

# RK 固件升级失败原因分析

Version 1.1

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Version 1.0	2010-07-27	初版	赵仪峰	
Version 1.1	2012-11-22	重新整理并增加更多信息	赵仪峰	

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## 1. 概述

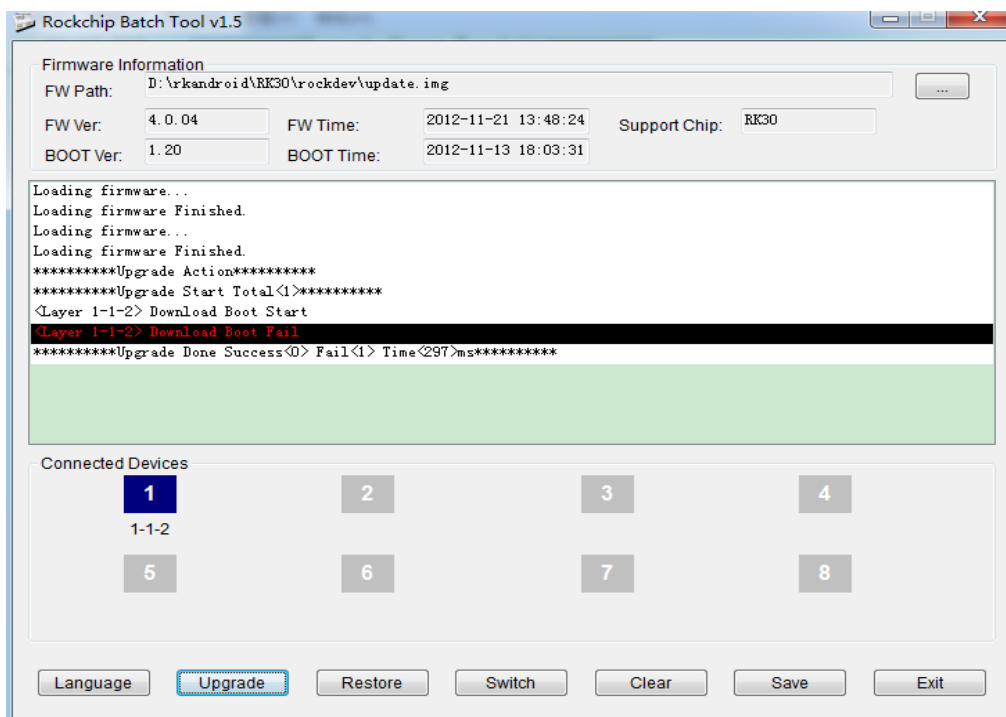
工厂和工程师经常会遇到固件升级失败的问题，为了方便查找问题，本文档整理了一些常见的问题和分析建议。

由于工具一直在更新，本文档的描述的信息可能和工具提示的信息不会完全一样，不过同一种类型的问题，提示信息应该是相似的。

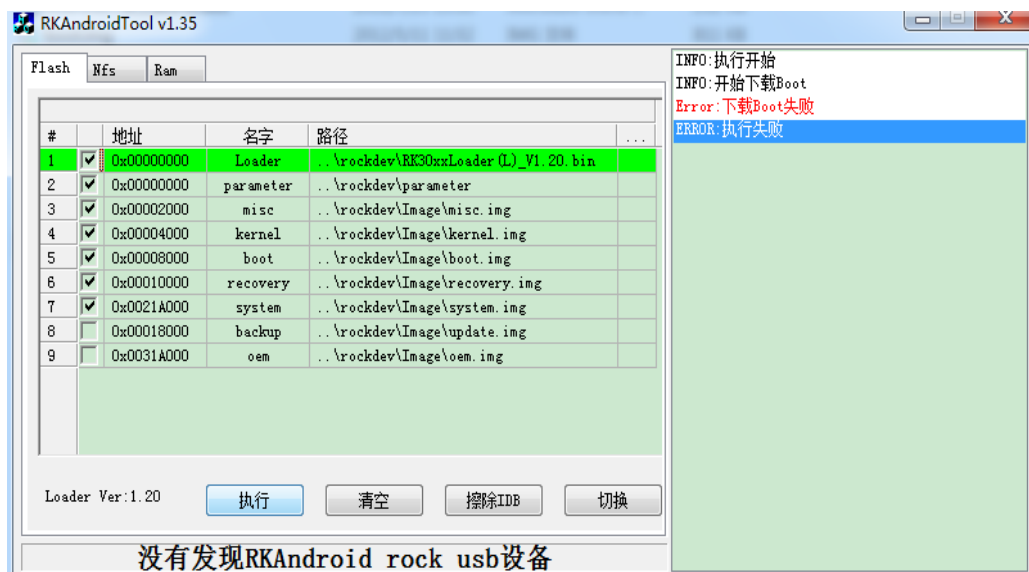
## 2. 常见问题及分析

### 2.1. Boot Code 下载失败

量产工具提示：



开发工具提示：



量产工具 log 目录下 log 文件提示:

```

19:56:12 616 *****Upgrade Start Total<1>*****
19:56:12 618 <Layer 1-1-2> Download Boot Start
19:56:12 906 <LAYER 1-1-2> ERROR:Boot_VendorRequest-->DeviceIoControl failed, Total
(12830), Sended(12288), bRet(0), err(31)
19:56:12 906 <LAYER 1-1-2> ERROR:DownloadBoot-->Boot_VendorRequest471 failed, index(0)
19:56:12 909 <Layer 1-1-2> Download Boot Fail
19:56:12 910 *****Upgrade Done Success<0> Fail<1> Time<297>ms*****
  
```

开发工具 log 目录下 log 文件提示:

```

19:59:01 032 MaskRom Device Path(\\?\USB#VID_
901f-00c04fb951ed}), threadID=6680
19:59:01 033 INFO:开始下载Boot
19:59:01 034 INFO:执行开始
19:59:01 454 INFO:Download USBData OK
19:59:02 146 ERROR: DeviceIoControl failed.
bRet=0, err=4096, dwReturnByte=4096, nSendBytes=4096
19:59:02 146 ERROR:Download USBBoot failed
19:59:02 147 Error:下载Boot失败
19:59:02 148 ERROR:MaskRomThread failed
19:59:02 150 ERROR:执行失败
  
```

出现这种问题可能的原因:

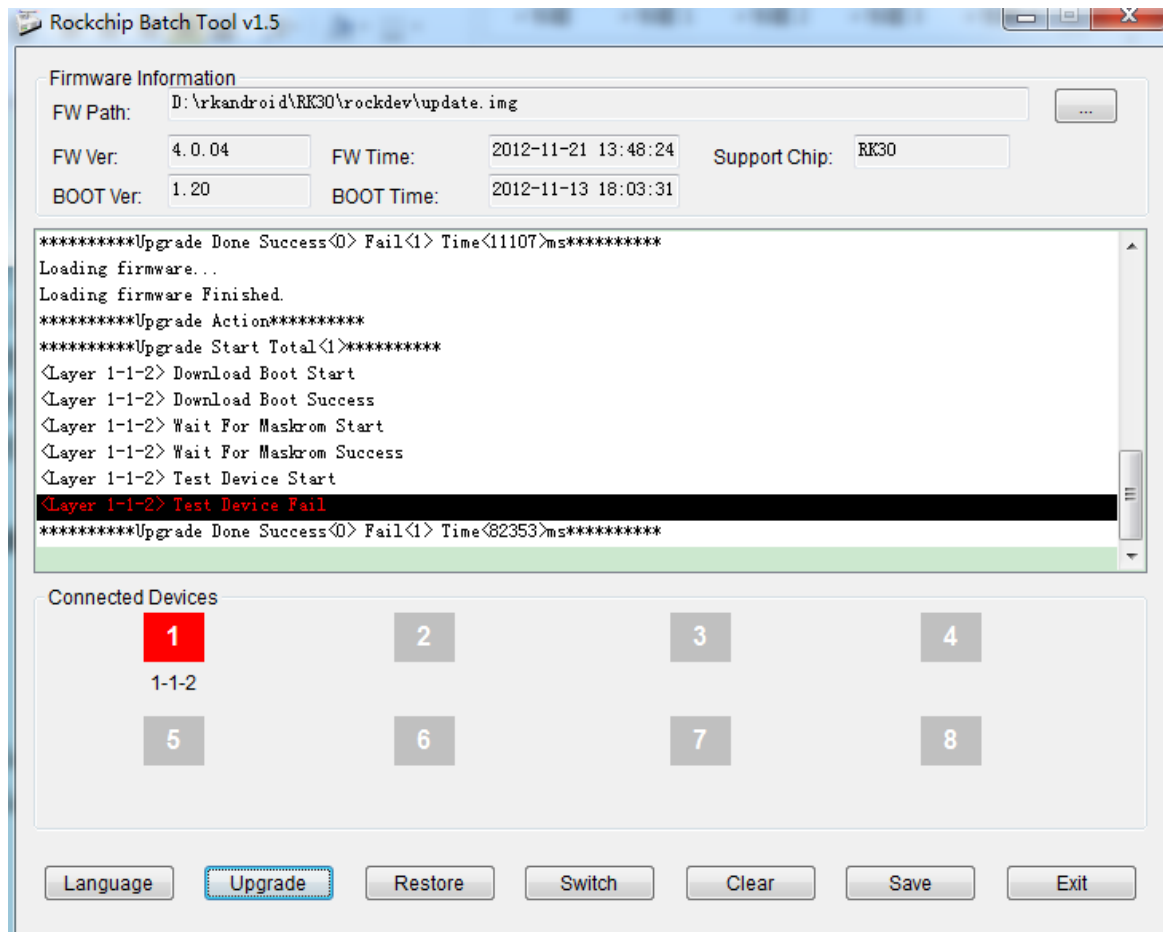
- 1、USB 信号不好
- 2、主控虚焊或者电源问题
- 3、DDR 相关问题
- 4、供电不足

排查问题的办法:

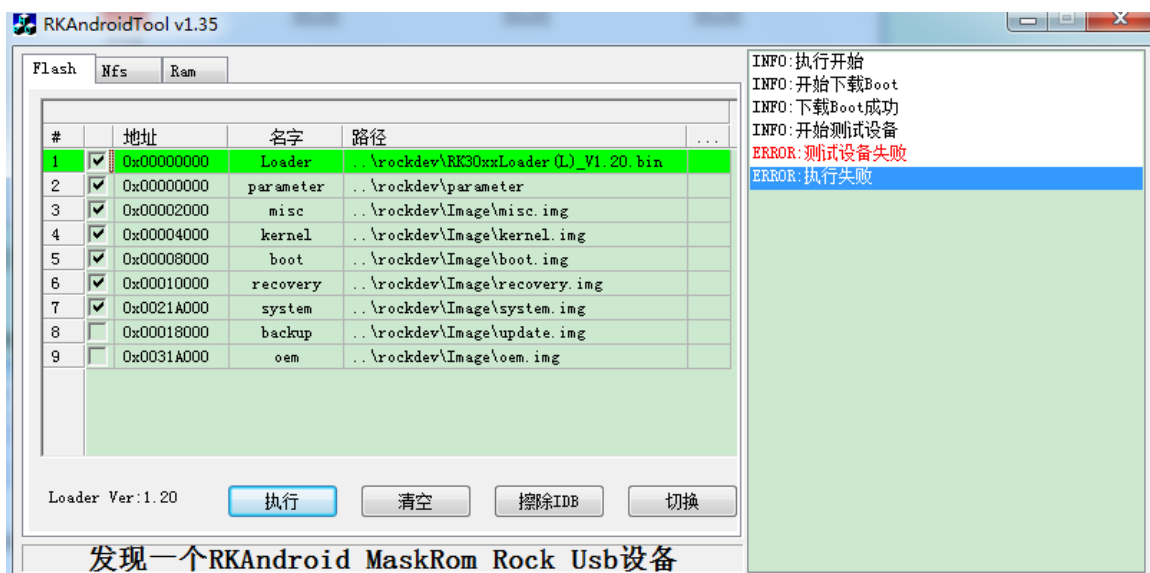
- 1、使用 DDR 测试工具测试 DDR 是否有焊接问题。
- 2、使用质量好的短的 USB2.0 的 USB 线，并连接在 PC 机后面的 USB 口进行固件升级。
- 3、检查 USB 线路上是否接的 ESD 器件，参数是不是不对。
- 4、检查 USB 供电是否正常：电压和纹波。
- 5、USB 走线是否和其他走线邻层平行。
- 6、检查主控和 usb 相关部分的电阻和电容的参数是否正常。
- 7、使用接外电源或者电池供电。

## 2.2. 下载Boot Code成功后测试设备失败

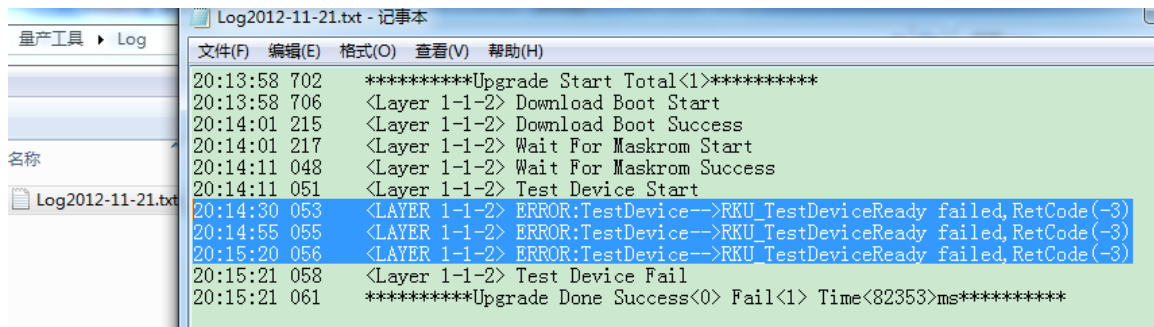
量厂工具提示:



开发工具提示:



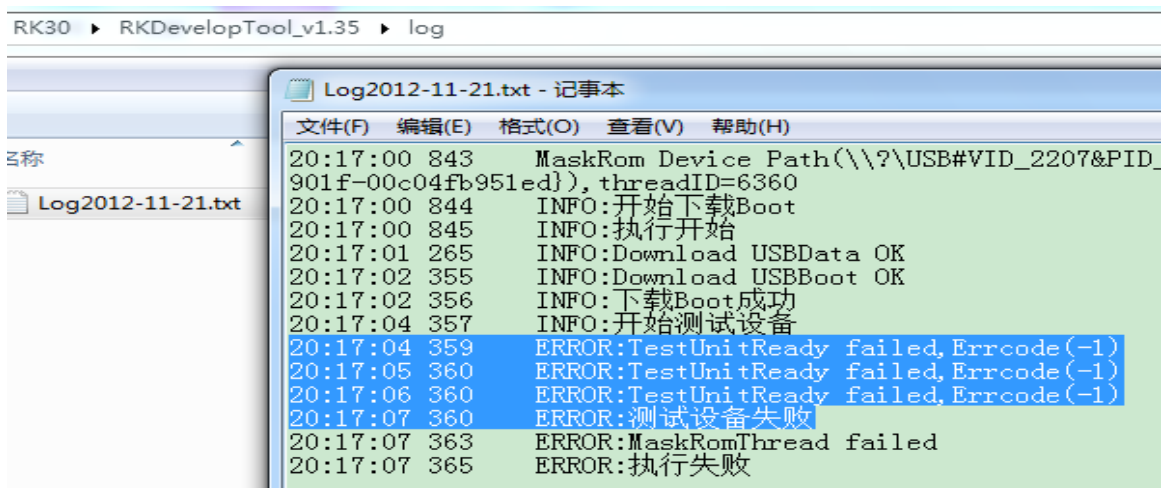
量产工具 log 目录下 log 文件提示:



```

Log2012-11-21.txt - 记事本
文件(F) 编辑(E) 格式(O) 查看(V) 帮助(H)
20:13:58 702 *****Upgrade Start Total<1>*****
20:13:58 706 <Layer 1-1-2> Download Boot Start
20:14:01 215 <Layer 1-1-2> Download Boot Success
20:14:01 217 <Layer 1-1-2> Wait For Maskrom Start
20:14:11 048 <Layer 1-1-2> Wait For Maskrom Success
20:14:11 051 <Layer 1-1-2> Test Device Start
20:14:30 053 <LAYER 1-1-2> ERROR:TestDevice-->RKU_TestDeviceReady failed, RetCode(-3)
20:14:55 055 <LAYER 1-1-2> ERROR:TestDevice-->RKU_TestDeviceReady failed, RetCode(-3)
20:15:20 056 <LAYER 1-1-2> ERROR:TestDevice-->RKU_TestDeviceReady failed, RetCode(-3)
20:15:21 058 <Layer 1-1-2> Test Device Fail
20:15:21 061 *****Upgrade Done Success<0> Fail<1> Time<82353>ms*****
  
```

开发工具 log 目录下 log 文件提示:



```

RK30 > RKDevelopTool_v1.35 > log
Log2012-11-21.txt - 记事本
文件(F) 编辑(E) 格式(O) 查看(V) 帮助(H)
20:17:00 843 MaskRom Device Path(\\?\USB#VID_2207&PID_
901f-00c04fb951ed}), threadID=6360
20:17:00 844 INFO:开始下载Boot
20:17:00 845 INFO:执行开始
20:17:01 265 INFO:Download USBData OK
20:17:02 355 INFO:Download USBBoot OK
20:17:02 356 INFO:下载Boot成功
20:17:04 357 INFO:开始测试设备
20:17:04 359 ERROR:TestUnitReady failed, Errcode(-1)
20:17:05 360 ERROR:TestUnitReady failed, Errcode(-1)
20:17:06 360 ERROR:TestUnitReady failed, Errcode(-1)
20:17:07 360 ERROR:测试设备失败
20:17:07 363 ERROR:MaskRomThread failed
20:17:07 365 ERROR:执行失败
  
```

出现这种问题可能的原因:

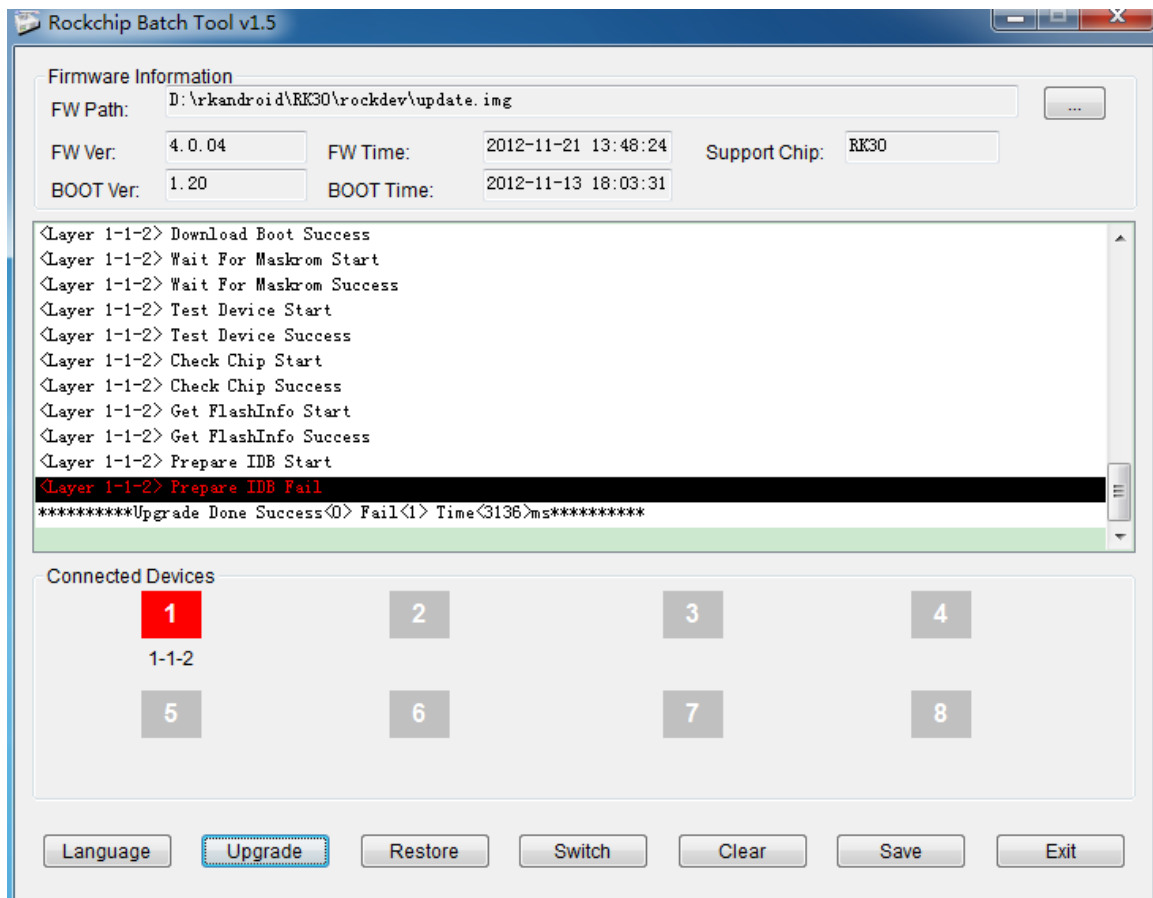
- 1、DDR 颗粒问题或者 DDR 布板走线问题（概率比较大）。
- 2、USB 信号不好。

排查问题的办法:

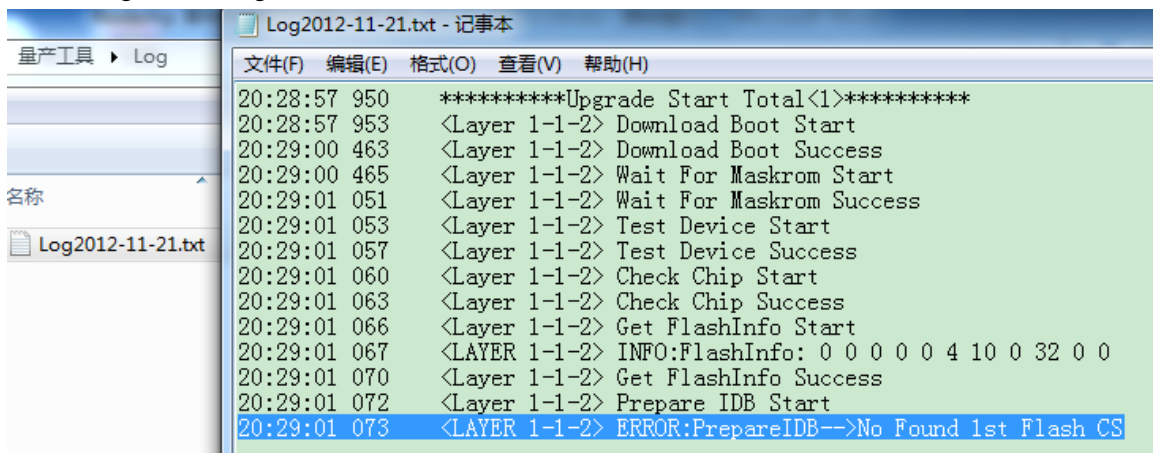
- 1、使用 DDR 测试工具测试 DDR 是否有焊接问题。
- 2、分析 PCB DDR 走线部分，是否有不符合布板规范的走线。
- 3、更换 DDR 颗粒
- 4、USB 部分参考 [“2.1. Boot Code 下载失败” 处理方法](#)。

## 2.3. 准备IDB失败（NAND FLASH 或者EMMC 焊接问题）

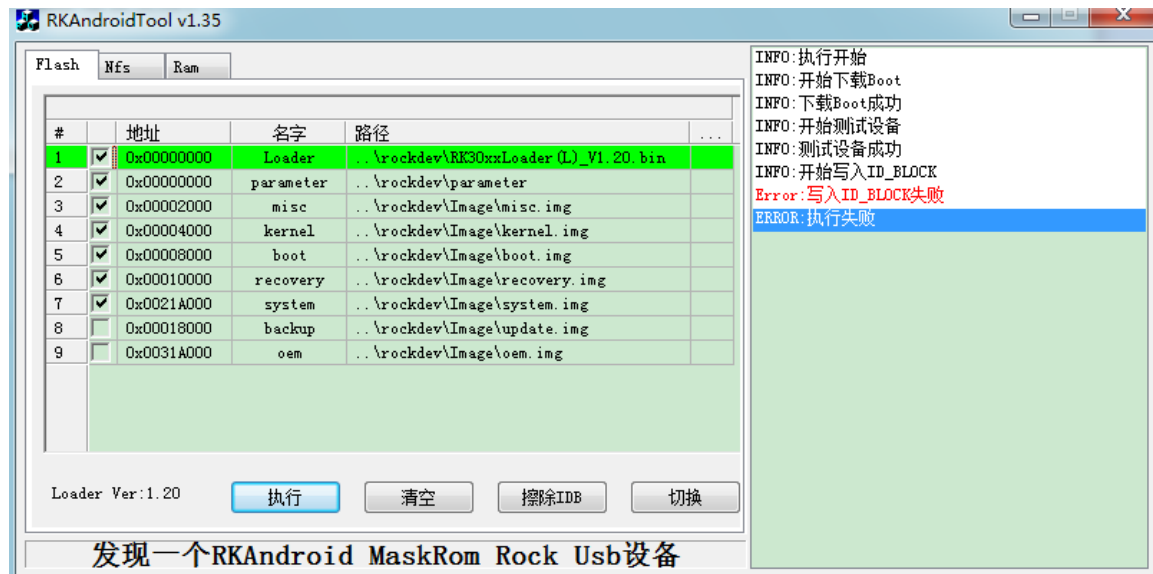
量产工具提示准备 IDB 失败:



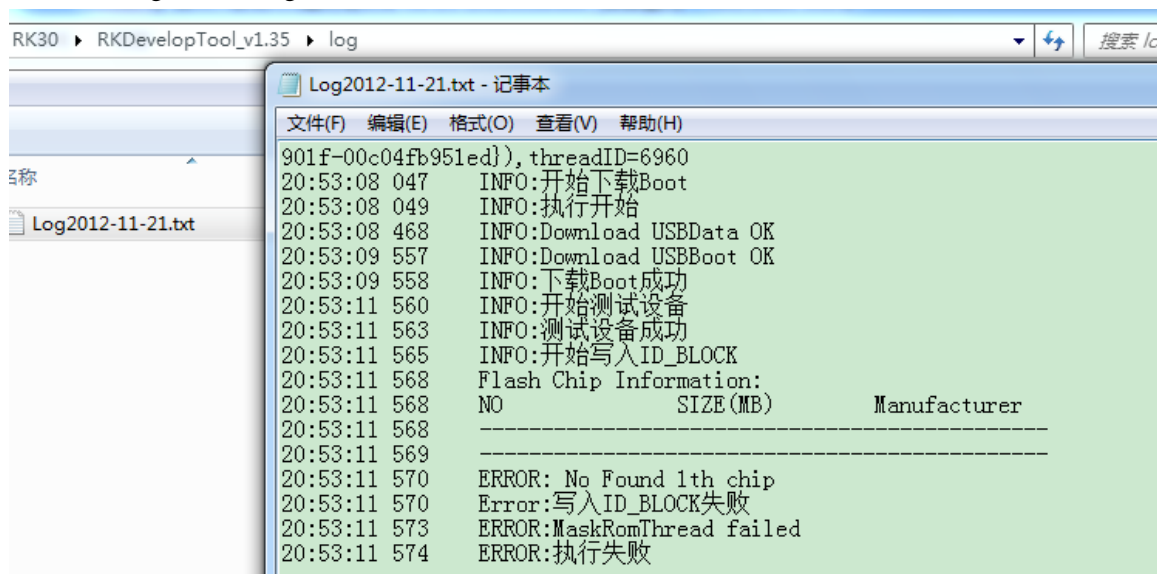
量产工具 log 目录下 log 文件提示:



开发工具提示写入 ID\_BLOCK 失败:



开放工具 log 目录下 log 文件提示没有找到 NAND FLASH,写入 ID\_BLOCK 失败:



出现这种问题可能的原因:

- 1、NAND FLASH 没有焊好
- 2、不支持的 NAND FLASH

排查问题的办法:

- 1、重新焊接 NAND FLASH。
- 2、检查电路原理图和 NAND FLASH 的 datasheet, 确认 NAND FLASH pin38 是接对了 (Toshiba、Sandisk 和 Samsung 的大部分 flash 都需要接 vcc, 其他 flash 没有要求)。
- 3、不支持的 NAND FLASH  
联系 rockchip [fae@rock-chips.com](mailto:fae@rock-chips.com),更新最新的 NAND FLASH 驱动补丁, 再查看补丁中的 NAND FLASH 支持列表, 确认 NAND FLASH 是否支持。
- 4、如果有串口, 可以接串口来帮助分析焊接问题  
下面是正常的机器打印的串口信息, 里面有打印 FLASH ID.



```

pry
mem

DX0DQSTR:3DB04001
DX1DQSTR:3DB04001
DX2DQSTR:3DB04001
DX3DQSTR:3DB04001
acc
ok
bus width=32 col=10 bank=8 row=15 CS=1
size=1024MB
ok OUT
serial_init
GetAHBCLK = 150
AccessTime = 50 ns , cycleTiming = 6 ns

FMWAIT @0x10a2

No.1 FLASH INFO:89 68 4 46 a9 0
No.2 FLASH INFO:89 68 4 46 a9 0
No.3 FLASH INFO:ff ff ff ff ff ff
No.4 FLASH INFO:ff ff ff ff ff ff
FlashLsbPage:0,1,2,3,6,7,10,11,14,15

```

FLASH ID 第一个 byte 为厂家信息:

ID	厂家
2C	Micron
AD	Hynix
45	Sandisk
89	Intel
EC	Samsung
98	Toshiba
00	没有接 NAND FLASH
FF	没有接 NAND FLASH
其他值	NAND FLASH 没有焊好或不支持的 NAND FLASH。

Flash ID 第二个 byte 为容量信息，下表为常用容量的 ID:

ID	容量
75	32MB
76	64MB
78、79、F1、D1	128MB
DA、71	256MB
DC	512MB
D3、	1GB
D5、48	2GB
D7、68	4GB
D9、88、DE、3A、64	8GB
3C、A8、84	16GB
其他值	NAND FLASH 没有焊好或不支持的 NAND FLASH。

下面列几种分析例子:

1)、打印信息如下，那么就是 NAND FLASH 没有焊好或者 EMMC 没有焊好。

```
DDR Version 1.00 20120529
In
DDR3
freq
300MHz
config state
pctl
phy
mem

DX0DQSTR:3DB04001
DX1DQSTR:3DB04001
DX2DQSTR:3DB04001
DX3DQSTR:3DB04001
acc
ok
bus width=32 col=10 bank=8 row=15 CS=1
size=1024MB
ok OUT
serial_init
GetAHBCLK = 150
AccessTime = 50 ns , CycleTiming = 6 ns

FMWAIT @0x10a2
No.1 FLASH INFO:ff ff ff ff ff ff
No.2 FLASH INFO:ff ff ff ff ff ff
No.3 FLASH INFO:ff ff ff ff ff ff
No.4 FLASH INFO:ff ff ff ff ff ff
ERROR:Card Identify Failed 20
ERROR:Card Identify Failed 20
ERROR:Card Identify Failed 20
```

2)、打印信息如下，只贴了两片 NAND FLASH，但是系统却认到 4 片 NAND FLASH，这种情况是是 NAND FLASH CS 没有焊好。

```
bus width=16 col=10 bank=8 row=15 CS=1
size=512MB
OUT
serial_init
AccessTime = 50 ns , CycleTiming = 6 ns

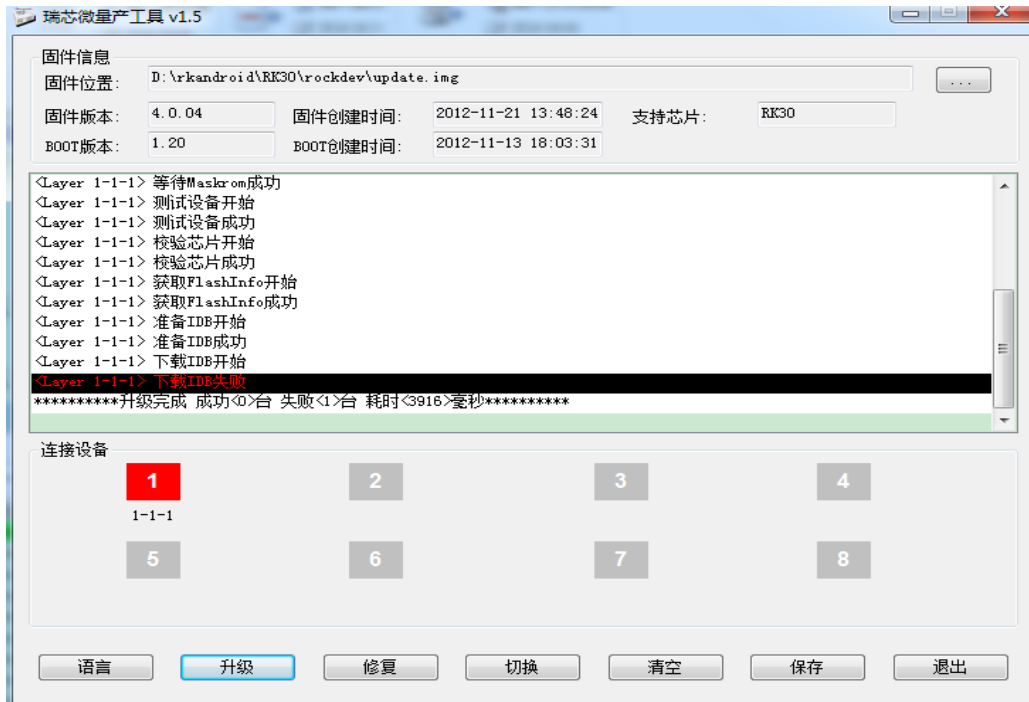
FMWAIT @0x10a2
No.1 FLASH INFO:2c 88 4 4b a9
No.2 FLASH INFO:2c 88 4 4b a9
No.3 FLASH INFO:2c 88 4 4b a9
No.4 FLASH INFO:2c 88 4 4b a9
FlashSetRandomizerFlag count @0x10
```

3)、打印信息如下，贴了两片 NAND FLASH，系统也可以认到两片 NAND FLASH 的 ID，但是 ID 是错误的，根据前面的表格，第一个字节是 2c，是美光的 NAND FLASH，第二个字节是 8c，是错误的，正确的应该是 88，可以确定是 NAND FLASH 没有焊好。

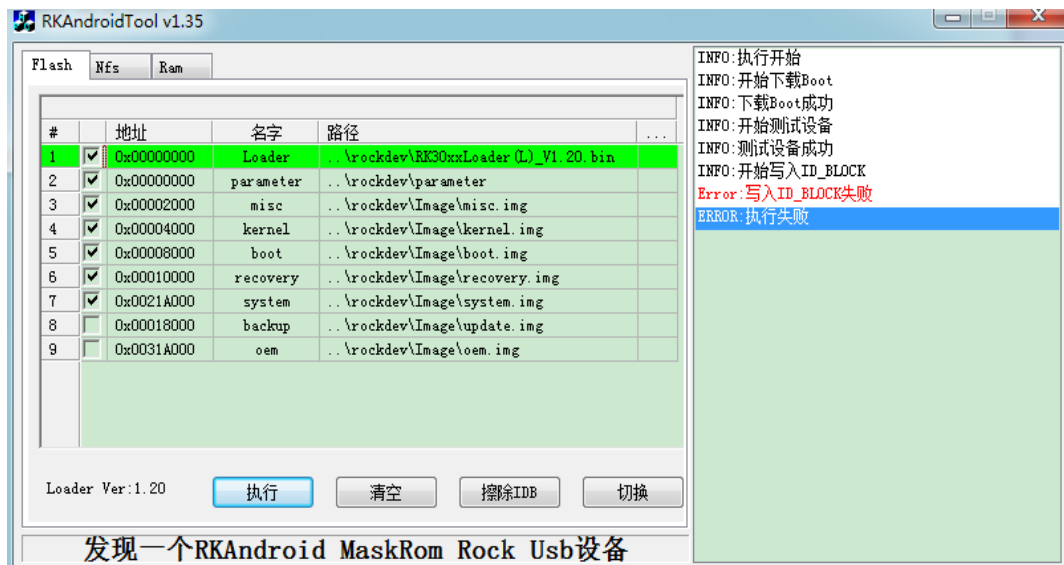
```
FMWAIT @0x10a2
No.1 FLASH INFO:2c 8c c 4f ad
No.2 FLASH INFO:ff ff ff ff ff
No.3 FLASH INFO:2c 8c c 4f ad
No.4 FLASH INFO:ff ff ff ff ff
FlashReadPage error! ,row = 1000
FlashReadPage error! ,row = 1000
FlashReadPage error! ,row = 3000
```

## 2.4. 写入IDB失败

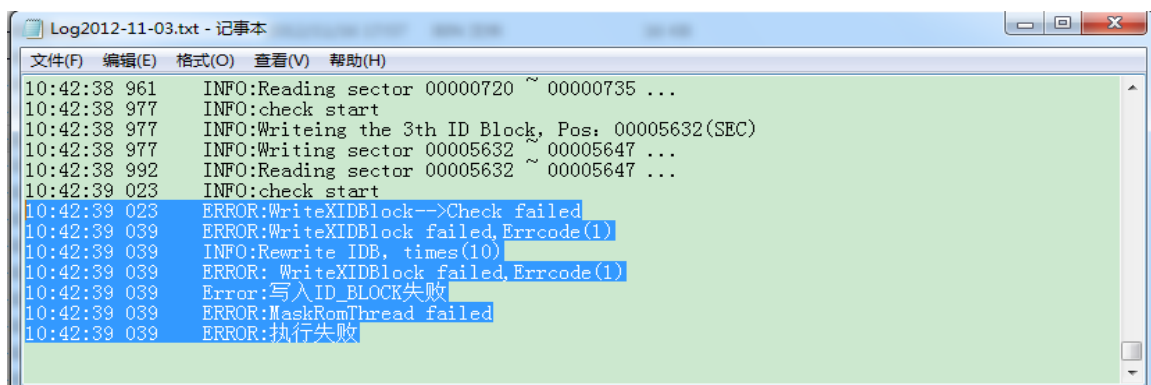
量产工具提示写入 ID\_BLOCK 失败:



开发工具提示写入 ID\_BLOCK 失败:



开发工具 log 目录下 log 提示比较出错:

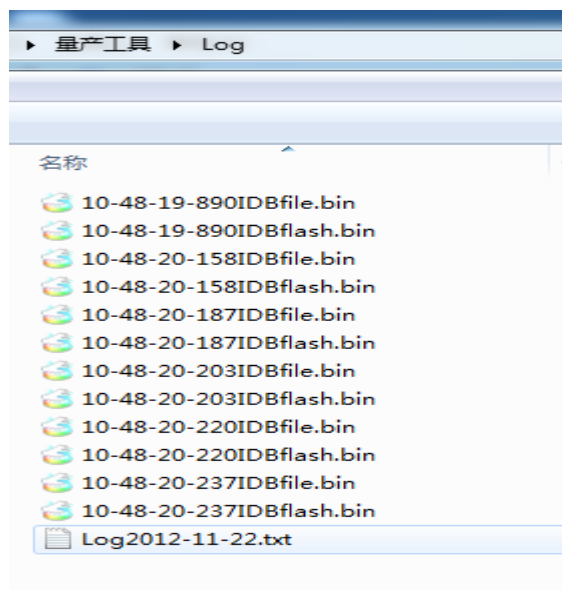


量产工具 log 目录下 log 提示:

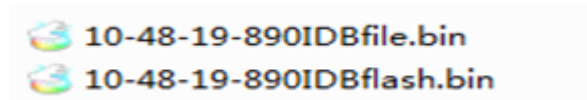
```

Log2012-11-22.txt - 记事本
文件(F) 编辑(E) 格式(O) 查看(V) 帮助(H)
10:48:19 602 <Layer 1-1-1> 测试设备开始
10:48:19 606 <Layer 1-1-1> 测试设备成功
10:48:19 610 <Layer 1-1-1> 校验芯片开始
10:48:19 614 <Layer 1-1-1> 校验芯片成功
10:48:19 617 <Layer 1-1-1> 获取FlashInfo开始
10:48:19 618 <LAYER 1-1-1> INFO:FlashInfo: 0 0 80 0 0 8 8 18 1E 4 3
10:48:19 622 <Layer 1-1-1> 获取FlashInfo成功
10:48:19 625 <Layer 1-1-1> 准备IDB开始
10:48:19 641 <LAYER 1-1-1> INFO:CS(1) (4096MB) (MICRON)
10:48:19 641 <LAYER 1-1-1> INFO:CS(2) (4096MB) (MICRON)
10:48:19 673 <Layer 1-1-1> 准备IDB成功
10:48:19 677 <Layer 1-1-1> 下载IDB开始
10:48:20 241 <Layer 1-1-1> 下载IDB失败
10:48:20 301 *****升级完成 成功<0>台 失败<1>台 耗时<3916>毫秒*****
  
```

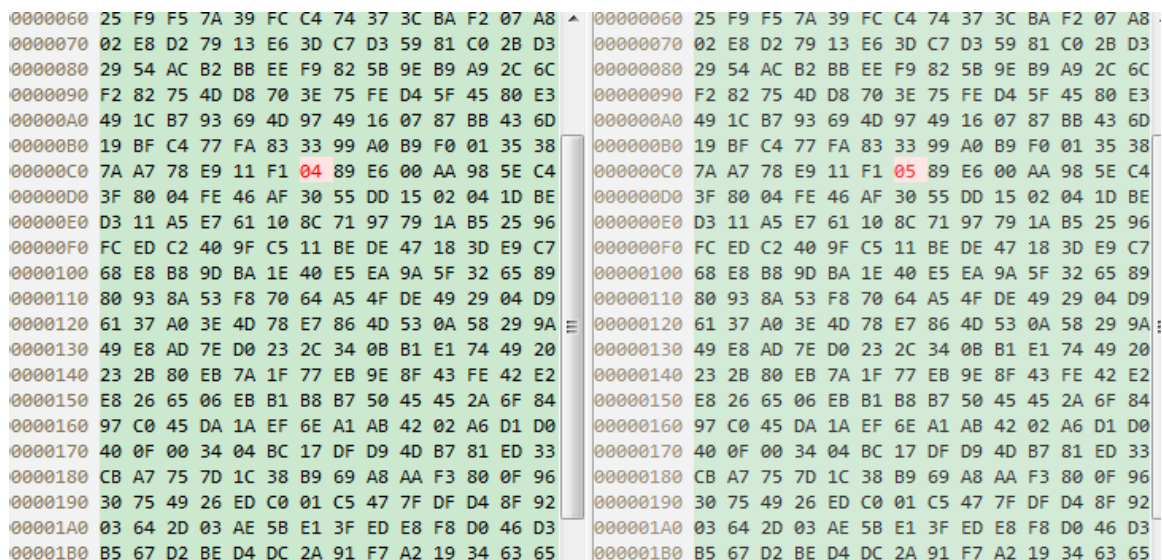
并且 LOG 目录中有几个 bin 文件:



用文件内容比较工具比较文件名前缀相同, 后缀为 “flash”和”file”的两个文件, 例如比较:



下面这种情况, 只有一个 bits 或者几个 bits 差异的, 是 DDR 问题, 参考“[2.2.下载 Boot Code 成功后测试设备失败](#)”的处理方法。

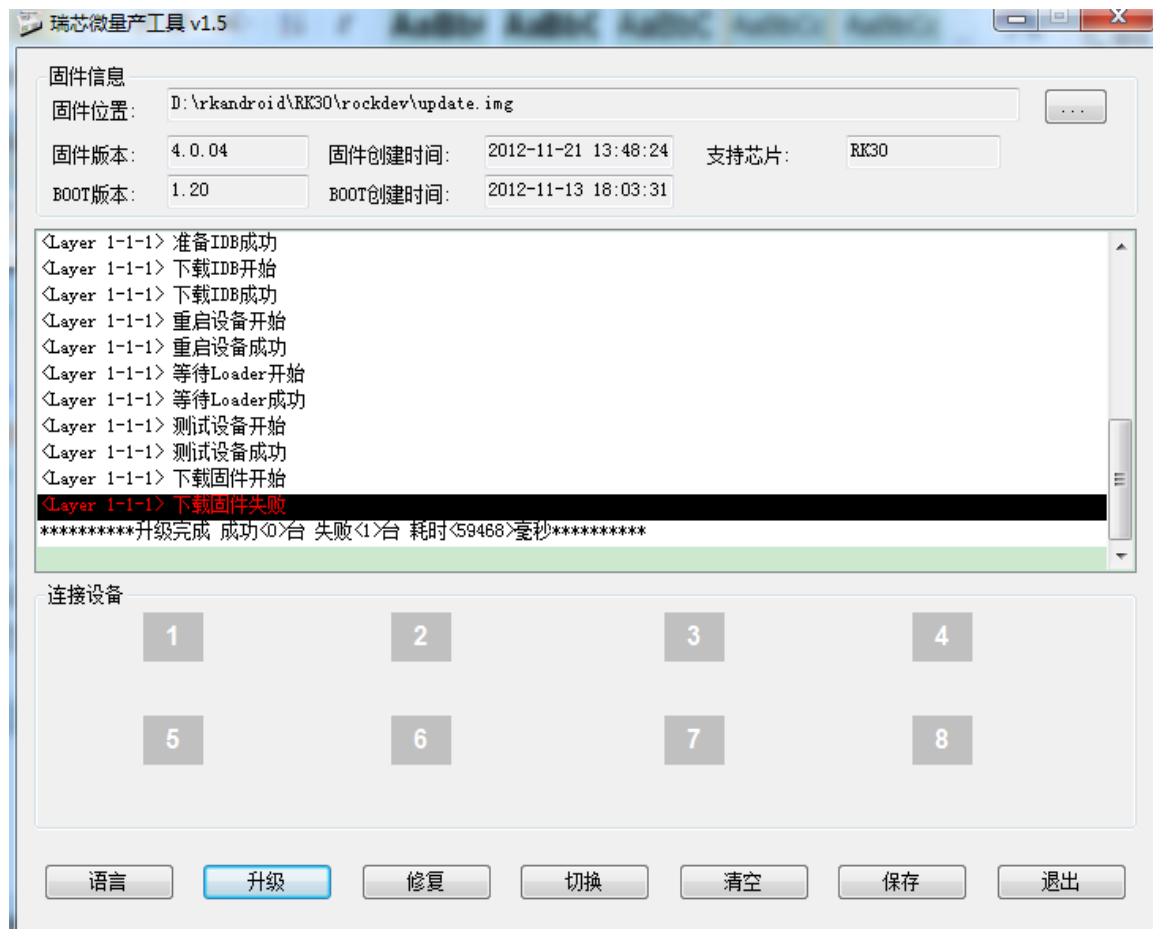


下面这种情况，有非常多的 bits 不同，一般是 flash 有问题，可以多升级几次固件看是否可以解决。如果 NAND FLASH 电源纹波太大或者没有使用滤波电容，可能也会出现这个问题。电源正常的情况下多次升级不能解决的，需要更换 flash 解决。

000000	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00000000	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0006E0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	000006E0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0006F0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	000006F0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000700	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00000700	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000710	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00000710	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000720	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00000720	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000730	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00000730	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000740	00 00 40 00 00 00 00 00 00 00 00 00 00 00 00 00	00000740	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000750	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00000750	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000760	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00000760	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000770	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00000770	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000780	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00000780	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000790	00 00 00 00 20 00 00 00 00 00 00 00 00 00 00 00	00000790	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007A0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	000007A0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007B0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	000007B0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007C0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	000007C0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007D0	08 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	000007D0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007E0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	000007E0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007F0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	000007F0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000800	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00000800	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000810	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	00000810	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

## 2.5. 下载固件失败

量产工具提示下载固件失败：



量产工具 log 目录下 log 提示 WriteLBA failed, 出错代码 (-3):

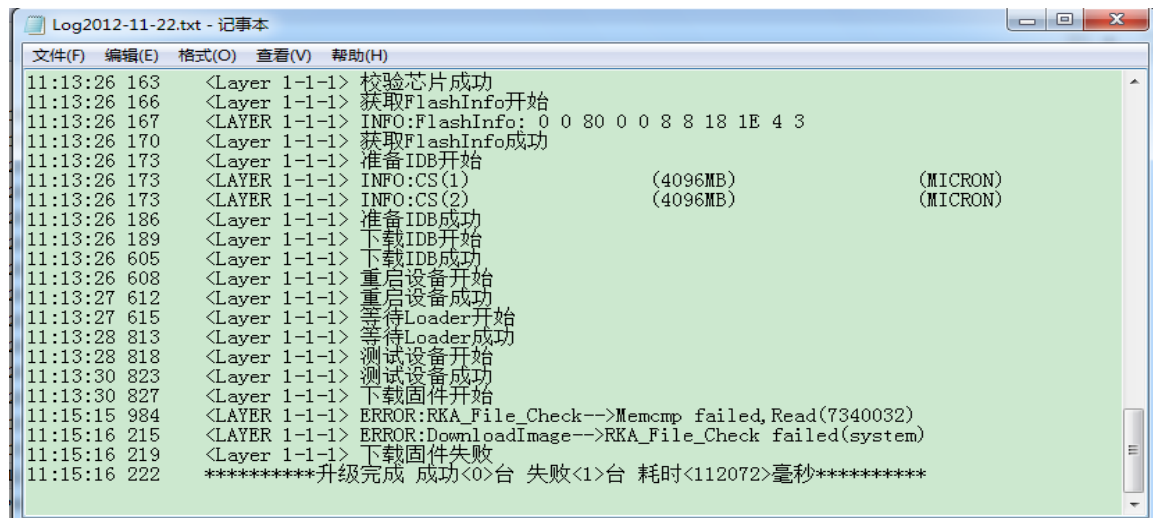
```
11:04:30 502 <LAYER 1-1-1> ERROR:LowerFormatDevice-->Not support lowerformat
11:04:30 505 <Layer 1-1-1> 下载IDB成功
11:04:30 508 <Layer 1-1-1> 重启设备开始
11:04:31 512 <Layer 1-1-1> 重启设备成功
11:04:31 515 <Layer 1-1-1> 等待Loader开始
11:04:32 844 <Layer 1-1-1> 等待Loader成功
11:04:32 848 <Layer 1-1-1> 测试设备开始
11:04:34 855 <Layer 1-1-1> 测试设备成功
11:04:34 858 <Layer 1-1-1> 下载固件开始
11:05:26 105 <LAYER 1-1-1> ERROR:RKA_File_Download-->RKU WritelBA failed,Written(138412032),RetCode(-3)
11:05:26 105 <LAYER 1-1-1> ERROR:DownloadImage-->RKA_File_Download failed(system)
11:05:26 109 <Layer 1-1-1> 下载固件失败
11:05:26 112 *****升级完成 成功<0>台 失败<1>台 耗时<59468>毫秒*****
```

量产工具 log 目录下 log 提示 ReadLBA failed,出错代码 (-4):

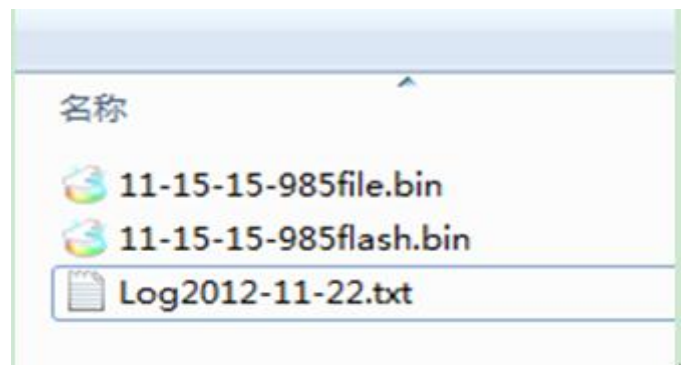
```
11:06:46 337 <LAYER 1-1-1> INFO:CS(1) (4096MB) (MICRON)
11:06:46 337 <LAYER 1-1-1> INFO:CS(2) (4096MB) (MICRON)
11:06:46 353 <Layer 1-1-1> 准备IDB成功
11:06:46 356 <Layer 1-1-1> 下载IDB开始
11:06:46 764 <Layer 1-1-1> 下载IDB成功
11:06:46 767 <Layer 1-1-1> 重启设备开始
11:06:47 772 <Layer 1-1-1> 重启设备成功
11:06:47 775 <Layer 1-1-1> 等待Loader开始
11:06:48 962 <Layer 1-1-1> 等待Loader成功
11:06:48 968 <Layer 1-1-1> 测试设备开始
11:06:50 975 <Layer 1-1-1> 测试设备成功
11:06:50 978 <Layer 1-1-1> 下载固件开始
11:08:48 277 <LAYER 1-1-1> ERROR:RKA_File_Check-->RKU ReadLBA failed,Read(16777216),RetCode(-4)
11:08:48 277 <LAYER 1-1-1> ERROR:DownloadImage-->RKA_File_Check failed(system)
11:08:48 281 <Layer 1-1-1> 下载固件失败
11:08:48 284 *****升级完成 成功<0>台 失败<1>台 耗时<122960>毫秒*****
```

这两种情况，都是 usb 通讯中断了，参考“[2.1.Boot Code 下载失败](#)”处理办法。

量产工具 log 目录下 log 提示 RKA\_File\_Check failed:



这种情况下 log 目录下还会生成两个，一个是固件要写到 flash 的数据，一个是 flash 里面读出来错误 数据：





用文件内容比较工具比较这两个文件：

下面这种情况，只有一个 bits 或者几个 bits 差异的，是 DDR 问题，参考“[2.2.下载 Boot Code 成功后测试设备失败](#)”的处理方法。

0000060 25 F9 F5 7A 39 FC C4 74 37 3C BA F2 07 A8	0000060 25 F9 F5 7A 39 FC C4 74 37 3C BA F2 07 A8
0000070 02 E8 D2 79 13 E6 3D C7 D3 59 81 C0 2B D3	0000070 02 E8 D2 79 13 E6 3D C7 D3 59 81 C0 2B D3
0000080 29 54 AC B2 BB EE F9 82 5B 9E B9 A9 2C 6C	0000080 29 54 AC B2 BB EE F9 82 5B 9E B9 A9 2C 6C
0000090 F2 82 75 4D D8 70 3E 75 FE D4 5F 45 80 E3	0000090 F2 82 75 4D D8 70 3E 75 FE D4 5F 45 80 E3
00000A0 49 1C B7 93 69 4D 97 49 16 07 87 BB 43 6D	00000A0 49 1C B7 93 69 4D 97 49 16 07 87 BB 43 6D
00000B0 19 BF C4 77 FA 83 33 99 A0 B9 F0 01 35 38	00000B0 19 BF C4 77 FA 83 33 99 A0 B9 F0 01 35 38
00000C0 7A A7 78 E9 11 F1 04 89 E6 00 AA 98 5E C4	00000C0 7A A7 78 E9 11 F1 05 89 E6 00 AA 98 5E C4
00000D0 3F 80 04 FE 46 AF 30 55 DD 15 02 04 1D BE	00000D0 3F 80 04 FE 46 AF 30 55 DD 15 02 04 1D BE
00000E0 D3 11 A5 E7 61 10 8C 71 97 79 1A B5 25 96	00000E0 D3 11 A5 E7 61 10 8C 71 97 79 1A B5 25 96
00000F0 FC ED C2 40 9F C5 11 BE DE 47 18 3D E9 C7	00000F0 FC ED C2 40 9F C5 11 BE DE 47 18 3D E9 C7
0000100 68 E8 B8 9D BA 1E 40 E5 EA 9A 5F 32 65 89	0000100 68 E8 B8 9D BA 1E 40 E5 EA 9A 5F 32 65 89
0000110 80 93 8A 53 F8 70 64 A5 4F DE 49 29 04 D9	0000110 80 93 8A 53 F8 70 64 A5 4F DE 49 29 04 D9
0000120 61 37 A0 3E 4D 78 E7 86 4D 53 0A 58 29 9A	0000120 61 37 A0 3E 4D 78 E7 86 4D 53 0A 58 29 9A
0000130 49 E8 AD 7E D0 23 2C 34 0B B1 E1 74 49 20	0000130 49 E8 AD 7E D0 23 2C 34 0B B1 E1 74 49 20
0000140 23 2B 80 EB 7A 1F 77 EB 9E 8F 43 FE 42 E2	0000140 23 2B 80 EB 7A 1F 77 EB 9E 8F 43 FE 42 E2
0000150 E8 26 65 06 EB B1 B8 B7 50 45 45 2A 6F 84	0000150 E8 26 65 06 EB B1 B8 B7 50 45 45 2A 6F 84
0000160 97 C0 45 DA 1A EF 6E A1 AB 42 02 A6 D1 D0	0000160 97 C0 45 DA 1A EF 6E A1 AB 42 02 A6 D1 D0
0000170 40 0F 00 34 04 BC 17 DF D9 4D B7 81 ED 33	0000170 40 0F 00 34 04 BC 17 DF D9 4D B7 81 ED 33
0000180 CB A7 75 7D 1C 38 B9 69 A8 AA F3 80 0F 96	0000180 CB A7 75 7D 1C 38 B9 69 A8 AA F3 80 0F 96
0000190 30 75 49 26 ED C0 01 C5 47 7F DF D4 8F 92	0000190 30 75 49 26 ED C0 01 C5 47 7F DF D4 8F 92
00001A0 03 64 2D 03 AE 5B E1 3F ED E8 F8 D0 46 D3	00001A0 03 64 2D 03 AE 5B E1 3F ED E8 F8 D0 46 D3
00001B0 B5 67 D2 BE D4 DC 2A 91 F7 A2 19 34 63 65	00001B0 B5 67 D2 BE D4 DC 2A 91 F7 A2 19 34 63 65

下面这种情况，有非常多的 bits 不同，一般是 NAND FLASH 有问题，可以先尝试用量产工具的

修复

方式升级固件，或者用开发工具

擦除IDB

后，再升级固件。

如果 NAND FLASH 电源纹波太大或者没有使用滤波电容，可能也会出现这个问题。

如果电源正常并重新升级不能解决问题，需要更换 NAND FLASH 解决问题。

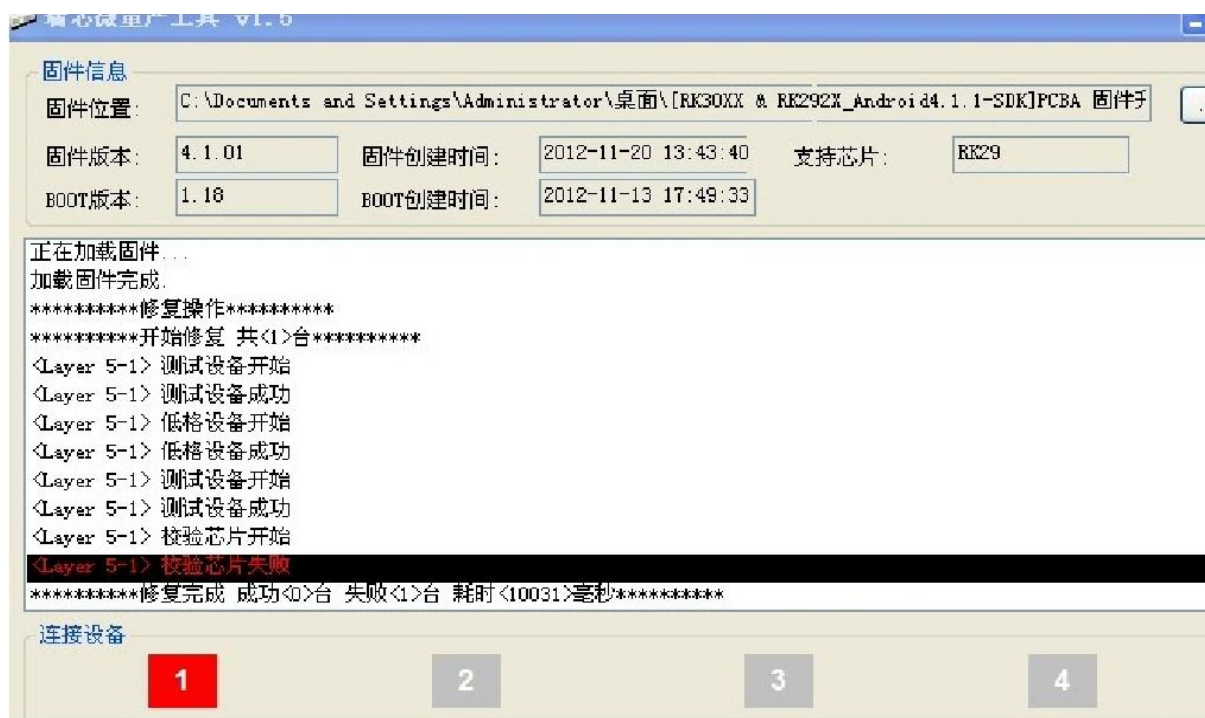
0000060 00 00 00 00 00 00 00 00 00 00 00 00 00	0000060 00 00 00 00 00 00 00 00 00 00 00 00 00
0000070 00 00 00 00 00 00 00 00 00 00 00 00 00	0000070 00 00 00 00 00 00 00 00 00 00 00 00 00
0000080 00 00 00 00 00 00 00 00 00 00 00 00 00	0000080 00 00 00 00 00 00 00 00 00 00 00 00 00
0000090 00 00 00 00 00 00 00 00 00 00 00 00 00	0000090 00 00 00 00 00 00 00 00 00 00 00 00 00
00000A0 00 00 00 00 00 00 00 00 00 00 00 00 00	00000A0 00 00 00 00 00 00 00 00 00 00 00 00 00
00000B0 00 00 00 00 00 00 00 00 00 00 00 00 00	00000B0 00 00 00 00 00 00 00 00 00 00 00 00 00
00000C0 00 00 00 00 00 00 00 00 00 00 00 00 00	00000C0 00 00 00 00 00 00 00 00 00 00 00 00 00
00000D0 00 00 00 00 00 00 00 00 00 00 00 00 00	00000D0 00 00 00 00 00 00 00 00 00 00 00 00 00
00000E0 00 00 00 00 00 00 00 00 00 00 00 00 00	00000E0 00 00 00 00 00 00 00 00 00 00 00 00 00
00000F0 00 00 00 00 00 00 00 00 00 00 00 00 00	00000F0 00 00 00 00 00 00 00 00 00 00 00 00 00
0000100 00 00 00 00 00 00 00 00 00 00 00 00 00	0000100 00 00 00 00 00 00 00 00 00 00 00 00 00
0000110 00 00 00 00 00 00 00 00 00 00 00 00 00	0000110 00 00 00 00 00 00 00 00 00 00 00 00 00
0000120 00 00 00 00 00 00 00 00 00 00 00 00 00	0000120 00 00 00 00 00 00 00 00 00 00 00 00 00
0000130 00 00 00 00 00 00 00 00 00 00 00 00 00	0000130 00 00 00 00 00 00 00 00 00 00 00 00 00
0000140 00 00 00 00 00 00 00 00 00 00 00 00 00	0000140 00 00 00 00 00 00 00 00 00 00 00 00 00
0000150 00 00 00 00 00 00 00 00 00 00 00 00 00	0000150 00 00 00 00 00 00 00 00 00 00 00 00 00
0000160 00 00 00 00 00 00 00 00 00 00 00 00 00	0000160 00 00 00 00 00 00 00 00 00 00 00 00 00
0000170 00 00 00 00 00 00 00 00 00 00 00 00 00	0000170 00 00 00 00 00 00 00 00 00 00 00 00 00
0000180 00 00 00 00 00 00 00 00 00 00 00 00 00	0000180 00 00 00 00 00 00 00 00 00 00 00 00 00
0000190 00 00 00 00 00 00 00 00 00 00 00 00 00	0000190 00 00 00 00 00 00 00 00 00 00 00 00 00
00001A0 00 00 00 00 00 00 00 00 00 00 00 00 00	00001A0 00 00 00 00 00 00 00 00 00 00 00 00 00
00001B0 00 00 00 00 00 00 00 00 00 00 00 00 00	00001B0 00 00 00 00 00 00 00 00 00 00 00 00 00
00001C0 00 00 00 00 00 00 00 00 00 00 00 00 00	00001C0 00 00 00 00 00 00 00 00 00 00 00 00 00
00001D0 00 00 00 00 00 00 00 00 00 00 00 00 00	00001D0 00 00 00 00 00 00 00 00 00 00 00 00 00
00001E0 00 00 00 00 00 00 00 00 00 00 00 00 00	00001E0 00 00 00 00 00 00 00 00 00 00 00 00 00
00001F0 00 00 00 00 00 00 00 00 00 00 00 00 00	00001F0 00 00 00 00 00 00 00 00 00 00 00 00 00
0000200 00 00 00 00 00 00 00 00 00 00 00 00 00	0000200 00 00 00 00 00 00 00 00 00 00 00 00 00
0000210 00 00 00 00 00 00 00 00 00 00 00 00 00	0000210 00 00 00 00 00 00 00 00 00 00 00 00 00

开发工具的提示及 log 信息和量产工具的 log 类似，可以参考量产工具的情况处理。

## 2.6. 校验芯片失败

量产工具在下载固件时提示校验芯片失败，这种问题一般都是固件选择错了，固件和芯片不匹配。在开发阶段，可能会是打包固件时参数配置错了。

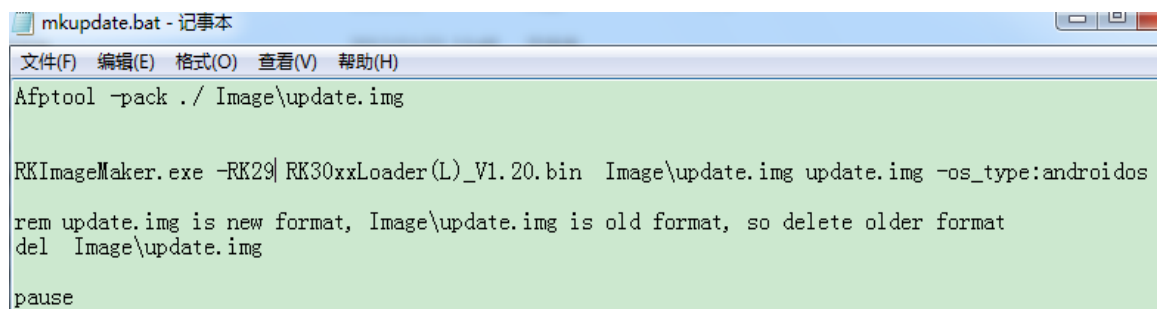
开发工具不会校验芯片信息，如果升级了错误的固件会出现不开机或者进入固件升级模式，那么需要重新升级正确的固件解决。



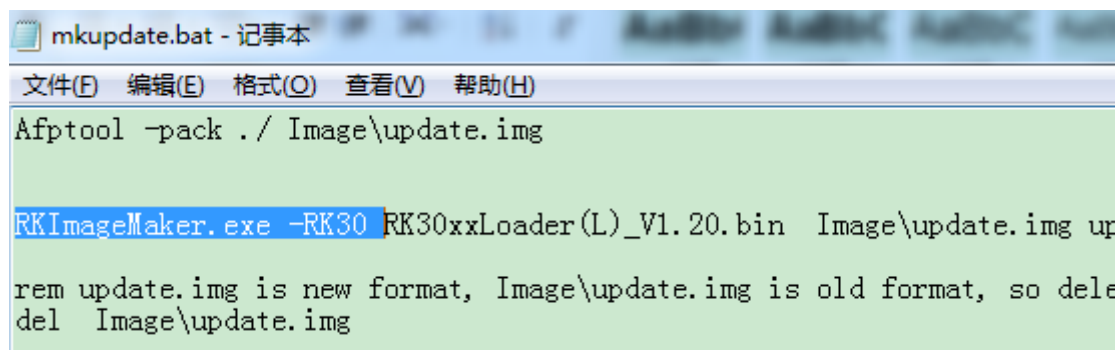
上图的固件是 rk30 的，打包时参数配置错误，配置成 RK29 了。

解决办法：

打开文件 mkupdate.bat，修改



修改 RKImageMaker.exe 芯片参数，给我“-RK30”。



更多详细的配置信息参考固件生成工具目录下的文档。



### 3. 其他问题

#### 3.1. 升级固件完自动重启后还在升级模式

用开发工具升级固件后，不开机，连接 USB 在在升级模式，串口信息提示如下：

```
DDR VENDOR: 1.00 20120925
In
DDR3
freq
300MHz
config state
pctl
phy
mem

DX0DQSTR:3DB04001
DX1DQSTR:3DB04001
DX2DQSTR:3DB04001
DX3DQSTR:3DB04001
acc
ok
bus width=32 col=10 bank=8 row=15 CS=1
size=1024MB
ok OUT
BUILD=====4
GetRemapTbl flag = 0
OK! 139389
unsigned!
SecureBootEn = 0
Boot ver: 2012-11-13#1.20
start_linux=====153017
Error: Invaidd tag(0x00000000)!
Load failed!
Begin recover...
GetRemapTbl flag = 1
Error: Invaidd tag(0x00000000) in backup!
Start Rockusb...
2900305 usbConnected
```

这种情况，都是升级固件时，升级了 misc.img，没有升级 recovery.img 引起的。

#		地址	名字	路径	...
1	<input checked="" type="checkbox"/>	0x00000000	Loader	..\rockdev\RK30xxLoader (L)_V1.20.bin	
2	<input checked="" type="checkbox"/>	0x00000000	parameter	..\rockdev\parameter	
3	<input checked="" type="checkbox"/>	0x00002000	misc	..\rockdev\Image\misc.img	
4	<input checked="" type="checkbox"/>	0x00004000	kernel	..\rockdev\Image\kernel.img	
5	<input checked="" type="checkbox"/>	0x00008000	boot	..\rockdev\Image\boot.img	
6	<input type="checkbox"/>	0x00010000	recovery	..\rockdev\Image\recovery.img	
7	<input checked="" type="checkbox"/>	0x0021A000	system	..\rockdev\Image\system.img	
8	<input type="checkbox"/>	0x00018000	backup	..\rockdev\Image\update.img	
9	<input type="checkbox"/>	0x0031A000	oem	..\rockdev\Image\oem.img	

解决办法：

重新升级 recovery.img 或者往 misc 分区写入一个大于 32KB 的其他文件清除 misc 分区中的命令。