

Near-Field 3M™ EMI Absorber Application Profiles

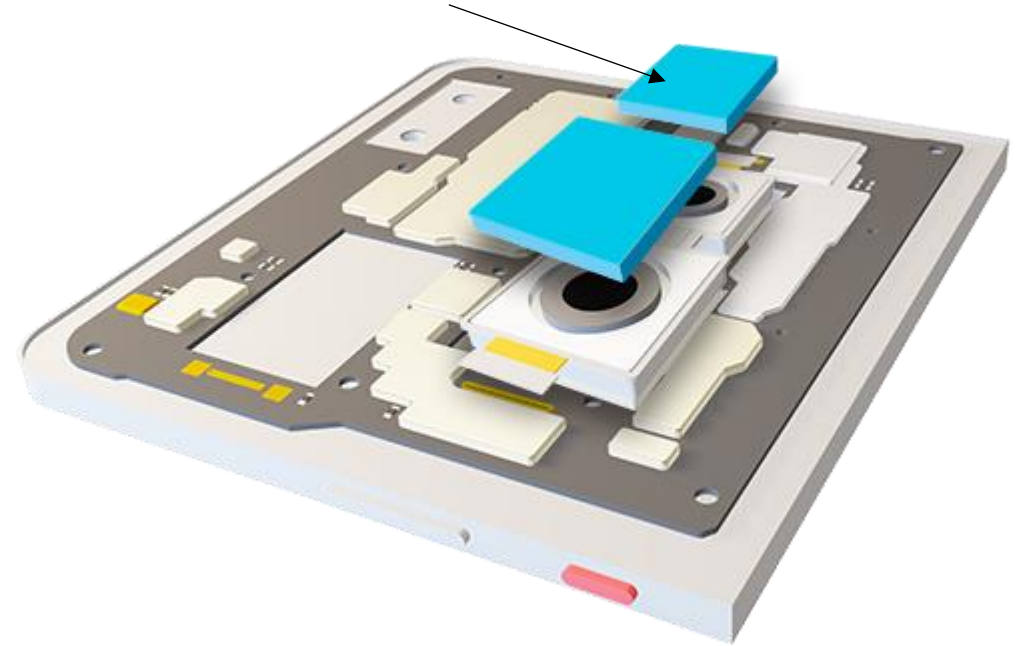
Solutions that help enable the next generation of technology

EMI Noise Suppression

Components

PCB/FPC traces, IC's, and cameras are potential sources of EMI, and they can induce EMI into different modules. These EMI signals can be mitigated by placing near-field absorbers directly over the noisy component.

Attach the absorber to the noisy component



Large enclosures

USE:	Sub 3 GHz
ABSORBER	3M™ EMI Absorber AB5000HF/SHF Series
TOP FEATURES	<ul style="list-style-type: none"> • Select thicknesses in roll format • Near-field & Cavity performance

Traces and small enclosures

USE:	Sub 2.5 GHz	Sub 4 GHz + Harsh Conditions	Sub 4 GHz + Longer Shelf Life	2-10 GHz
ABSORBER	3M™ EMI Absorber & Magnetic Shielding Material EM25TP Series	3M™ EMI Absorber AB8000 Series	3M™ EMI Absorber AB7000E Series	3M™ EMI Absorber & Magnetic Shielding Material AB3000 Series – *coming soon
TOP FEATURES	<ul style="list-style-type: none"> • High permeability for EMI absorbing & shielding performance • Multiple product constructions 	<ul style="list-style-type: none"> • High temperature resistance (150°C) • Available without adhesive • 2-year shelf life 	<ul style="list-style-type: none"> • Broad temp range -25°C-105°C • 18-month shelf life • Available with and without adhesive 	<ul style="list-style-type: none"> • Predicted broadband frequency performance • Predicted EMI absorbing and magnetic shielding

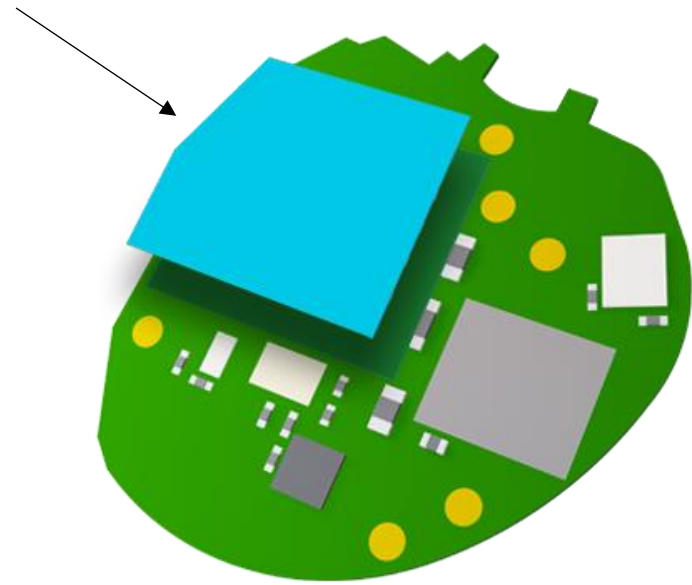
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EMI Noise Suppression

Digital ICs and Modules

High clock frequencies of data modules and ICs can lead to induced internal and external EMI in nearby environments. This EMI noise can affect telecom and Wi-Fi frequency bands. This can be addressed by placing absorbers with high magnetic loss to capture both clock frequencies and their harmonics. Thin absorbers can be easily placed over aggressor circuits to help suppress noise.

Attach the absorber to the microprocessor or digital IC



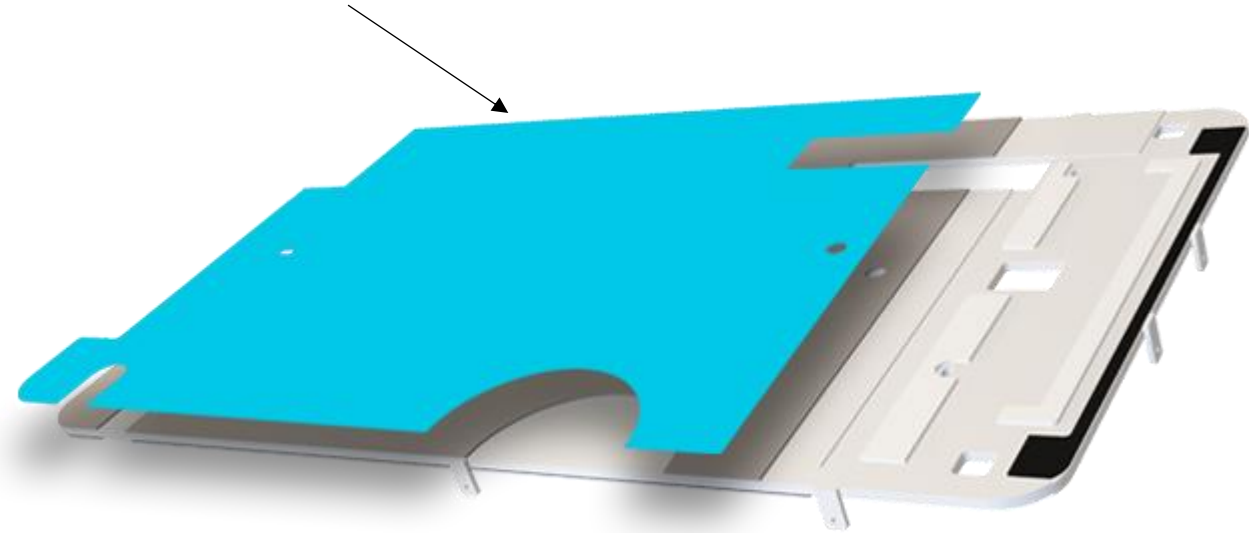
USE:	Sub 4 GHz	Sub 4 GHz and harsh environments
ABSORBER	3M™ EMI Absorber AB7000E Series	3M™ EMI Absorber AB8000 Series
TOP FEATURES	<ul style="list-style-type: none">• Stable resin• Broad temperature performance -25°C – 105°C• 18-month shelf life• Available with and without adhesive	<ul style="list-style-type: none">• High performance resin system for solder reflow stable• High temperature resistance (150°C)• Available without adhesive• 2-year shelf life

EMI Noise Suppression

Enclosures

Noise from PCB stacks could be due to trace-to-trace or inductor-to-trace coupling. Unlike metal foils, thin absorbers with high magnetic shielding and loss will not support surface currents that could lead to additive EMI problems. 3M offers very thin, high performance EMI absorbers to fill gaps potentially without electrical system redesign.

Insert the absorber between the module



USE:	Sub 2.5 GHz	Sub 4 GHz + Longer Shelf Life	2-10 GHz
ABSORBER	3M™ Flux Field Directional Material EM25TP	3M™ EMI Absorber AB7000E Series	*Coming soon: 3M™ EMI Absorber & Magnetic Shielding Material AB3000 Series
TOP FEATURES	<ul style="list-style-type: none"> • High permeability • High magnetic shielding and absorbing efficiency • Multiple product constructions 	<ul style="list-style-type: none"> • Broad temp range - 25°C-105°C • 18-month shelf life • Available with and without adhesive 	<ul style="list-style-type: none"> • Predicted broadband frequency performance • Predicted EMI absorbing and magnetic shielding

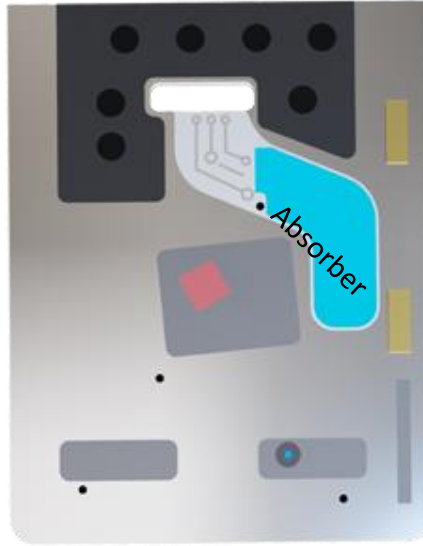
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EMI Noise Suppression

Cables

Whether conventional or flex flat, cables can emit EMI themselves and act as an antennae for external EMI signals that can couple into connected components. For conventional cables, chokes or thin absorbers can help create an economical and efficient EMI design. Flex flat cables can create conducted EMI between modules, requiring a compact yet powerful EMI noise suppression absorber.

Attach to flex flat cable or wrap a conventional cable



Short Cables/Flex Flat Cables

Long Cables

	Short Cables/Flex Flat Cables			Long Cables	
USE:	Sub 2.5 GHz	Sub 4 GHz + Harsh Conditions	Sub 4 GHz + Longer Shelf Life	2-10 GHz	Sub 3 GHz + Roll Format
ABSORBER	3M™ Flux Field Directional Material EM25TP	3M™ EMI Absorber AB8000 Series	3M™ EMI Absorber AB7000E Series	3M™ EMI Absorber & Magnetic Shielding Material AB3000 Series – *coming soon	3M™ EMI Absorber AB5000HF/SHF Series
TOP FEATURES	<ul style="list-style-type: none"> • High permeability • EMI absorbing & shielding performance • Very thin options 	<ul style="list-style-type: none"> • High temperature resistance (150°C) • Available without adhesive • 2-year shelf life 	<ul style="list-style-type: none"> • Broad temp range -25°C-105°C • 18-month shelf life • Available with and without adhesive 	<ul style="list-style-type: none"> • Predicted broadband frequency performance • Potentially available with and without adhesive 	<ul style="list-style-type: none"> • Select thicknesses in roll format • Near-field & Cavity performance

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