

# WM\_W600\_路由器连网兼容性测试报告

## V0.3

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## 测试报告修订记录

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|------|----------|---------------|-----|----|
| V0.1 | 20180827 | 初稿            | 陈泽兴 |    |
| V0.2 | 20180831 | 调整部分描述，突出测试策略 | 李光辉 |    |
| V0.3 | 20181012 | 更新 SDK 版本信息   | 李光辉 |    |
|      |          |               |     |    |
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## 引言

### 1.1 编写目的

记录 WM\_W600 与路由器连网兼容性验证过程和测试结果相关信息，为 WM\_W600 与路由器连网兼容性提供质量评估依据。

### 1.2 预期读者

WM\_W600 相关研发人员，包括但不限于产品经理，软硬件开发人员，FAE 以及测试人员。

### 1.3 术语定义

|      |                                 |            |
|------|---------------------------------|------------|
| AP   | Access Point                    | 访问点        |
| Open |                                 | 开放式/不加密    |
| WEP  | Wired Equivalent Privacy        | 有线等效加密     |
| WPA  | Wi-Fi Protected Access          | Wi-Fi 保护访问 |
| TKIP | Temporal Key Integrity Protocol | 临时密钥集成协议   |
| IP   | Internet Protocol               | 网际协议       |

## 2 测试策略

为验证 WM\_W600 能否满足对市场占有率较高无线路由器的连网兼容性，我们特拟定以下策略：

- 1、选择多品牌多款型无线路由器---从天猫和京东搜索销量排名 Top20 无线路由器。最终确定了 31 个品牌 44 款无线路由器；
- 2、关键验证模块能否成功连接 44 款无线路由器，并获取相应 IP 地址；
- 3、为模拟客户真实使用场景，特加入了一款无线信号放大器参与测试。放大器与 27 款无线路由器连接，验证模块连接经放大器放大后的无线信号能否成功。

### 3 测试环境

按照下图搭建测试环境：

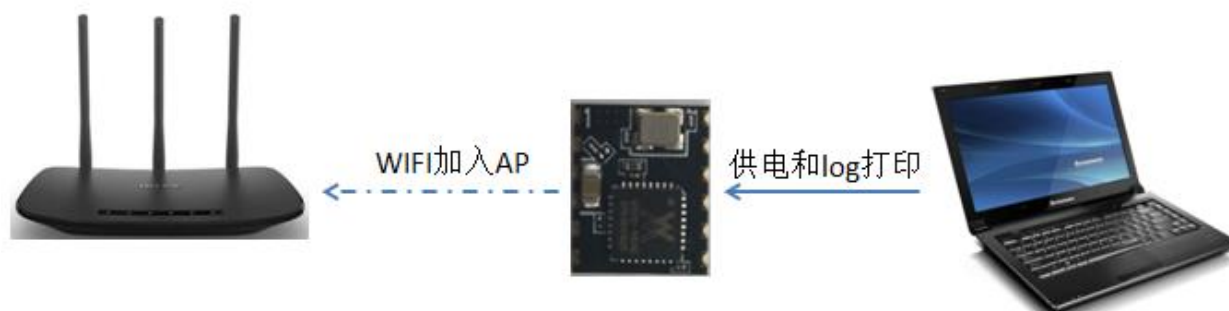


图 1 测试组网图

- 1、参与测试的 44 款路由器同时上电，按第 4 章节所附文件设置各款无线路由器参数；
- 2、模块与路由器距离 3 米左右，通过 AT 指令 Wjoin 连网；
- 3、部署一款无线信号放大器参与测试；
- 4、SDK 版本为 G2.2.5、 G2.2.6、 G2.2.7、 G2.2.8、 G3.0.0。

### 4 测试用例

验证模块连网的兼容性，无线路由器的一些配置和工作模式是需要考虑的，我们着重覆盖了以下情况：

- 1、无线路由器恢复出厂设置后模块连网情况；
- 2、无线路由器不同加密方式下模块连网情况；
- 3、无线路由器不同信道模式下模块连网情况；
- 4、无线路由器不同工作模式下模块连网情况。

具体的被测设备和设置以及测试数据如下：

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说明：  
中间区域数据OK表示模块加网成功；  
黄色背景表示经过TL-WA832RE信号放大器扩展后，模块也进行了加网测试

| 路由器品牌         | 型号                  | Open | WEP            | 加密方式     |                  | 11b-only    |             |          | 11g-only    |             |         | b/g mix |     |         | b/g/n mix      |                |               | 11n-20           |     |         | 11n-40 |     |         |
|---------------|---------------------|------|----------------|----------|------------------|-------------|-------------|----------|-------------|-------------|---------|---------|-----|---------|----------------|----------------|---------------|------------------|-----|---------|--------|-----|---------|
|               |                     |      |                | WPA/WPA2 | WPA-PSK/WPA2-PSK | 1信道         | 6信道         | 11信道     | 1信道         | 6信道         | 11信道    | 1信道     | 6信道 | 11信道    | 1信道            | 6信道            | 11信道          | 1信道              | 6信道 | 11信道    | 1信道    | 6信道 | 11信道    |
| TP-Link       | TL-WR886N           | OK   | OK             | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
|               | TL-WR941N           | OK   | OK             | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
|               | TL-WDR6300          | OK   | 无加密方式设置，仅能设置密码 |          |                  |             | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
|               | TL-WR842N           | OK   | 无此设置           | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
| D-Link        | DIR-619L (包含与psk并行) | OK   | OK             | OK       | OK               | 无11b-only设置 |             |          | 无11g-only设置 |             |         | OK      | OK  | OK      | OK             | OK             | 无11n-only模式设置 |                  |     |         |        |     |         |
|               | DIR-822             | OK   | OK             | 无此设置     | OK               | 无11b-only设置 |             |          | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
| Mercury       | MW316R              | OK   | OK             | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
|               | MW305R              | OK   | 无加密方式设置，仅能设置密码 |          |                  |             | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
| Tenda         | W303Rv3             | OK   | OK             | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | 无11n-only模式设置 |                  |     |         |        |     |         |
|               | AC9                 | OK   | 无此设置           |          |                  |             | 无11b-only设置 |          |             | 无11g-only设置 |         |         | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
| H3C           | WBR204N             | OK   | OK             | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
| Huawei        | WS832               | OK   | 无此设置           | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | 无11n-only模式设置 |                  |     |         |        |     |         |
|               | WS851               | OK   | 无此设置           | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | 无11n-only模式设置 |                  |     |         |        |     |         |
| xiaomi        | R1C                 | OK   | 无此设置           |          |                  |             | 无bgn模式设置    |          |             |             |         |         |     |         |                |                |               |                  |     |         |        |     |         |
|               | R1D                 | OK   | 无此设置           |          |                  |             | 无bgn模式设置    |          |             |             |         |         |     |         |                |                |               |                  |     |         |        |     |         |
| 360           |                     |      | 无此设置           |          |                  |             | 无bgn模式设置    |          |             |             |         |         |     |         |                |                |               |                  |     |         |        |     |         |
|               | C403 P0             | OK   | OK             | 无此设置     |                  |             |             | 无bgn模式设置 |             |             |         |         |     |         |                |                |               |                  |     |         |        |     |         |
| Netcore       |                     | OK   | OK             | OK       | OK               | OK          | OK          | 无11信道选项  | OK          | OK          | 无11信道选项 | OK      | OK  | 无11信道选项 | OK             | OK             | 无11信道选项       | OK               | OK  | 无11信道选项 | OK     | OK  | 无11信道选项 |
|               | AC1                 | OK   | OK             | 无此设置     | OK               | OK          | OK          | OK       | 无11g-only设置 |             |         | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
| 飞鱼星           | NF762               | OK   | OK             | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
| Belkin        | F9K1002v1           | OK   | OK             | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
| KINGNET       | KN-WR935            | OK   | OK             | OK       | OK               | 无11b-only设置 |             |          | OK          | OK          | OK      | 无bg混合设置 |     |         | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
| FAST          | FAC1200R            | OK   | 无加密方式设置，仅能设置密码 |          |                  |             | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
| novo (newelf) |                     | OK   | 无此设置           | OK       | OK (支持WPA2-PSK)  | 无bgn模式设置    |             |          |             |             |         |         |     |         |                |                |               |                  |     |         |        |     |         |
|               | R6830               | OK   | OK             | 无此设置     | OK               | 无11b-only设置 |             |          | 无11g-only设置 |             |         | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
| ZTE           | E5501S              | OK   | OK             | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
|               | N630R               | OK   | OK             | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
| Totolink      | N150RP              | OK   | OK             | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
| JCG           | JHR-N835R           | OK   | OK             | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
| Apple         | A1392               | OK   | 无此设置           | OK       | OK               | 无11b-only设置 |             |          | 无11g-only设置 |             |         | OK      | OK  | OK      | OK             | OK             | OK            | 无11n-only模式设置    |     |         |        |     |         |
| Cisco         | WRH54G              | OK   | OK             | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | 无11n-only模式设置  |               |                  |     |         |        |     |         |
| Netgear       | R7000               | OK   | OK             | OK       | OK               | 无11b-only设置 |             |          | 无11g-only设置 |             |         | OK      | OK  | OK      | OK             | OK             | OK            | 无11n-only模式设置    |     |         |        |     |         |
|               | WNR2200             | OK   | OK             | OK       | OK               | 无11b-only设置 |             |          | 无11g-only设置 |             |         | OK      | OK  | OK      | OK             | OK             | OK            | 无11n-only模式设置    |     |         |        |     |         |
| Sitecom       | WNDR4300V2          | OK   | OK             | OK       | OK               | 无11b-only设置 |             |          | 无11g-only设置 |             |         | OK      | OK  | OK      | OK             | OK             | OK            | 无11n-only模式设置    |     |         |        |     |         |
|               | WL-368              | OK   | OK             | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
| HP            | NR114               | OK   | 无此设置           | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | 无11n-only模式设置 |                  |     |         |        |     |         |
| 华硕            | RT-N10E             | OK   | OK             | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | 无b/g/n mix模式设置 |               |                  |     |         |        |     |         |
| WAVLINK       | WL-WN521N2          | OK   | OK             | OK       | OK (支持WPA-PSK)   | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
| BUFFALO       | WCR-GN              | OK   | 无此设置           | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
| LB-LINK       | EL-WR4000           | OK   | 无加密方式设置，仅能设置密码 |          |                  |             | 无bgn模式设置    |          |             |             |         |         |     |         |                |                |               |                  |     |         |        |     |         |
| UTT           | 进取518W              | OK   | OK             | OK       | OK               | 无11b-only设置 |             |          | OK          | OK          | OK      | 无bg混合设置 |     |         | OK             | OK             | OK            | OK               | OK  | OK      | OK     | OK  |         |
| Alpha         | GR55                | OK   | OK             | OK       | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | 无b/g/n mix模式设置 |                |               |                  |     |         |        |     |         |
| 紫光Mywifi      | M300 (Green)        | OK   | OK             | OK       | OK               | 无11b-only设置 |             |          | 无11g-only设置 |             |         | 无bg混合设置 |     |         | OK             | OK             | OK            | 界面不能设置11n-only模式 |     |         |        |     |         |
| 极路由3          | HC5861              | OK   | 无此设置           | 无此设置     | OK               | 无bgn模式设置    |             |          |             |             |         |         |     |         |                |                |               |                  |     |         |        |     |         |
| AFOUNDRY      | BW500               | OK   | OK             | 无此设置     | OK               | OK          | OK          | OK       | OK          | OK          | OK      | OK      | OK  | OK      | OK             | OK             | 无11n-only模式设置 |                  |     |         |        |     |         |

## 5 测试结果和过程

### 5.1 测试结果

对路由器工作模式、信道和加密方式组合，设计用例共 995 条，但部分路由器不能设置某些模式，有 87 条用例无法测试，其它 908 条用例执行结果全部 PASS。

通过 31 个品牌 44 款无线路由器以及一台无线放大器的组合测试结果来看，我们 SDK 软件和模块均能很好的兼容市场畅销路由器，连网并未出现失败现象。

### 5.2 测试过程遇到问题

KINGNETKN-WR935 路由器经 TL-WA832RE 信号放大器扩展后，信号放大器会频繁重启。该问题实为信号放大器与无线路由器兼容的问题，非 WM\_W600 产品问题，不予关注。