

MVE Low Loss Flexible Phase stable Coax Cable

MCBL-LL406P.50



Specifications

Features

- 74%Vp PTFE Tape + SPC Foil
- Ultra Low Loss, Excellent Temp Phase Stable

Applications

- Military / Commercial Communication Systems Interconnect
- Shipboard System
- Airborne Platform
- Radio Station

CONSTRUCTION

ITEM	MATERIAL	DIAMETER(mm)	Tolerance(mm)
INNER CONDUCTOR	Silver Plated Copper	0.51	±0.02
DIELECTRIC	LD PTFE	1.53	±0.05
OUTER CONDUCTOR	Silver-plated Copper Foil	1.70	±0.05
INNER LAYER	PET	1.73	±0.05
OUTER SHEILD	Silver-plated Copper	2.05	±0.05
JACKET	FEP (Clean / Gray)	2.30	±0.10

ELECTRICAL DATA

MIN. BEND RADIUS :Installation	9mm
MIN. BEND RADIUS: Repeated	23mm
WEIGHT (g/m)	15
OPERATING TEMP	-55°C ~ +165°C
TEMP STORAGE	-65°C ~ +165°C

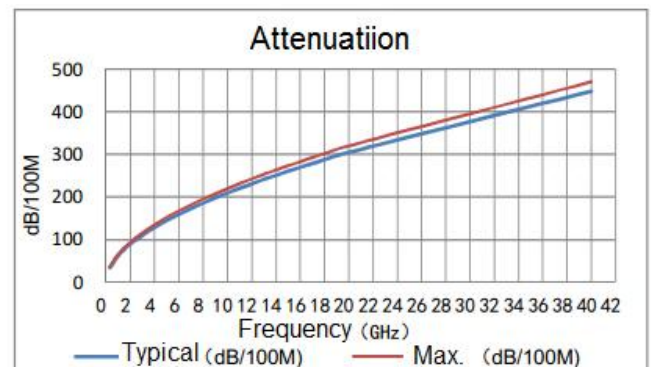
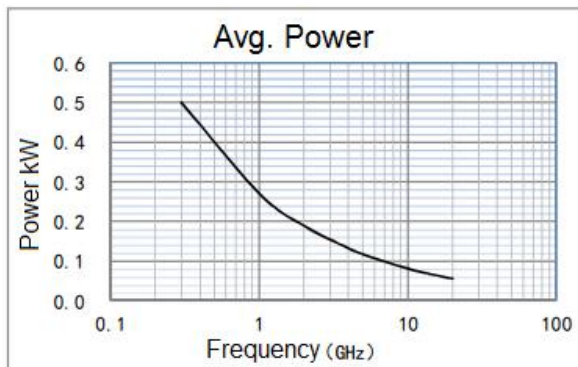
MECHANICAL DATA

FREQUENCY	40.0GHz
IMPEDANCE	50 Ohm
VELOCITY OF PROPAGATION	74.0 %
SHIELDING EFFECT	90 dB
VOLTAGE WITHSTAND	500 V.DC

TYP. ATTENUATION(25°C) and TYP. AVG. POWER (40°C)

Freq.(GHz)	0.3	1	2	4	6	8	10	12	18	26.5	40.0
dB/100m	36.1	66.3	94.4	134.6	166.0	192.7	216.5	238.2	295.0	362.6	452.8
Power kW	0.500	0.272	0.191	0.134	0.109	0.094	0.083	0.076	0.061	0.050	0.040

$K1 = 1.9500000$ $K2 = 0.0014500$ Equation = $K1 \cdot \sqrt{F \text{ MHz}} + K2 \cdot F \text{ MHz}$



NOTES:

1. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME
2. CUSTOMER OUTLINE DRAWING FOR REFERENCE ONLY





Cable Assembly Part Number

MVE PART NUMBER	CONNECTOR 1	CONNECTOR 2	LENGTH (cm)	FREQUENCY (GHz)	VSWR
480482.LL406P.XXH	SMP Female	SMP Female R/A	15, 30, 45, 60, 90, 100	40	1.60
482482.LL406P.XXH	SMP Female R/A	SMP Female R/A	15, 30, 50, 60, 90, 100	40	1.80
150482.LL406P1.XX	2.92mm Female	SMP Female R/A	15, 30, 50, 60, 90, 100	20	1.50
160482.LL406P1.XX	3.5mm Male	SMP Female R/A	15, 30, 50, 60, 90, 100	26.5	1.40
280480.LL406P.XX	SMA Male S/T	SMP Female S/T	15, 30, 50, 60, 90, 100	26.5	1.30
280480.LL406P1.XX	SMA Male S/T	SMP Female S/T	15, 30, 50, 60, 90, 100	8	1.40
280482.LL406P.XX(HR)	SMA Male S/T	SMP Female R/A	15, 30, 50, 60, 90, 100	26.5	1.50
280482.LL406P1.XX	SMA Male S/T	SMP Female R/A	15, 30, 50, 60, 90, 100	26.5	1.55
290480.LL406P1.XX	SMA Female S/T	SMP Female S/T	15, 30, 50, 60, 90, 100	26.5	1.60
290482.LL406P1.XX	SMA Female S/T	SMP Female R/A	15, 30, 50, 60, 90, 100	26.5	1.60
480480.LL406P1.XX	SMP Female S/T	SMP Female S/T	15, 30, 50, 60, 90, 100	20	1.55
482482.LL406P1.XX	SMP Female R/A	SMP Female R/A	15, 30, 50, 60, 90, 100	26.5	1.60
630630.LL406P1.XX	SMPM Female	SMPM Female	15, 30, 50, 60, 90, 100	40	1.50

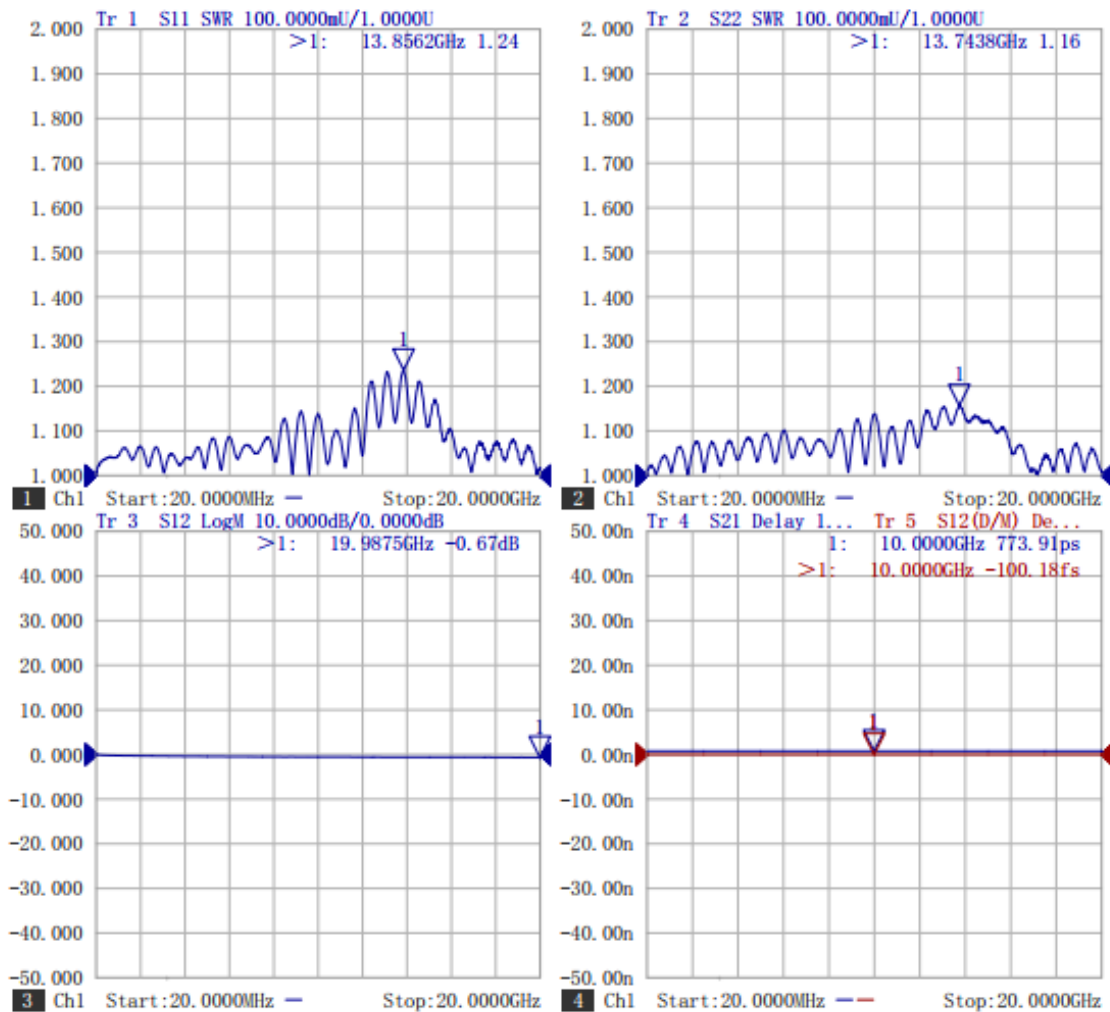
NOTES:

1. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME
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Typical Test Result

PART NUMBER	DESCRIPTION
150482.LL406P1.15	2.92mm Female To SMP Female R/A, DC-20GHz LL406P Cable/Phase match<±1ps/pair/ L:15cm

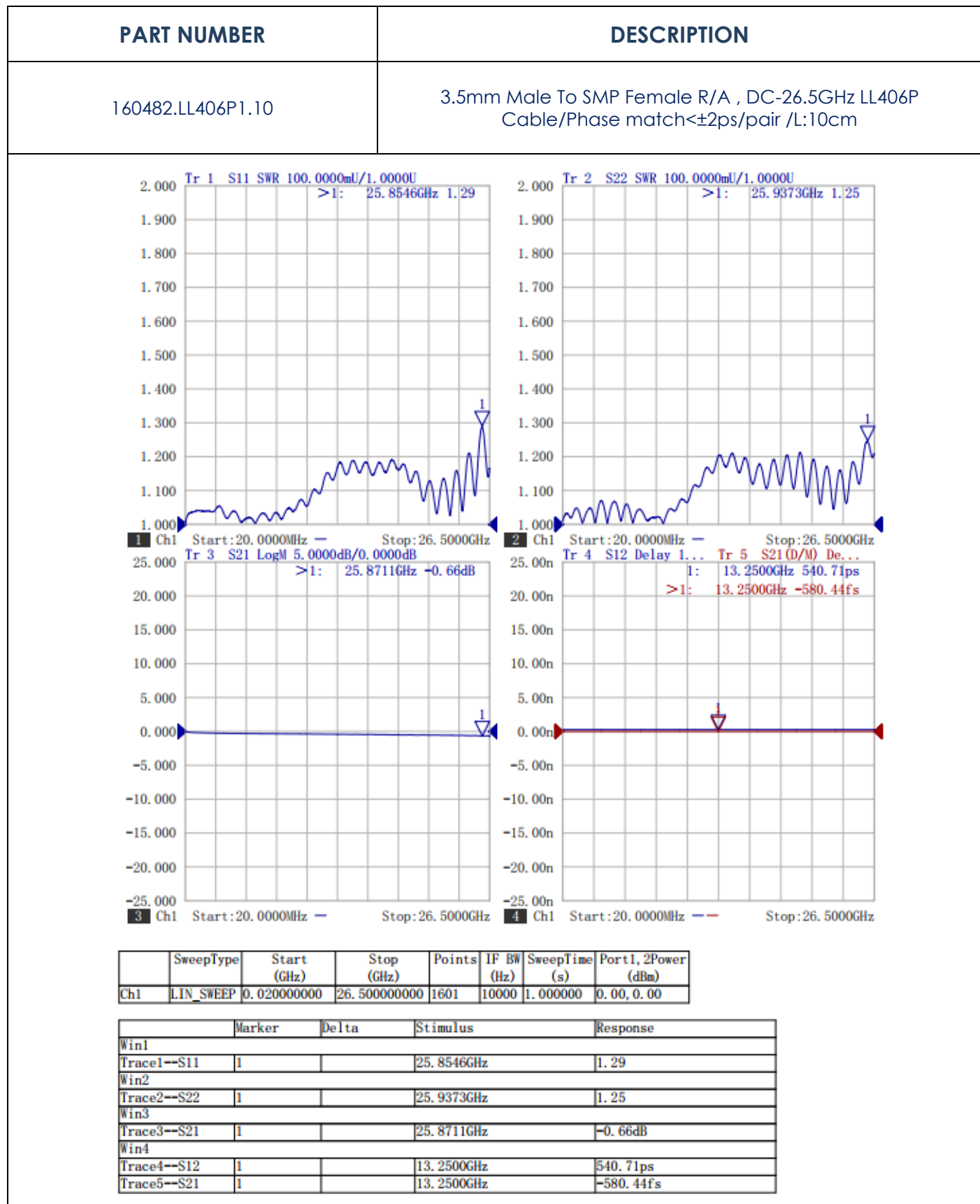


	SweepType	Start (GHz)	Stop (GHz)	Points	IF BW (Hz)	SweepTime (s)	Port1, 2Power (dBm)
Ch1	LIN_SWEEP	0.020000000	20.000000000	1601	10000	1.000000	0.00, 0.00

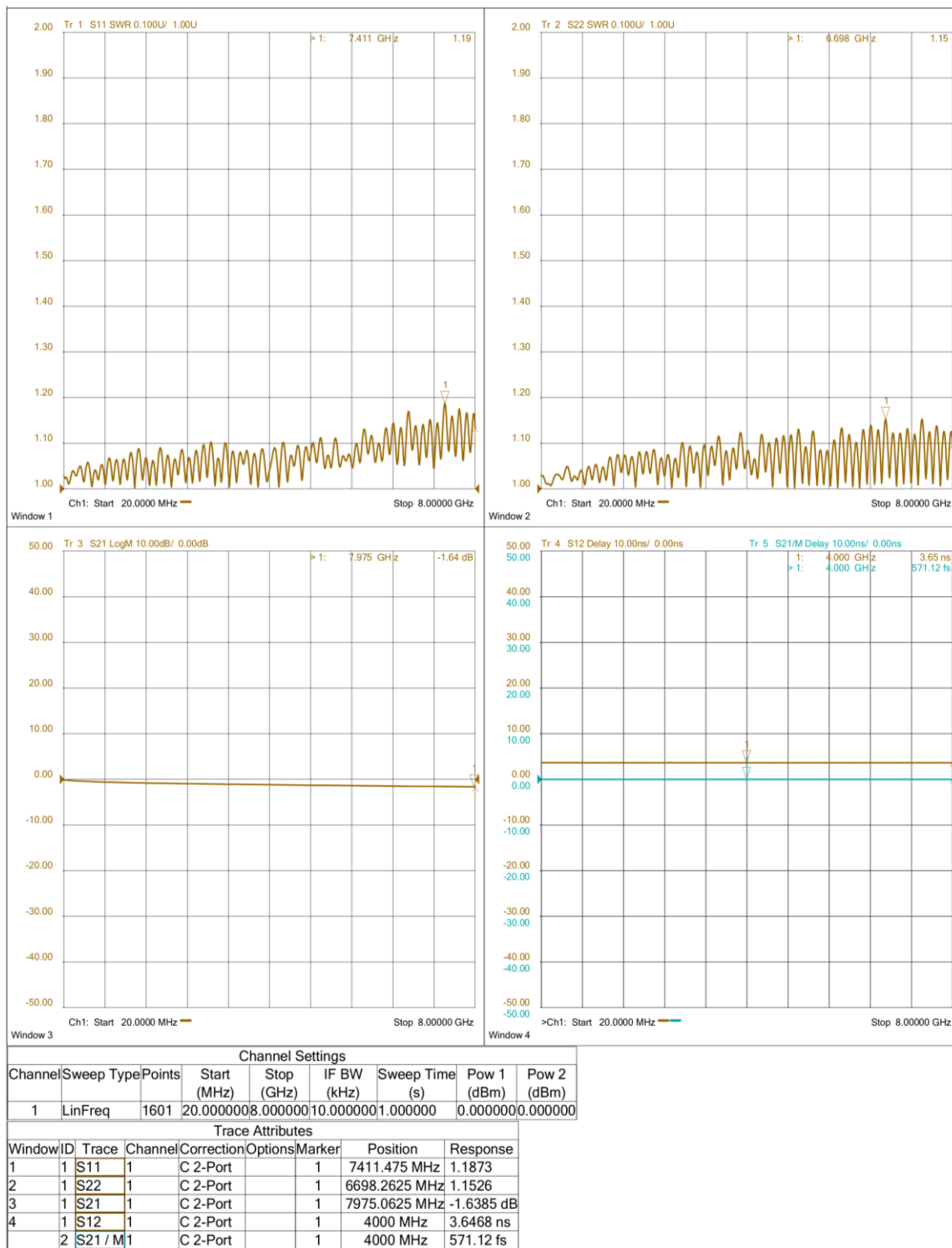
	Limit type	Start stimulus	Stop stimulus	Start value	Stop value
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	Marker	Delta	Stimulus	Response
Win1				
Trace1--S11	1		13.8562GHz	1.24
Win2				
Trace2--S22	1		13.7438GHz	1.16
Win3				
Trace3--S12	1		19.9875GHz	-0.67dB
Win4				
Trace4--S21	1		10.0000GHz	773.91ps
Trace5--S12	1		10.0000GHz	-100.18fs

Typical Test Result



PART NUMBER	DESCRIPTION
280480.LL406P1.80	SMP Female R/A To SMP Female R/A, DC-26.5GHz LL406 Cable,Phase Match<±2ps/L:40cm



PART NUMBER	DESCRIPTION
280480.LL406P1.80(2)	SMP Female R/A To SMP Female R/A, DC-26.5GHz LL406 Cable, Phase Match<±2ps/L:40cm

2.00

Tr 1 S11 SWR 0.100U/ 1.00U

> 1: 6.703 GHz

1.19

Ch1: Start 20.0000 MHz

Stop 8.00000 GHz

Window 1

2.00

Tr 2 S22 SWR 0.100U/ 1.00U

> 1: 6.145 GHz

1.19

Ch1: Start 20.0000 MHz

Stop 8.00000 GHz

Window 2

50.00

Tr 3 S21 LogM 10.00dB/ 0.00dB

> 1: 7.995 GHz

-1.72 dB

Ch1: Start 20.0000 MHz

Stop 8.00000 GHz

Window 3

50.00

Tr 4 S12 Delay 10.00ns/ 0.00ns

Tr 5 S21/M Delay 10.00ns/ 0.00ns

> 1: 4.000 GHz

3.64 ns

> 1: 4.000 GHz

-1.45 ps

>Ch1: Start 20.0000 MHz

Stop 8.00000 GHz

Window 4

Channel Settings								
Channel	Sweep Type	Points	Start (MHz)	Stop (GHz)	IF BW (kHz)	Sweep Time (s)	Pow 1 (dBm)	Pow 2 (dBm)
1	LinFreq	1601	20.000000	8.000000	10.000000	1.000000	0.000000	0.000000

Trace Attributes								
Window	ID	Trace	Channel	Correction	Options	Marker	Position	Response
1	1	S11	1	C	2-Port	1	6703.25 MHz	1.1867
2	1	S22	1	C	2-Port	1	6144.65 MHz	1.1861
3	1	S21	1	C	2-Port	1	7995.0125 MHz	-1.7176 dB
4	1	S12	1	C	2-Port	1	4000 MHz	3.6443 ns
	2	S21 / M	1	C	2-Port	1	4000 MHz	-1.2858 ps

PART NUMBER	DESCRIPTION
280482.LL406P1.100(1)	SMA Male To SMP Female R/A, DC-26.5GHz LL406Cable(Phase Match $\leq\pm 2$ ps,VSWR ≤ 1.55 , I.L<4.1dB)/L:100cm

Window 1

Tr 1 S11 SWR 0.100U/ 1.00U
> 1: 19.988 GHz 1.24
Ch1: Start 20.0000 MHz Stop 20.0000 GHz

Window 2

Tr 2 S22 SWR 0.100U/ 1.00U
> 1: 20.000 GHz 1.18
Ch1: Start 20.0000 MHz Stop 20.0000 GHz

Window 3

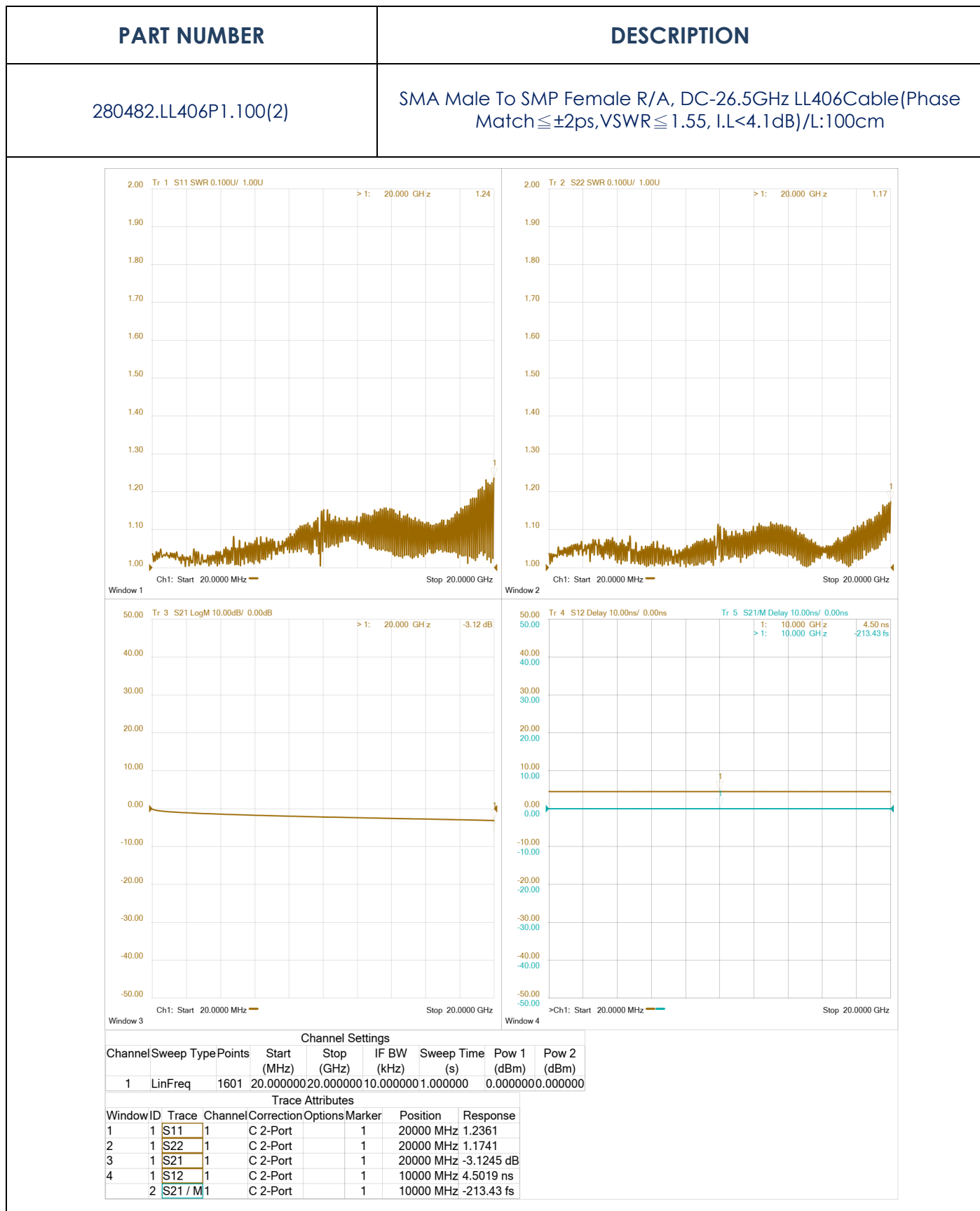
Tr 3 S21 LogM 10.00dB/ 0.00dB
> 1: 20.000 GHz -3.14 dB
Ch1: Start 20.0000 MHz Stop 20.0000 GHz

Window 4

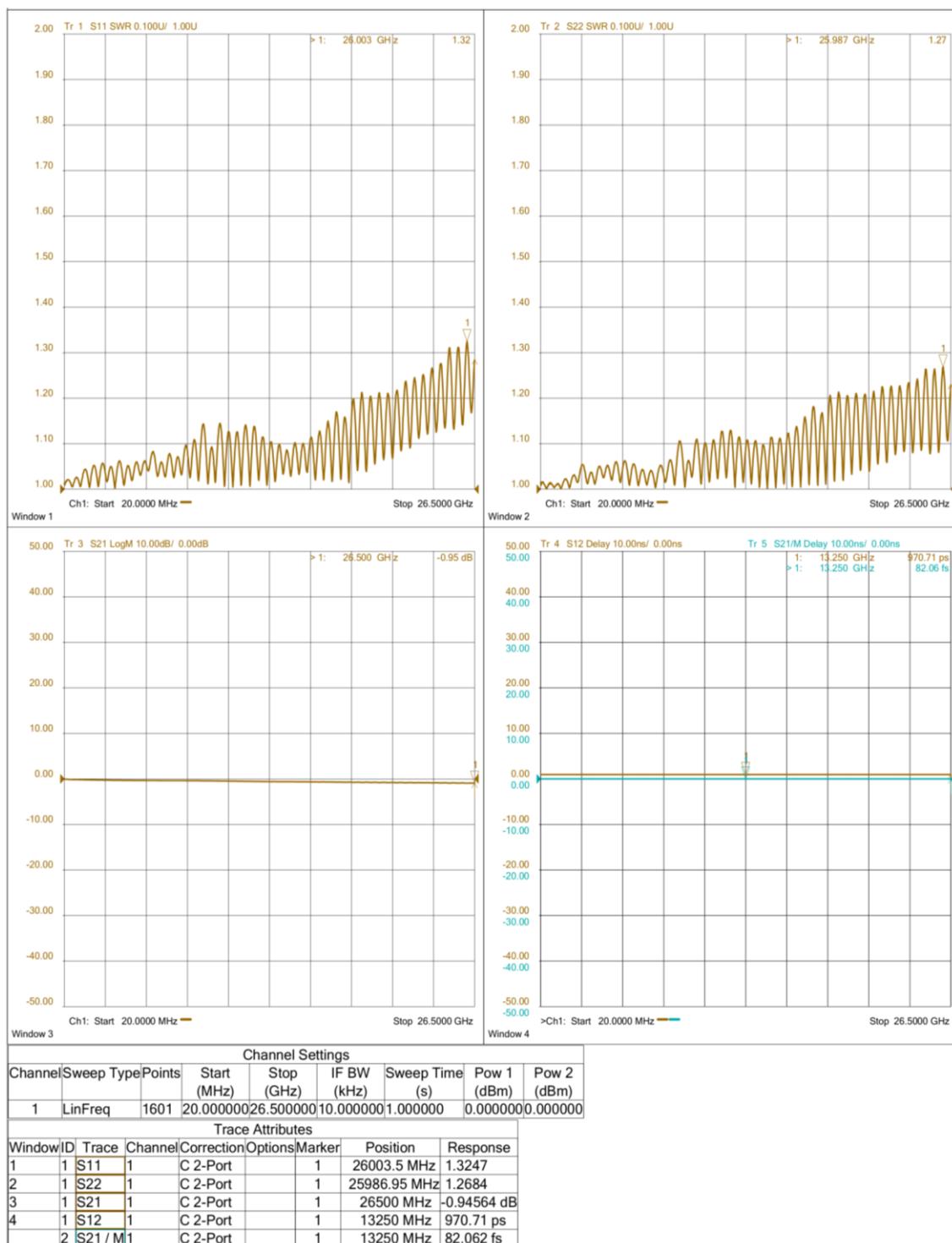
Tr 4 S12 Delay 10.00ns/ 0.00ns
Tr 5 S21/M Delay 10.00ns/ 0.00ns
1: 10.000 GHz 4.50 ns
> 1: 10.000 GHz 678.02 fs
>Ch1: Start 20.0000 MHz Stop 20.0000 GHz

Channel	Sweep	Type	Points	Start (MHz)	Stop (GHz)	IF BW (kHz)	Sweep Time (s)	Pow 1 (dBm)	Pow 2 (dBm)
1	Lin	Freq	1601	20.000000	20.000000	10.000000	1.000000	0.000000	0.000000

Window	ID	Trace	Channel	Correction	Options	Marker	Position	Response
1	1	S11	1	C 2-Port		1	19987.513 MHz	1.2382
2	1	S22	1	C 2-Port		1	20000 MHz	1.1751
3	1	S21	1	C 2-Port		1	19987.513 MHz	-3.1464 dB
4	1	S12	1	C 2-Port		1	10000 MHz	4.5026 ns
2	2	S21 / M	1	C 2-Port		1	10000 MHz	732.58 fs



PART NUMBER	DESCRIPTION
290480.LL406P1.20(1)	SMA Female To SMP Female, DC-26.5GHz LL406 Cable, Phase Match<±2ps/L:20cm



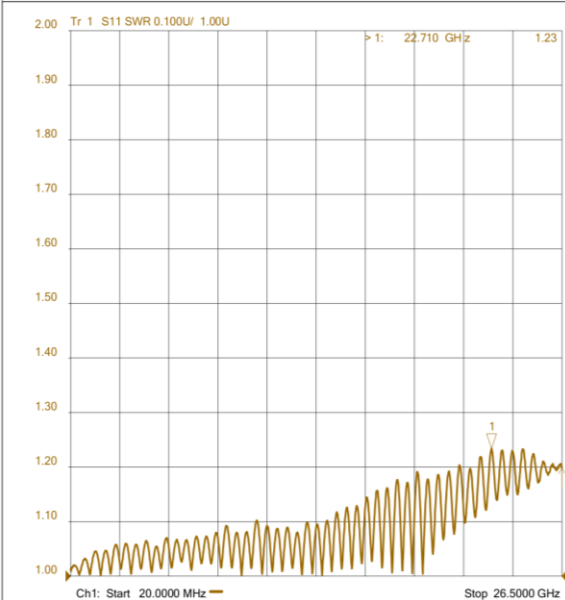
PART NUMBER	DESCRIPTION
290480.LL406P1.20(2)	SMA Female To SMP Female, DC-26.5GHz LL406 Cable, Phase Match<±2ps/L:20cm

2.00

Tr 1 S11 SWR 0.100U/ 1.00U

> 1: 22.710 GHz

1.23



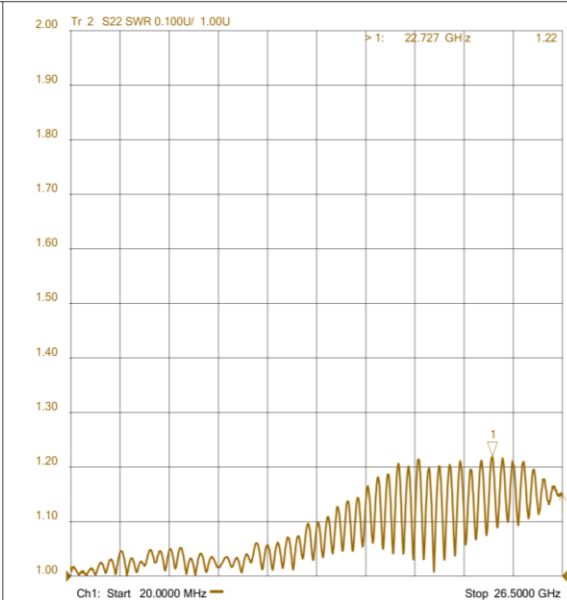
Window 1

2.00

Tr 2 S22 SWR 0.100U/ 1.00U

> 1: 22.727 GHz

1.22



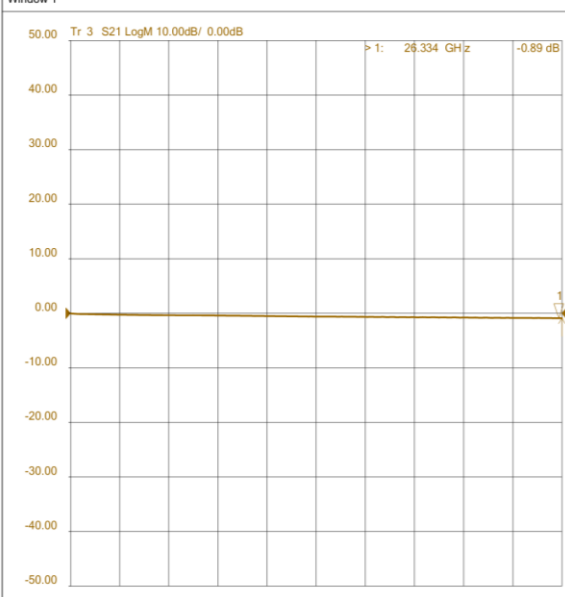
Window 2

50.00

Tr 3 S21 LogM 10.00dB/ 0.00dB

> 1: 26.334 GHz

-0.89 dB



Window 3

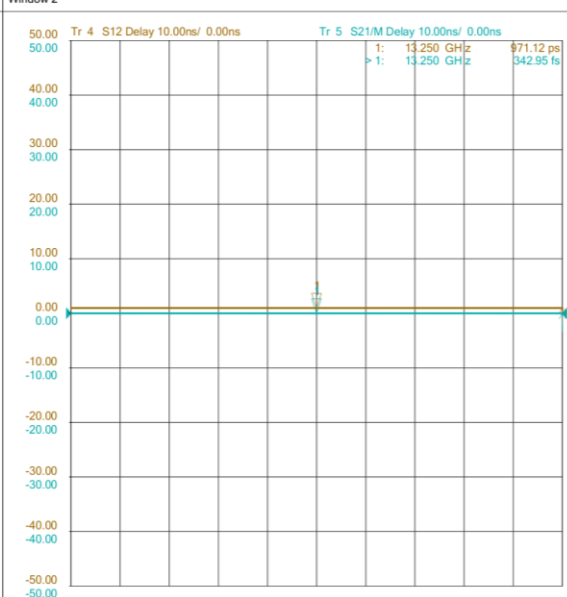
50.00

Tr 4 S12 Delay 10.00ns/ 0.00ns

Tr 5 S21/M Delay 10.00ns/ 0.00ns

1: 13.250 GHz 971.12 ps

> 1: 13.250 GHz 342.95 fs



Window 4

Channel Settings									
Channel	Sweep	Type	Points	Start (MHz)	Stop (GHz)	IF BW (kHz)	Sweep Time (s)	Pow 1 (dBm)	Pow 2 (dBm)
1	Lin	Freq	1601	20.000000	26.500000	10.000000	1.000000	0.000000	0.000000

Trace Attributes								
Window	ID	Trace	Channel	Correction	Options	Marker	Position	Response
1	1	S11	1	C 2-Port		1	22710.05 MHz	1.2342
2	1	S22	1	C 2-Port		1	22726.6 MHz	1.2193
3	1	S21	1	C 2-Port		1	26334.5 MHz	-0.89423 dB
4	1	S12	1	C 2-Port		1	13250 MHz	971.12 ps
2	2	S21 / M1	1	C 2-Port		1	13250 MHz	342.95 fs

PART NUMBER	DESCRIPTION
290482.LL406P1.20(1)	SMA Female To SMP Female R/A, DC-26.5GHz LL406 Cable, Phase Match<±2ps/L:20cm

2.00

Tr 1 S11 SWR 0.100U/ 1.00U

> 1: 19.781 GHz

1.39

Ch1: Start 20.0000 MHz

Stop 26.5000 GHz

Window 1

2.00

Tr 2 S22 SWR 0.100U/ 1.00U

> 1: 19.781 GHz

1.36

Ch1: Start 20.0000 MHz

Stop 26.5000 GHz

Window 2

50.00

Tr 3 S21 LogM 10.00dB/ 0.00dB

> 1: 26.053 GHz

-1.09 dB

Ch1: Start 20.0000 MHz

Stop 26.5000 GHz

Window 3

50.00

Tr 4 S12 Delay 10.00ns/ 0.00ns

> 1: 13.250 GHz

1.02 ns

Tr 5 S21/M Delay 10.00ns/ 0.00ns

> 1: 13.250 GHz

-32.31 fs

>Ch1: Start 20.0000 MHz

Stop 26.5000 GHz

Window 4

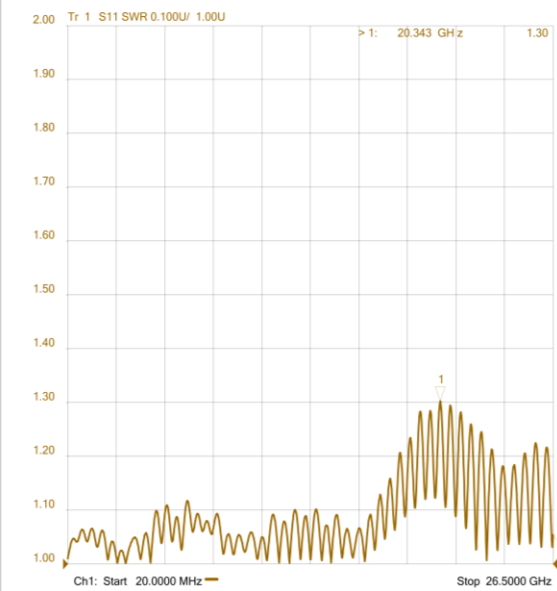
Channel Settings								
Channel	Sweep Type	Points	Start (MHz)	Stop (GHz)	IF BW (kHz)	Sweep Time (s)	Pow 1 (dBm)	Pow 2 (dBm)
1	LinFreq	1601	20.000000	26.500000	10.000000	1.000000	0.000000	0.000000

Trace Attributes								
Window	ID	Trace	Channel	Correction	Options	Marker	Position	Response
1	1	S11	1	C 2-Port		1	19780.7 MHz	1.3890
2	1	S22	1	C 2-Port		1	19780.7 MHz	1.3553
3	1	S21	1	C 2-Port		1	26053.15 MHz	-1.0886 dB
4	1	S12	1	C 2-Port		1	13250 MHz	1.0163 ns
2	2	S21 / M1	1	C 2-Port		1	13250 MHz	107.15 fs

PART NUMBER	DESCRIPTION
290482.LL406P1.20(2)	SMA Female To SMP Female R/A, DC-26.5GHz LL406 Cable, Phase Match<±2ps/L:20cm

Tr 1 S11 SWR 0.100U/ 1.00U

> 1: 20.343 GHz 1.30

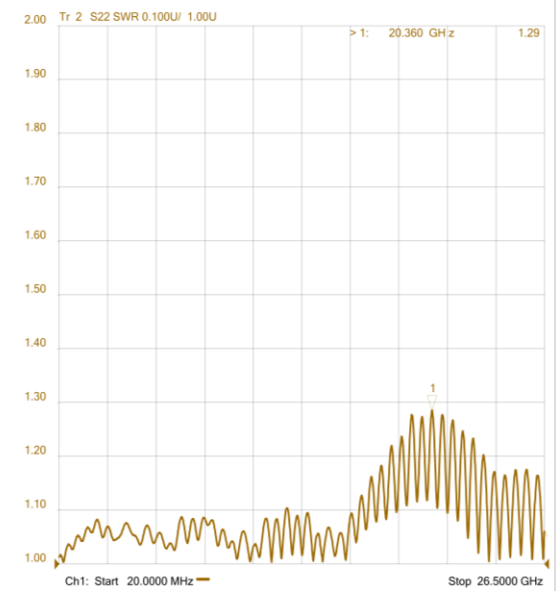


Ch1: Start 20.0000 MHz Stop 26.5000 GHz

Window 1

Tr 2 S22 SWR 0.100U/ 1.00U

> 1: 20.360 GHz 1.29

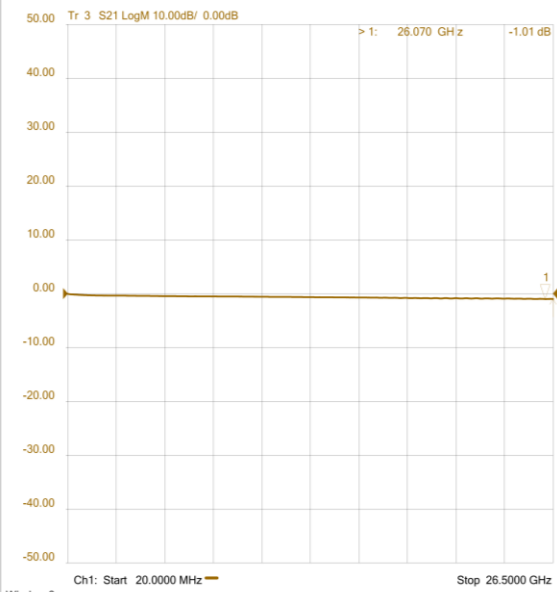


Ch1: Start 20.0000 MHz Stop 26.5000 GHz

Window 2

Tr 3 S21 LogM 10.00dB/ 0.00dB

> 1: 26.070 GHz -1.01 dB



Ch1: Start 20.0000 MHz Stop 26.5000 GHz

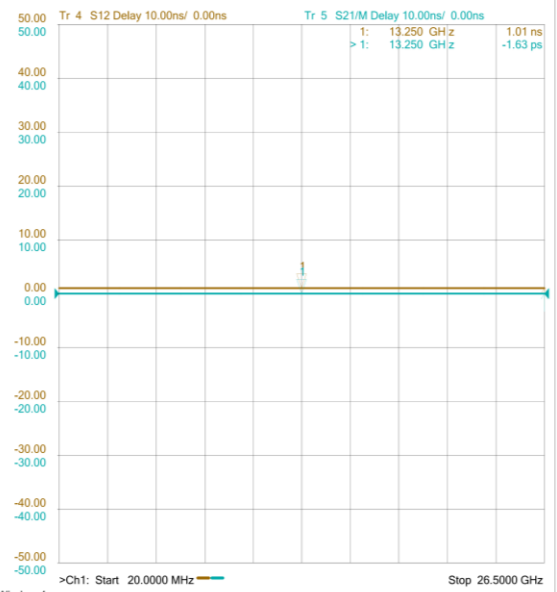
Window 3

Tr 4 S12 Delay 10.00ns/ 0.00ns

Tr 5 S21/M Delay 10.00ns/ 0.00ns

> 1: 13.250 GHz 1.01 ns

> 1: 13.250 GHz -1.63 ps



>Ch1: Start 20.0000 MHz Stop 26.5000 GHz

Window 4

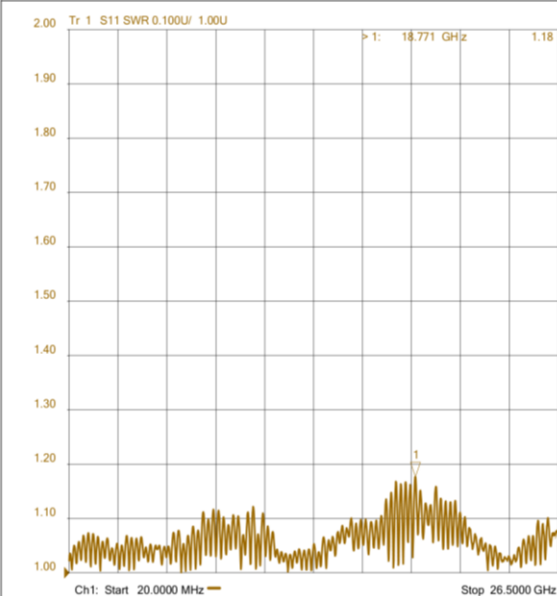
Channel Settings

Channel	Sweep Type	Points	Start (MHz)	Stop (GHz)	IF BW (kHz)	Sweep Time (s)	Pow 1 (dBm)	Pow 2 (dBm)
1	LinFreq	1601	20.000000	26.500000	10.000000	1.000000	0.000000	0.000000

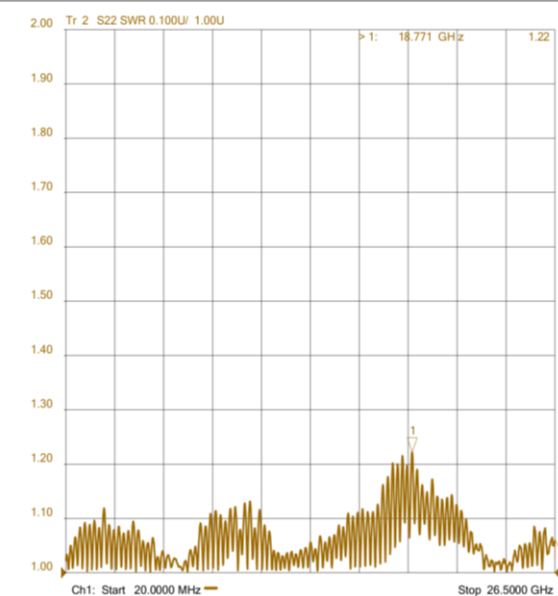
Trace Attributes

Window	ID	Trace	Channel	Correction	Options	Marker	Position	Response
1	1	S11	1	C	2-Port	1	20343.4 MHz	1.3027
2	1	S22	1	C	2-Port	1	20359.95 MHz	1.2859
3	1	S21	1	C	2-Port	1	26102.8 MHz	-1.0100 dB
4	1	S12	1	C	2-Port	1	13250 MHz	1.0147 ns
2	2	S21 / M	1	C	2-Port	1	13250 MHz	-1.6258 ps

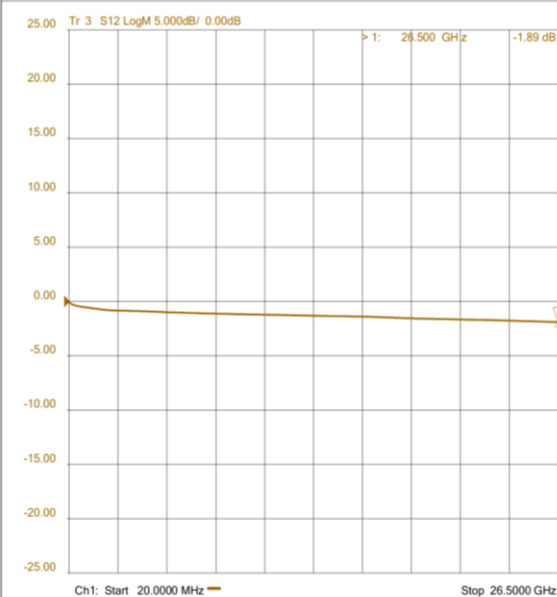
PART NUMBER	DESCRIPTION
482482.LL406P1.40(1)	SMP Female R/A To SMP Female R/A, DC-26.5GHz LL406 Cable, Phase Match<±2ps/L:40cm



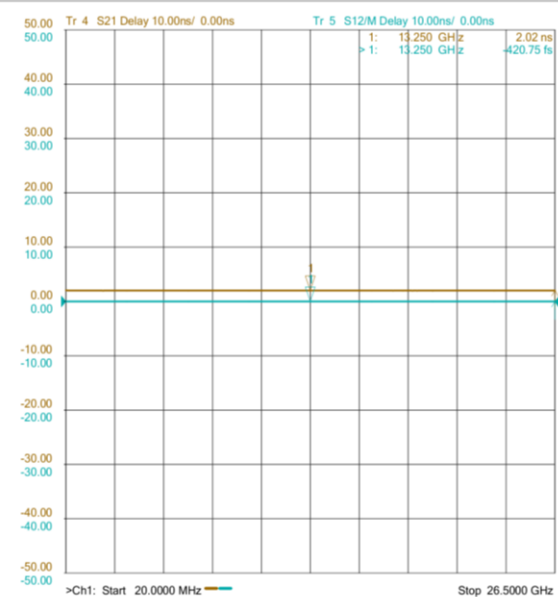
Window 1



Window 2



Window 3



Window 4

Channel	Sweep Type	Points	Start (MHz)	Stop (GHz)	IF BW (kHz)	Sweep Time (s)	Pow 1 (dBm)	Pow 2 (dBm)
1	LinFreq	1601	20.000000	26.500000	10.000000	1.000000	0.000000	0.000000

Window	ID	Trace	Channel	Correction	Options	Marker	Position	Response
1	1	S11	1	C 2-Port		1	18771.15 MHz	1.1768
2	1	S22	1	C 2-Port		1	18771.15 MHz	1.2217
3	1	S12	1	C 2-Port		1	26500 MHz	-1.8893 dB
4	1	S21	1	C 2-Port		1	13250 MHz	2.0212 ns
2	2	S12 / M1	1	C 2-Port		1	13250 MHz	-420.75 fs

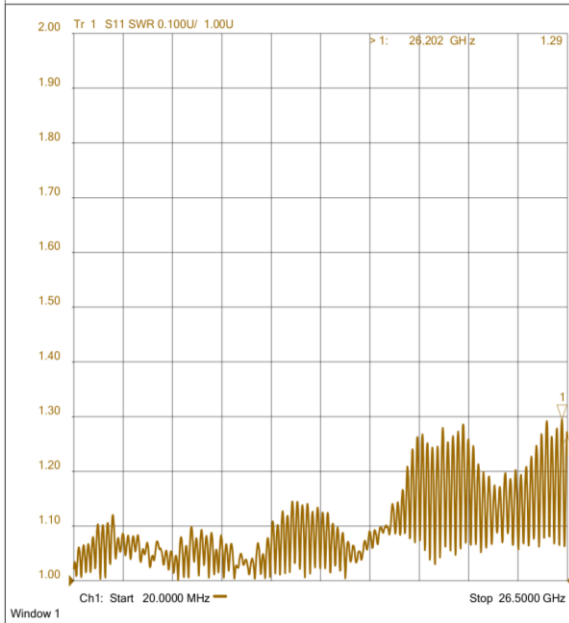
PART NUMBER	DESCRIPTION
482482.LL406P1.40(2)	SMP Female R/A To SMP Female R/A, DC-26.5GHz LL406 Cable, Phase Match<±2ps/L:40cm

2.00

Tr 1 S11 SWR 0.100U/ 1.00U

> 1: 26.202 GHz

1.29



Ch1: Start 20.0000 MHz

Stop 26.5000 GHz

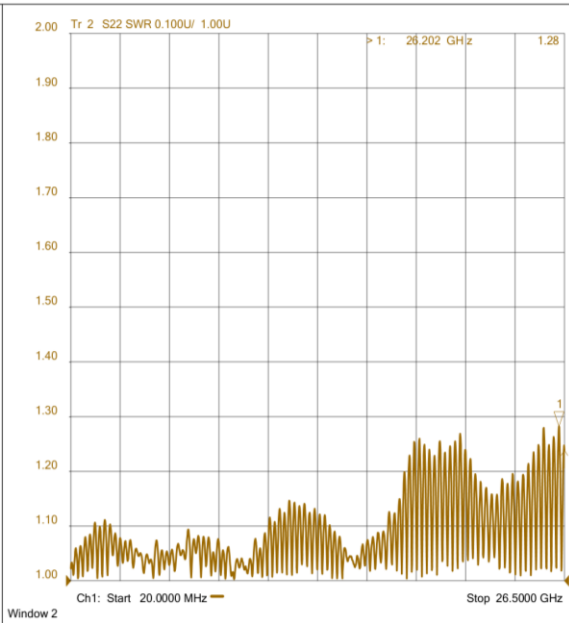
Window 1

2.00

Tr 2 S22 SWR 0.100U/ 1.00U

> 1: 26.202 GHz

1.28



Ch1: Start 20.0000 MHz

Stop 26.5000 GHz

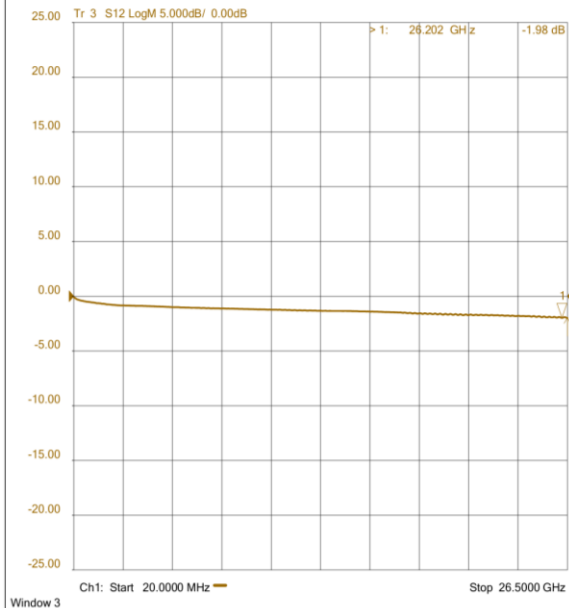
Window 2

25.00

Tr 3 S12 LogM 5.000dB/ 0.00dB

> 1: 26.202 GHz

-1.98 dB



Ch1: Start 20.0000 MHz

Stop 26.5000 GHz

Window 3

50.00

Tr 4 S21 Delay 10.00ns/ 0.00ns

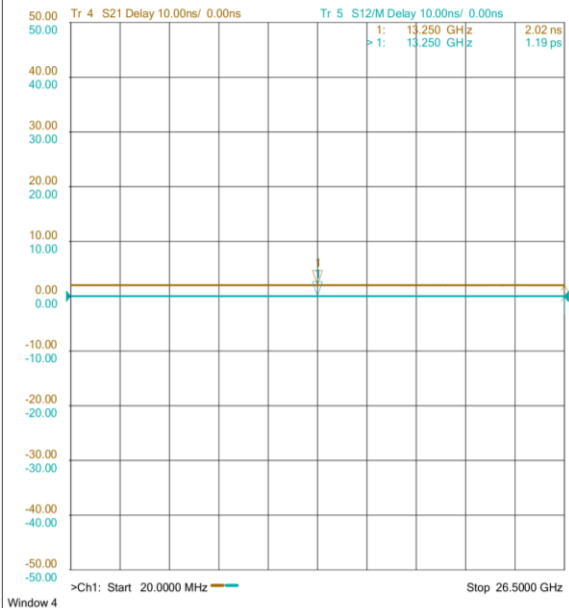
Tr 5 S12/M Delay 10.00ns/ 0.00ns

> 1: 13.250 GHz

2.02 ns

> 1: 13.250 GHz

1.19 ps



>Ch1: Start 20.0000 MHz

Stop 26.5000 GHz

Window 4

Channel Settings								
Channel	Sweep Type	Points	Start (MHz)	Stop (GHz)	IF BW (kHz)	Sweep Time (s)	Pow 1 (dBm)	Pow 2 (dBm)
1	LinFreq	1601	20.000000	26.500000	10.000000	1.000000	0.000000	0.000000

Trace Attributes								
Window	ID	Trace	Channel	Correction	Options	Marker	Position	Response
1	1	S11	1	C 2-Port		1	26202.1 MHz	1.2947
2	1	S22	1	C 2-Port		1	26202.1 MHz	1.2821
3	1	S12	1	C 2-Port		1	26202.1 MHz	-1.9816 dB
4	1	S21	1	C 2-Port		1	13250 MHz	2.0227 ns
2	2	S12 / M1	1	C 2-Port		1	13250 MHz	1.1949 ps

PART NUMBER	DESCRIPTION
480480.LL406P1.30	SMP Female To SMP Female, DC-20GHz LL406Cable/L:30cm

