

## EMI-RFI Filters

### Applications

- Any size OEM equipment
- System integrator
- Electronic devices

### Benefits

- 5 Year warranty
- Cost effective
- Saves time

### Features

- High probability to pass CE Certification
- On-site real time solution



# EMI-RFI Filters

## Introduction

This white paper discusses a recent Enerdoor success story using an EMI- RFI filter in conjunction with laser equipment. Laser equipment often uses AC/DC power converters in order to rectify and control the laser.

Today, lasers are used in several different markets, including: medical, machine tools, microelectronics, marking and advanced processing.

All electric or electronic devices have connections that are potential sources for electromagnetic or radio frequency interference (EMI-RFI). Both are known as electrical noise which may cause disturbance in normal operations. This can cause unexpected issues to occur, also known as “Ghost” problems. Audible noise or leaking water are examples of problems that a person can hear or see. “Electrical noise,” however, is the type of problem that can only be solved after careful analysis, using very expensive instruments.

Laser manufacturers are often challenged to achieve CE Certification, due to the fact that their products work in higher frequency ranges and generate severe radio frequency interference that often cause malfunctions with other nearby machines.

## The Challenge

A manufacturer of laser equipment designed a new machine to be sold worldwide just prior to a major industry trade show.

The design team needed to reduce the footprint of the previous design, which included eliminating space dedicated for an EMI filter. The electrical specifications required the filter to be rated for ambient temperature 50°C.

## The Solution

The manufacturer requested an on-site, pre-compliance test with Enerdoor mobile laboratory, as the original configuration was not in compliance with IEC Standards.

Working in conjunction with the customer, Enerdoor engineers performed the conducted emission test using two options: a standard filter solution as well as a custom solution, built on-site. The customer decided to use the custom solution because it offered better performance, or headroom with the IEC Standards.



After promptly providing a quotation and receiving the customer's order, Enerdoor built a sample filter in two weeks, installed it at the customer's facility and their laser product immediately passed the emissions test at their local Compliance house.

## The Result

The manufacturer's decision to take advantage of the Enerdoor mobile laboratory for pre-compliance testing before moving to the final Compliance test saved both time and more importantly, money. The potential compliance failure of the machine would compromise the project deadline and the introduction to the market during the upcoming worldwide exhibition.

This example of teamwork allowed the customer to bring a product to the global market faster, while being in complete compliance and at a reduced total cost. Enerdoor is committed to providing the highest level of customer support possible and bringing value to our customers.