Swingbridge Road, Grantham, NG31 7XT.
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Technical Data

DONGSHIN RAT -----Thin, flexible, magnetically loaded, resonant absorber

Characteristics

- **basic composition:**
  magnetically loaded neoprene rubber
- **feature:**
  thin, flexible, narrowband, more intensity and more environment resistance
- **retardancy:**
  Non flammable
- **working temperature:**
  -50°C ~ + 100°C or -85°F ~ 212°F

Availability:

- **thickness**
  From 1mm to 5mm, variable
- **size**
  Standard size is 200mm X 200mm per sheet. Or various size by customers' request
- **Color**
  Gray to black
- **Frequency and bandwidth**
  Available from 1GHz to above 15GHz. Through a best ratio of the magnetic material and rubber, an appropriate frequency, bandwidtch and the attenuation would be achieved.
- **Rubber**
  default is neoprene rubber, for higher working temperature-50°C ~ + 180°C or -85°F ~ 356°F)(, silicon rubber is recommended. And also nitrile rubber is available for resitance to water and oil.
- **Naming**
  RAT-xxmm-yyGHz
  xx: material thickness in mm
  yy: center frequency
  in the name end, blank means neoprene rubber, S stands for silicon rubber and N stands for nitrile rubber
- **PSA**
  pressure sensitive adhesive (PSA) for easy use, peel and stick. PSA is attached to the end of the model name if applicable

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Performance

Standard working frequency is 15GHz, 10, 9.4, 5.5, 3 and 2GHz. At the tuned frequency, attenuation could achieve –17~-25dB in normal incidence, and down to –13dB and –10dB in the range of 24% and 35% bandwidth. For off normal, attenuation change little for small incidence and at 60°, vertical polarization goes to –7dB and horizontal polarization goes to –13dB.

Grade	Weight Kg/sqm	Tuned frequency -GHz	Reflectivity dB
RAT-1.2mm-15GHz	3.7	15	17~20
RAT-1.7mm-10GHz	5.0	10	17~20
RAT-1.8mm-9.4GHz	5.2	9.4	17~20
RAT-2.8mm-5.5GHz	7.6	5.5	17~20
RAT-3.6mm-3GHz	13	3	17~20
RAT-5.0mm-2GHz	18	2	17~20

Thiner rubber sheet like RAT-1.5mm-5.5GHz and RAT-2.7mm-3GHz have around one half of thickness for same tuned frequency for the above grade. Reflectivity is around –13dB~ -17dB at center frequency, a little lower than the above grades in return of broader bandwidth. The bandwidth is about 50% centered the tuned frequency in which reflectivity is just about 10% lower.

Grade	Thickness mm	Weight Kg/sqm	Tuned Frequency GHz	Reflectivity at normal -dB	Frequency range with –10dB
RAT-1.5mm -5.5GHz	1.5	6.8	5.5	-15	4.1~6.9
RAT-2.7mm -3G	2.7	11.5	3	-15	2.2~3.8

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Applications

- RAT is used for radar, masts of ships, airport luminary where narrowband needed.
- RAT can also be used inside the EM facilities to eliminate the interference, surface current and etc.

Method of installation

- RAT require to be backed with a metallic surface.
- For RAT with PSA, it is easily to peel and stick. Not so strong as the contact adhesive, but it is adequate in most applications.
- For general installation, a neoprene contact is recommended. For best results, brush the adhesive over the substrate and wait it till tack-free, then apply the adhesive to the back of the RAT material till it is till tacky but not wet, then press the material against the substrate.