SIMCOM Diaggrab (linux)

支持高通 MDM9X07/SDX12/SDX55/SDX62 平台，本工具运行于 Linux 平台

1.Release 路径

适用于 SDX55/SDX62 等支持 5G 模组

适用于 SIM7600 等 LTE 模组

2. 前提条件

模块已经连接，并按照 Linux USB 文档正确配置

LOG 工具需要与

diaggrab 是以源码形式提供的，使用前需要编译生成 Linux 下可执行文件

以下将以 适用于 SDX55/SDX62 等支持 5G 模组 为例解释工具用法

3. 工具接口概览

./diaggrab -h

Usage for ./diaggrab:

-h --help: usage help

-p --port: TTY device to use. Example /dev/ttyUSB0

-s --size: maximum file size in MB, default is 100

-n --lognum: maximum file num[0-512], default is 0. 0 means no limit.

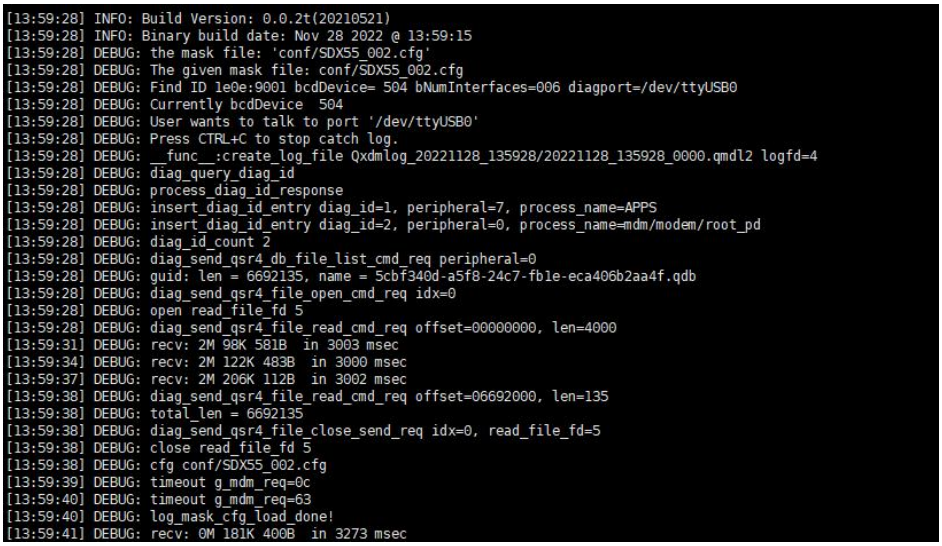
-c --filemdm: mask file name for MDM

-u, --qmdl2_v2: Guid-diagid mapping in qmdl2 header

-r, --ramdump: catch SDX55 ram dump

4. 常用示例：指定特定 logmask

./diaggrab -c conf/SDX55_002.cfg



5. 常用示例：指定单个日志包文件大小

以下参数指定单个日志包文件大小 500M

./diaggrab -c conf/SDX55_002.cfg -s 500

6. 常用示例：指定以覆盖方式抓取

以下参数指定单个日志包文件大小 100M，并且本次以循环覆盖的方式抓取，抓满 5 个日志后，覆盖最早生成的日志文件

./diaggrab -c conf/SDX55_002.cfg -s 100 -n 5

7. 常用示例：抓取 dump

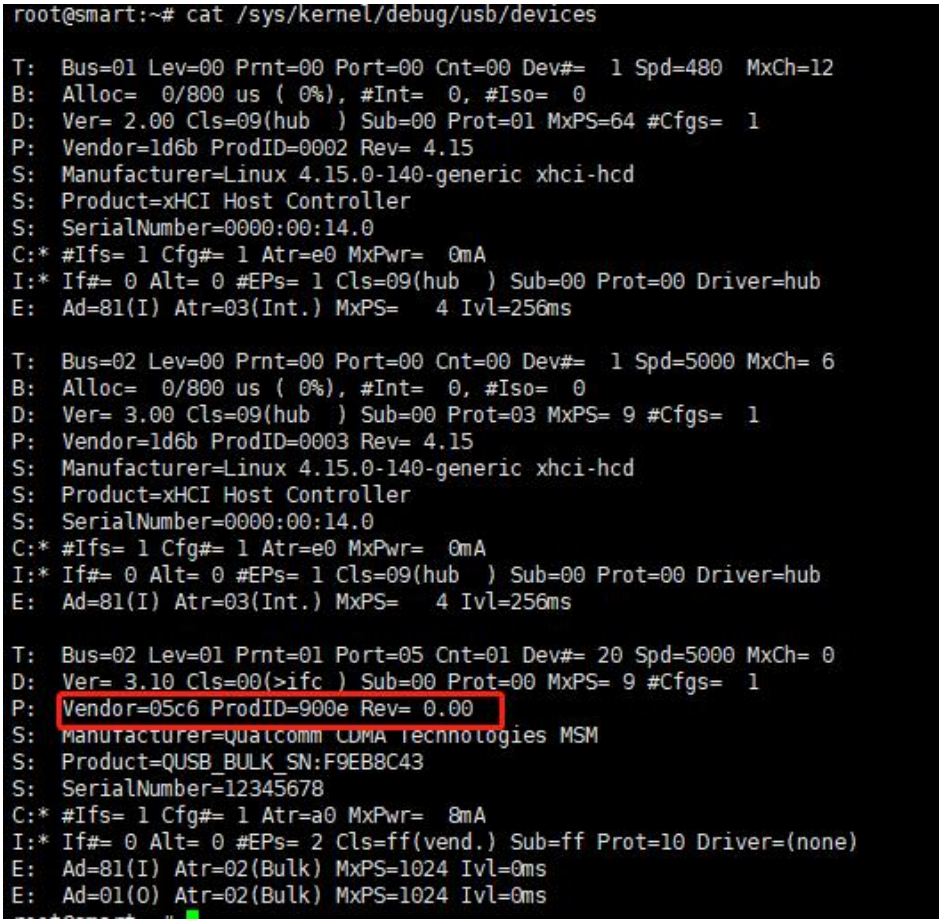
注意：at+cedump=1 开机后要设置，否则模块即使死机也不会进入 dump 模式的

进入 dump 后

```
#  lsusb
Bus 002 Device 020: ID 05c6:900e Qualcomm, Inc.
Bus 002 Device 001: ID 1d6b:0003 Linux Foundation 3.0 root hub
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
```

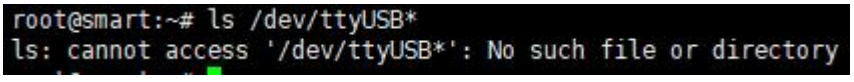
或者

```
#  cat /sys/kernel/debug/usb/devices
```



确认 dump 模式下 diag 口

```
#  ls /dev/ttyUSB*
```



如果此时执行 LOG 工具，会出现如下提示

./diaggrab

```
[15:03:29] INFO: Build Version: 0.0.2t(20210521)
[15:03:29] INFO: Binary build date: Nov 28 2022 @ 13:59:15
[15:03:29] DEBUG: The given mask file: Built-in mask
[15:03:30] DEBUG: Find ID 5c6:900e bcdDevice= 0 bNumInterfaces=001 diagport=
[15:03:31] DEBUG: Find ID 5c6:900e bcdDevice= 0 bNumInterfaces=001 diagport=
```

发现有口是可以跳过设置本条代码的，此处 05c6 和 900e 根据上图的 Vendor=05c6 ProdID=900e 获得

```
#  echo 05c6 900e > /sys/bus/usb-serial/drivers/option1/new_id
```

./diaggrab -q 抓取 dump 后并退出 diaggrab 程序

```
[16:15:48] INFO: Build Version: 0.0.2t(20210521)
[16:15:48] INFO: Binary build date: Nov 29 2022 @ 16:13:33
[16:15:48] DEBUG: The given mask file: Built-in mask
[16:15:48] DEBUG: Find ID 5c6:9001 bcdDevice= 0 bNumInterfaces=001
diagport=/dev/ttyUSB0
[16:15:48] DEBUG: Currently bcdDevice 0
[16:15:48] DEBUG: User wants to talk to port '/dev/ttyUSB0'
[16:15:48] DEBUG: catch ramdump
[000.000] STATE <-- SAHARA_WAIT_HELLO
[000.000] Read 8 bytes, command 1 and packet length 48 bytes
[000.000] RECEIVED <-- SAHARA_HELLO_ID
[000.000] RECEIVED <-- SAHARA_MODE_MEMORY_DEBUG
[000.000] SENDING --> SAHARA_HELLO_RESPONSE
[000.000] STATE <-- SAHARA_WAIT_COMMAND
[000.000] Read 8 bytes, command 1 and packet length 48 bytes
[000.000] RECEIVED <-- SAHARA_HELLO_ID
[000.000] Received an unknown command: 1
[000.000] STATE <-- SAHARA_WAIT_COMMAND
[000.000] Read 8 bytes, command 1 and packet length 48 bytes
[000.000] RECEIVED <-- SAHARA_HELLO_ID
[000.000] Received an unknown command: 1
```

```
[000.000] STATE <-- SAHARA_WAIT_COMMAND
[000.000] Read 8 bytes, command 1 and packet length 48 bytes
[000.000] RECEIVED <-- SAHARA_HELLO_ID
[000.000] Received an unknown command: 1
[000.000] STATE <-- SAHARA_WAIT_COMMAND
[000.000] Read 8 bytes, command 1 and packet length 48 bytes
[000.000] RECEIVED <-- SAHARA_HELLO_ID
[000.000] Received an unknown command: 1
[000.000] STATE <-- SAHARA_WAIT_COMMAND
[000.000] Read 8 bytes, command 1 and packet length 48 bytes
[000.000] RECEIVED <-- SAHARA_HELLO_ID
[000.000] Received an unknown command: 1
[000.000] STATE <-- SAHARA_WAIT_COMMAND
[000.008] Read 8 bytes, command 9 and packet length 16 bytes
[000.008] RECEIVED <-- SAHARA_MEMORY_DEBUG_ID
[000.008] RECEIVED <-- SAHARA_MEMORY_DEBUG
[000.008] Memory Table Address: 0x8FDBB4E0, Memory Table Length: 0x000005E4
[000.008] SENDING --> SAHARA_MEMORY_READ, address 0x8FDBB4E0, length 0x000005E4
[000.008] STATE <-- SAHARA_WAIT_MEMORY_TABLE
[000.008] STATE <-- SAHARA_WAIT_MEMORY_TABLE
[000.009] Memory Debug table received
[000.009] Base 0x14680000 Len 0x00010000, 'OCIMEM.BIN', 'OCIMEM'
[000.009] Base 0x0B000000 Len 0x00018000, 'CODERAM.BIN', 'AOP Code RAM region'
[000.009] Base 0x0B0E0000 Len 0x00008000, 'DATARAM.BIN', 'AOP Data RAM region'
[000.009] Base 0x0C300000 Len 0x00000400, 'MSGRAM.BIN', 'AOP MSG RAM region'
[000.009] Base 0x01EA0000 Len 0x00009F00, 'IPA_IU.BIN', 'IPA IU region'
[000.009] Base 0x01E50000 Len 0x00004B20, 'IPA_SRAM.BIN', 'IPA SRAM region'
[000.009] Base 0x01EC2000 Len 0x00000100, 'IPA_MBOX.BIN', 'IPA MBOX region'
[000.009] Base 0x01E60000 Len 0x0000B9B0, 'IPA_HRAM.BIN', 'IPA HRAM region'
[000.009] Base 0x01E81000 Len 0x00000300, 'IPA_SEQ.BIN', 'IPA SEQ region'
[000.009] Base 0x09060000 Len 0x00010000, 'SHRM_MEM.BIN', 'SHRM Memory region'
[000.009] Base 0x0C300000 Len 0x00000400, 'MSGRAM0.BIN', 'AOP_MSG_DRV0'
[000.009] Base 0x0C310000 Len 0x00000400, 'MSGRAM1.BIN', 'AOP_MSG_DRV1'
[000.009] Base 0x0C320000 Len 0x00000400, 'MSGRAM2.BIN', 'AOP_MSG_DRV2'
[000.009] Base 0x0C330000 Len 0x00000400, 'MSGRAM3.BIN', 'AOP_MSG_DRV3'
[000.009] Base 0x0C340000 Len 0x00000400, 'MSGRAM4.BIN', 'AOP_MSG_DRV4'
[000.009] Base 0x0C350000 Len 0x00000400, 'MSGRAM5.BIN', 'AOP_MSG_DRV5'
[000.009] Base 0x0C360000 Len 0x00000400, 'MSGRAM6.BIN', 'AOP_MSG_DRV6'
[000.009] Base 0x0C370000 Len 0x00000400, 'MSGRAM7.BIN', 'AOP_MSG_DRV7'
[000.009] Base 0x01E06000 Len 0x00001500, 'IPA_GSI.BIN', 'IPA GSI region'
```

[000.009] Base 0x010AE000 Len 0x00002000, 'DCC_SRAM.BIN', 'DCC SRAM'
[000.009] Base 0x010A2000 Len 0x00001000, 'DCC_CFG.BIN', 'DCC CFG'
[000.009] Base 0x8FDBB008 Len 0x00000008, 'PMIC_PON.BIN', 'Pmic PON stat'
[000.009] Base 0x8FDBB010 Len 0x000000CC, 'PMON_HIS.BIN', 'Pmic PON History'
[000.009] Base 0x8FDBB0E0 Len 0x00000400, 'PBUS_LOG.BIN', 'Pmic PBUS log dump'
[000.009] Base 0x8FDBB000 Len 0x00000004, 'RST_STAT.BIN', 'Reset Status
Region'
[000.009] Base 0x14856100 Len 0x00000004, 'FSM_STS.BIN', 'Aoss rst fsm stat'
[000.009] Base 0x14856104 Len 0x00000004, 'FSM_CTRL.BIN', 'Aoss rst fsm ctrl'
[000.009] Base 0x80000000 Len 0x20000000, 'DDRCS0.BIN', ' DDR CS0 Memory'
[000.009] Base 0x8FD07038 Len 0x00000898, 'load.cmm', 'CMM Script'
[000.009] STATE <-- SAHARA_WAIT_MEMORY_REGION
[000.009] SENDING --> SAHARA_MEMORY_READ, address 0x14680000, length
0x00008000
[000.010] Received file 'OCIMEM.BIN'
[000.010] 65536 bytes transferred in 0.000848 seconds (73.7028MBps)
[000.010] SENDING --> SAHARA_MEMORY_READ, address 0x0B000000, length
0x00008000
[000.012] Received file 'CODERAM.BIN'
[000.012] 98304 bytes transferred in 0.002098 seconds (44.6854MBps)
[000.012] SENDING --> SAHARA_MEMORY_READ, address 0x0B0E0000, length
0x00008000
[000.013] Received file 'DATARAM.BIN'
[000.013] 32768 bytes transferred in 0.000710 seconds (44.0141MBps)
[000.013] SENDING --> SAHARA_MEMORY_READ, address 0x0C300000, length
0x00000400
[000.013] Received file 'MSGRAM.BIN'
[000.013] 1024 bytes transferred in 0.000164 seconds (5.9546MBps)
[000.013] SENDING --> SAHARA_MEMORY_READ, address 0x01EA0000, length
0x00008000
[000.013] SENDING --> SAHARA_MEMORY_READ, address 0x01EA8000, length
0x00001F00
[000.014] Received file 'IPA_IU.BIN'
[000.014] 40704 bytes transferred in 0.000646 seconds (60.0903MBps)
[000.014] SENDING --> SAHARA_MEMORY_READ, address 0x01E50000, length
0x00004B20
[000.014] Received file 'IPA_SRAM.BIN'
[000.014] 19232 bytes transferred in 0.000255 seconds (71.9257MBps)
[000.014] SENDING --> SAHARA_MEMORY_READ, address 0x01EC2000, length
0x00000100
[000.014] Received file 'IPA_MBOX.BIN'

[000.014] 256 bytes transferred in 0.000117 seconds (2.0867MBps)
[000.014] SENDING --> SAHARA_MEMORY_READ, address 0x01E60000, length 0x00008000
[000.015] SENDING --> SAHARA_MEMORY_READ, address 0x01E68000, length 0x000039B0
[000.015] Received file 'IPA_HRAM.BIN'
[000.015] 47536 bytes transferred in 0.000647 seconds (70.0678MBps)
[000.015] SENDING --> SAHARA_MEMORY_READ, address 0x01E81000, length 0x00000300
[000.015] Received file 'IPA_SEQ.BIN'
[000.015] 768 bytes transferred in 0.000121 seconds (6.0531MBps)
[000.015] SENDING --> SAHARA_MEMORY_READ, address 0x09060000, length 0x00008000
[000.016] Received file 'SHRM_MEM.BIN'
[000.016] 65536 bytes transferred in 0.000756 seconds (82.6720MBps)
[000.016] SENDING --> SAHARA_MEMORY_READ, address 0x0C300000, length 0x00000400
[000.016] Received file 'MSGRAM0.BIN'
[000.016] 1024 bytes transferred in 0.000114 seconds (8.5663MBps)
[000.016] SENDING --> SAHARA_MEMORY_READ, address 0x0C310000, length 0x00000400
[000.016] Received file 'MSGRAM1.BIN'
[000.016] 1024 bytes transferred in 0.000123 seconds (7.9395MBps)
[000.016] SENDING --> SAHARA_MEMORY_READ, address 0x0C320000, length 0x00000400
[000.016] Received file 'MSGRAM2.BIN'
[000.016] 1024 bytes transferred in 0.000121 seconds (8.0708MBps)
[000.016] SENDING --> SAHARA_MEMORY_READ, address 0x0C330000, length 0x00000400
[000.016] Received file 'MSGRAM3.BIN'
[000.016] 1024 bytes transferred in 0.000125 seconds (7.8125MBps)
[000.016] SENDING --> SAHARA_MEMORY_READ, address 0x0C340000, length 0x00000400
[000.016] Received file 'MSGRAM4.BIN'
[000.016] 1024 bytes transferred in 0.000124 seconds (7.8755MBps)
[000.017] SENDING --> SAHARA_MEMORY_READ, address 0x0C350000, length 0x00000400
[000.017] Received file 'MSGRAM5.BIN'
[000.017] 1024 bytes transferred in 0.000132 seconds (7.3982MBps)
[000.017] SENDING --> SAHARA_MEMORY_READ, address 0x0C360000, length 0x00000400

[000.017] Received file 'MSGRAM6.BIN'
[000.017] 1024 bytes transferred in 0.000130 seconds (7.5120MBps)
[000.017] SENDING --> SAHARA_MEMORY_READ, address 0x0C370000, length
0x00000400
[000.017] Received file 'MSGRAM7.BIN'
[000.017] 1024 bytes transferred in 0.000135 seconds (7.2338MBps)
[000.017] SENDING --> SAHARA_MEMORY_READ, address 0x01E06000, length
0x00001500
[000.017] Received file 'IPA_GSI.BIN'
[000.017] 5376 bytes transferred in 0.000172 seconds (29.8079MBps)
[000.017] SENDING --> SAHARA_MEMORY_READ, address 0x010AE000, length
0x00002000
[000.017] Received file 'DCC_SRAM.BIN'
[000.017] 8192 bytes transferred in 0.000187 seconds (41.7781MBps)
[000.017] SENDING --> SAHARA_MEMORY_READ, address 0x010A2000, length
0x00001000
[000.018] Received file 'DCC_CFG.BIN'
[000.018] 4096 bytes transferred in 0.000147 seconds (26.5731MBps)
[000.018] SENDING --> SAHARA_MEMORY_READ, address 0x8FDBB008, length
0x00000008
[000.018] Received file 'PMIC_PON.BIN'
[000.018] 8 bytes transferred in 0.000118 seconds (0.0647MBps)
[000.018] SENDING --> SAHARA_MEMORY_READ, address 0x8FDBB010, length
0x000000CC
[000.018] Received file 'PMON_HIS.BIN'
[000.018] 204 bytes transferred in 0.000122 seconds (1.5947MBps)
[000.018] SENDING --> SAHARA_MEMORY_READ, address 0x8FDBB0E0, length
0x00000400
[000.018] Received file 'PBUS_LOG.BIN'
[000.018] 1024 bytes transferred in 0.000120 seconds (8.1380MBps)
[000.018] SENDING --> SAHARA_MEMORY_READ, address 0x8FDBB000, length
0x00000004
[000.018] Received file 'RST_STAT.BIN'
[000.018] 4 bytes transferred in 0.000123 seconds (0.0310MBps)
[000.018] SENDING --> SAHARA_MEMORY_READ, address 0x14856100, length
0x00000004
[000.018] Received file 'FSM_STS.BIN'
[000.018] 4 bytes transferred in 0.000118 seconds (0.0323MBps)
[000.018] SENDING --> SAHARA_MEMORY_READ, address 0x14856104, length
0x00000004
[000.019] Received file 'FSM_CTRL.BIN'

[000.019] 4 bytes transferred in 0.000120 seconds (0.0318MBps)
[000.019] SENDING --> SAHARA_MEMORY_READ, address 0x80000000, length 0x00008000
[000.195] SENDING --> SAHARA_MEMORY_READ, address 0x81000000, length 0x00008000
[000.335] SENDING --> SAHARA_MEMORY_READ, address 0x82000000, length 0x00008000
[000.473] SENDING --> SAHARA_MEMORY_READ, address 0x83000000, length 0x00008000
[000.618] SENDING --> SAHARA_MEMORY_READ, address 0x84000000, length 0x00008000
[000.755] SENDING --> SAHARA_MEMORY_READ, address 0x85000000, length 0x00008000
[000.892] SENDING --> SAHARA_MEMORY_READ, address 0x86000000, length 0x00008000
[001.029] SENDING --> SAHARA_MEMORY_READ, address 0x87000000, length 0x00008000
[001.166] SENDING --> SAHARA_MEMORY_READ, address 0x88000000, length 0x00008000
[001.305] SENDING --> SAHARA_MEMORY_READ, address 0x89000000, length 0x00008000
[001.445] SENDING --> SAHARA_MEMORY_READ, address 0x8A000000, length 0x00008000
[001.592] SENDING --> SAHARA_MEMORY_READ, address 0x8B000000, length 0x00008000
[001.728] SENDING --> SAHARA_MEMORY_READ, address 0x8C000000, length 0x00008000
[001.865] SENDING --> SAHARA_MEMORY_READ, address 0x8D000000, length 0x00008000
[002.002] SENDING --> SAHARA_MEMORY_READ, address 0x8E000000, length 0x00008000
[002.139] SENDING --> SAHARA_MEMORY_READ, address 0x8F000000, length 0x00008000
[002.277] SENDING --> SAHARA_MEMORY_READ, address 0x90000000, length 0x00008000
[002.416] SENDING --> SAHARA_MEMORY_READ, address 0x91000000, length 0x00008000
[002.555] SENDING --> SAHARA_MEMORY_READ, address 0x92000000, length 0x00008000
[002.701] SENDING --> SAHARA_MEMORY_READ, address 0x93000000, length 0x00008000

[002.839] SENDING --> SAHARA_MEMORY_READ, address 0x94000000, length 0x00008000
[002.975] SENDING --> SAHARA_MEMORY_READ, address 0x95000000, length 0x00008000
[003.119] SENDING --> SAHARA_MEMORY_READ, address 0x96000000, length 0x00008000
[003.250] SENDING --> SAHARA_MEMORY_READ, address 0x97000000, length 0x00008000
[003.386] SENDING --> SAHARA_MEMORY_READ, address 0x98000000, length 0x00008000
[003.529] SENDING --> SAHARA_MEMORY_READ, address 0x99000000, length 0x00008000
[003.672] SENDING --> SAHARA_MEMORY_READ, address 0x9A000000, length 0x00008000
[003.808] SENDING --> SAHARA_MEMORY_READ, address 0x9B000000, length 0x00008000
[003.954] SENDING --> SAHARA_MEMORY_READ, address 0x9C000000, length 0x00008000
[004.092] SENDING --> SAHARA_MEMORY_READ, address 0x9D000000, length 0x00008000
[004.231] SENDING --> SAHARA_MEMORY_READ, address 0x9E000000, length 0x00008000
[004.375] SENDING --> SAHARA_MEMORY_READ, address 0x9F000000, length 0x00008000
[004.514] Received file 'DDRCS0.BIN'
[004.514] 536870912 bytes transferred in 4.495228 seconds (113.8986MBps)
[004.514] SENDING --> SAHARA_MEMORY_READ, address 0x8FD07038, length 0x00000898
[004.514] Received file 'load.cmm'
[004.514] 2200 bytes transferred in 0.000103 seconds (20.3697MBps)
[004.514] SENDING --> SAHARA_RESET
[004.514] STATE <-- SAHARA_WAIT_RESET_RESP
[004.514] Read 8 bytes, command 8 and packet length 8 bytes
[004.514] RECEIVED <-- SAHARA_RESET_RESP_ID
[004.514] Sahara protocol completed
[004.514] Catch DUMP using Sahara protocol successful