

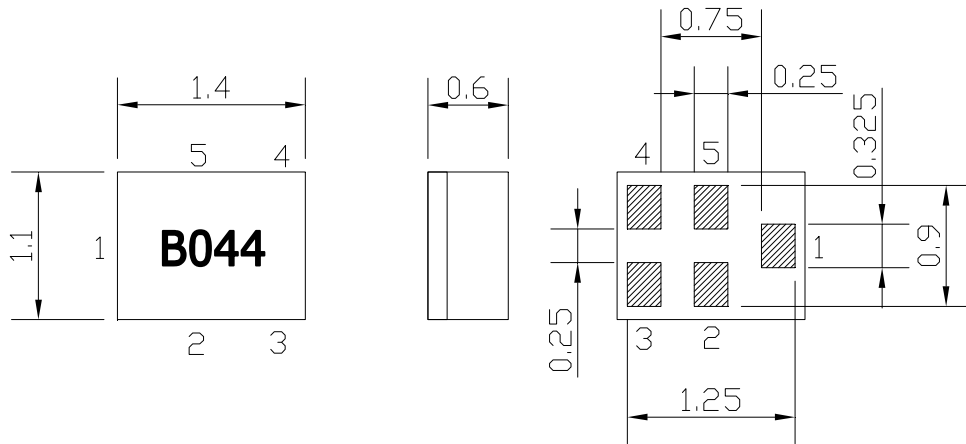
SAW Bandpass Filter F1G5S



Features

- RF bandpass filter
- No matching 50Ω single-ended operation
- Ceramic Surface Mounted Device Package (1.4 mm × 1.1 mm)
- RoHS Compliant
- This part is compliant with AEC-Q200

Package Dimensions



Dimensions shown are nominal in millimeters

Body : Al₂O₃ Ceramic

Lid : Kovar, Ni Plated


Terminations : Au plating 0.3 ~ 1.0 um, Over a 1.27 ~ 8.89 um
Ni Plating

Pin Configuration	
1	Input
4	Output
2, 3, 5	Ground

Maximum Ratings

Parameter	Unit	Minimum	Typical	Maximum
Operating Temperature Range	℃	-40	25	105
Storage Temperature Range	℃	-45	25	125
Power Handling Capability	dBm	-	-	13

Electrostatics Sensitive Device (ESD)

	ITF Co., Ltd. 102-901, Bucheon Technopark 364, Samjeong-Dong, Ojeong-Gu, Bucheon-City, Gyeonggi-Do, Korea 421-809	Part No.	F1G5S	
		Rev. Date	2017-4-19	
		Rev.	AS02	1/9

SAW Bandpass Filter F1G5S



Specifications (GPS + Glonass)


Fc = 1583.5 MHz

Room Temperature : +25℃	Minimum	Typical	Maximum	Unit
Center Frequency (Fc)	-	1583.5	-	MHz
Insertion Loss (1561 ~ 1606 MHz)	-	2.2	2.8	dB
VSWR (1561 ~ 1606 MHz)	-	1.5	2.3	
Attenuation				
0.3 ~ 824 MHz	42	45	-	dB
824 ~ 925 MHz	42	45	-	
1427 ~ 1453 MHz	40	45	-	
1710 ~ 1785 MHz	40	45	-	
1850 ~ 1910 MHz	40	44	-	
1920 ~ 1980 MHz	39	44	-	
2400 ~ 2500 MHz	43	45	-	
2500 ~ 2570 MHz	37	42	-	
2600 ~ 3000 MHz	30	38	-	
Input/Output Impedance		50		Ohms

Operating Temperature : -40℃ ~ +105℃	Minimum	Typical	Maximum	Unit
Center Frequency (Fc)	-	1583.5	-	MHz
Insertion Loss (1561 ~ 1606 MHz)	-	2.2	3.0	dB
VSWR (1561 ~ 1606 MHz)	-	1.5	2.7	
Input/Output Impedance		50		Ohms

Notes :

- 1) All specifications are based on the matching schematic shown below, measured by Agilent Network analyzer and full 2 port calibration.
- 2) Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances

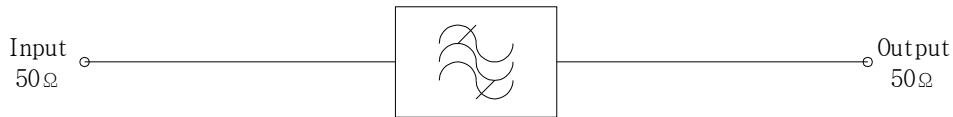
	ITF Co., Ltd. 102-901, Bucheon Technopark 364, Samjeong-Dong, Ojeong-Gu, Bucheon-City, Gyeonggi-Do, Korea 421-809	Part No.	F1G5S	
		Rev. Date	2017-4-19	
		Rev.	AS02	2/9

SAW Bandpass Filter F1G5S



Matching Schematic

(Actual matching values may vary due to PCB layout and parasitics)



Marking Configuration

B¹⁾ 044²⁾

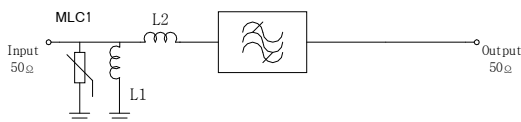
1) Series Number

2) Date Code

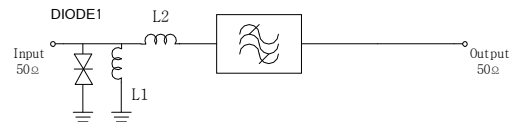
* Ink or Laser Marking available

ESD protection of SAW filters

- SAW filters are weak to Electric Static Discharge
- Generally, to overcome damages of ESD, recommend suitable matching structure. (Depending input impedance)

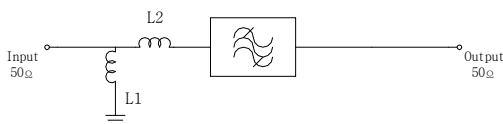


(Case A : MLC varistor used ESD matching structure)

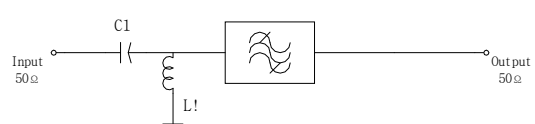


(Case B : Diode used ESD matching structure)

- In case weak ESD used simple L-C component matching structure. (Depending input impedance)



(Case C : Shunt L // Series L matching structure)



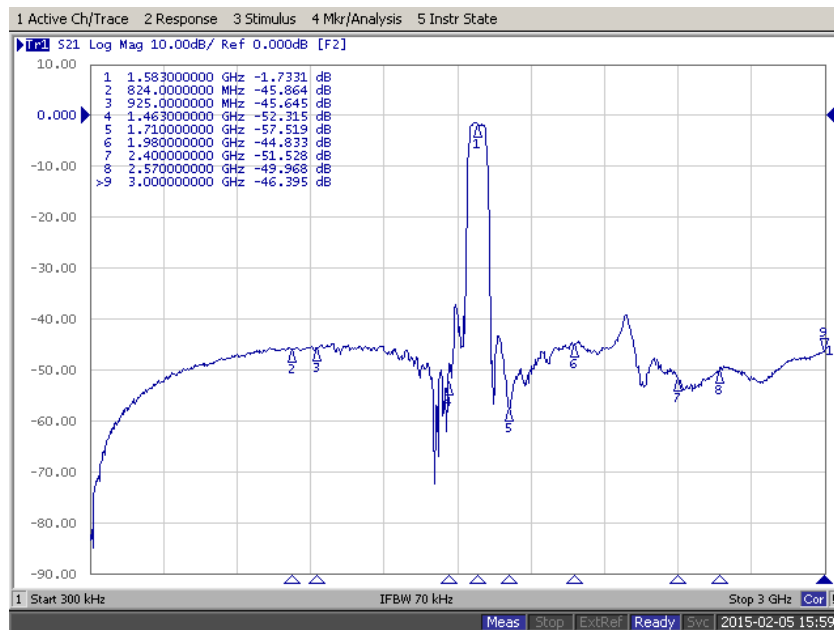
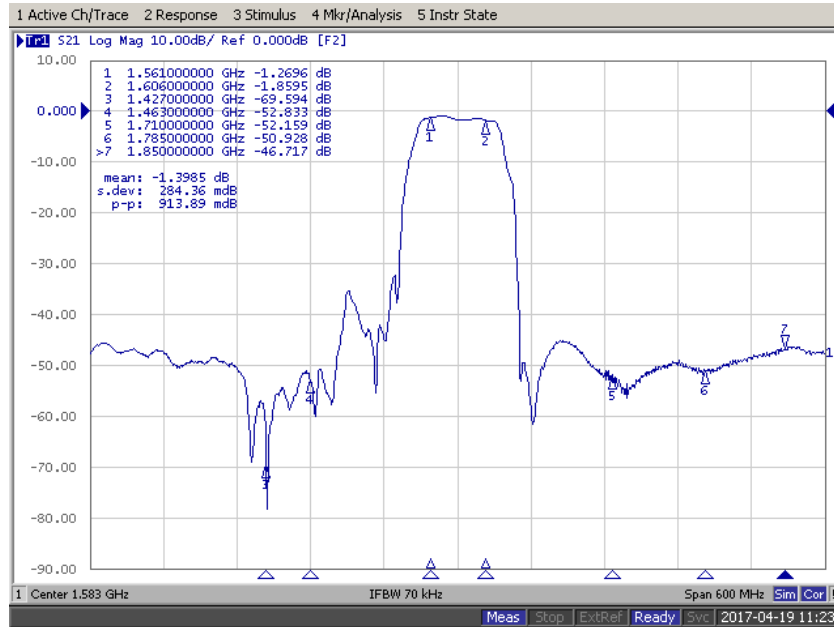
(Case D : Series C // Shunt L matching structure)


	ITF Co., Ltd. 102-901, Bucheon Technopark 364, Samjeong-Dong, Ojeong-Gu, Bucheon-City, Gyeonggi-Do, Korea 421-809	Part No.	F1G5S	
		Rev. Date	2017-4-19	
		Rev.	AS02	3/9

SAW Bandpass Filter F1G5S



Typical Performance (at 25°C)

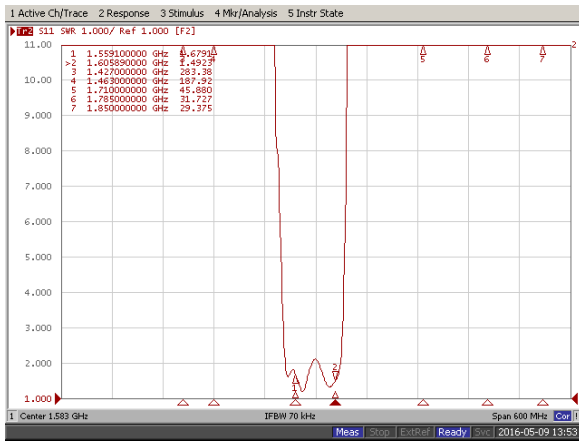


	ITF Co., Ltd. 102-901, Bucheon Technopark 364, Samjeong-Dong, Ojeong-Gu, Bucheon-City, Gyeonggi-Do, Korea 421-809	Part No.	F1G5S	
		Rev. Date	2017-4-19	
		Rev.	AS02	4/9

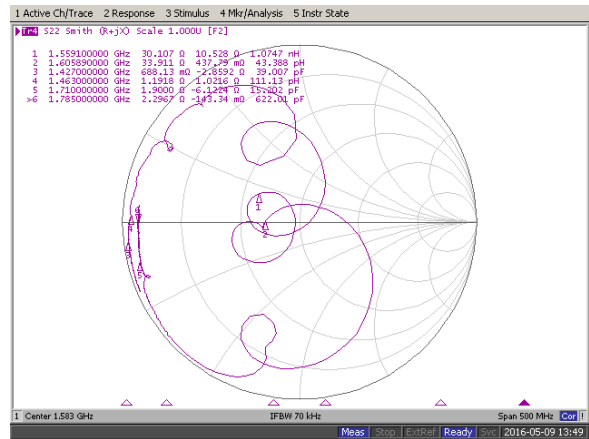
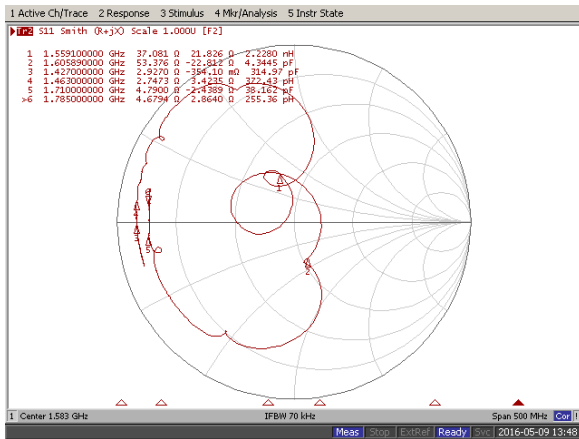
SAW Bandpass Filter F1G5S



Input / Output VSWR Charts



Input / Output Smith Charts



ITF Co., Ltd.
 102-901, Bucheon Technopark 364,
 Samjeong-Dong, Ojeong-Gu, Bucheon-City,
 Gyeonggi-Do, Korea 421-809

Part No.	F1G5S	
Rev. Date	2017-4-19	
Rev.	AS02	5/9

SAW Bandpass Filter F1G5S




Specifications (GPS + Glonass + Beidou)

Fc = 1588 MHz

Room Temperature : +25℃		Minimum	Typical	Maximum	Unit
Center Frequency (Fc)		-	1588	-	MHz
Insertion Loss	(1574.42 ~ 1576.42 MHz)	-	1.4	1.6	dB
	(1559.05 ~ 1563.15 MHz)		1.8	2.0	
	(1573.37 ~ 1577.47 MHz)		1.5	2.0	
	(1597.78 ~ 1605.66 MHz)		2.2	2.4	
VSWR	(1574.42 ~ 1576.42 MHz)	-	1.2	2.0	
	(1559.05 ~ 1563.15 MHz)		1.6	2.0	
	(1573.37 ~ 1577.47 MHz)		1.4	2.0	
	(1597.78 ~ 1605.66 MHz)		1.6	2.0	
Attenuation	0.3 ~ 824 MHz	42	45	-	dB
	824 ~ 925 MHz	42	45	-	
	1427 ~ 1453 MHz	40	45	-	
	1710 ~ 1785 MHz	40	45	-	
	1850 ~ 1910 MHz	40	44	-	
	1920 ~ 1980 MHz	39	44	-	
	2400 ~ 2500 MHz	43	45	-	
	2500 ~ 2570 MHz	37	42	-	
	2600 ~ 3000 MHz	30	38	-	
Input/Output Impedance		50		Ohms	

Operating Temperature : -40℃ ~ +105℃		Minimum	Typical	Maximum	Unit
Center Frequency (Fc)		-	1588	-	MHz
Insertion Loss	(1574.42 ~ 1576.42 MHz)	-	1.4	1.8	dB
	(1559.05 ~ 1563.15 MHz)		1.8	3.0	
	(1573.37 ~ 1577.47 MHz)		1.5	2.2	
	(1597.78 ~ 1605.66 MHz)		2.2	3.0	
VSWR	(1574.42 ~ 1576.42 MHz)	-	1.2	2.0	
	(1559.05 ~ 1563.15 MHz)		1.6	2.7	
	(1573.37 ~ 1577.47 MHz)		1.4	2.0	
	(1597.78 ~ 1605.66 MHz)		1.6	2.2	
Input/Output Impedance		50		Ohms	


	ITF Co., Ltd. 102-901, Bucheon Technopark 364, Samjeong-Dong, Ojeong-Gu, Bucheon-City, Gyeonggi-Do, Korea 421-809	Part No.	F1G5S	
		Rev. Date	2017-4-19	
		Rev.	AS02	6/9

SAW Bandpass Filter F1G5S



Notes :

- 1) All specifications are based on the matching schematic shown below, measured by Agilent Network analyzer and full 2 port calibration.
- 2) Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances

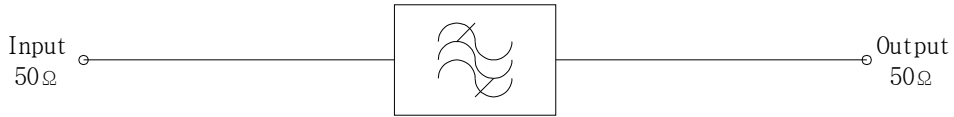
 <i>Integrated Technology Future</i>	ITF Co., Ltd. 102-901, Bucheon Technopark 364, Samjeong-Dong, Ojeong-Gu, Bucheon-City, Gyeonggi-Do, Korea 421-809	Part No.	F1G5S	
		Rev. Date	2017-4-19	
		Rev.	AS02	7/9

SAW Bandpass Filter F1G5S



Matching Schematic

(Actual matching values may vary due to PCB layout and parasitics)



Marking Configuration

B¹⁾ 044²⁾

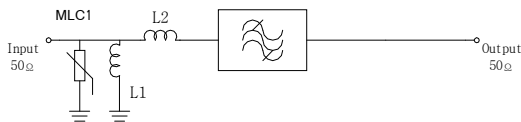
3) Series Number

4) Date Code

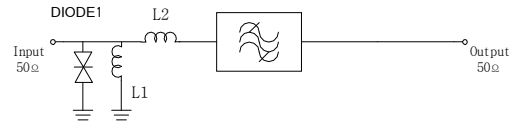
* Ink or Laser Marking available

ESD protection of SAW filters

- SAW filters are weak to Electric Static Discharge
- Generally, to overcome damages of ESD, recommend suitable matching structure. (Depending input impedance)

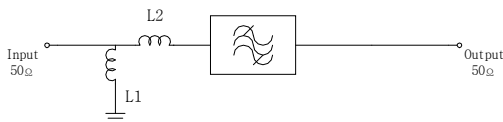


(Case A : MLC varistor used ESD matching structure)

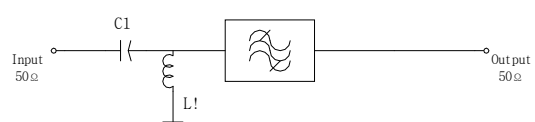


(Case B : Diode used ESD matching structure)

- In case weak ESD used simple L-C component matching structure. (Depending input impedance)



(Case C : Shunt L // Series L matching structure)



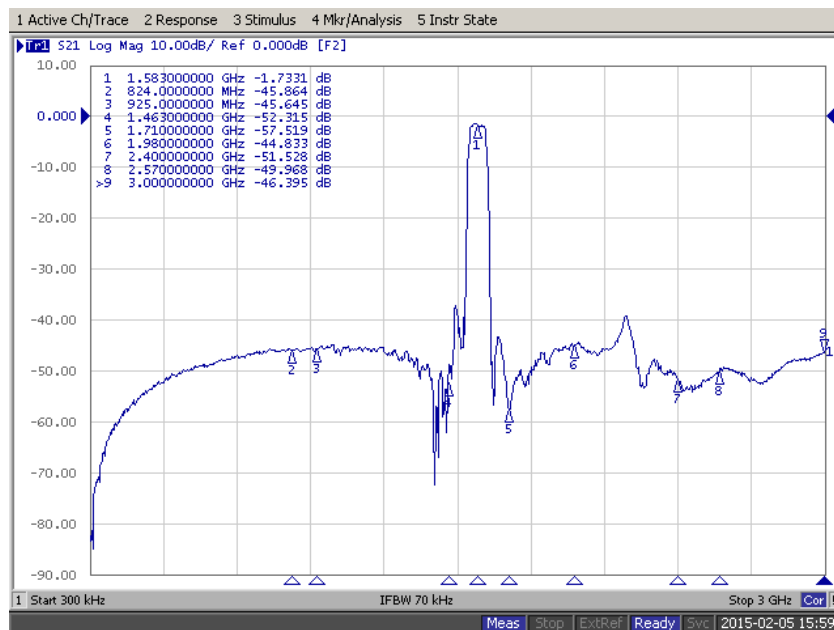
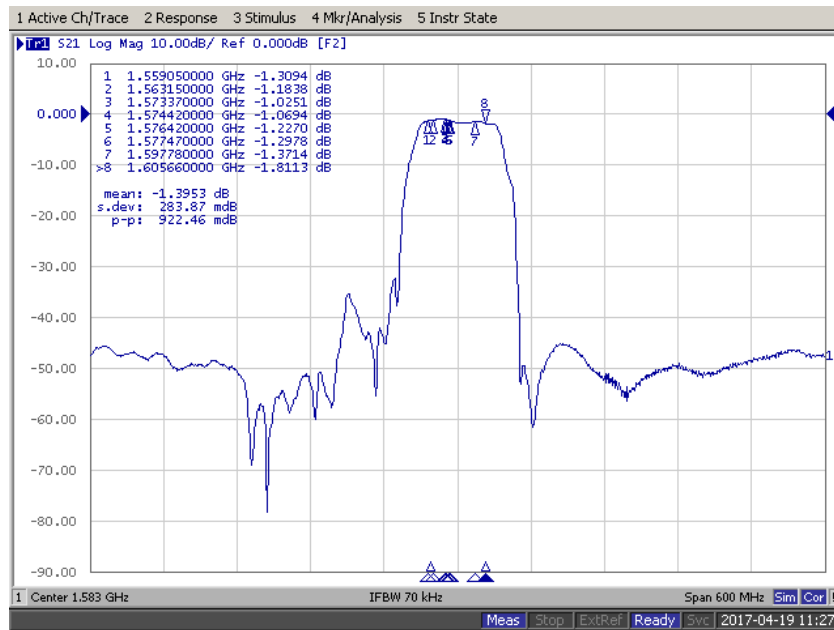
(Case D : Series C // Shunt L matching structure)


	ITF Co., Ltd. 102-901, Bucheon Technopark 364, Samjeong-Dong, Ojeong-Gu, Bucheon-City, Gyeonggi-Do, Korea 421-809	Part No.	F1G5S	
		Rev. Date	2017-4-19	
		Rev.	AS02	8/9

SAW Bandpass Filter F1G5S



Typical Performance (at 25°C)

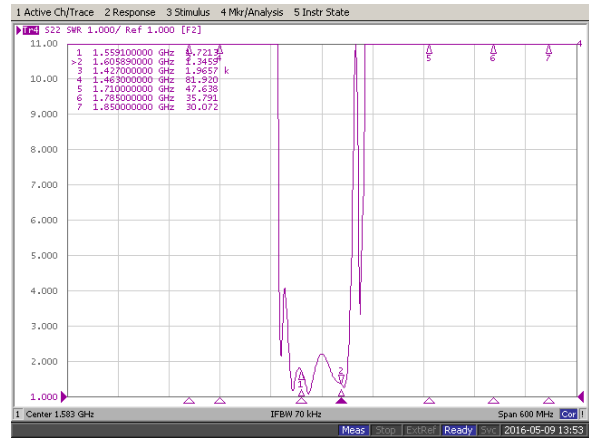
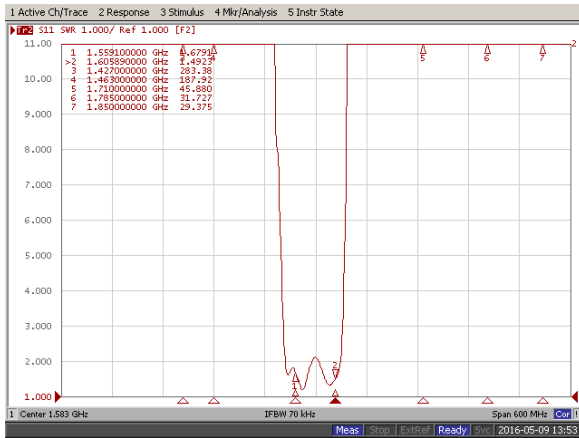


	ITF Co., Ltd. 102-901, Bucheon Technopark 364, Samjeong-Dong, Ojeong-Gu, Bucheon-City, Gyeonggi-Do, Korea 421-809	Part No.	F1G5S	
		Rev. Date	2017-4-19	
		Rev.	AS02	9/9

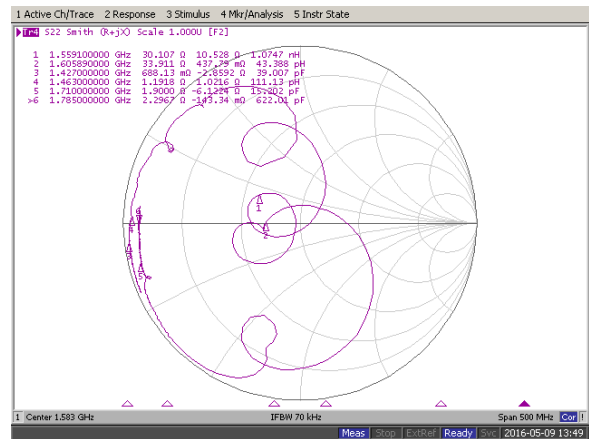
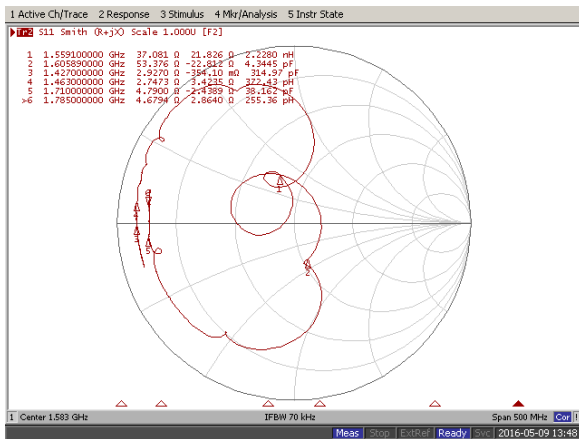
SAW Bandpass Filter F1G5S



Input / Output VSWR Charts



Input / Output Smith Charts



ITF Co., Ltd.
 102-901, Bucheon Technopark 364,
 Samjeong-Dong, Ojeong-Gu, Bucheon-City,
 Gyeonggi-Do, Korea 421-809

Part No.	F1G5S	
Rev. Date	2017-4-19	
Rev.	AS02	10/9