Android & Linux
CMUX Driver User Guide

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About the Document

History

Revision	Date	Author	Description
1.0	2014-05-21	Joe WANG	Initial
1.1	2015-04-07	Kent XU	Added applicable modules

Contents

1 **Introduction**

This document mainly introduces how to integrate the CMUX driver into Android or Linux OS for Quectel wireless module.

This document is applicable to Quectel GSM and WCDMA modules.

2 System Integration

This chapter describes the structure of Android and Linux CMUX driver and explains how to integrate the CMUX driver into Android or Linux OS for Quectel wireless module.

2.1. The Structure of CMUX

The multiplexer provides several virtual connections between TE and MS. TE and MS communicate with each other through the virtual channel. And each channel between TE and MS is called Data Link Connection (DLC) and established separately and sequentially. Each DLC may have individual flow control procedures for buffer management and the aggregate link also has overall flow control mechanisms.
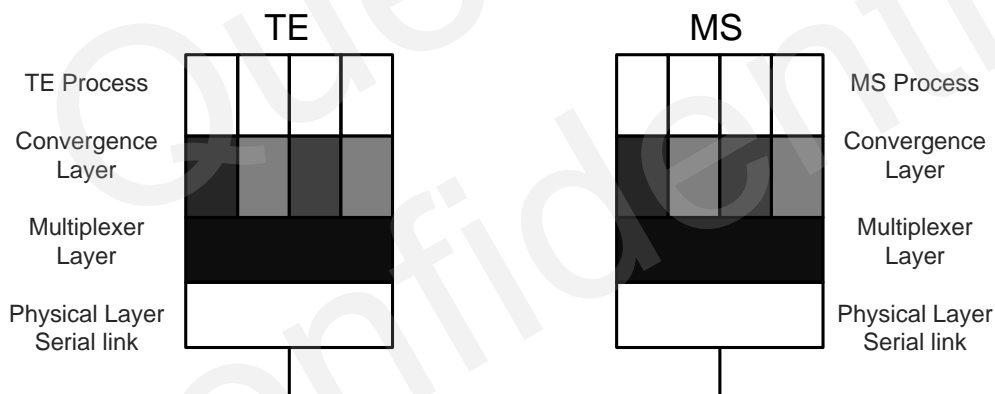

Figure 1: CMUX Structure

2.2. Driver Integration

2.2.1. Get CMUX Driver Source Code

Quectel provides the CMUX source code, please contact Quectel technical support to get it.

2.2.2. Compile Driver

CMUX driver only has one file named "gsm0710muxd_bp.c", you can use the following command to

compile CMUX driver:

```
"gcc -o gsm0710muxd_bp gsm0710muxd_bp.c -lpthread"
```

For embedded system, you should use cross compiler to compile.

2.2.3. Parameters Instruction

1. Here are all parameters for CMUX driver:

    - -d: Fork, get a daemon [yes]
    - -v: Set verbose logging level. 0 (Silent) - 7 (Debug) [6]
    - -s: <serial port name>: Serial port device to connect to [/dev/ttyS0]
    - -c: <hardware flow control>: Hardware flow control [disabled]
    - -t: <timeout>: Reset modem after this number of seconds of silence [0]
    - -P: <pin-code>: PIN code to unlock SIM [-1]
    - -p: <number>: Use ping and reset modem after this number of unanswered pings [0]
    - -b: <baudrate>: Mode baudrate [115200]
    - -m: <modem>: Mode (basic, advanced) [basic]
    - -f: <framsize>: Frame size [130]
    - -n: <number of ports>: Number of virtual ports to create, must be in the range of 1-31 [3]
    - -o: <output log to file>: Output log to /tmp/gsm0710muxd.log [no]
    - -h: Show this help message and show current settings.

Parameters in "[]" are the default values.

2. Here are several parameters which are used frequently:

    - -s: <serial port name>: Serial port device to connect [/dev/ttyS0]
    - -n: <number of ports>: Number of virtual ports to create, must be in the range of 1-31 [3]
    - -b: <baudrate>: Mode baudrate [115200]

3. Example of how to run CMUX driver:

```
gsm0710muxd_bp -s /dev/ttyS0 -b 115200 -n 3
```

When CMUX driver is working, it will create several pts files in /dev/pts, and also create several links in /dev/chn. It is better to use links than pts files, because links are always named from 1 to N (N is the parameter you set), while pts files maybe not.

4. Debug

```
-v: Set verbose logging level. 0 (Silent) - 7 (Debug) [6]
```

If debug is needed, set parameter "-v" value to 7 to print all debug message.

3 Appendix A Reference

Table 1: Terms and Abbreviations

Abbreviation	Description
DLC	Data Link Connection
OS	Operating System
TE	Terminal Equipment
MS	Mobile Station