

MagMR Lightweight EMI-Absorbing Coatings for Electronics, Aerospace & Defense Systems

MagMR is a new advanced EMI coating developed using the patented MOLECULAR REBAR[®] technology platform from Molecular Rebar Design, Austin, Texas. MagMR is a lightweight, spray-applied nanocomposite coating designed to reduce electromagnetic signatures while protecting sensitive electronics and sensors. Unlike conventional EMI paints that primarily reflect electromagnetic energy, MAGMR absorbs a significant portion of incident energy and converts it into low-level heat that is dissipated through the carbon nanotube network.

Why Choose MagMR?

- Broadband EMI attenuation (>300 dB/mm, 26–40 GHz)
 - Tested total attenuation 14 dB at 41 micron thickness with 9.5 dB absorption
- Excellent adhesion to metals, plastics, and composites
- Durable, Lightweight, Matte-black finish
- Water-based, low-VOC formulation
- Available in aerosol cans or for conventional coatings systems
- Designed for production, depot maintenance, and field repair without specialist equipment

EMI control for commercial and military applications

Electronics



Radios
Navigation
Power Electronics
Communications
Sensors

Military



Drones
Ground Robots
Radar Housings
Vehicles
Shelters

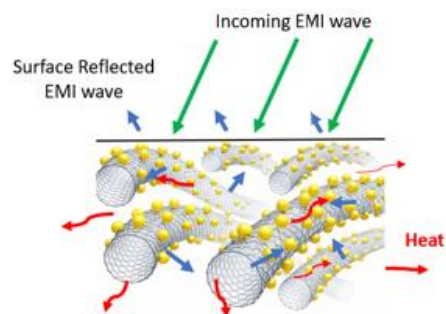
Vehicles



Battery Compartments
Electronic Bays
Plastic Covers
Electric Drive Systems

Engineered to Absorb EMI – Not Just Reflect It

MagMR combines a durable tailored acrylic binder with discrete MOLECULAR REBAR® carbon nanotubes and 20–40 nm iron oxide magnetic nanoparticles. The formulation is engineered to promote magnetic loss, dielectric loss, interfacial polarization, and thermal dissipation, helping absorb electromagnetic energy rather than simply reflecting it. The acrylic binder provides durability and adhesion to many plastic and metal substrates.



Mechanism of EMI Attenuation

Performance

Key reported results: 14 dB total attenuation at 41 μm coating thickness, including 9.5 dB absorption loss, measured across the 26–40 GHz range.

Property	Value
Frequency Range	26–40 GHz
Total Attenuation at 41 μm Coating	14 dB
Absorption Loss	9.5 dB
Reflection Loss	4.5 dB
Density	1.2 g/cm ³
Thermal Conductivity	0.89 W/m·K
Dielectric Constant	11.3
Surface Resistance	240 Ω

Representative test results. Actual performance depends on coating thickness, substrate, geometry, surface preparation, cure conditions, and application environment.

Why Molecular Rebar Design?

- Commercial-scale production of discrete functionalized carbon nanotubes
- ISO 9001:2015 certified manufacturing in Austin, Texas
- More than 180 granted patents worldwide
- Aerosol designed for production, retrofit, depot maintenance and field repair

Next Steps

Learn more, Discuss your application, Request a technical data sheet, or Schedule a sample evaluation for your application.

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