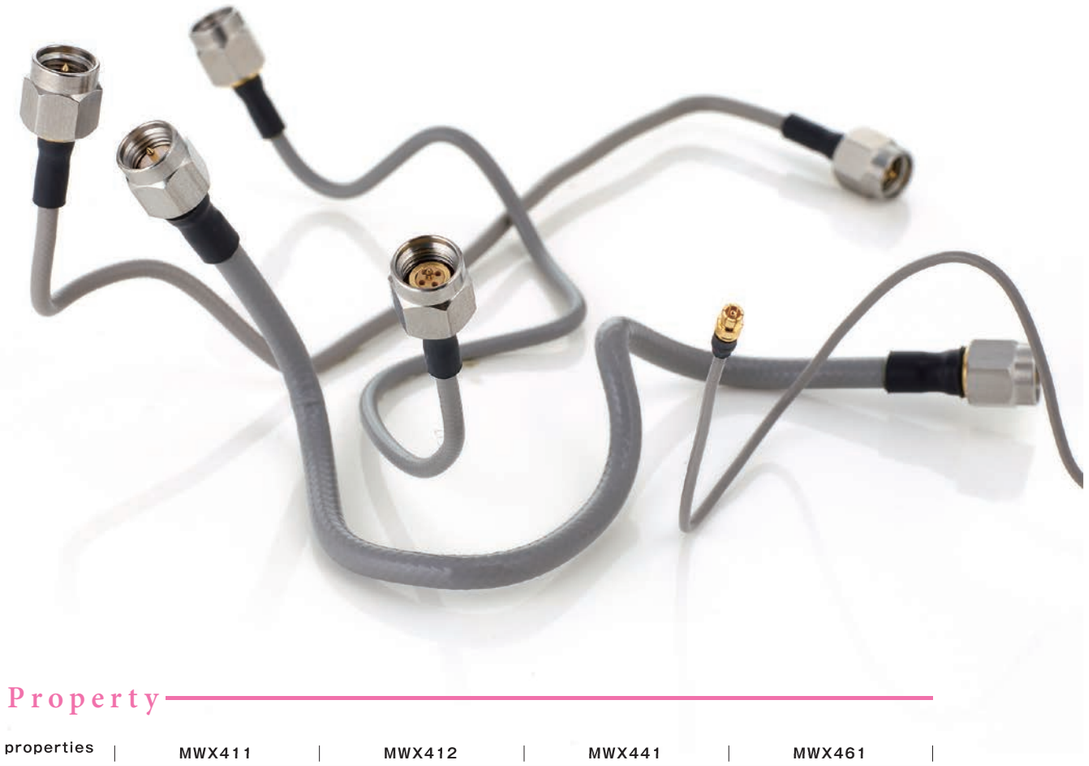
MWX4 SERIES

MWX4



Property

Electrical properties	MWX411	MWX412	MWX441	MWX461
Maximum operating frequency	18.0 GHz	18.0 GHz	40.0 GHz	67.0 GHz
Characteristic impedance (typ.)	50 Ω	50 Ω	50 Ω	50 Ω
Capacitance (typ.)	85 pF/m	85 pF/m	90 pF/m	95 pF/m
Propagation delay (typ.)	4.3 ns/m	4.4 ns/m	4.3 ns/m	4.7 ns/m
Wavelength reduction rate (typ.)	78 %	76 %	78 %	70 %
Higher mode frequency (typ.)	64.0 GHz	36.0 GHz	76.0 GHz	108 GHz
VSWR (per connector/both ends of assy.)	1.182/1.40	1.182/1.40	1.224/1.50	1.732/3
Maximum frequency insertion loss	2.2 dB/m(18.0 GHz)	1.4 dB/m(18.0 GHz)	4.3 dB/m(40.0 GHz)	12 dB/m (67.0 GHz)

Mechanical properties	MWX411	MWX412	MWX441	MWX461
Cable outer diameter	2.5 mm	4.0 mm	2.4 mm	1.33 mm
Minimum bending radius (inner side)	15 mm	20 mm	15 mm	5 mm
Cable mass (typ.)	19 g/m	41 g/m	17 g/m	4.6 g/m
Continuous operating temperature range	−30~+85 ℃	−30~+85 ℃	−30~+85 ℃	−65~+125 ℃
Assembly length	100~5,000 mm	100~5,000 mm	100~5,000 mm	40~2,000 mm
Remark	Semi-rigid cable φ2.2 equivalent	Semi-rigid cable φ3.6 equivalent	Semi-rigid cable φ2.2 equivalent	Semi-rigid cable φ1.2 equivalent

Order form example

Please provide the following information when placing an order.

*Please order in minimum order quantity.

Example MWX441

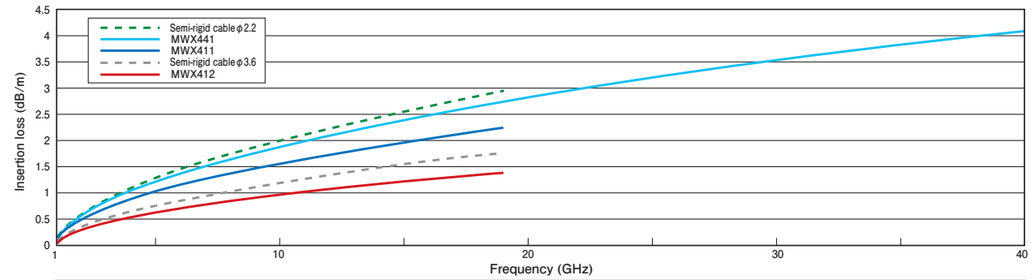
Assembly length:200 mm
Connector Ⅰ:2.92 mm(m)straight
Connector Ⅱ:2.92 mm(m)straight

Catalog No.
MWX441-KP-KP L=200 mm
a c b

a:Cable
b:Assembly length
c:Connector

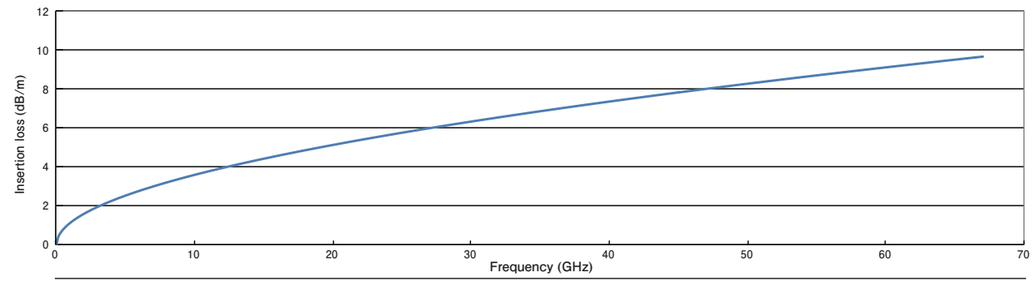
Technical Data

Comparison of typical insertion loss (MWX4 series vs. semi-rigid cable L=1000mm)



MWX411	● Typical insertion loss (0.002×f(GHz)+0.336×√f(GHz))×L(m) ● Maximum insertion loss (0.004×f(GHz)+0.517×√f(GHz))×L(m)x1.12
MWX412	● Typical insertion loss (0.004×f(Ghz)+0.517×√f(GHz))×L(m) ● Maximum insertion loss (0.004×f(GHz)+0.517×√f(GHz))×L(m)x1.12
MWX441	● Typical insertion loss (0.008×f(GHz)+0.604×√f(GHz))×L(m) ● Maximum insertion loss (0.008×f(GHz)+0.604×√f(GHz))×L(m)x1.12

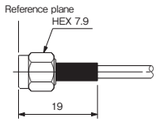
Typical insertion loss (MWX461 L=1000mm)



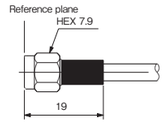
MWX461	● Typical insertion loss (0.01×f(GHz)+1.1×√f(GHz))×L(m) ● Maximum insertion loss (0.01×f(GHz)+1.1×√f(GHz))×L(m)×1.12

Connector

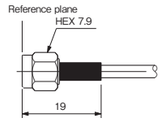
SMA(m) straight (Code:MWX411-AP)
Maximum operating frequency:18.0 GHz／Mass:3g



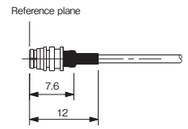
SMA(m) straight (Code:MWX412-AP)
Maximum operating frequency:18.0 GHz／Mass:3g



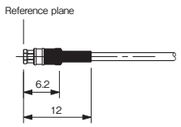
2.92mm(m) straight (Code:MWX441-KP)
Maximum operating frequency:40.0 GHz／Mass:5g



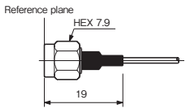
SMP(f) straight (Code:MWX461-SJ)
Maximum operating frequency:12.0 GHz／Mass:1g



SMPM(f) straight (Code:MWX461-MJ)
Maximum operating frequency:67.0 GHz／Mass:1g



SMA(m)straight (Code:MWX461-AP)
Maximum operating frequency:18.0GHz／Mass:3g



Option **For connectors not listed Please contact us separately.**

*The above figures are measured values for reference only.

MWX5 SERIES

MWX5

Property

Electrical properties	MWX511	MWX512
Maximum operating frequency	18.0 GHz	18.0 GHz
Characteristic impedance (typ.)	50 Ω	50 Ω
Capacitance (typ.)	97 pF/m	95 pF/m
Propagation delay (typ.)	4.7 ns/m	4.7 ns/m
Wavelength reduction rate (typ.)	71 %	71 %
Higher mode frequency (typ.)	63.0 GHz	34.0 GHz
VSWR (per connector/ both ends of assy.)	1.182/1.40	1.182/1.40
Maximum frequency insertion loss	3.1 dB/m(18.0 GHz)	2.0 dB/m(18.0 GHz)

Mechanical properties	MWX511	MWX512
Cable outer diameter	3.0 mm	4.4 mm
Minimum bending radius (inner side)	10 mm	15 mm
Cable mass (typ.)	19 g/m	41 g/m
Continuous operating temperature range	−30~+85 ℃	−30~+85 ℃
Assembly length	100~5,000 mm	100~5,000 mm
Remark	Semi-flexible cable φ2.1 equivalent	Semi-flexible cable φ3.45 equivalent

Order form example

Please provide the following information when placing an order.

*Please order in minimum order quantity.

Example MWX511

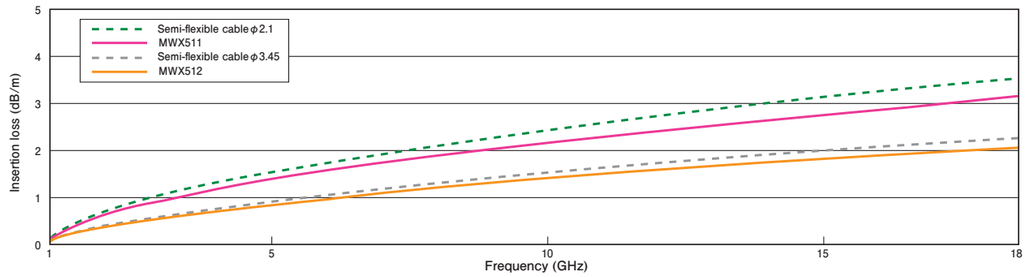
Assembly length:200 mm
Connector Ⅰ:SMA(m)straight
Connector Ⅱ:SMA(m)straight

Catalog No.
MWX511-AP-AP L=200 mm
a c b

a:Cable
b:Assembly length
c:Connector

Technical Data

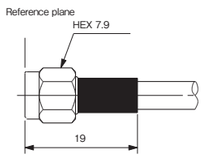
Comparison of typical insertion loss (MWX5 series vs. semi-flexible cable L=1000mm)



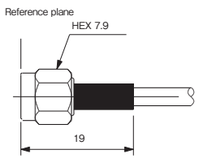
MWX511	● Typical insertion loss (0.015×f(GHz)+0.693×√f(GHz))×L(m) ● Maximum insertion loss (0.015×f(GHz)+0.693×√f(GHz))×L(m)×1.12
MWX512	● Typical insertion loss (0.018×f(GHz)+0.42×√f(GHz))×L(m) ● Maximum insertion loss (0.018×f(GHz)+0.42×√f(GHz))×L(m)×1.12

Connector

SMA(m) straight (Code:MWX511-AP)
Maximum operating frequency:18.0 GHz / Mass:3g



SMA(m) straight (Code:MWX512-AP)
Maximum operating frequency:18.0 GHz / Mass:3g



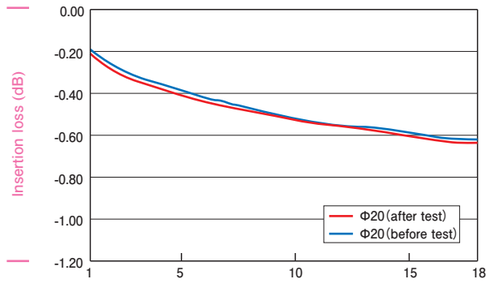
*The above figures are measured values for reference only.

MWX4,5 SERIES

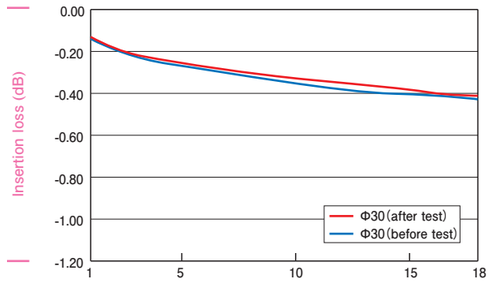
Formable (MWX4,5 Series) Technical Data 1

Static bending data (insertion loss)

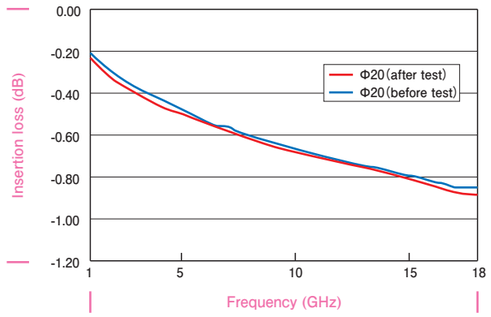
MWX411



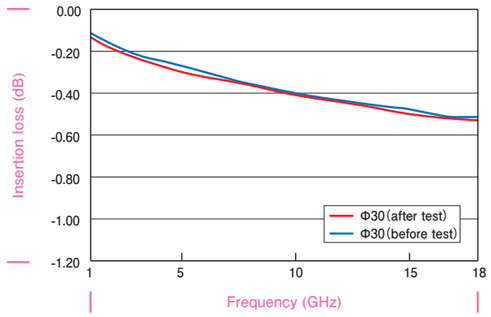
MWX412



MWX511



MWX512



Measurement method

The initial value was measured with the test cable connected to the measuring instrument. The after-test value was measured with the cable wrapped 360°around a mandrel at a position approximately 50 mm from the measuring instrument.

Test conditions

Mandrel diameter

MWX411、MWX511 20 mm MWX412、MWX512 30 mm

Test cable length 300 mm

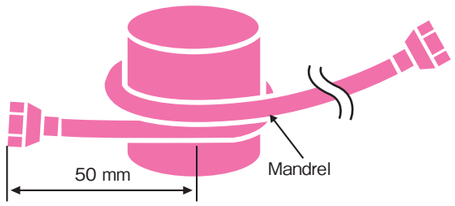


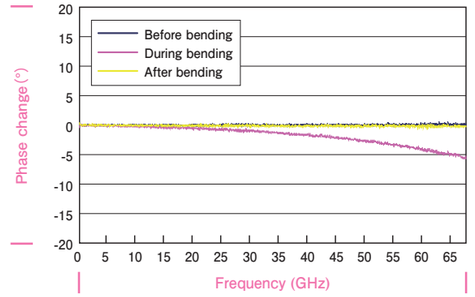
Fig.1 Schematic description of the static bending test

＊The above figures are measured values for reference only.

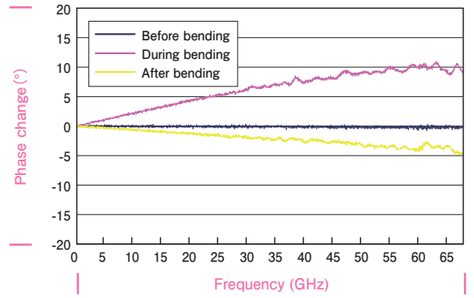
Formable (MWX4,5 Series) Technical Data 2

Static bending data (Phase)

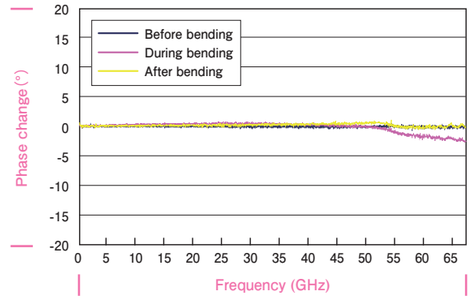
MWX461 Static bending data 1



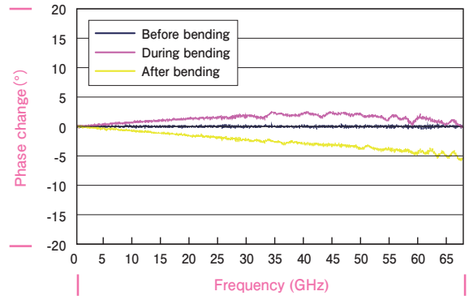
Semi-flexible coaxial cable corresponding to UT47



MWX461 MWX461 Static bending data 2



Semi-flexible coaxial cable corresponding to UT47



Test method

・The test is conducted as follows:

(1) The straight cable is connected to the vector network analyzer to record the initial phase waveform. (Waveform before the test)

(2) The phase waveform is recorded while the cable is wrapped on a mandrel of ϕ8mm (R = 4mm). (Waveform during the test)

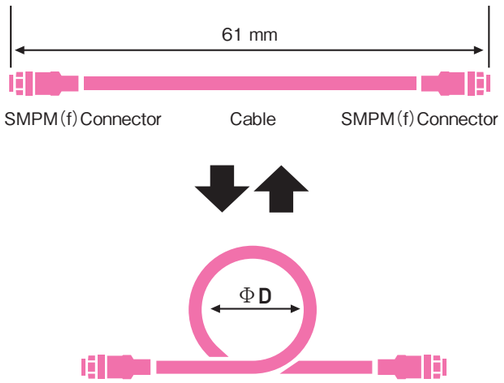
(3) The phase waveform is recorded after straightening the cable. (Waveform after the test)

Test cables

・2 type cables are tested as the right figures.

① MWX461 formable coaxial cable assembly

② Semi-flexible coaxial cable corresponding to UT47



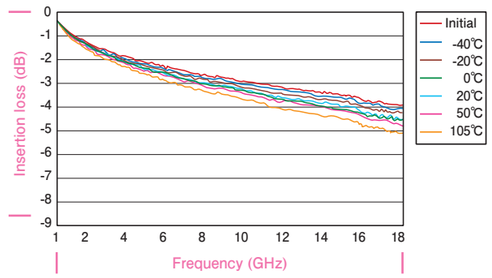
The cable was wrapped 360°around ϕ8mm mandrel. (During bending)

MWX4,5 SERIES

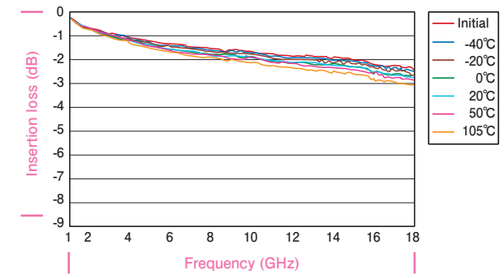
Formable (MWX4 Series) Technical Data 3

Temperature characteristics (insertion loss) Test cable: 2 m

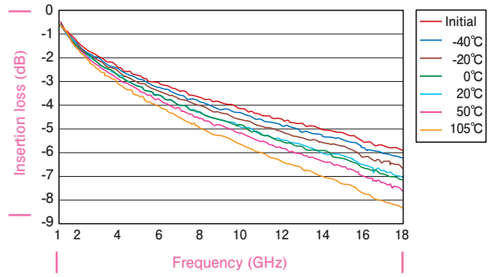
MWX411



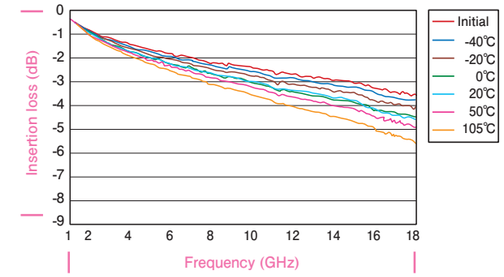
MWX412



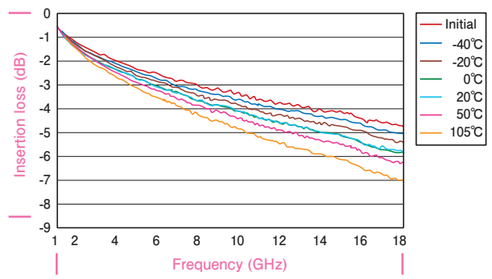
Semi-flexible cable ϕ2.1



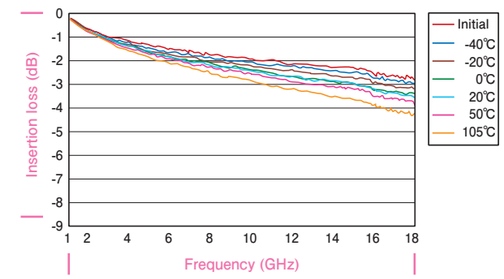
Semi-flexible cable ϕ3.45



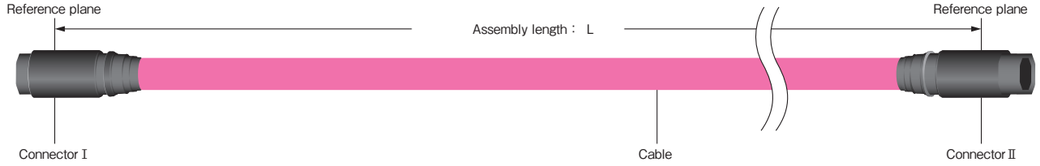
Semi-rigid cable ϕ2.2



Semi-rigid cable ϕ3.6



Placing orders



Catalog number

ex. MWX511 - AP - AP L=1000mm

Cable : MWX511 type
Connector Ⅰ : SMA (m) straight
Connector Ⅱ : SMA (m) straight
Assembly length : 1000mm

The minimum order quantity is 5 for MWX4 and 10 for MWX5 respectively (for MWX461, the minimum order quantity is 100).
*1) MWX411, 412, 511, and 512 come with the standard SMA (m) connector.
The product code for the connector is "AP." The standard connector for MWX411 is a 2.92 mm (m) straight type.
The product code for this connector is "KP." For MW461, the product code for the SMP (f) straight connector is "SJ." The product code for the SMPM (f) straight connector is" MJ."
*2) Assembly length is measured from the end of one connector to the end of the other connector.

Delivery times

MWX4 and MWX5 series will be shipped within 12 business days after received order.
*Leadtime may be effected by larger order volume.