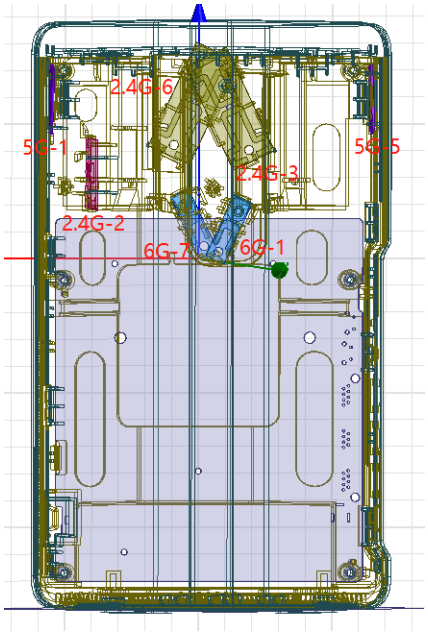
Measurement of Antenna for Mesh12XEP Project

Manufacture：SHENZHEN TENDA TECHNOLOGY CO., LTD.

1. Antenna Appearance:



2. Electrical performance test results at normal temperature

a)2.4G Antenna(2.4G-3)

No	Test Item	Unit	Demand Performance	Test Result		Judgement
1	Frequency Range	MHz	2400-2483	2400-2483		OK
2	Gain	dBi	3	2400	3.63	OK
				2450	3.86	OK
				2483	4.12	OK
3	Isolation	dB	≤-15	2400	-21	OK
				2450	-20	OK
				2483	-21	OK
4	Return loss	dB	≤-10	2400	-15	OK
				2450	-16	OK
				2483	-13	OK

b)2.4G Antenna(2.4G-2)

No	Test Item	Unit	Demand Performance	Test Result		Judgement
1	Frequency Range	MHz	2400-2483	2400-2483		OK
2	Gain	dBi	3	2400	4.63	OK
				2450	3.67	OK
				2483	3.71	OK
3	Isolation	dB	≤-15	2400	-21	OK
				2450	-20	OK
				2483	-21	OK
4	Return loss	dB	≤-10	2400	-14	OK
				2450	-13	OK
				2483	-13	OK

c)2.4G Antenna(2.4G-6)

No	Test Item	Unit	Demand Performance	Test Result		Judgement
1	Frequency Range	MHz	2400-2483	2400-2483		OK
2	Gain	dBi	3	2400	3.99	OK
				2450	3.46	OK
				2483	3.76	OK
3	Isolation	dB	≤-15	2400	-21	OK
				2450	-20	OK
				2483	-21	OK
4	Return	dB	≤-10	2400	-14	OK

	loss			2450	-14	OK
				2483	-14	OK

d) 5G Antenna (5G-1)

No	Test Item	Unit	Demand Performance	Test Result		Judgement
1	Frequency Range	MHz	5150-5850	5150-5850		OK
2	Gain	dBi	3	5150	3.84	OK
				5500	3.83	OK
				5850	5.66	OK
3	Isolation	dB	≤-15	5150	-33	OK
				5500	-31	OK
				5850	-32	OK
4	Return loss	dB	≤-10	5150	-19	OK
				5500	-12	OK
				5850	-11	OK

e) 5G Antenna (5G-5)

No	Test Item	Unit	Demand Performance	Test Result		Judgement
1	Frequency Range	MHz	5150-5850	5150-5850		OK
2	Gain	dBi	3	5150	3.52	OK
				5500	3.99	OK
				5850	4.40	OK
3	Isolation	dB	≤-15	5150	-33	OK
				5500	-31	OK
				5850	-32	OK
4	Return loss	dB	≤-10	5150	-20	OK
				5500	-12	OK
				5850	-11	OK

f) 6G Antenna (6G-4)

No	Test Item	Unit	Demand Performance	Test Result		Judgement
1	Frequency Range	MHz	5900-7100	5900-7125		OK
2	Gain	dBi	3	6000	5.27	OK
				6500	5.49	OK
				7000	5.49	OK

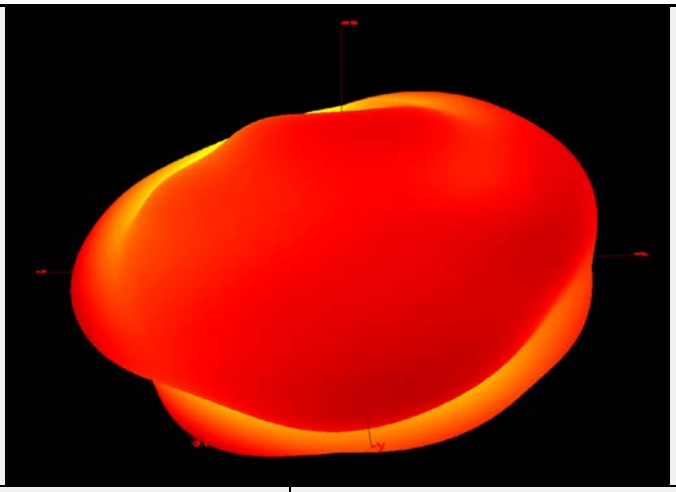
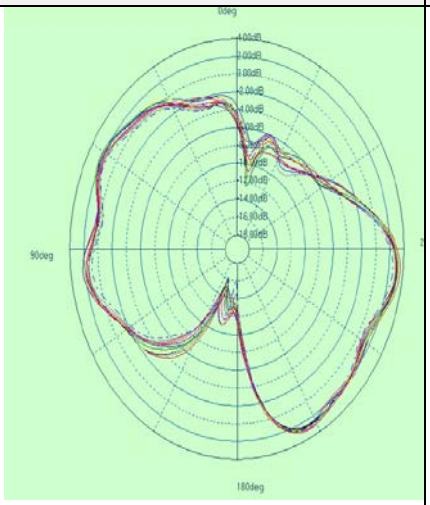
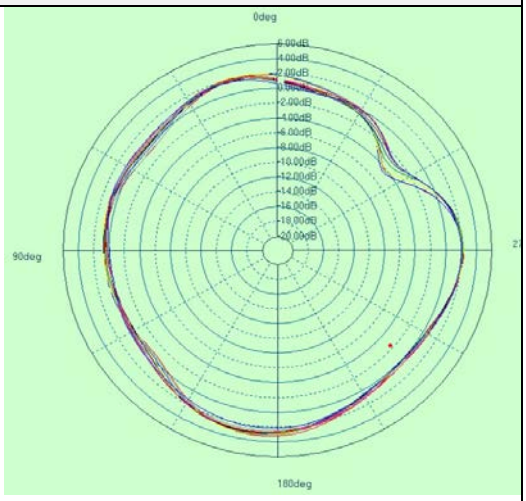
3	Isolation	dB	≤-15	6000	-53	OK
				6500	-48	OK
				7000	-37	OK
4	Return loss	dB	≤-10	6000	-14	OK
				6500	-15	OK
				7000	-12	OK

g) 6G Antenna (6G-6)

No	Test Item	Unit	Demand Performance	Test Result		Judgement
1	Frequency Range	MHz	5900-7100	5900-7125		OK
2	Gain	dBi	3	6000	5.5	OK
				6500	5.8	OK
				7000	6.1	OK
3	Isolation	dB	≤-15	6000	-27	OK
				6500	-29	OK
				7000	-30	OK
4	Return loss	dB	≤-10	6000	-14	OK
				6500	-16	OK
				7000	-11	OK

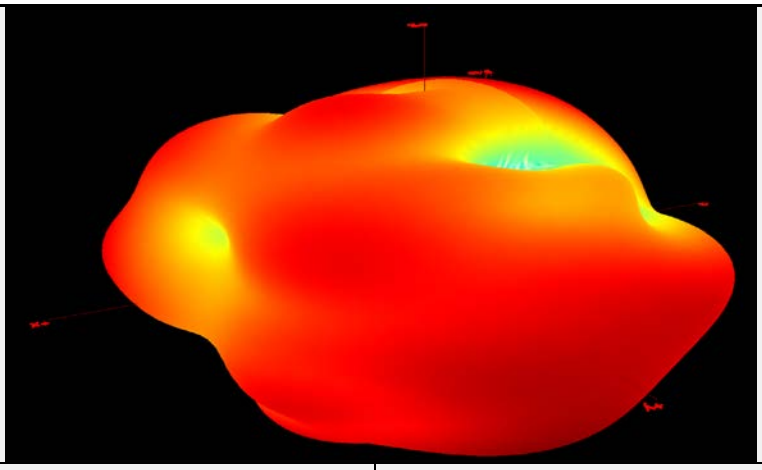
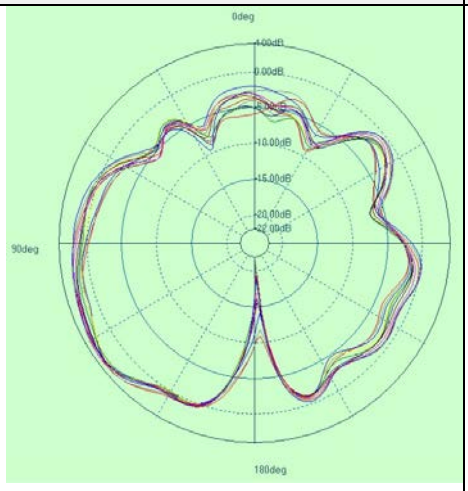
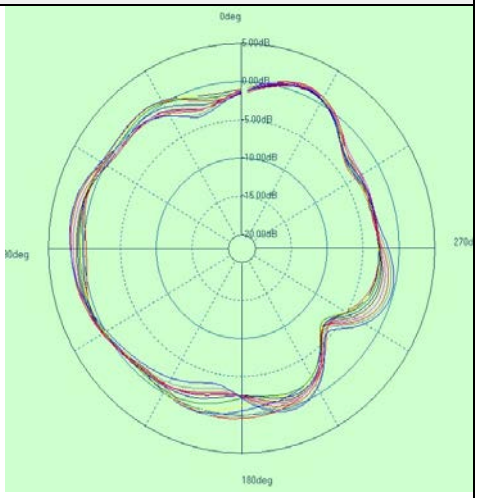
Directional diagram for 2.4GHz (24G-3)

Frequency	E Total. dB(dB)	Efficiency( )
2400MHz	3.63	89%
2410MHz	3.73	90%
2420MHz	3.77	90%
2430MHz	3.91	92%
2440MHz	3.96	90%
2450MHz	3.86	88%
2460MHz	3.91	89%
2470MHz	4.09	91%
2480MHz	4.10	91%
2490MHz	4.02	89%
2500MHz	4.02	87%

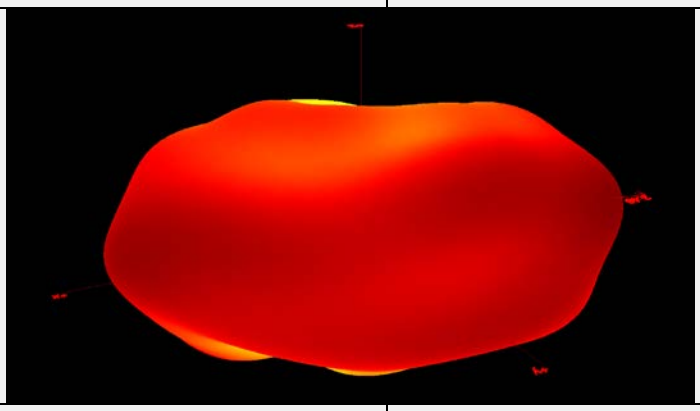
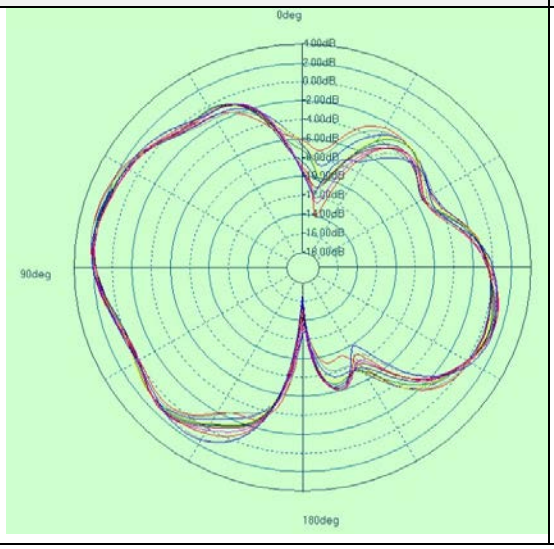
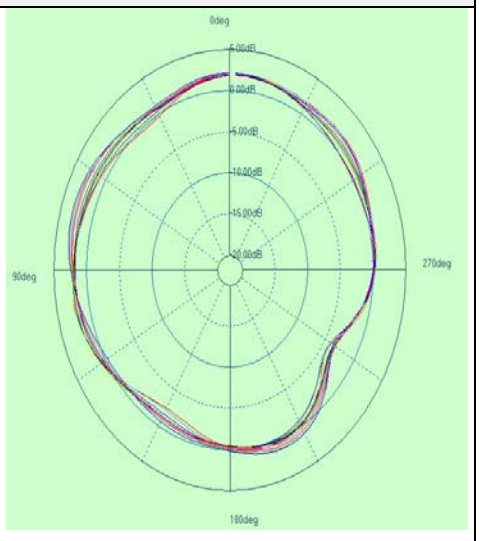
3D Radiation patterns		
	V **PLANE**	H **PLANE**
2D Radiation patterns		

Directional diagram for 2.4GHz (24G-2)

Frequency	E Total. dB(dB)	Efficiency( )
2400MHz	4.63	74%
2410MHz	4.38	75%
2420MHz	4.14	75%
2430MHz	3.93	75%
2440MHz	3.90	74%
2450MHz	3.67	74%
2460MHz	3.63	73%
2470MHz	3.74	75%
2480MHz	3.71	76%
2490MHz	3.45	75%
2500MHz	3.28	74%

3D Radiation patterns		
	V **PLANE**	H **PLANE**
2D Radiation patterns		

Directional diagram for 2.4GHz(24G-6)

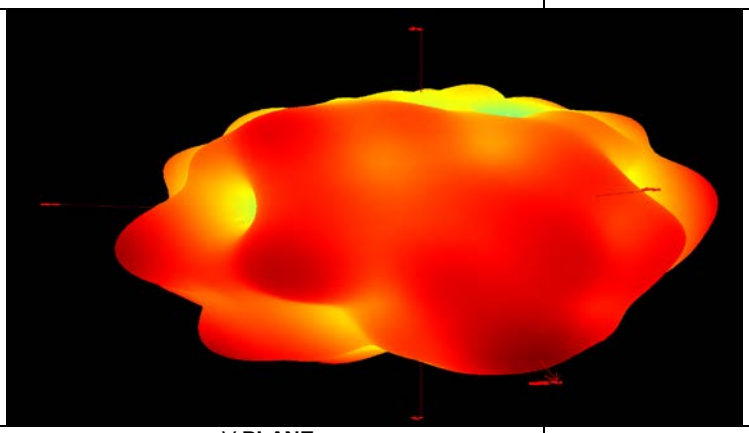
Frequency	E Total. dB(dB)	Efficiency( )
2400MHz	3.99	87%
2410MHz	3.89	87%
2420MHz	3.76	87%
2430MHz	3.60	89%
2440MHz	3.57	88%
2450MHz	3.46	87%
2460MHz	3.49	87%
2470MHz	3.65	89%
2480MHz	3.75	89%
2490MHz	3.70	88%
2500MHz	3.62	87%
3D Radiation patterns		
	V **PLANE**	H **PLANE**
2D Radiation patterns		

Directional diagram for 5GHz(5G-5)

Frequency	E Total. dB(dBi)	Efficiency( )
5150MHz	3.12	73%
5200MHz	3.00	68%
5250MHz	3.06	63%
5300MHz	3.20	61%
5350MHz	3.63	69%
5400MHz	3.84	73%
5450MHz	3.76	66%

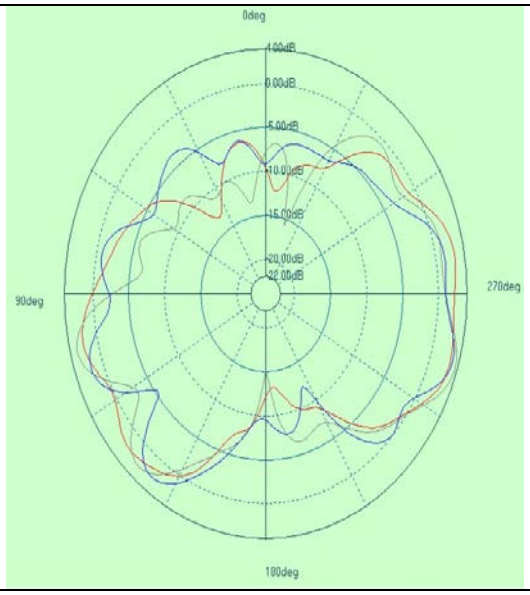
5500MHz	3.99	63%
5550MHz	4.00	65%
5600MHz	4.01	65%
5650MHz	3.90	61%
5700MHz	3.26	63%
5750MHz	3.12	61%
5800MHz	3.60	67%
5850MHz	4.40	66%

3D Radiation patterns

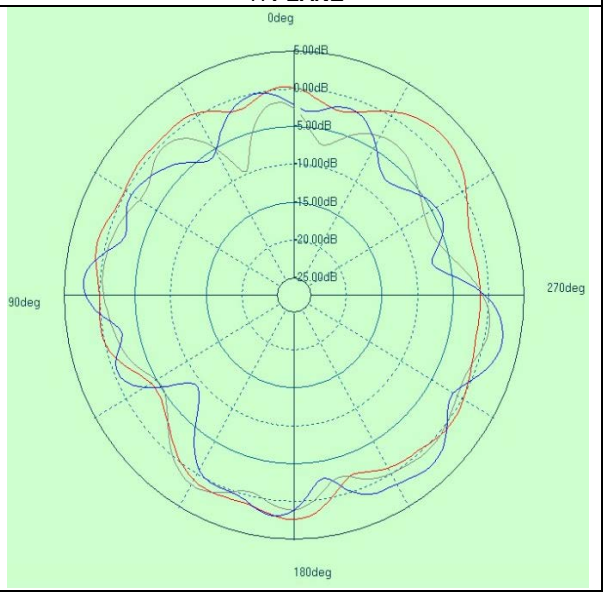


2D Radiation patterns

V **PLANE**

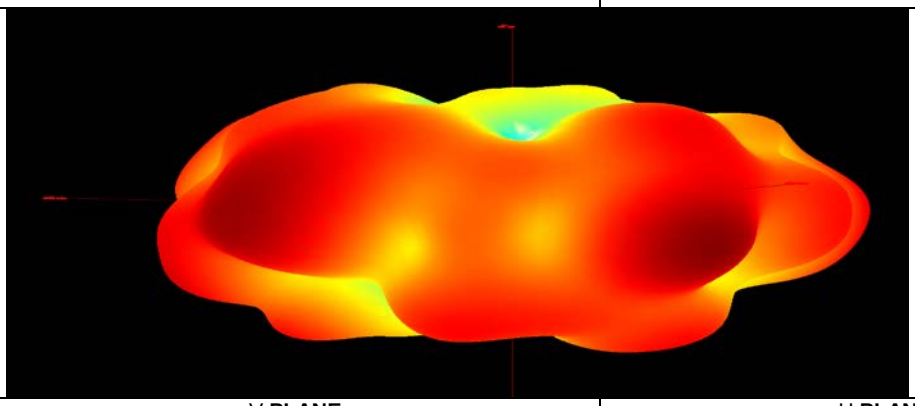
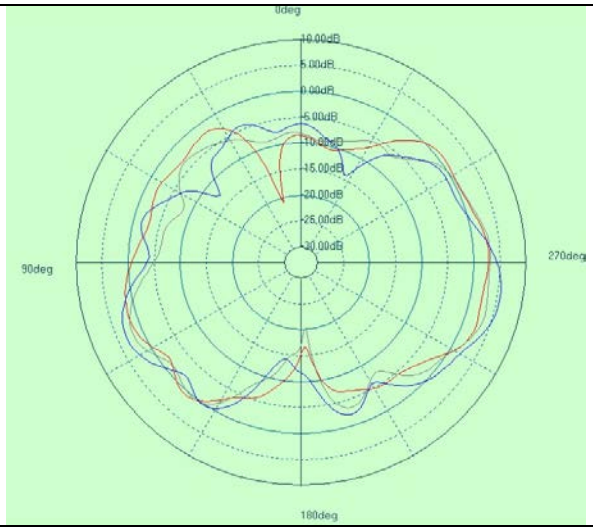
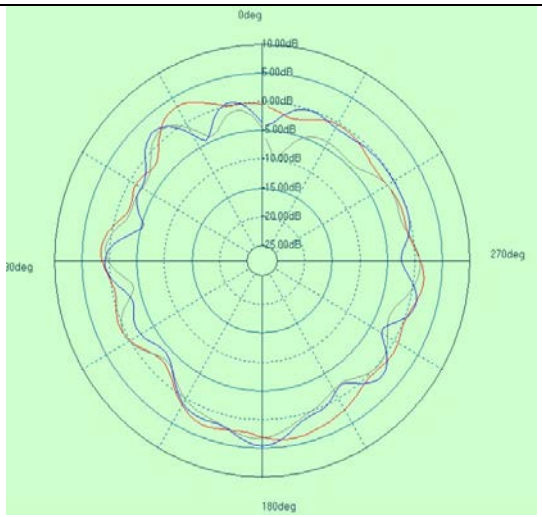


H **PLANE**



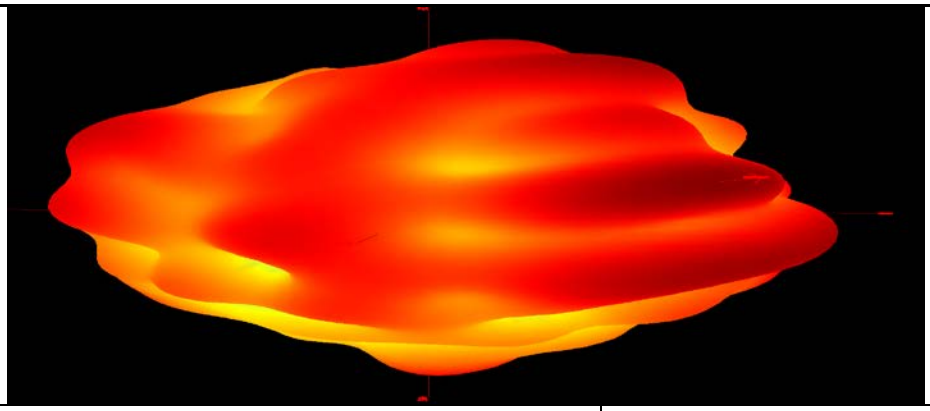
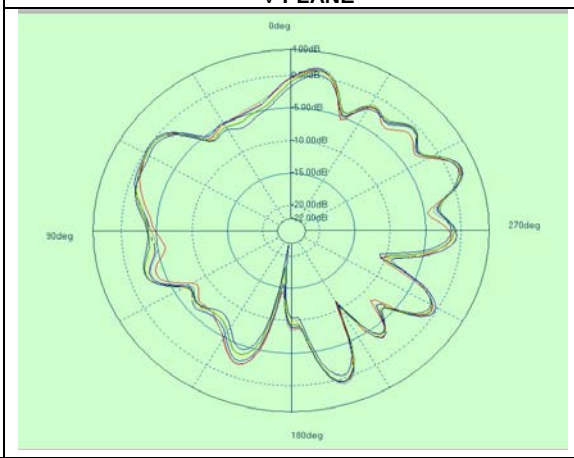
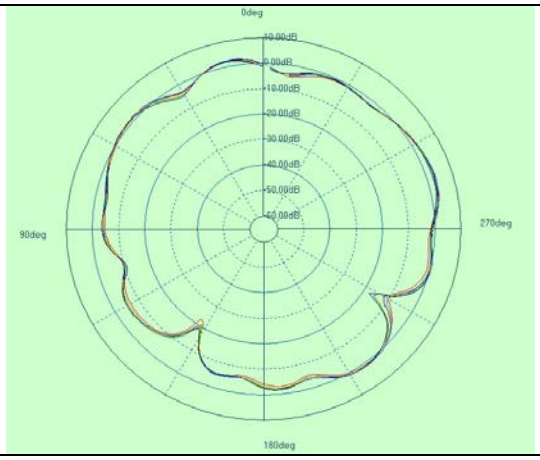
Directional diagram for 5GHz(5G-1)

Frequency	E Total. dB(dBi)	Efficiency( )
5150MHz	3.84	72%
5200MHz	4.07	70%
5250MHz	4.01	64%
5300MHz	3.82	60%
5350MHz	4.35	66%
5400MHz	4.84	71%
5450MHz	4.38	64%
5500MHz	3.83	61%
5550MHz	3.95	63%
5600MHz	3.48	63%
5650MHz	3.20	64%

5700MHz	3.11	62%
5750MHz	3.87	62%
5800MHz	4.82	61%
5850MHz	5.66	67%
3D Radiation patterns		
2D Radiation patterns	V **PLANE**	H **PLANE**
		

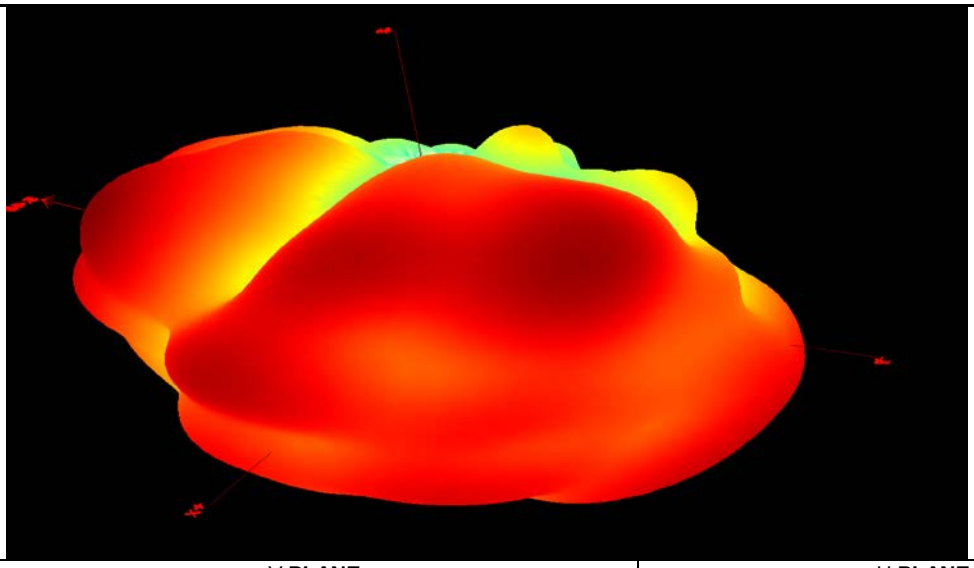
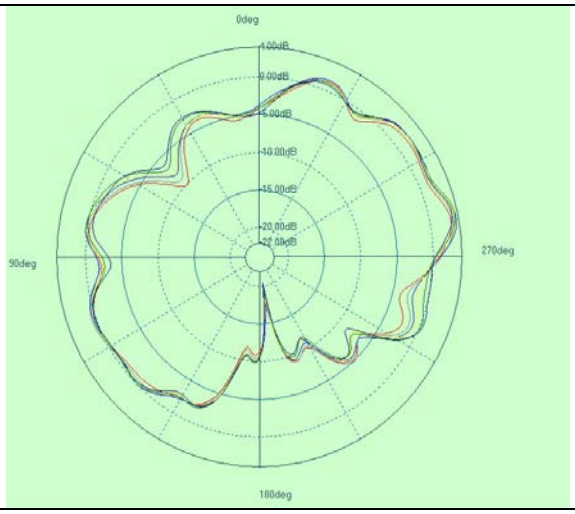
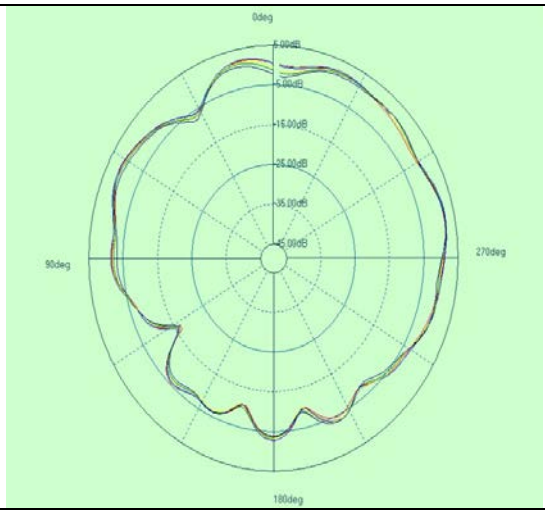
Directional diagram for 6GHz(6G-4)

Frequency	E Total. dB(dBi)	Efficiency( )
5900MHz	5.27	63%
6100MHz	5.74	70%
6200MHz	5.87	71%
6300MHz	5.60	68%
6400MHz	5.82	69%
6500MHz	5.49	66%
6600MHz	5.78	63%
6700MHz	5.84	61%
6800MHz	5.89	63%
6900MHz	5.60	63%
7100MHz	5.42	64%

3D Radiation patterns		
2D Radiation patterns	V **PLANE** 	H **PLANE** 

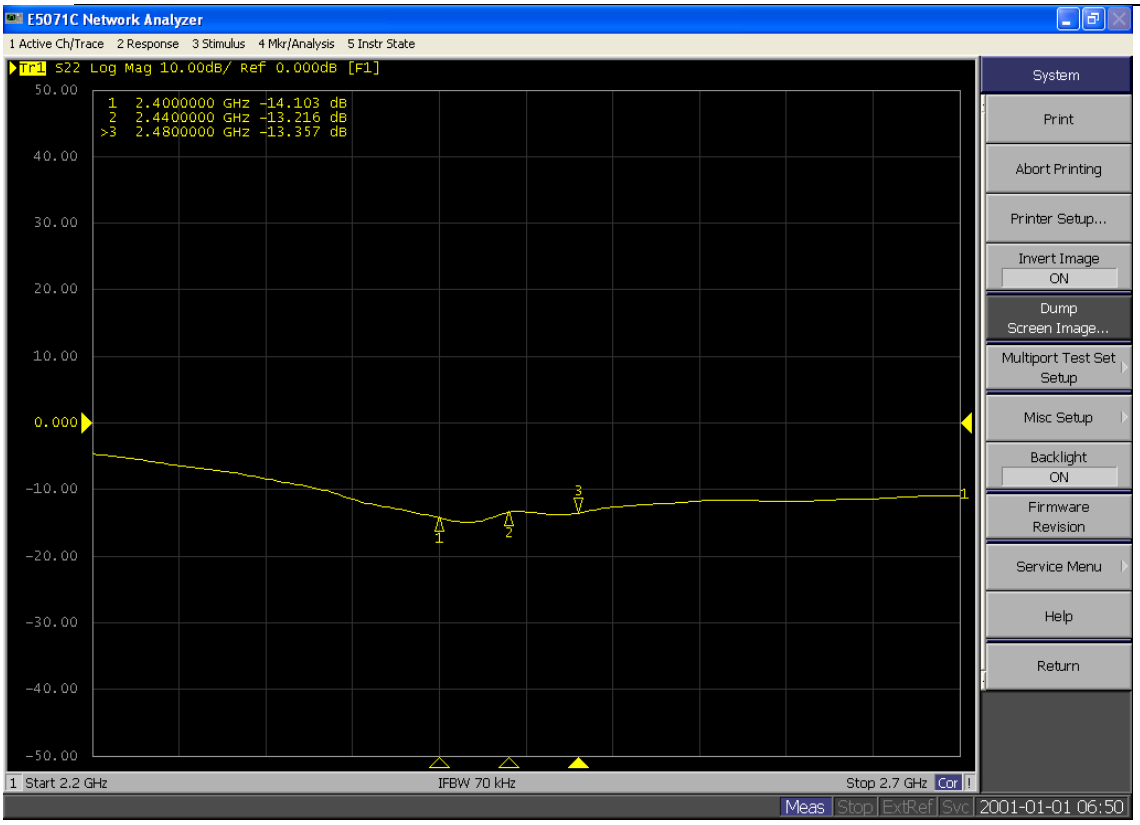
Directional diagram for 6GHz(6G-7)

Frequency	E Total. dB(dBi)	Efficiency( )
5900MHz	5.48	69%
6100MHz	5.90	66%
6200MHz	5.86	67%
6300MHz	5.85	65%
6400MHz	6.27	66%
6500MHz	6.17	63%
6600MHz	5.48	69%
6700MHz	5.70	76%
6800MHz	5.96	67%
6900MHz	5.78	63%
7100MHz	5.27	66%

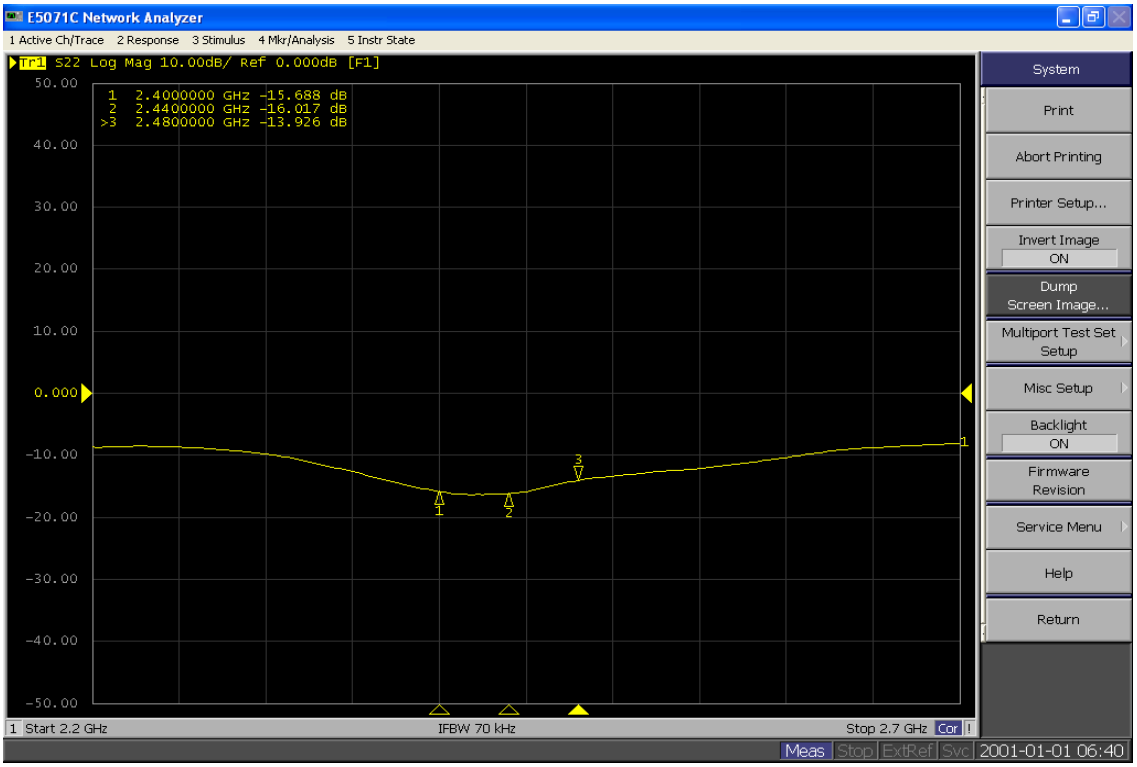
3D Radiation patterns		
2D Radiation patterns	V **PLANE** 	H **PLANE** 

2.4G Return loss test

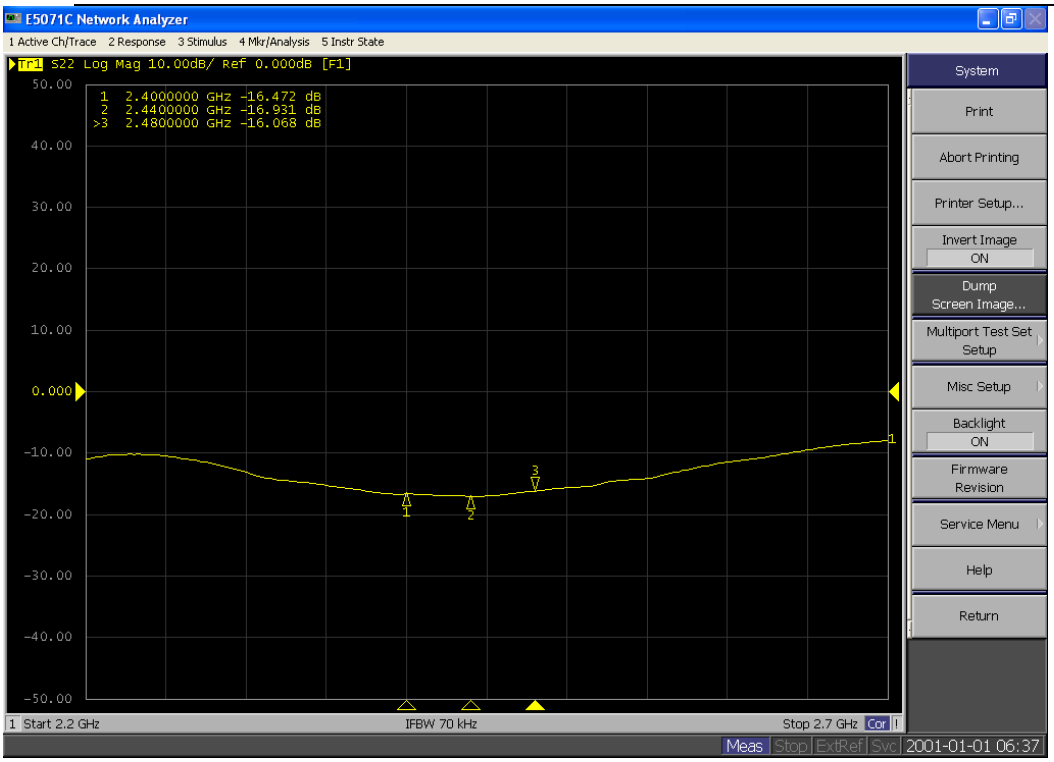
2.4G-2:


E5071C Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Tr1 S22 Log Mag 10.00dB/ Ref 0.000dB [F1]
1 2.4000000 GHz -14.103 dB
2 2.4400000 GHz -13.216 dB
>3 2.4800000 GHz -13.357 dB
50.00
40.00
30.00
20.00
10.00
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
1 Start 2.2 GHz
IFBW 70 kHz
Stop 2.7 GHz
Cor
Meas Stop ExtRef Svc 2001-01-01 06:50
System
Print
Abort Printing
Printer Setup...
Invert Image ON
Dump Screen Image...
Multiport Test Set Setup
Misc Setup
Backlight ON
Firmware Revision
Service Menu
Help
Return

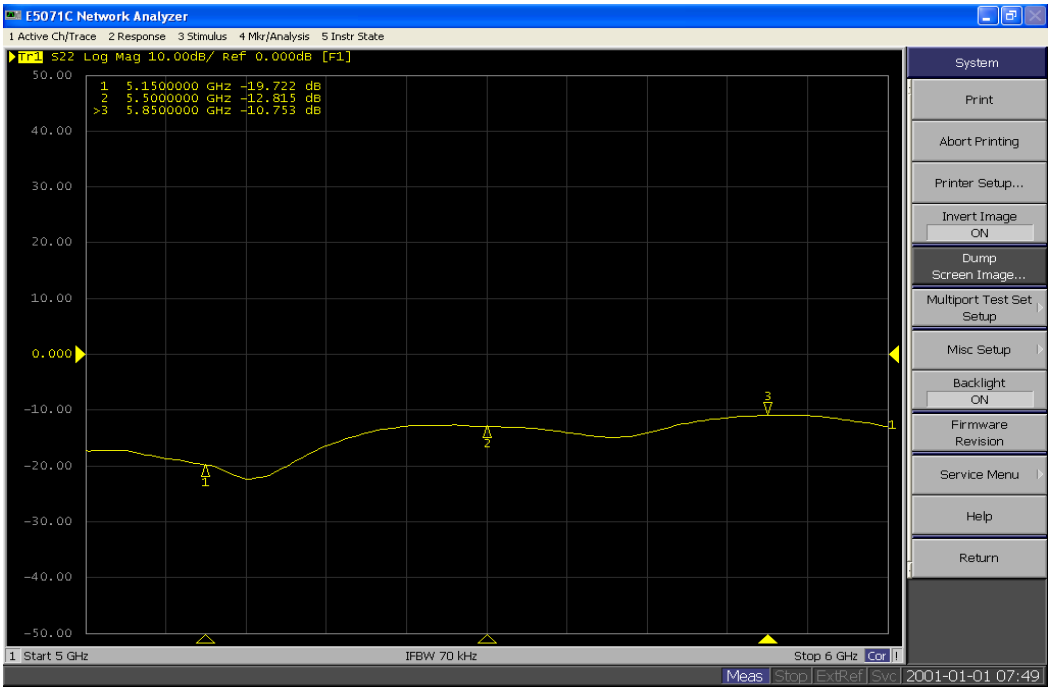
2.4G-3:


E5071C Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Tr1 S22 Log Mag 10.00dB/ Ref 0.000dB [F1]
1 2.4000000 GHz -15.688 dB
2 2.4400000 GHz -16.017 dB
>3 2.4800000 GHz -13.926 dB
50.00
40.00
30.00
20.00
10.00
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
1 Start 2.2 GHz
IFBW 70 kHz
Stop 2.7 GHz
Cor
Meas Stop ExtRef Svc 2001-01-01 06:40
System
Print
Abort Printing
Printer Setup...
Invert Image ON
Dump Screen Image...
Multiport Test Set Setup
Misc Setup
Backlight ON
Firmware Revision
Service Menu
Help
Return

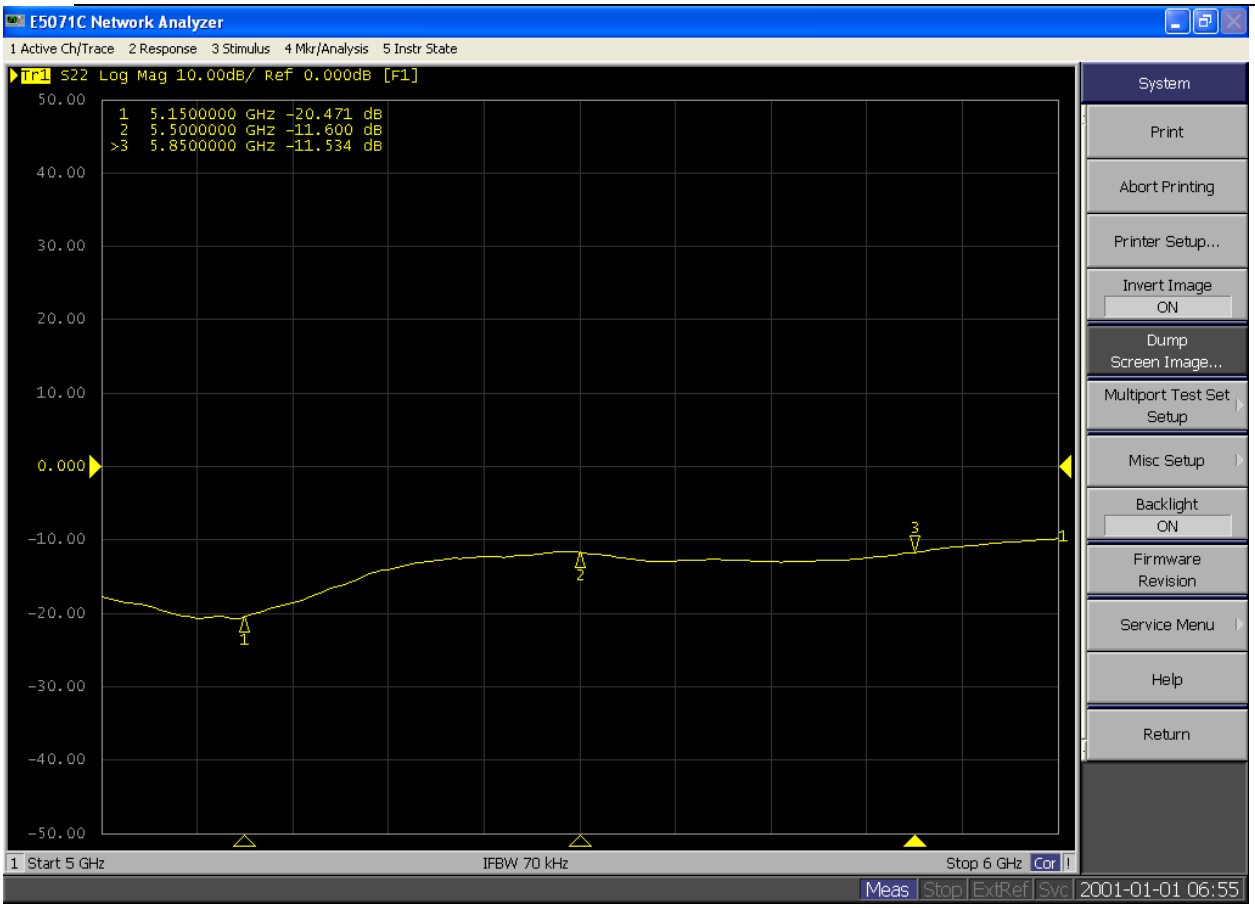
2.4G-6:


E5071C Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Tr1 S22 Log Mag 10.00dB/ Ref 0.000dB [F1]
1 2.4000000 GHz -16.472 dB
2 2.4400000 GHz -16.931 dB
>3 2.4800000 GHz -16.068 dB
50.00
40.00
30.00
20.00
10.00
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
1 Start 2.2 GHz
IFBW 70 kHz
Stop 2.7 GHz
Cor
Meas Stop ExtRef Svc 2001-01-01 06:37
System
Print
Abort Printing
Printer Setup...
Invert Image ON
Dump Screen Image...
Multiport Test Set Setup
Misc Setup
Backlight ON
Firmware Revision
Service Menu
Help
Return

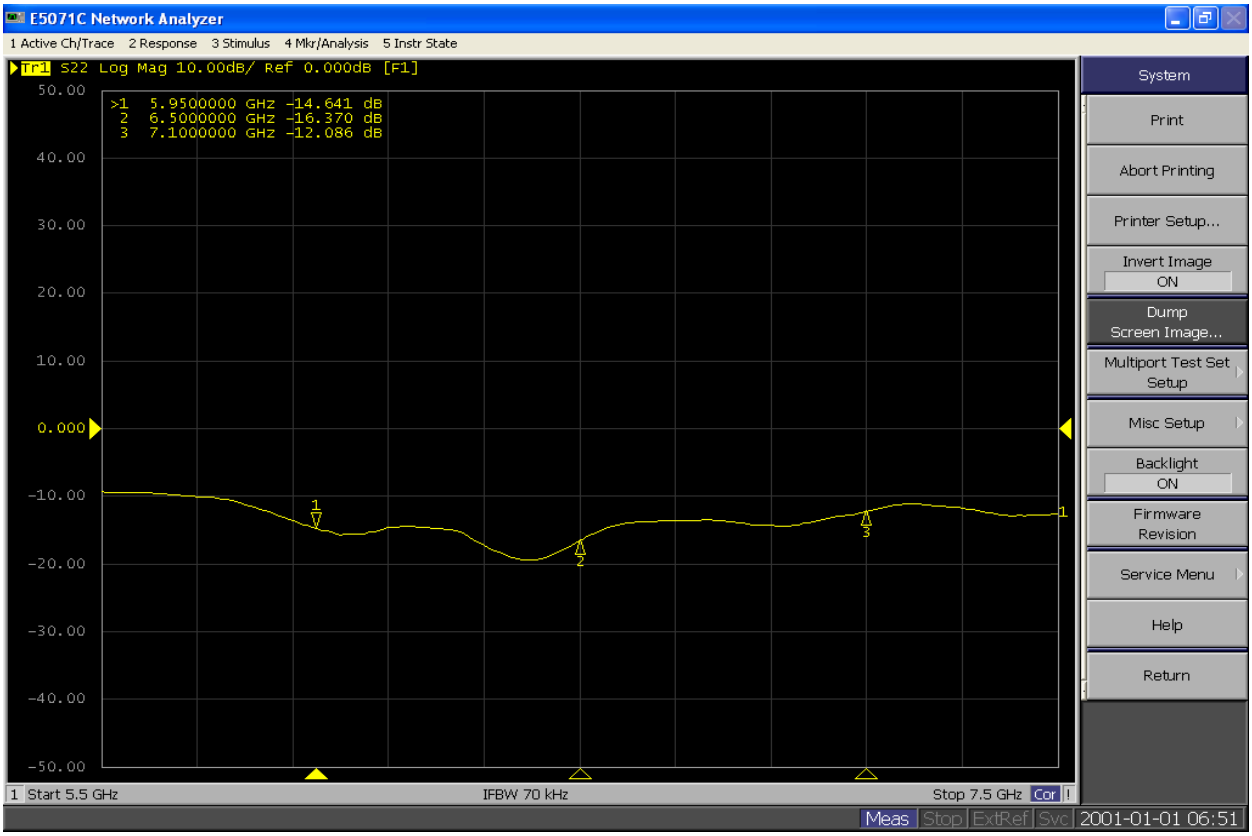
5G-1:


E5071C Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Tr1 S22 Log Mag 10.00dB/ Ref 0.000dB [F1]
1 5.1500000 GHz -19.722 dB
2 5.5000000 GHz -12.815 dB
>3 5.8500000 GHz -10.753 dB
50.00
40.00
30.00
20.00
10.00
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
1 Start 5 GHz
IFBW 70 kHz
Stop 6 GHz
Cor
Meas Stop ExtRef Svc 2001-01-01 07:49
System
Print
Abort Printing
Printer Setup...
Invert Image ON
Dump Screen Image...
Multiport Test Set Setup
Misc Setup
Backlight ON
Firmware Revision
Service Menu
Help
Return

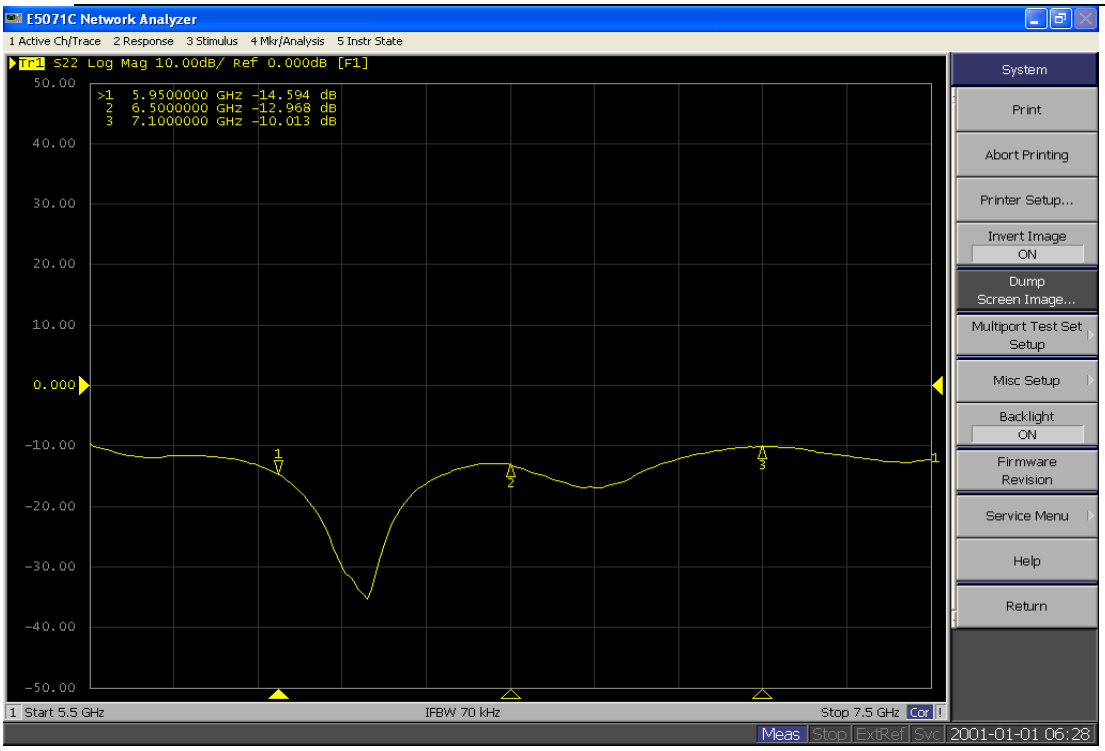
5G-5:


E5071C Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Tr1 S22 Log Mag 10.00dB/ Ref 0.000dB [F1]
1 5.1500000 GHz -20.471 dB
2 5.5000000 GHz -11.600 dB
>3 5.8500000 GHz -11.534 dB
50.00
40.00
30.00
20.00
10.00
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
1 Start 5 GHz
IFBW 70 kHz
Stop 6 GHz
Cor
System
Print
Abort Printing
Printer Setup...
Invert Image
ON
Dump Screen Image...
Multiport Test Set Setup
Misc Setup
Backlight
ON
Firmware Revision
Service Menu
Help
Return
Meas
Stop
ExtRef
Svc
2001-01-01 06:55

6G-4:


E5071C Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Tr1 S22 Log Mag 10.00dB/ Ref 0.000dB [F1]
>1 5.9500000 GHz -14.641 dB
2 6.5000000 GHz -16.370 dB
3 7.1000000 GHz -12.086 dB
50.00
40.00
30.00
20.00
10.00
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
1 Start 5.5 GHz
IFBW 70 kHz
Stop 7.5 GHz
Cor
System
Print
Abort Printing
Printer Setup...
Invert Image
ON
Dump Screen Image...
Multiport Test Set Setup
Misc Setup
Backlight
ON
Firmware Revision
Service Menu
Help
Return
Meas
Stop
ExtRef
Svc
2001-01-01 06:51

6G-7:


E5071C Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Tr1 S22 Log Mag 10.00dB/ Ref 0.000dB [F1]
>1 5.9500000 GHz -14.594 dB
2 6.5000000 GHz -12.968 dB
3 7.1000000 GHz -10.013 dB
50.00
40.00
30.00
20.00
10.00
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
1 Start 5.5 GHz
IFBW 70 kHz
Stop 7.5 GHz
Cor
Meas
Stop
ExtRef
Svc
2001-01-01 06:28
System
Print
Abort Printing
Printer Setup...
Invert Image
ON
Dump Screen Image...
Multiport Test Set Setup
Misc Setup
Backlight
ON
Firmware Revision
Service Menu
Help
Return