

## PRODUCT SPECIFICATION FOR INFORMATION

FINAL SPECIFICATION

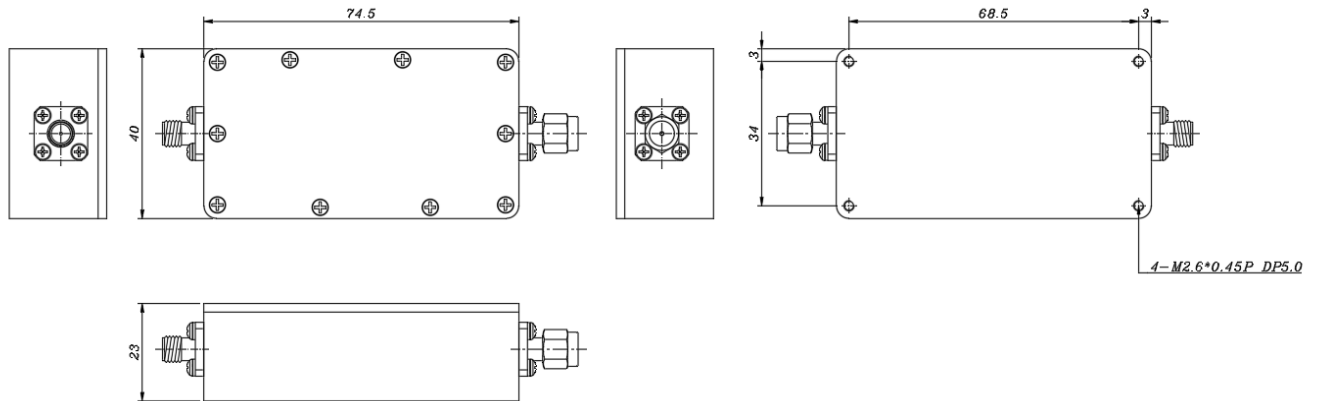
**Product Name : Cavity Band Pass Filter**

**Part No : MBP-C4975\_250MS-A-R5**

### ■ History List

| No. | Rev. No. | Description                               | Date       | Author        | Final Approver |
|-----|----------|-------------------------------------------|------------|---------------|----------------|
| 1   | R0       | Draft                                     | 2023.04.21 | Jeffrey Jeong | Michael Jeon   |
| 2   | R1       | Size changed, Insertion Loss to 1.0dB Max | 2023.04.28 | Jeffrey Jeong | Michael Jeon   |
| 3   | R2       | Environmental condition added             | 2023.05.15 | Jeffrey Jeong | Michael Jeon   |
| 4   | R3       | Environmental Condition double checked    | 2024.01.16 | Jeffrey Jeong | Michael Jeon   |
| 5   | R4       | SMA(M) to SMA(F), Mounting holes changed. | 2024.02.26 | Jeffrey Jeon  | Michael Jeon   |
| 6   | R5       | Changed connectors to SMA(M) & SMA(F)     | 2024.03.12 | Jeffrey Jeon  | Michael Jeon   |

## ■ Mechanical Drawing



Finish : Black Power Coating  
IP : 67

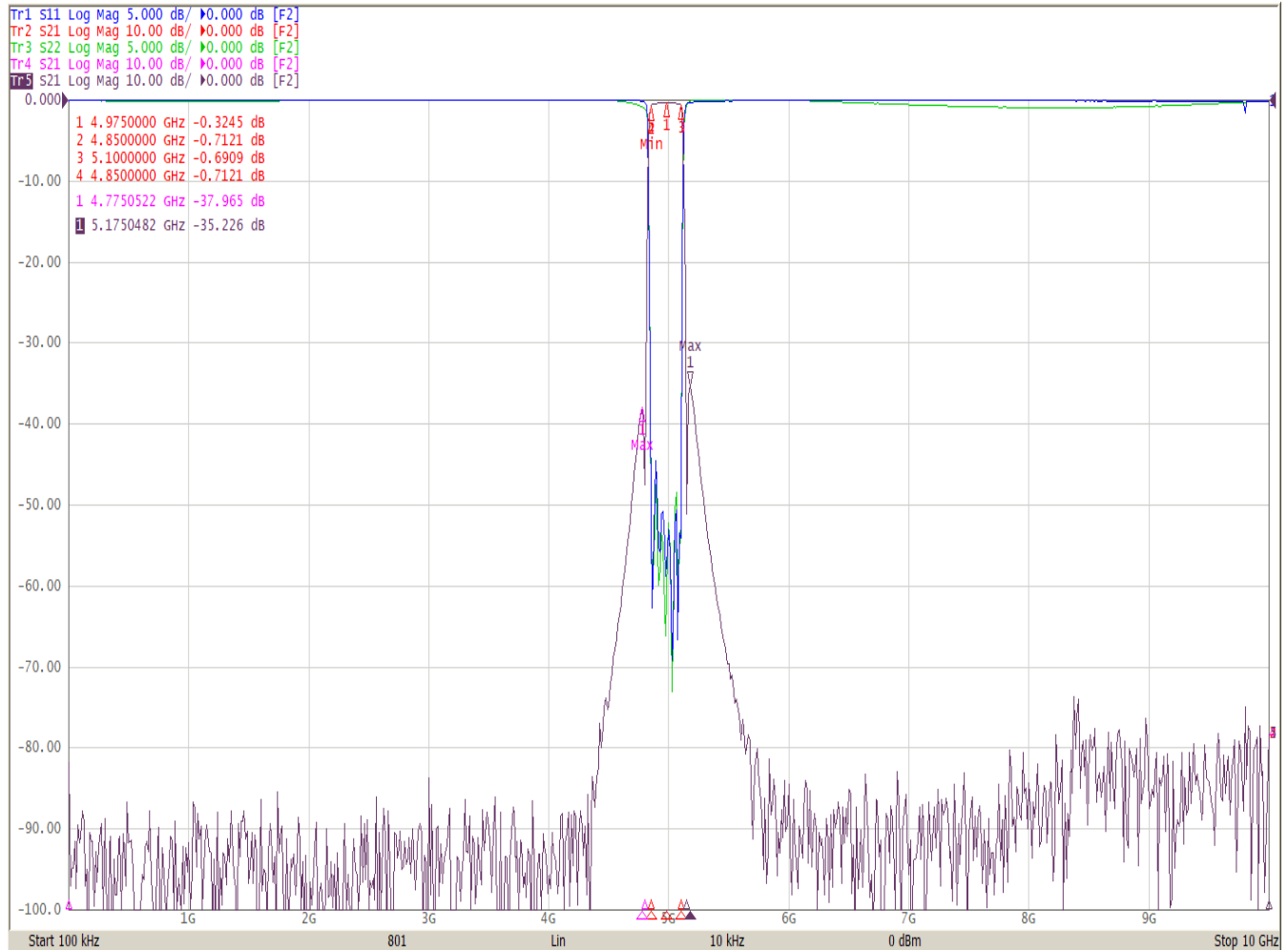
## ■ Electrical Specification

| Parameter            | Specification                                         | Remark   |
|----------------------|-------------------------------------------------------|----------|
| 1. Center Frequency  | 4975MHz                                               |          |
| 2. Bandwidth         | 250MHz[4850 ~ 5100MHz]                                |          |
| 3. Insertion Loss    | 1.0dB Max.                                            | Proposed |
| 4. Attenuation       | 30dB Min @ DC ~ 4800MHz<br>30dB Min @ 5150 ~ 10000MHz |          |
| 5. Power Handling    | 40dBm Max.                                            |          |
| 6. In/Out Impedance  | 50Ω                                                   |          |
| 7. Temperature Range | -30°C ~ +50°C                                         |          |
| 8. Dimension[WxDxH]  | 74.5 X 40.0 X 23mm Max                                |          |
| 9. Weight            | 170Grams Max.                                         | Proposed |
| 10. Connectors       | 2 X SMA(F)                                            |          |
| 11.MTBF              | 20,000HRS Min.                                        |          |

※It is subjected to change with prior notice.

## Test Curve

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## Environmental Condition

### 1. Temperatures and Altitude Temperature Shock

1.1 : Operational(MIL-STD-810F Method 520.2 Proc. III)

A) Temperature Range : -30°C ~ +50°C

B) Altitude : 18Kft

C) Item condition : Unpacked – operational

D) For Safety Of Flight(SOF) test : 3cycles

E) For Qual Test : 10cycles

Design to meet

1.2 : Storage(MIL-STD-810F Method 501.4 Proc I)

- A) Temperature Range : +33°C ~ +71°C Item
- B) Condition : Unpacked – Not operating
- C) Cycle Duration : 24HRS
- D) No of Cycles : 7

1.3 Storage(MIL-STD-810F Method 502.7 Proc I)

- A) Altitude : 40Kft
- B) Temperature Range : -20°C
- C) Item Condition : Unpacked – not operating
- D) Cycle Duration : 24HRS
- E) Number of cycles : 1

Design to meet

## 2. Humidity(MIL-STD-810F Method 507.4)

- A) Temperature Range : +30°C ~ +60°C
- B) Cycle Duration : 24HRS
- C) Number of Cycles : 10
- D) Item Condition : Unpacked – not operating
- E) Humidity > 95%RH

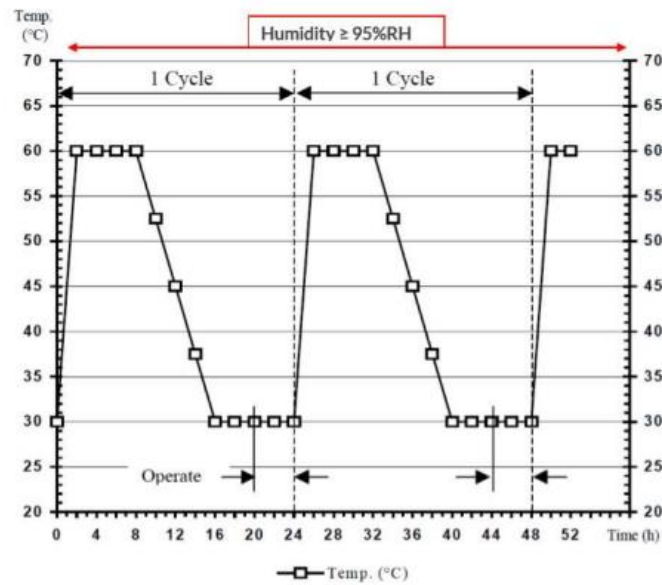


Figure 2: Humidity Test

### 3. Salt Fog(Spreay)(MIL-STD-810F Method 509.4)

- A) Item condition : unpacked non-operational
- B) Salt solution concentration :  $5 \pm 1\%$
- C) Salt Fog PH : 6.5 ~ 7.2
- D) Salt Fog Fallout rate : 1-3ml/80cm<sup>2</sup>/h.

### 4. Sand and Dust(MIL-STD-810F Method 510.4 Proc I & II)

- A) Item condition : Unpacked – Operational
- B) Air Velocity : 8.9m/Sec
- C) Sand concentration :  $10.6 \pm 7\text{g/m}^3$
- D) Humidity : <30% RH
- E) Temperature : +23°C & +50°C

Design to meet

### 5. Fluid Contamination(MIL-STD-810F Method 504 (Table 4))

- A) Item condition : unpacked – not operating

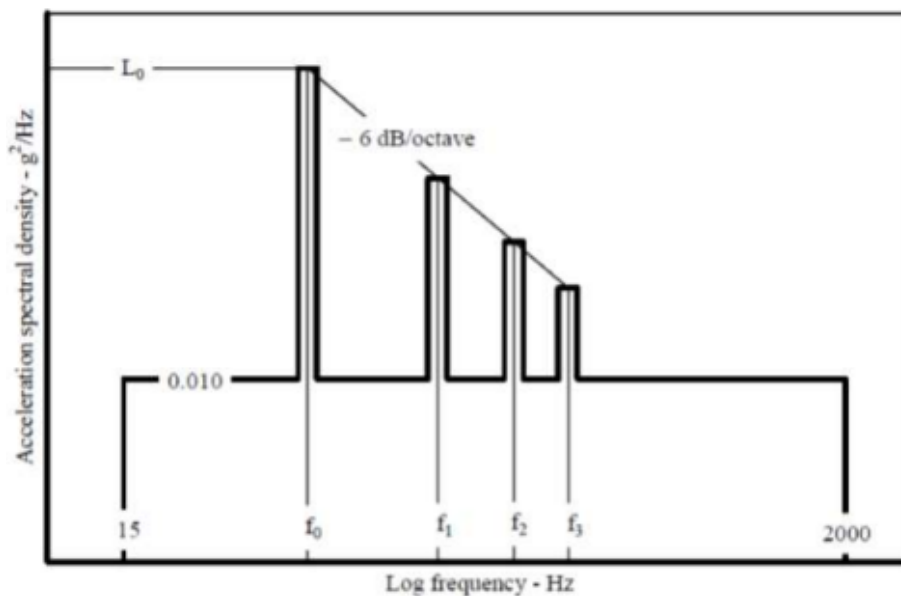
**Table 4: Fluid Contamination**

| #  | Fluid Group           | Fluid Type                         | Fluid Temperature | UUT Temperature | Soak Temperature |
|----|-----------------------|------------------------------------|-------------------|-----------------|------------------|
| 1. | Fuels                 | Mogad 98                           | +40° C            | +71° C          | +71° C           |
| 2. | Lubricating Oil       | Liqui-Moly 10W-40                  | +70° C            | +71° C          | +71° C           |
| 3. | Grease                | Rocol Dry Moly Paste, AEROSHELL 22 | Ambient           | +71° C          | +71° C           |
| 4. | Solvents and Cleaning | 3258 1A1LP                         | Ambient           | +71° C          | +71° C           |

## 6. Vibration

The vibration test is conducted in accordance with MIL-STD-810F's method 514.5, Procedure I, category 13. Figure 3 displays the acceleration spectral density in relation to the frequency. Table 5 lists the vibration frequencies.

- A) Axes : 3( $\pm X$ ,  $\pm Y$ ,  $\pm Z$ )
- B) Vibration Time in Each Axis = 1hour
- C) Item condition : unpacked – oprational



**Figure 3: Vibration**

Design to meet

**Table 5: Vibration Frequencies**

| #  | Frequency | F <sub>0</sub> Multiplier | Symbol          |
|----|-----------|---------------------------|-----------------|
| 1. | 50 Hz     | x1                        | f <sub>0</sub>  |
| 2. | 100 Hz    | x2                        | f <sub>1</sub>  |
| 3. | 125 Hz    | x2.5                      | f <sub>1'</sub> |
| 4. | 150 Hz    | x3                        | f <sub>2</sub>  |
| 5. | 175 Hz    | x3.5                      | f <sub>2'</sub> |
| 6. | 200 Hz    | x4                        | f <sub>3</sub>  |

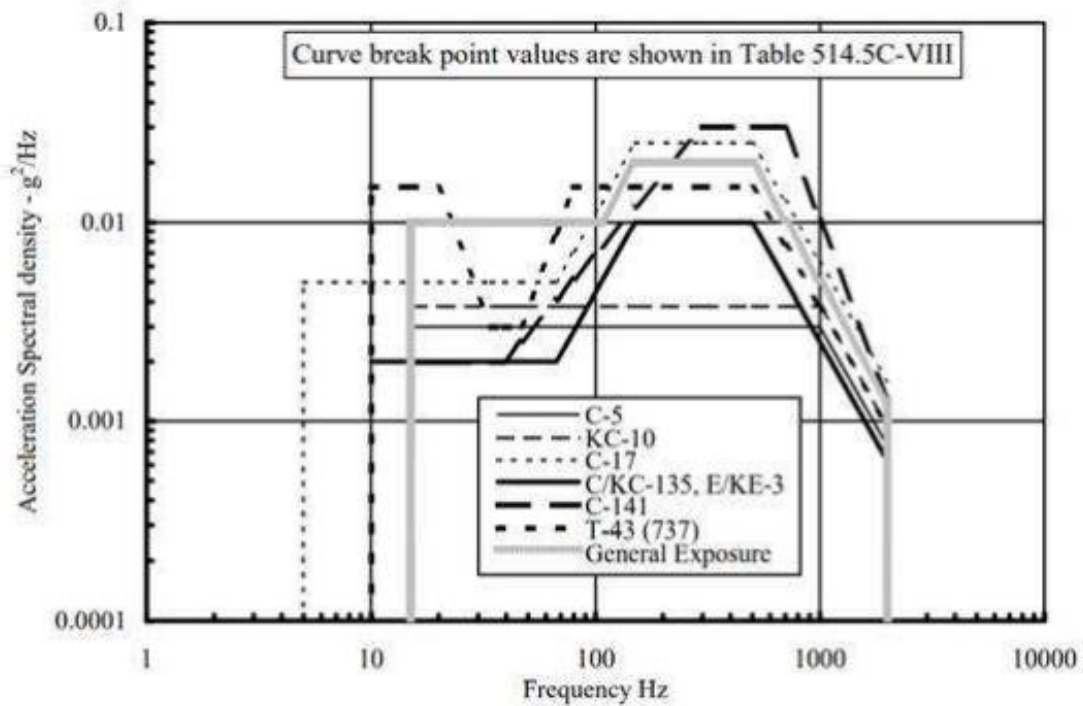
The vibration test is conducted in accordance with MIL-STD-810F method 514.5, procedure I, category 7, general exposure. Figure 4 : displays the acceleration spectral density in relation to the frequency.

A) Axes : 3(±X, ±Y, ±Z)

B) Vibration Time in Each Axis = 5min per Axis

C) Item condition : unpacked – not operating

Design to meet



**FIGURE 514.5C-6. Jet aircraft cargo vibration exposure.**

**Figure 4: Aircraft cargo vibration**

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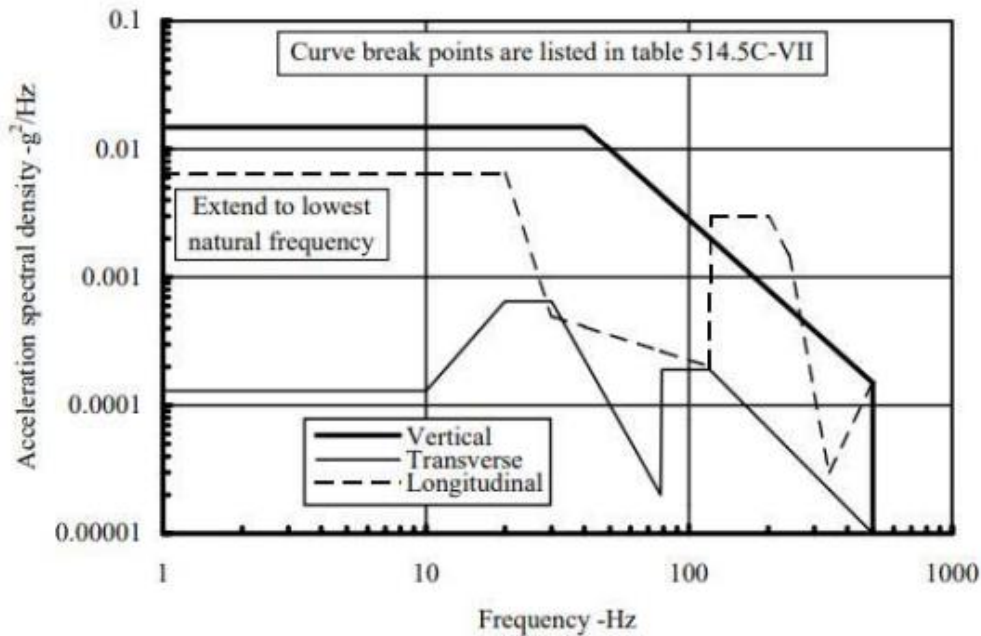
he vibration test is conducted in accordance with MIL-STD-810F's method 514.5, procedure I, category 4.

Figure 3 displays the acceleration spectral density in relation to the frequency.

A) Axes :  $3(\pm X, \pm Y, \pm Z)$

B) Vibration Time in Each Axis = 60min per Axis

C) Item condition : unpacked – not operating



**FIGURE 514.5C-1. U. S. highway truck vibration exposure.**

**Figure 5: Truck vibration**

## 7. Shock(MIL-STD-810F method 516.5, procedure I)

- A) Axes : 3( $\pm X$ ,  $\pm Y$ ,  $\pm Z$ )
- B) Shocks per axis : 6(3each directions)
- C) Item condition : unpacked – operation
- D) Shock form : half sine
- E) Pulse duration : 50mSec
- F) Shock Amplitude : 25g

Design to meet

## 8. Acceleration

The 20g acceleration test is conducted in accordance with MIL-STD-810F's method 513.5 procedures I & II

- A) Axes : 3( $\pm X$ ,  $\pm Y$ ,  $\pm Z$ )
- B) Acceleration time : 1min.
- C) Item condition : Unpacked – operation

## 9. Explosive Atmosphere

The explosive atmosphere test is conducted in accordance with MIL-STD-810F's method 511.4

- A) Max temperature : +50°C
- B) Item condition : Unpacked – operational
- C) Altitude : 18Kft.

Design to meet