



\$4 Buck
Ballast Conducted EMI Fix

EZ FIX

11 March 2015
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C'mon Feel The Noise

Poorly designed electronic ballasts spray unwanted RF energy as electromagnetic interference (EMI) on both the power line, and the lamp cord. This can screw up WiFi, cell service, cable TV and have the FCC and others knocking at your door.

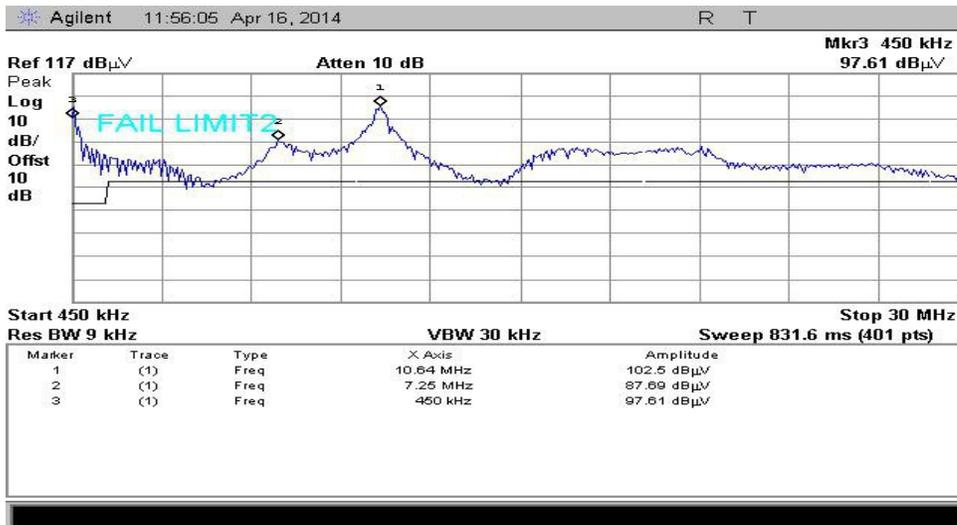
Power line, or Conducted EMI, mainly causes problems in the home with the ballasts – if you're not having a problem, odds are no one else is either.

Radiated EMI from the lamp cord, though, is another story. It's been measured to cause serious interference 1/2 a mile away, and has been the basis for every single FCC enforcement action and all grow-room hunts to date.

If you're got junk ballasts giving you Conducted EMI issues, though, a power line filter is a piece of cake!

The Garbage Man

This is a Conducted EMI plot from a notoriously noisy and well-known ballast measured at Compliance Testing, in Phoenix, an FCC-certified EMI test lab. The black line is the FCC's maximum for conducted noise, and yeah, they're completely above it. I included the plot so you can see theses guys are not missing by a little, they're missing by a LOT. Twenty of these ballasts and No WiFi For You!



Here's The Fix

We built lamp-side filters to to quiet down noisy grows because they're dangerous if you do 'em wrong. If you need a power line filter, though, its dirt EZ looks like this:



Clip it on your power cord as close to the ballast as you can get it, and loop the cord through a couple times. The impedance here rises as the square of the turns, so four (4) wraps are sixteen (16) times better than one wrap.

You can get one of your very own at Mouser electronics for \$3.64:

<http://www.mouser.com/ProductDetail/Fair-Rite/0431164181/?qs=%2fha2pyFadui9i7OfS7yC6UQqC3M9yLQhKcwDWD2IHtc%3d>



Mouser Part #: 623-0431164181
Manufacturer Part #: 0431164181
Manufacturer: Fair-Rite
Description: Ferrite Clamp On Cores Low & BB Freq
 31 Mat 260Ohm @250MHz Round



[Page 1,273, Mouser Online Catalog](#)
[Page 1,273, PDF Catalog Page](#)
[Data Sheet](#)

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Specifications

Features

Documents (2)

My Notes

Manufacturer:	Fair-Rite	<input checked="" type="checkbox"/>
Product Category:	Ferrite Clamp On Cores	<input checked="" type="checkbox"/>
RoHS:	Details	
Brand:	Fair-Rite	
Shape:	Round	<input type="checkbox"/>
Inside Diameter:	13.05 mm	<input type="checkbox"/>
Outside Length:	39.4 mm	<input type="checkbox"/>
Outside Width:	31 mm	<input type="checkbox"/>
Outside Height:	15.25 mm	<input type="checkbox"/>
Core Material:	31	
Operating Temperature Range:	- 55 C to + 125 C	
Packaging:	Bulk	
Factory Pack Quantity:	110	
Tradename:	SNAP-ITS	
Type:	Round Cable Core	

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Real Time Availability

Stock: 13,467 Can Ship Immediately
On Order: 0
Factory Lead-Time: 3 Weeks

Enter Quantity:

[Buy](#) Minimum: 1
 Multiples: 1

Pricing (USD)

1: \$3.64
 10: \$3.60
 50: \$2.87
 100: \$2.58
 500: \$2.44
 1,000: \$2.27
 2,000: \$2.22
 5,000: \$2.15
 10,000: Quote

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Shhhhh....

Clip one on, and enjoy the Conducted EMI fix. Boom. Done.