



**RF MORECOM
COREA**

5G (3.5GHz, C band, mmWave) High-end Filter Solution

Technology Innovation of RF Microwave Industry



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28GHz SIW filter

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Classic monoblock filter type

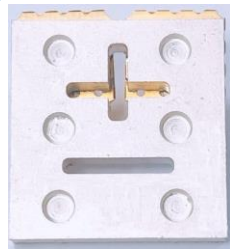
4

Classic Cavity filter type

Ceramic waveguide filter

3.5GHz, 3.7GHz

PRODUCT STRONG POINTS



<Ceramic Wave Filter>

01

Same Performance as
Cavity Connectorized Filter

02

Ultra Compact Size

03

Sharp Rejection and lowest
Insertion loss

04

Surface Mounted Type

05

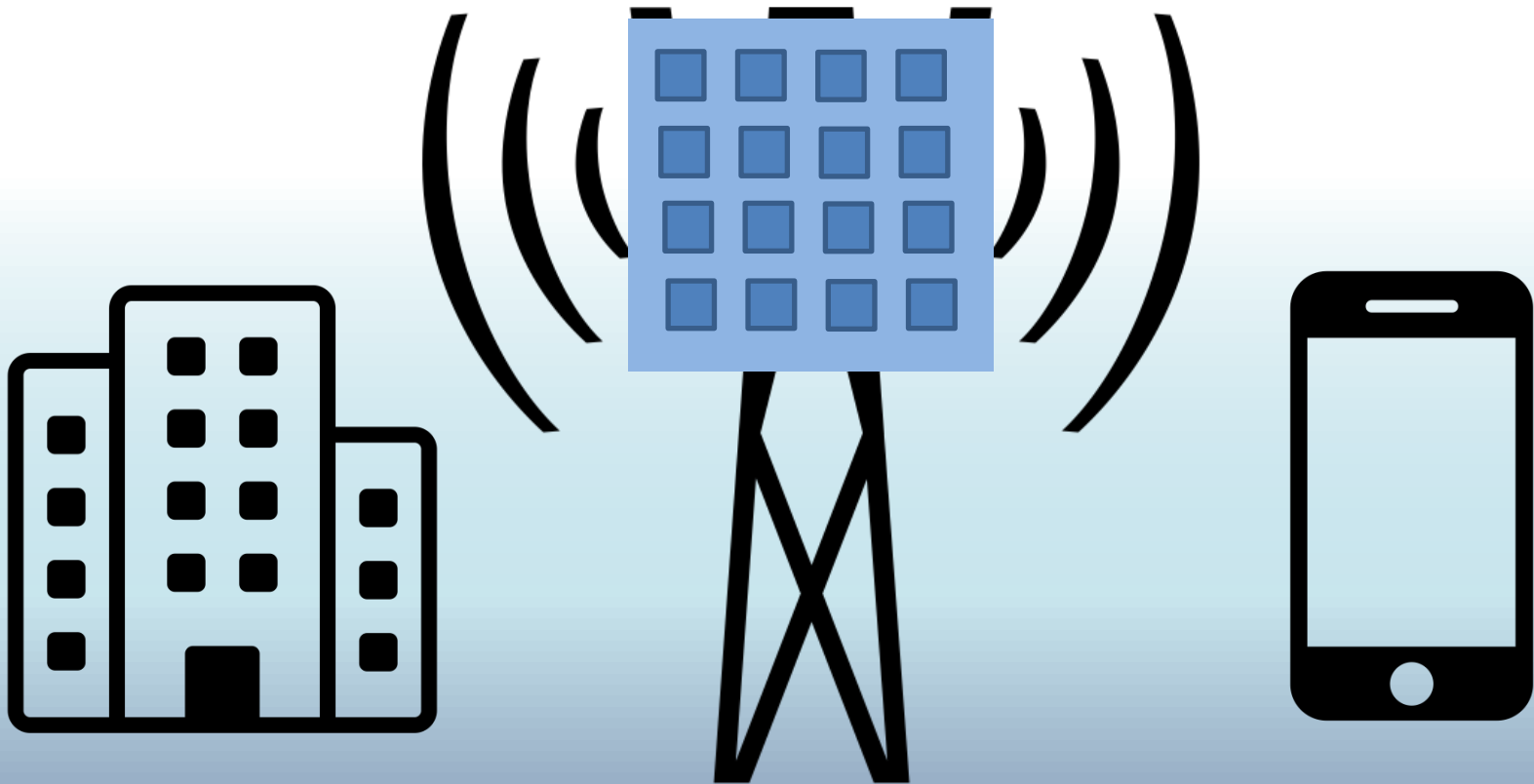
Lower cost than Cavity filter

Products Application

The Ceramic waveguide filter can use the 5G New Radio(NR) Massive MIMO base station. The Massive MIMO consist with 64 antennas (8x8) to dramatically improve wireless data speed and link reliability.

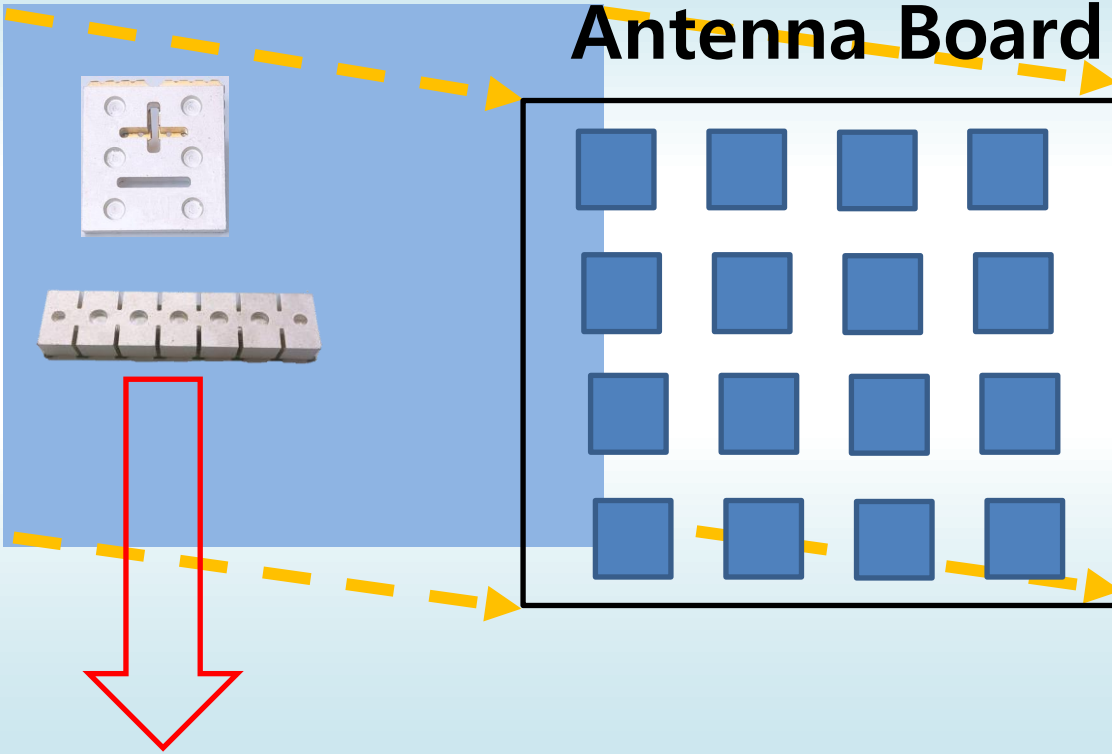
This technology is completely different from the traditional BTS architecture. Massive MIMO has hundreds of antenna elements and uses pre-coding technology to focus wireless energy on target mobile users to reduce radiant power. Focusing energy on certain users saves not only copy power, but also reduces interference with other users. This is particularly advantageous in the current cellular network, where interference is limited.

Massive MIMO Base Station



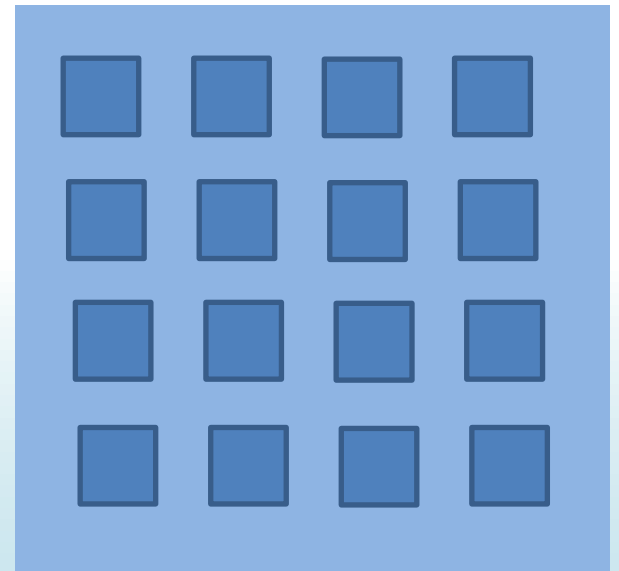
Products Application

Filter Board



Ceramic Waveguide Filter

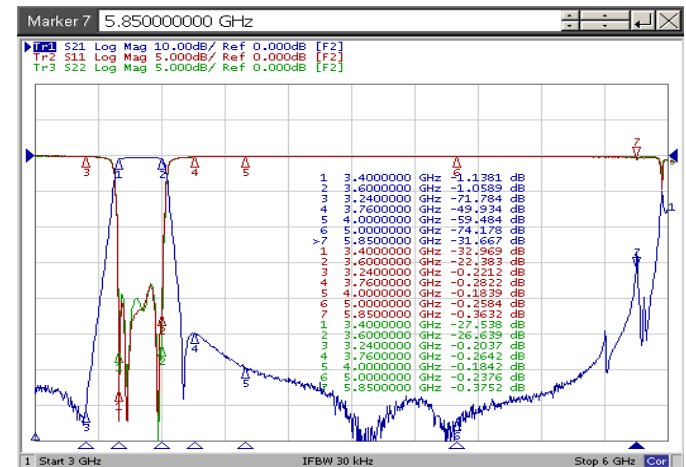
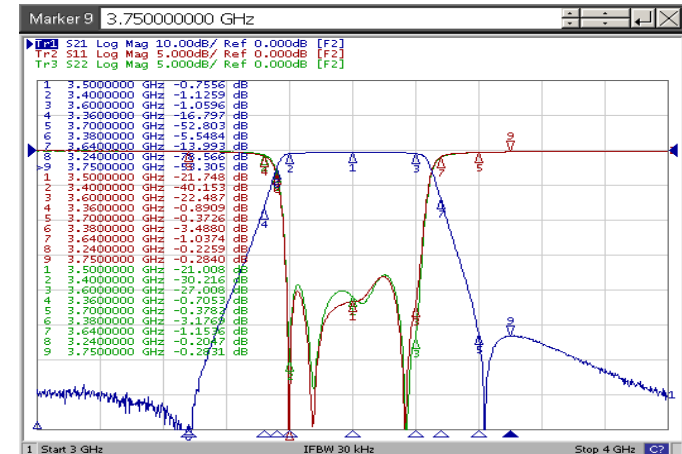
Massive MIMO



1-1. 3.5GHz 200MHz BandWidth

1. Electrical Specifications

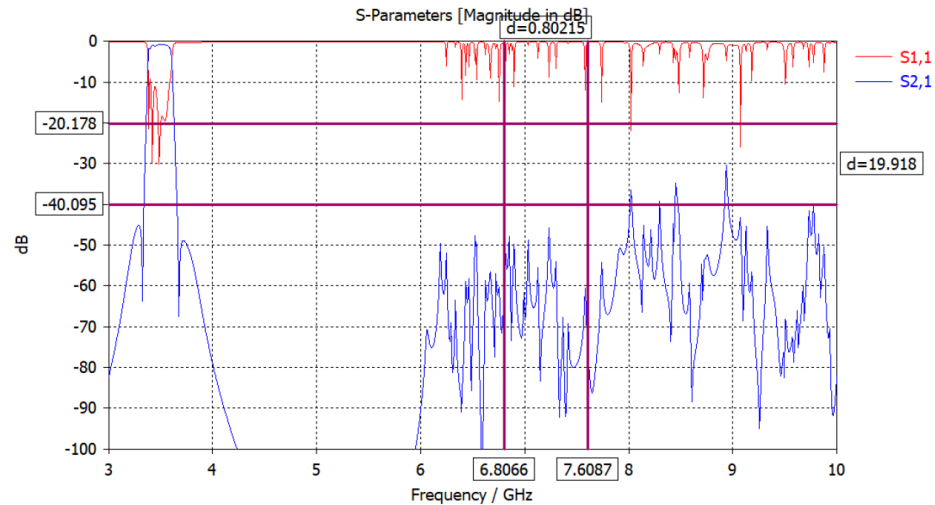
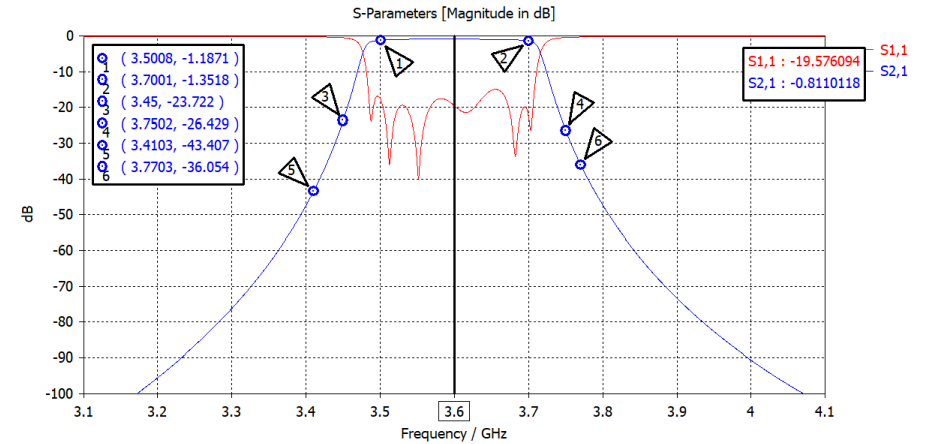
Descriptions		Specification
Frequency		3400-3600 MHz
Band Width		200MHz
Insertion loss		≤ 1.1 dB
Passband Ripple		≤ 0.5 dB
Return loss		≥ 15dB
Attenuation	DC - 2500 MHz	≥ 60 dB
	2500 - 2600 MHz	≥ 50 dB
	2600 - 3300 MHz	≥ 30 dB
	3340 - 3360 MHz	≥ 12 dB
	3640 - 3660 MHz	≥ 12 dB
	3660 - 3700 MHz	≥ 20 dB
	3700 - 4000 MHz	≥ 50 dB
	4000 - 5000 MHz	≥ 50 dB
5000 - 5850 MHz		≥ 25 dB
Dimension(mm)		30 x 30 x 8 or 65 x 15 x 8
Power handling		20 watt
Temperature		-40 ~ 85 °C



1-2. 3.6GHz 200MHz BandWidth

1. Electrical Specifications

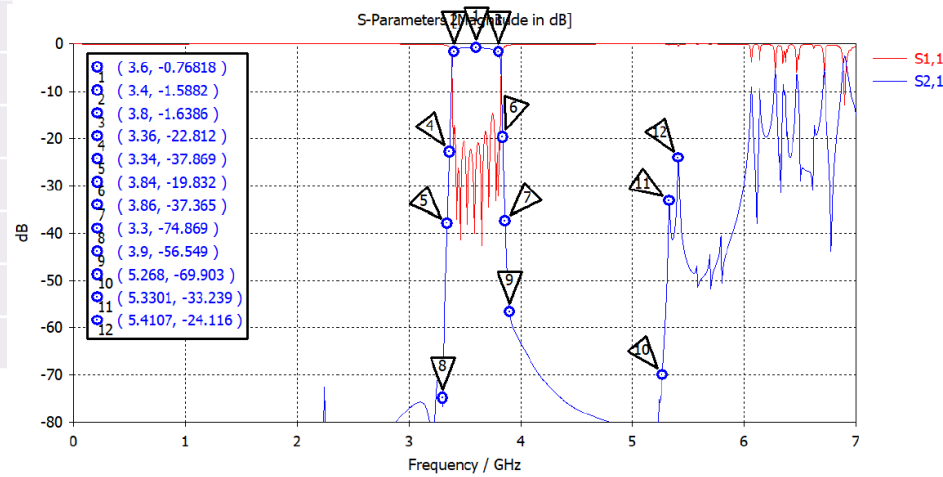
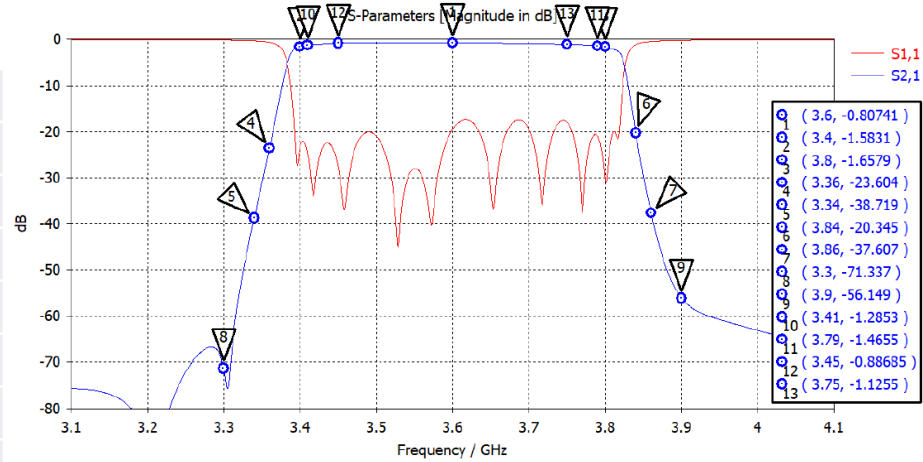
Descriptions		Specification
Center Frequency		3500-3700MHz
Band Width		200MHz
Insertion loss		≤ 1.35 dB
Passband Ripple		≤ 1.5 dB
Return loss		≥ 17 dB
Attenuation	DC - 1915.7 MHz	≥ 60 dB
	1915.7 - 3300 MHz	≥ 53 dB
	3300 - 3410 MHz	≥ 40 dB
	3410 - 3450 MHz	≥ 20 dB
	3750 - 3770 MHz	≥ 20 dB
	3770 - 4400 MHz	≥ 35 dB
	4400 - 5000 MHz	≥ 50 dB
	5000 - 7400 MHz	≥ 35 dB
	7400 - 11000 MHz	≥ 15 dB
	11000 - 18500 MHz	≥ 5 dB
Dimension(mm)		45 x 12 x 7
Power handling		Avg 10 Watt
Temperature		-40 ~ 105 °C



1-3. 3.6GHz 400MHz BandWidth

1. Electrical Specifications

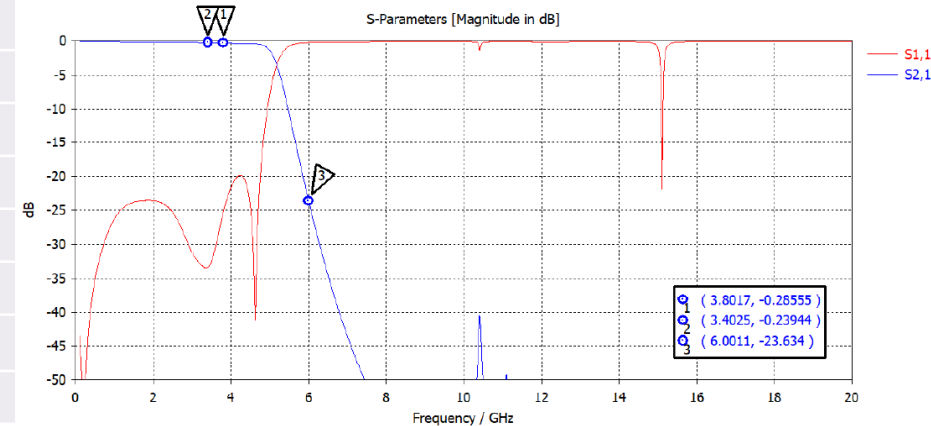
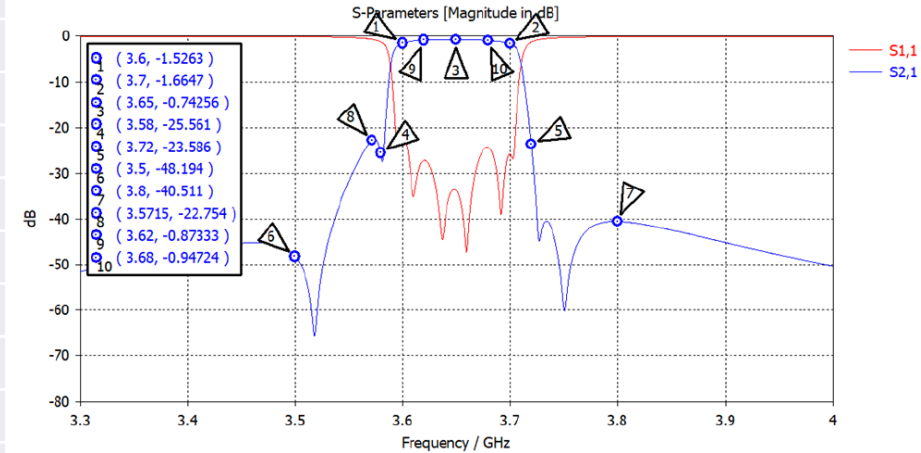
Descriptions		Specification
Center Frequency		3400-3800MHz
Band Width		400MHz
Insertion loss		≤ 3.0 dB
Passband Ripple		≤ 1.5 dB
Return loss		≥ 14 dB
Attenuation	DC - 3300 MHz	≥ 60 dB
	3300 - 3340 MHz	≥ 30 dB
	3340 - 3360 MHz	≥ 15 dB
	3840 - 3860 MHz	≥ 15 dB
	3860 - 3900 MHz	≥ 30 dB
	3900 - 4400 MHz	≥ 50 dB
4400 - 5000 MHz		≥ 60 dB
Dimension(mm)		42 x 17 x 7
Power handling		Avg 10 Watt
Temperature		-40 ~ 85 °C



1-4. 3.65 GHz 100MHz BandWidth

1. Electrical Specifications

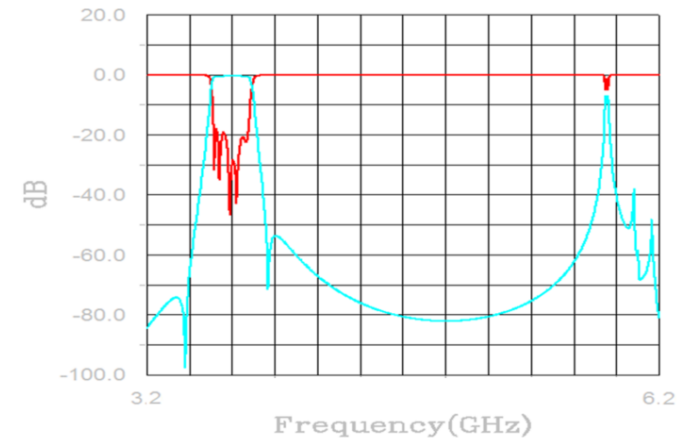
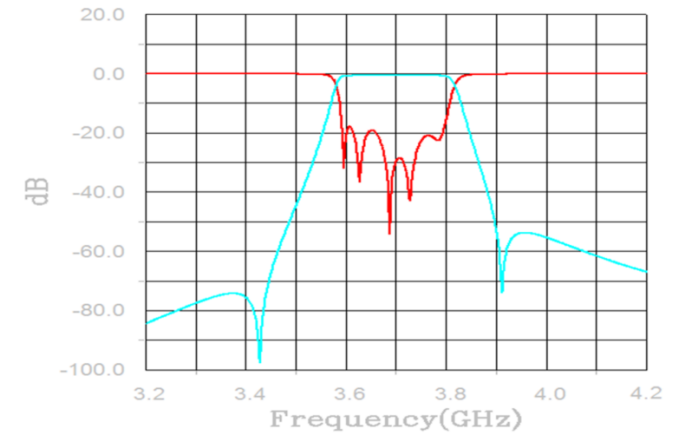
Descriptions		Specification
Center Frequency		3600-3700MHz
Band Width		100MHz
Insertion loss		≤ 1.6 dB
Passband Ripple		≤ 1.0 dB
Return loss		≥ 18dB
Attenuation	9KHz - 2170 MHz	≥ 70 dB
	2170 - 2690 MHz	≥ 60 dB
	2690 - 3500 MHz	≥ 35 dB
	3500 - 3580 MHz	≥ 20 dB
	3720 - 3800 MHz	≥ 20 dB
	3800 - 4400 MHz	≥ 35 dB
	4400 - 5925 MHz	≥ 55 dB
	5925 - 7400 MHz	≥ 30 dB
	7400 -12750 MHz	≥ 25 dB
12750 - 18500 MHz	≥ 5 dB	
Dimension(mm)		42 x 18 x 7
Power handling		Avg 8 Watt
Temperature		-40 ~ 100 °C



1-5. 3.7GHz 200MHz BandWidth

1. Electrical Specifications

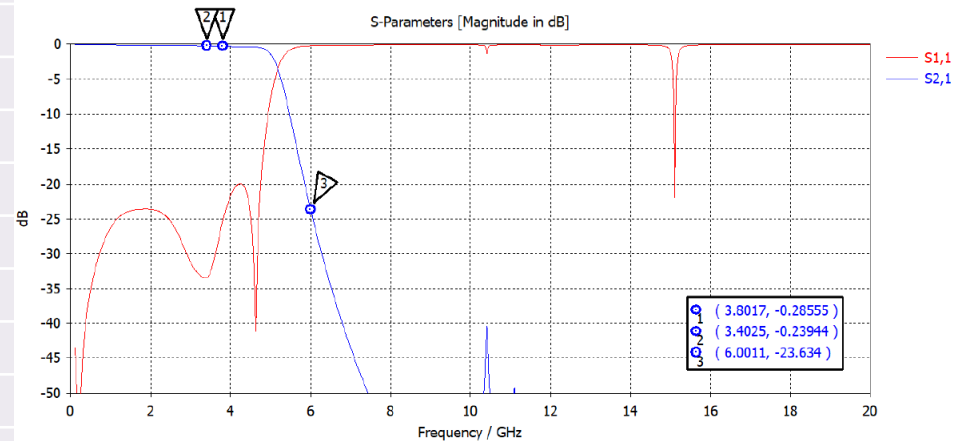
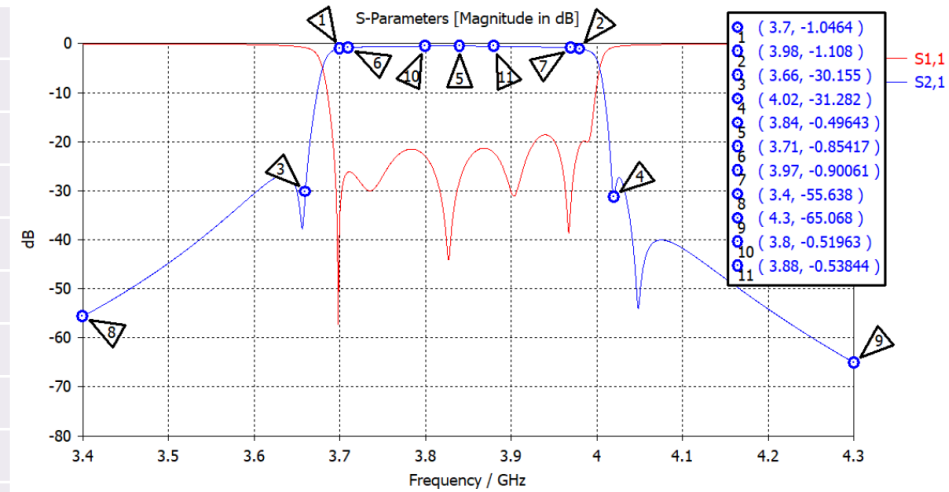
Descriptions		Specification
Center Frequency		3600-3800MHz
Band Width		200MHz
Insertion loss		≤ 1.1 dB
Passband Ripple		≤ 0.5 dB
Return loss		≥ 14 dB
Attenuation	DC - 2700 MHz	≥ 60 dB
	2700 - 2800 MHz	≥ 50 dB
	2800 - 3500 MHz	≥ 30 dB
	3540 - 3560 MHz	≥ 12 dB
	3840 - 3860 MHz	≥ 12 dB
	3860 - 3900 MHz	≥ 20 dB
	3900 - 4200 MHz	≥ 50 dB
	4200 - 5800 MHz	≥ 40 dB
Dimension(mm)	30 x 30 x 8 or 65 x 15 x 8	
Power handling	20 watt	
Temperature	-40 ~ 85 °C	



1-6. 3.84GHz 280MHz BandWidth

1. Electrical Specifications

Descriptions		Specification
Center Frequency		3700-3980MHz
Band Width		280MHz
Insertion loss		≤ 1.5 dB
Passband Ripple		≤ 1.0 dB
Return loss		≥ 14 dB
Attenuation	1 - 2690 MHz	≥ 67 dB
	2690 - 3400 MHz	≥ 40 dB
	3400 - 3660 MHz	≥ 25 dB
	4020 - 4400 MHz	≥ 25 dB
	4400 - 4550 MHz	≥ 42 dB
	4550 - 4865 MHz	≥ 37 dB
	4865 - 5000 MHz	≥ 60 dB
	5000 - 5380 MHz	≥ 35 dB
	5380 - 7400 MHz	≥ 28 dB
	7400 - 15965 MHz	≥ 25 dB
15965 - 18500 MHz	≥ 5 dB	
7400 - 19900 MHz	≥ 20 dB	
Dimension(mm)		42 x 18 x 7
Power handling		Avg 10 Watt
Temperature		-20 ~ 95 °C

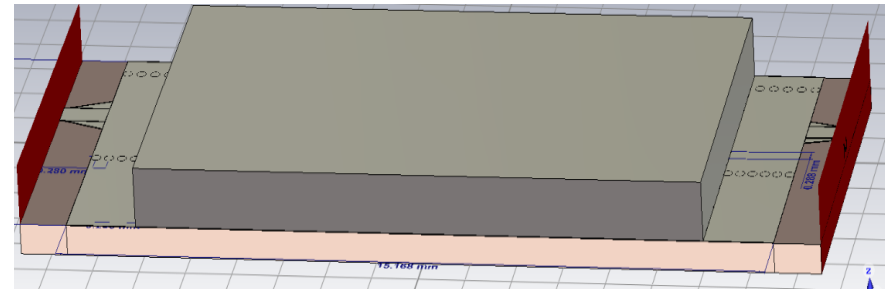


28GHz Substrate Integrated Waveguide filter

2-1. RMS500B2800 SIW filter

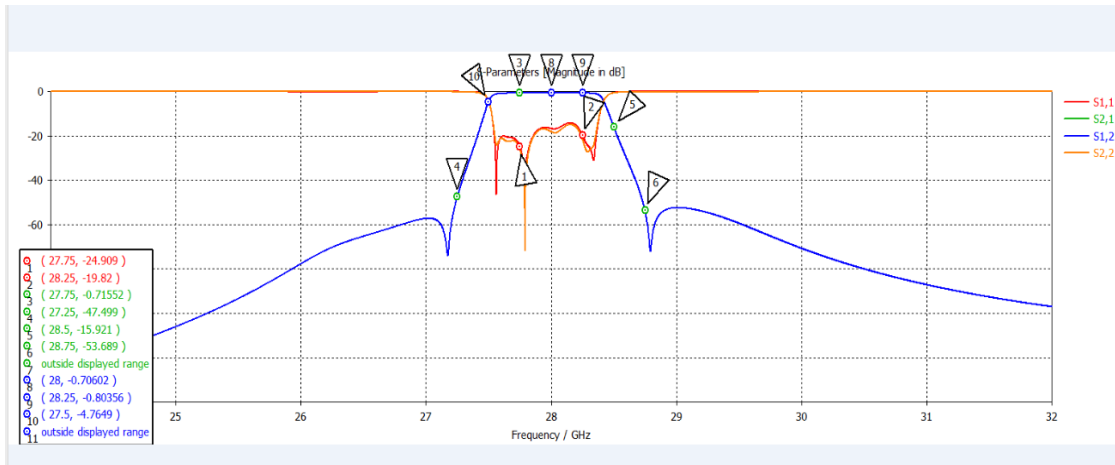
1. Electrical Specifications

Parameter	Specification
Frequency Range	27.75GHz~28.25GHz
Return Loss	15dB Min.
dB value over Frequency (27.25~28.75GHz)	40dB Min.@27.25GHz
	2.5dB Max.@27.5GHz
	1.5dB Max. @27.75GHz
	1.5dB Max.@28.25GHz
	2dB Max.@28.5GHz
	30dB Min.@28.75GHz



Size:29X13X6mm

2. Simulation data

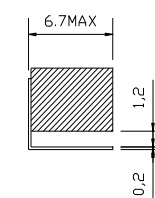
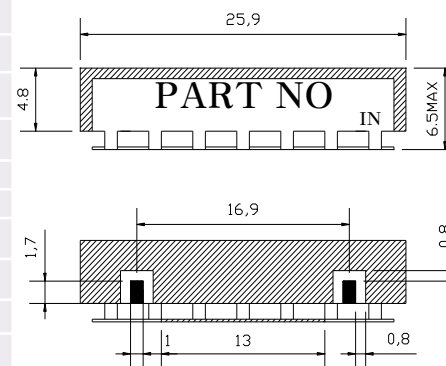


Monoblock Filter Type

3-1. RM150B3625S6.5R6NP

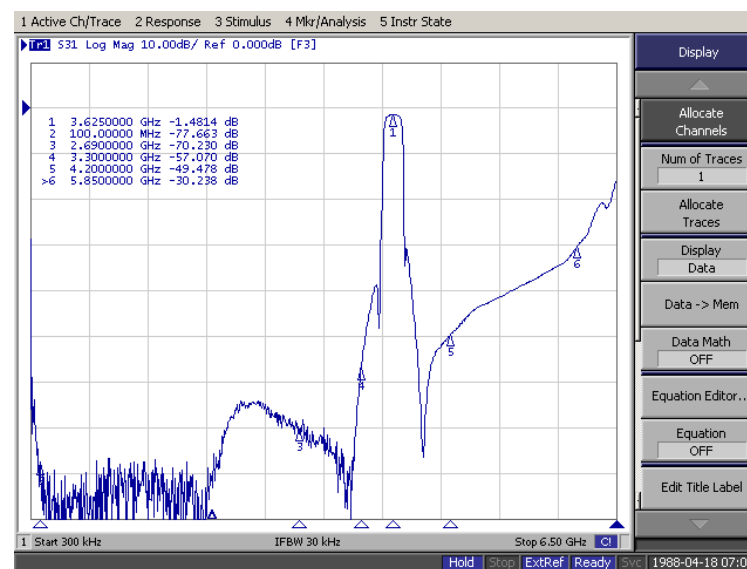
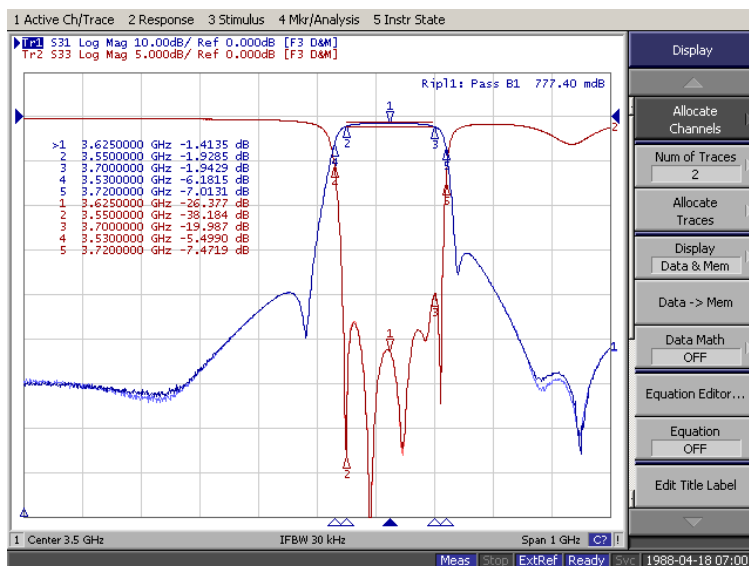
1. Electrical Specifications

Descriptions	Specification	Remark
Center frequencies	3625MHz	
Band width	150MHz (3550~3700)	
Insertion Loss	2.0 dB max.	
Ripple	1.0 dB max.	
V.S.W.R	2.0:1 dB max.	
Attenuation	@DC~2690 MHz	40 dB min.
	@2690~3300 MHz	25 dB min.
	@3300~3530 MHz	6 dB min.
	@3720~4200 MHz	6 dB min.
	@4200~5850 MHz	30 dB min.
Input Power	3W max	
In/Out Impedance	50 ohm	
Temperature range	-40~+85°C	
Size	25.9 x 6.5 x 6.7 mm	



IN / OUT TOLERANCE UNLESS SPECIFIED : +/-0.3 mm
 GROUND

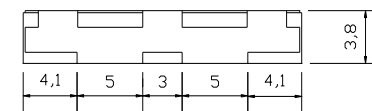
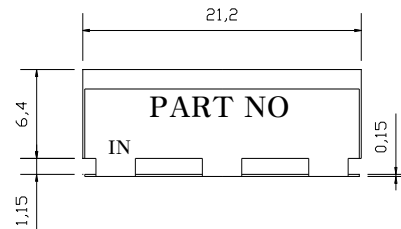
2. Plot Data



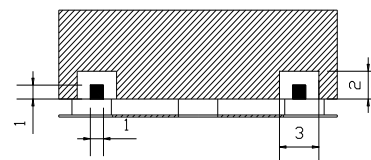
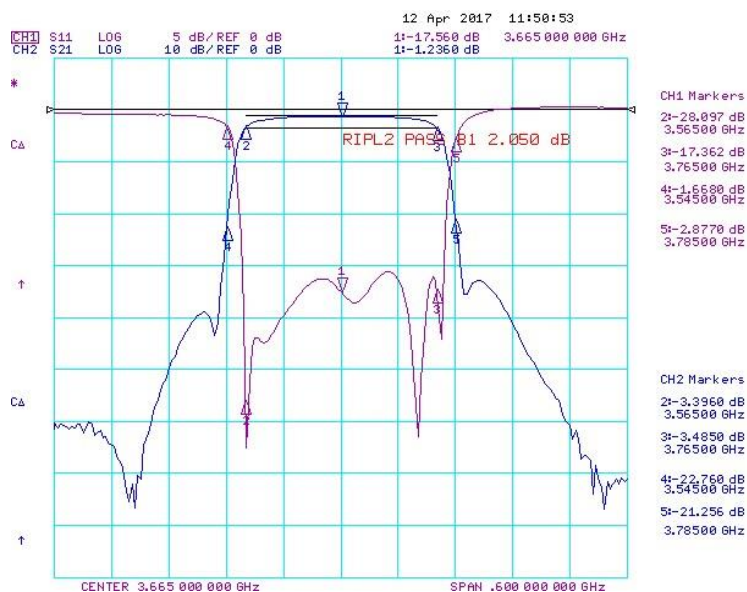
3-2. RM200B3500M48NP

1. Electrical Specifications

Descriptions	Specification	Remark
Center frequencies	3500MHz	
Band width	200MHz	
Insertion Loss	4.5 dB max.	
Ripple	2.0 dB max.	
Return Loss	13 dB max.	
Attenuation	@3380 MHz	18 dBc min.
	@3620 MHz	18 dBc min.
Input Power	3W max	
In/Out Impedance	50 ohm	
Temperature range	-40~+85°C	
Size	21.2 x 7.55 x 3.8 mm	



2. Plot Data

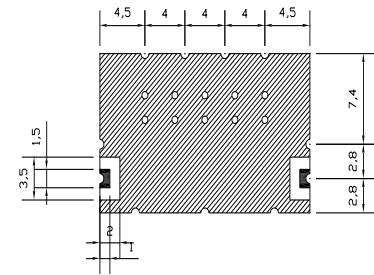
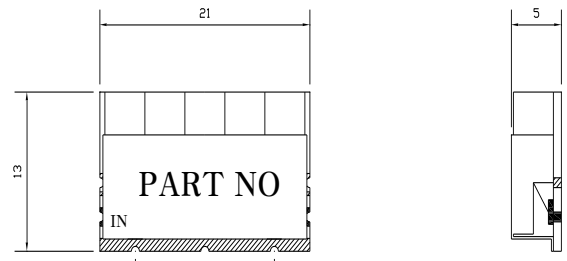


IN / OUT
 GROUND
 TOLERANCE UNLESS SPECIFIED : +/-0.3 mm

3-3. RM480B3500S45A

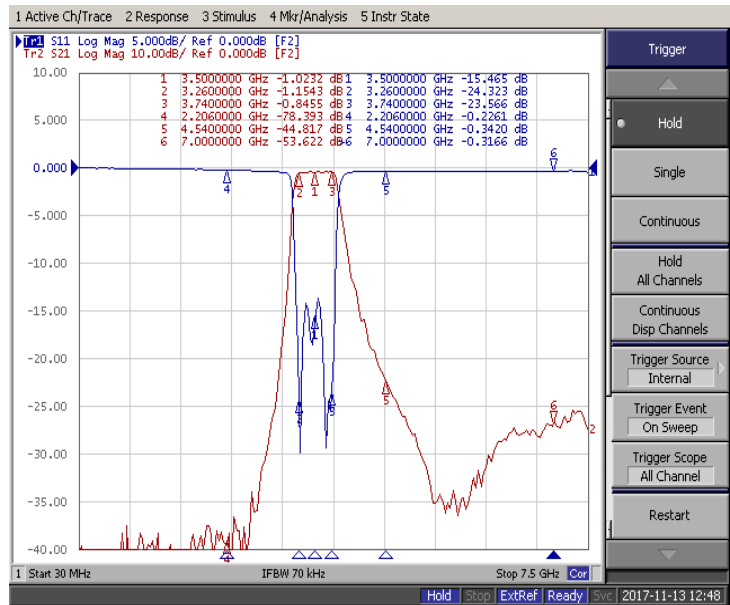
1. Electrical Specifications

Descriptions	Specification	Remark
Center frequencies	3500MHz	
Band width	480MHz	
Insertion Loss	3.0 dB max.	
Ripple	Over240MHz, 0.5 dB max. Over480MHz, 0.7 dB max.	
Return Loss	10 dB max.	
Attenuation	@DC~2206MHz	40 dBc min.
	@4540~7000 MHz	40 dBc min.
Input Power	3W max	
In/Out Impedance	50 ohm	
Temperature range	-40~+85°C	
Size	21 x 13 x 5 mm	



IN / OUT
 GROUND
 TOLERANCE UNLESS SPECIFIED : +/-0.2 mm

2. Plot Data

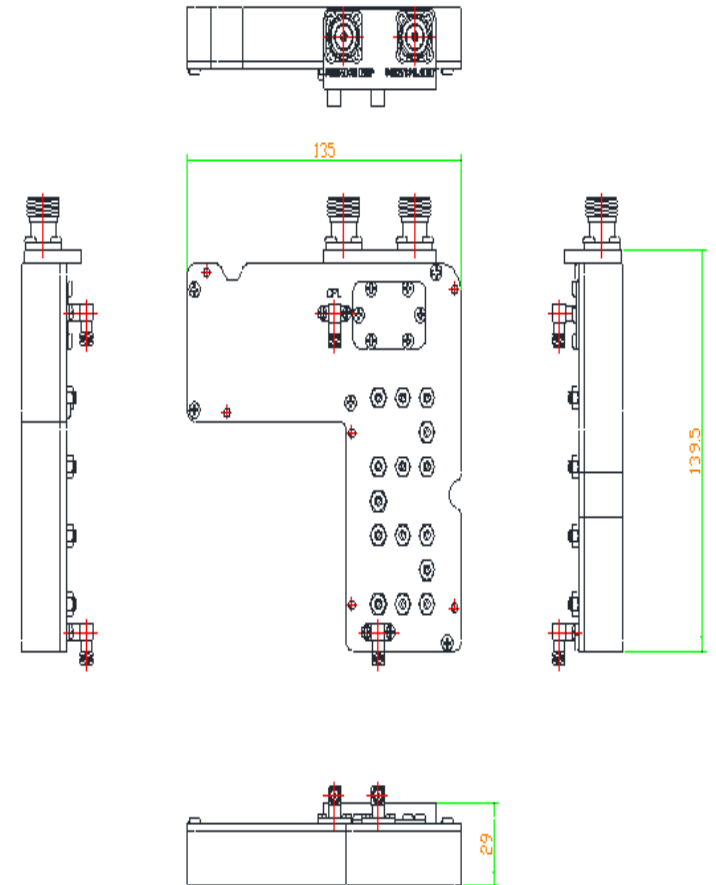


3.5GHz combined Cavity Filter

4-1. 3.5GHz combined Diplexer

1. Electrical Specifications

Descriptions	Specification	
Frequency Range	3600~ 3800MHz	800~2700MHz
Insertion Loss	1dB	1dB
Ripple	0.8dB	1dB
Return Loss	18 dB	18 dB
Coupling	30dB ±1.5dB	
Directivity	10dBc	
Attenuation	3400MHz ~ 5000MHz	≥30 dB
	100MHz ~ 3500MHz	-
	3500MHz ~ 3550MHz	35dB
	3850MHz ~ 6000MHz	-
	3577MHz	5dB(Room)
	3823MHz	5dB(Room)
	6500MHz ~ 8000MHz	≥30 dB
Absolute Delay	20nsec	20nsec
Input Power	AVG 5W	AVG 1W
In/Out Impedance	50Ω	
Temp. / Humidity.	- 30°C ~ 70°C(0% ~ 90%)	
Vibration	1G 10 ~ 150Hz, 0.1 OCTAVES / MIN	
RoHS	RoHS apply	
Size	135 x 139.5 x 29 mm	



2. Block Diagram

