

EM-7847 | Tunable Notch Filter Network



Description

The Electro-Metrics Model EM-7847 Tunable Notch Filter Network is a tunable cavity rejection filter operating from 3.0 to 6.5 GHz and used to perform specification compliance testing as stated in MIL-STD-462 and other related standards. The cavity exhibits very sharp resonances at the tuned frequency with low insertion loss and low skirt attenuation.

The EM-7847 has optimum performance when resonance in the TE₀₁₁ mode and can operate over a wide range of power levels. The cavity and associated tuning mechanism is constructed of copper, brass, and aluminum alloys.

Due to the precise nature of the cavity for operation in the designated frequency range, care should always be taken to ensure that the network mechanisms are not damaged when being used or transported.

Specifications

Electrical

Frequency Range: 3.0 GHz - 6.5 GHz

Rejection: 50 dB minimum @ tuned frequency
80 dB typical

Insertion Loss*: <5 dB typical.
15 dB worst case

Notch Characteristics:

Total Rejection** 35dB or more at $f_0 \pm (<0.002f_0)$
40dB or more at $f_0 \pm (<0.0005f_0)$

Impedance: Designed for 50Ω system

Connector: Type N, female

Mechanical

Height: 65.4 cm (25.75")
(w/ maximum screw extension)

Height, Cylinder: 26.0 cm (10.5")

Diameter, Cylinder: 15.5 cm (6.1")

Width, Stand: 20.3 cm (8.0")

Weight: 7.5 kg (16.5 lbs)

*In Cavity Notch Filters, insertion loss excludes the fundamental TE₀₁₁ mode notch, TE₀₁₁ fundamental harmonic notches, and notches created by modes other than the TE₀₁₁ mode. In all notch filters, insertion loss versus frequency will change each time a notch is tuned to a different frequency. Determination of the insertion loss must be made after the unit is tuned to the fundamental to insure that the insertion loss is compensated for when data is being gathered during the test process.

** Total Rejection = Insertion loss at f_0 + Notch Depth

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