

Meig Linux firehose update tool usage guide_V1.0

Controlled version: V1.0

Release date: May 26, 2021



Important statement

Copyright Notice

Copyright: Meige Intelligent Technology Co., Ltd.

This material and all the content it contains are owned by MAG Intelligent Technology Co., Ltd., and are protected by Chinese laws and applicable international conventions related to copyright laws. Without the written authorization of Meige Intelligent Technology Co., Ltd., no one may copy, disseminate, distribute, modify or use part or all of this information in any form. Violators will be held accountable in accordance with the law.

No guarantee statement

MG Intelligent Technology Co., Ltd. does not make any express or implied statements or guarantees for any content in this document, and does not assume any responsibility for the marketability and applicability for specific purposes or any indirect, special or joint losses.

Confidentiality statement

The information contained in this document (including any attachments) is confidential. The recipient understands that the document he obtained is confidential, and shall not be used for any purpose other than the specified purpose, and shall not disclose the document to any third party.

Disclaimer

The company is not responsible for property or personal injury caused by abnormal operations of customers. Customers are requested to develop corresponding products in accordance with the technical specifications and reference designs in the manual. Before making a statement, the company has the right to change the content of this manual according to the needs of technological development, and the revised version will not be notified otherwise.

Revision record

version number	date	Revised content
V1.0	2021-05-26	Initially established

MeiG Confidential

Contents

Important statement	1
Revision record.....	2
Contents.....	3
1 introduction	4
1.1 Document purpose.....	4
1.2 Lists of contents.....	4
2 Software environment preparation	5
3 Introduction to upgrade package composition	6
4 Upgrade the module through the host computer	7
4.1 Compile the upgrade program that can be run on the corresponding platform	7
4.2 Start to upgrade.....	7
4.3 Run Meig_firehose.....	7
5 Other problem description	9
5.1 Upgrade log save path	9
5.2 Troubleshooting during the firehose upgrade process.....	9

1 INTRODUCTION

1.1 Document purpose

This document mainly introduces the operation instructions of the Meig 4g and 5g modules on the Linux-based host computer through the Meig_firehose upgrade tool to upgrade the modules.

1.2 Lists of contents

This article is divided into the following parts:

- Software environment preparation;
- Introduction to upgrade package composition;
- Upgrade the module through the host computer;
- Other problem description;

2 SOFTWARE ENVIRONMENT PREPARATION

Operating system: Linux-based host computer operating environment, such as openwrt, ubuntu, centos, android, etc.

Target upgrade module: The host computer integrates Meig 4g and 5g communication modules. The module and the host computer are connected via usb.

MeiG Confidential

3 INTRODUCTION TO UPGRADE PACKAGE COMPOSITION

Table 1 Upgrade package composition

File name	Remarks
Meig_firehose	The main upgrade program, this upgrade program is generated by the cross-compilation tool chain of the upper computer
Image	Upgrade the mirror folder, the folder name can be arbitrarily specified, this folder contains all the mirrors required to upgrade the module. Such as boot, system, modem, etc., the mirror composition is as shown in Figure 1

名称	修改日期	类型	大小
abl.elf	2020/11/19 14:26	ELF 文件	148 KB
abl_fastboot.elf	2020/11/19 14:26	ELF 文件	148 KB
aop.mbn	2020/11/19 14:26	MBN 文件	152 KB
apdp.mbn	2020/11/19 14:26	MBN 文件	14 KB
devcfg.mbn	2020/11/19 14:26	MBN 文件	42 KB
efs.mbn	2020/11/19 14:28	MBN 文件	1,548 KB
erase_all.xml	2020/11/19 14:26	XML 文档	1 KB
erase_partitions.xml	2020/11/19 14:26	XML 文档	1 KB
hyp.mbn	2020/11/19 14:26	MBN 文件	83 KB
ipa_fw.elf	2020/11/19 14:26	ELF 文件	53 KB
multi_image.mbn	2020/11/19 14:26	MBN 文件	13 KB
NON-HLOS.ubi	2020/11/19 14:26	UBI 文件	77,568 KB
partition.mbn	2020/11/19 14:26	MBN 文件	1 KB
partition_complete_p4K_b256K.mbn	2020/11/19 14:26	MBN 文件	16 KB
partition_nand_12.xml	2020/11/19 14:26	XML 文档	12 KB
patch_p4K_b256K.xml	2020/11/19 14:26	XML 文档	1 KB
prog_firehose_sdx55.mbn	2020/11/19 14:26	MBN 文件	268 KB
qdsp6sw.mbn	2020/11/19 14:26	MBN 文件	83,021 KB
rawprogram_nand_p4K_b256K.xml	2020/11/19 14:26	XML 文档	9 KB
recovery.img	2020/11/19 14:26	IMG 文件	10,890 KB
sbl1.mbn	2020/11/19 14:26	MBN 文件	581 KB
sbl1_only.mbn	2020/11/19 14:26	MBN 文件	569 KB
sdxprairie-boot.img	2020/11/19 14:26	IMG 文件	10,890 KB
sdxprairie-recoveryfs.ubi	2020/11/19 14:26	UBI 文件	27,392 KB
sdxprairie-sysfs.ubi	2020/11/19 14:26	UBI 文件	93,696 KB
sdxprairie-usrfs.ubifs	2020/11/19 14:26	UBIFS 文件	11,904 KB
sec.elf	2020/11/19 14:26	ELF 文件	13 KB
tz.mbn	2020/11/19 14:26	MBN 文件	892 KB
uefi.elf	2020/11/19 14:26	ELF 文件	1,164 KB
xbl_cfg.elf	2020/11/19 14:26	ELF 文件	65 KB

Figure 1 Target upgrade image of MAG module

Upgrade process:

The upgrade process is shown in Figure 3 below:

```
[sahara_protocol.c-0236][008.679]: RECEIVED <-- SAHARA_MODE_IMAGE_TX_PENDING
[sahara_protocol.c-0258][008.679]: SENDING --> SAHARA_HELLO_RESPONSE
[sahara_protocol.c-0265][008.679]: STATE <-- SAHARA_WAIT_COMMAND
[sahara_protocol.c-0091][008.679]: RECEIVED <-- SAHARA_READ_DATA_ID
[sahara_protocol.c-0157][008.679]: 0x0000000d 0x00000000 0x00000034
[sahara_protocol.c-0265][008.679]: STATE <-- SAHARA_WAIT_COMMAND
[sahara_protocol.c-0091][008.680]: RECEIVED <-- SAHARA_READ_DATA_ID
[sahara_protocol.c-0157][008.680]: 0x0000000d 0x00000034 0x00000080
[sahara_protocol.c-0265][008.680]: STATE <-- SAHARA_WAIT_COMMAND
[sahara_protocol.c-0091][008.680]: RECEIVED <-- SAHARA_READ_DATA_ID
[sahara_protocol.c-0157][008.680]: 0x0000000d 0x00001000 0x00001000
[sahara_protocol.c-0265][008.680]: STATE <-- SAHARA_WAIT_COMMAND
[sahara_protocol.c-0091][008.710]: RECEIVED <-- SAHARA_READ_DATA_ID
[sahara_protocol.c-0157][008.710]: 0x0000000d 0x00002000 0x000009d0
[sahara_protocol.c-0265][008.710]: STATE <-- SAHARA_WAIT_COMMAND
[sahara_protocol.c-0091][008.711]: RECEIVED <-- SAHARA_READ_DATA_ID
[sahara_protocol.c-0157][008.711]: 0x0000000d 0x00003000 0x00001000
[sahara_protocol.c-0265][008.711]: STATE <-- SAHARA_WAIT_COMMAND
[sahara_protocol.c-0091][008.711]: RECEIVED <-- SAHARA_READ_DATA_ID
[sahara_protocol.c-0157][008.711]: 0x0000000d 0x00004000 0x00001000
[sahara_protocol.c-0265][008.712]: STATE <-- SAHARA_WAIT_COMMAND
[sahara_protocol.c-0091][008.712]: RECEIVED <-- SAHARA_READ_DATA_ID
[sahara_protocol.c-0157][008.712]: 0x0000000d 0x00005000 0x00001000
[sahara_protocol.c-0265][008.712]: STATE <-- SAHARA_WAIT_COMMAND
[sahara_protocol.c-0091][008.712]: RECEIVED <-- SAHARA_READ_DATA_ID
[sahara_protocol.c-0157][008.712]: 0x0000000d 0x00006000 0x00001000
[sahara_protocol.c-0265][008.713]: STATE <-- SAHARA_WAIT_COMMAND
```

Figure 3 Upgrade process

Upgrade result:

After the normal upgrade is successful, there will be a print as shown in Figure 4: Prompt Upgrade module successfully;

```
[firehose_protocol.c-0374][064.594]: <log value="INFO: Calling handler for program" />
[firehose_protocol.c-0374][064.594]: <log value="INFO: NAND was previously open, returning existing handle 0." />
[firehose_protocol.c-0355][064.595]: <response value="ACK" rawmode="true" />
send sdxprairie-sysfs.ubi, filesize = 96206848

[meig_firehose.c-1125][088.452]: upgrade progress 99% 232110035/232704255
upgrade progress 99% 232110035/232704255
[firehose_protocol.c-0590][088.452]: send finished
[firehose_protocol.c-0355][088.455]: <response value="ACK" rawmode="false" />
[firehose_protocol.c-0610][088.455]: cmd count is:41[firehose_protocol.c-0622][088.455]: cmd count is:40[firehose_protocol.c-0476][088.455]: <program PAGES_PER_BLOCK="64" SECTOR_SIZE_IN_BYTES="4096" filename="sbl1.mbn" num_partition_sectors="146" physical_partition_number="0" start_sector="0" />
[firehose_protocol.c-0374][088.455]: <log value="INFO: Calling handler for program" />
[firehose_protocol.c-0374][088.456]: <log value="INFO: NAND was previously open, returning existing handle 0." />
[firehose_protocol.c-0355][088.457]: <response value="ACK" rawmode="true" />
send sbl1.mbn, filesize = 594220

[meig_firehose.c-1125][088.591]: upgrade progress 100% 233298475/232704255
upgrade progress 100% 233298475/232704255
[firehose_protocol.c-0590][088.591]: send finished
[firehose_protocol.c-0355][088.593]: <response value="ACK" rawmode="false" />
[firehose_protocol.c-0476][088.593]: <power value="reset" />
[firehose_protocol.c-0374][088.594]: <log value="INFO: Calling handler for power" />
[firehose_protocol.c-0355][088.594]: <response value="ACK" rawmode="false" />
[firehose_protocol.c-0374][088.595]: <log value="INFO: Will issue reset/power off 100 useconds, if this hangs check if />
[firehose_protocol.c-0374][088.595]: <log value="INFO: bsp_target_reset() 1" />
[usb_linux.c-0456][088.602]: inf[0] ep_in -1/1024, errno = 71 (Protocol error)
[usb_linux.c-0810][088.603]: qusb_noblock_read read=-1, errno: 71 (Protocol error)
[usb_linux.c-0816][088.603]: qusb_noblock_read cur=0, min_size=1
[firehose_protocol.c-0327][088.603]: firehose_protocol.c fh_rcv_cmd 327 fail
The total download time is 61.596 s
[meig_firehose.c-1056][088.603]: Upgrade module successfully.
root@zhangqingyun:/home/zhangqingyun/Desktop/meig_firehose/Meig_Firehose#
```

Figure 4 Successful upgrade result

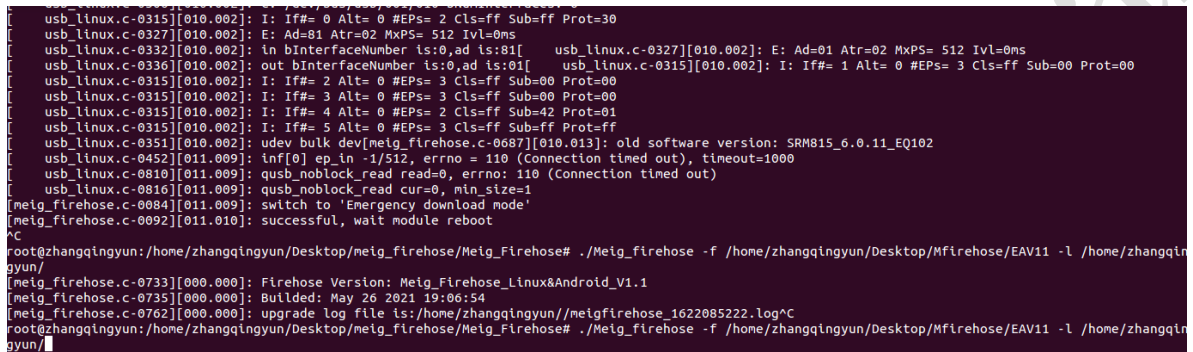
5 OTHER PROBLEM DESCRIPTION

5.1 Upgrade log save path

By default, no log is saved during the upgrade process. If you need to save the upgrade log, you need to carry the -l parameter when executing the upgrade tool.

Take the local ubuntu system as an example to execute:

```
./Meig_firehose -f /home/zhangqingyun/Desktop/Mfirehose/EAV11 -l /home/zhangqingyun/
```



```

[usb_linux.c-0315][010.002]: I: If#= 0 Alt= 0 #EPs= 2 Cls=ff Sub=ff Prot=30
[usb_linux.c-0327][010.002]: E: Ad=81 Atr=02 MxPS= 512 IvL=0ms
[usb_linux.c-0332][010.002]: in bInterfaceNumber is:0,ad is:01[usb_linux.c-0327][010.002]: E: Ad=01 Atr=02 MxPS= 512 IvL=0ms
[usb_linux.c-0336][010.002]: out bInterfaceNumber is:0,ad is:01[usb_linux.c-0315][010.002]: I: If#= 1 Alt= 0 #EPs= 3 Cls=ff Sub=00 Prot=00
[usb_linux.c-0315][010.002]: I: If#= 2 Alt= 0 #EPs= 3 Cls=ff Sub=00 Prot=00
[usb_linux.c-0315][010.002]: I: If#= 3 Alt= 0 #EPs= 3 Cls=ff Sub=00 Prot=00
[usb_linux.c-0315][010.002]: I: If#= 4 Alt= 0 #EPs= 2 Cls=ff Sub=42 Prot=01
[usb_linux.c-0315][010.002]: I: If#= 5 Alt= 0 #EPs= 3 Cls=ff Sub=ff Prot=ff
[usb_linux.c-0351][010.002]: udev bulk dev[meig_firehose.c-0687][010.013]: old software version: SRM815_6.0.11_EQ102
[usb_linux.c-0452][011.009]: intf[0] ep_in -1/512, errno = 110 (Connection timed out), timeout=1000
[usb_linux.c-0810][011.009]: qusb_noblock_read read=0, errno: 110 (Connection timed out)
[usb_linux.c-0816][011.009]: qusb_noblock_read cur=0, min_size=1
[meig_firehose.c-0084][011.009]: switch to 'Emergency download mode'
[meig_firehose.c-0092][011.010]: successful, wait module reboot
^C
root@zhangqingyun:/home/zhangqingyun/Desktop/meig_firehose/Meig_Firehose# ./Meig_firehose -f /home/zhangqingyun/Desktop/Mfirehose/EAV11 -l /home/zhangqingyun/
[meig_firehose.c-0733][000.000]: Firehose Version: Meig_Firehose_Linux&Android_V1.1
[meig_firehose.c-0735][000.000]: Builded: May 26 2021 19:06:54
[meig_firehose.c-0762][000.000]: Upgrade log file is:/home/zhangqingyun/meigfirehose_1622085222.log^C
root@zhangqingyun:/home/zhangqingyun/Desktop/meig_firehose/Meig_Firehose# ./Meig_firehose -f /home/zhangqingyun/Desktop/Mfirehose/EAV11 -l /home/zhangqingyun/

```

Figure 5 Upgrade log printing

The default log will be saved in /xxx/xxx/meigfirehose_time.log during the upgrade process.

5.2 Troubleshooting during the firehose upgrade process

- (1) Confirm whether the Meig_firehose tool is compiled for the host computer platform.
- (2) Confirm whether the usb port is mapped on the host computer. You can use the following command:
ls /dev/ttyUSB*;
- (3) You can use -l to print out the upgrade log to confirm the cause of the specific upgrade exception.