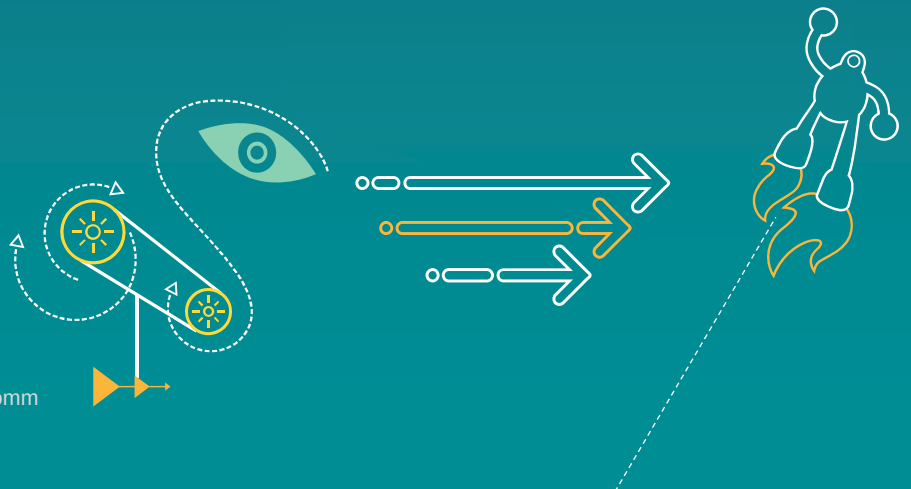
高通协议技术期刊 – 2014/09/11

Qualcomm Technologies, Inc.



Confidential and Proprietary – Qualcomm Technologies, Inc.

Restricted Distribution: Not to be distributed to anyone who is not an employee of either Qualcomm or its subsidiaries without the express approval of Qualcomm's Configuration Management.

Confidential and Proprietary – Qualcomm Technologies, Inc.

NO PUBLIC DISCLOSURE PERMITTED: Please report postings of this document on public servers or websites to: DocCtrlAgent@qualcomm.com.

Restricted Distribution: Not to be distributed to anyone who is not an employee of either Qualcomm or its subsidiaries without the express approval of Qualcomm's Configuration Management.

Not to be used, copied, reproduced, or modified in whole or in part, nor its contents revealed in any manner to others without the express written permission of Qualcomm Technologies, Inc.

Qualcomm is a trademark of QUALCOMM Incorporated, registered in the United States and other countries. All QUALCOMM Incorporated trademarks are used with permission. Other product and brand names may be trademarks or registered trademarks of their respective owners.

This technical data may be subject to U.S. and international export, re-export, or transfer ("export") laws. Diversion contrary to U.S. and international law is strictly prohibited.

Qualcomm Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121
U.S.A.

© 2014 Qualcomm Technologies, Inc.

内容

- 8916/8936/8939系统解决方案
- MBN solution number
- CT on site support team
- Recent CT issue list
- 中国联通增加了LTE终端对B40频段的支持要求
- 高通芯片在RmNet接口上不再支持以太类型封装
- Solution #00029551 - "What is “Disable APN matching” switch (NV73529)“
- MSM8916 Network registers and drops off 4G repeatedly.

8916/8936/8939系统解决方案Solution

为了直观，便于检索，我们在Saleforce系统上编写了系统解决方案。包含各个技术领域，便于大家查找。

8916系统解决方案

Solution Number: 00029134

链接： https://qualcomm-cdmatech-support.my.salesforce.com/50130000000VfUZ?srPos=0&srKp=501

8936/8939系统解决方案

Solution Number: 00029333

链接：https://qualcomm-cdmatech-support.my.salesforce.com/50130000000Vg5B

MBN介绍

- MBN的设计需求，文档，实现方法, 请参阅Solution number:00029357.

https://qualcomm-cdmatech-support.my.salesforce.com/50130000000VgDA?srPos=0&srKp=501

CT on site support team

1)We have CT on site support team to help customer launch product in CT more smoothly.
Aaron Chen take more time and responsibility as onsite team lead. Qiang Deng will be overall LTE PoC for any LTE related issue on CT PA gating issue.

2) They will onsite to CT Guangzhou lab per demand.

3) Please call the hotline (**18902459098**) for any failure case even they are both not in lab. By this way, Aaron will know ALL the issues from first line and we can track and drive OEM block issue more efficiently.

4) CT support solution in Salesforce. Solution Number00029325
https://qualcomm-cdmatech-support.my.salesforce.com/50130000000Vg27

Recent CT issues list

1)CT international roaming issue list.

(1)Add 1st attached EFS file "bst_tbl" to EFS /sd. WCDMA RAT higher priority than GSM, as CT required

(2)Copy 2nd attached file to nv/item_files/modem/lte/ML1/ spv_timer_connected. For SRLTE camp, need to set T310=5s. It is generic issue.

(3)Change “noservice” from 20 mins to 2mins in carrier_policy.xml. For roaming cases which require “no switch off” or at boundary, then we need OOS timer not too long, in original setting, it is 20 mins. It is FT

(4)Exclude the 310 from “sxlte_mccs” in carrier_policy.xml. This is for A&T GSM camp in US roaming. It is lab test.

2) BIP failure. The solution is

NV65683 = Android

NV6876 = 5 (Auto)

For those OEM not using MBN, please make sure NV65674 = C6. Latest MBN should have correct setting for it.

3)IRAT issue between LTE and eHRPD

CR **691825** can fix and it is in latest post CS2 i.e. **M8916AAAAANLYD1032.3**, MPSS.DPM.1.0.c7-00030-M8916EAAAANVZM-1

Please upgrade or apply SBA based on post CS1.

中国联通增加了**LTE**终端对**B40**频段的支持要求

We are informed that CU is going to mandate TDD LTE B40(full 100Mhz band) support soon, possibly after end of Oct. Currently QCT is actively evaluate the additional work customer need do to enable B40 on projects without B40 support, and we will provide app notes to assist customer on the change soon. We need customer also pay attention and do early preparation for CU launch after Oct.

And you must claim B40 support in CTA .

高通芯片在RmNet接口上不再支持以太类型封装

Problem Area: RmNet

【历史背景】

在若干年前高通只有modem芯片开始，我们就支持从PC基于RmNet接口进行数据传输。为了适配Windows操作系统的NDIS接口，当时默认使用以太网类型二层封装。也就是说，如果查看传输在modem和外部设备之间的数据报文，可以看见是有以太网头封装的，里面的载荷是IP数据报文。在此之后，高通推出了MSM系列的只能手机芯片，这样的架构也被移植过来，AP可以看作之前的外部设备。

但实际上，这样的以太网封装，在数据卡或者智能手机中，是没有实际意义的，只是增加了系统的运算开销。

在有线计算机网络中，以太网二层报头可以用于二层交换机路由，避免二层报文形成转发风暴，等等。但是，在数据卡或者智能手机中，其实意义不大。因为我们知道，在空口侧，静载荷是IP报文，而二层以太报头终结于modem内部。换句话说，只有modem知道这个以太封装的存在，网络侧是感知不到的。而对于modem，这样的以太封装实际已经没有任何意义，只是徒增计算成本。

实际上，在目前的高通主流芯片中，比如AP侧发送到modem的数据报文，已经是raw IP格式的，也就是说，没有二层以太封装。只是高通依然保持了对以太封装的支持。

【未来】

在未来更新的芯片中， 高通将逐步取消支持以太网类型封装。一般来说，对于智能手机客户，这不会造成任何感知，因为客户一般不会关注AP与modem之前的报文封装情况。但是对于数据卡客户，需要格外注意，尤其是有些客户，PC侧的驱动程序是自己开发完成的，需要注意使用raw IP格式发送和接收数据报文，避免出错。

Solution #00029551 - "What is “Disable APN matching” switch (NV73529)"

问题分类： Data Service

Question:
What is “Disable APN matching” switch (NV73529)

Answer:
Under some Network, NW won't reject the PDN request during LTE attach even if the requested APN is not correct, instead NW assign a new APN to UE.

For example,
Step1 UE attached CMCC LTE NW with APN = ctnet according to attach profile configuration

2014 Jul 23 11:27:43.736 [A1] 0xB0ED LTE NAS EMM Plain OTA Outgoing Message -- Attach request Msg
2014 Jul 23 11:27:43.967 [0A] 0xB0E2 LTE NAS ESM Plain OTA Incoming Message -- ESM information request Msg
2014 Jul 23 11:27:43.967 [FD] 0xB0E3 LTE NAS ESM Plain OTA Outgoing Message -- ESM information response Msg
msg_type = 218 (0xda) (ESM information response)
lte_esm_msg
esm_info_res
acc_pt_name_incl = 1 (0x1)
access_point_name
num_acc_pt_val = 6 (0x6)
acc_pt_name_val[0] = 5 (0x5) (length)
acc_pt_name_val[1] = 99 (0x63) (c)
acc_pt_name_val[2] = 116 (0x74) (t)
acc_pt_name_val[3] = 110 (0x6e) (n)
acc_pt_name_val[4] = 101 (0x65) (e)
acc_pt_name_val[5] = 116 (0x74) (t)

Solution #00029551 - "What is “Disable APN matching” switch (NV73529)"

问题分类： Data Service

Step2 It's CMCC NW, ctnet is not the correct attach APN. NW assign the correct APN name(cmwap)

2014 Jul 23 11:27:44.250 [60] 0xB0E2 LTE NAS ESM Plain OTA Incoming Message -- Activate default EPS bearer context request Msg

access_point

num_acc_pt_val = 25 (0x19)

acc_pt_name_val[0] = 5 (0x5) (length)

acc_pt_name_val[1] = 67 (0x43) (C)

acc_pt_name_val[2] = 77 (0x4d) (M)

acc_pt_name_val[3] = 87 (0x57) (W)

acc_pt_name_val[4] = 65 (0x41) (A)

acc_pt_name_val[5] = 80 (0x50) (P)

Step3 Per DS design, 3GPP MH will reject the bear activation since APN mismatch.

DS 3GPP/High 11:27:44.263 ds_3gpp_pdn_context.c 20480 Encoded APN name: **ctnet**

DS LTE/Error 11:27:44.263 ds_eps_pdn_context.c 03625 apn name does not match with profile apn name

2014 Jul 23 11:27:44.264 [0C] 0xB0ED LTE NAS EMM Plain OTA Outgoing Message -- Detach request Msg

For Step2, 3GPP TS 24.301 implies that network should reject UE’s request if the PDN requested by the UE cannot be accepted by the network.

6.5.1.4 UE requested PDN connectivity procedure not accepted by the network

If connectivity with the requested PDN cannot be accepted by the network, the MME shall send a PDN CONNECTIVITY REJECT message to the UE. The message shall contain the PTI and an ESM cause value indicating the reason for rejecting the UE requested PDN connectivity.

...

To provide more compatibility/flexibility to workaround this incorrect NW behavior, we introduced NV73529(/nv/item_files/modem/data/3gpp/lteps/disable_apn_matching) to turn on/off APN comparison.

By default, this NV73529 is set to FALSE and force to do the APN comparison.

According to customer/operator’s requirement, customer may set the NV73529 to TRUE, then DS wll not reject the bearer activation if NW assigns APN other than Requested APN in PDN connection.

MSM8916 Network registers and drops off 4G repeatedly.

问题分类：UI

This solution is useful for M8916AAAAANLYD1130.4

Issue description: Network registers and drops off 4G repeatedly. Insert a China Telecom 4G card, set network mode to CDMA+LTE/EVDO, power on the phone, we can see the network jump between 2G, 3G and 4G repeatedly, it seems register on 4G then drop off repeatedly. Another issue is: MMS send fail if creat a new ctnet APN and marked as preferred.

CR: 701620 Set a wrong APN as preferred APN will cause the network changed to 3G mode, cannot back to 4G.
CR: 703057 MMS send fail if creat a new ctnet APN and marked as preferred.

Solution: Need 3 patches for this issue.
Patch 1:
In 'apps/etc/apns-conf.xml' add the following code:

```
<!-- -LTE ctlte for China MainLand -->
<apn carrier="China Telecom"
apn="ctlte"
mcc="460"
mnc="03"
user=""
server=""
password=""
proxy=""
port=""
mmsproxy=""
mmsport=""
mmsc=""
type="ia"/>

<!-- -LTE ctlte for China MainLand -->
<apn carrier="China Telecom"
apn="ctlte"
mcc="460"
mnc="11"
user=""
server=""
password=""
proxy=""
port=""
mmsproxy=""
mmsport=""
mmsc=""
type="ia"/>
```

MSM8916 Network registers and drops off 4G repeatedly.

问题分类：UI

```
<!-- -LTE ctlte for China MainLand -->
 <apn carrier="China Telecom"
 apn="ctlte"
 mcc="455"
 mnc="02"
 user=""
 server=""
 password=""
 proxy=""
 port=""
 mmsproxy=""
 mmsport=""
 mmsc=""
 type="ia"/>
```

Patch 2:
Add the following patch:
https://www.codeaurora.org/cgit/quic/la/platform/packages/apps/Settings/patch/?id=04e0a3220e133ea3c457aca60db5dd1fe167f108

Patch 3:
In '/src/com/android/settings/ApnEditor.java', add the following code after the line 'numeric = defaultOperatorNumeric;' in the function 'fillUi()':

```
 mApnType.setText(PhoneConstants.APN_TYPE_DEFAULT);
```

After add these patch, due to the ‘apns-conf.xml’ has been changed, do factory reset is necessary before test this issue.

Questions?

You may also submit questions to:
https://support.cdmatech.com