W1™ Series Ultra Low loss test cable

withwave
Versatile RF & MW Test Solutions

W1 Series are complete line of high performance flexible microwave cable assemblies.
The W1 have extruded **Low density PTFE dielectric** structure to allow low dielectric constant as close as air up to 1.3 and achieve fast velocity propagation of **83 %**.

W1 Series have the lowest insertion loss available to **18, 26.5, 35, 40 GHz**
These low loss cable assemblies are extremely versatile, moderately priced and fit a variety of applications.

Features

- Center Conductor : Silver Plated Copper
- Dielectric core : LD PTFE
- Outer Conductor : Silver Plated Copper Ribbon
- Outer Shield : Silver Plated Copper

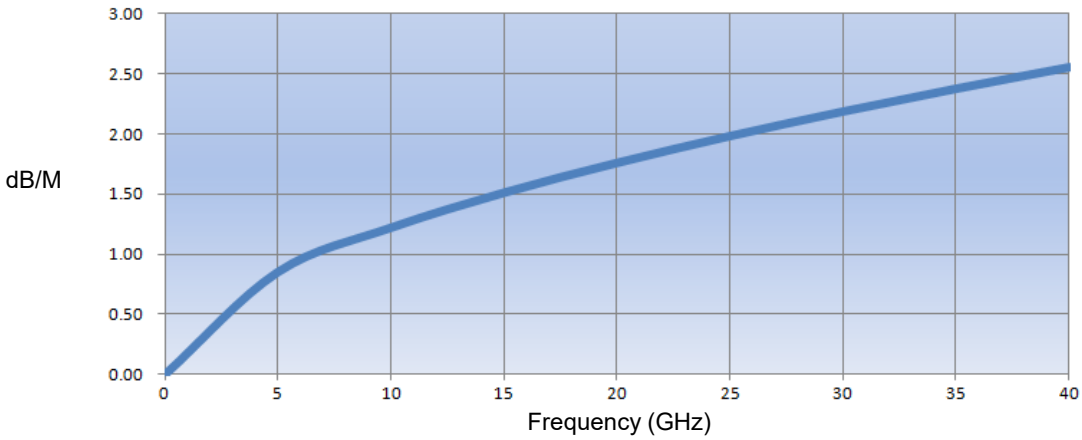
Specification

Scope	Specification	W100	W101	W102
Physical	Center Conductor	0.91	1.45	2.30
	Dielectric	2.50	4.00	6.30
	Outer Conductor	2.66	4.20	6.60
	Outer Shield	3.15	4.70	7.11
	Jacket	3.60	5.10	7.80
Electrical	Impedance(Ohm)		50	
	Operation Freq.(GHz)	40	26.5	18
	Velocity of Propagation(%)		83	
	VSWR (Max)		<1.3	
	Shielding Effectiveness(dB)		<-90	
	Voltage Withstand(V,DC)	1,000	1,500	2,000
Mechanical & Environmental	Weight (g/M)	33	50	146
	Bending Radius : Installation (mm)	18	25.5	39
	Repeated (mm)	33	65	78
	Temperature (Operating)		-40 ~+85 ℃ *	

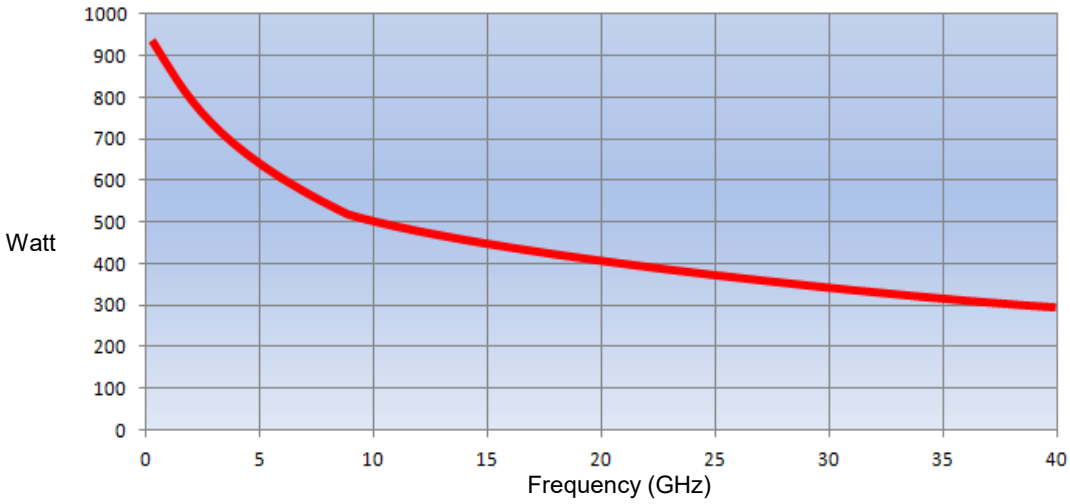
* Adhesive type shrinkable tube: - -40 ~+85 ℃ / Non-adhesive type shrinkable tube: - -40 ~ + 125 ℃

W100 (40 GHz)

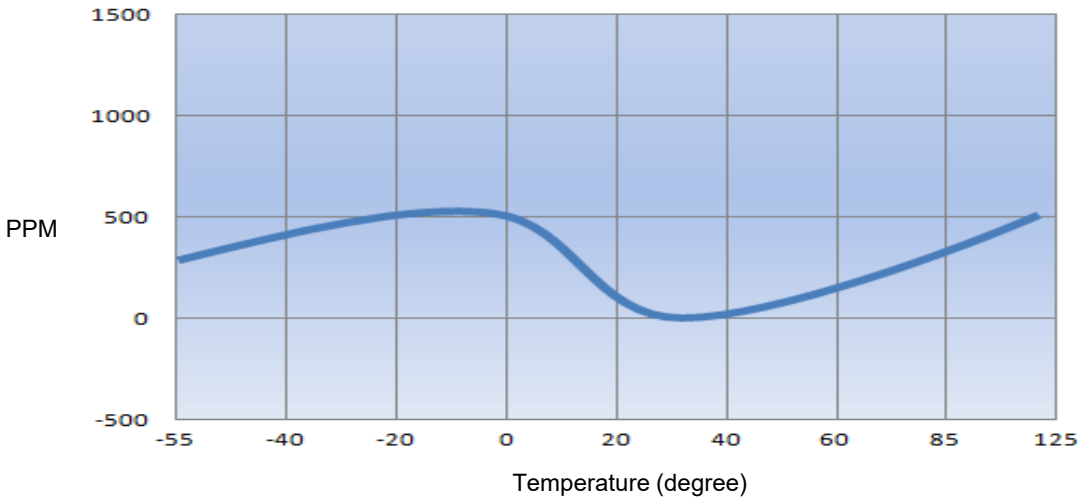
Cable Attenuation (Nominal Values @ +25 ℃ Ambient temperature)



Power Handling (Maximum Values @ +40 ℃ Ambient temperature & Sea level)

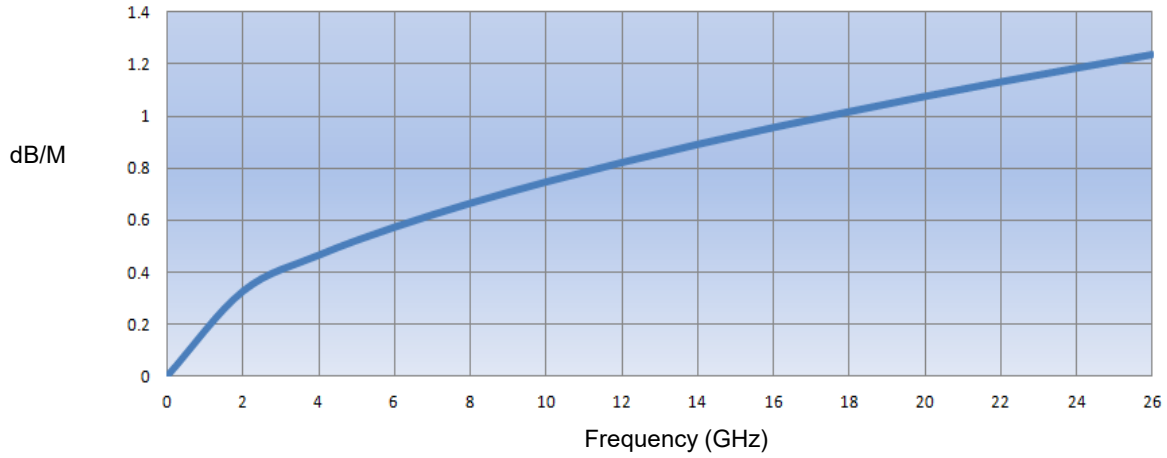


Typical Phase change

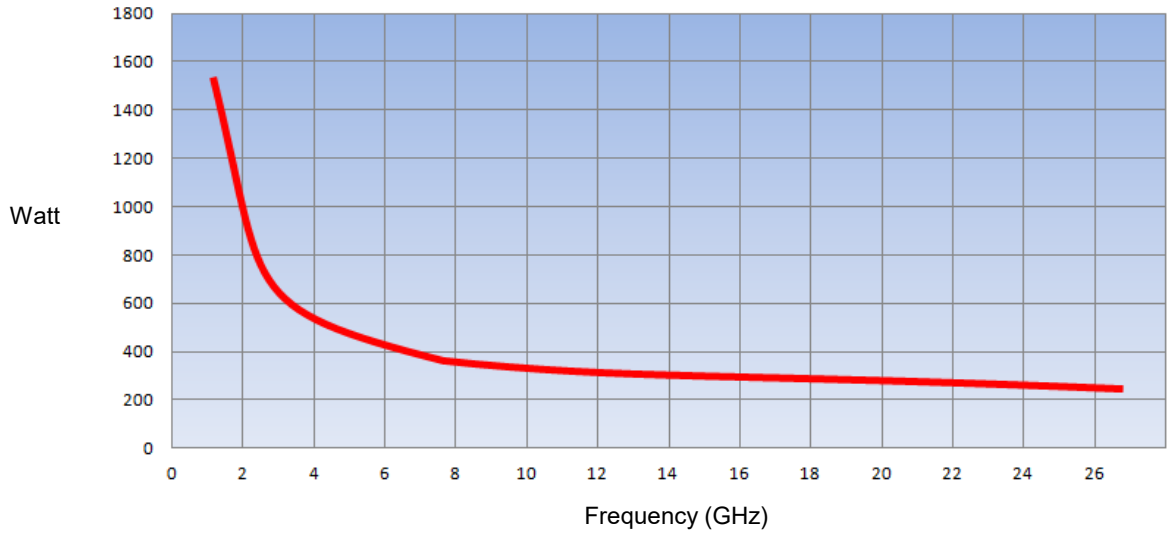


W101 (26.5 GHz)

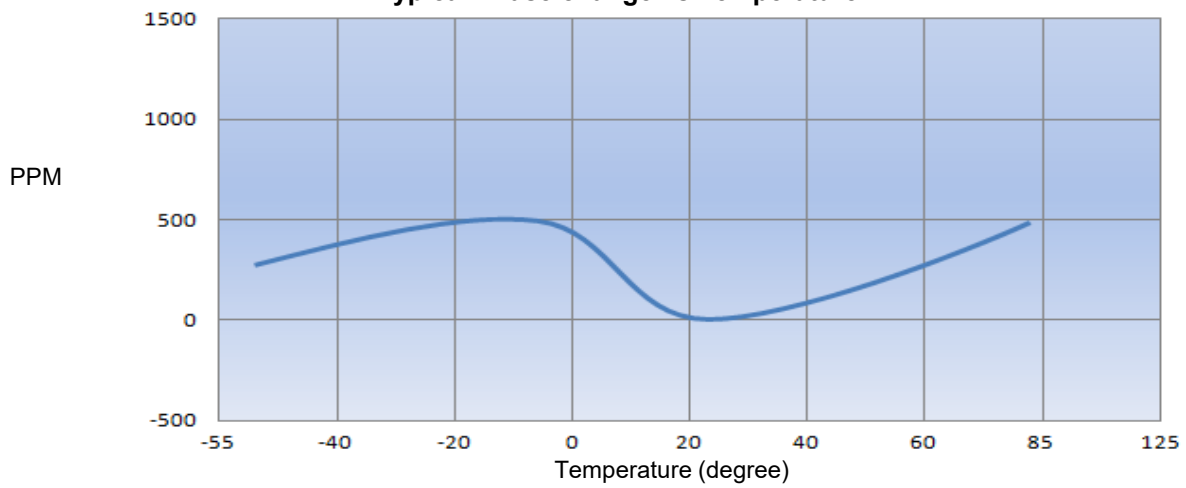
Cable Attenuation (Nominal Values @ +25 ℃ Ambient temperature)



Power Handling (Maximum Values @ +40 ℃ Ambient temperature & Sea level)

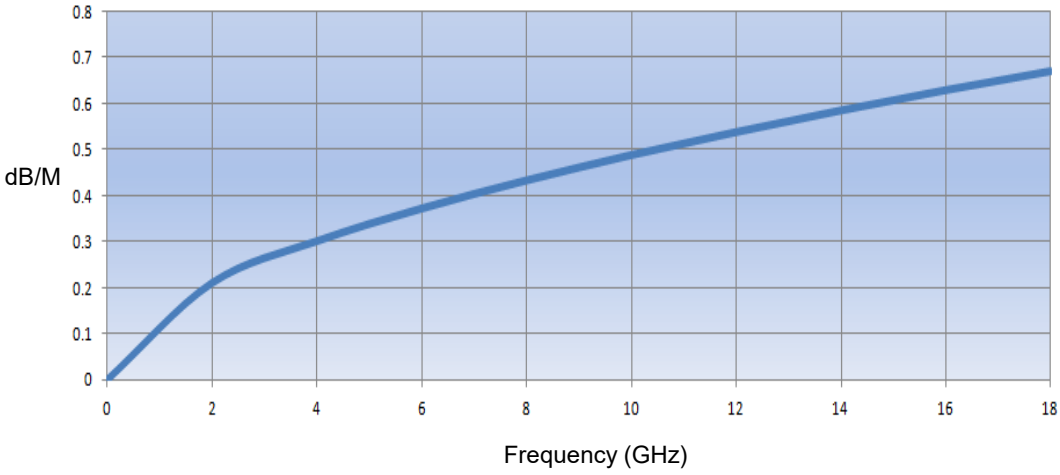


Typical Phase change vs Temperature

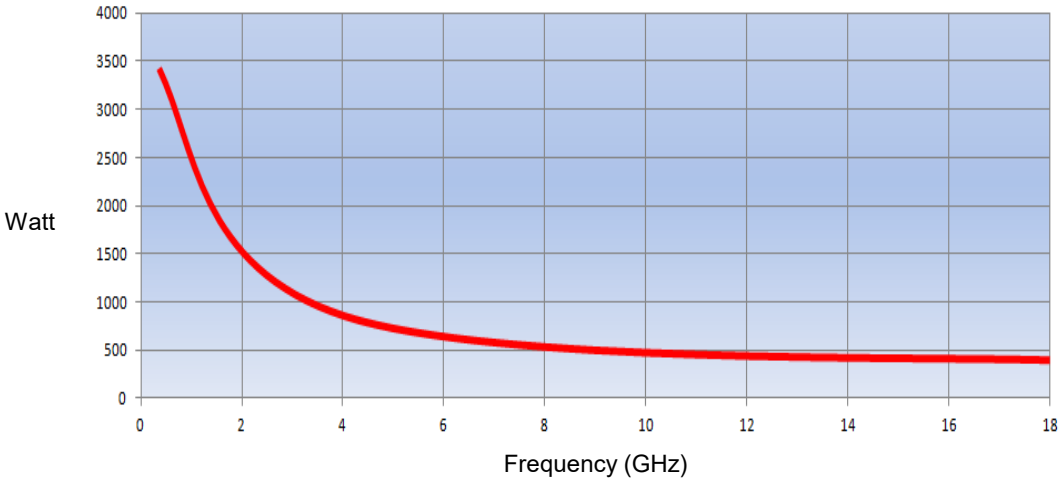


W102 (18 GHz)

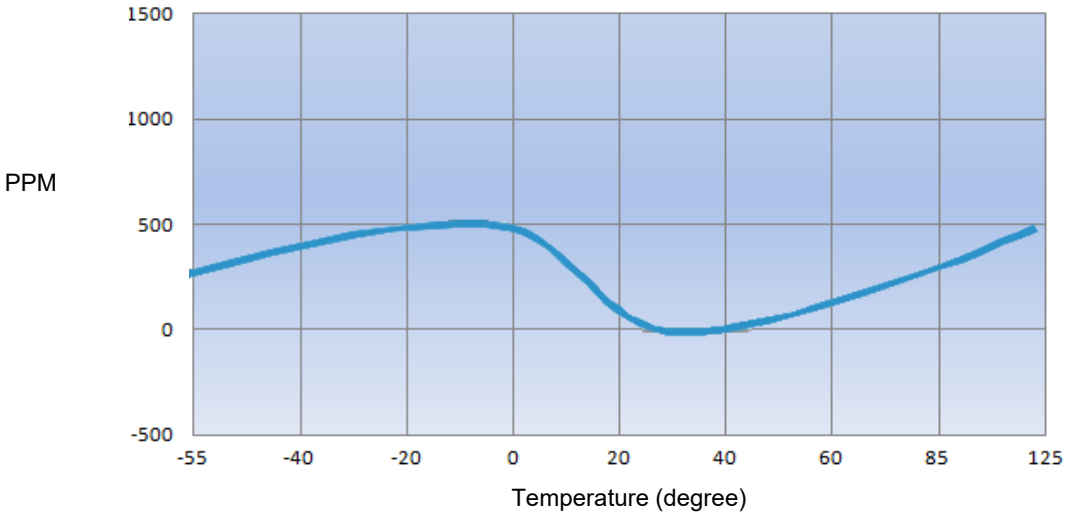
Cable Attenuation (Nominal Values @ +25 ℃ Ambient temperature)



Power Handling (Maximum Values @ +40 ℃ Ambient temperature & Sea level)



Typical Phase change

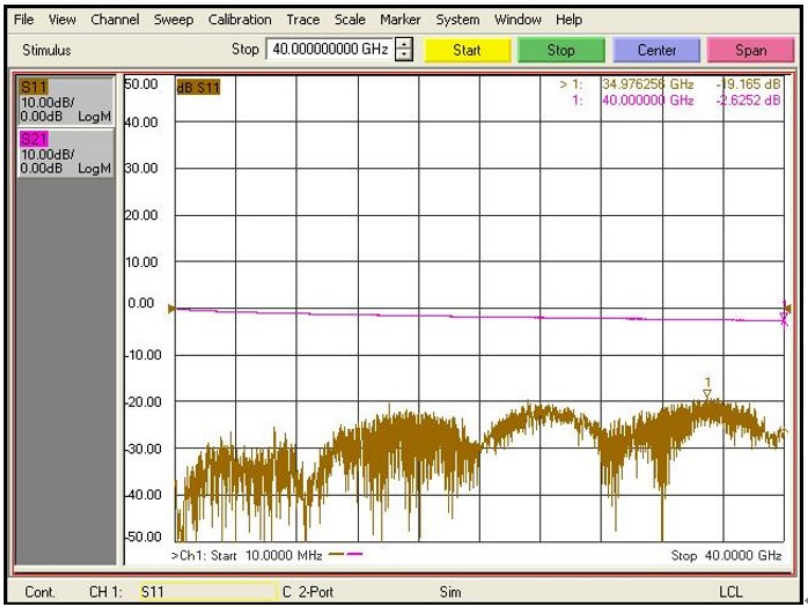


Test Result

W100 cable Assembly

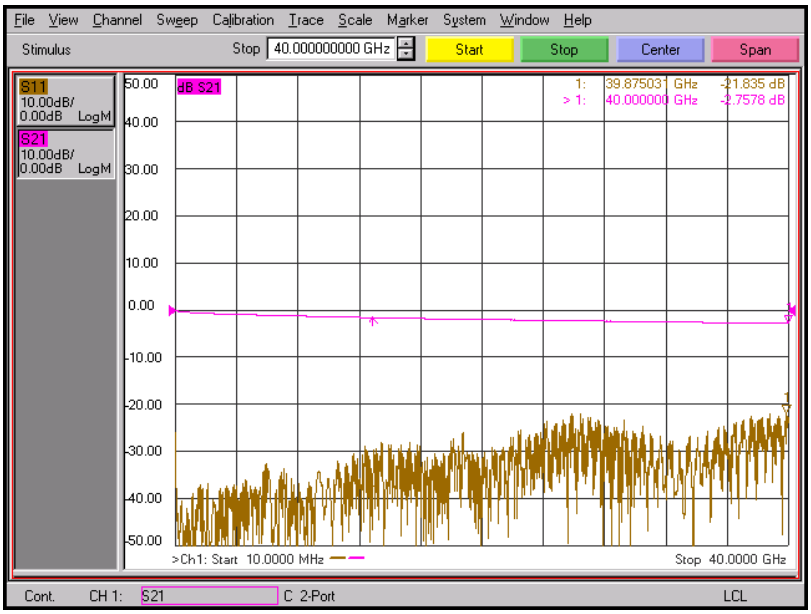
Part No: W100-KM1KM1-1M

- Frequency : DC to 40 GHz
- Connector : 2.92 mm(Male)
- Cable Length : 1 meter



Part No: W100-KF1KF1-1M

- Frequency : DC to 40 GHz
- Connector : 2.92 mm(Female)
- Cable Length : 1 meter

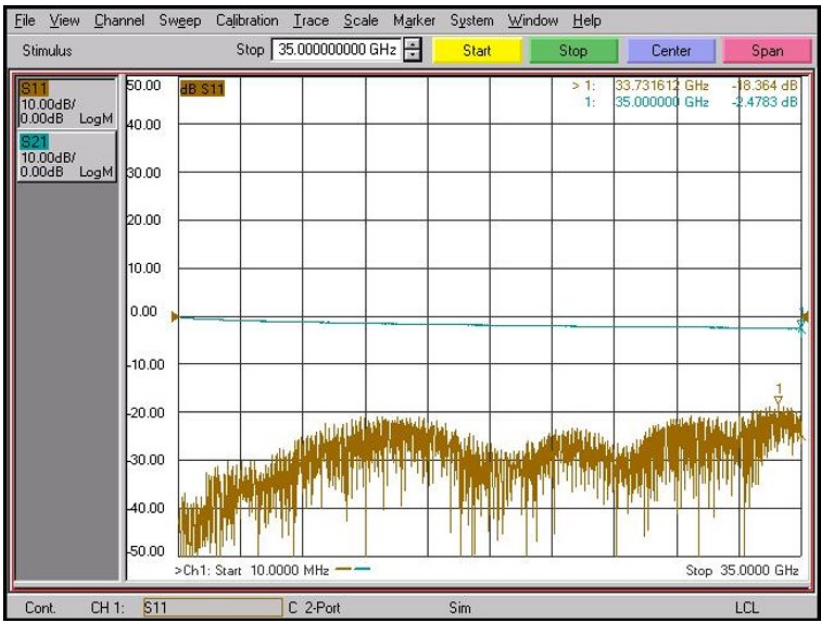


Test Result

W100 cable Assembly

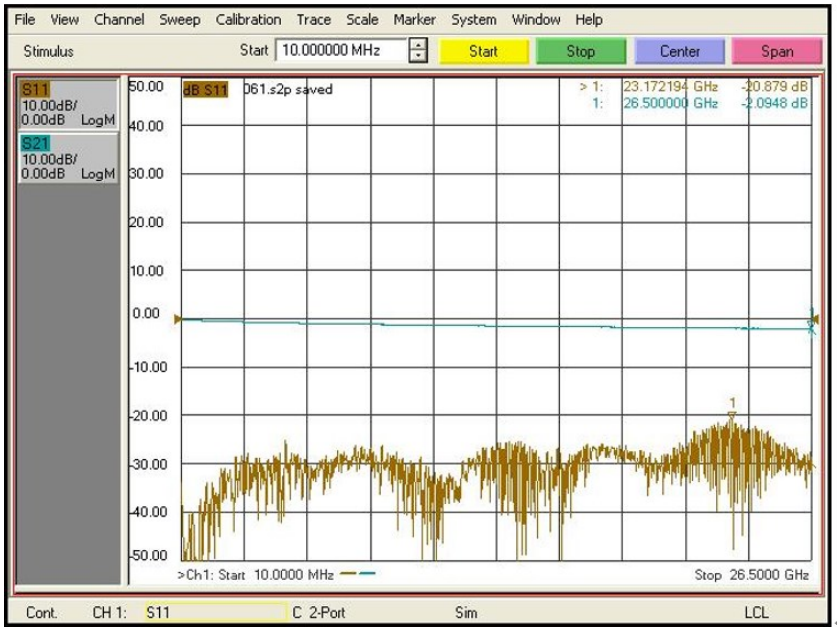
Part No: W100-3M13M1-1M

- Frequency : DC to 35 GHz
- Connector : 3.5 mm(Male)
- Cable Length : 1 meter



Part No: W100-SM1SM1-1M

- Frequency : DC to 26.5 GHz
- Connector : SMA (Male)
- Cable Length : 1 meter

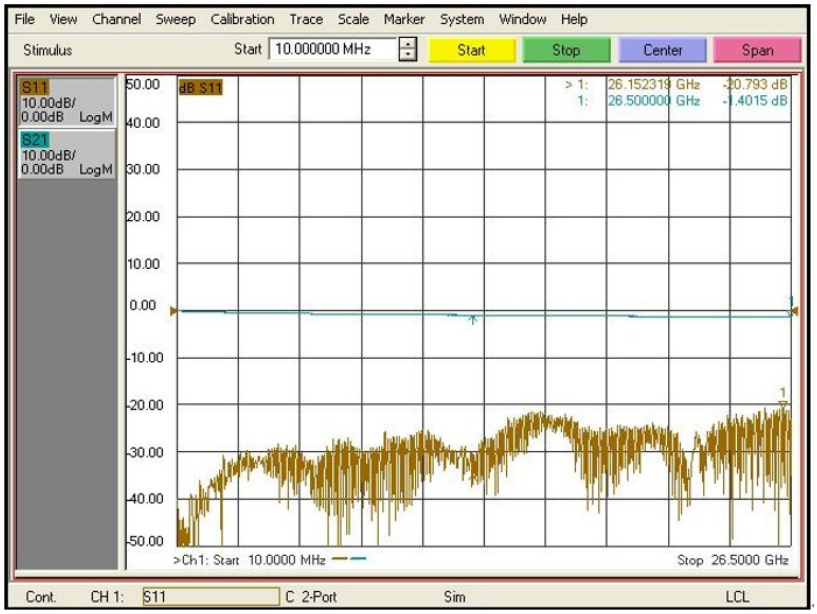


Test Result

W101 cable Assembly

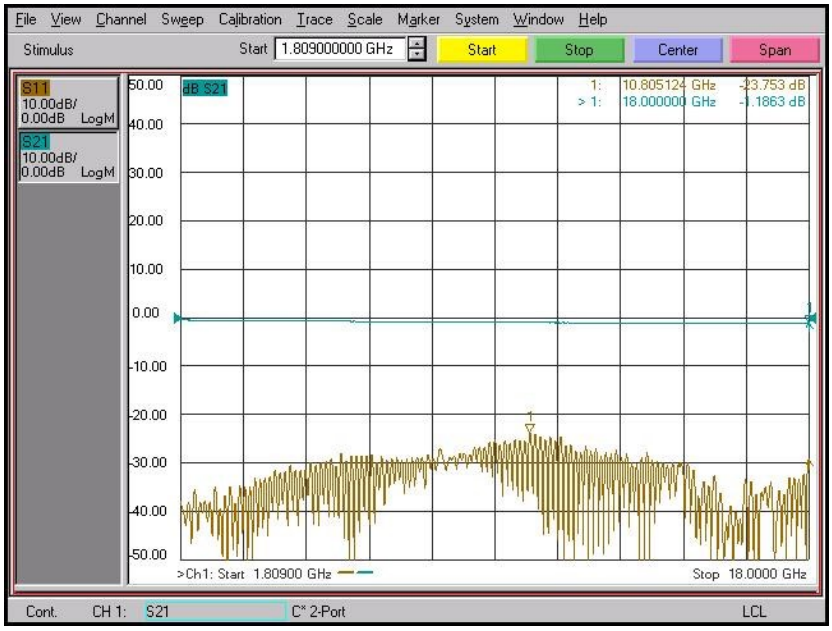
Part No: W101-SM1SM1-1M

- Frequency : DC to 26.5 GHz
- Connector : SMA (Male)
- Cable Length : 1 meter



Part No: W101-NM1NM1-1M

- Frequency : DC to 18 GHz
- Connector : N-type (Male)
- Cable Length : 1 meter

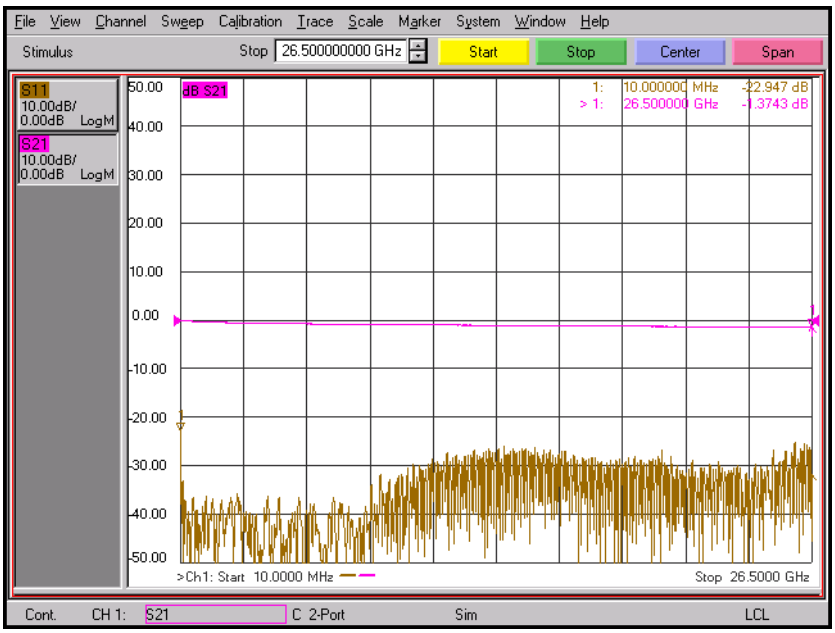


Test Result

W101 cable Assembly

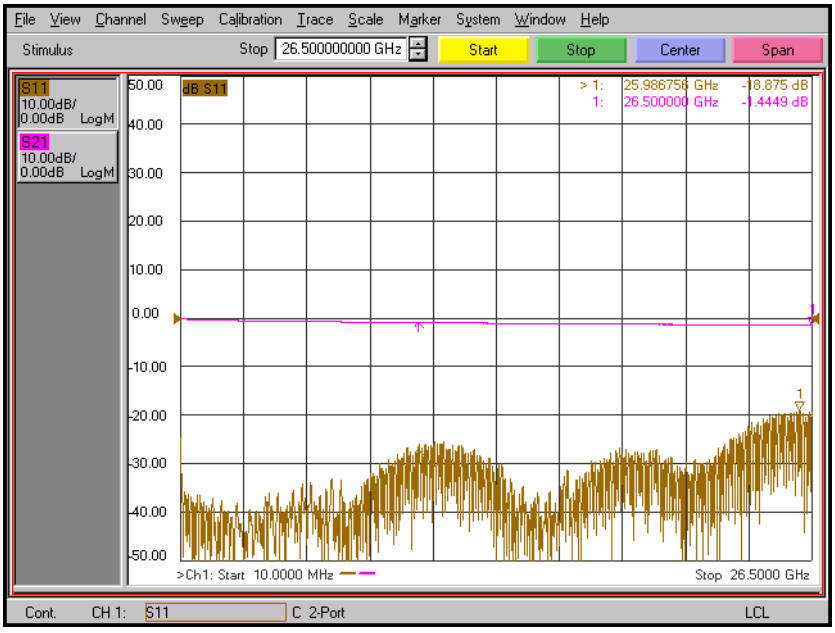
Part No: W101-3M13M1-1M

- Frequency : DC to 26.5 GHz
- Connector : 3.5 mm(Male)
- Cable Length : 1 meter



Part No: W101-3F13F1-1M

- Frequency : DC to 18 GHz
- Connector : 3.5 mm(Female)
- Cable Length : 1 meter

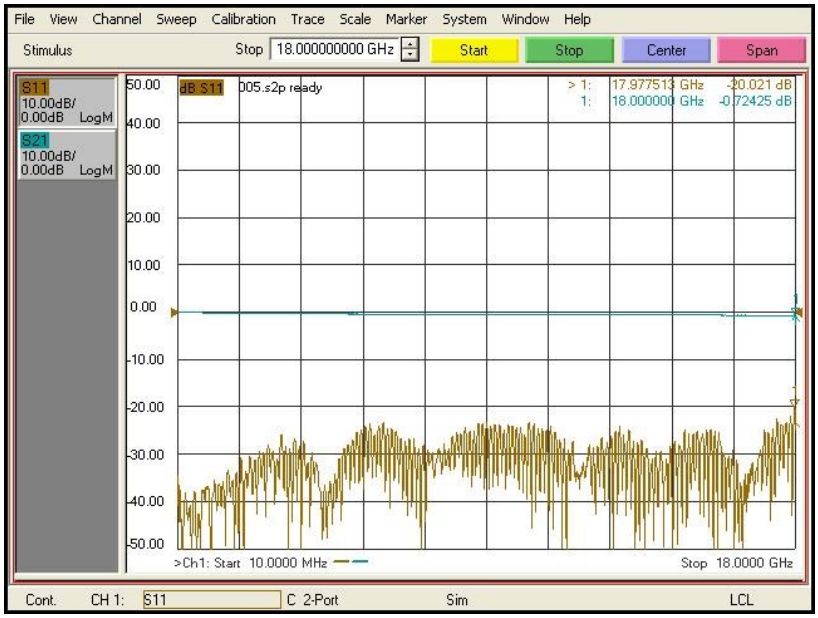


Test Result

W102 cable Assembly

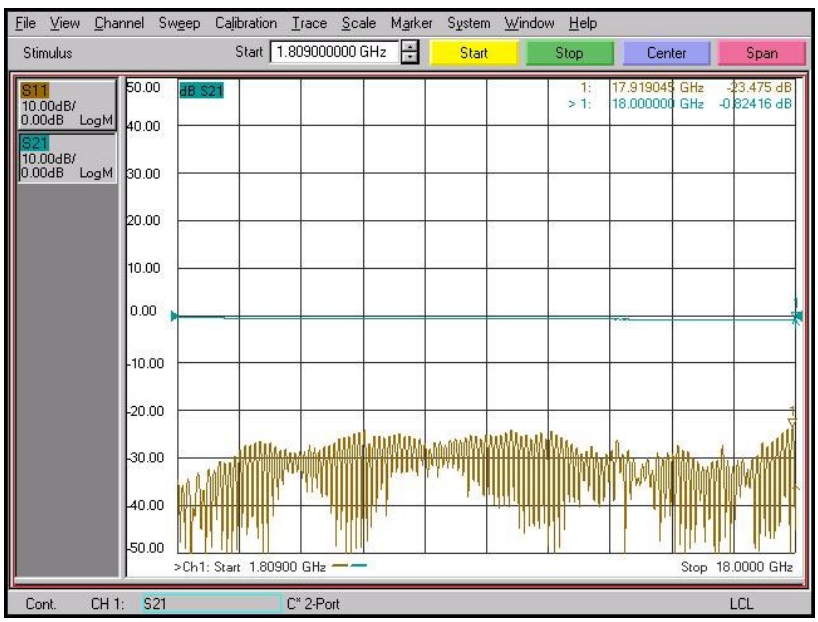
Part No: W102-SM1SM1-1M

- Frequency : DC to 18 GHz
- Connector : SMA (Male)
- Cable Length : 1 meter



Part No: W102-NM1NM1-1M

- Frequency : DC to 18 GHz
- Connector : N-type (Male)
- Cable Length : 1 meter

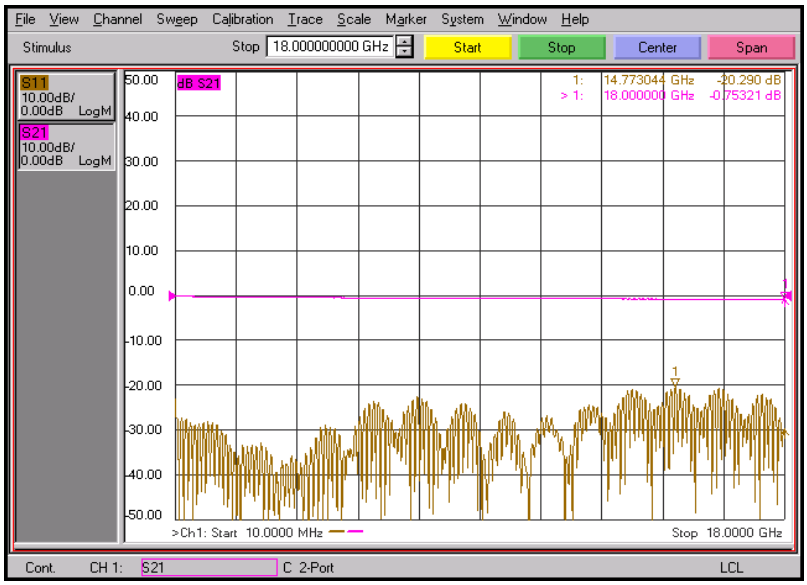


Test Result

W102 cable Assembly

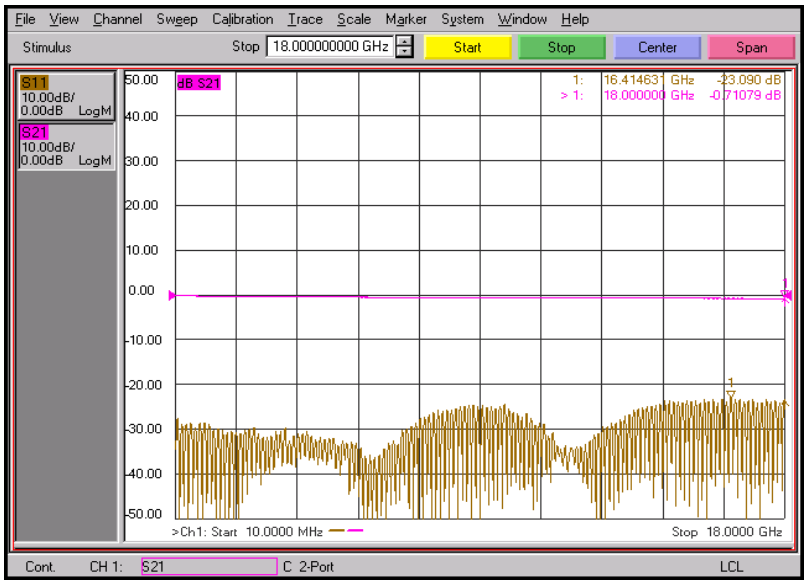
Part No: W102-SF1SF1-1M

- Frequency : DC to 18 GHz
- Connector : SMA (Female)
- Cable Length : 1 meter



Part No: W102-NF1NF1-1M

- Frequency : DC to 18 GHz
- Connector : N-type (Female)
- Cable Length : 1 meter



Selection Guide

W100 – KM1KM1 - 1M – 2PS - T

Cable Type

W100
W101
W102

Connector Type

SM1 : SMA Male
3M1 : 3.5 mm Male
KM1 : 2.92 mm Male
KF1 : 2.92 mm Female
NM1 : N-type Male

Cable Length

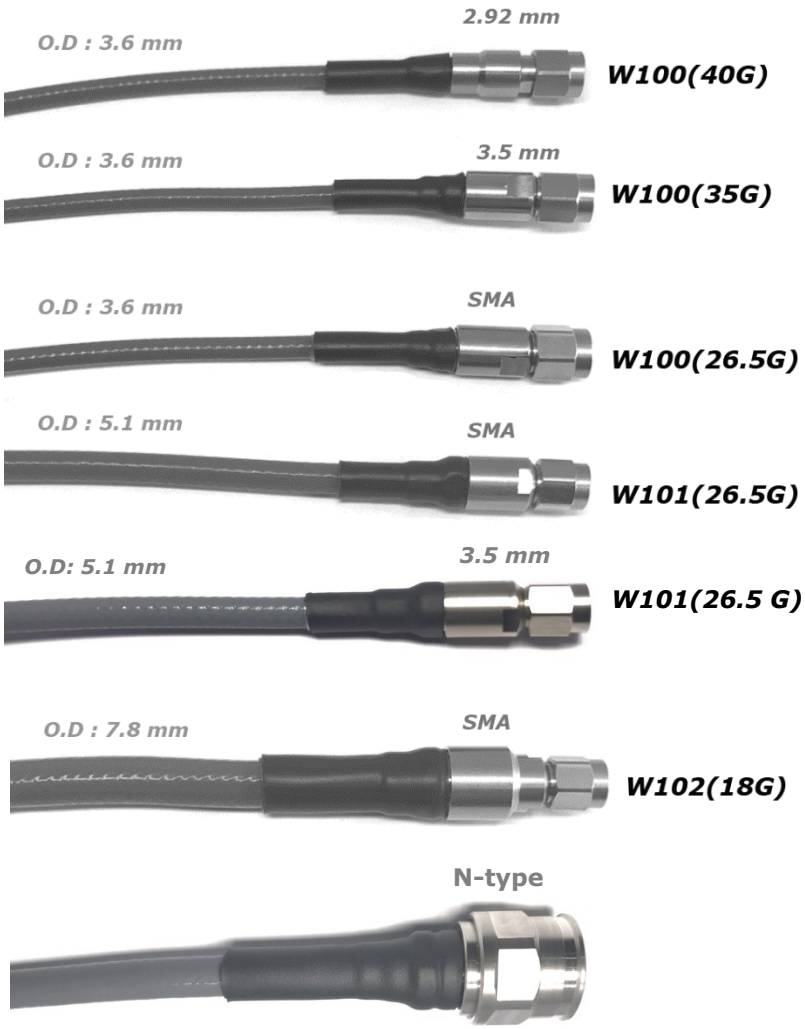
Unit : Meter

Phase Matching

2PS: ± 2 pico-second
5PS: ± 5 pico-second
10PS: ± 10 pico-second

Non-Adhesive Shrinkable Tube

T: -40 ~ + 125 ℃



Revision History

Revision	Date	Changes
Ver 1.0	2015-06-29	Released W1 Series Cable Assembly
Ver.1.1	2015-11-16	Add test results for each type
Ver 2.1	2018-07-05	Add new model (3.5 mm type, phase matching)
Ver 2.2	2019-07-01	Update test results
Ver.2.3	2019-11-01	Updated specification
Ver.2.4	2020-02-03	Add test result for 2.92 mm Female type
Ver 2.5	2020-04-17	Add N-type for W101, W02 cable
Ver 2.6	2020-05-12	Updated specification
Ver 3.0	2021-02-04	Add 3.5 mm type for W101 cable
Ver 3.1	2021-06-22	Add SMA & N-type Female for W102 cable
Ver 3.2	2021-08-20	Updated Specification
Ver 3.3	2022-04-22	Updated Temperature Spec. according to Tube