

# Coupling/Decoupling Network

## EM5070A

(CDN- M2/M3)



## Preface

To safely use this machine and avoid personal injury or device loss, please read this instruction manual carefully and strictly follow the safety cautions below. Our company will not be responsible for any injury or loss caused by violating the instruction.

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 have suffered minor injuries and material damage while with the wrong operation, to avoid such situation, note the matters needing attention.

**Note**

This symbolizes important note about how to use the machine.



This product is designed according to the international EMC standard, so, theoretically there will be relatively large leakage current. If the ground condition is bad, there could be deadly electric shock. Thus, the company requires the users to check the following tips:

- ◆ The ground must be good. (There're ground point on the sides and back of the device)
- ◆ The electric environments of many users have bad grounding, but users don't know. This is critically dangerous so the company require the users to have double protection: users must install isolation transformer. Users can buy it on the market or use our EM5060 isolation transformer (0.9kVA), which can satisfy most low power test requirement.
- ◆ Do not open the case or try to connect lines during operation. Do not use the LISN in damp or explosive environment. Please keep the device surface dry and clean before operating.
- ◆ Must make sure the product is used in the rating voltage/ current range.
- ◆ If there's anything wrong with the product, please contact us immediately. Do not open the case and try to repair the device to avoid unwanted accident.

## 1. Summary

**EM5070A coupling/decoupling network CDN-M2/M3** is the product used for EMI test, it can provide stable impedance between the device under test and the reference ground in RF range and insulate the test circuit from the useless signal from the electric network, coupling the interference signal of the device under test to the input port of the test receiver.

Designed according to national standard GB/T17626.6-2008/IEC61000-4-6: 2006 and requirement for CDN- M2/M3 coupling/decoupling network (CDN-M2 double line, CDN-M3 triple line,) EM5070A combine both CDN-M2 and CDN-M3 test methods. Users can proceed measurement to M2 and M3 with only one EM5070A.

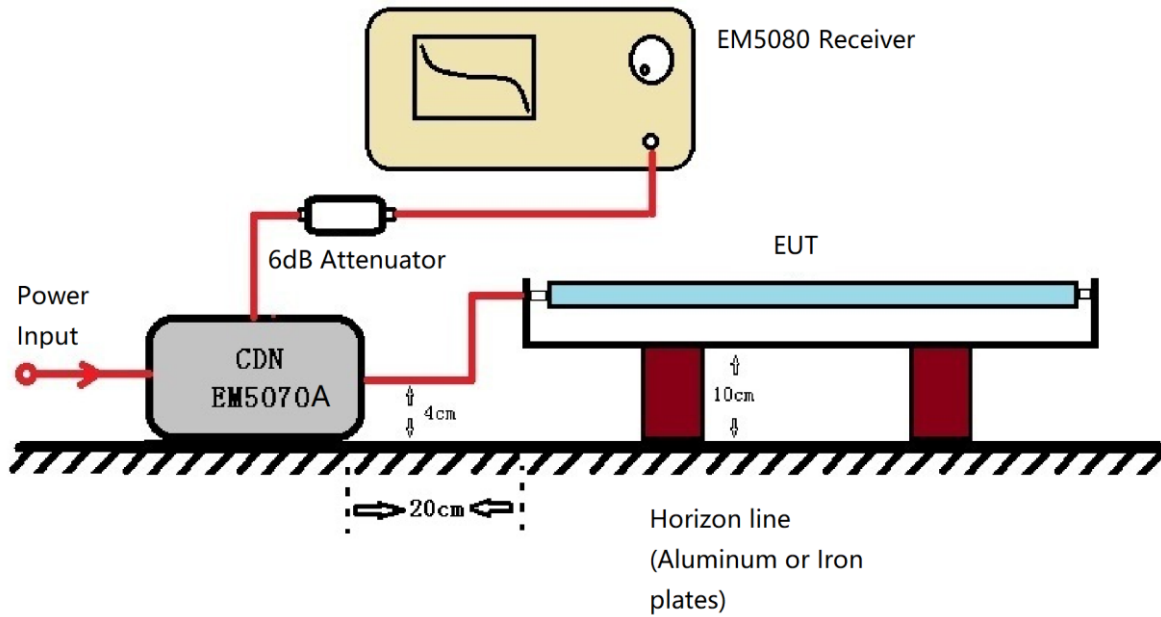
Coupling/decoupling network (CDN) can be used for can be used for the 150kHz~300MHz radio interference testing of the electric lighting device according to national standard GB17743-2007 /CISPR15: 2005/EN55015. The detailed testing method can refer to the standards above.

EM5070A can be well used for single phase device conduct test. According to the design theory, there could be relatively large leakage current, good grounding is necessary during operation. Isolation transformer will be needed to cooperate in necessary cases, and our EM5060 (900VA) can satisfy most testing requirement.

## 2. Electrical Specification

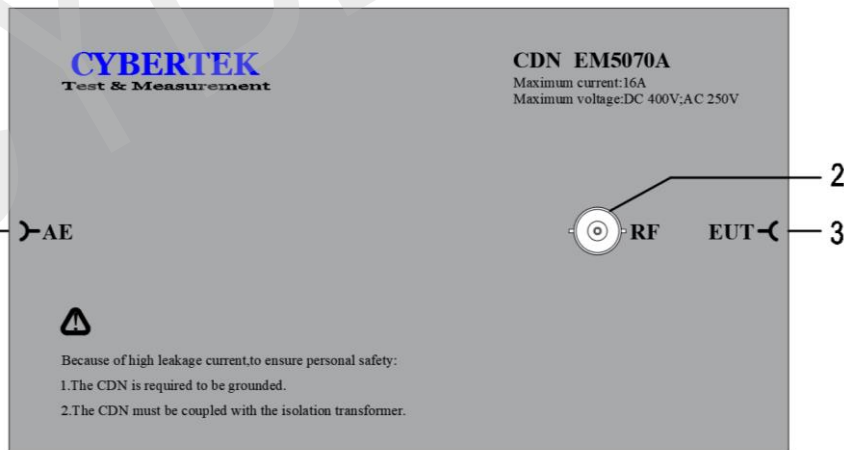
Frequency range	150kHz—300MHz
Test routine phase number	Single phase
AC voltage range	0~250V AC +10%
AC frequency range	50~60Hz ±5%
DC voltage range	0~400V DC
Current range	0~16A
Output port	4mm banana set
Interference output port	Standard BNC female set, 50Ω
RF continuous output power	6W
Operating temperature range	5°C~45°C
Division factor (EUT and RF)	150kHz-300MHz 9.5dB +3dB/-1dB
Port impedance 150Ω	150kHz-26MHz , 150Ω±20Ω 26MHz-80MHz, 150Ω+60Ω-45Ω 80MHz-300MHz , 150Ω±60Ω
Decoupling coefficient DC	(AE port and RF port) Lowest point: ≥20dB
Dimension	245mm(L)×100mm(W)×100mm (H)
Mass	0.79kg

### 3. Lighting Test Diagram



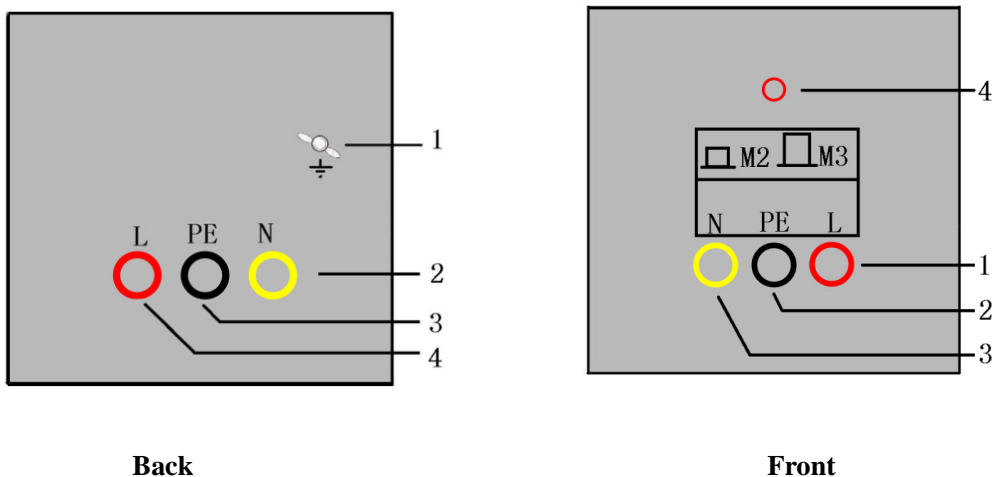
### 4. Interface Instruction

#### 4.1、 EM5070A M2/M3 Upper Interface Instruction



- ❖ Power Supply Input Port: Power supply input port, 4mm banana set
- ❖ RF Port: Standard BNC RF port, used to connect receiver or spectrometer.
- ❖ EUT Power Supply Port: EUT power supply port, 4mm banana set.

## 4.2、 EM5070A Front/Back Interface Instruction



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|--|--|
| <ol style="list-style-type: none"> <li>1) <b>Grounding Port:</b> bolt around 4mm for grounding protection;</li> <li>2) <b>Power Input Port:</b> power supply input Port N, 4mm banana set;</li> <li>3) <b>Power Input port:</b> power supply input port PE, 4mm banana set;</li> <li>4) <b>Power Input Port:</b> power supply input port L, 4mm banana set.</li> </ol> | <ol style="list-style-type: none"> <li>1) <b>EUT power supply port:</b> EUT power supply input port L, 4mm Banana set;</li> <li>2) <b>EUT power supply port:</b> EUT power supply input port PE, 4mm banana set;</li> <li>3) <b>EUT power supply port:</b> EUT power supply port N, 4mm banana set;</li> <li>4) <b>M2/M3 switch:</b> M2/M3 RF output selection.</li> </ol> |
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## 5. Steps for Installing and Testing

- ✧ Connect the ground electrode of EM5070A and test receiver to the grounding line.
- ✧ Connect the isolation transformer and CDN network EM5070A.
- ✧ Connect the device under test and put the device according to the diagram above on position.
- ✧ Connect the interference signal output port of the EM5070A to the input port of EMI receiver.
- ✧ Select the corresponding filter for EM5070A according to EUT standard.
- ✧ Connect the isolation transformer with the electronics network and connect the EM5070A with the isolation transformer turn on the power to test.

## 6. User Tips



- ☞ Do not open the shell during operation, do not operate in environment with explosive danger. Make sure the surface of the device is clean and dry before putting into use.
- ☞ Carefully read the instruction manual before test and learn the safety tips. Proceed testing with right steps.
- ☞ Recommend isolation transformer to prevent the occurrence of accidents.
- ☞ If there's any product malfunction, please contact our company immediately. Do not open the shell and repair on your own, or accident could occur.

## 7. Packing List

Packing List	
Name	Amount
CDN	1
CK-316 (Power supply cable)	1PCS
CK-320A (RF cable)	1PCS
Instruction manual	1
Warranty card	1
Test report	1

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