & Amplitude Stable
*Flexible Coaxial Cable

High Performance Ultra Low Loss,Phase&Amplitude Stable,Flexible

*Meet MIL-DTL-17H Standard

Features & Advantages

*Operating Frequency up to 40GHz
*Phase Stable <550PPM@-55~+85℃
*Mechanical Phase Stable±5°
*Amplitude Stable±0.1dB
*Ultra Low Loss
*Superior Shielding Effectiveness(<-90dB)

Applications

- RF Module Interconnection
- System Testing and Interconnection
- Robust Flexible Test.
- Low Loss and High Power
- Phase Matching

Products Instruction

JA series more than 12 types available for your selection, the cable using low loss expanded PTFE wrapping technologies ,frequency cover from DC to 130 GHz and super flexible provide excellent insertion loss performance.these ultra low loss,stable ,flexible microwave cableespecially suited for outdoor and indoor system interconnection. in electrical performance,VP up to 83% providing ultra low loss and 550PPM temperature stability, the smallest diameter less than 1.46mm get small space application,the high power cable up 3000W CW at 2GHz , Superior shielding effectiveness more than 110dB with a unique composition of dielectric materials results in superior cable performance,it is further enhanced by our robust production process.

Outer Diameter 1.4~5mm

Material & Construction

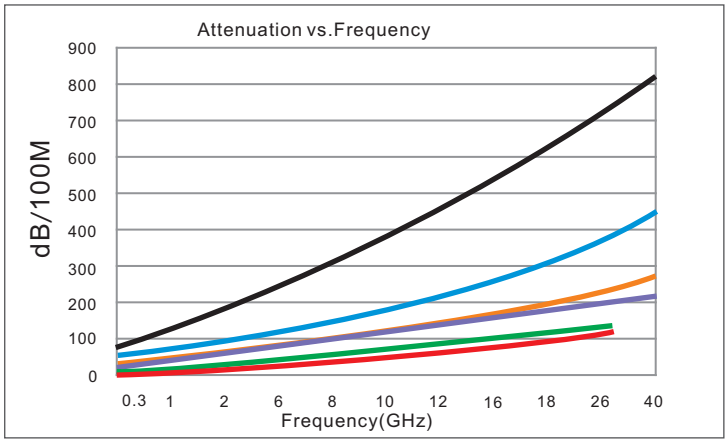
Cable Type	JA146	JA220	JA360	JA400	JA480	JA500
Silver Plated Copper (mm)	0.29	0.51	0.91	1.05	1.40	1.45
LD PTFE(mm)	0.84	1.38	2.50	2.95	3.75	4.00
Silver Plated Copper Ribbon(mm)	1.00	1.58	2.66	3.15	3.95	4.20
Silver Plated Copper(mm)	1.24	1.90	3.15	3.45	4.35	4.70
FEP Gray/Mint Green(mm)	1.46	2.20	3.60	3.90	4.80	5.10

Specifications

Specifications	JA146	JA220	JA360	JA400	JA480	JA500
Operating Frequency (GHz)	130	67	40	40	26.5	26.5
Impedance (Ω)	50	50	50	50	50	50
Vp (%)	80	81	82	82	83	83
Voltage Withstand (V,DC)	600	800	1000	1000	1200	1500
Shielding Effectivenss (dB)	<-90	<-90	<-90	<-90	<-90	<-90
Bend Radius : Installation (mm)	7	11	18	20	24	25.5
Bend Radius : Repeated (mm)	15	22	36	39	48	50
Weight (g/m)	5.6	16	33	36	57	65
Operating Temperature Range (℃)	-55~+165	-55~+165	-55~+165	-55~+165	-55~+165	-55~+165

Attenuation vs.Frequency

Typical Values @+25° Ambient Temperature



Attenuation vs.Frequency (dB/100m)

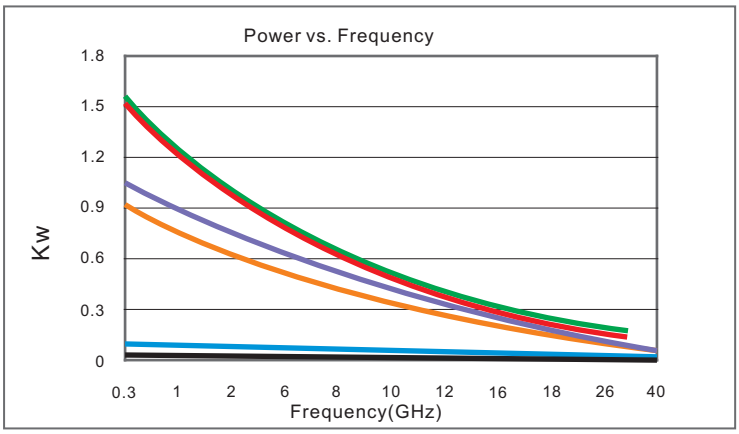
F (MHz)	300	1000	2000	6000	8000	10000	12000	16000	18000	26500	40000
JA146	70.5	128.9	182.7	317.9	367.7	411.7	451.6	522.7	554.9	676.1	834.9
JA220	34.6	63.7	90.8	160.4	186.5	209.8	231	269.5	287.1	354.1	444
JA360	20.4	37.5	55.36	93.8	108.9	122.3	134.6	156.6	166.7	204.8	255.7
JA400	16.8	31	44.1	78	90.6	102	114.3	131	139.6	172.1	215.8
JA480	12.9	23.67	33.7	59.54	69.22	77.86	87.26	99.96	106.48	131.24	
JA500	12.5	23	32.7	57.4	66.6	74.8	82.3	95.8	101.9	125.2	

JA220—K1=4.0594 K2=0. 0005755 JA220—K1=1. 975832 K2=0. 001221 JA360—K1=1.16847 K2=0. 00055 JA400—K1=0. 96104 K2=0. 00059 JA480—K1=0. 734593 K2=0. 00044 JA500—K1=0. 715687 K2=0. 000328

IL=K1*sqrt(fMHz)+K2*fMHz(dB/100m)

CW Power vs. Frequency

Maximum Values@+40° Ambient Temperature And Sea Level



CW Power Handling vs. Frequency (Kw)

Frequency (MHz)	300	1000	2000	6000	8000	10000	12000	16000	18000	26500	40000
JA146	0.050	0.511	0.028	0.021	0.013	0.010	0.009	0.008	0.007	0.006	0.002
JA220	0.102	0.055	0.039	0.022	0.019	0.017	0.015	0.013	0.012	0.01	0.008
JA360	0.94	0.511	0.359	0.204	0.176	0.157	0.142	0.122	0.115	0.094	0.075
JA400	1.05	0.57	0.386	0.23	0.198	0.17	0.15	0.13	0.13	0.1	0.08
JA480	1.609	0.872	0.612	0.347	0.298	0.265	0.236	0.206	0.194	0.157	
JA500	1.608	0.875	0.615	0.351	0.302	0.268	0.244	0.211	0.197	0.163	

Outer Diameter 7.5~12mm

Material & Construction

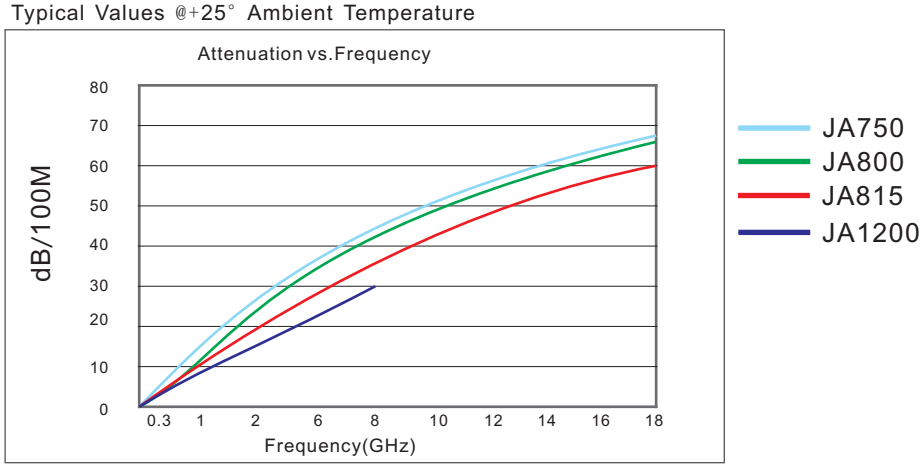
Structure /Material	Cable Type	JA750	JA800	JA815	JA1200
1.Center Conductor(mm)	Silver Plated Copper	2.10	2.30	2.43	3.48
2.Dielectric(mm)	LD PTFE	5.75	6.30	6.60	9.85
3.Outer Conductor(mm)	Silver Plated Copper Ribbon	6.07	6.60	6.90	10.10
4.Outer Shields(mm)	Silver Plated Copper	6.58	7.11	7.40	10.80
5.Jacket(mm)	FEP/Gray , Mint Green Light Purple	7.50	7.80	8.10	12.20

Specifications

Cable Type	JA750	JA800	JA815	JA1200
Operating Frequency Range (GHz)	18	18	18	8
Impedance (Ω)	50	50	50	50
Vp (%)	83	83	83	83
Voltage Withstand (V,DC)	200	2000	2000	4000
Shielding Effectivenss (dB)	<-90	<-90	<-90	<-90
Bend Radius : Installation (mm)	37	39	40	60
Bend Radius : Repeated (mm)	75	78	81	120
Weight (g/m)	125	146	147	235
Operating Temperature Range (℃)	-55~+165	-55~+165	-55~+165	-55~+165

Attenuation vs. Frequency

Typical Values @+25° Ambient Temperature



Attenuation vs.Frequency（dB/100m）

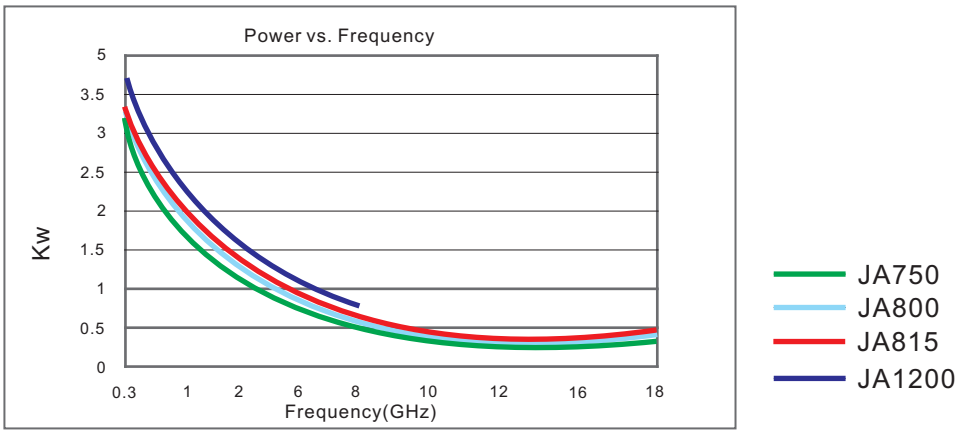
Frequency (MHz)	300	1000	2000	6000	8000	10000	12000	16000	18000
JA750	8.41	15.43	21.90	38.42	44.55	49.99	55.61	63.84	67.86
JA800	7.30	14.80	21.10	37.30	43.40	48.90	53.90	63.00	67.10
JA815	7.20	13.20	18.90	33.60	39.10	44.10	49.50	56.90	60.70
JA1200	5.33	9.98	14.10	26.34	30.99				

JA750—K1=0. 482490 K2=0. 000174　JA800—K1=0. 45638 K2=0. 000328　JA815—K1=0. 40800 K2=0. 00033　JA1200—K1=0. 290173 K2=0. 000562

IL=K1*sqrt（f MHz）+K2*f MHz（dB/100m）

CW Power vs. Frequency

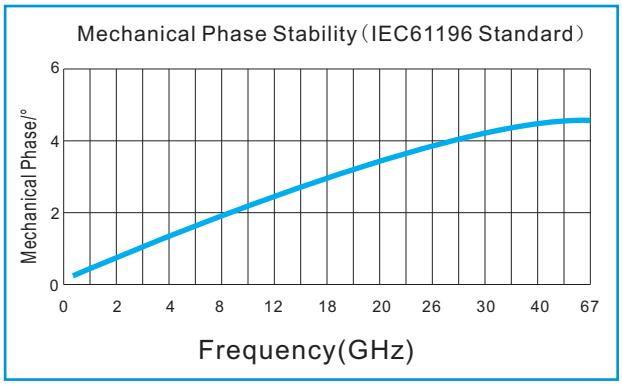
Maximum Values@+40° Ambient Temperature And Sea Level

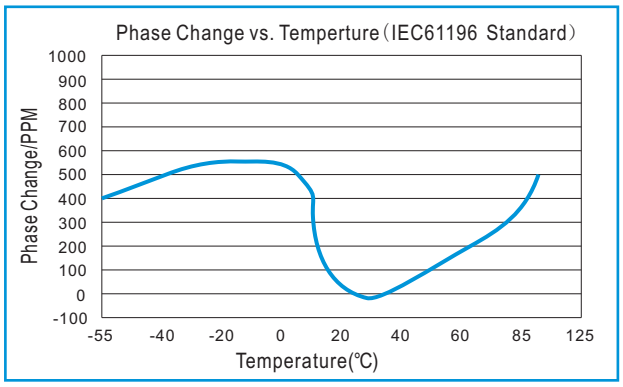


CW Power Handling vs. Frequency （Kw）

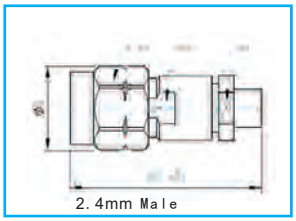
Frequency (MHz)	300	1000	2000	6000	8000	10000	12000	16000	18000
JA750	3.350	1.825	1.285	0.738	0.632	0.563	0.504	0.439	0.425
JA800	3.341	1.812	1.269	0.716	0.615	0.547	0.496	0.425	0.398
JA815	3.420	1.850	1.290	0.730	0.630	0.560	0.490	0.430	0.400
JA1200	4.800	2.610	1.820	1.020	0.880				

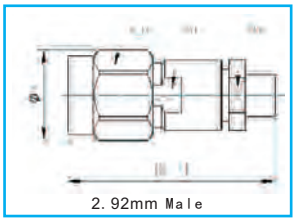
Phase Stability&Connector Outline Drawing

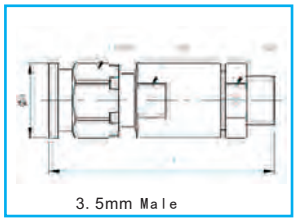


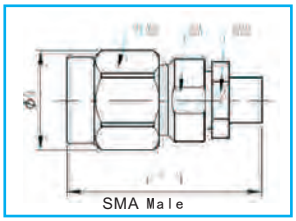


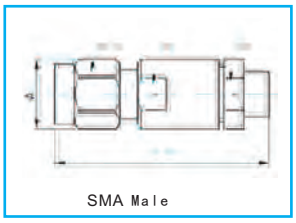
Connector Outline Drawing

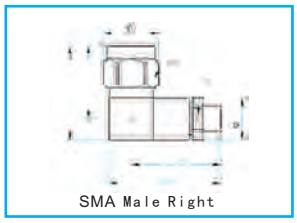


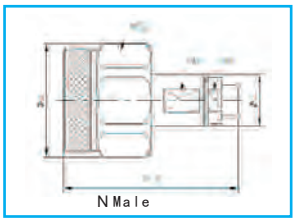


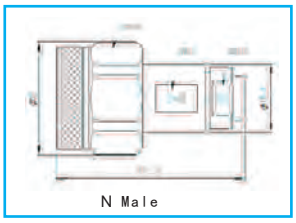












Cable Connector Type

Connector	P/N	Material	Assembly Type	Applicable Cable
SMA	SMA-xxx	SUS-303	Welding	JA220/360/480/500/800
N	N-xxx	SUS-303	Welding	JA360/480/500/800
3. 5mm	35-xxx	SUS-303	Welding	JA480/500
2. 92mm	29-xxx	SUS-303	Welding	JA220/360/400
2. 4mm	24-xxx	SUS-303	Welding	JA360

Remark:
xxx Refer to Cable Type
Other Type Conector also Available

Cable Assembly

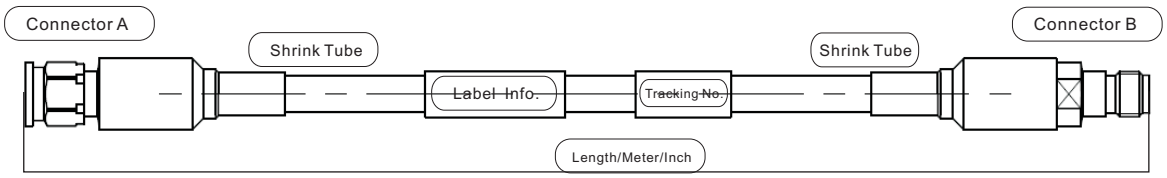
Low Loss Phase Stable Cable Assemblies

High Flexible cable Assemblies

JA Series is a complete product of low loss and high flexible cable with phase stability up to 67 GHz. This cable assembly, integrated with microwave connectors, is designed and engineered for the highest possible performance at the high frequency range.

It supports the most demanding needs of any application where performance and phase stability is critical.

It is ideal for many application requirements including Military/Aerospace and Telecom and Mobile market.



Available Connector

SSMP Male	1.85mm Male	1.85mm Female	SMA Male	SMA Female
SMP Male	2.4mm Male	2.4mm Female	N-type Male	N-type Female
MMCX Male	2.92mm Male	2.92mm Female	TNC Male	SMA Male Right Angle
MCX Male	3.5mm Male	3.5mm Female	DIN Male	N-type Male Right Angle

For Connector Specific Drawing Please Contact us.

How to Order

JA220-XXXX-XX

① ② ③ ④

① Cable Type

② Connector A Type

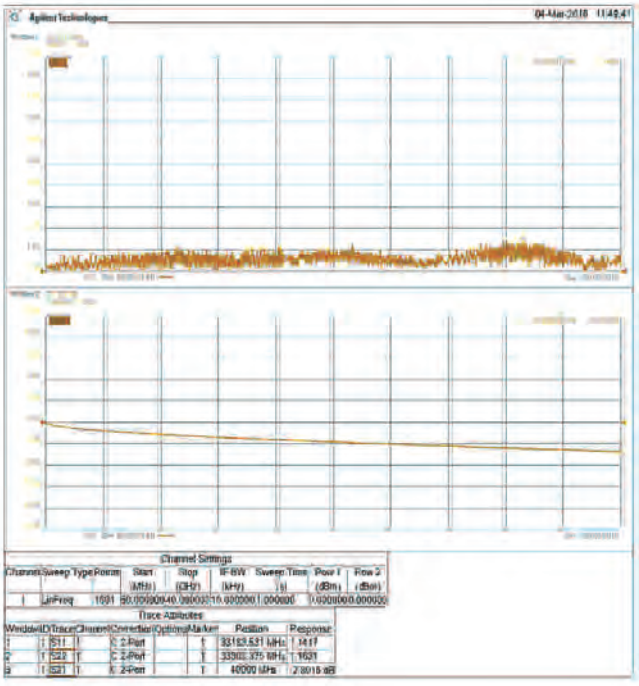
③ Connector B Type

④ Length Unit/M:Meter or IN:Inch

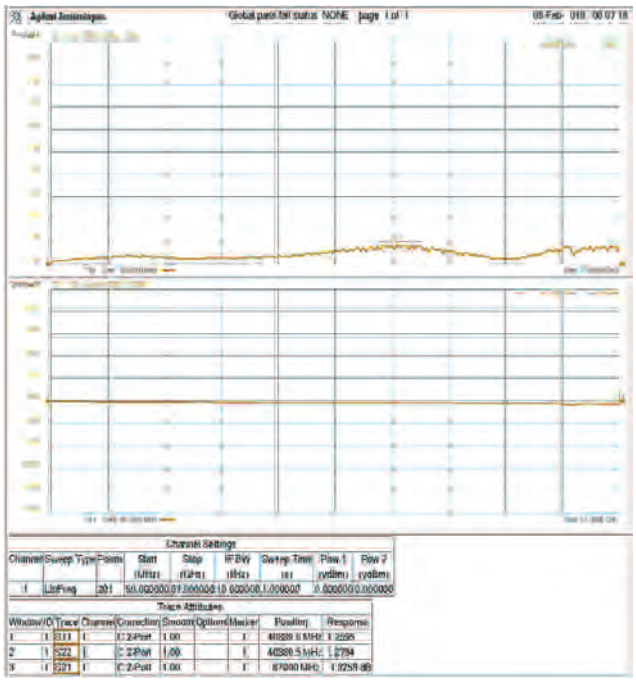
Connector Short for
SM=SMA Male
SF=SMA Female
NM=N Male
NF=N Female
35M=3.5mm Male
35F=3.5mm Female

Test Report Reference

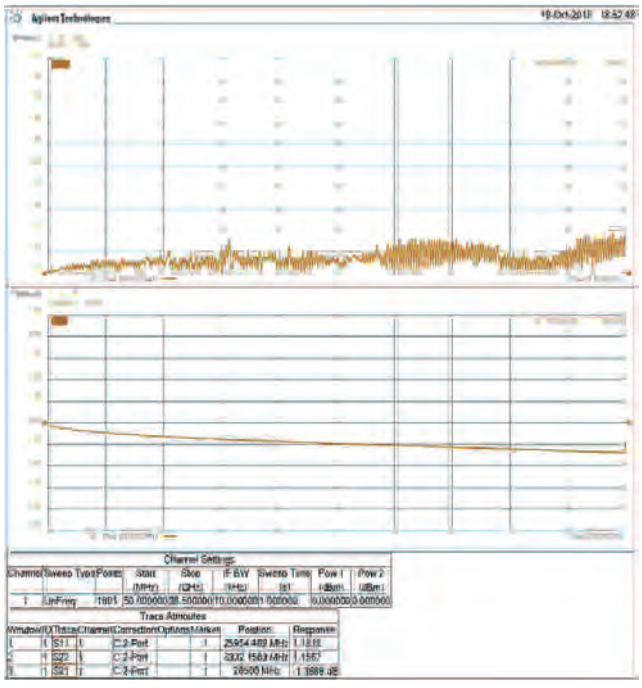
JA360-KMKM-1M 40GHz Keysight VNA N5230A



JA220-VMVM-0.3M to 67GHz Keysight VNA N5247B

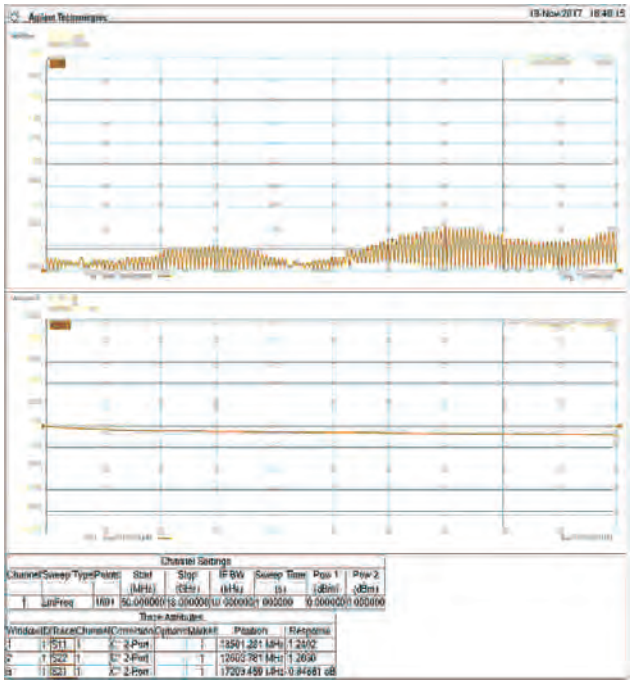


JA500-SMSM-1M 26.5GHz Keysight VNA N5230A



JA815-NMNM-1M to 18GHz Keysight VNA N5230A

0.56dB/m



JB Series

*Low Loss
*Phase & Amplitude Stable
*Flexible Coaxial Cable

Ultra Low Loss,Phase&Amplitude Stable,Flexible High Performance

Features & Advantages

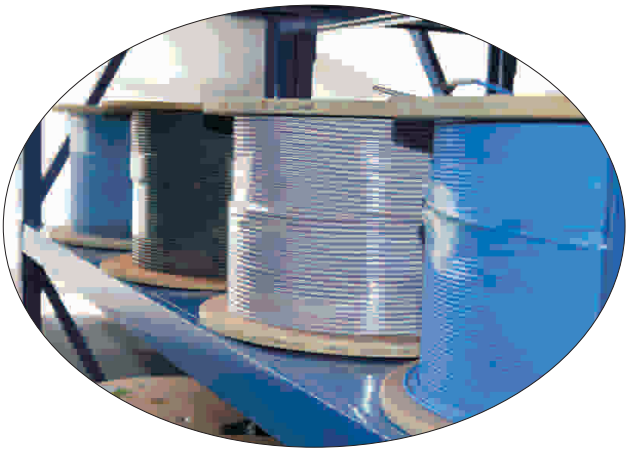
*Operating Frequency up to DC-40GHz
*Phase Stable 1000PPM
*Mechanical Phase Stable±10°
*Amplitude Stable
*Low Loss
*Superior Shielding Effectiveness(<-90dB)

Applications

- Lab Testing
- RF Module Connection
- Radar Antenna
- High Power Cable
- Satellite Communications

Products Instruction

JB series more than 5 types available for your selection, the cable using low loss expanded PTFE wrapping technologies ,frequency cover from DC to 40GHz and super flexible provide excellent insertion loss performance. These low loss、stable 、flexible microwave cable especially suited for outdoor and indoor system interconnection. In electrical performance, VP up to 76% providing ultra low loss and 1000ppm temperature stability, the smallest diameter less than 3.6mm get small space application, the high power cable up 700W CW at 2GHz , Superior shielding effectiveness more than 110dB with a unique composition of dielectric materials results in superior cable performance, performance is further enhanced by our robust production process.



Low Loss,Phase&Amplitude Stable,Flexible High Performance

Material & Construction

Structure/Material	Cable Type	JB360	JB460	JB520	JB600
1.Center Conductor(mm)	Silver Plated Copper	0.72	1.02	1.29	1.57
2.Dielectric(mm)	LD PTFE/ND PTFE	2.21	3.05	3.85	4.72
3.Outer Conductor(mm)	Silver Plated Copper Ribbon	2.40	3.32	4.15	5.18
4.Innerlayer(mm)	PCA/PTFE	2.80	3.45	4.28	5.30
5.Outer Shields(mm)	Silver Plated Copper	3.15	4.02	4.73	5.80
6.Jacket(mm)	FEP/PUR	3.60	4.60	5.20	6.20

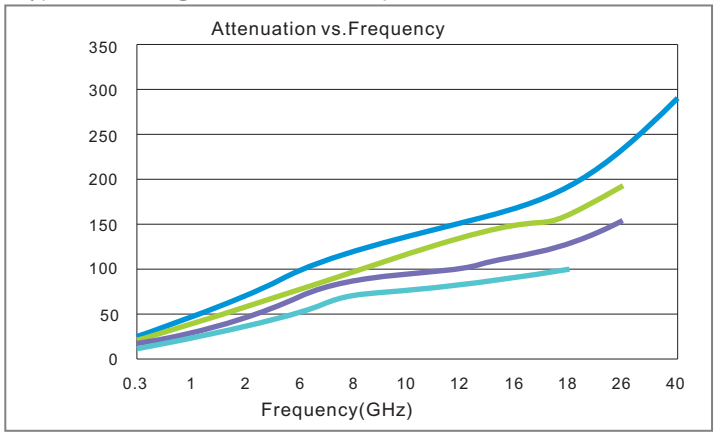
Specifications

Specifications	JB360	JB460	JB520	JB600
Operating Frequency Range (GHz)	50	26.5	26.5	18
Impedance (Ω)	50	50	50	50
Vp (%)	76	76	76	76
Voltage Withstand (V,DC)	50	1000	1500	2000
Shielding Effectivenss (dB)	<-90	<-100	<-100	<-100
Bend Radius : Installation (mm)	18	18.4	20.8	25.4
Bend Radius : Repeated (mm)	36	46	52	62
Weight (g/m)	34	50	60	100
Operating Temperature Range (℃)	-55 ~ 165	-55 ~ 200	-55 ~ 200	-55 ~ 200

Low Loss,Phase&Amplitude Stable,Flexible High Performance

Attenuation vs. Frequency

Typical Values @+25° Ambient Temperature



Attenuation vs.Frequency（dB/100m）

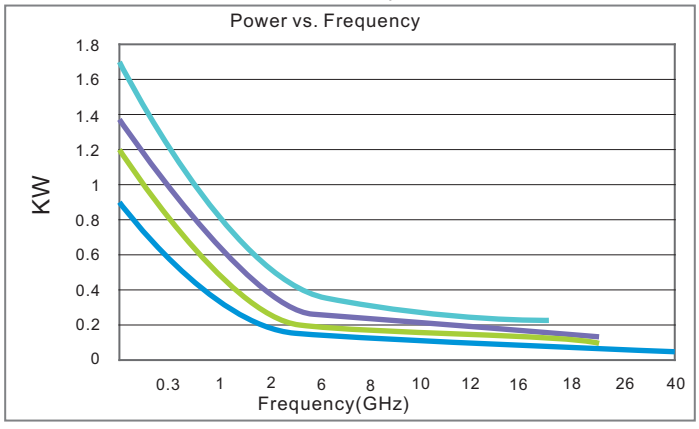
Frequency (MHz)	300	1000	2000	6000	8000	10000	12000	16000	18000	26500	40000
JB360	23.9	43.8	62.2	108.8	126.1	141.5	155.4	180.43	191.8	234.8	291.7
JB460	19.2	35.4	50.39	88.8	103.2	116	127.7	148.7	158.3	194.9	
JB520	15.01	27.7	39.5	69.9	81.3	91.5	100.9	117.8	125.5	155	
JB600	12	22.2	31.7	56.4	65.8	74.2	81.84	95.8	102.2		

JB360—K1=1. 3707349 K2=0. 00044　　JB460—K1=1. 0994853 K2=0. 0005906　　JB520—K1=0. 8562340 K2=0. 0005906　　JB600—K1=0. 682430 K2=0. 0005906

IL=K1*sqrt（fMHz）+K2*fMHz（dB/100m）

CW Power vs. Frequency

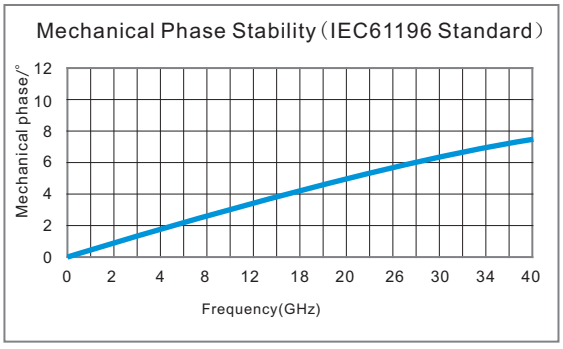
Maximum Values@+40° Ambient Temperature And Sea Level

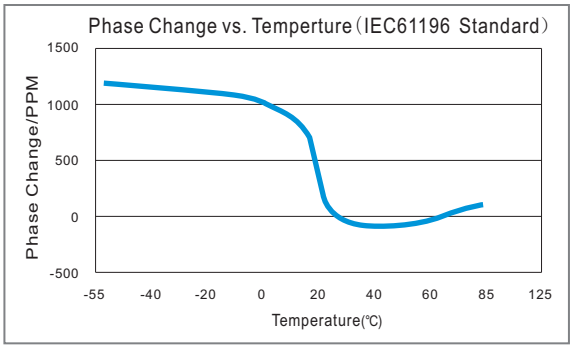


CW Power Handling vs. Frequency

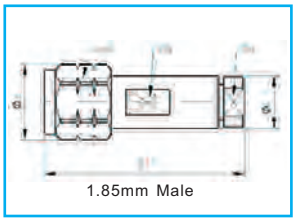
Frequency (MHz)	300	1000	2000	6000	8000	10000	12000	16000	18000	26500	40000
JB360	0.75	0.409	0.288	0.165	0.142	0.127	0.115	0.106	0.093	0.076	0.061
JB460	1.047	0.569	0.364	0.227	0.195	0.174	0.158	0.135	0.127	0.103	
JB520	1.38	0.754	0.528	0.301	0.256	0.228	0.207	0.177	0.166	0.134	
JB600	1.83	1.024	0.716	0.402	0.345	0.306	0.272	0.237	0.225		

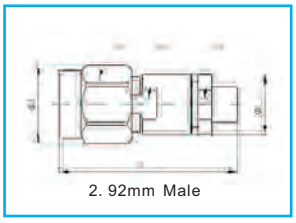
Low Loss,Phase&Amplitude Stable,Flexible High Performance Coax

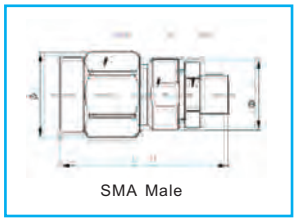


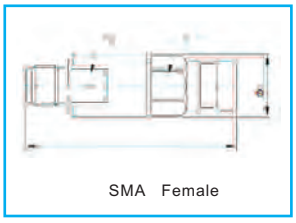


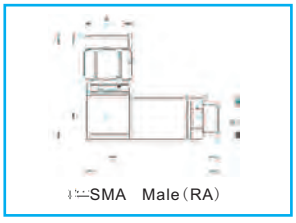
Connector Outline Drawing

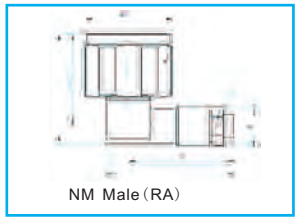

1.85mm Male

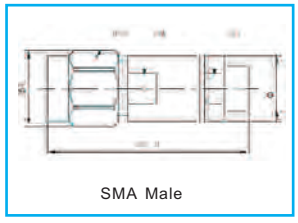

2. 92mm Male

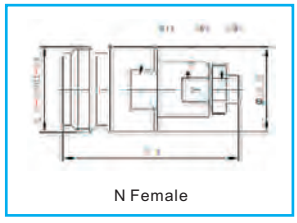

SMA Male


SMA Female


SMA Male（RA）


NM Male（RA）


SMA Male


N Female

Cable Connector Type

Connector	P/N	Material	Assembly Type	Applicable Cable
SMA	SMA-XXX	SUS-303	Welding	JB360/JB460/JB520/JB600
N	N-XXX	SUS-303	Welding	JB460/JB520/JB600
2.92MM	29-XXX	SUS-303	Welding	JB360
2.4MM	24-XXX	SUS-303	Welding	JB360

Remark:
xxx Refer to Cable Type
Other Type Conector also Available


Reel Cable


Cable Assembly

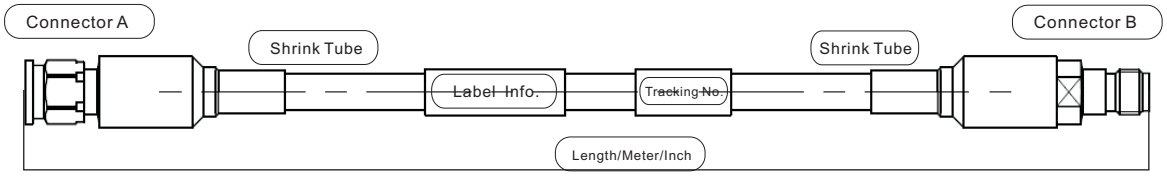
Low Loss Phase Stable Cable Assemblies

High Flexible Cable Assemblies

JB Series is a complete product of low loss cable with phase stability up to 40 GHz. This cable assembly, integrated with microwave connectors, is designed and engineered for the highest possible performance at the high frequency range.

It supports the most demanding needs of any application where performance and phase stability is critical.

It is ideal for many application requirements including Military/Aerospace and Telecom and Mobile market.



Available Connector

SSMP Male	1.85mm Male	1.85mm Female	SMA Male	SMA Female
SMP Male	2.4mm Male	2.4mm Female	N-type Male	N-type Female
MMCX Male	2.92mm Male	2.92mm Female	TNC Male	SMA Male Right Angle
MCX Male	3.5mm Male	3.5mm Female	DIN Male	N-type Male Right Angle

For Connector Specific Drawing Please Contact us.

How to Order

JB360-XXXX-XX

① ② ③ ④

① Cable Type

② Connector A Type

③ Connector B Type

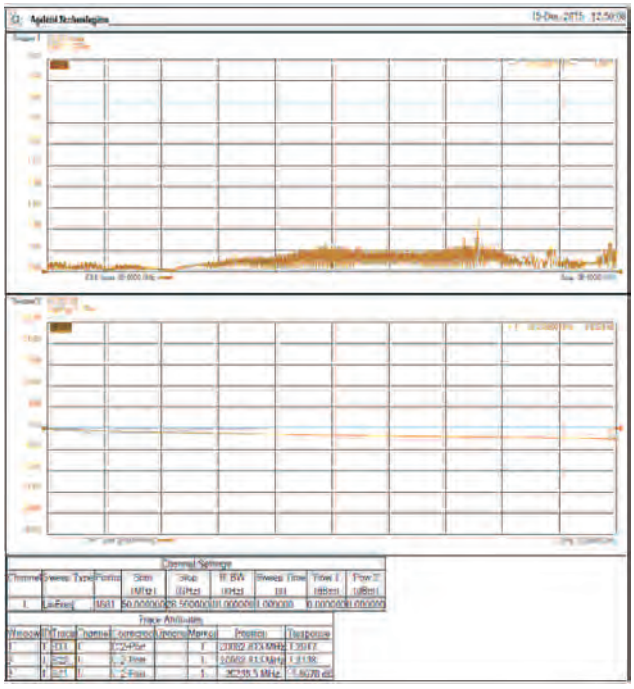
④ Length Unit/M:Meter or IN:Inch

Connector Short for
SM=SMA Male
SF=SMA Female
NM=N Male
NF=N Female
35M=3.5mm Male
35F=3.5mm Female

Test Report Reference

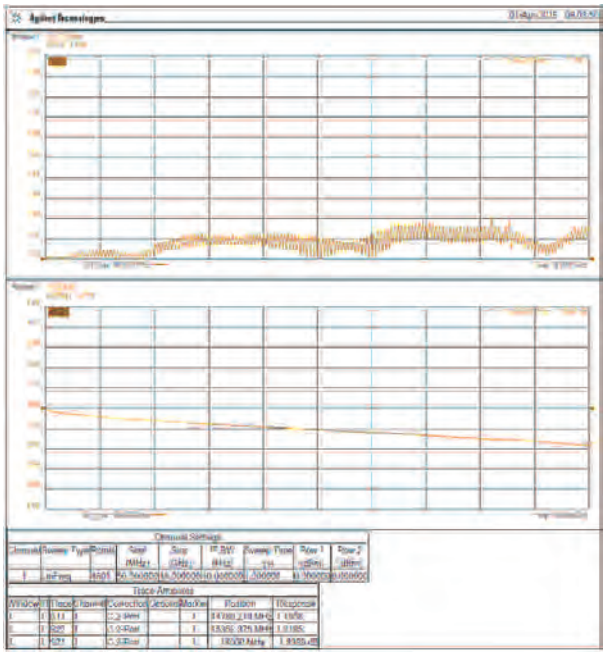
JB360-KMKM-1M 40GHz Keysight VNA N5230A

JB460-SMSM-1.5M to 26.5GHz Keysight VNA N5230A



JB460-NMSM-0.8M 18GHz Keysight VNA N5230A

JA600-SMSM-1M to 18GHz Keysight VNA N5230A



JC Series

*Replace Semi-flex and Semi-rigid
*Mechanical Phase & Amplitude Stable
*Flexible Coaxial Cable

Economy Mechanical Phase Stable Flexible Coax

Features & Advantages

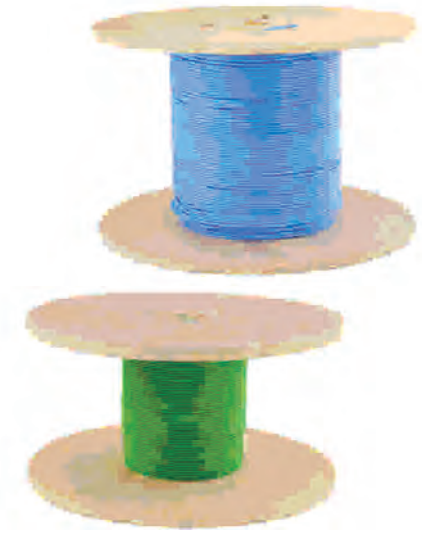
*Operating Frequency up to DC-40GHz
*Mechanical Phase StableMax.±10°
*Amplitude Stability±0.1dB
*Excellent Bending Stability
*Superior Shielding Effectiveness(<-90dB)
*Best Options for Cabinet Jumper

Applications

- PIM Cable
- Within Cabinet Jumper
- Instrument
- RF Module
- Radar
- Testing

Products Instruction

JC series more than 3 types available for your selection, the cable using Solid PTFE technologies, frequency cover from DC to 40 GHz and super flexible provide excellent performance.these stable,flexible microwave cable especially suited for outdoor and indoor system interconnection.
In electrical performance,VP up to 70% providing More Stable loss and 150PPM temperature stability, the smallest diameter less than 2.8mm get small space application,the high power cable up 400W CW at 2GHz, Superior shielding effectiveness more than 110dB with a unique compositionof dielectric materials results in superior cable performance,performance is further enhanced by our robust production process.



- Feed Network

Economy Mechanical Phase Stable Flexible Coax

Material & Construction

Structure/Material	Cable Type	JC280	JC400	JC650
Center Conductor(mm)	Silver Plated Copper	0.51	0.91	1.65
Dielectric(mm)	Solid PTFE	1.60	3.00	5.25
Outer Conductor(mm)	Silver Plated Copper Ribbon	1.79	3.20	5.57
Outer Shields(mm)	Silver Plated Copper	2.16	3.60	6.08
Jacket(mm)	FEP/PUR	2.80	4.00	6.50

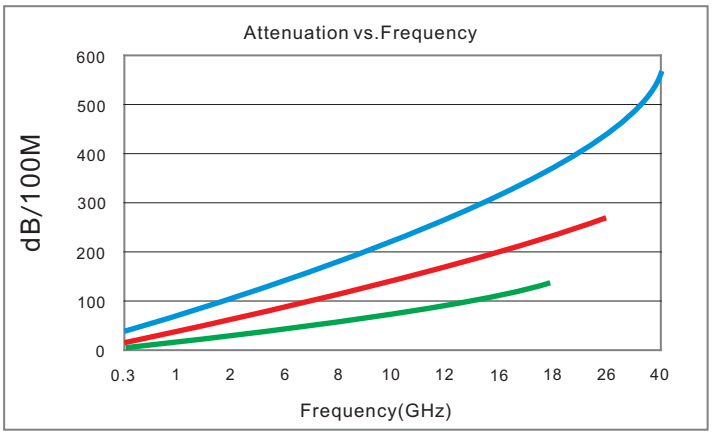
Specifications

Cable Type	JC280	JC400	JC650
Operating Frequency Range (GHz)	40	26.5	18
Impedance (Ω)	50	50	50
Vp (%)	70	70	70
Voltage Withstand (V,DC)	1500	1900	2000
Shielding Effectivenss (dB)	<-90	<-90	<-90
Bend Radius : Installation (mm)	14	20	33
Bend Radius : Repeated (mm)	28	40	65
Weight (g/m)	22	37	142
Operating Temperature Range (℃)	-55 ~ +125	-55 ~ +125	-55 ~ +125

Economy Phase Stable Flexible

Attenuation vs. Frequency

Cable Typical Values @+25° Ambient Temperature



Attenuation VS. Frequency (dB/100m)

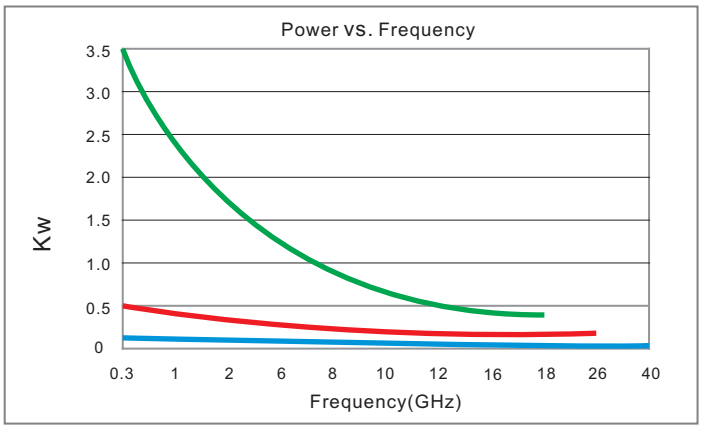
Frequency MHz	300	1000	2000	6000	8000	10000	12000	16000	18000	26500	40000
JC280	37	69.3	100.3	183.7	216.4	246.1	273.7	324.4	348.2	440.8	570.87
JC400	19.9	38.2	56.3	107.5	128.3	147.6	165.8	199.9	216.1	280.5	
JC650	13.1	25.6	38.7	77.1	93.1	108.4	122.7	150.5	163.3		

JC280—K1=2. 0669291 K2=0. 003937 JC400—K1=1. 082400 K2=0. 003937 JC650—K1=0.688976 K2=0.003937

IL=K1*sqrt(fMHz)+K2*fMHz(dB/100m)

CW Power vs. Frequency

Maximum Values @ +40 °C Ambient Temperature And Sea Level

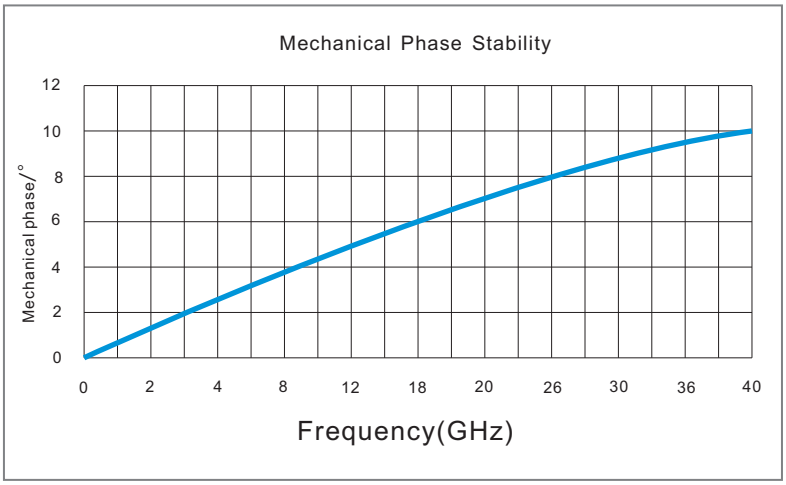


CW Power Handling vs. Frequency

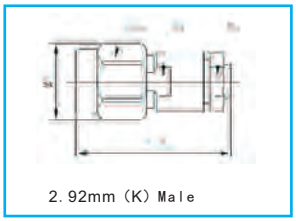
Frequency MHz	300	1000	2000	6000	8000	10000	12000	16000	18000	26500	40000
JC280	0.187	0.12	0.069	0.05	0.04	0.028	0.025	0.021	0.024	0.019	0.012
JC400	0.512	0.29	0.181	0.11	0.09	0.069	0.062	0.051	0.05	0.036	
JC650	1.177	0.610	0.399	0.205	0.166	0.143	0.126	0.103	0.095		

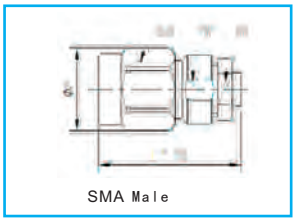
Economy Mechanical Phase Stable Flexible

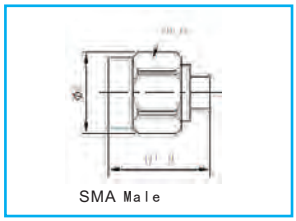
Note:If there is Temperature Stability Concerned, do please select JA or JB series accordingly.

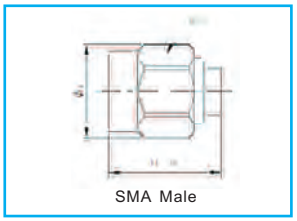


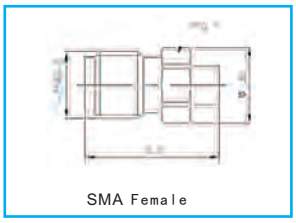
Connector Outline Drawing

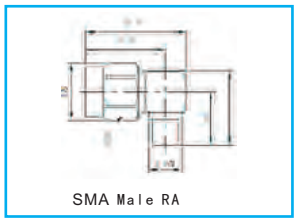

2. 92mm (K) Male

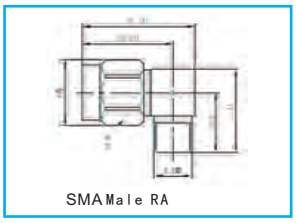

SMA Male

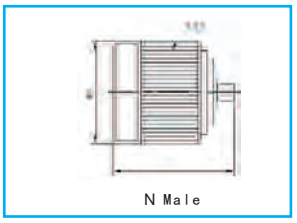

SMA Male


SMA Male


SMA Female


SMA Male RA

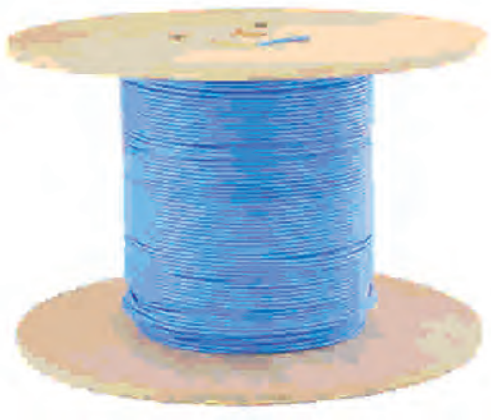

SMA Male RA


N Male

Cable Connector Type

Connector	P/N	Material	Assembly Type	Applicable Cable
SMA	SMA-XXX	SUS-303	Welding	JC280/JC400/JC650
N	N-XXX	SUS-303	Welding	JC400/JC650
2.92MM	29-XXX	SUS-303	Welding	JC280

Remark:
xxx Refer to Cable Type
Other Type Conector also Available


Bulk Cable


Cable Assembly

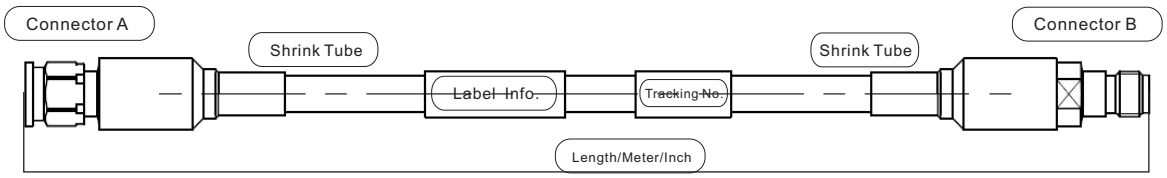
Economy JC Mechanical Phase Stable Cable Assemblies

Flexible Cable Assemblies

JC Series is a complete product of economy cable with mechanical phase stability up to 40 GHz. This cable assembly, integrated with microwave connectors, is designed and engineered for the highest possible performance at the high frequency range.

It supports the most demanding needs of any application where performance and phase stability is critical.

It is ideal for many application requirements including Military/Aerospace and Telecom and Mobile market.



Available Connector

2.92mm Male	SMA Male	SMA Female	SSMP Male
3.5mm Male	N-type Male	N-type Female	SMB Male
SMP Male	TNC Male	SMA Male Right Angle	MMCX Male
SMPM Male	DIN Male	N-type Male Right Angle	MCX Male

For Connector Specific Drawing Please Contact us.

How to Order

JC280-XXXX-XX

① ② ③ ④

① Cable Type

② Connector A Type

③ Connector B Type

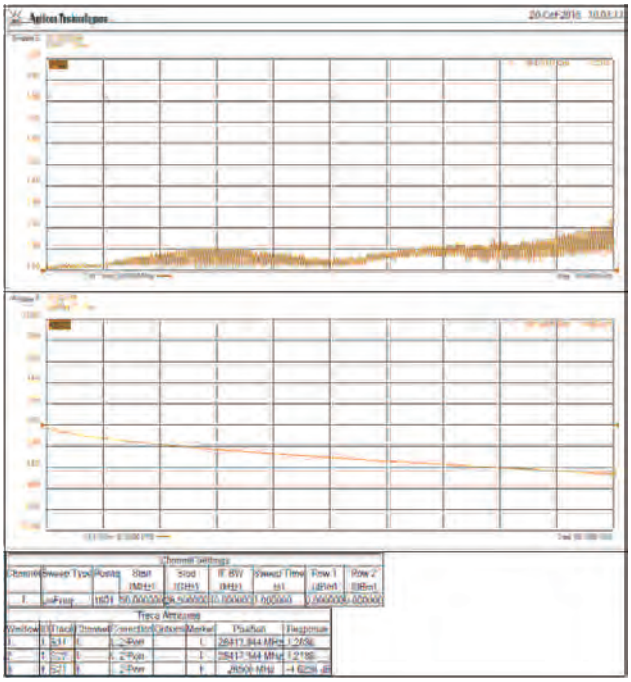
④ Length Unit/M:Meter or IN:Inch

Connector Short for
SM=SMA Male
SF=SMA Female
NM=N Male
NF=N Female
35M=3.5mm Male
35F=3.5mm Female

Test Reports for Reference

JC280-KMKM-0.25M 40GHz Keysight VNA N5230A

JC280-SMSM-1M 26.5GHz Keysight VNA N5230A



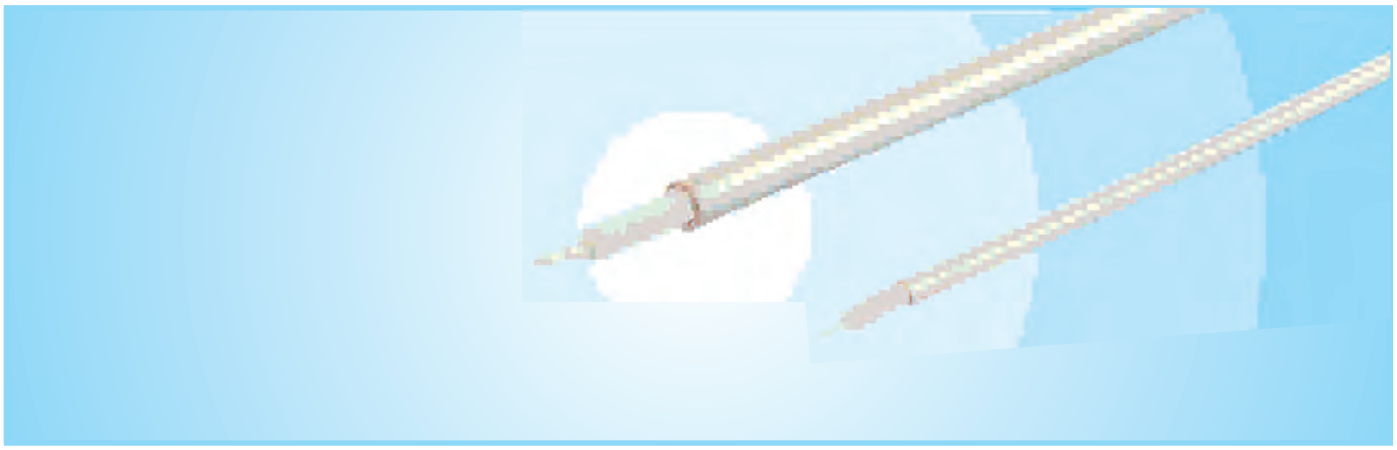
JC400-SMSM-0.3M 18GHz Keysight VNA N5230A

JC650-NMNM-1.5M to 3GHz Keysight VNA N5230A

JD Series

Ultra Low Loss Semi-Rigid Form Stable Cable

*Ultra Low Loss
*Phase & Amplitude Stable
*Semi-Rigid Coaxial Cable

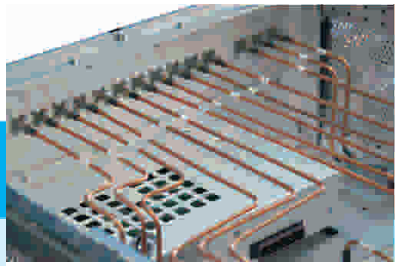


Features & Advantages

*Operating Frequency up to DC-40GHz
*Phase Stable 500PPM
*Mechanical Phase Stable ±5°
*Amplitude Stability ±0.05dB
*Ultra Low Loss
*Superior Shielding Effectiveness (>-90dB)

Applications

- Switching Box System
- Phased Array Radar
- Feed Network
- Within Cabinet Jumper



Products Instruction

JD series have 2 types available for your selection, the cable using low loss expanded PTFE wrapping technologies ,frequency cover from DC to 40 GHz and super flexible provide excellent insertion loss performance.these ultra low loss,stable ,flexible microwave cableespecially suited for outdoor and indoor system interconnection. In electrical performance,VP up to 81% providing ultra low loss and 500ppm temperature stability, the smallest diameter less than 2.3mm get small space application,the high power cable up 400W CW at 2GHz , Superior shielding effectiveness more than 110dB with a unique compositionof dielectric materials results in superior cable performance, performance is further enhanced by our robust production process.

Low Loss Semi-Rigid Form Stable

Material & Construction

Structure	Material \ Cable Type	JD086	JD141
1.Center Conductor(mm)	Silver Plated Copper	0.58	1.05
2.Dielectric(mm)	LD PTFE	1.68	3.05
3.Outer Shielding(mm)	Cu-Sn-Zn Alloy Available	2.18	3.58

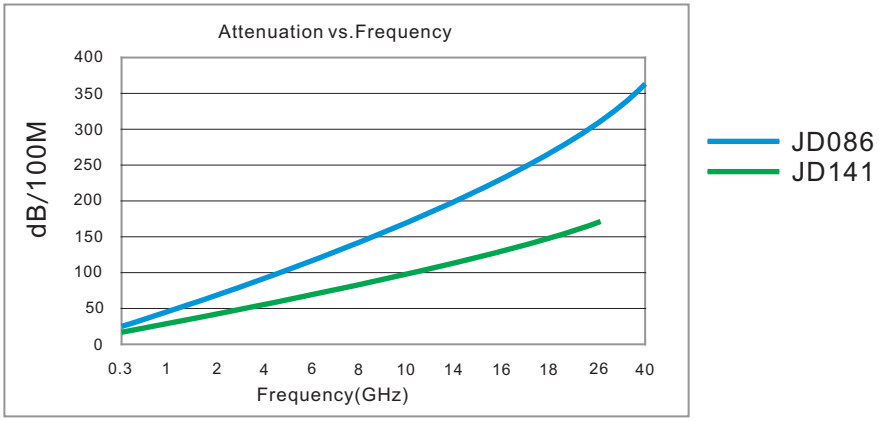
Specifications

Specifications\Cable Type	JD086	JD141
Operating Frequency Range (GHz)	40	26.5
Impedance (Ω)	50	50
Vp (%)	81	81
Voltage Withstand (V,DC)	500	1300
Shielding Effectivenss (dB)	<-110	<-110
Bend Radius : Installation (mm)	7	13.5
Bend Radius : Repeated (mm)	N/A	N/A
Weight (g/m)	19	49
Operating Temperature Range (℃)	-60 ~ 250	-60 ~ 250

Low Loss Semi-Rigid Form Stable Coax

Attenuation vs. Frequency

Cable Typical Values @+25° Ambient Temperature



Nominal Values @+25° Ambient Temperature

Attenuation vs. Frequency (dB/100m)

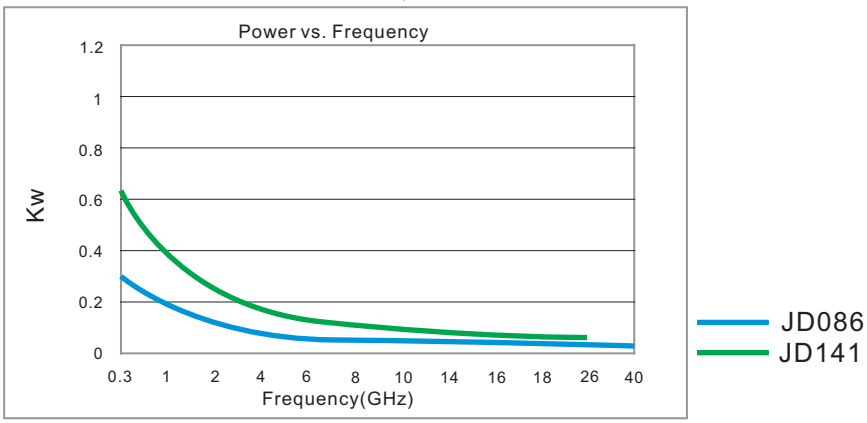
Frequency MHz	300	1000	2000	4000	6000	8000	10000	14000	16000	18000	26500	40000
JD086	29.3	54.5	75.2	110.3	135.5	157.1	175.1	210.3	224.3	238.8	292.4	363.3
JD141	16.7	30.8	43.2	62.1	77.1	89.5	100.5	120.5	130.1	136.9	168.1	

JD086—K1=1. 72000 K2=0. 00059 JD141—K1=0. 96104 K2=0. 00059

IL=K1*sqrt(fMHz)+K2*fMHz; dB/100m

CW Power vs. Frequency

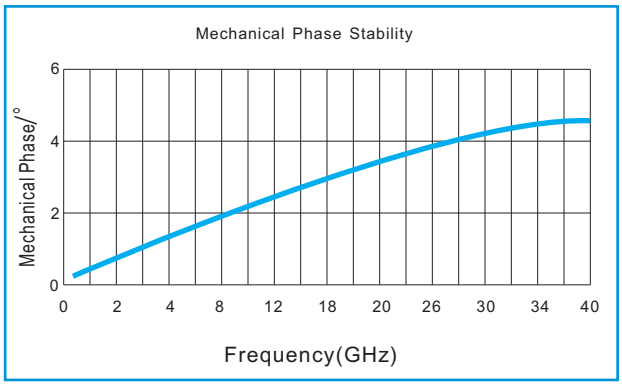
Maximum Values@+40° Ambient Temperature and Sea Level

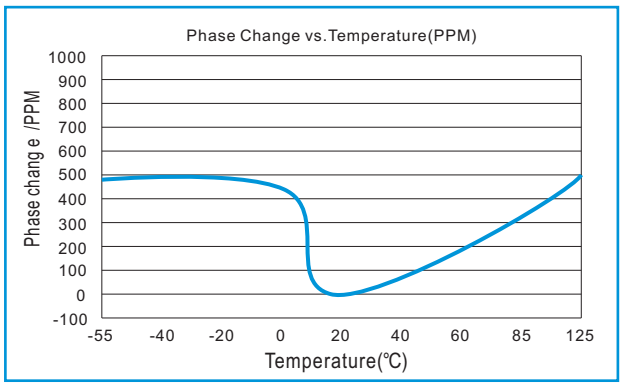


CW Power Handling vs. Frequency

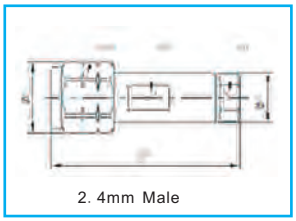
Frequency MHz	300	1000	2000	4000	6000	8000	10000	14000	16000	18000	26500	40000
JD086	0.476	0.259	0.183	0.128	0.098	0.09	0.08	0.073	0.063	0.059	0.042	0.039
JD141	1.086	0.59	0.414	0.359	0.234	0.201	0.179	0.163	0.139	0.131	0.106	

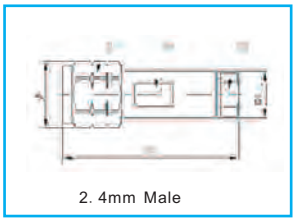
Low Loss Semi-Rigid Form Stable Coax

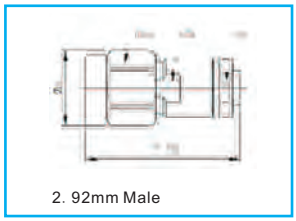


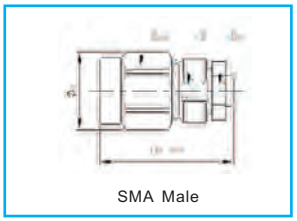


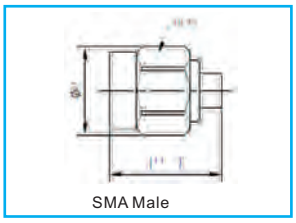
Connector Outline Drawing

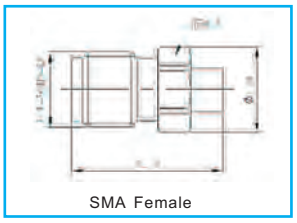

2. 4mm Male

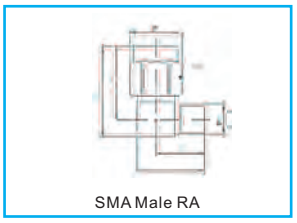

2. 4mm Male

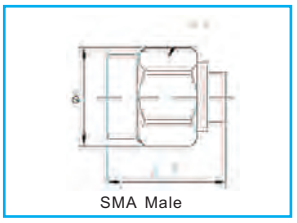

2. 92mm Male


SMA Male


SMA Male


SMA Female


SMA Male RA


SMA Male

Cable Connector Type

Connector	P/N	Material	Assembly Type	Applicable Cable
SMA	SMA-XXX	SUS-303	Welding	JD086/JD141
2.4MM	24-XXX	SUS-303	Welding	JD086
2.92MM	29-XXX	SUS-303	Welding	JD141

Remark:
xxx Refer to Cable Type
Other Type Conector also Available


Cable Assembly

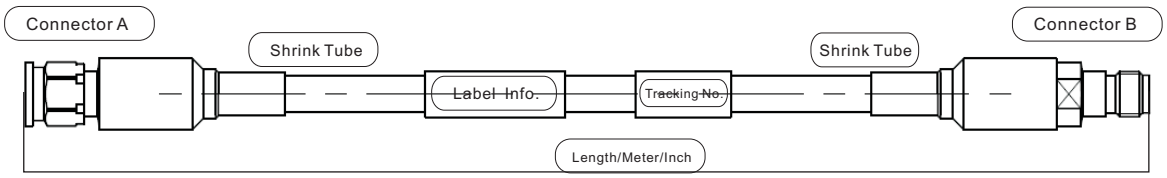
Ultra-Low Loss Semi-Rigid Form Stable Cable Assembly

Semi-rigid Cable Assemblies

JD Series is a complete product of low loss cable with phase stability up to 40 GHz. This cable assembly, integrated with microwave connectors, is designed and engineered for the highest possible performance at the high frequency range.

It supports the most demanding needs of any application where performance and phase stability is critical.

It is ideal for many application requirements including Military/Aerospace and Telecom and Mobile market.



Available Connector

SSMP Male	1.85mm Male	1.85mm Female	SMA Male	SMA Female
SMP Male	2.4mm Male	2.4mm Female	N-type Male	N-type Female
MMCX Male	2.92mm Male	2.92mm Female	TNC Male	SMA Male Right Angle
MCX Male	3.5mm Male	3.5mm Female	DIN Male	N-type Male Right Angle

For Connector Specific Drawing Please Contact us.

How to Order

JD086-XXXX-XX

① ② ③ ④

① Cable Type

② Connector A Type

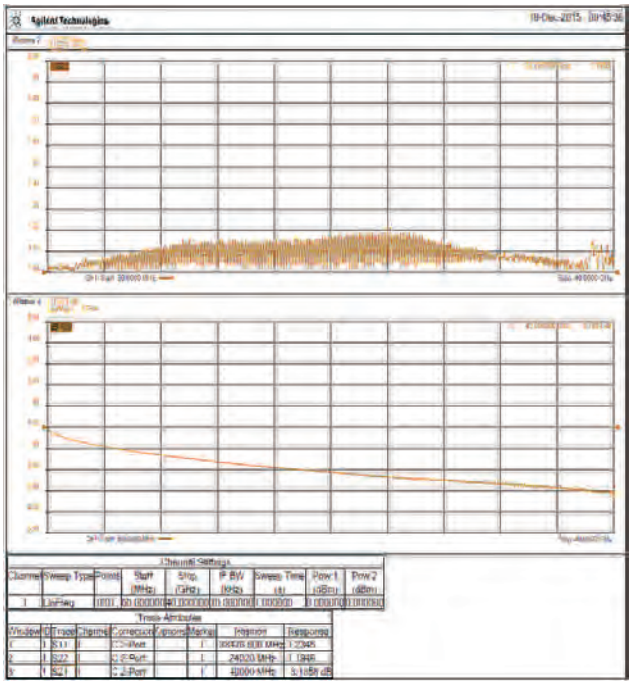
③ Connector B Type

④ Length Unit/M:Meter or IN:Inch

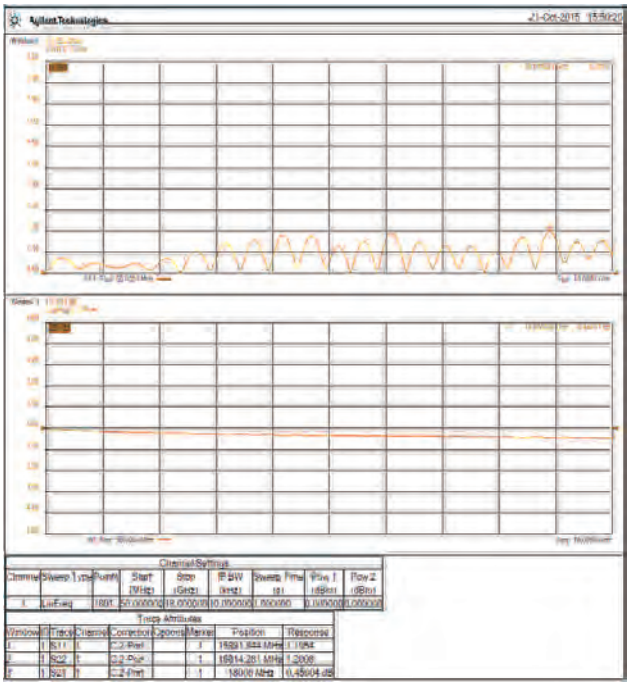
Connector Short for
SM=SMA Male
SF=SMA Female
NM=N Male
NF=N Female
35M=3.5mm Male
35F=3.5mm Female

Test Reports Reference

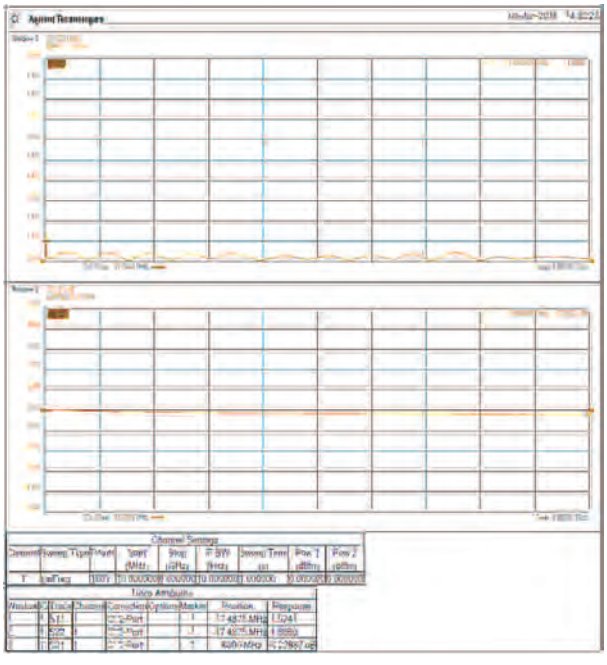
JD086-KMKM-0.8M 40GHz Keysight VNA N5230A



JD086-SMSM-0.2M to 18GHz Keysight VNA N5230A



JD141-SMSM-0.2M 6GHz Keysight VNA N5230A

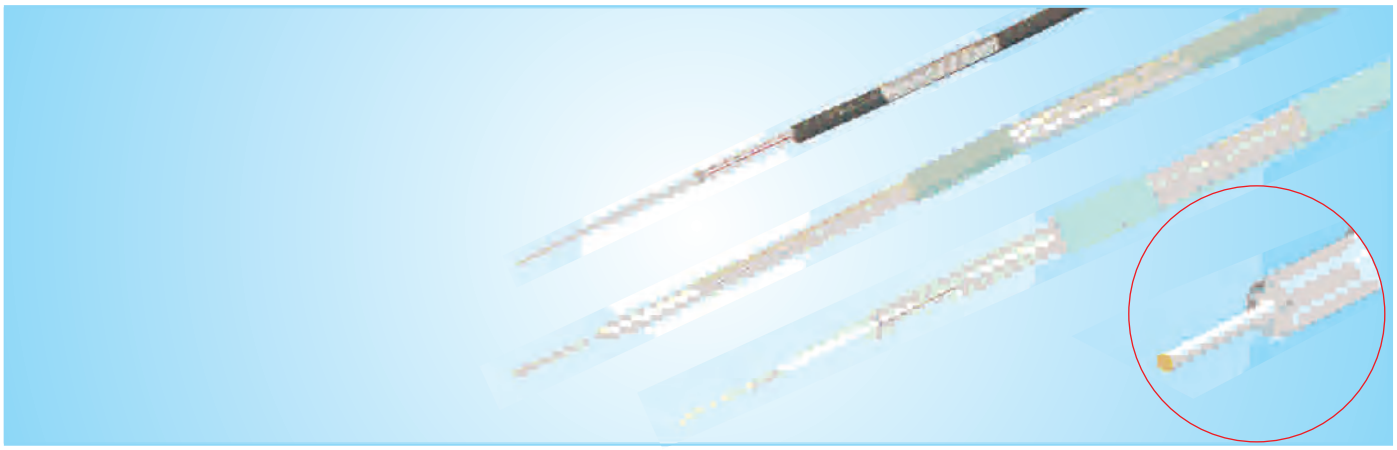


JD141-NMNM-0.5M to 18GHz Keysight VNA N5230A

JE Series

*Low Loss
*Phase & Amplitude Stable
*Excellent VSWR

Phase&Amplitude Stable Micro-Porous (Exclusive Patented)



Features & Advantages

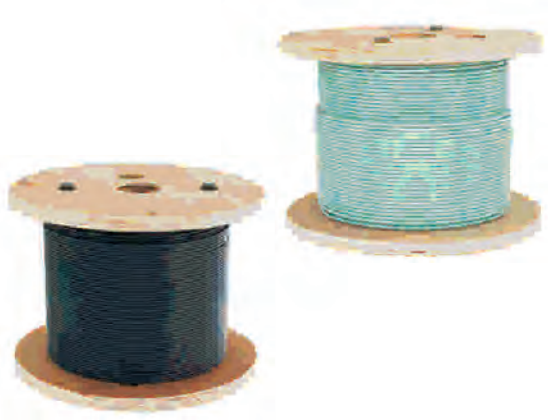
*Operating Frequency up to DC-67GHz
*Temperature Phase Stable 500PPM
*Mechanical Phase Stable
*Amplitude Stability
*Superior Shielding Effectiveness(<-90dB)

Applications

- Feed Network
- Test cable
- Radio
- PIM Cable Assembly
- Within Cabinet Jumper
- Board Interconnection

Products Instruction

JE series more than 3 types available for your selection, the cable using Patented FPD2 Micro Poronus technologies ,frequency cover from DC to 67 GHz and super flexible provide excellent insertion loss performance.these low loss,stable ,flexible microwave cable especially suited for outdoor and indoor system interconnection. In electrical performance,VP up to 76% providing low loss and 550ppm temperature stability, the smallest diameter less than 2.2mm get small space application,the high power cable up 300W CW at 10GHz , Superior shielding effectiveness more than 110dB with a unique composition of dielectric materials results in superior cable performance,performance is further enhanced by our robust production process.



Low Loss Phase & Amplitude Stable Porous

Material & Construction

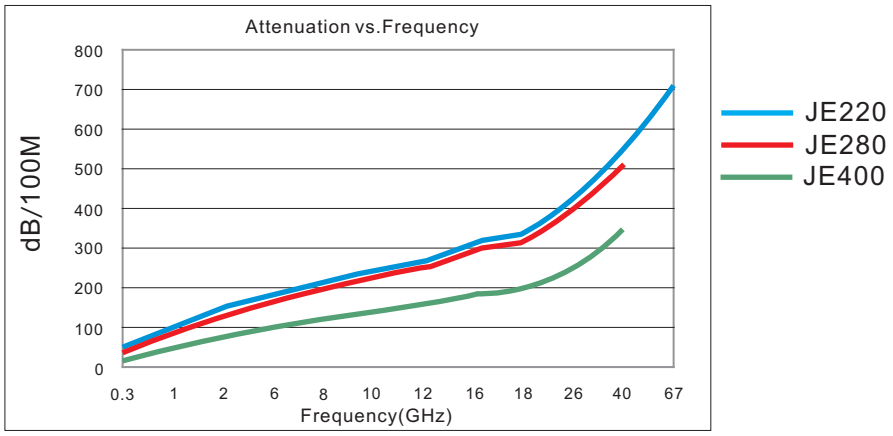
Structure	Material Cable Type	JE220	JE280	JE400
1.Center Conductor (mm)	Silver Plated Copper	0.50	0.53	0.94
2.Dielectric (mm)	PFD2	1.50	1.68	2.70
3.Outer Conductor (mm)	Silver Plated Copper Ribbon	1.70	1.88	2.90
4.Outer Shields (mm)	Silver Plated Copper	1.95	2.20	3.30
5.Jacket (mm)	FEP	2.20	2.80	4.00

Specifications

Specifications	JE220	JE280	JE400
Operating Frequency Range (GHz)	67	40	40
Impedance (Ω)	50+/-0.5	50+/-0.5	50+/-0.5
Vp (%)	76	76	76
Voltage Withstand (V,DC)	500	2000	3000
Shielding Effectivenss (dB)	<-90	<-90	<-100
Bend Radius : Installation (mm)	11	14	19
Bend Radius : Repeated (mm)	22	28	38
Weight (g/m)	18	22	48
Operating Temperature Range (℃)	-55 ~ 125	-55 ~ 125	-55 ~ 85
Temp. Phase (PPM)	700	700	700

Attenuation vs. Frequency

Typical Values @+25° Ambient Temperature



Attenuation vs. Frequency (dB/100m)

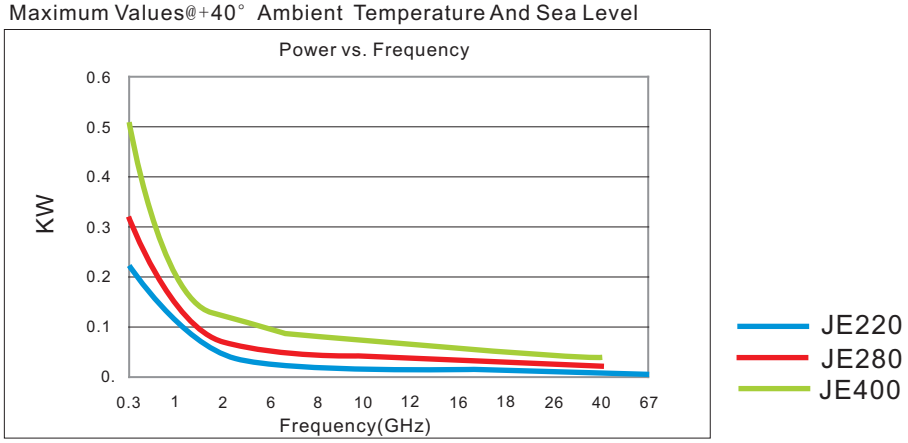
Frequency MHz	300	1000	2000	6000	8000	10000	12000	16000	18000	26500	40000	67000
JE220	38.1	101.8	147.2	183.3	214.6	242.9	268.9	315.9	338.4	426.05	548	759.3
JE280	36.6	97.4	140.4	174.5	204	230.5	254.9	299.3	319.8	398.7	507	
JE400	20.2	55.4	81.5	102.7	121.5	138.6	154.6	184.2	198.1	252.7	347.6	

JE220—K1=2. 0750000 K2=0. 0023000 JE280—K1=2. 1473097 K2=0. 0027887 JE400—K1=0. 8856000 K2=0. 0042323

IL=K1*sqrt(fMHz)+K2*fMHz (dB/100m)

CW Power vs. Frequency

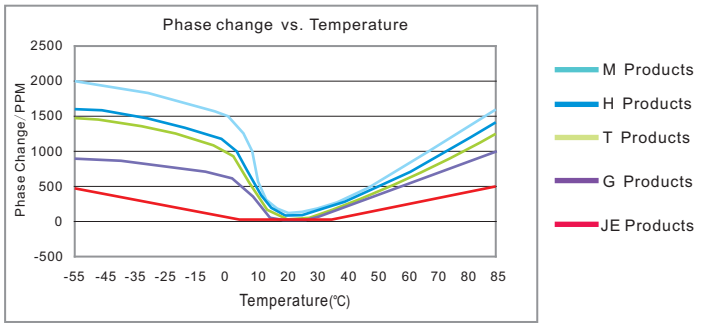
Maximum Values@+40° Ambient Temperature And Sea Level

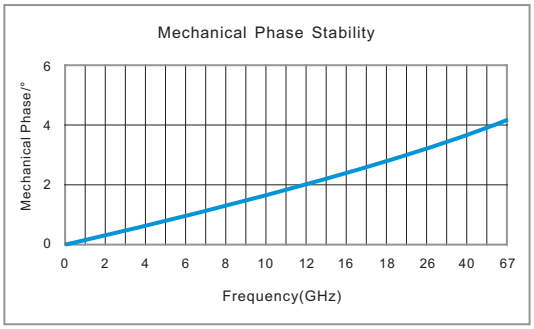


CW Power Handling vs. Frequency

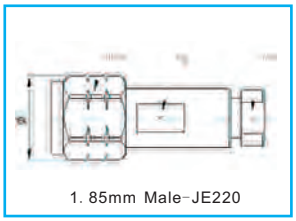
Frequency MHz	300	1000	2000	6000	8000	10000	12000	16000	18000	26500	40000	67000
JE220	0.221	0.113	0.047	0.036	0.03	0.027	0.024	0.02	0.019	0.014	0.012	0.01
JE280	0.321	0.138	0.054	0.038	0.032	0.028	0.025	0.021	0.02	0.015	0.013	
JE400	0.512	0.181	0.121	0.095	0.08	0.069	0.062	0.051	0.047	0.036	0.031	

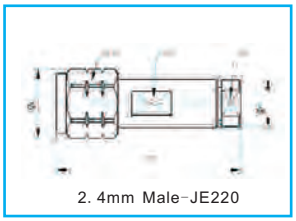
Low Loss Phase & Amplitude Stable Porous

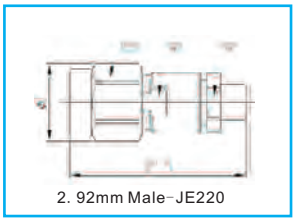


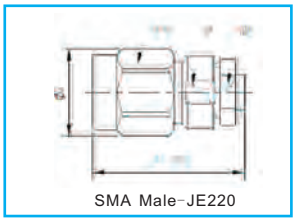


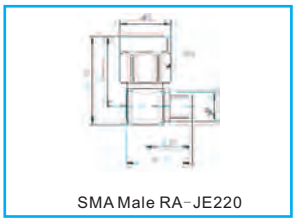
Connector Outline Drawing


1. 85mm Male-JE220


2. 4mm Male-JE220


2. 92mm Male-JE220


SMA Male-JE220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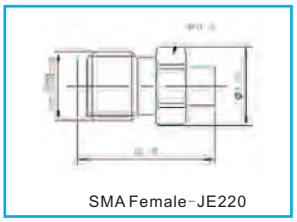
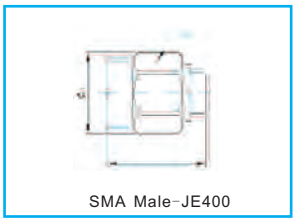
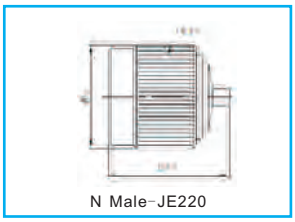

SMA Female-JE220


SMA Male-JE400


N Male-JE220

Cable Connector Type

Connector	P/N	Material	Assembly Type	Applicable Cable
SMA	SMA-XXX	SUS-303	Welding	JE280/JE400
N	N-XXX	SUS-303	Welding	JE400
2.92MM	29-XXX	SUS-303	Welding	JE400
1.85MM	185-XXX	SUS-303	Welding	JE220
2.4MM	24-XXX	SUS-303	Welding	JE220

Remark:
xxx Refer to Cable Type
Other Type Conectors also Available


Cable Assembly

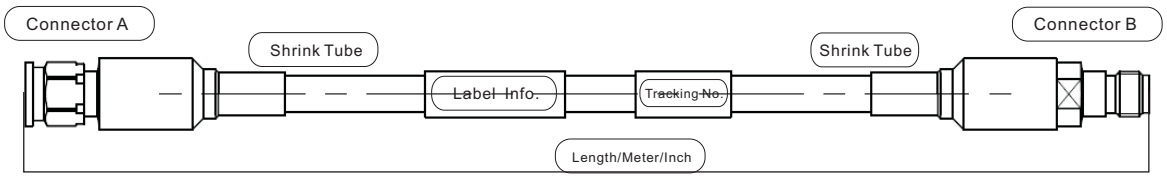
JE Series Cable Assembly

Amplitude Stable Porous Cable Assemblies

JE Series is a complete product of low loss cable with phase stability up to 40 GHz. This cable assembly, integrated with microwave connectors, is designed and engineered for the highest possible performance at the high frequency range.

It supports the most demanding needs of any application where performance and phase stability is critical.

It is ideal for many application requirements including Military/Aerospace and Telecom and Mobile market.



Available Connector

SSMP Male	1.85mm Male	1.85mm Female	SMA Male	SMA Female
SMP Male	2.4mm Male	2.4mm Female	N-type Male	N-type Female
MMCX Male	2.92mm Male	2.92mm Female	TNC Male	SMA Male Right Angle
MCX Male	3.5mm Male	3.5mm Female	DIN Male	N-type Male Right Angle

For Connector Specific Drawing Please Contact us.

How to Order

JE220-XXXX-XX

① ② ③ ④

① Cable Type

② Connector A Type

③ Connector B Type

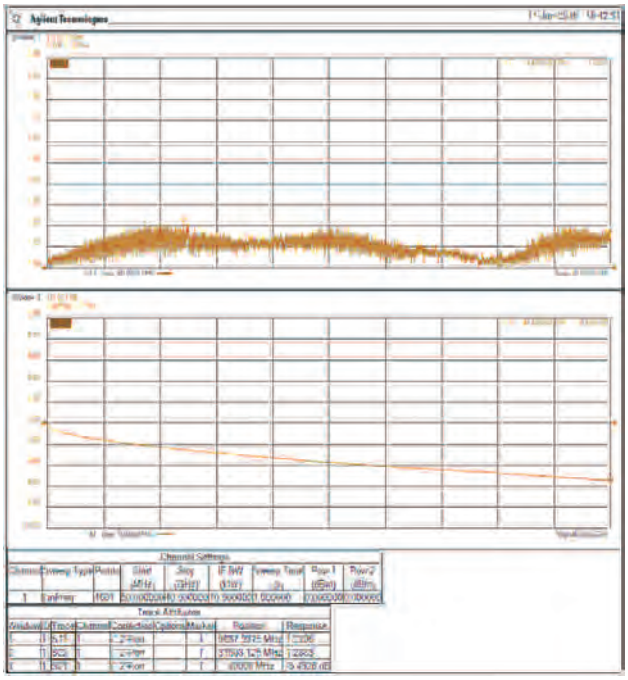
④ Length Unit/M:Meter or IN:Inch

Connector Short for
SM=SMA Male
SF=SMA Female
NM=N Male
NF=N Female
35M=3.5mm Male
35F=3.5mm Female

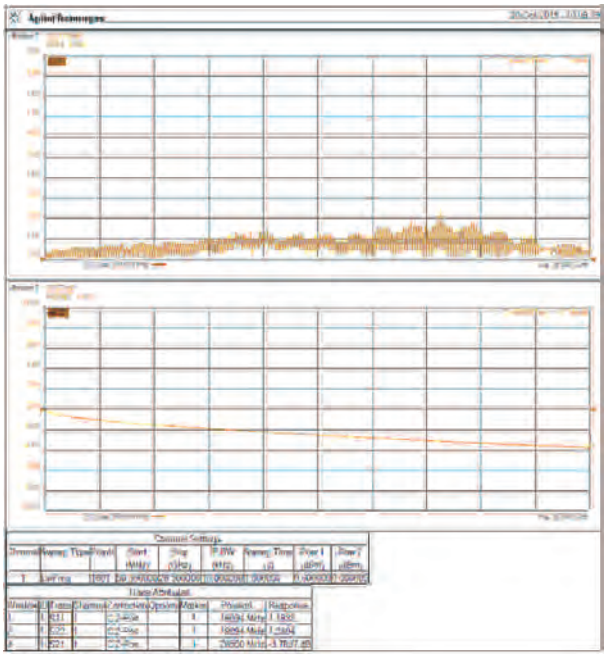
Test Reports Reference

JE220-VMVM-0.3M 67GHz Keysight VNA N5247B

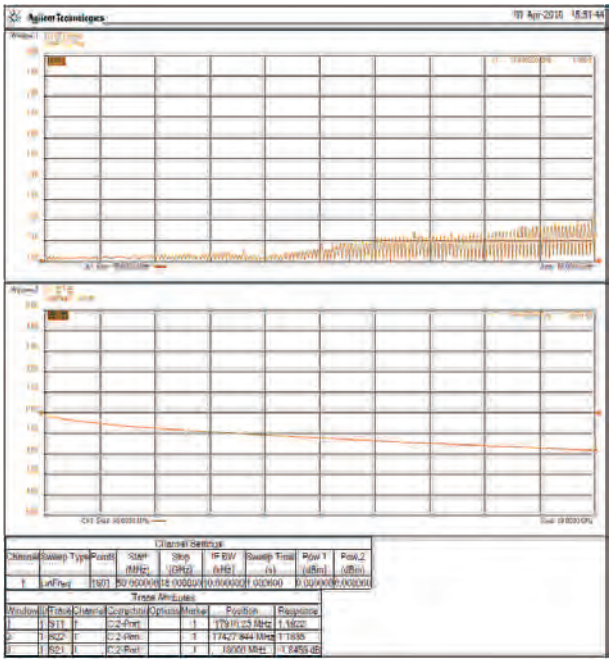
JE220-KMKM-1M to 40GHz Keysight VNA N5230A



JE280-SMSM-1M 26.5GHz Keysight VNA N5230A



JE400-SMSM-1M to 18GHz Keysight VNA N5230A



JF Super Flexible
Low Loss & Phase Stable

*Low Loss
*Phase & Amplitude Stable
*Super-Flexible

Features & Advantages

*Operating Frequency up to DC-40GHz
*Phase Stable 550PPM
*Mechanical Phase Stable ±3°
*Amplitude Stability ±0.1dB
*Ultra Low Loss
*Superior Shielding Effectiveness(<-90dB)

Applications

·Vchicle & Shipboard Communication
·Military/Commercial Antenna
·Military/Commercial Base Station
·Any Small Complex Space
·Radio Station

Products Instruction

JF series more than 8 types available for your selection, the cable using low loss expanded PTFE wrapping technologies ,frequency cover from DC to 40 GHz and super flexible provide excellent insertion loss performance.these ultra low loss,stable ,flexible microwave cable especially suited for outdoor and indoor system interconnection. in electrical performance,VP up to 83% providing ultra low loss and 550PPM temperature stability, the smallest diameter less than 3.6mm get small space application, the high power cable up 600W CW at 2GHz , Superior shielding effectiveness more than 110dB with a unique composition of dielectric materials results in superior cable performance, performance is further enhanced by our robust production process.

Low Loss & Super Flexible

Material & Construction

Structure	Material Cable Type	JF360/JF360S	JF360L/JF360LS	JF500/JF500S	JF500L/JF500LS
1.Center Conductor (mm)	Silver Plated Copper	0.72	0.91	1.02	1.45
2.Dielectric (mm)	ND PTFE / LD PTFE	2.10	2.50	3.07	3.90
3.Outer Conductor (mm)	Silver Plated Copper Ribbon	2.23	2.66	3.27	4.10
4.Outer Shields (mm)	Silver Plated Copper	2.71/2.9	3.31/3.45	3.78/4.0	4.60/4.90
5.Jacket (mm)	Purple FEP		3.60 /3.90		5.1/5.3
	Blue Black PUR	3.6 /4.0	/4.4	5.0 /	5.9/6.2

Specifications

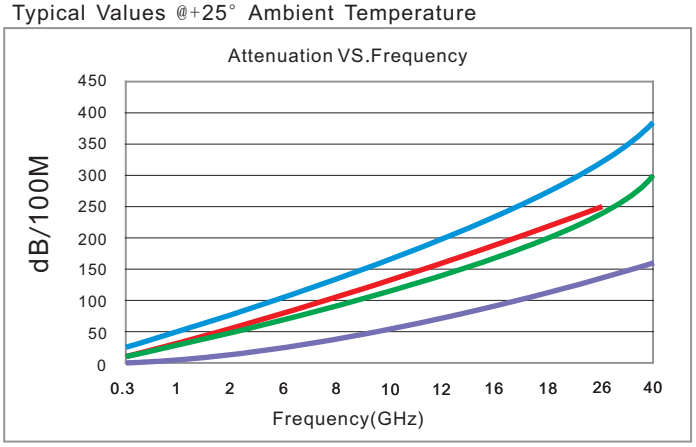
Specifications\Cable Type	JF360/JF360S	JF360L/JF360LS	JF500/JF500S	JF500L/JF500LS
Operating Frequency Range (GHz)	40	40	26.5	26.5
Impedance (Ω)	50	50	50	50
Vp (%)	76	81	76	81
Voltage Withstand (V,DC)	500	500	1000	1000
Shielding Effectivenss (dB)	<-90	<-90	<-90	<-90
Bend Radius : Installation (mm)	14	18	20	27
Bend Radius : Repeated (mm)	36	36	50	50
Weight (g/m)	30	33	50	62
Operating Temperature Range (℃)	-55 ~ 85/165	-55 ~ 85/165	-55 ~ 85/165	-55 ~ 85/165

Super Flexible

Attenuation vs. Frequency

Note: S for more better Mechanical Performance Electrical Performance are the same

Typical Values @+25° Ambient Temperature



Attenuation vs. Frequency (dB/100m)

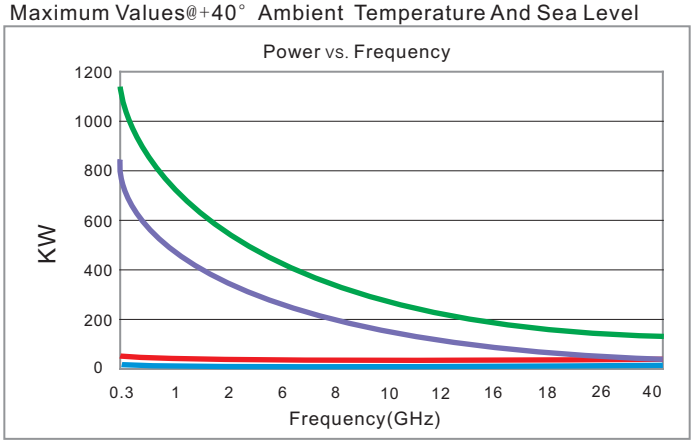
Frequency MHz	300	1000	2000	6000	8000	10000	12000	16000	18000	26500	40000
JF360	27.96	51.86	74.4	133.45	156.03	176.3	195	229.1	244.88	305.54	388.8
JF360L	23.5	30.4	61.4	107.1	125.4	141	133.4	155	192.1	236	294.6
JF500	20.45	38.47	55.9	103.22	121.9	138.9	154.8	184.2	198.03	252.07	
JF500L	12.9	29.2	41.6	73.6	85.6	96.4	106.1	123.8	131.9	162.8	

JF360—K1=1. 582929 K2=0. 001806 JF500—K1=1. 13660 K2=0. 002530 JF360L—K1=1. 3466500 K2=0. 0006325 JF500L—K1=0.9055116 K2=0. 00058

=K1*sqrt(fMHz)+K2*fMHz; dB/100m

CW Power vs. Frequency

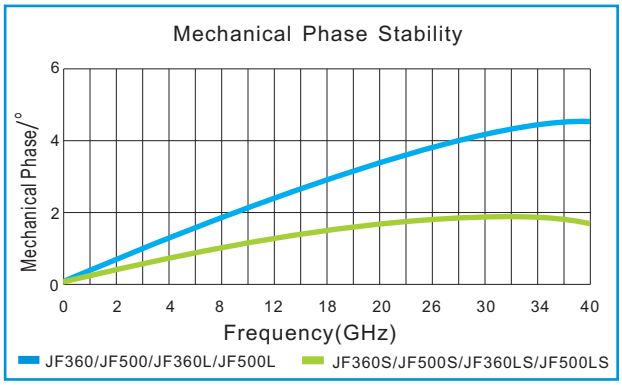
Maximum Values@+40° Ambient Temperature And Sea Level

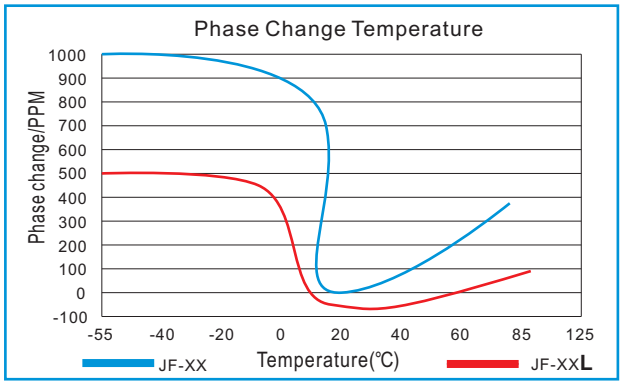


CW Power Handling vs.Frequency

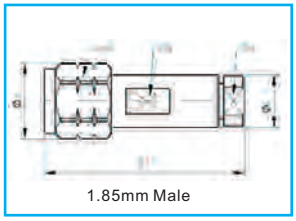
Frequency MHz	300	1000	2000	6000	8000	10000	12000	16000	18000	26500	40000
JF360	0.22	0.12	0.067	0.046	0.039	0.035	0.031	0.027	0.025	0.02	0.016
JF360L	0.82	0.5	0.348	0.2	0.165	0.15	0.14	0.12	0.11	0.09	0.07
JF500	0.28	0.15	0.11	0.06	0.05	0.046	0.04	0.038	0.032	0.02	
JF500L	1.161	0.87	0.61	0.35	0.29	0.27	0.23	0.21	0.19	0.16	

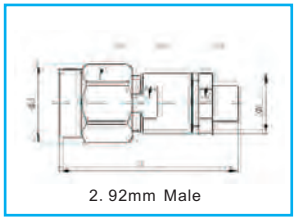
Super Flexible

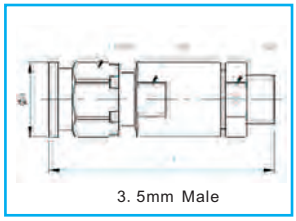


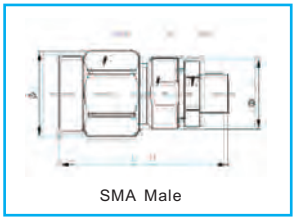


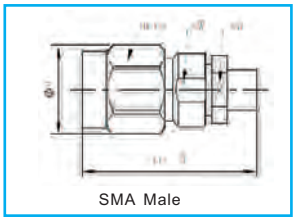
Connector Outline Drawing

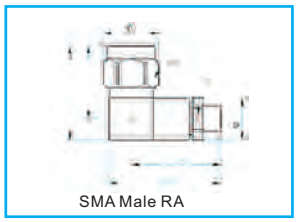

1.85mm Male

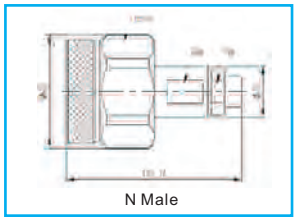

2. 92mm Male

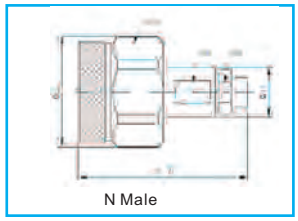

3. 5mm Male


SMA Male


SMA Male


SMA Male RA

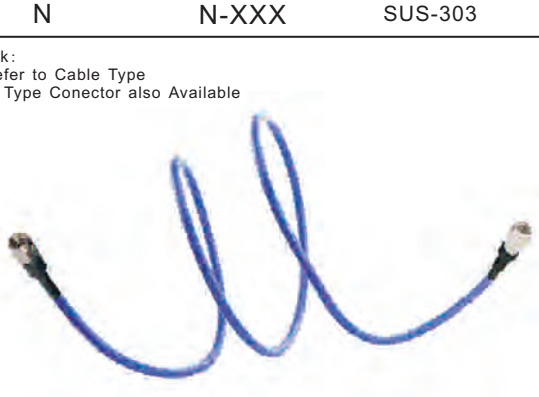

N Male


N Male

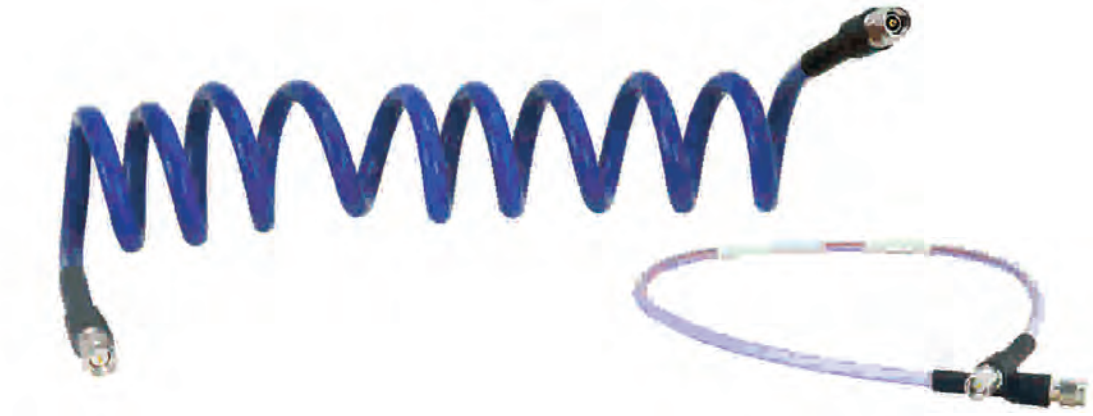
Cable Connector Type

Connertor	P/N	Material	Assembly Type	Applicable Cable
2.4MM	24-XXX	SUS-303	Welding	JF360
2.92MM	29-XXX	SUS-303	Welding	JF360
3.5MM	35-XXX	SUS-303	Welding	JF500
SMA	SMA-XXX	SUS-303	Welding	JF360/JF500
N	N-XXX	SUS-303	Welding	JF360/JF500

Remark:
xxx Refer to Cable Type
Other Type Conector also Available



JF Series Super Flexible Cable Assemblies

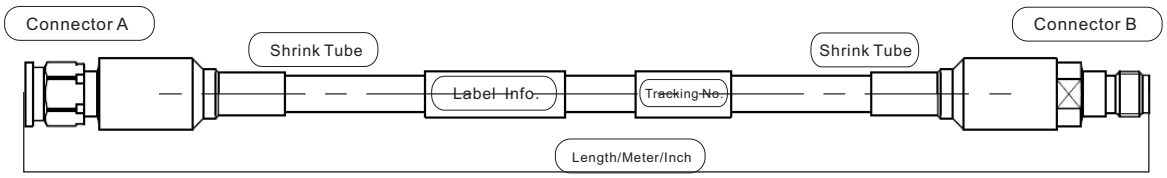


Super Flexible Cable Assemblies

JF Series is a complete product of low loss and high flexible cable with phase stability up to 40 GHz. This cable assembly, integrated with microwave connectors, is designed and engineered for the highest possible performance at the high frequency range.

It supports the most demanding needs of any application where performance and phase stability is critical.

It is ideal for many application requirements including Military/Aerospace and Telecom and Mobile market.



Available Connector

SSMP Male SMP Male	2.4mm Male 2.92mm Male 3.5mm Male	1.85mm Female 2.4mm Female 2.92mm Female 3.5mm Female	SMA Male N-type Male TNC Male DIN Male	SMA Female N-type Female SMA Male Right Angle N-type Male Right Angle

For Connector Specific Drawing Please Contact us.

How to Order

JF500-XXXX-XX

① ② ③ ④

① Cable Type

② Connector A Type

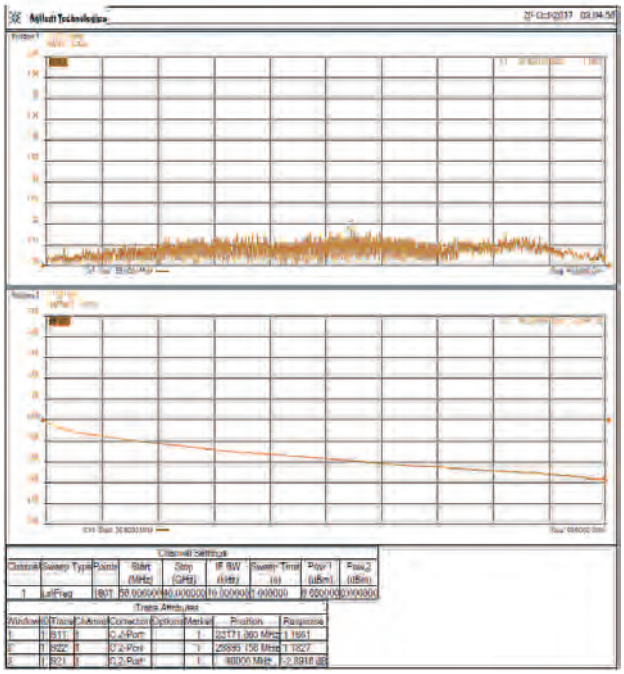
③ Connector B Type

④ Length Unit/M:Meter or IN:Inch

Connector Short for
SM=SMA Male
SF=SMA Female
NM=N Male
NF=N Female
35M=3.5mm Male
35F=3.5mm Female

Test Report Reference

JF360-KMKM-1M 40GHz Keysight VNA N5230A



JF360-SMSM-1M to 26.5GHz Keysight VNA N5230A

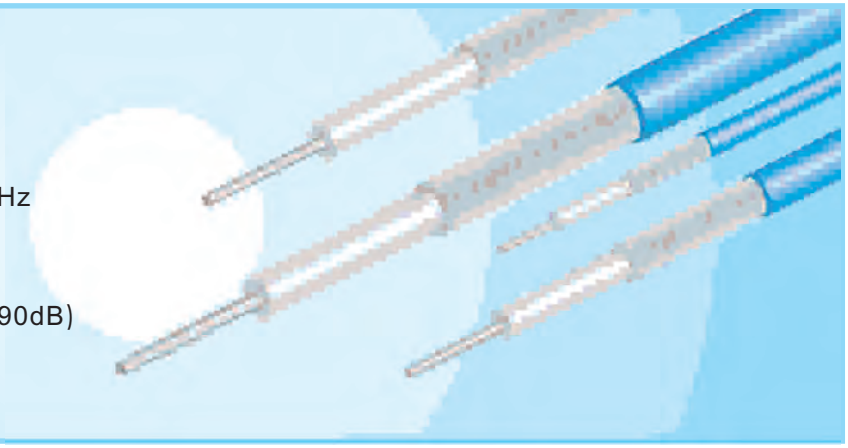
JF500S-SMSM-1M 26.5GHz Keysight VNA N5230A

JF500LS-NMNM-1M to 18GHz Keysight VNA N5230A

JSF Hand Formable Series

*Low Cost
*Phase & Amplitude Stable
*Semi-Flexible

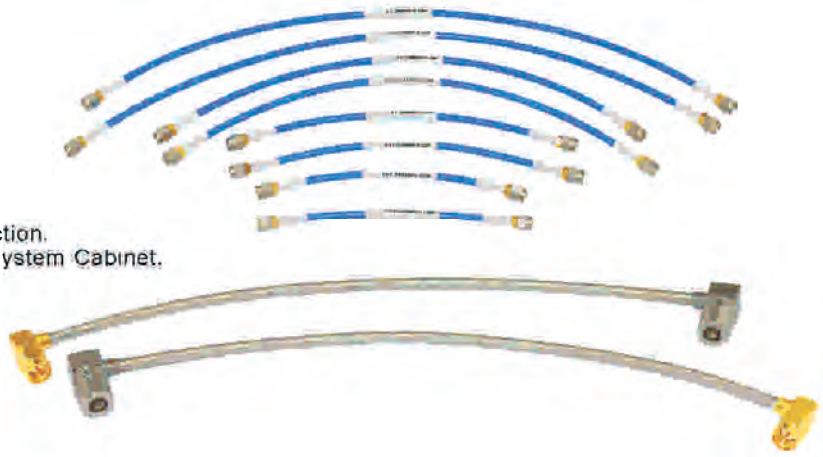
Features & Advantages



*Operating Frequency up to DC-40GHz
*PIM<-168dBc
*Mechanical Phase Stable±5°
*Amplitude Stability±0.05dB
*Superior Shielding Effectiveness(>-90dB)

Application:

1. Delay Line
2. Radio Equipment
3. Base station Internal Interconnection
4. Multi-channel Date Transmission Line
5. Microwave Components, Subsystem Interconnection.
6. ECM-Electronic Countermeasures, Navigation System Cabinet.



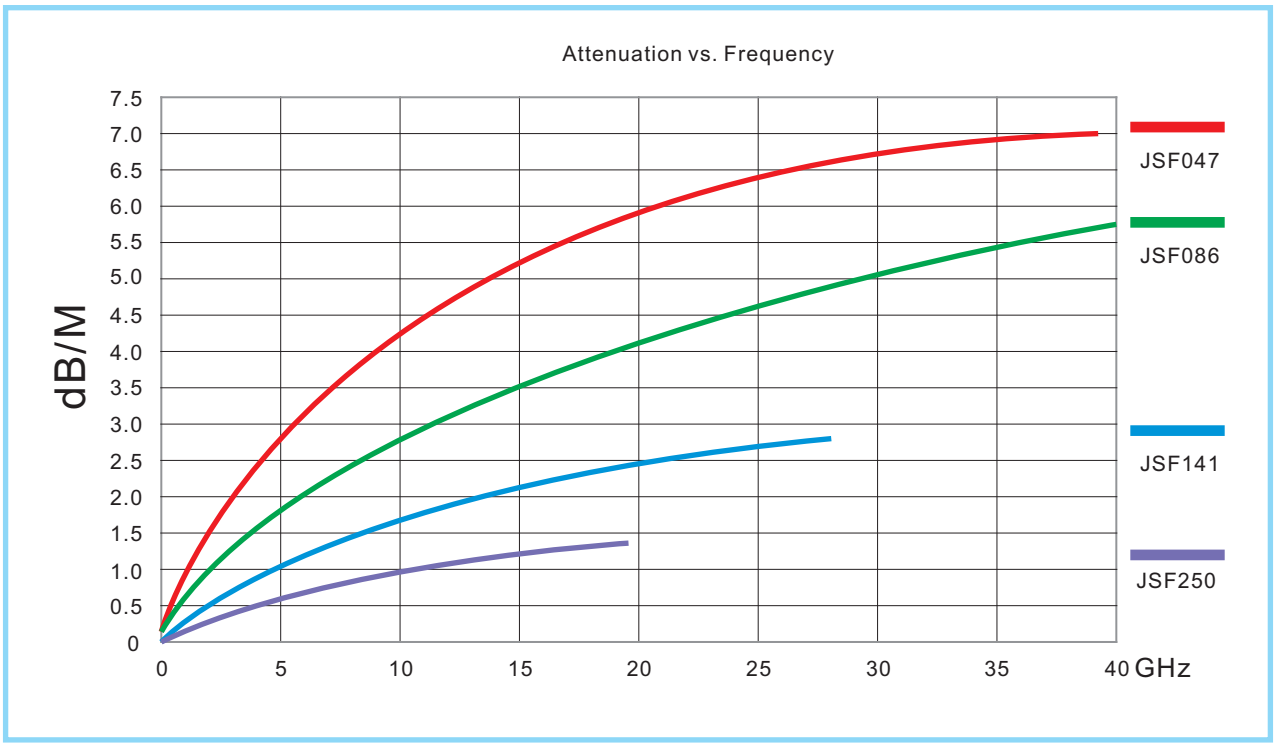
Material & Construction

Type	Frequency (GHz)	Center Conductor(mm)	Dielectric PTFE(mm)	Outer Shields (mm)	Jacket	Weight (g/m)	VP	Operating Temperature Range℃	Shielding Effetivtivenss (dB)
JSF047	50	0.3	0.94	1.2	FEP/PVC	6.6	70%	-65~+165	-100
JSF086	40	0.53	1.68	2.17	FEP/PVC	16	70%	-65~+165	-100
JSF141	33	0.94	2.98	3.55	FEP/PVC	41	70%	-65~+165	-100
JSF250	18	1.65	5.25	6.3	FEP/PVC	127	70%	-65~+165	-100

CW Power Handling vs. Frequency

Frequency	500	1000	2000	3000	5000	10000	18000	26500	40000
JSF047	0.046	0.031	0.022	0.018	0.013	0.0092	0.0067	0.006	0.005
JSF086	0.338	0.219	0.142	0.11	0.08	0.052	0.036	0.013	0.011
JSF141	0.79	0.526	0.351	0.277	0.205	0.137	0.097	0.071	
JSF250	1.831	1.188	0.771	0.598	0.435	0.282	0.196		

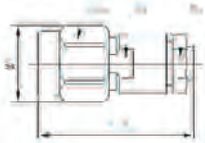
Note: It can be jacketed with FEP/PVC or other materials, which can be better protected. Please contact with us for more details.



Attenuation vs. Frequency (dB/m)

Frequency MHz	500	1000	2000	3000	5000	10000	18000	26500	40000
JSF047	0.83	1.24	1.78	2.21	2.96	4.31	6.03	6.5	7.2
JSF086	0.49	0.72	1.07	1.34	1.8	2.67	3.73	4.75	5.72
JSF141	0.27	0.41	0.62	0.78	1.05	1.58	2.22	2.87	
JSF250	0.16	0.24	0.37	0.48	0.65	0.99	1.42		

Connector Outline Drawing

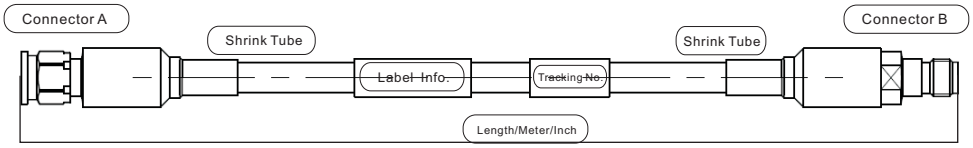

2. 92mm Male-JSF086


SMA Male-JSF086


SMA Male-JSF086


SMA公头-JSF141

Selection Guide:



JSF141-XXXX-XX

① ② ③ ④

① Cable Type
② Connector A Type
③ Connector B Type
④ Length Unit/M:Meter or IN:Inch

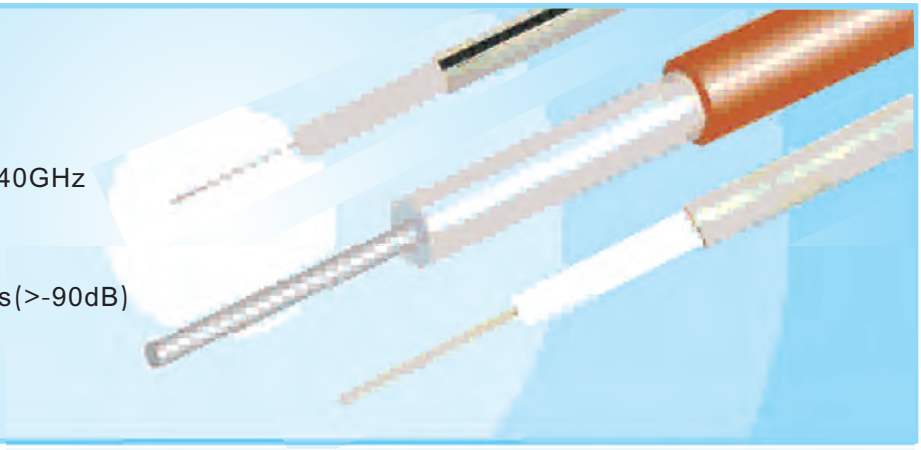
Connector Short for
SM=SMA Male
SF=SMA Female
NM=N Male
NF=N Female
35M=3.5mm Male
35F=3.5mm Female

JSR Semi-Rigid Series

*Low Cost
*Phase &Amplitude Stable
*Semi-Rigid

Features:

*Operating Frequency up to DC-40GHz
*Low PIM
*Mechanical Phase Stable±5°
*Amplitude Stability±0.05dB
*Superior Shielding Effectiveness(>-90dB)



Application:

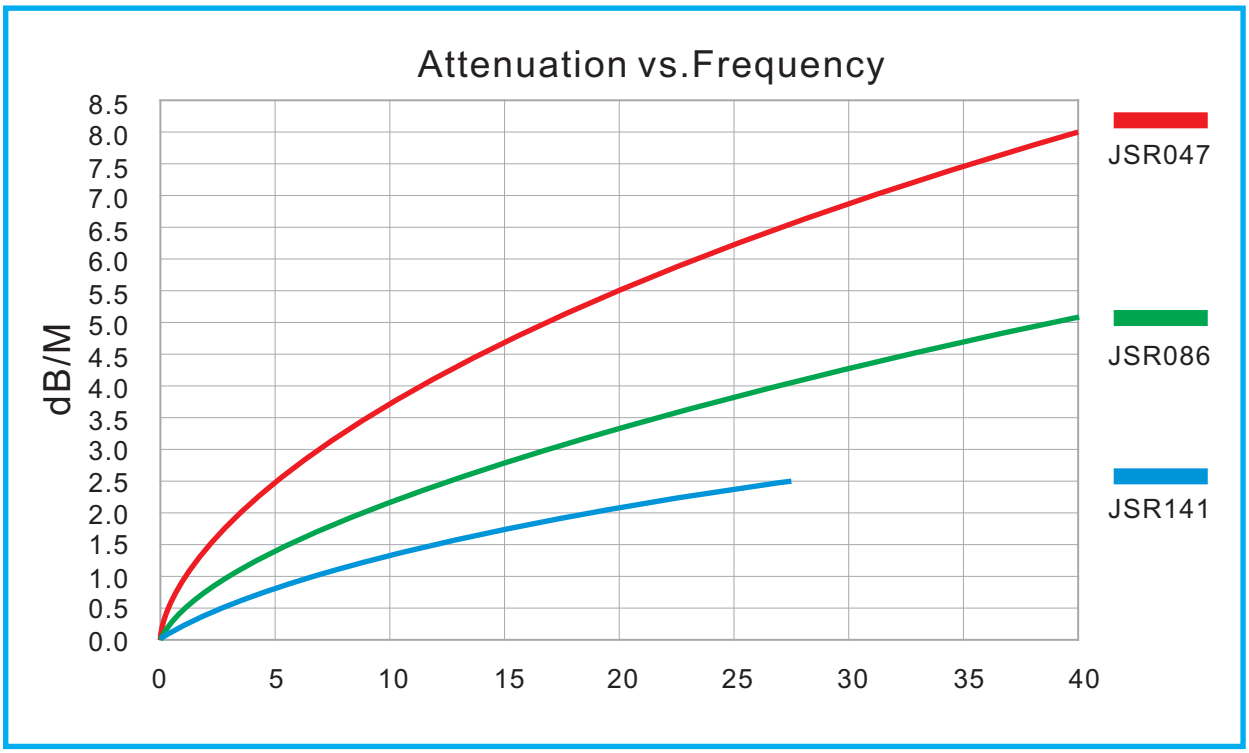
■Communication Cabinet
■Navigation Module
■Fire Control System
■Electronic Countermeasures
■Drone Aircraft
■Power Distribution System
■Instruments

Material & Construction

Type	Frequency (GHz)	Center Conductor(mm)	Dielectric Solid PTFE(mm)	Outer Shields Coppe Tuber(mm)	Weight (g/m)	VP	Operating Temperature Range℃	Shielding Effetivtivenss (dB)
JSR047	50	0.29	0.94	1.19	5	70%	-65~+150	-110
JSR086	40	0.53	1.68	2.2	10	70%	-65~+150	-110
JSR141	33	0.94	2.98	3.58	15	70%	-65~+150	-110

CW Power Handling vs. Frequency

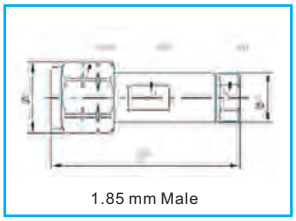
Frequency (MHZ)	500	1000	2000	3000	5000	10000	20000	26500	40000
JSR047	0.067	0.047	0.039	0.035	0.021	0.015	0.01	0.009	0.005
JSR086	0.191	0.133	0.111	0.088	0.057	0.039	0.027	0.025	0.02
JSR141	0.484	0.363	0.316	0.281	0.191	0.146	0.101	0.096	

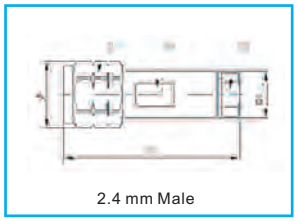


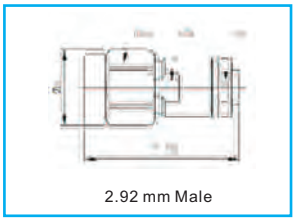
Attenuation vs. Frequency (dB/m)

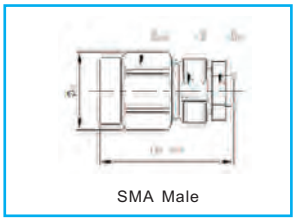
Frequency (MHZ)	500	1000	2000	3000	5000	10000	20000	26500	40000
JSR047	0.79	1.13	1.56	1.85	2.59	3.74	5.44	6.25	8.2
JSR086	0.43	0.63	0.92	1.13	1.50	2.12	3.15	3.95	5.05
JSR141	0.25	0.37	0.52	0.68	0.90	1.31	2.01	2.55	

Connector Outline Drawing

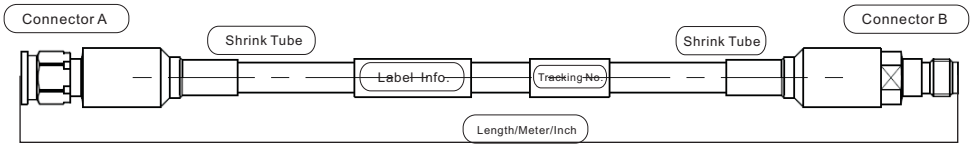

1.85 mm Male


2.4 mm Male


2.92 mm Male


SMA Male

Selection Guide:



JSR141-XXXX-XX
① ② ③ ④

① Cable Type
② Connector A Type
③ Connector B Type
④ Length Unit/M:Meter or IN:Inch

Connector Short for
SM=SMA Male
SF=SMA Female
NM=N Male
NF=N Female
35M=3.5mm Male
35F=3.5mm Female

JMR Series

Low Loss Wireless Communication

*Low Loss
*Low Cost

Features:

*Frequency up to DC-6GHz
*Super Shielding Effectiveness<-90dB
*Ultra Low Loss
*UV Resistant
* 20 Years Outdoor Using

Applications :

1. Base Station Feeder
2. Vehicular Platform
3. Radio Stations
4. System Interconnection
5. Mobile Communications
6. RFID Connection
7. Remote Control Test

Material & Construction

Type	Center Conductor (mm)	Dielectric-Foam PE (mm)	Double Shields/Tin Plated Copper Wire (mm)	Jacket PE/TPE (mm)	Weight (g/m)	Vp%	Working Temperature℃
JMR100	0.46	1.52PE	2.11	2.8	0.01	66	-40~+85
JMR200	1.12	2.79	3.53	5	0.03	80	-40~+85
JMR240/UF	1.42	3.81	4.52	6	0.05	83	-40~+85
JMR300	1.78	4.83	5.72	7	0.08	83	-40~+85
JMR400	2.74	7.24	8.13	10	0.1	84	-40~+85
JMR600	4.47	11.56	12.45	15	0.2	87	-40~+85

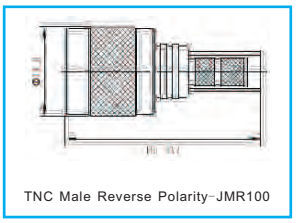
Attenuation vs. Frequency (dB/m)

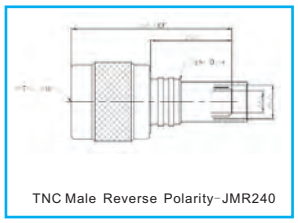
Frequency (MHz)	50	150	220	450	900	1500	1800	2000	2500	5800
JMR100	0.1674	0.2937	0.3580	0.5200	0.7510	0.9895	1.0932	1.1584	1.3107	2.1140
JMR200	0.0841	0.1466	0.1781	0.2568	0.3672	0.4793	0.5275	0.5576	0.6275	0.9864
JMR240	0.0574	0.1001	0.1216	0.1754	0.2509	0.3276	0.3605	0.3811	0.4290	0.6750
JMR300	0.0458	0.0800	0.0973	0.1406	0.2017	0.2640	0.2909	0.3078	0.3469	0.5500
JMR400	0.0289	0.0506	0.0616	0.0892	0.1284	0.1687	0.1861	0.1971	0.2226	0.3562
JMR600	0.0185	0.0322	0.0393	0.0574	0.0835	0.1106	0.1226	0.1300	0.1476	0.2419

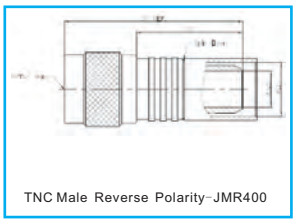
(Kw) CW Power Handling vs. Frequency

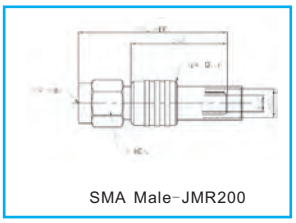
Frequency (MHz)	50	150	220	450	900	1500	1800	2000	2500	5800
JMR100	0.180	0.100	0.083	0.057	0.039	0.029	0.027	0.025	0.022	0.013
JMR200	0.680	0.390	0.320	0.220	0.160	0.120	0.110	0.100	0.090	0.060
JMR240	1.150	0.660	0.540	0.380	0.260	0.200	0.180	0.170	0.150	0.100
JMR300	1.620	0.920	0.760	0.520	0.360	0.280	0.250	0.240	0.210	0.130
JMR400	2.570	1.470	1.200	0.830	0.580	0.440	0.400	0.370	0.330	0.210
JMR600	4.240	2.410	1.970	1.350	0.930	0.700	0.630	0.590	0.520	0.320

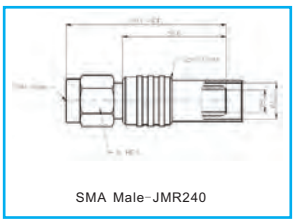
Connector Outline Drawing

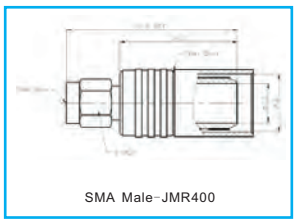

TNC Male Reverse Polarity-JMR100

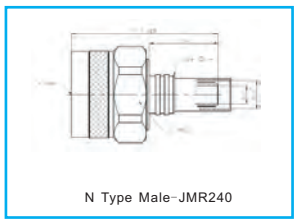

TNC Male Reverse Polarity-JMR240

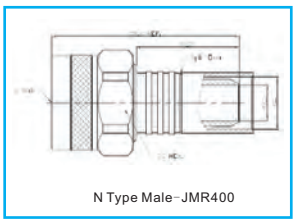

TNC Male Reverse Polarity-JMR400


SMA Male-JMR200

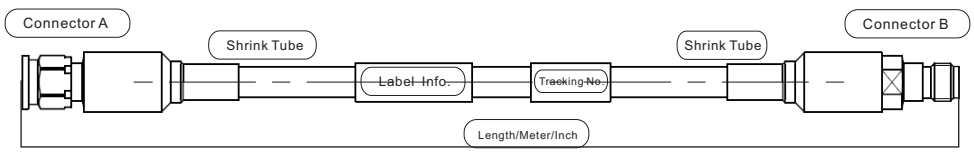

SMA Male-JMR240


SMA Male-JMR400


N Type Male-JMR240


N Type Male-JMR400

Selection Guide:



JMR240-XXXX-XX

① ② ③ ④

① Cable Type
② Connector A Type
③ Connector B Type
④ Length Unit/M:Meter or IN:Inch

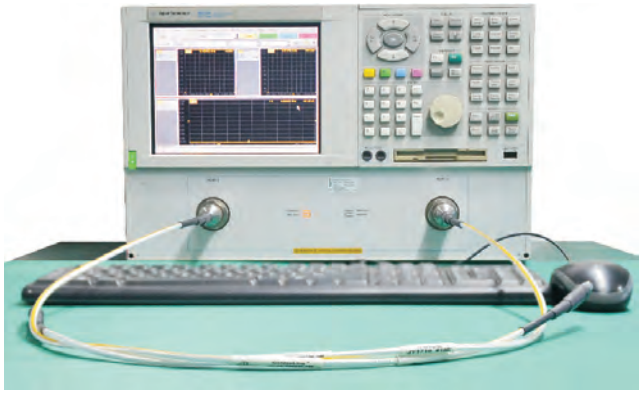
Connector Short for
SM=SMA Male
SF=SMA Female
NM=N Male
NF=N Female
35M=3.5mm Male
35F=3.5mm Female

GoldenLine™ Microwave Test Cable

200,000 Harsh Environmental Bending Life Cycles !

Application :

- Research & Development Labs
- High Volume Production Test Stations
- RF& Microwave Components / Module Testing
- Instrument Test Equipment
- Cellular Infrastructure Site Testing
- Field Testing
- RF Environment & Temperature Chambers

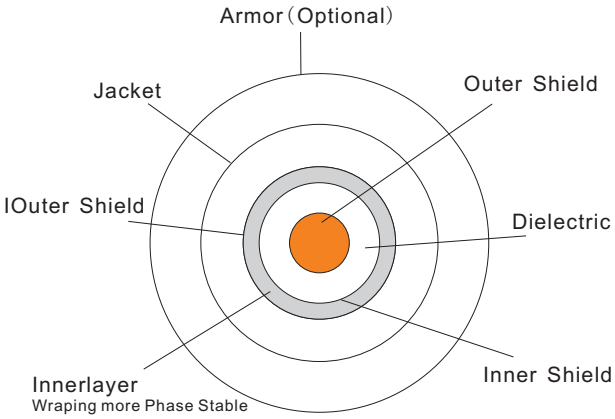


Goldenline™ Series test cables are designed to offer superior electrical performance and durability for a variety of test and measurement applications, It is also a low cost ,durble,high-performance cable assemblies designed for Lab and interconnect applications.It's rugged design,solid PTFE dielectric cable assembly with stainless steel connectors and a proven strain relief system,these cables provide long life and excellent stability in applications where they are repeatedly flexed and mated/unmated.They are also economical enough to be used as interconnects in test sysems.

Features & Benefits:

- ■Long Flex Life
- ■Super Cost Effectiveness
- ■Outdoor Using Directly
- ■Super Shielding Properties
- ■Phase & Loss & Mechanical Stable
- ■Various Armor Protecting Selection
- ■Frequency DC to 26.5GHz
- ■Mating Cycles,Stainless Steel Connector

GoldenLine™ Quality Guarantee
Providing 12 months Quality Warranty From Shipment Date. Excludes cable or connector interface Damage from misuse or abuse.



Cable Construction：

Inner Conductor:SPC Clad Steel

Dielectric:Solid PTFE

Shield:SPC Ribbon

Inter Layer:PTCA

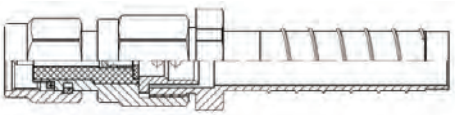
Outer Shield:SPC

Jacket:Clear FEP

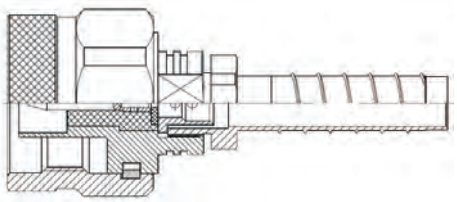
Armor: Transparent PVC/SS/Black SS

Connector Advantage：

*Passivated stainless steel finish.
*Gold plated berylliuym copper center contacts.
*Superior wear-resistant ability.
*More than 5000 mating cycles.



Extended Metal Tail Tube Protection



Center Pin Flip-chip Design

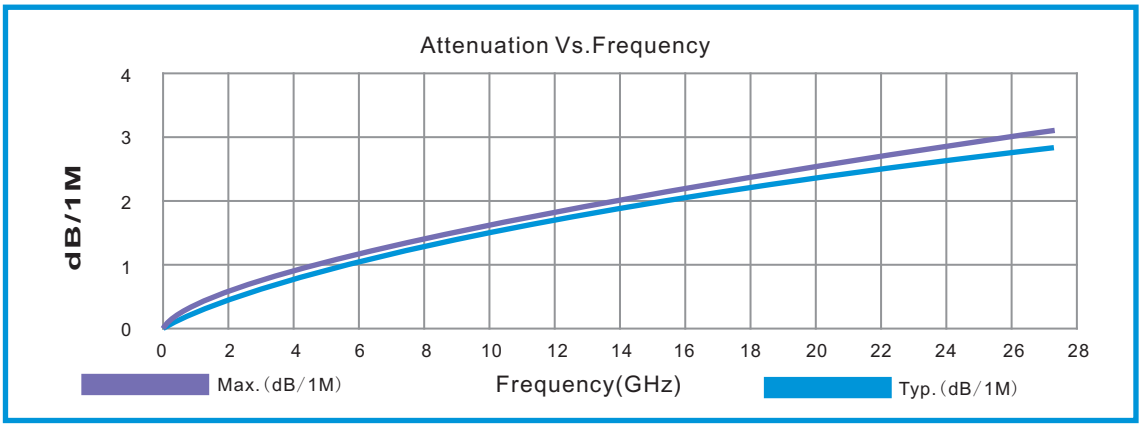
Specifications Physical & Mechanical		
Dimensions	Inch	mm
Inner Conductor	0.036	0.93
Dielectric	0.115	2.96
Inner Shield	0.127	3.16
Interlayer	0.131	3.31
Outer Shield	0.153	3.9
Jacket	0.196	4.96
Armor(Optional)	A 10mm / S 8. 7mm / B 10mm	
Weight(kg/m)	0.064(Cable)	
Armor Resistance/cm2	120Kg(A)/ 68Kg(S) /88Kg(B)	
Bend Radius minimum	20(mm)	
Mating Cycle	>5000	
Length Tolerance	+/-5mm	
Temperature Range	-55℃/+125℃	

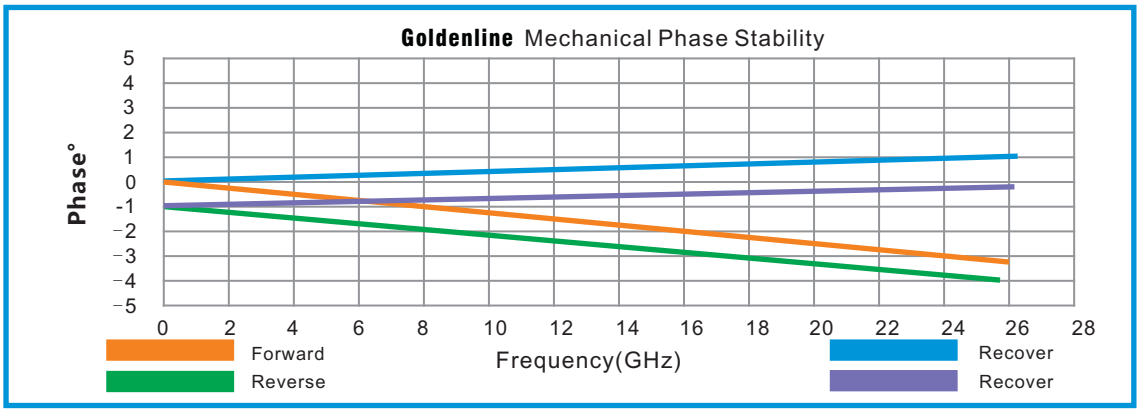
Electrical Specifications					
VSWR(max.)		3Ghz	6Ghz	18Ghz	26.5Ghz
	SMA 3.5mm	1.07	1.10	1.20	1.25
	N 3.5NMD	1.10	1.15	1.25	
	BNC	1.15			
Impedance		50 Ω			
VP		71%			
Shielding Effectiveness		>110dB			
Capacitance		96.41pf/Meter			
Phase Stability		DC-10Ghz 1° 10-18Ghz 2°			
Amplitude Stability		DC-26Ghz <+/- 0.03dB			
Phase Match		Customized			

Connector Types		
Connector	Code	Max Working Frequency
SMA Male	SM	DC-26.5GHz
3.5mm Male	3M	DC-27GHz
SMA Female	SF	DC-26GHz
3.5mm Female	3F	DC-27GHz
N Male	NM	DC-18GHz
N Felame	NF	DC-12GHz
3.5NMD	35NMD	DC-27GHz

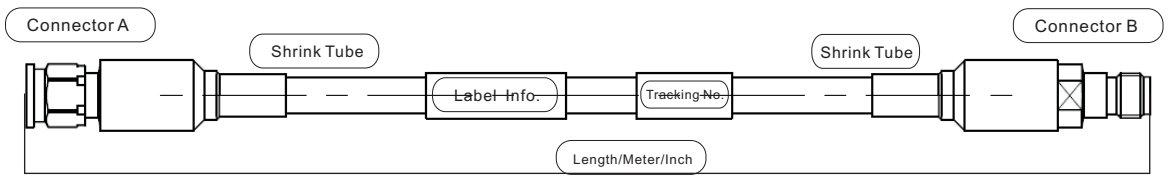
Cable Insertion Loss	
Frequency	dB/M
1GHz	0.382
3GHz	0.711
6GHz	1.075
12GHz	1.658
18GHz	2.161
26.5GHz	2.811

Attenuation (Included Connector)





Selection Guide:



GL26A-XXXX-XX

① ⑤ ② ③ ④

① Cable Type
② Connector A Type
③ Connector B Type
④ Length Unit/M:Meter or IN:Inch
⑤ Armor Optional
L:Low Loss Type

Connector Short for
SM=SMA Male
SF=SMA Female
NM=N Male
NF=N Female
35M=3.5mm Male
35F=3.5mm Female

⑤
A=Transparent PVC and Spring Armor

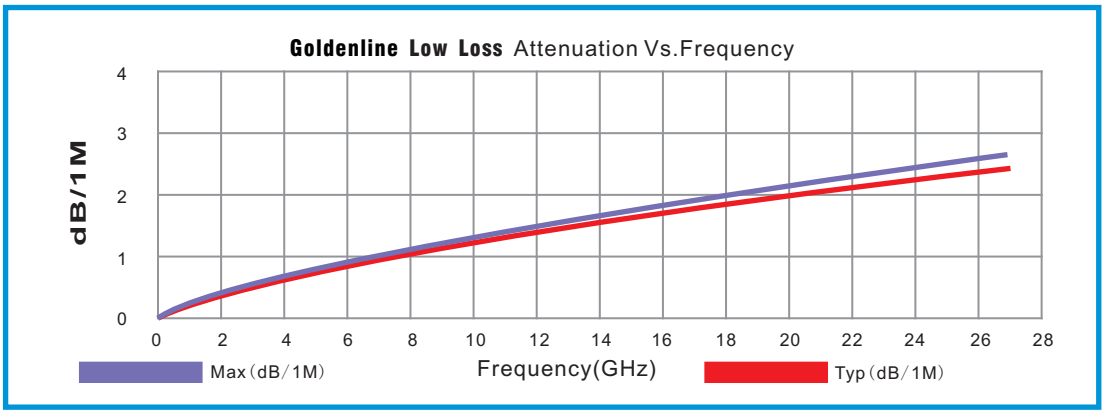
S=Stainless Steel Armor

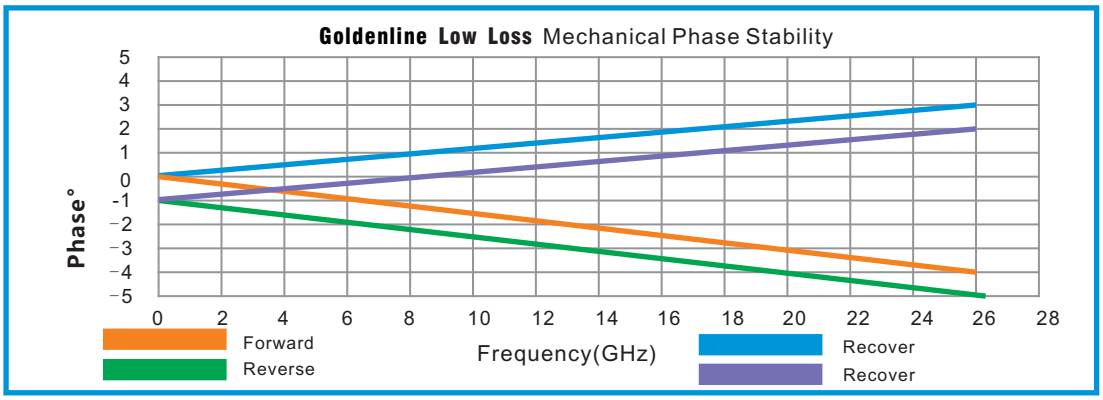
B=Black Nylon Armor


Goldenline™ Low Loss Series

Specifications Physical & Mechanical	
Dimensions	mm
Inner Conductor	1.02
Dielectric	3.05
Inner Shield	3.32
Inter Layer	3.45
Outer Shield	4.02
Jacket	4.85
Armor(Optional)	A10mm/S8.7mm/B10mm
Weight(kg/m)	0.050
Armor Resistance/cm2	100kg(P) 60Kg(S) 120Kg(B)
Bend Radius minimum	18(mm)
Mating Cycle	>5000
Length Tolerance	+/-5mm
Temperature Range	-55℃/+125℃

Electrical Specifications					
VSWR(max)		3Ghz	6Ghz	18Ghz	26.5Ghz
	SMA 3.5mm	1.07	1.1	1.2	1.25
	N 3.5NMD	1.1	1.15	1.25	
	BNC	1.15			
Impedance		50 Ω			
VP		76%			
Shielding Effectiveness		>110dB			
Capacitance		96.41pf/Meter			
Phase Stability		DC-10Ghz 1.1° 10-18Ghz 2°			
Amplitude Stability		DC-26Ghz <+/-0.05dB			
Phase Match		Customized			





PhaseTest™ Precision Test Cable

400,000 Times Bending Cycles

Features:

- ■Up to 67GHz
- ■Rugged Construction
- ■Minimal Phase Change With Temperature
- ■Phase&Return Loss Stable
- ■Long Term Electrical Stability
- ■Integrated Armor Protection,Crush and Torque Resistant

Phasetest™ Series High Performance VNA Vector Network Analyzer Test Port Cable Assemblies using the best materials for phase stable , ultra low loss and best repeatability. The cable includes 10 different functional layers to ensure machinery and electrical performance. These high-quality components incorporate stainless steel armor for precision test measurements.

PhaseTest™ Quality Commitment

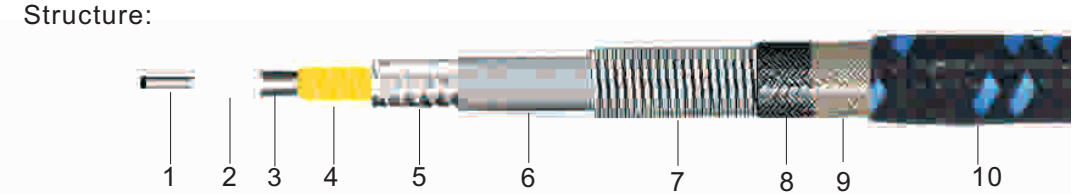
PhaseTest Product Guarantee ,Juncoax will repair or replace test cable at it's options, if the quality fails within 6 months from shipment. This guarantee excludes cable or connect or interface damage from misuse or abuse.

Applications:

- *R& D Labs
- *Field Testing
- *Instrument Testing
- *RF& Microwave Components / Module Testing
- *VNA Calibration

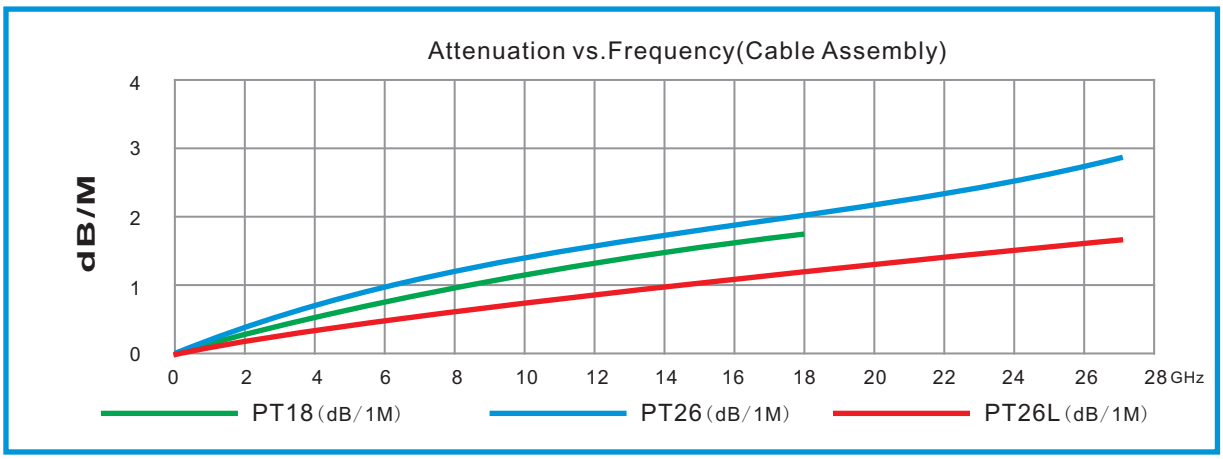
PhaseTest™ Precision Test Cable

Structure:



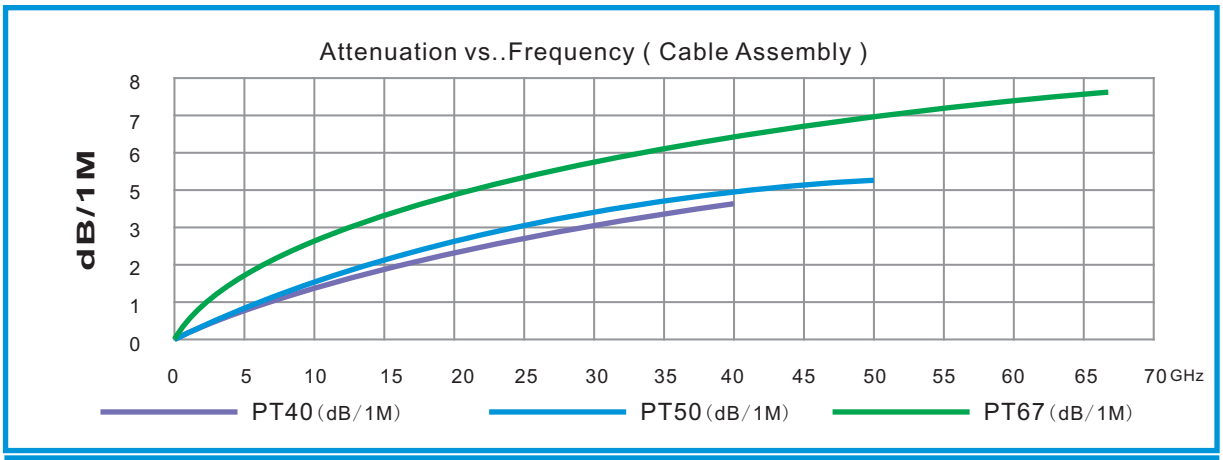
1-Center Conductor , Silver Plated Copper;
2-Dielectric:Low Density PTFE ;
3-Outer Conductor : Silver Pated Copper Ribbon;
4-Stable Layer : PTFE ;
5-Inner Braiding: SPC;
6-Jacket:FEP ;
7-Crush Protection Layer ;
8-Braiding SPC ;
9-PTFE Stable Gum;
10-Braided Outer Jacket。

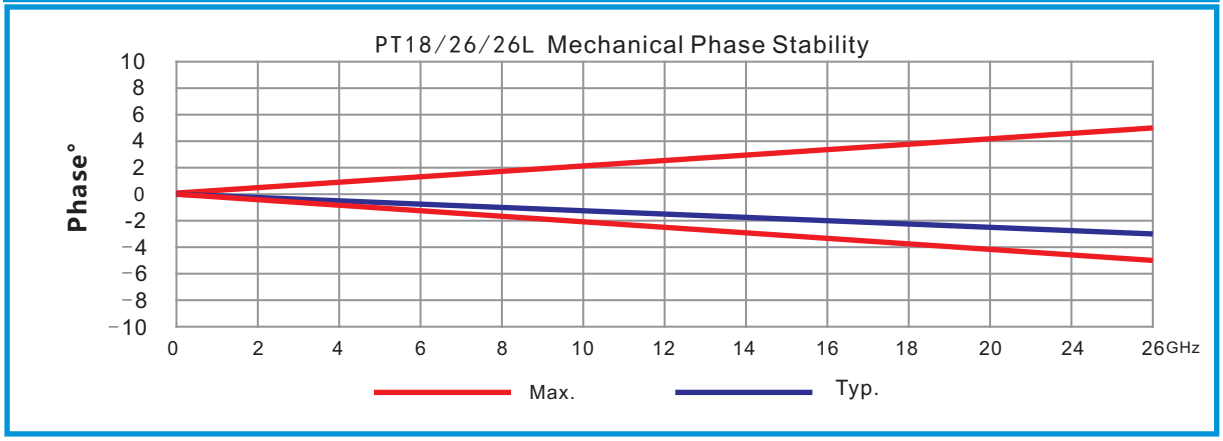
PT Series(DC-26.5GHz)		PT18	PT26	PT26L
Electrical	Frequency (GHz)	18	26.5	26.5
	VSWR	1.20Max.	1.30Max.	1.30Max.
	Insertion Loss-cable (dB)	1.7dB/M	2.25dB/M	1.25dB/M
	Impedance(Ohms)	50	50	50
	Amplitude (dB)	0.02	0.02	0.03
	Phase (°)	2	2	3
	VP(%)	70	70	83
	Shielding Effectiveness (dB)	>100		
	Time delay (ns)	4.76	4.76	4.0
Construction	Overall Diameter(mm)	7.7	7.7	7.9
	Cable Weight (g/m)	110	110	140
	Minimun Bend Radius	77	77	79
	Life Cycles	>400000		
	Temperature Range (℃)	-55~85/-55~125/-55~165		



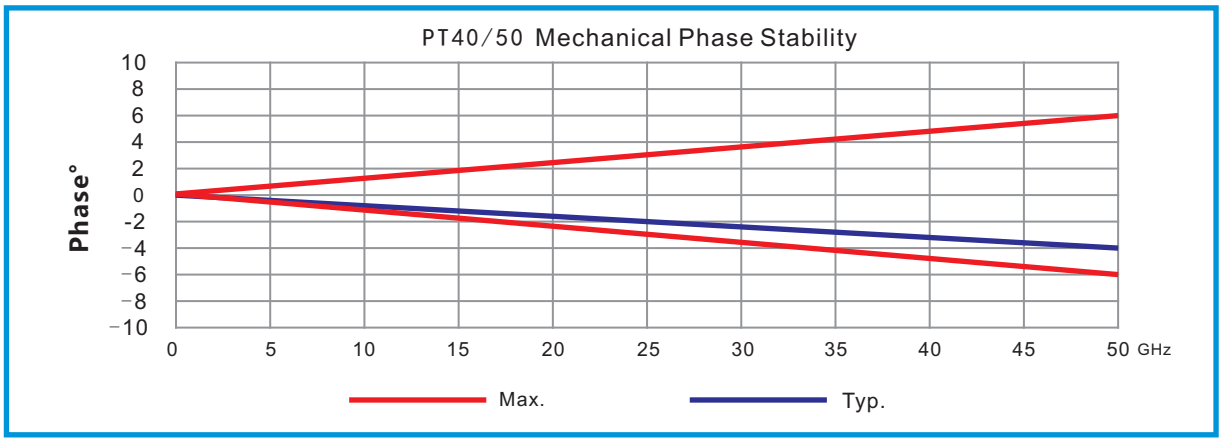
PhaseTest™ Precision Test Cable

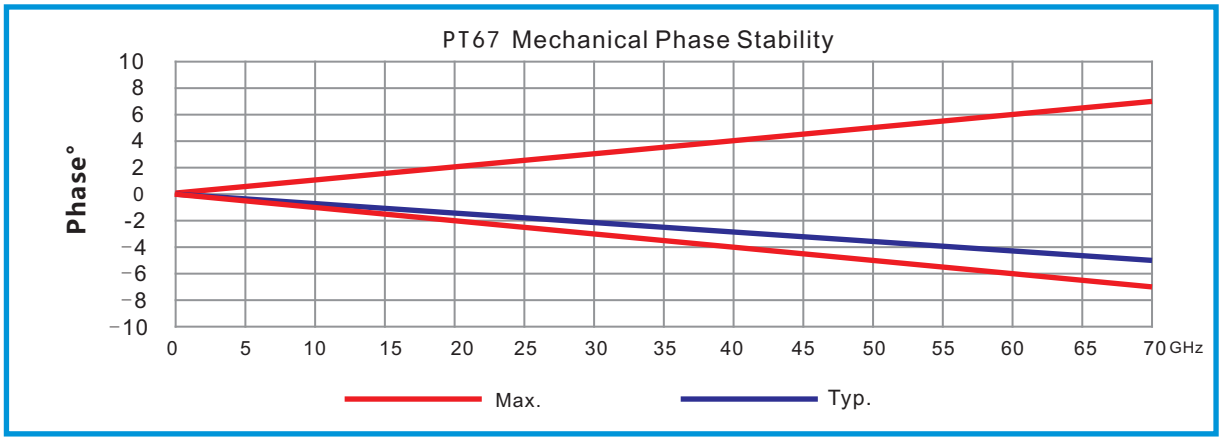
PT Series(40-67GHz)		PT40	PT50	PT67
Electrical	Frequency (GHz)	40	50	67
	VSWR	1.30Max.	1.30Max.	1.40Max.
	Insertion Loss-Cable (dB)	2.90dB/M	3.30dB/M	5.95dB/M
	Impedance(Ohms)	50	50	50
	Amplitude (dB)	0.03	0.05	0.10
	Mechanical Phase (°)	3	5	8
	VP(%)	76	76	76
	Shielding Effectiveness (dB)	<-100		
	Time Delay (ns)	4.3	4.3	4.3
Construction	Outer Diameter(mm)	6.5	6.5	6.5
	Weight (g/m)	105	105	90
	Minimun Bend Radius	65	95	105
	Life Cycles	>200000		
	OperatingTemperature Range (℃)	-55~85/125/165		
	Crush Resistance (kg/cm)	300		



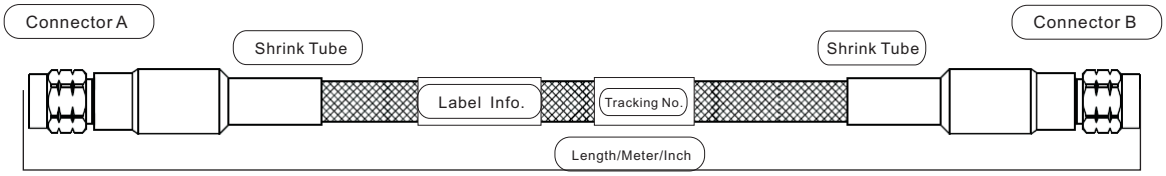


PhaseTest™ Precision Test Cable





Selection Guide:



PT40-XXXX-XX

① ⑤ ② ③ ④

① Cable Type

② Connector A Type

③ Connector B Type

④ Length Unit/M:Meter or IN:Inch

⑤ Frequency:
- 18: DC-18GHz
- 26: DC-26.5GHz
- 26L:Low Loss
- 40: DC-40GHz
- 50: DC-50GHz
- 67: DC-67GHz

Connector Short for :

18M: 1. 85mm Male
24M: 2. 4mm Male
29M:2.92mm Male
35M: 3. 5mm Male
SM: SMA Male
NM: N Type Male
18F: 1. 85mm Female
24F: 2. 4mm Female
29F:2.92mm Female
35F: 3. 5mm Female
SF: SMA Female
NF: N Type Female

VNATest™

Special Test Cable for Vector Network Analyzer

Precission Durable Working Life

Features:

*Frequency to 67GHz
*Vector Network Analyzer
*Research & Development Labs
*RF& Microwave Components
*Module Testing

VNA test™ Test Cable series is dedicated for VNA network analyzer test.The product adopts special phase-stable cable ,stainless steel Compression and Torsion Resistant and reinforced stainless steel connectors to ensure the stability of the product during the test, especially in the test cable movement and bending process.

The optimized product structure design ensures the long life of the product.

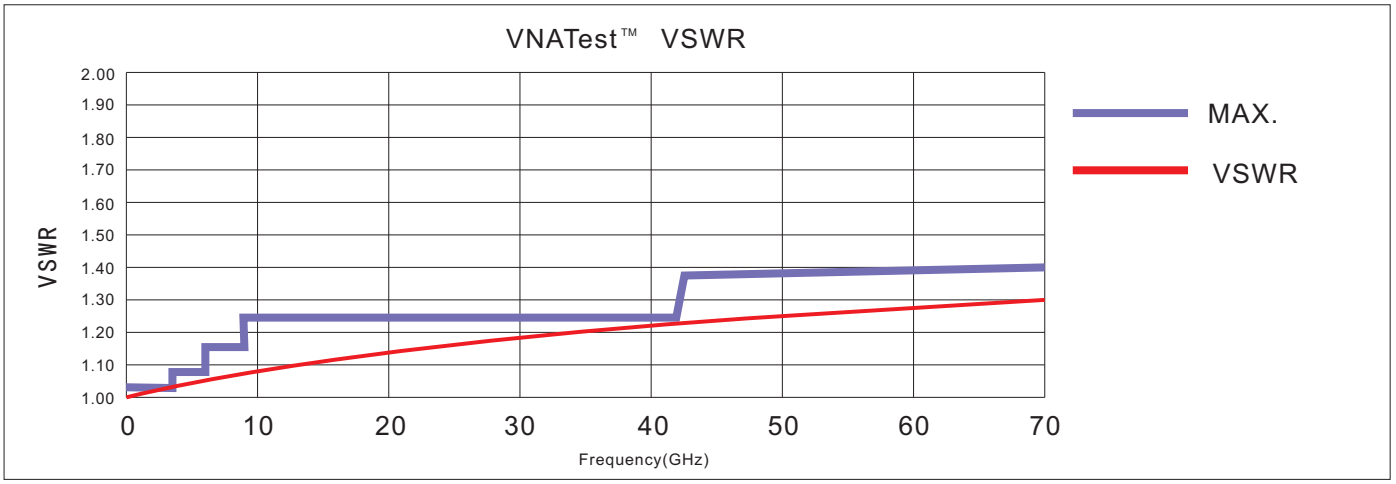
Precision Test Cable

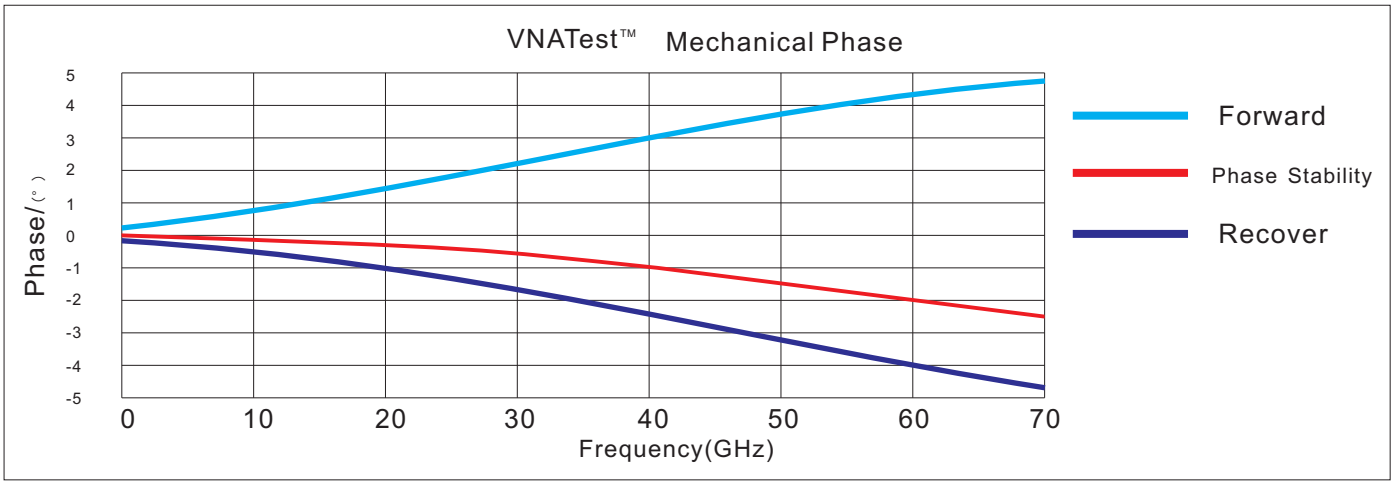
Superior Quality Warranty

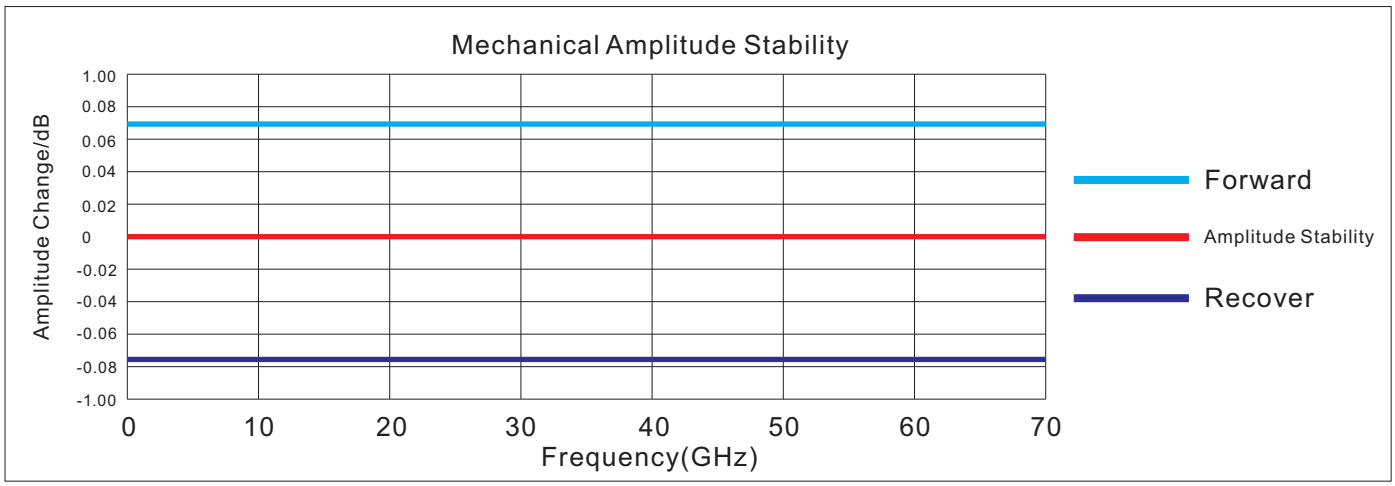
Features:

*Ensure Precision Measurement
*Phase&Loss Stables
*Triple Shielded Cable
*Long Flex Life
*Super Flexible
*Compression & Torsion Resistant
*Cost Effectiveness

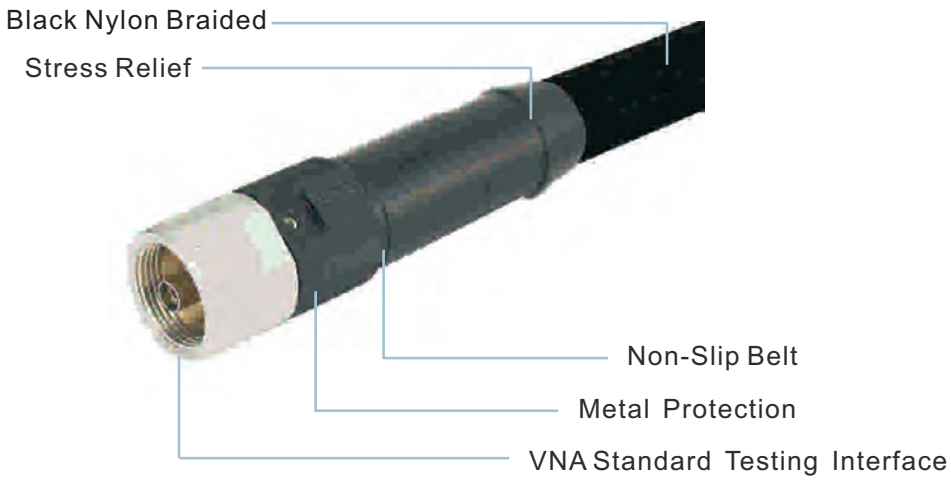
Electrical Performance					
Operating Frequency	18GHz	26.5GHz	40GHz	50GHz	67GHz
Connector (Male/Female)	N-Type	3.5mm NMD3.5mm	NMD2.92mm APC2.92mm	NMD2.4mm APC2.4mm	1.85mm NMD1.85mm
VSWR	1.23:1Max	1.25:1 max	1.30:1 max	1.30:1 max	1.35:1 max
Shielding Effectiveness	-100dB	-100dB	-100dB	-100dB	-100dB
Insertion Loss	≤1.5dB	≤1.8dB	≤2.5dB	≤3.2dB	≤5.2dB
Impedance	50 Ω				
Phase Stability (with a mandrel of 10cm diameter)	≤1.5°	≤2°	≤2.5°	≤2.5°	≤3°
Amplitude Stability ((with a mandrel of 10cm diameter)	≤0.05dB	≤0.06dB	≤0.08dB	≤0.1dB	≤0.15dB
Mechanical					
Cable Length Standard(Custom Available)	63 cm	63 cm	63cm	63cm	63cm
Maximum Outer Diameter	1.52cm	1.52cm	1.52cm	1.52cm	1.52cm
Minimum Bend Radius	6.5 cm	6.5 cm	6.5 cm	6.5 cm	6.5 cm
Environmental					
Operating Temperature	+20 ~ +26℃				
Storage Temperature	-45 ~ +85℃				



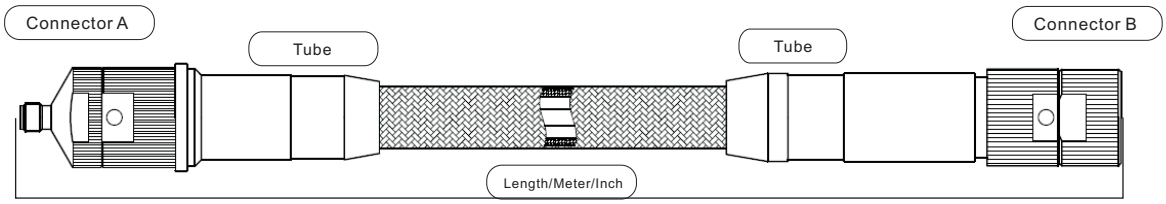




Part Number	Connector 1	Connector 2	Part Number	Connector 1	Connector 2	Length
VNA-5153-630			VNA-5152-630			63CM
	NMD3.5mm Female	APC3.5mm Female		NMD3.5mm Female	NMD3.5mm Male	
VNA-4143-630			VNA-4142-630			63CM
	NMD2.92mm Female	APC2.92mm Female		NMD2.92mm Female	NMD2.92mm Male	
VNA-3133-630			VNA-3132-630			63CM
	NMD2.4mm Female	APC2.4mm Female		NMD2.4mm Female	NMD2.4mm Male	
VNA-1311-630			VNA-1312-630			63CM
	NMD1.85mm Female	APC1.85mm Female		NMD1.85mm Female	NMD1.85mm Male	



Selection Guide:



VNA40-XXXX-XX

① ⑤ ② ③ ④

① Cable Type

② Connector A Type

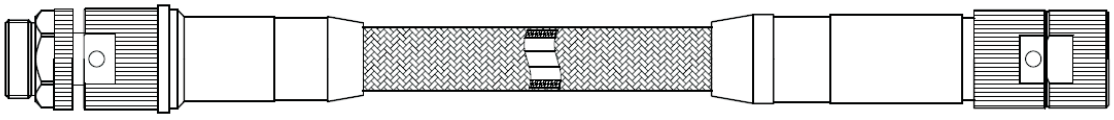
③ Connector B Type

④ Length Unit/M:Meter or IN:Inch

⑤ Frequency:
- 18: DC-18GHz
- 33: DC-33GHz
- 40: DC-40GHz
- 50: DC-50GHz
- 67: DC-67GHz

Connector Short for:

11: 1. 85mm Female Male
12: 1. 85mm Male NMD
13: 1. 85mm Female APC
21: N Female
22: N Male
31: 2. 4mm Female Male
32: 2. 4mm Male NMD
33: 2. 4mm Female APC
41: 2. 92mm Female Male
42: 2. 92mm Male NMD
43: 2. 92mm Female
51: 3. 5mm Female Male
52: 3. 5mm Male NMD
53: 3. 5mm Female



Armor Solution

NO.1

PUR and Stainless Steel Tube Armor

Features: Super Flexible, Convenient to Install and Ruggidized Design

NO.2

Nylon and Stainless Steel Tube Armor

Features: Convenient to Install and Ruggidized Design

NO.3

Normax and Stainless Steel Tube Armor

Features: High Strength,High Temperature Resistance, Stable Structure

NO.4

Stainless Steel Armor

Features: High Pressure Resistance, Harsh Field Environment

NO.5

Transparent PVC and Spring Armor

Features: Waterproof,Corrosion Resistance

Customized Armor Solution for Different Color and Size

Armor Type	NO.1 BPA	NO.2 BA	NO.3 YA@1000℃	NO.4 SA	NO.5 A
Construction	1.Stainless Steel Flexible Tube 2.Tin Plated Copper Wire 3.PUR Jacket	1.Stainless Steel Flexible Tube 2.Tin Plated Copper Wire 3.Nylon Braid	1.Stainless Steel Flexible Tube 2.Tin Plated Copper Wire 3.Normax	1.Stainless Steel Flexible Tube	1.Transparent 2.Stainless Steel Spring
Outer Dia. (mm)	10.5	10.5	6.4/9.8	6.4/8.9	6.4
Inner Bore (mm)	6.35	6.35	3.8/6.35	3.8/6.35	10.9

VSWR、IL、Return Loss

It is an important parameter used to describe the efficient transmission efficiency of the signal from the source to the load. Some manufacturers also use RL（Return Loss）to describe. The conversion relationship between the two and the corresponding energy transmission efficiency are shown in the following table.

VSWR	VSWR/dB	Return loss /dB	Transmission Loss/dB	Forward Power/%	Refllected Power%	VSWR	VSWR/dB	Return loss /dB	Transmissio n Loss/dB	Forward Power/%	Refllected Power%
1	0		0	100	0	1.52	3.6	13.7	0.189	95.7	4.3
1.01	0.1	46.1	0	100	0	1.54	3.8	13.4	0.201	95.5	4.5
1.02	0.2	40.1	0	100	0	1.56	3.9	13.2	0.213	95.2	4.8
1.03	0.3	36.6	0.001	100	0	1.58	4	13	0.225	94.9	5.1
1.04	0.3	34.2	0.002	100	0	1.6	4.1	12.7	0.238	94.7	5.3
1.05	0.4	32.3	0.003	99.9	0.1	1.62	4.2	12.5	0.25	94.4	5.6
1.06	0.5	30.7	0.004	99.9	0.1	1.64	4.3	12.3	0.263	94.1	5.9
1.07	0.6	29.4	0.005	99.9	0.1	1.66	4.4	12.1	0.276	93.8	6.2
1.08	0.7	28.3	0.006	99.9	0.1	1.68	4.5	11.9	0.289	93.6	6.4
1.09	0.7	27.3	0.008	99.8	0.2	1.7	4.6	11.7	0.302	93.3	6.7
1.1	0.8	26.4	0.01	99.8	0.2	1.72	4.7	11.5	0.315	93	7
1.11	0.9	25.7	0.012	99.7	0.3	1.74	4.8	11.4	0.329	92.7	7.3
1.12	1	24.9	0.014	99.7	0.3	1.76	4.9	11.2	0.342	92.4	7.6
1.13	1.1	24.3	0.016	99.6	0.4	1.78	5	11	0.356	92.1	7.9
1.14	1.1	23.7	0.019	99.6	0.4	1.8	5.1	10.9	0.37	91.8	8.2
1.15	1.2	23.1	0.021	99.5	0.5	1.82	5.2	10.7	0.384	91.5	8.5
1.16	1.3	22.6	0.024	99.5	0.5	1.84	5.3	10.6	0.398	91.3	8.7
1.17	1.4	22.1	0.027	99.4	0.6	1.86	5.4	10.4	0.412	91	9
1.18	1.4	21.7	0.03	99.3	0.7	1.88	5.5	10.3	0.426	90.7	9.3
1.19	1.5	21.2	0.033	99.2	0.8	1.9	5.6	10.2	0.44	90.4	9.6
1.2	1.6	20.8	0.036	99.2	0.8	1.92	5.7	10	0.454	90.1	9.9
1.21	1.7	20.4	0.039	99.1	0.9	1.94	5.8	9.9	0.468	89.8	10.2
1.22	1.7	20.1	0.043	99	1	1.96	5.8	9.8	0.483	89.5	10.5
1.23	1.8	19.7	0.046	98.9	1.1	1.98	5.9	9.7	0.497	89.2	10.8
1.24	1.9	19.4	0.05	98.9	1.1	2	6	9.5	0.512	88.9	11.1
1.25	1.9	19.1	0.054	98.8	1.2	2.5	8	7.4	0.881	81.6	18.4
1.26	2	18.8	0.058	98.7	1.3	3	9.5	6	1.249	75	25
1.27	2.1	18.5	0.062	98.6	1.4	3.5	10.9	5.1	1.603	69.1	30.9
1.28	2.1	18.2	0.066	98.5	1.5	4	12	4.4	1.938	64	36
1.29	2.2	17.9	0.07	98.4	1.6	4.5	13.1	3.9	2.255	59.5	40.5
1.3	2.3	17.7	0.075	98.3	1.7	5	14	3.5	2.553	55.6	44.4
1.32	2.4	17.2	0.083	98.1	1.9	5.5	14.8	3.2	2.834	52.1	47.9
1.34	2.5	16.8	0.093	97.9	2.1	6	15.6	2.9	3.1	49	51
1.36	2.7	16.3	0.102	97.7	2.3	6.5	16.3	2.7	3.351	46.2	53.8
1.38	2.8	15.9	0.112	97.5	2.5	7	16.9	2.5	3.59	43.8	56.3
1.4	2.9	15.6	0.122	97.2	2.8	7.5	17.5	2.3	3.817	41.5	58.5
1.42	3	15.2	0.133	97	3	8	18.1	2.2	4.033	39.5	60.5
1.44	3.2	14.9	0.144	96.7	3.3	8.5	18.6	2.1	4.24	37.7	62.3
1.46	3.3	14.6	0.155	96.5	3.5	9	19.1	1.9	4.437	36	64
1.48	3.4	14.3	0.166	96.3	3.7	9.5	19.6	1.8	4.626	34.5	65.5
1.5	3.5	14	0.177	96	4	10	20	1.7	4.807	33.1	66.9

◆Coaxial Cable Equations Legend

（1）Specifications：

Symbol	Definition	Units
α	Attenuation in dB/m	dB/m
ε	Dielectric constant	
Γ	Reflection coefficient	
Φ	Electrical length	degrees
C	Capacitance	pF/m
L	Inductance	H/m
Z0	Impedance	ohms
Vp	Velocity of propagation	%
df	Dissipation factor	
Td	Time delay	ns/m
F	Frequency	MHz
PTC	Phase temperature coefficient	ppm/C
ΔT	Change in temperature(t2 to t1)	C
LTH	Length	m
ΔΦ	Change in electrical length(t1 to t2)	degrees
D	Dielectric diameter	mm
ds	Braid wire size	mm
Fbd	Braid factor	
FCO	Cutoff frequency	GHz
C	Braid carriers	
N	Braid ends per carrier	
t	Flat strip thickness	mm
w	Flat strip width	mm
SRL	Return loss	dB
VSWR	Voltage standing wave ratio	
FWD	Forward power	dB
RFL	Reflected power	dB
MML	Mismatch loss	dB
ME	Match efficiency	%
Ks	①1.0 for solid center conductor ②0.939 for 7 strand center conductor ③0.97 for 19 strand center conductor	
log	logarithm to base 10	
ln	logarithm to base e	
k1	resistive loss constant	
k2	dielectric loss constant	
d	Center Comductor Diameter	

（2）Coax Cable Design Equations：

(1)Impedance(ohms)

$$Z_O = \frac{138}{\sqrt{\varepsilon}} \log\left(\frac{D}{d \bullet k_s}\right) = \frac{60}{\sqrt{\varepsilon}} \ln\left(\frac{D}{d \bullet k_s}\right)$$

(2) Velocity of propagation(%)and dielectric constant

$$V_P = \frac{1}{\sqrt{\varepsilon}} \qquad \varepsilon = \frac{1}{V_P^2}$$

（3）Time delay(ns/m)

$$Td = \frac{3.332}{V_P} = 3.332\sqrt{\varepsilon}$$

（4）Capacitance(pF/m)

$$C = \frac{24.14\varepsilon}{\log\left(\frac{D}{d \bullet k_s}\right)} = \frac{55.6\varepsilon}{\ln\left(\frac{D}{d \bullet k_s}\right)}$$

$$C = \frac{24.14}{V_P^2 \log\left(\frac{D}{d \bullet k_s}\right)} = \frac{55.6}{V_P^2 \ln\left(\frac{D}{d \bullet k_s}\right)}$$

$$C = \frac{3332.5}{Z_O \bullet V_P}$$

(5)Inductance(uH/m)

$$L = 0.459 \log\left(\frac{D}{d \bullet k_s}\right) = 0.199 \ln\left(\frac{D}{d \bullet k_s}\right)$$

(6)Attenuation(dB/m)

$$\alpha = \frac{0.356}{Z_O \bullet D}\left[\frac{D}{d \bullet k_s} + Fbd\right]\sqrt{F} + \frac{0.091 \bullet df \bullet F}{V_P}$$

（7）Braid factor

Round Wire Braid：$Fbd = \dfrac{8D + 16ds}{C \bullet N \bullet ds}$

Flat Strip Braid：$Fbd = \dfrac{2\pi(D + 2t)}{C \bullet W}$

Solid Tube：$Fbd = 1.0$

(8) Cutoff frequency(GHz)

$$F_{CO} = \frac{190.5 \bullet V_P}{(D + (d \bullet k_s))}$$

$$F_{CO} = \frac{190.5}{\sqrt{\varepsilon}(D + (d \bullet k_s))}$$

(9) Electrical length(degrees)

$$\phi = \frac{360 \bullet F \bullet L_{TH}}{300 \bullet V_P}$$

$$\phi = \frac{360 \bullet F \bullet L_{TH} \bullet \sqrt{\varepsilon}}{300}$$

(10) Phase temperature coefficient(ppm/C°)

$$PTC = \frac{\Delta\phi \bullet 1 \times 10^6}{\phi \bullet \Delta T}$$

(11) Phase stability(degrees)

$$\Delta\phi = \frac{PTC \bullet \phi \bullet \Delta T}{1 \times 10^6}$$

(12) Return loss(dB)

$$RL = -20 \log \Gamma$$

$$RL = -20 \log \frac{VSWR - 1}{VSWR + 1}$$

$$RL = 10 \log \frac{RFL}{FWD}$$

(13)VSWR

$$VSWR = \frac{1 + \Gamma}{1 - \Gamma}$$

$$VSWR = \frac{1 + 10^{RL/20}}{1 - 10^{RL/20}}$$

$$VSWR = \frac{1 + \sqrt{RFL/FWD}}{1 - \sqrt{RFL/FWD}}$$

(14) Reflection coefficient

$$\Gamma = 10^{-RL/20}$$

$$\Gamma = \frac{VSWR - 1}{VSWR + 1}$$

$$\Gamma = \sqrt{RFL/FWD}$$

(15) Match efficiency(%)

$$ME = (1 - \Gamma^2) \bullet 100$$

$$ME = \left[1 - \left(\frac{VSWR - 1}{VSWR + 1}\right)^2\right] \bullet 100$$

$$ME = \left(\frac{FWD - REL}{FWD}\right) \bullet 100$$

(16) Mismatch loss(dB)

$$MML = -10 \log(1 - \Gamma^2)$$

$$MML = -10 \log\left[1 - \left(\frac{VSWR - 1}{VSWR + 1}\right)\right]$$

$$MML = -10 \log\left(1 - \frac{RFL}{FWD}\right)$$

Reference Notes

◆Materials Abbreviations Legend

(1) Conductors&Braid Materials

AL	Aluminium
BC	Bare Copper
BeCu	Beryllium-Copper Alloy 172
BCCAl	Copper Clad Aluminium
CCS	Copper Clad Steel
GS	Zinc Plated Steel
HR	High Resistance Wire
MW	Magnet Wire
NC	Nickel Plated Copper
SA	Silver Plated Alloy
SC	Silver Plated Copper
SCBeCu	Silver Plated Beryllium Copper
SCCadBr	Silver Plated Cadmium Bronze
SCCAl	Silver Plated Copper Clad Aluminum
SCCS	Silver Plated Copper Clad Steel
SNCCS	Silver Plated Nickel Plated Copper Clad Steel
SCS	Silver Plated Copper Strip
TC	Tinned Copper
TCCS	Tinned Copper Clad Steel

(2) Dielectric Materials

PE	Solid Low Density Polyethylene
PTFE	Solid Polytetrafluoroethylene
LDPTFE	Low Density PTFE
Foam PE	Foam Polyethylene
FEP	Solid Fluorinated Ethylene Propylene
CPT	Conductive PTFE
CPE	Conductive Polyethylene
MGO	Magnesium Oxide

(3) Interlayer Materials

PE	Solid Polyethylene
PTFE	Solid Polytetrafluoroethylene
MY	Polyester
KP	Polyimide
ALMY	Aluminium-Polyester Laminate
ALKP	Aluminium-Polyimide Laminate
CPC	Copper-Polyester-Copper Laminate

(4) Jacket Materials

FEP	Fluorinated Ethylene Propylene
FG Braid	Fiberglass;Impregnated
PE	Clear Polyethylene
LS/LT	Low Smoke/Low Toxicity(XLPE)
PE	Polyethylene,black HMW
PFA	Perfluoroalkoxy
PTFE	Polytetrafluoroethylene
PUR	Polyurethane
PVC-I	Polyvinyl Chloride
PVC-II	Polyvinyl Chloride, (non-contaminating)
TPE	Thermo Plastic Elastomer
XLPE	Crosslinked Polyolefin

◆General Electrical Properties

	Cable Type	Impedance (ohms)	Capacitance (pF/m)	Velocity (%)	Dielectric constant	Time delay (ns/m)
50 Ω	Solid Polyethylene	50	101	65.9	2.3	5.05
	Foam PE	50	80.4~75.8	83.0~88.0	1.45~1.29	4.00~3.80
	Solid PTFE	50	95.8	69.5	2.07	4.79
	Tape PTFE	50	93.8	71	1.98	4.69
	Low Density PTFE	50	87.6~83.3	76.0~80.0	1.73~1.56	4.40~4.17
75 Ω	Solid Polyethylene	75	67.6	65.9	2.3	5.05
	Foam PE	75	53.5~50.5	83.0~88.0	1.45~1.29	4.00~3.80
	Solid PTFE	75	64	69.5	2.07	4.79
	Low Density PTFE	75	58.4~55.4	76.0~80.0	1.73~1.56	4.40~4.17

◆Properties Of Wire And Cable Insulating Materials

Material	Dielectric Constant	Dissipation Factor	Volume-Resistivity (ohm-cm)	Operating Temperature (Range o0)
PTFE	2.07	0.0003	1019th	-75 ~ +250
Polyethylene	2.3	0.0003	1016th	-65 ~ +80
Foam Polyethylene	1.29-1.64	0.0001	1012th	-65 ~ +100
Polyvinylchloride	3.0-8.0	0.07-0.16	2×1012th	-50 ~ +105
Polyamide	3.5-4.6	0.03-0.4	4×1014th	-60 ~ +120
Silicone Rubber	2.1-3.5	0.007-0.016	1013th	-70 ~ +250
Ethylene Propylene	2.24	0.00046	1017th	-40 ~ +105
FEP	2.1	0.0007	1018th	-70 ~ +200
Low Density PTFE	1.38-1.73	0.00005	1019th	-75 ~ +250
Foam FEP	1.45	0.0007	1018th	-75 ~ +200
Polyimide	3.0-3.5	0.002-0.003	1013th	-75 ~ +300
PFA	2.1	0.001	1016th	-75 ~ +260
PVDF	7.8	0.02	1014th	-75 ~ +125

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