

# SVP

BROADCAST  
MICROWAVE

**FC**  
**Channel Filters**  
**FC-2010**  
**FC-3020**

**MANUAL V1.1**



**Dear Customer,**

We would like to thank you for choosing this item and welcome you to the SVP's growing family of products.

We are sure that the addition of this item to your existing installation will cause you nothing but satisfaction.

Please read these instructions carefully, and keep them at hand in case you have to refer to them.

## Contents

### ***Chapter 1: Introduction***

This first chapter provides general information regarding SVP Broadcast Microwave's channel filters.

### ***Chapter 2: FC-2010 Channel filter***

This second chapter provides a description, technical and mechanical information regarding the FC-2010 filter for COFDM applications.

### ***Chapter 3: FC-3020 Narrowband filter***

In this chapter the a detailed description of the FC-3020 narrowband filter is provided together with technical and mechanical information.

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# 1 Introduction

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SVP provides a wide range of RF and microwave filters for different frequency bands with a wide variety of features.

Channel filters can be used either in the transmitter or in the receiver site.

In the transmitter site, when using high output power amplifiers, the use of channel filters is necessary. The power amplifiers usually increase the noise in the adjacent channels, the use of channel filters is necessary in order that the transmitted signal meets the recommendations for noise emissions in adjacent channels.

In the receiver site band-pass filters are commonly used, but for repeater systems or repeater stations, especially when the received and transmitted signal share same frequency band, channel filters should be used in the receiver site. The receiver is protected from being saturated by the transmitted signal.

SVP Broadcast Microwave filters are made of aluminium and are weatherproof.

## 2 FC-2010 Channel Filter

### 2.1 Description

SVP provides a wide range of RF and microwave filters for different frequency bands with a wide variety of different features.

The FC-2010 single-channel filter has a bandwidth of 10MHz. The central frequency of the filter is set upon request.

The pass band can be tuned in 100MHz frequency range. The insertion losses are lower than 1,6dB; also, the attenuation at +/- 50 MHz is 70 dB.

This filter is ideal for transmitting COFDM signals as it is usually installed at the output of a power amplifier.

When working with high-powered transmission amplifiers, this filter is necessary to meet the recommendations for noise emission in adjacent channels.

This filter can also be used in the receiver site.



Figure 2.1 FC-2010 Filter

### 2.2 Technical Features

The table below shows main features of the FC-2010 filter

Table 2.1 FC-2010 Characteristics

Item	Specification
Frequency range	From 2.0 to 2.6 GHz (Adjustable in 100MHz range)
Bandwidth	10MHz
Insertion loss	<1.6 dB
Adaptation	>18dB
Attenuation at $\pm 50$ MHz	>70 dB
Power max	50 Watt
Connectors	N female
Size	222x51x28
Temperature range	-30°C to +50°C

The figure below shows the performance of the FC-2010 Filter. S11 and S21 parameters have been measured.

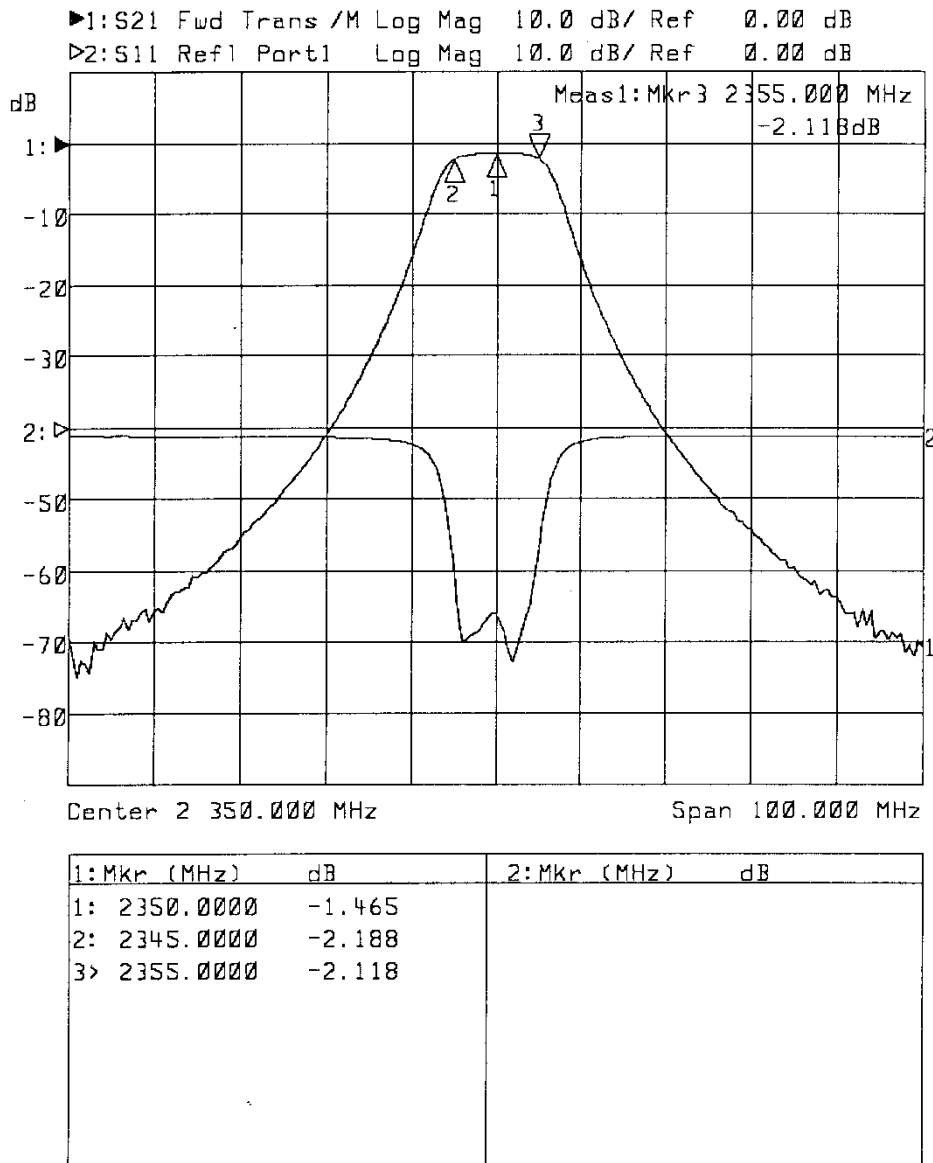


Figure 2.2 S11 and S21 parameters of the FC-2010 channel filter

## 2.3 Mechanical characteristics

The figure below shows mechanical information of the FC-2010 filter

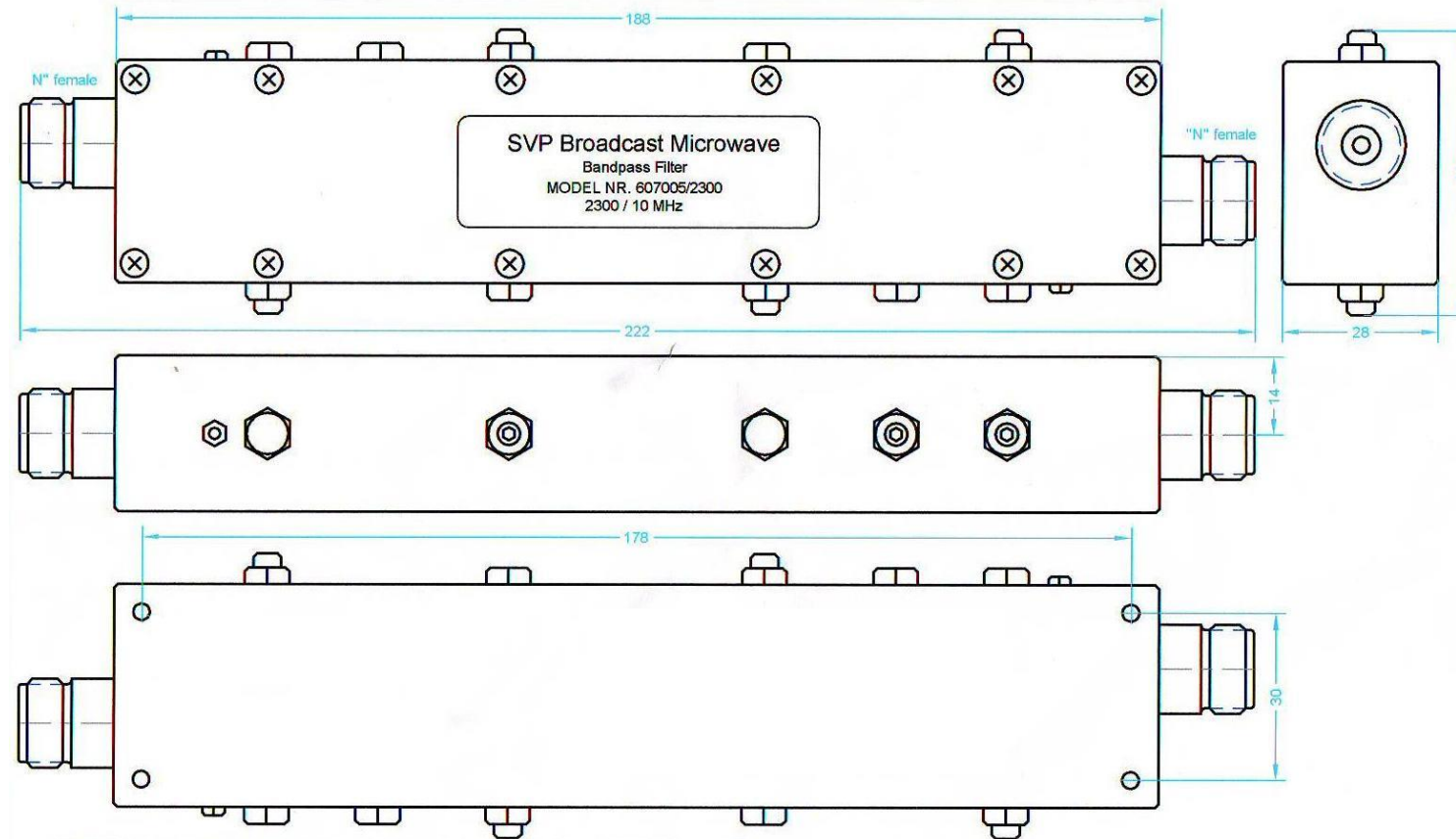


Figure 2.3 Filter FC-2010



## 3 FC-3020 Narrowband Filter

### 3.1 Description

SVP provides a broad range of RF and microwave filters for different frequency bands and with a wide variety of features

The FC-3020 narrow band filter has a 15 MHz bandwidth at -1dB and 19 MHz at -3dB. It is available from in 3.4 to 3.8GHz band and it can be tuned in 100MHz range.

This filter supports 50 Watts power and it is ideal for its use either in the transmitter or in the receiver site of a COFDM link.

The attenuation at +/- 50 MHz is higher than 42 dB and the insertion losses lower than 1,5 dB.

When working with high-powered transmission amplifiers, this filter is necessary to meet the recommendations for noise emission in adjacent channels.



Figure 3.1 FC-3020 Narrowband filter

### 3.2 Technical Features

The table below shows main features of the FC-3020 filter

Table 3.1 FC-3020 Characteristics

Item	Specification
Frequency range	3.4 – 3.8 GHz
Bandwidth	15 MHz @ -1dB and 19 MHz @ -3dB
Impedance	50Ω
Insertion loss	<1,5 dB
Power support	50 Watt
Weight	160 gr
Connectors	N female
Number of poles	3
Static protection	Yes
Size	130x38x23mm
Temperature range	-30°C to +50°C

The figure below shows the performance of the FC-3020 Filter. S11 and S21 parameters have been measured.

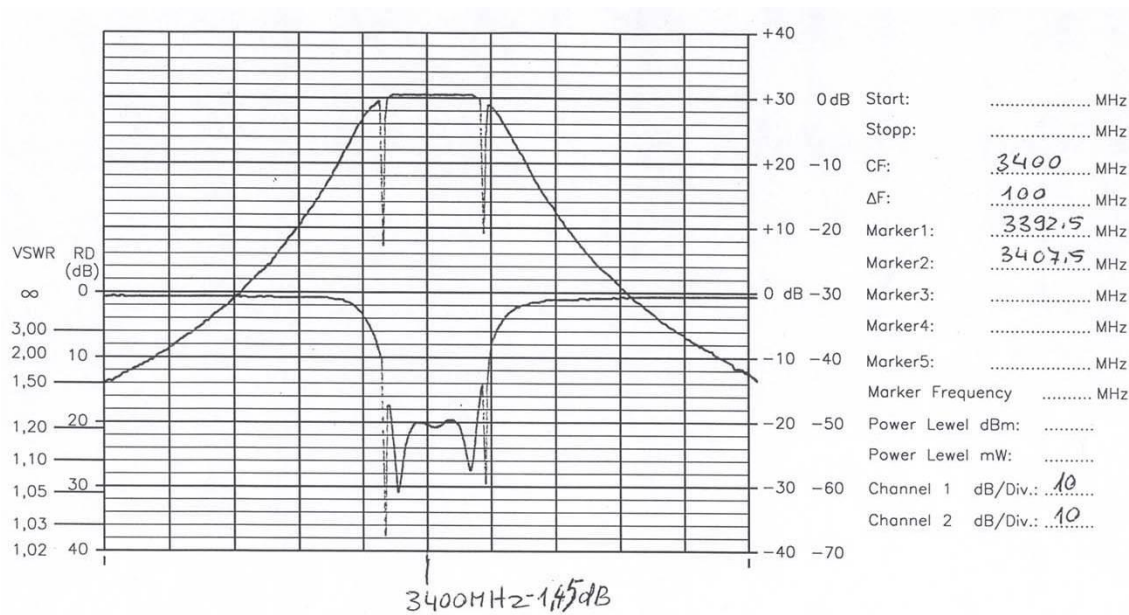


Figure 3.2 FC-3020 Filter. Central frequency 3400MHz. S11 and S21 parameter measurement.

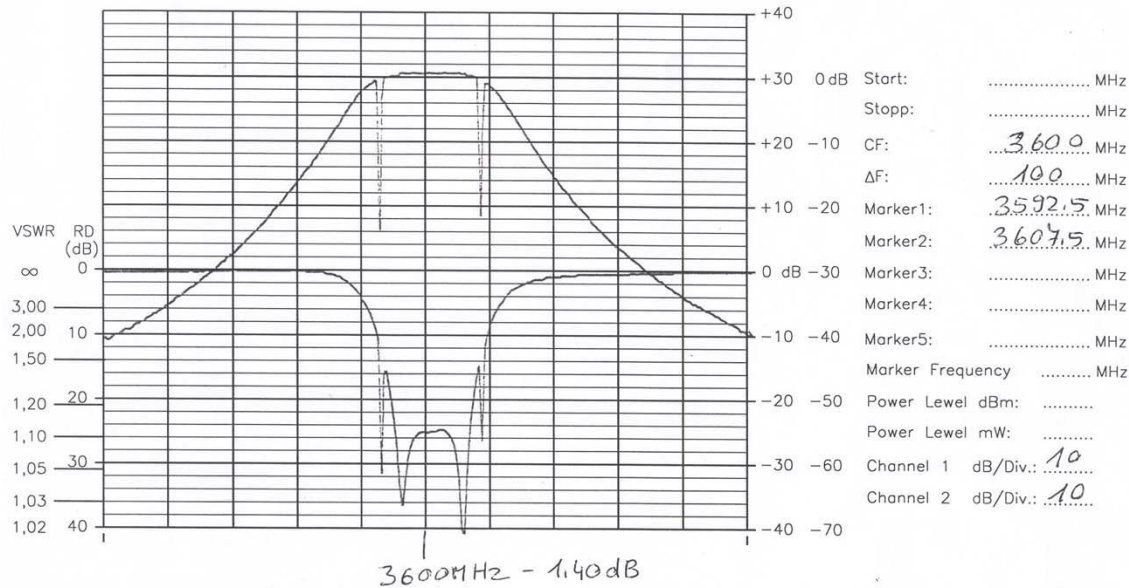


Figure 3.3 FC-3020 Filter. Central frequency 3600MHz. S11 and S21 parameter measurement.

### 3.3 Mechanical Characteristics

The figure below shows mechanical information of the FC-3020 filter

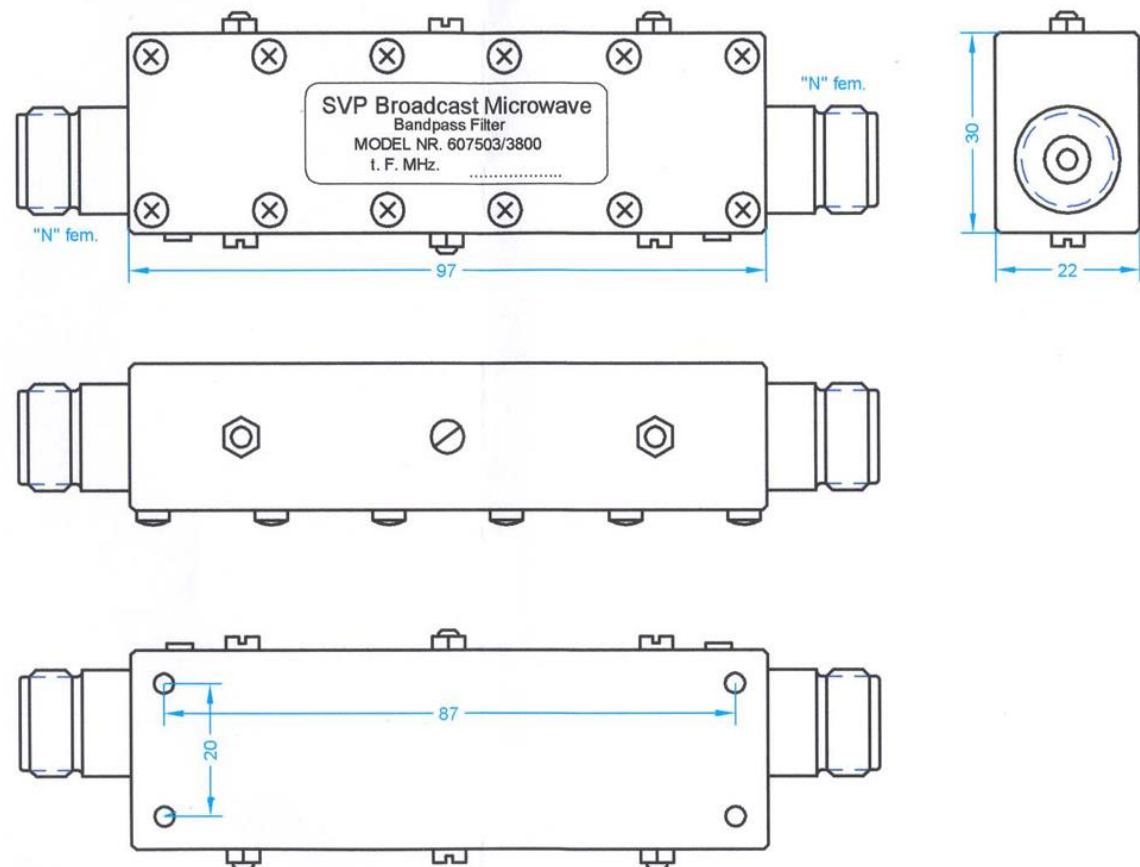


Figure 3.4 FC-3020. Mechanical layout

## 4 Notes

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## **End note**

At SVP Broadcast Microwave S.L. we make a constant effort to continuously improve our equipments and models. For that reason, please understand that there may be some changes in design, equipment and technology. Therefore, we cannot be held liable for the data, figures and descriptions given in this datasheet.

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