

## Specifications



### FEATURES

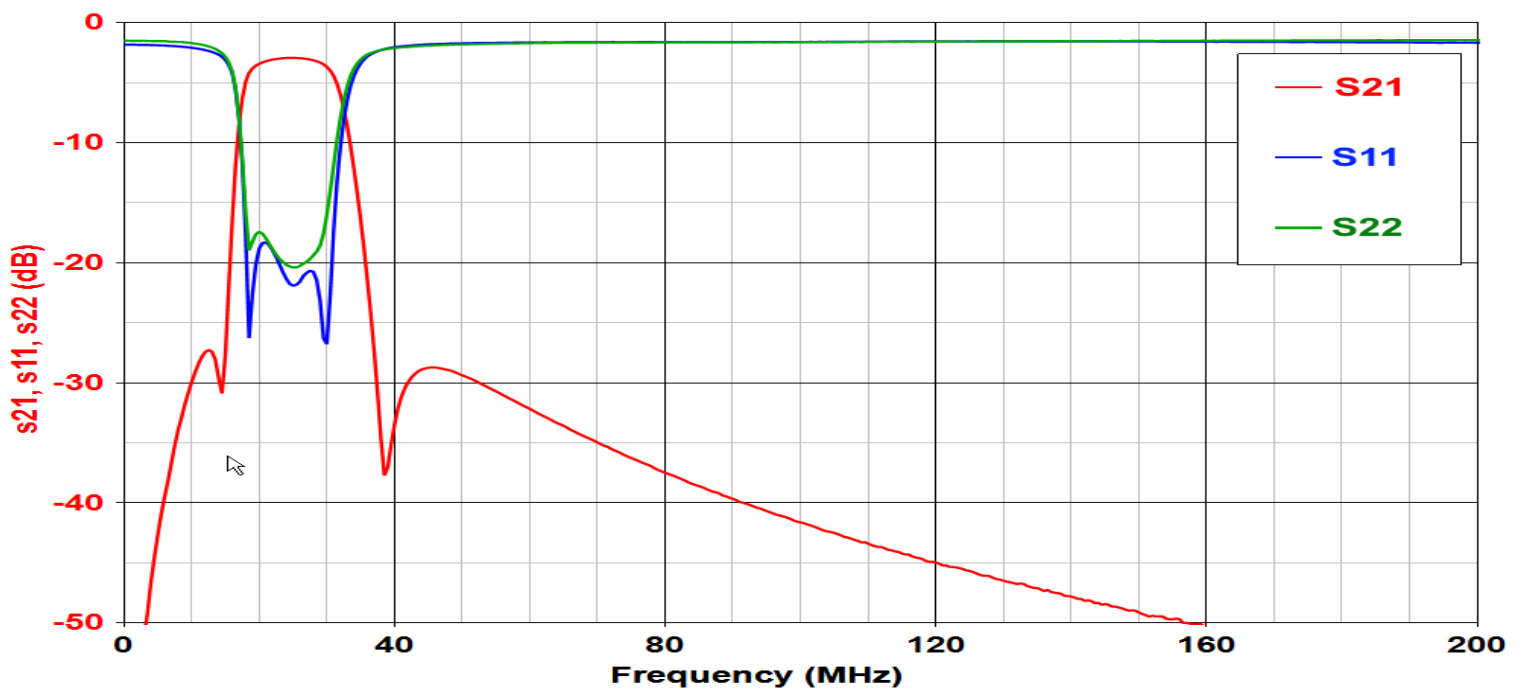
Netcom's 3621 is an SMT small size switched filter bank module. It contains three sub-octave filters covering the frequency range of 20 to 88MHz, plus a wide bandpass filter for the whole range.

The low DC power consumption, the extended operating temperature range and RF power performance of this module provides an excellent solution for both transmit and receive applications in handheld or base station tactical transceivers.

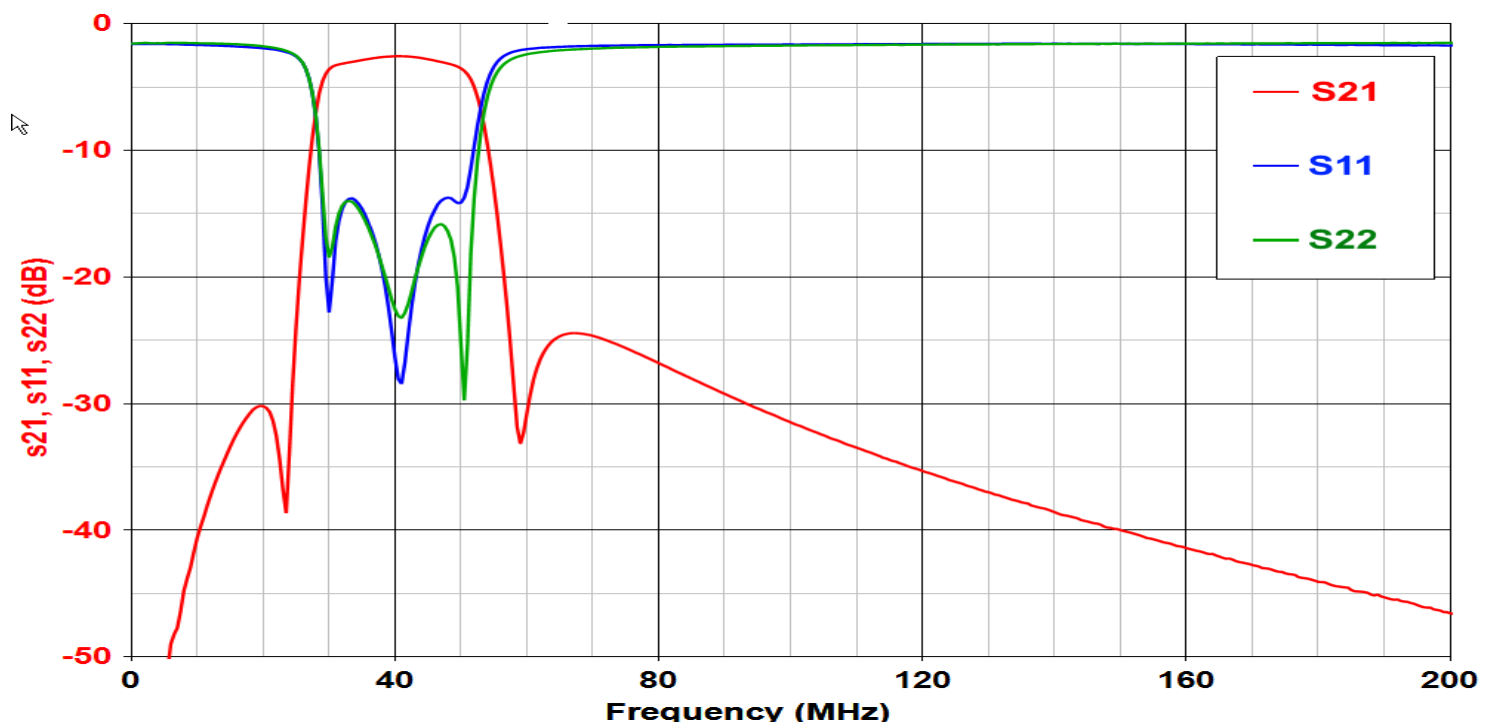
The following table shows the typical performance of the filter.

Frequency Range	20 to 88MHz			
Input / Output Impedance	50Ω			
RF Power Rating				
Operating	+20dBm			
Handling	+23dBm			
Survival	+30dBm			
Number of Channels	4			
	Channel 1	Channel 2	Channel 3	Channel 4
Passband Frequency Range	20 to 30MHz	30 to 50MHz	50 to 88MHz	20 to 88MHz
Passband Insertion Loss	4.5dB Max	4.5dB Max	4.5dB Max	4.5dB Max
Passband Insertion Loss Variation including Roll-Off	1dB Max	2dB Max	2.5dB Max	2.5dB Max
Passband Ripple (Peak-2-Valley)	0.1dB Max	0.1dB Max	0.1dB Max	0.5dB Max
Passband Noise Figure	I.L.	I.L.	I.L.	I.L.
Passband VSWR	1.8:1 Max	1.8:1 Max	1.8:1 Max	1.8:1 Max
Passband Group Delay Lot Variance per +/-5KHz	+/-20nsec	+/-20nsec	+/-20nsec	+/-20nsec
Input IP2	+70dBm Min	+70dBm Min	+70dBm Min	+50dBm Min
Input IP3	+30dBm Min	+30dBm Min	+30dBm Min	+30dBm Min
Filter Rejection				
Channel 1 (20 – 30MHz)				
DC – 10MHz	23 dBc Min			
10 – 15MHz	20 dBc Min			
40 – 80MHz	20 dBc Min			
80 – 130MHz	30 dBc Min			
130 – 4000MHz	40 dBc Min			
Channel 2 (30 – 50MHz)				
DC – 10MHz	34 dBc Min			
10 – 25MHz	19 dBc Min			
60 – 130MHz	19 dBc Min			
130 – 190MHz	30 dBc Min			
190 – 4000MHz	40 dBc Min			
Channel 3 (50 – 88MHz)				
DC – 10MHz	40 dBc Min			
10 – 44MHz	18 dBc Min			
100 – 230MHz	20 dBc Min			
230 – 300MHz	33 dBc Min			
300 – 4000MHz	40 dBc Min			
Channel 4 (20 – 88MHz)				
0 – 10MHz	10dBc Min			
115 – 220MHz	35dBc Min			
220 – 4000MHz	40dBc Min			
Channel Switching Time (50% CTRL to either 10% or 90% RF Power)	10µsec Max			
DC Supply Voltage (+3.3VDC)	2.3V to 5.5V			
DC Supply Current	2mA max			
Control Voltage High	1.2 to 3.6V			
Control Voltage Low	0.6V Max			
Operating Temperature Range	-40°C to +115°C			
Storage Temperature Range	-54°C to +125°C			
Dimensions	0.760 X 0.750 X 0.260 inches			
ESD Class	2			
MSL	3			

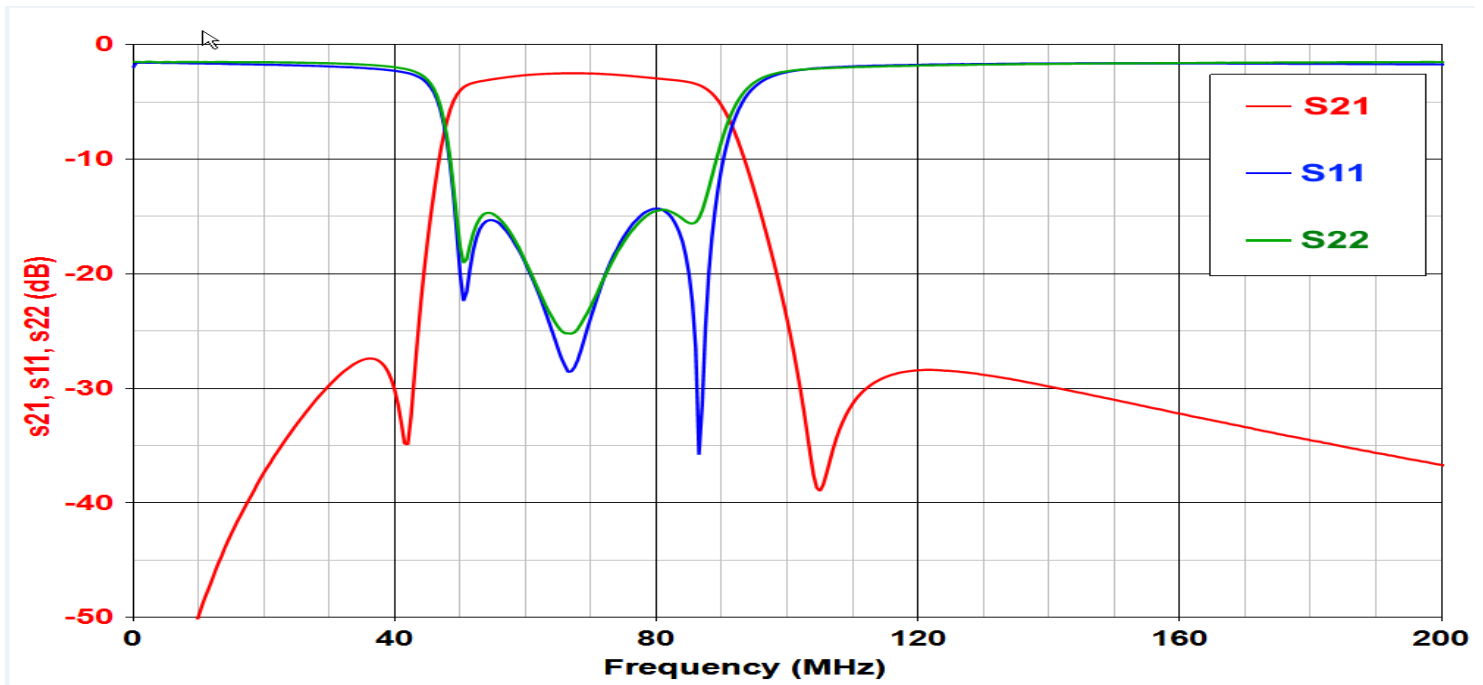
## #3621 Channel 1 (20-30Mhz) Response



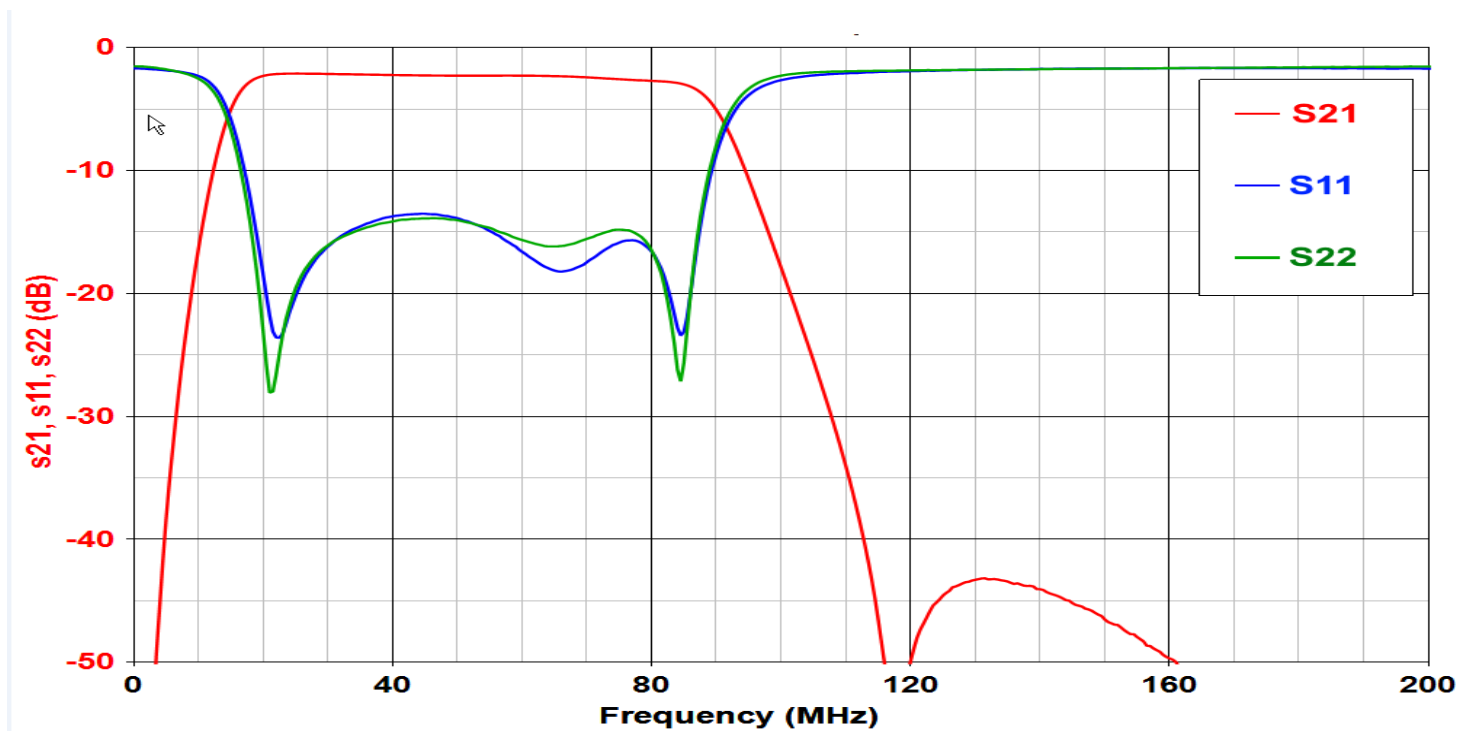
## #3621 Channel 2 (30-50 Mhz) Response



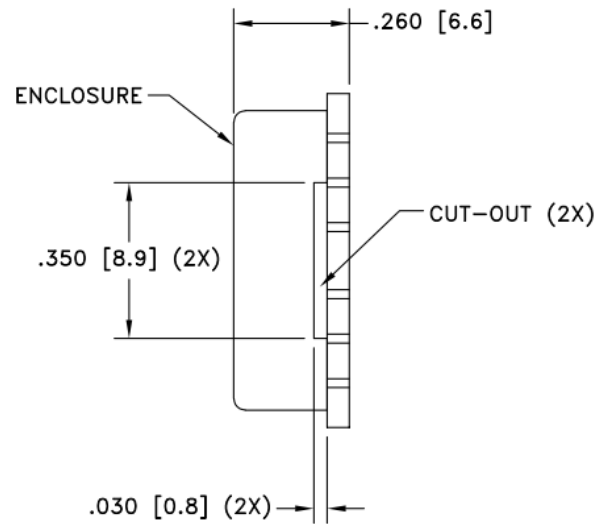
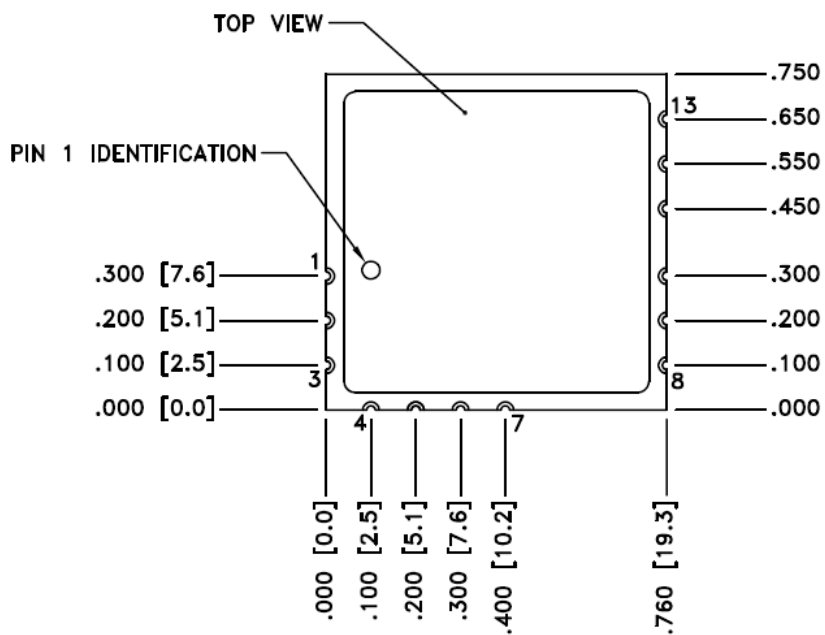
## #3621 Channel 3 (50-88 Mhz) Response



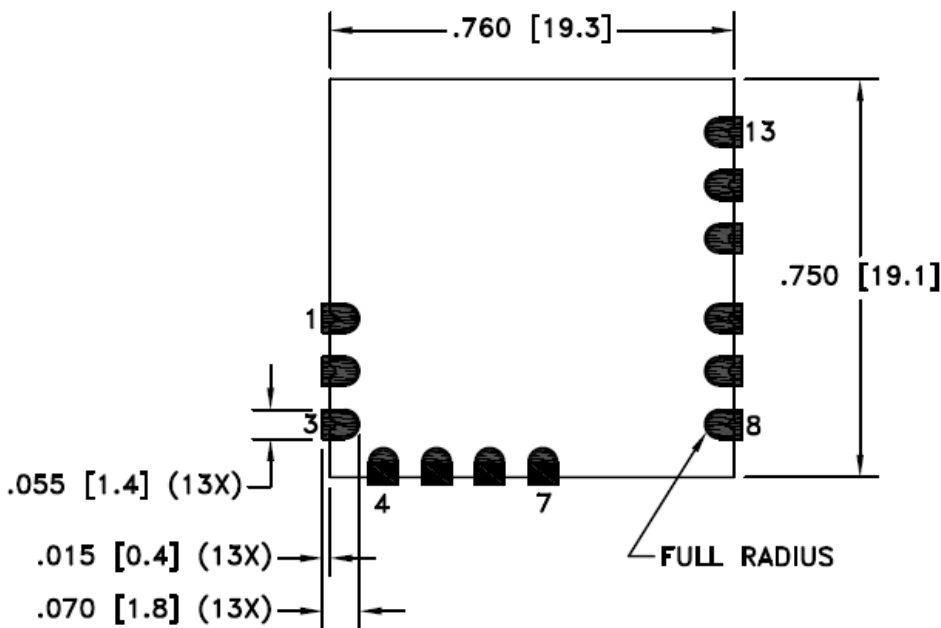
## #3621 Channel 4 (20-88 Mhz) Response



# Mechanical



RECOMMENDED LAYOUT PATTERN  
TOP VIEW



PIN DESIGNATORS	
PIN NUMBER	DESCRIPTION
1	GND
2	INPUT
3	GND
4	GND
5	CTRL_1
6	CTRL_2
7	GND
8	GND
9	+3.3V
10	GND
11	GND
12	OUTPUT
13	GND

NOTES:

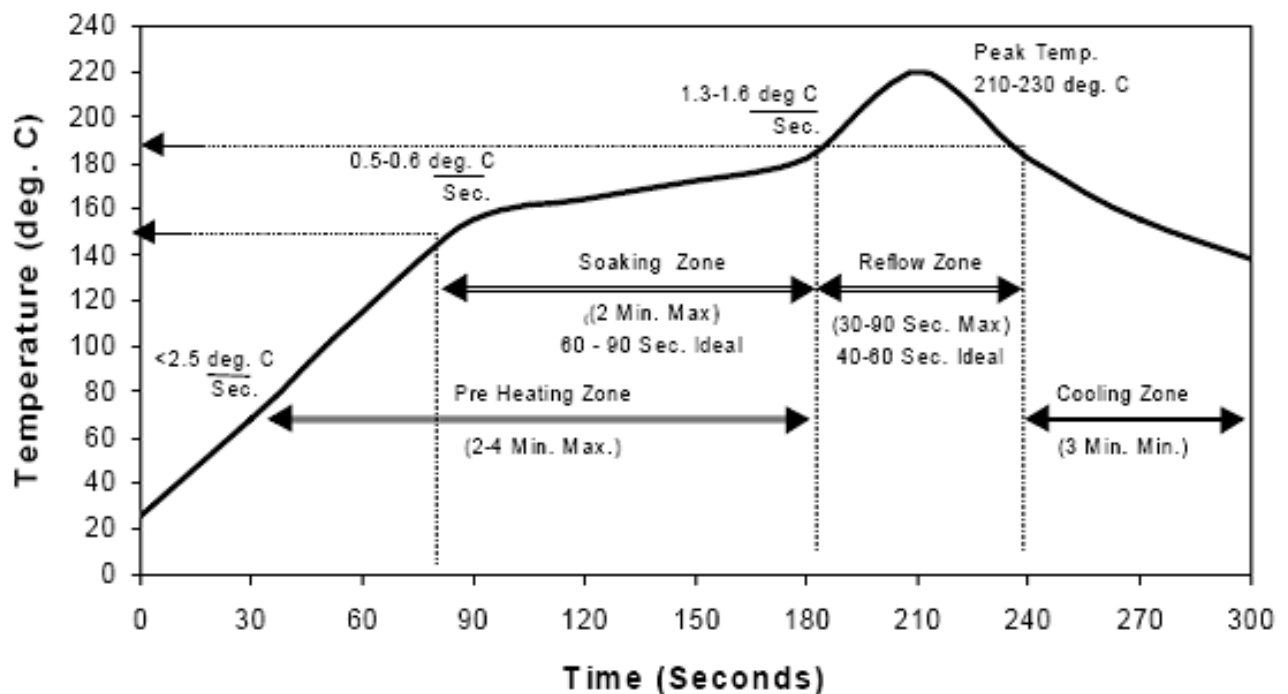
1. TOLERANCES  $\pm 0.010$  [0.25] UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS ARE INCHES [mm].

# Solder Process

Filter model 3621 is designed for system assembly through SMT reflow soldering. All filter components have been selected for secondary reflow and are assembled using Sn95Sb5 high temp solder. The system level SMT reflow temperature profile is as specified in the IPC/JEDEC J-STD-020 standard for a Sn-Pb Eutectic Process. In systems using Pb-Free and high temp solder, the filter must be mounted through a hand soldering process.

The exact reflow profile required will depend on the characteristics of the circuit board assembly like thickness, size, and heat transfer. Also affecting the reflow profile is the solder paste type, flux, and density of other components. Temperature limitations of other components on the circuit board also must be considered. The recommended profile below is at the printed circuit board interface using Sn63/Pb37 tin lead solder.

## Recommended Solder Profile



## Lead Plating

ELECTROLESS NICKEL TYPE 1, CLASS 1 Cu/Ni P7 100 MICRO INCHES (0.000001 INCHES) MINIMUM IMMERSION  
GOLD PLATE 2 TO 6 MICRO INCHES (0.000002 TO 0.000006 INCHES) ON OUTER LAYERS

## Housing Finish

SILVER ELECTROPLATED IAW ASTM B700-97  
TYPE 1, GRADE A, CLASS N, 8um - 15um THICK  
OVER: STRESS FREE NICKEL SULFAMATE IAW 5AE AMS 2424, 3um - 5um THICK

## Thermal Shock

THERMAL SHOCK  $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  with 5 cycles at  $-55^{\circ}\text{C}$  and 5 cycles at  $+85^{\circ}\text{C}$  for 10 total cycle thermal exposure.

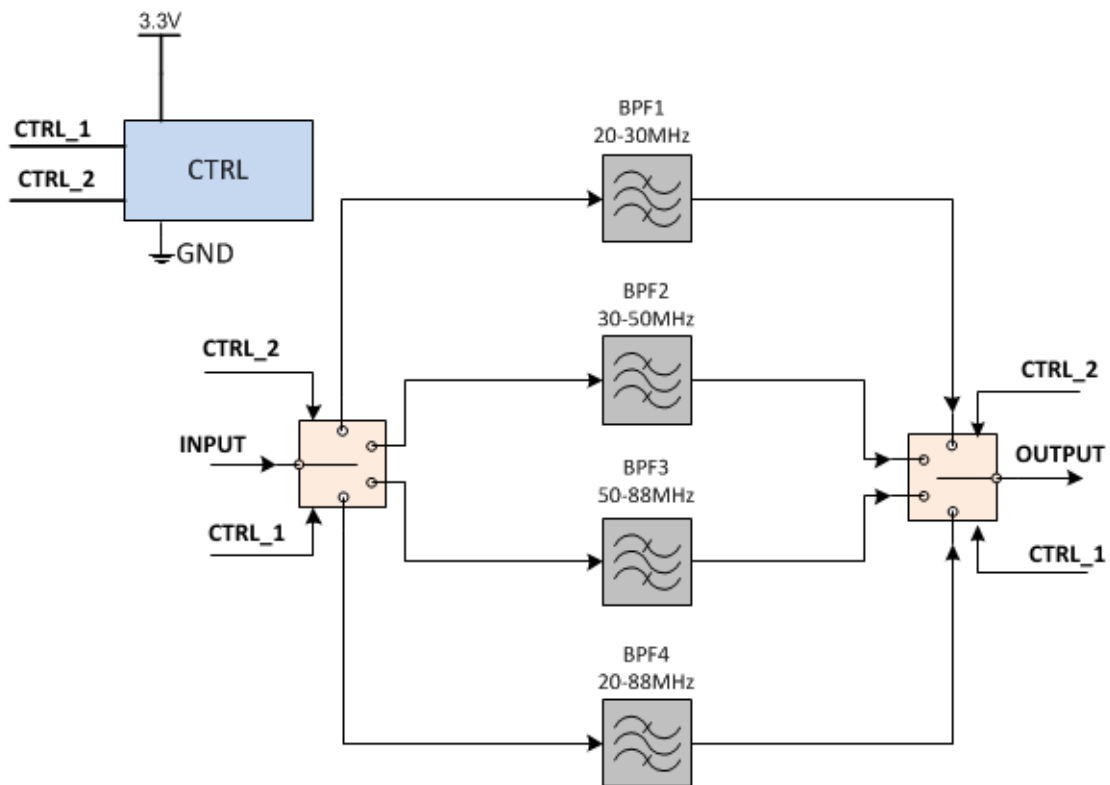
## Pre-Assembly Baking

All units baked at  $+85^{\circ}\text{C}$  for 72 hours prior to initial and final assembly.

## Product is:

- EAR99 Compliant

# Functional Block Diagram



## Control Truth Table (\*)

CTRL_1	CTRL_2	Selected Filter
0	0	BPF1
0	1	BPF2
1	0	BPF3
1	1	BPF4

(\*) Truth table Filter selection locations subject to change due to design considerations.

# Acceptance Testing

Netcom shall test the following filter parameters at each stage of development and production as listed below:

Parameter	AT [1]	QT [2]	DT [3]
Passband Insertion Loss for all channels	+	+	+
Passband Ripple for all channels	+	+	+
Passband Ripple for all channels	+	+	+
Rejection for all channels	+	+	+
IIP2		+	+
IIP3		+	+
Switching Time		+	+
RF Power		+	+
Passband VSWR for all channels	+	+	+
Passband Group Delay Lot Variance	+	+	+
Passband Noise Figure for all channels		+	+
DC Supply Voltage & Current	+	+	+
Control Voltage		+	+
Operating Temperature Range [4]	+	+	+
Storage Temperature Range		+	+
Dimensions	+	+	+
ESS / Thermal Shock [5]	+	+	+

# Acceptance Testing

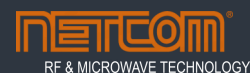
[1]: All AT testing performed; all parts are 100% tested at 25°C temperature.

[2]: QT (Qualification Test) is performed on 3 units minimum and will be tested at 25°C, -40°C and +115°C.

[3]: DT (Development Test) is performed on development units and will be tested at 25°C, -40°C and +115°C.

[4]: AT (Acceptance Test) for Operating Temperature Range is performed on production units based on AQL profile.  
Acceptable Quality Limit (AQL) testing option available on AT specification when data supports option.

[5]: ESS / Thermal Shock is performed during assembly phase of unit.



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