



# 2-18 GHz RECONFIGURABLE FILTER BANK

## INTRODUCTION

- Eight 2 GHz Channels
- 256 Filter States
- Fast, <100 ns Switching Speed
- Low Noise Figure, 15 dB nominal

BSC have independently developed a fully reconfigurable adaptive filter solution, designed for fast & seamless switching into any of 256 filter states across the 2-18 GHz range.

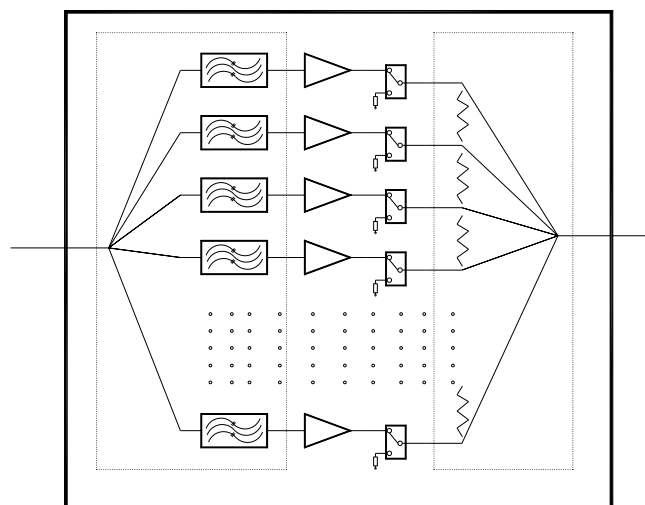
Ideally suited to EW front-end preselection or protection, any combination of bandpass and bandstop states can be selected almost instantly.



Each 2 GHz channel can be switched in (bandpass) and out (bandstop) of the signal path with a switching time of less than 100 ns. DC power and 8-bit TTL control is supplied through a standard 15-pin MDM connector.

In the crowded spectrum of the future, front-end flexibility is of increasing importance. Not limited to 2-18 GHz or equal channel widths, the same core architecture may be used in more specific bands, for example at VHF/UHF frequencies. This makes the system equally as suited to EW as it is to Mil Comms applications, where sampling sensitivity or frequency-agile protocols respectively are key to system function.

## TYPICAL ARCHITECTURE





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### SPECIFICATION

Channel	Nominal Passband	Offset from Band Edge	Useable Passband	Lower 50 dB Rejection	Upper 50 dB Rejection
1	2—4 GHz	- 250 MHz	2.00—3.75 GHz	N/A	5 GHz
2	4—6 GHz	+/- 250 MHz	4.25—5.75 GHz	3 GHz	7 GHz
3	6—8 GHz	+/- 250 MHz	6.25—7.75 GHz	5 GHz	9 GHz
4	8—10 GHz	+/- 300 MHz	8.30—9.70 GHz	7 GHz	11 GHz
5	10—12 GHz	+/- 300 MHz	10.30—11.70 GHz	9 GHz	13 GHz
6	12—14 GHz	+/- 400 MHz	12.40—13.60 GHz	11 GHz	15 GHz
7	14—16 GHz	+/- 400 MHz	14.40—15.60 GHz	13 GHz	17 GHz
8	16—18 GHz	+ 400 MHz	16.40—18.00 GHz	15 GHz	N/A

Characteristic	Specification
Passband Insertion Loss:	0 dB nominal, +/- 2.5 dB max (+/- 0.05 dB/°C deviation)
Passband VSWR:	2.5:1 nominal, 3:1 max
Passband Group Delay Variation:	6 ns max
Noise Figure:	15 dB nominal, 17 dB max
P1dB (input):	+5 dBm min
IP3 (input):	+ 15 dBm min
Reconfiguration Time:	100 ns max
Operating Temperature:	-30°C to +70°C
Control Method:	8-bit TTL
DC Power Supply:	+12 V / -12 V
Current Consumption:	+12V: 1.5 A max -12V: 100 mA max
RF Connectors:	SMA Female
DC & Control Connector:	15-pin MDM, male contact
External Dimensions (Excluding Connectors):	130 x 105 x 16 mm typical

Pin	Function	Pin	Function	Pin	Function
1	GND	6	CH 2	11	CH 5
2	+12 V	7	CH 3	12	CH 6
3	+12 V	8	GND	13	CH 7
4	-12 V	9	GND	14	CH 8
5	CH 1	10	CH 4	15	GND

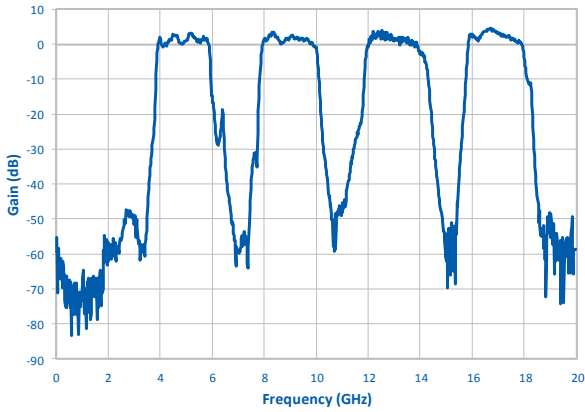




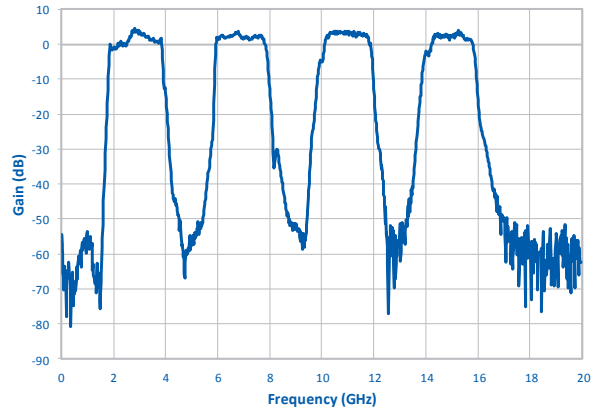
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## MEASURED PERFORMANCE DATA

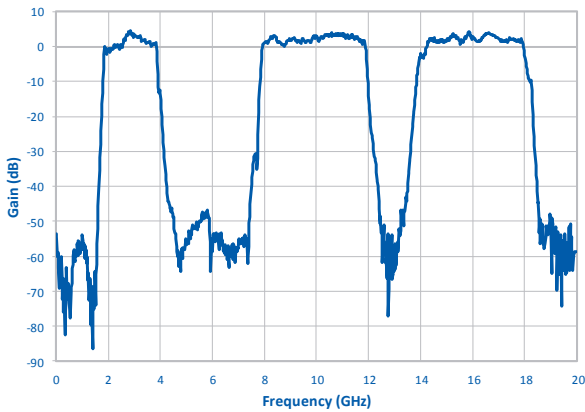
S21 – Even Channels Selected



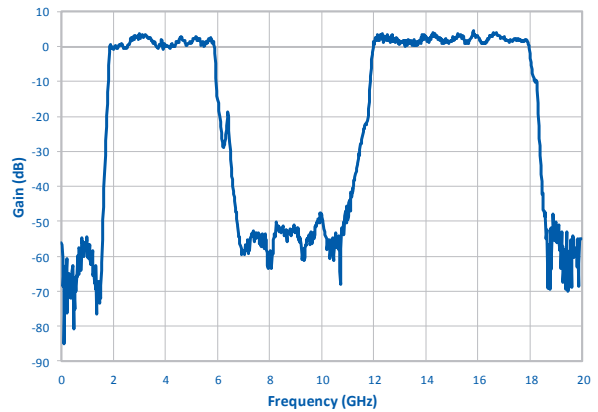
S21 – Odd Channels Selected



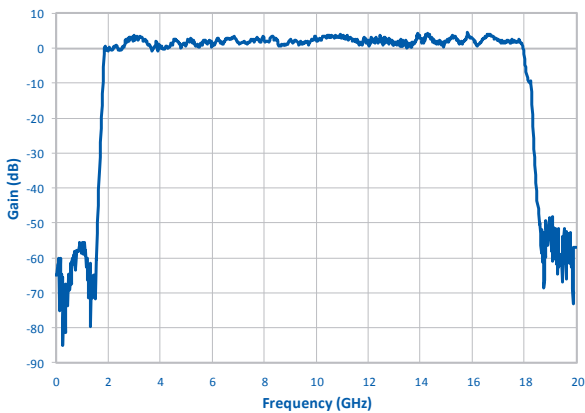
S21 – Triple-Bandpass State



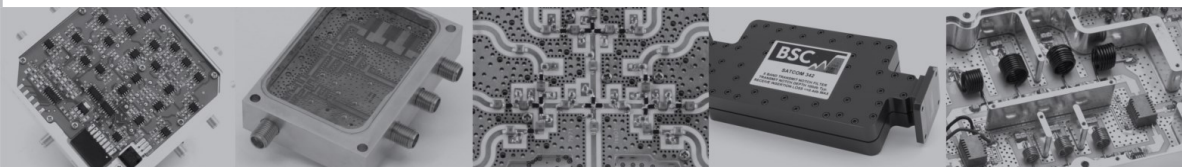
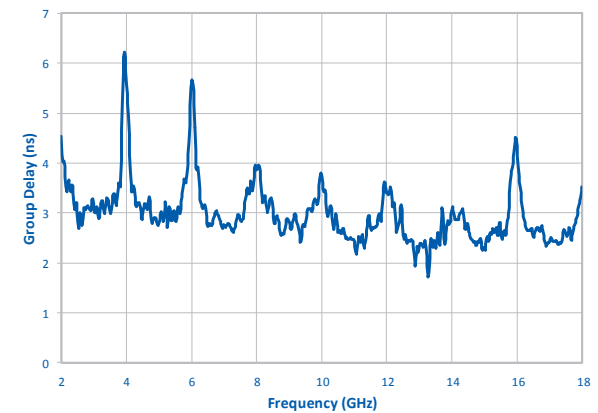
S21 – Dual Bandpass & Wide Notch



S21 – All-Pass State



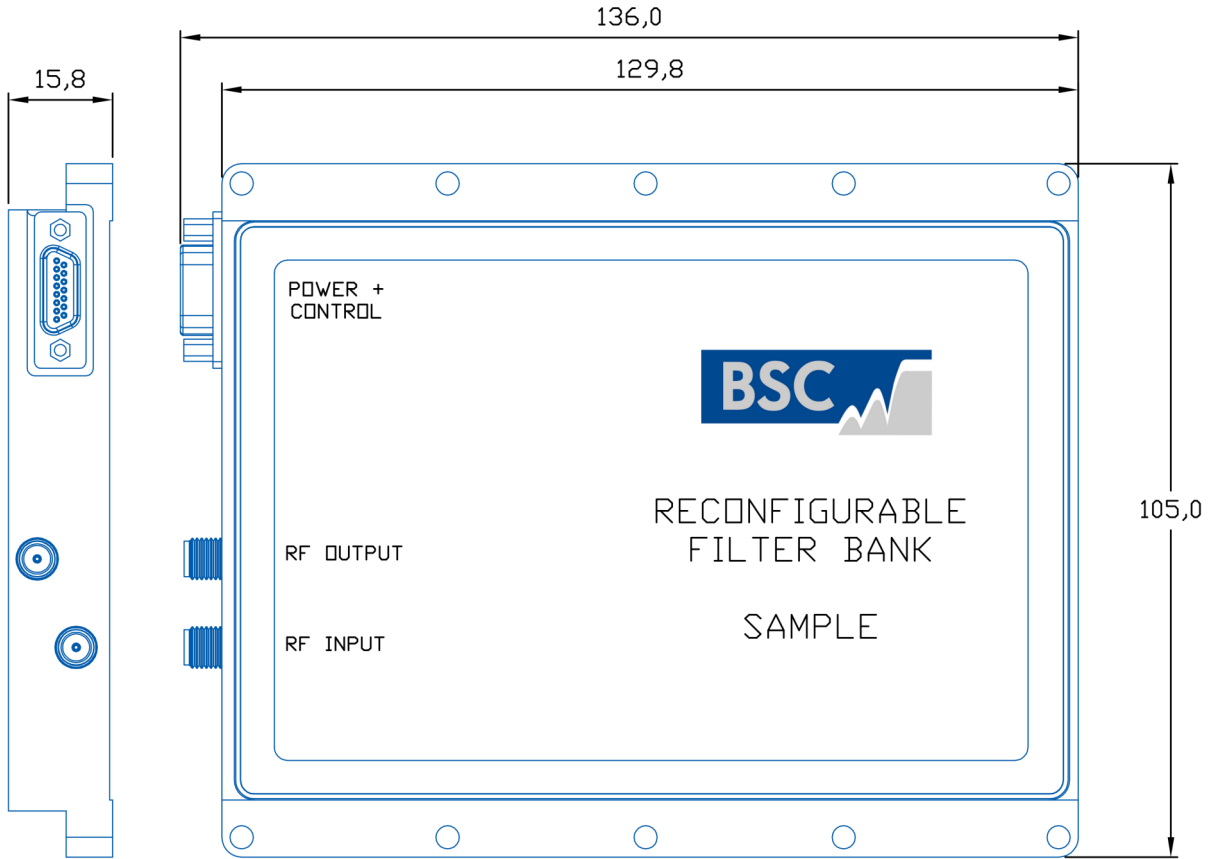
Group Delay – All-Pass State





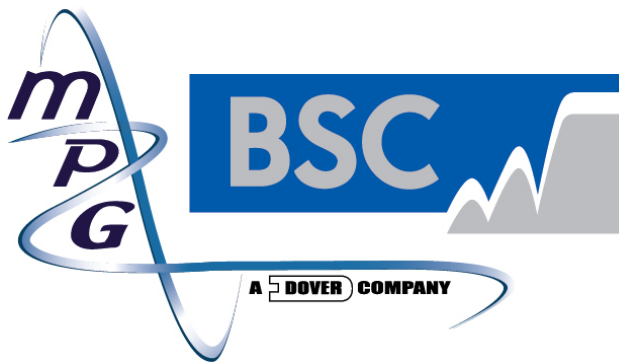
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## OUTLINE



TECHNICAL DATA SHEET

BSCFILTERS.COM



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