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# 高通硬件基带技术期刊2015-11-09

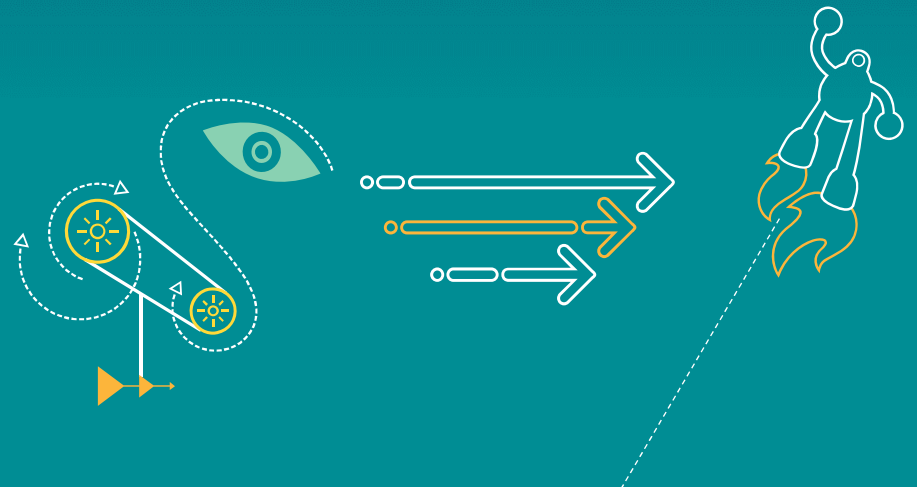
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Qualcomm Technologies, Inc.

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# Revision History

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| Revision | Date     | Description     |
|----------|----------|-----------------|
| A        | Nov 2015 | Initial release |

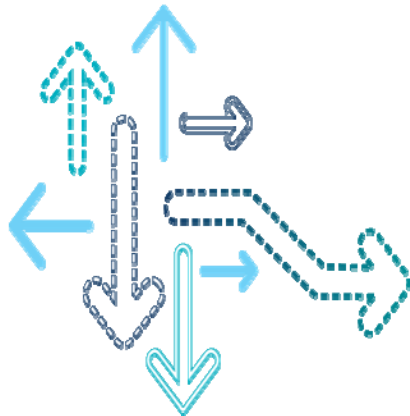
**Note:** There is no Rev. I, O, Q, S, X, or Z per Mil. standards.

# Contents

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- Baseband
- audio
- PMIC and SMB

## Baseband



# PMI8996 support on MSM8996

适用平台：MSM8996  
问题描述：QCOM release的软件可以从01400 (Pre-CS1)支持PMI8996, 请参考80-NT204-600

This matrix lists supported software (SW) and hardware (HW) combinations for the MSM8996 chipset family. "Y" in this table denotes a supported HW revision and "N" in this table represents a non-supported HW configuration for the appropriate SW releases. It is recommended to run the latest SW release in order to support newer revisions of HW. Filter by the HW device and sample type columns (below) to validate HW-SW combinations.

| Hardware |         |        |           | Software   |             |             |            |                 |                 |                          |
|----------|---------|--------|-----------|--|-------------|-------------|------------|-----------------|-----------------|--------------------------|
| Category | HW      | Sample | Rev (RR)  | SP   | LA 1.0      |             |            |                 |                 |                          |
|          |         |        |           | Each column represents a SW build where the HW-SW compatibility changes from the previous build. |             |             |            |                 |                 |                          |
|          |         |        |           | META   | 01100 (ES1) | 01200 (ES2) | 01300 (FC) | 01400 (Pre-CS1) | 01450 (Pre-CS2) | 01500 (Pre-CS/M release) |
|          |         |        |           | Latest build   |             |             |            |                 |                 |                          |
| Baseband | MSM8996 | ES2.1  | (v2.1) 02 |  | Y           | Y           | Y          | Y               | Y               | Y                        |
| Baseband | MSM8996 | ES3.x  | (v3.x) 04 |  |             |             |            | Y               | Y               | Y                        |
| PM       | PM8996  | ES1    | (v2.0) 02 |  | Y           | Y           | Y          | Y               | Y               | Y                        |
| PM       | PM8996  | ES2    | (v2.0) 02 |  |             | N           | Y          | Y               | Y               | Y                        |
| PM       | PMI8994 | CS     | (v2.0) 05 |  | Y           | Y           | Y          | Y               | Y               | Y                        |
| PM       | PMI8996 | ES     | (v1.0) 00 |  | N           | N           | N          | Y               | Y               | Y                        |
| PM       | PMK8004 | ES     | (v2.0) 11 |  | N           | N           | Y          | Y               | Y               | Y                        |

PMI8996 和PMI8994 是Pin to Pin兼容的, 元器件的区别请参考原理图80-NT204-41 中的BOM表

| Component | L44                                   | C528  | C530  | C416                             |
|-----------|---------------------------------------|-------|-------|----------------------------------|
| PMI8994   | DFE252012F-1R0M or CIGT252010EH1R0MNE | 2.2uF | 2.2uF | 1.5nF for AMOLED<br>47nF for LCD |
| PMI8996   | CIGT252010EH1R0MNE                    | 4.7uF | 4.7uF | 1.5nF                            |

# 地磁传感器布局检查

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- 问题描述：

地磁传感器是敏感部件，手机上含有很多对地磁传感器数据产生干扰的材料和器件，如果在板子设计前期不完善（没有跟地磁干扰源保持足够安全距离），项目后期将很难进行更改，板子上常见的干扰源情况：

硬磁干扰，硬磁随距离增加而成指数级衰减，手机中典型硬磁干扰器件：

扬声器，接收机，自动对焦相机，振动器，霍尔开关

软磁干扰，软磁对磁场影响呈各向异性，典型的软磁效应的零件：

铁质螺钉，屏蔽罩（根据材料），NFC的铁氧天线，Wacom sheet，无线充电磁板

动态干扰，主要是变化的电流导致的，大电流伴随着较大的变化量，电流导致的磁场干扰无规律可言，不能通过软件消除，唯一避免的方式是保持安全距离

- 解决办法：

在项目硬件初期就联系地磁传感器供应商，获取地磁传感器布局的标准文档，并与地磁传感器供应商一起检查地磁传感器周边的布局；在早期硬件版本回来后，及时联系供应商检查传感器数据，扫描地磁传感器周边的磁干扰情况，尽早发现地磁干扰问题

## 地磁传感器布局检查(续)

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可以在第一版硬件回来后组装2台以上的完整机器（包含最终产品将要用到的磁性材料如NFC，无线充电，各种卡槽屏蔽罩等）以便测试指南针的准确性和机器间的差异性；

常用测试用例：

开关LCD

插拔充电器

开关WIFI

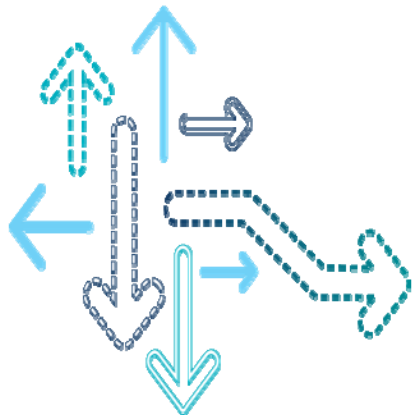
开关外放SPEAKER

固定手机方位，通过将CPU满载或者手机充电的方法使手机升温，观察方向漂移

固定手机方位，手动使CPU满载/空载，观察方向抖动。地磁传感器是敏感部件，手机上含有很多对地磁传感器数据产生

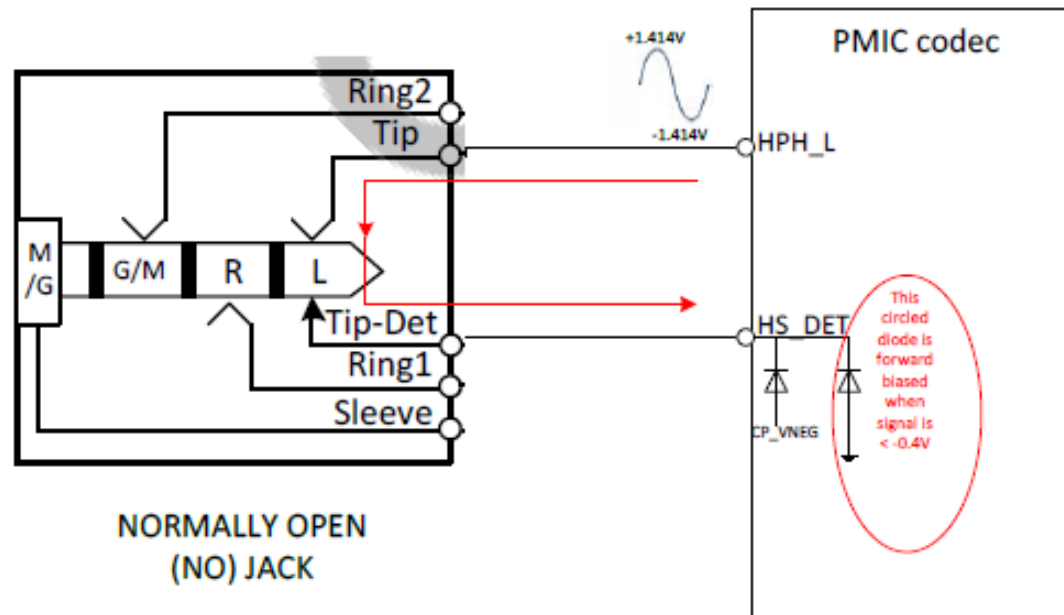


# Audio



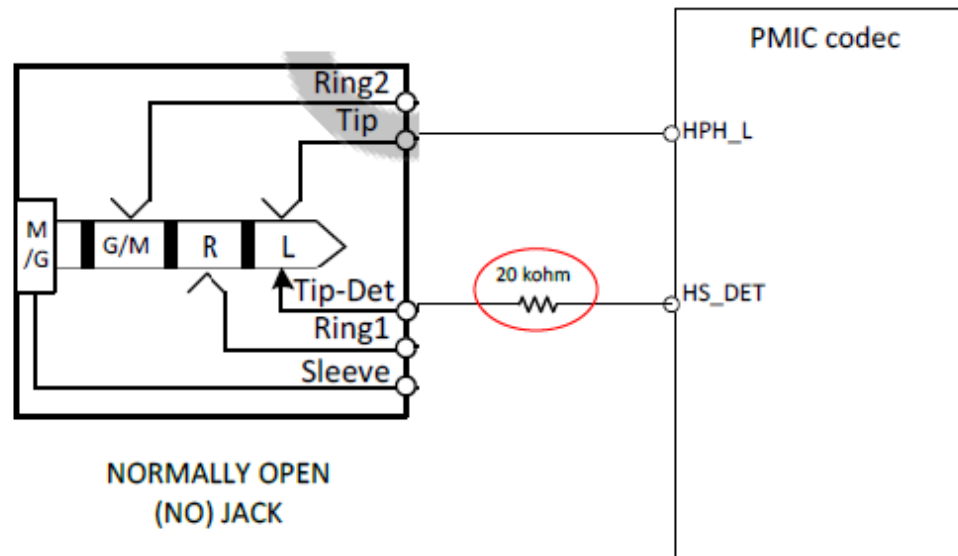
# PMIC HS\_DET affects THD of HPH\_L with NO jack

- 适用平台：PM8909/8916/8952/8956
- 问题描述：在使用常开耳机座时，如果HPH的输出超过500mVrms, HS\_DET 将会较明显的影响到左声道 THD+N
- Root cause, 当左声道输出小于约-0.4V时，HS\_DET 电路里的二极管将会导通，从而导致有从HS\_DET到地的漏电路径，这个非线性的漏电流会影响左声道的THD+N性能



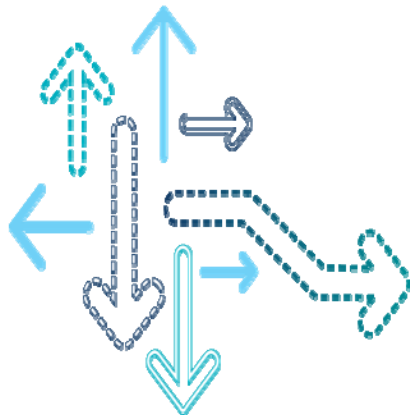
# PMIC HS\_DET affects THD of HPH\_L with NO jack

- Workaround ,在HS\_DET 路径上面串联20Kohm 电阻。



- 问题详细描述请参考文档<80-NT390-13>

# PMIC



# PMI8996/PMI8994 unused pin handle of 5V boost

适用平台：MSM8996/MSM8994

问题描述：5V boost unused pin handle update

Please **connect FB\_5V\_BST to VREG\_5V\_BST together** and then leave NC if not use 5V boost, we will update following table in next version doc

|                |     |     |   |
|----------------|-----|-----|---|
| VDD_BST_BYP    | –   | –   |   |
| 5 V boost SMPS |     |     |   |
| VSW_5V_BST     | NC  | NC  | If 5 V boost module unused completely   |
| VREG_5V_BST    | NC  | NC  |   |
| FB_5V_BST      | NC  | NC  |   |
| REQ_5V_BST     | GND | GND | This feature can be specifically unused |