



SRC HAVERHILL

POLYIRON™
MICROWAVE ABSORBER

Applications for PolyIron™ Microwave Absorber:

EMI RFI Shielding

Optical Transceivers

Integrated Microwave
Assemblies (Covers)

EMC Chambers

Eliminate RFID
Interference

Absorbing Cavity
Resonance

Waveguide Loads

Vehicle Obstacle
Avoidance Radar

Stealth Radar Absorber
and Electronic 'Silencing'

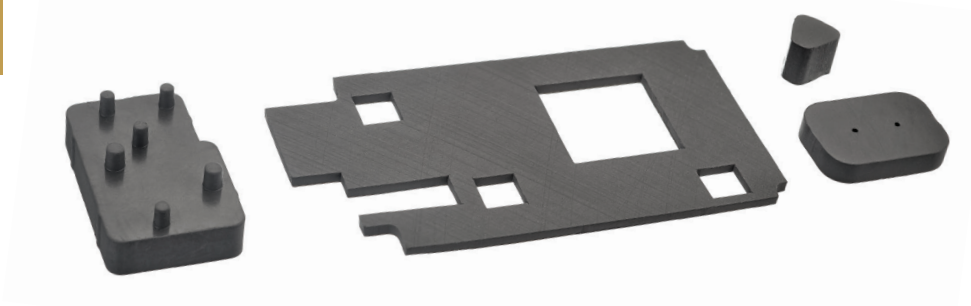
Antenna Side Lobe
Attenuation

Cell Phone and Handset
RF EMI Suppression



SRC HAVERHILL

POLYIRON™ MICROWAVE ABSORBER



3D PARTS MOLDED OR 2D PARTS DIE CUT TO YOUR EXACT PRINT

Unlike common Salisbury shields or gaskets, PolyIron™ magram absorber works to attenuate EMI by absorbing it, not by reflecting it. This is particularly important in small enclosures, where high frequencies cause cavity resonance—something shields do not really address. In today's densely-packed microwave devices where space is at a premium, PolyIron™ has significant advantages because, typically, .030" to .125" thickness of PolyIron™ is all that is required.

SRC Haverhill's PolyIron™ consists of a 5 to 1 pure iron oxide powder, mixed with various catalysts to form a flexible material that is non-conductive. It may be used effectively even in the most confined of enclosures, such as a handset or for small spaces surrounding vehicle avoidance radar, or to reduce antenna side lobe interference.

PolyIron™ was first used for military radar avoidance and stealth applications, but today PolyIron™ is increasingly used in the RF and Microwave industry as operating frequencies continue to go up and design options to absorb unwanted microwaves and lower surface currents are harder to achieve. The typical range of frequencies our customers are addressing successfully is between .5 GHz to 40 GHz.

Common commercial applications are for EMI/Microwave Shielding, eliminating cavity resonance in handsets, for waveguide loads, or to increase security by silencing noisy devices. Designs are limited only by your imagination or the demands of your test, microwave, or military application.

What's more, the material is easy to work with. In sheet form, PolyIron™ can be easily cut by hand to fit even the smallest of enclosures. The SRC Haverhill proprietary binder formulation exhibits low outgassing, is not susceptible to mold and mildew, and the material can handle demanding temperature and environmental extremes.

SRC HAVERHILL POLYIRON™ MICROWAVE ABSORBER



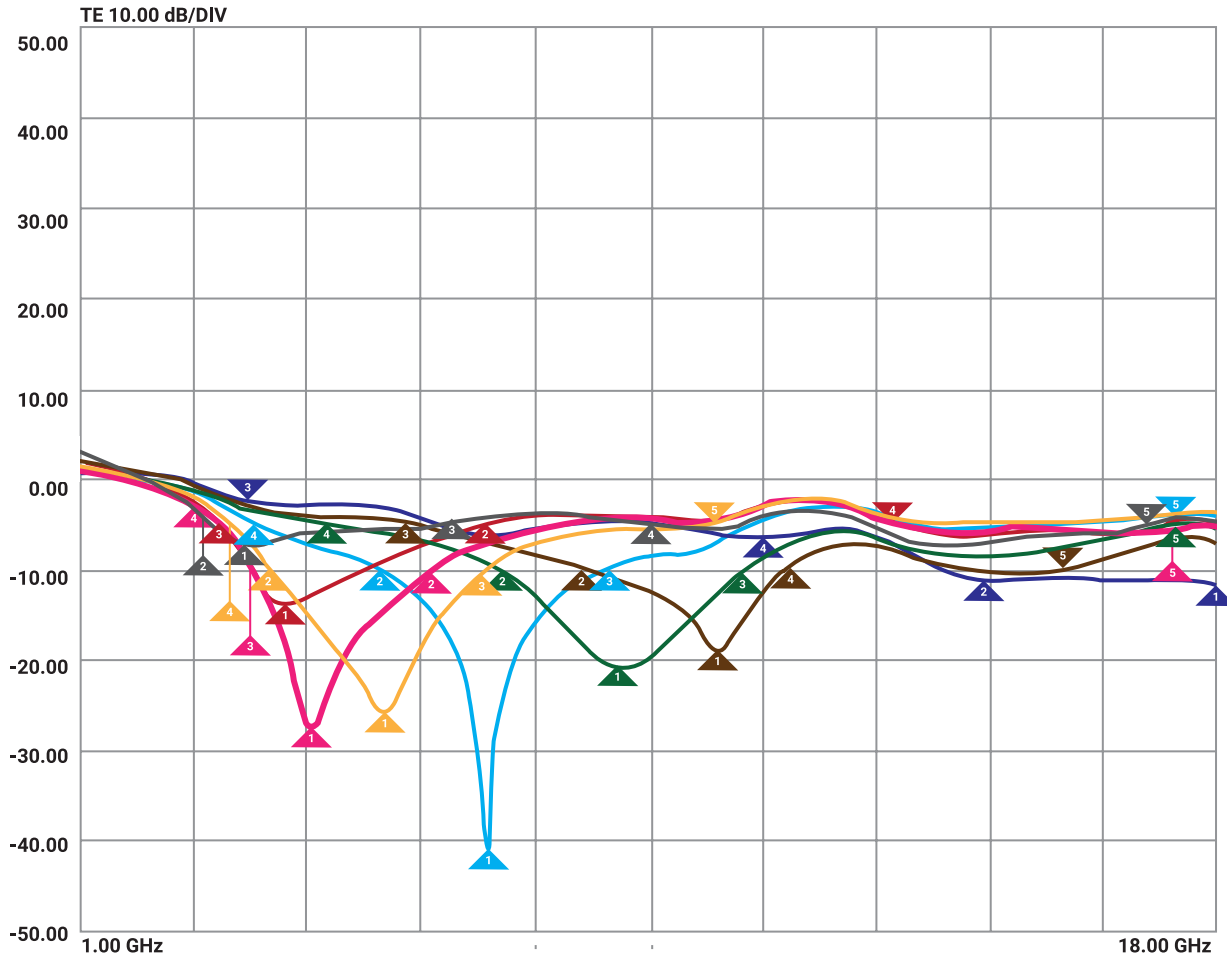
POLYIRON™ PART NUMBER	THICKNESS (INCHES)	OVERALL SHEET DIMENSION (INCHES)
SRC-030	.030	8.8 x 8.5
SRC-040	.040	14 x 6.5
SRC-050	.050	14 x 6.5
SRC-060	.060	14 x 6.5
SRC-075	.075	14 x 6.5
SRC-087	.087	14 x 6.5
SRC-100	.100	14 x 6.5
SRC-125	.125	14 x 6.5
ROHS STATUS		
Lead (Pb) Content		Pass
Cadmium (Cd) Content		Pass
Hexavalent Chromium (Cr6) Content		Pass
Mercury (Hg) Content		Pass
Bromine Compounds		Pass

MILITARY SPECIFICATIONS AND STANDARDS	
IEEE-STD-1128	Free Space Method & Broadband Reflectivity (ARCH)
IEEE-STD-1129	Resonant Cavity Test
ASTM D5470	Thermal Conductivity
MIL-STD-285	Attenuation Measurements for Enclosures
VOLUME RESISTIVITY	
DESC 92017	<1.5 Ohm-cm (0.25 mm thick)
MIL-G-83528	3.45 MPa (500 psi) Load
SHIELDING EFFECTIVENESS	
DESC 92017	Free Space Method & Broadband Reflectivity (ARCH)
MIL-G-83528	"E" Field - 100 dB 200 MHz to 18 GHz

POLYIRON™ PART NUMBER	PERMITTIVITY			PERMEABILITY		
	E'	e"	Loss Tangent (Electric)	u'	u"	Loss Tangent (Magnetic)
SRC-030	13.69	.337	.025	1.69	.502	.297
SRC-100	16	1.085	.068	1.76	.604	.343
SRC-040	13.56	.391	.029	1.66	.466	.281
SRC-050	14.06	.514	.037	1.66	.461	.278
SRC-087	15.77	.91	.058	1.7	.55	.322
SRC-060	14.18	.553	.039	1.69	.479	.284
SRC-075	17.08	.929	.054	1.75	.58	.332
SRC-125	15.43	1.25	.081	1.71	.577	.337

1-18 GHz

BROADBAND REFLECTIVITY



SRC-030

1:	18.00 GHz	-11.80 dB
2:	14.49 GHz	-11.43 dB
>3:	3.52 GHz	-2.71 dB
4:	11.18 GHz	-6.28 dB

SRC-040

1:	4.02 GHz	-14.15 dB
2:	6.97 GHz	-5.03 dB
3:	3.02 GHz	-5.00 dB
> 4:	13.09 GHz	-4.73 dB

SRC-050

1:	10.53 GHz	-19.05 dB
2:	8.53 GHz	-9.94 dB
3:	5.85 GHz	-4.98 dB
4:	11.58 GHz	-9.92 dB
> 5:	15.64 GHz	-9.93 dB

SRC-060

1:	9.03 GHz	-20.73 dB
2:	7.30 GHz	-9.96 dB
3:	10.89 GHz	-9.86 dB
4:	4.75 GHz	-4.90 dB
> 5:	17.33 GHz	-5.18 dB

SRC-075

1:	4.45 GHz	-27.18 dB
2:	6.23 GHz	-9.98 dB
> 3:	3.58 GHz	-10.08 dB
4:	2.69 GHz	-2.50 dB
5:	17.33 GHz	-4.50 dB

SRC-087

1:	7.08 GHz	-40.87 dB
2:	5.48 GHz	-10.14 dB
3:	8.88 GHz	-10.00 dB
4:	3.62 GHz	-5.02 dB
> 5:	17.39 GHz	-4.13 dB

SRC-100

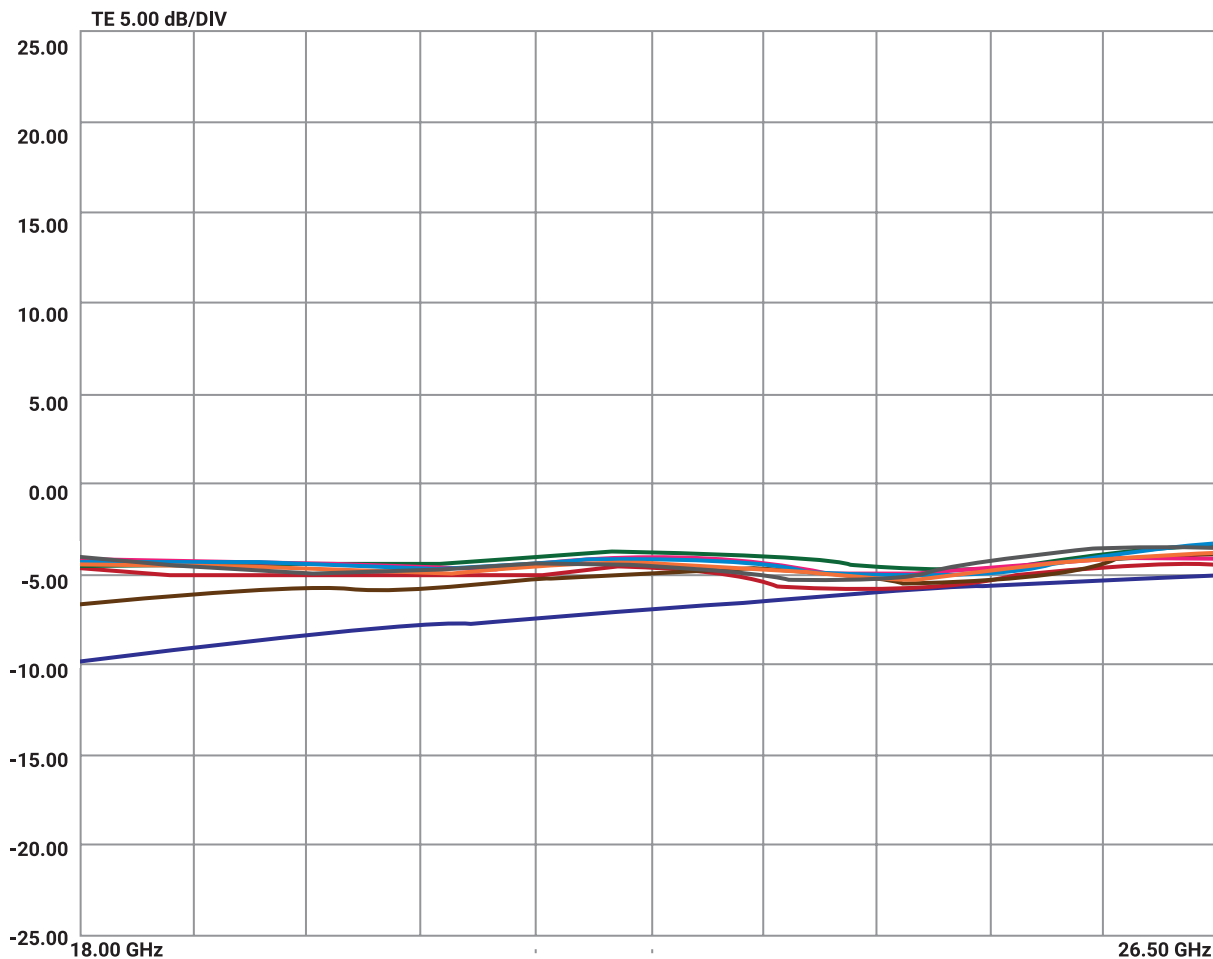
1:	5.59 GHz	-26.19 dB
2:	3.85 GHz	-10.14 dB
3:	7.03 GHz	-10.21 dB
4:	3.25 GHz	-5.20 dB
> 5:	10.49 GHz	-5.05 dB

SRC-125

1:	3.45 GHz	-7.48 dB
2:	2.91 GHz	-5.09 dB
3:	6.56 GHz	-4.89 dB
4:	9.49 GHz	-4.91 dB
> 5:	16.96 GHz	-5.03 dB

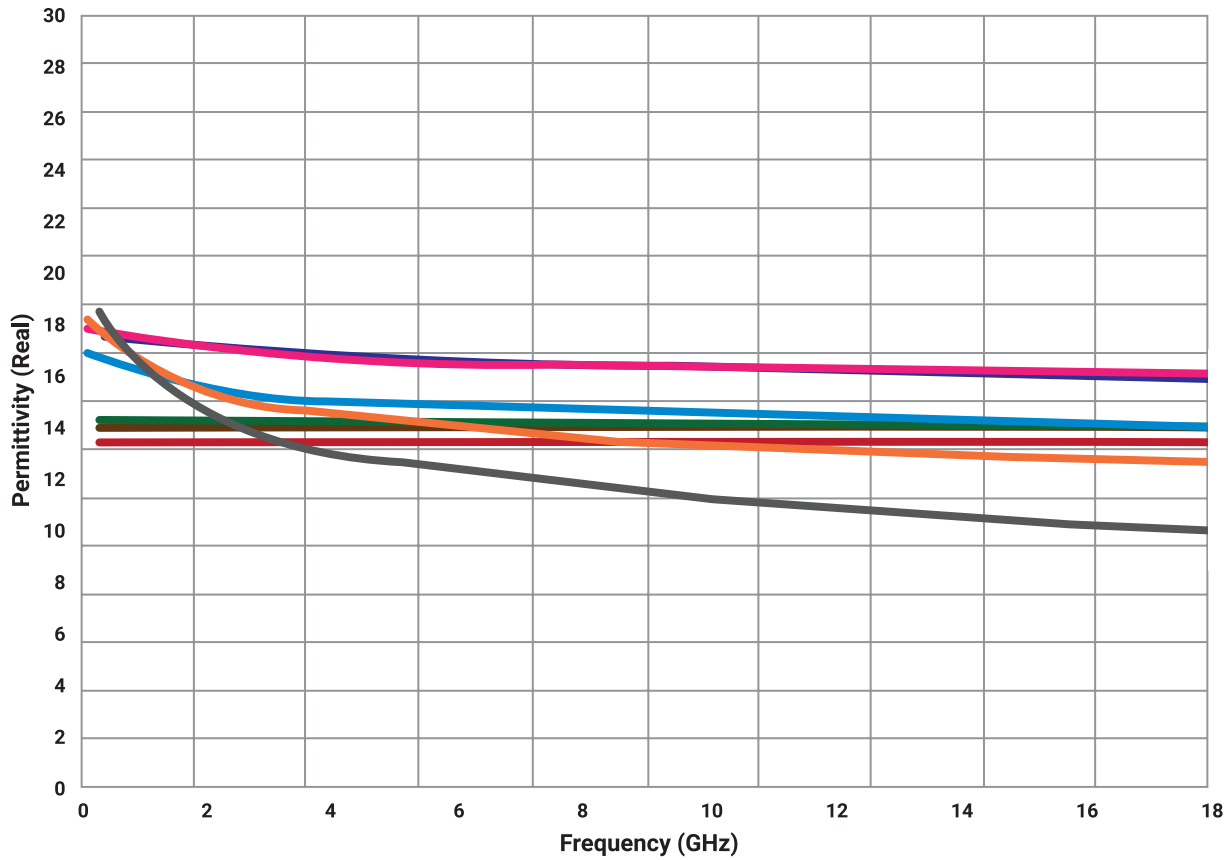
18-26.5 GHz

BROADBAND REFLECTIVITY



SRC-030 1: 18.00 GHz -9.87 dB >2: 26.50 GHz -5.09 dB	SRC-040 1: 18.00 GHz -4.98 dB > 2: 26.50 GHz -4.85 dB	SRC-050 1: 18.00 GHz -6.38 dB > 2: 26.50 GHz -3.80 dB
SRC-060 1: 18.00 GHz -4.86 dB > 2: 26.50 GHz -3.84 dB	SRC-075 1: 18.00 GHz -4.33 dB > 2: 26.50 GHz -4.18 dB	SRC-087 1: 18.00 GHz -4.01 dB >2: 26.50 GHz -3.47 dB
SRC-100 1: 18.00 GHz -4.09 dB > 2: 26.50 GHz -3.75 dB	SRC-125 1: 18.00 GHz -4.50 dB > 2: 26.50 GHz -4.03 dB	

POLYIRON™ RELATIVE PERMITTIVITY



SRC-030

SRC-040

SRC-050

SRC-060

SRC-075

SRC-087

SRC-100

SRC-125



APPLICATIONS

Product complexity, device frequency, and component density are increasing across the range of microwave, satellite, wireless, test equipment, military, and commercial EMI applications. EMI designers and engineers must find effective, affordable ways to handle unwanted emissions and impedance mis-match. As components grow smaller and more dense, designers and engineers are faced with dwindling layout options to resolve cross talk, creeping waves, cavity resonance, or RF antenna coupling problems.

One of the many problems our PolyIron™ custom-fabricated microwave absorber has solved is for manufacturers of optical transceivers. With these devices stacked closely to each other on high-speed routers used in large cloud farm data centers, meeting stringent FCC regulations was a problem. The PolyIron™ was molded and cut to the customer's complex application shapes. Cross talk was eliminated and the parts met FCC requirements.

For high frequency RF, microwave, radar, and antenna applications ranging from 100 MHz to 40 GHz, SRC Haverhill PolyIron™ attenuates near field emissions. Applications include isolating noisy PC board components, shielding sensitive microwave devices from both magnetic and electric interference, eliminating cavity resonance from enclosures, waveguide loads, reducing antenna side lobes - the list of applications is continuously growing.





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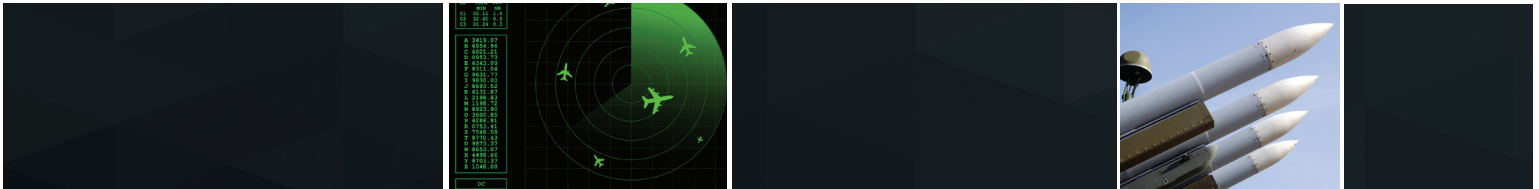
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BRANDS

