



Easily accessible design & simulation of an EMI filter with realistic component models



REDEXPERT®

- Würth Elektronik's online simulation & design tool
- Launched in 2015
- More than 20.000 registered users
- 36 product family modules and growing
- 20 simulation applications and growing
- Very accurate AC loss model for Power Inductors
- NEW application: EMI Filter Designer !





EMI Filter Designer



Why EMI Filter?









Electronic interference

- Badly working products
- Lost revenue
- Property loss
- Dangerous situations



6000

Frequency in Hz

4000

Problem

Determining suitable components for a low-pass filter, to make your device EMC compliant, can be a time consuming and largely empirical process.

- $f = \frac{1}{2 \times \pi \times \sqrt{LC}}$
 - Insertion Loss may not be achieved
 - Only limited to LC filter topology
 - Impedances not considered
- Does not consider attenuation @ frequency
- Assumes ideal components
- Which actual component to select?







Símple Equívalent Círcuít - Inductor





more than you expect

REDEXPERT[®] EMI Filter Designer



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PARAMETERS	SELECTION AND SIMULATION	SUMMARY			NEXT >
EMI Filter Designer for Use this application to determine the second	differential mode: sign a discrete electronic EMI filter fo	r conducted differential noise, Topology: (1)	for example from your DC-D $ \begin{array}{c} $	C converter, and evaluate the $c_1 + c_2 + c_2$ $c_1 + c_2 + c_2$	e realistic response based
		Advanced SMD components only shielded inductors High temperature (125) Shared input capacitor DC	C/DC converter	л 10 µF	

- Takes out guess work
- Reduces time & costs
- Low entry and easy to use
- First filter tool from component manufacturer
- Design and simulate 4 component subsystem circuit from scratch
- Fast and new architecture

more than you expect

REDEXPERT[®] EMI Filter Designer



- Topology recommendation based on the impedance, insertion loss & cutoff frequency
- Component recommendation considering noise source and load impedance, cut off frequency, parameters
- Auto-selects from thousands of parts
- Shows insertion loss and input/output impedance
- Non-ideal components simulation



EMI Filter Designer

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https://redexpert.we-online.com (register first)



FILTER DESIGNER

Questions?



