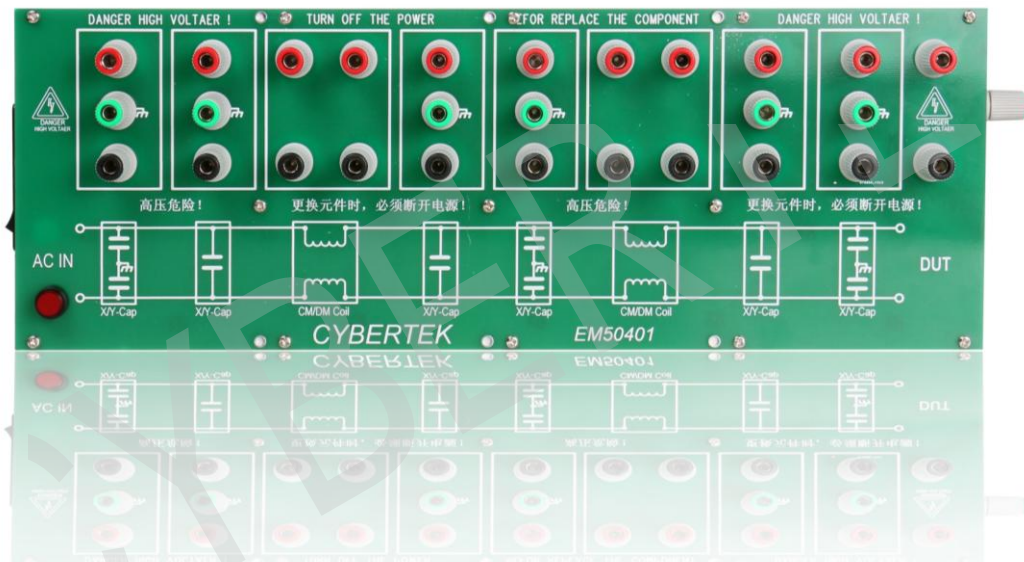


Filter Debug Fixture

EM50401



Introduction

First of all, thank you for purchasing our products, this instruction manual is the description about the function, usage, operation attention points, etc. Before use, please read the instructions carefully and use correctly.

Manual annotation will use the following symbols to distinguish.



This symbol means it is harmful to the machine and human body; you must strictly follow the instruction manual to operate.

Warning

In the case of wrong operation, the user risk injury. The content under this mark records the relevant matters needing attention to avoid such dangers.

Notice

The user may suffer minor injuries and material damage with the wrong operation. To avoid such situation, the matters under this mark need attention.

Note

This symbolizes important note about how to use the machine.

To the safely use the machine, you must abide by the following safety precautions strictly. The violation against the manual is likely to damage the protective function of the machine. In addition, the company is not responsible for any safety problem caused by the violation of matters needing attention in operation.

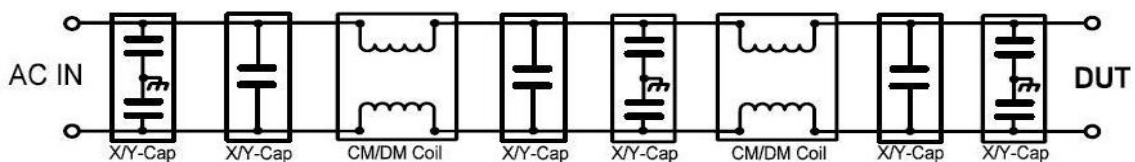


- Please make sure that the product is operating in the range of voltage and current.
- Please do not open the machine's shell or touch the metal port when the product is in use.
- Do not change the filter module if the product is in operation. Make sure to turn the power off before do so.
- Because the X capacitor's capacity is large, after using it, do not directly touch the metal port of this device before discharge treatment.
- Strongly recommend Isolation Transformer that can prevent deadly electric shock.
- Do not use the product in wet, combustible or explosive environment.
- Please keep the device surface dry and clean before use.
- If there's anything wrong with the product, please contact the company immediately. Do not try to open the shell and repair it, this could cause unwanted accident.

1. General Introduction

EM50401 is the Filter Debug Fixture designed for the debugging of conduction interference for the switching power supply. It can interact with LISN EM5040B and EM5080 series receivers of our company and build a whole conduction test system. By plugging different filter modules on this fixture, the users can improve the efficiency of product designing and debugging because of the simplified process. By analysis the CM/DM signal of the device under test, it can help the user find the best power supply filter circuit easily, debug and improve the conduction interference fast.

2. Circuit Diagram



3. Specification

Fuse rating	6.3A /250VAC
Size of the Banana Connector	4mm
Size	360mm(length) x 125mm (width) x 54mm (height)
Weight	1.4kg

4. Construction of the Test Platform

4.1 Safety instruction



- ❖ The LISN must always be insulated by the isolation transformer to keep the users safe.
- ❖ The earth line of the LISN requires ground to keep the users safe. Especially when isolation transformer is not used, LISN must be grounded, or there could be deadly electric shock.
- ❖ When changing the component of the EM 50401, the power supply must be turned off.

4.2. Schematic Diagram of the construction of the platform

The diagram below is the example of using CM/DM analyzing technology to debug and improve the product designed

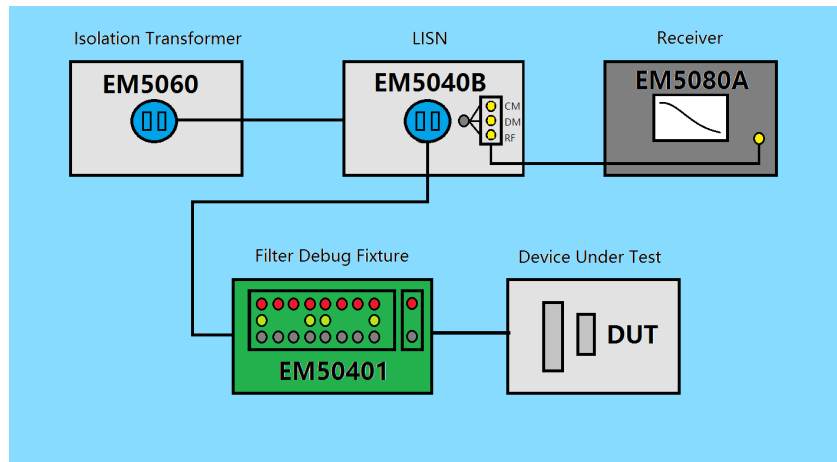


Diagram: CM/DM conduction interference debugging system

5. EMI Debugging TIPS

Frequency(Hz)	Effect	Solution
9k-1M	Differential mode mainly	X capacitor, differential mode inductor
1M-5M	Mixture of differential and common mode	X capacitor, differential mode inductor, Y capacitor, common mode inductor
5M-30M	Common mode	Y capacitor, common mode inductor
30-50M	Caused by the fast switching of MOSFET	Increase the gate driver resistance
50M-200M	Caused by the reverse recovery current of the diode	Add ferrite core on the pin of diode
200M-1000M	The emission of the switching power supply is low	High-speed digital circuit, clock and RAM/CPU mainly

6. Packing List

35 component modules in standard pack:



Common mode/differential mode/shortage modules



Y capacitor



X capacitor

Component module listed below



Packing List			
Name	Quantity	Name	Quantity
EM50401	1	8mH common mode inductor module	2
2200pF Y capacitor module	3	30mH common mode inductor module	2
4700pF Y capacitor module	3	30uH differential mode inductor module	2
0.1uF X2 capacitor module	3	70uH differential mode inductor module	2
0.47uF X2 capacitor module	3	100uH differential mode inductor module	2
1uF X2 capacitor module	3	Instruction manual	1
2uF X2 capacitor module	3	Guarantee card	1
1.2mH common mode inductor module	2	Test report	1

CYBERTEK

SHENZHEN ZHIYONG ELECTRONICS CO., LTD

Addr: Room A1702, Building 4, TianAn Cyber Park, HuangGe North Road, LongGang
District, ShenZhen City, China

Tel: +86-400 852 0005
+86-755-86628000

Q Q: 400 852 0005

Fax: +86)0755-8662 0008

Email: cybertek@cybertek.cn

Url: <http://www.cybertek.cn>

© Zhiyong Electronics, 2018

Published in China, January 1, 2018