



RF MICROWAVE

Absorbers

LAIRD R&F PRODUCTS IS A GLOBAL
MICROWAVE AND mm WAVE EMC
SOLUTION LEADER SERVING MILITARY
AND AEROSPACE DESIGN TEAMS

Survivability Materials
Antenna Pattern Enhancement
High Frequency EMI Absorption
Radomes
Seals and Gaskets
Camouflage

MANUFACTURING CAPABILITIES

- Injection Molding
- Water jet cutting
- Wrapping
- Molding
- Die cutting
- Machining
- Dispensing
- Kiss cutting
- Lamination
- Impregnation
- Spraying

Reference Use Cases

MILITARY / AEROSPACE

CHALLENGE/FUNCTION	APPLICATION	ECCOSORB	ECCOSTOCK
Radar cross section reduction	Radar, vehicles, models	Fluorosilicone Absorber Series; Nitrile and Urethane Absorber Series; Multiband Absorbers (RFMB)	
Antenna crosstalk reduction	DF Systems; RWRs, Electronic Warfare; Communications	ANW; Cerseal Coated AN; CamoRam; MCS; BSR	
Antenna side/back lobe reduction	Spiral Antennas, Radar, Testing and Measurement equipment, EW	ANW; Cerseal Coated AN; CamoRam; MCS; BSR; RFHC (Honeycomb)	
Surface current attenuation	Fuselage mounted antennas; DF Systems; RF cavities	NS1000 (< 2GHz), MCS, BSR, LS, JCS (>25 GHz)	
Waveguide termination	Transmission line radar, microwave components	MS, CR	
Space/insulator	Antenna, connector, coaxial transmission, wave guide support		PP, Lok, 0005, HIK, FFP, SH, Flex loK
Radome	UAV, Submarine, UGV, Radar, Comms, EW	JCP PBT 252	Lok, 0005, Flex lok; LoK Unity, LoK TP
Thermal barrier	High Temperature Applications, Space, Satellite		FS-TI (fluorosilicone, HIK 500 (high temp)
EMI interference reduction	Electronic Boxes; Communications; Electronic Warfare	FS-EcE (conductive fluorosilicone; FS-NCE (nonconductive fluorosilicone	
Cavity resonance control	ECU, RRU, Amplifier, Test box, Satcom equipment, Optical transceiver	MCS, BSR, GDS, MMI, JCS, Fluorosilicone Abs Series; Nitrile and Urethane Abs Series	
Reflectivity reduction	Ship masts; electromagnetic barriers,	FGM, SF, HR, AN, CamoRam, Multiband Absorbers	SH, HIK



General Selection Guide

ECCOSORB MICROWAVE ABSORBER

NEARFIELD NOISE SUPPRESSION	CAVITY RESONANCE				FREE SPACE					TRANSMISSION LOAD/TERMINATION	
					ISOLATION	REFLECTION REDUCTION					
						NARROW BAND	BROADBAND				
20 Mhz - 2 Ghz	800 Mhz - 6 Ghz	6-18 Ghz	18-35 Ghz	35-100 Ghz	> 1 Ghz	700 Mhz - 40 Ghz	600 Mhz - 2 Ghz	2-18 Ghz	> 18 Ghz	1-18 Ghz	18-35 Ghz
NS 1000	MCS	BSR LS QR-13AF Thermo-plastic MF	GDS 5GMeF1 LS QR-13AF Thermo-plastic MF	MMI JCS 5GHiF1 JCP PBT 252	LS QR-13AF JCS	SF	AN	AN FGM HR RFMB RFRET	HR RFRET	MF MF500F CR/ CRS/ CFS BSR	BSR Thermo-plastic MF



Absorber Product Lines (*New Product Release)

ECCOSORB | CAVITY RESONANCE

Dampening resonance solutions in enclosed space applications when the volume is on the order of a wavelength with non propagating waves.

ELASTOMER	THIN SILICONE	FREQUENCY RANGE
Eccosorb MCS	High loss UL rated sub 6 Ghz absorber sheet	800 MHz - 6 GHz
Eccosorb BSR	High loss flexible sub 18 Ghz absorber sheet	6-18 GHz
Eccosorb GDS	Medium frequency UL rated absorber sheet	18-35 GHz
Eccosorb MMI	Harsh environment mm wave absorber sheet	35-100 GHz
Eccosorb JCS	Electrically conductive mm wave absorber sheet	35-100 GHz
Eccosorb F ² R ²	Fuorosilicone series of fuel resistant, fire retardant absorbers	2-18 GHz
FOAM	LIGHTWEIGHT POLYURETHANE	FREQUENCY RANGE
Eccosorb LS	Insertion loss flexible sheet series	>1 Ghz
Eccosorb QR-13AF	Antimony free UL rated flexible sheet	>1 Ghz
THERMOSET	RIGID MACHINEABLE	FREQUENCY RANGE
Eccosorb MF	Epoxy stock series	1-18 GHz
Eccosorb MF500F	High temperature 260 degree Celsius epoxy stock series	1-18 GHz
COMPOUNDS	CASTABLE/DISPENSABLE LIQUID	FREQUENCY RANGE
Eccosorb CR	2-parts castable rigid epoxy series	1-18 GHz
Eccosorb CRS	2-parts castable silicone series	1-18 GHz
Eccosorb CFS-8480	2-parts castable high temperature silicone	0.6-10 GHz
THERMOPLASTIC	HIGH VOLUME INJECTABLE	FREQUENCY RANGE
Eccosorb MF-PP	High loss polypropylene grade	1-35 GHz
Eccosorb MF-PA	High temperature 170 degree Celsius polyamide grade	1-35 GHz
Eccosorb MF-PPS*	Reflow compliant UL rated grade	1-35 GHz
Eccosorb MF-TPE	Flexible thermoplastic	1-35 GHz
Eccosorb JCP PBT 252*	High mechanical performance PolyButylene Teraphtalate grade	35-100 GHz

TESTING CAPABILITIES

Laird is leading the absorber expertise

in the market thanks to its high level equipment and contributions to the establishment of new standards and testing methods. Full parameters from 0.1-90 GHz are available in CST material library and upon request.

- fl Modeling and testing capabilities
- fl 2D and 3D modeling
- fl RF simulation and modeling
 - fi Ansys HFSS
 - fi CST
- fl RF measurement from 10 Mhz to 100 Ghz
- fl Reliability testing

Absorber Product Lines (continued)

ECCOSORB | FREE SPACE

Free space solutions reduce reflections from surfaces and provide signal isolation and energy barrier between adjacent components. Involve propagating waves where the volume is large relative to wavelength of energy.

ELASTOMER	THIN SILICONE	FREQUENCY RANGE
Eccosorb SF	Frequency tuneable, narrow band high performance resonant sheet	0.7-40 Ghz
Eccosorb FGM	High temperature, low outgassing broadband sheet	2-18 Ghz
Eccosorb RFMB	Multiband free space elastomeric absorber	2-18 Ghz
FOAM	LIGHTWEIGHT POLYURETHANE	FREQUENCY RANGE
Eccosorb HR	Controlled gradient open cell series	5-90 Ghz
Eccosorb AN	Multi layer gradient sheet series	600 Mhz - 20Ghz
Eccosorb RFRET	Broadband graded reticulated foam	2-90 Ghz
Eccosorb RFHC	Broadband graded honeycomb core	2-18 Ghz

ECCOSORB | NEAR FIELD

Noise suppressor are board level solutions for EMI control to achieve better signal integrity.

ELASTOMER	THIN SHEET	FREQUENCY RANGE
NS 1000	Ultra thin, down to 0.06 mm, high permeability noise suppressor	20 Mhz - 2 Ghz

