



NETCOM Model 5590-7-20

Features

Netcom's 5590-7-20 is a digitally tunable filter covering the frequency range of 20 to 520 $\rm MH_{2}$

The filter has been designed using three bands of tunable filters from Netcom's proven 5500 Series. This tri-band filter is offered in a smaller integrated SMT package to support applications where compact design, power requirements, and board layout flexibility are important. It meets the vibration and shock requirements of systems used in ground-mobile and airborne environments.

Commercially available high voltage drivers and a new generation CPLD have been used to achieve improved performance and reduced cost while at the same time providing increased functionality. The filter incorporates high voltage totem-pole drivers for the PIN diode bias voltage to minimize current draw from the internal high voltage supply.

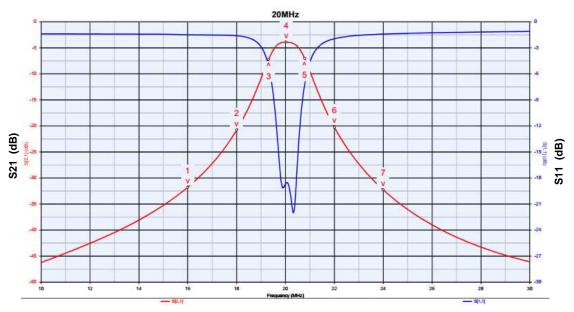
The following table shows the typical performance of the filter at different 3 dB bandwidths. Options are available upon request for different bandwidths, insertion loss, inter-

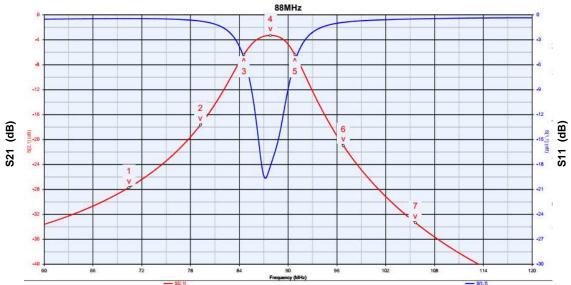
Specifications				
Frequency Tuning Range	20 to 520 MHz			
3 DB Bandwidth (%)	6.3 (Min)	7 (Typ)	7.8 (Max)	
Input / Output Impedance		50 Ω		
In / Output Return Loss (dB)			9.5 (Max)	
RF Power Rating				
Inband, (typical)		2 W		
Filter Bandwidth		7 %		
Insertion Loss (Typical)		4.5 dB		
Selectivity ±5% from Fc (dBc)	4 (Min)	5.5 (Typ)		
Selectivity ±10% from Fc (dBc)	13 (Min)	15.5 (Typ)		
Shape Factor (30dB / 3 dB BW)		5.5 (Typ)	6.5 (Max)	
Tuning Steps	200		5200	
Switching Speed		50 μsec		
DC Inputs				
+5 Volts (±0.5 Volts)		0.3 A		
+150 Volts (-7, +25 Volts)		2 mA		
Temperature Range	-	-40 to +85 °C		
Control Interface (User Specific Interface Available upon Request)		Selectable 13 bit Parallel or Serial, TTL and CMOS Compatible		
Power Save Mode	Programma	Programmable		
Dimensions (mm [inches])	71.12 [2.80] L x 12.70 [0.50	71.12 [2.80] L x 50.80[2.00] W x 12.70 [0.500] H		



Performance at 20 MHz and 88 MHz

The following plots show typical performance of a filter with a 7% BW at different tuning frequencies. Across the 20 to 520 MHz frequency range, insertion loss will average 4.5 dB.

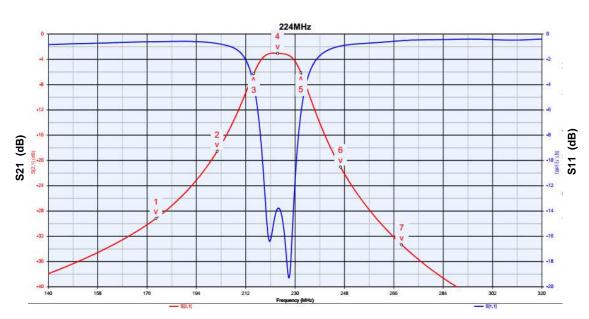






Performance at 88.6 MHz and 224 MHz



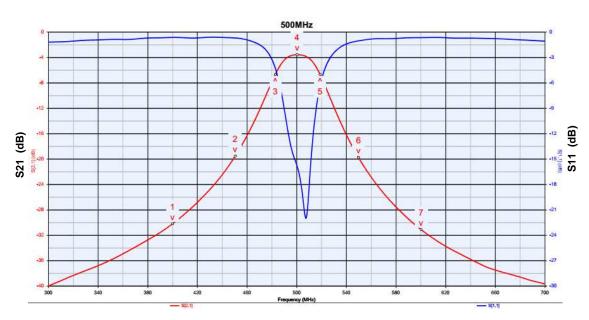


The nominal input power rating is up to 2 W (+33 dBm) in band.



Performance at 225 MHz and 500 MHz

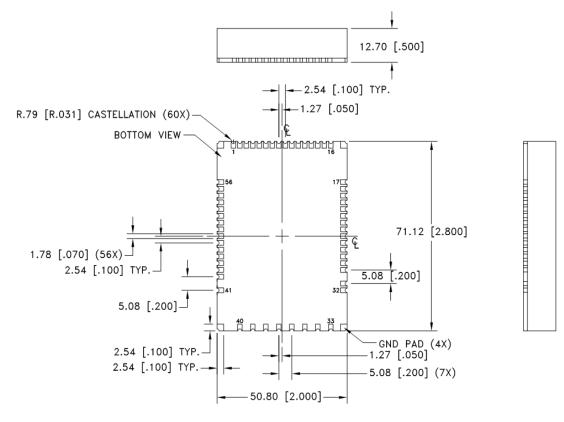




The nominal input power rating is up to 2 W (+33 dBm) in band.



Mechanical Dimensions



NOTES:

- 1. TOLERANCES ±0.25 UNLESS OTHERWISE SPECIFIED.
- 2. DIMENSIONS ARE mm [inches]

Component pad plating — Gold Plate over Nickel

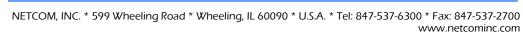
Units are single unit packaging.

Suggested unit mounting to board is single unit manual soldering to board using standard settings for lead-free soldering. Reflow of unit is not recommended at this time.

Product is RoHS compliant.

Unit is considered Moisture Sensitivity Level one (MSL1) with no baking required.

Cleaning of the unit is recommended using commercially available flux residue remover, or isopropyl alcohol based solution on bottom and sides of unit only. Immersion of unit not recommended.







Recommended PCB Layout

A top view of the recommended PCB layout pattern is shown below.

