EC2x&AG35-QuecOpen UART Forwarding Application Note

LTE Standard/Automotive Module Series

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About the Document

History

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1.0	2018-01-23	Navy QIU	Initial

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1 Introduction

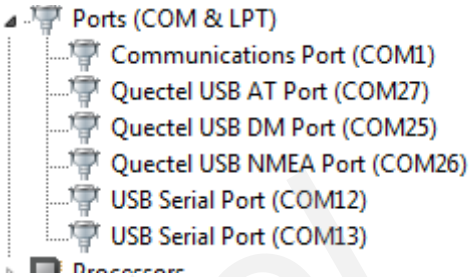
This document mainly applies to global market. The LTE Standard/Automotive module currently supporting the function includes:

- EC2x: EC20 R2.1/EC25/EC21
- AG35

2 Quectel-uart-ddp

QuecOpen provides two methods to send/receive AT command: USB AT and virtual SMD8.

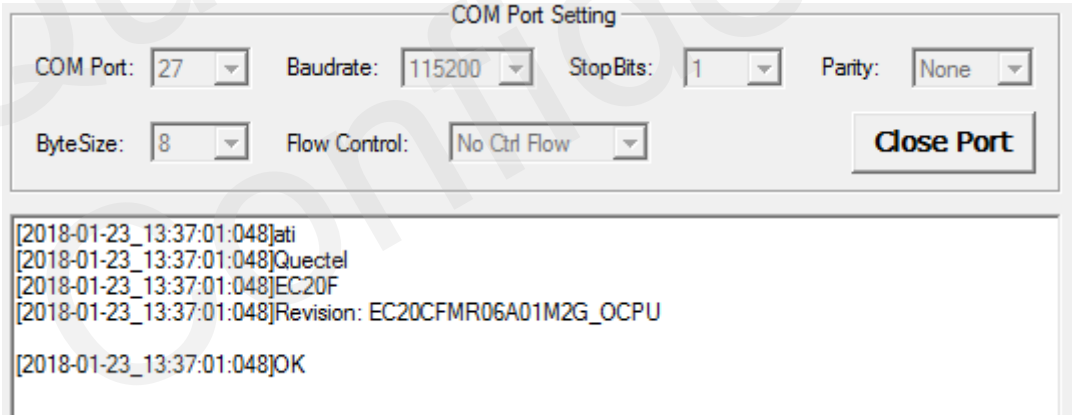
USB AT Port will be listed in the device manager when USB connects to PC. Please see COM27 in the following figure:



This port can be opened via serial port tools in the Windows and can be used to send/receive AT command.

NOTE

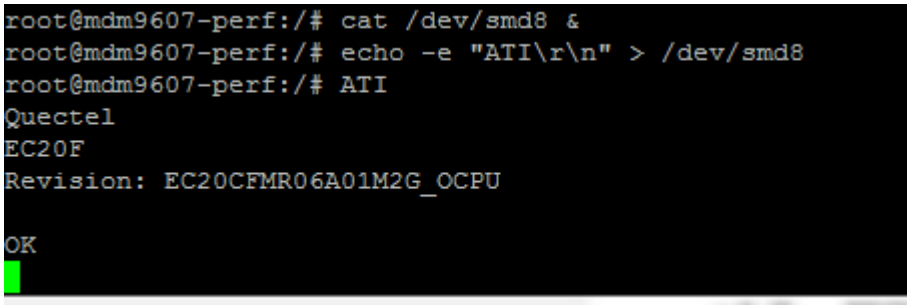
COM12 is connected to Main UART, and COM13 is connected to Debug UART.



SMD8 is a virtual port located at /dev/smd8:

```
root@mdm9607-perf:/# ls /dev/smd
smd21               smd7                smd_pkt_loopback
smd22               smd8                smdcntl0
smd36               smd9                smdcntl8
```

It can be used to send AT command in the internal program. Please see an example in the following figure.



In the final product, USB AT is generally not available but Main UART and Debug UART are available Therefore, it is necessary to provide one way to use UART to send/receive AT command for the external device. Quectel-uart-ddp is designed to directly forward data between serial port and virtual SMD port. One function of quectel-uart-ddp is to send AT command via Main UART.

3 Quectel-uart-ddp Function Lists

Help command of quectel-uart-ddp:

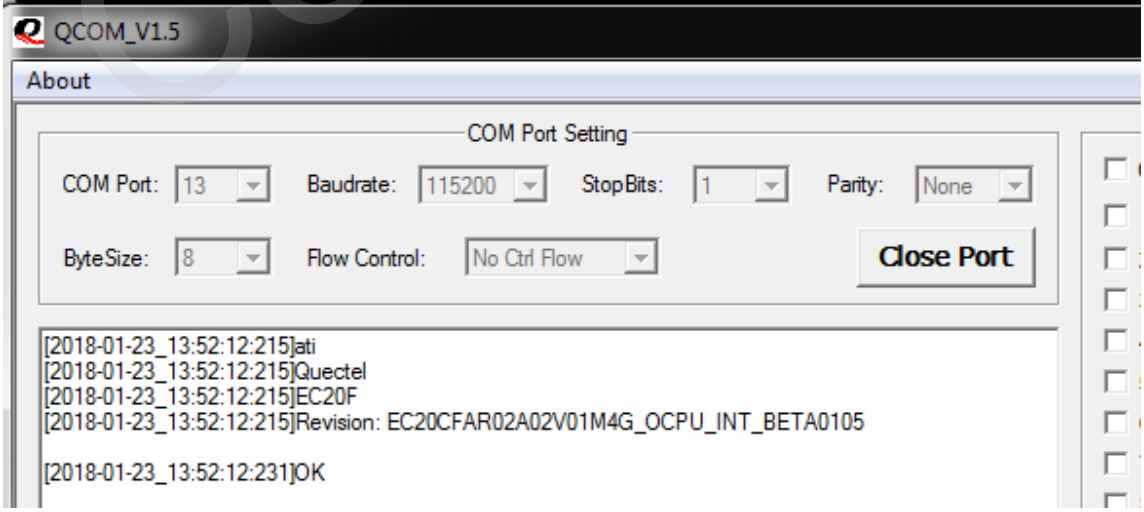
```
root@mdm9607-perf:/# quectel-uart-ddp -help
Usage:
        -help : print usage
        -b    : set baudrate, i.e. 115200
        -d    : set data bits,i.e. 8
        -s    : set stop bits,i.e. 1
        -p    : set parity,   i.e. 0
        -f    : set flow ctrl,i.e. 1
        -uart : main: /dev/ttyHS0, dbg:/dev/ttyHSL0
        -smd  : /dev/smd7/8/9
        -flag : |0x04, none block
root@mdm9607-perf:/#
```

3.1. Sending/Receiving AT command via Main UART

Set to forward data between Main UART and SMD8:

quectel-uart-ddp –uart /dev/ttyHS0 -smd /dev/smd8

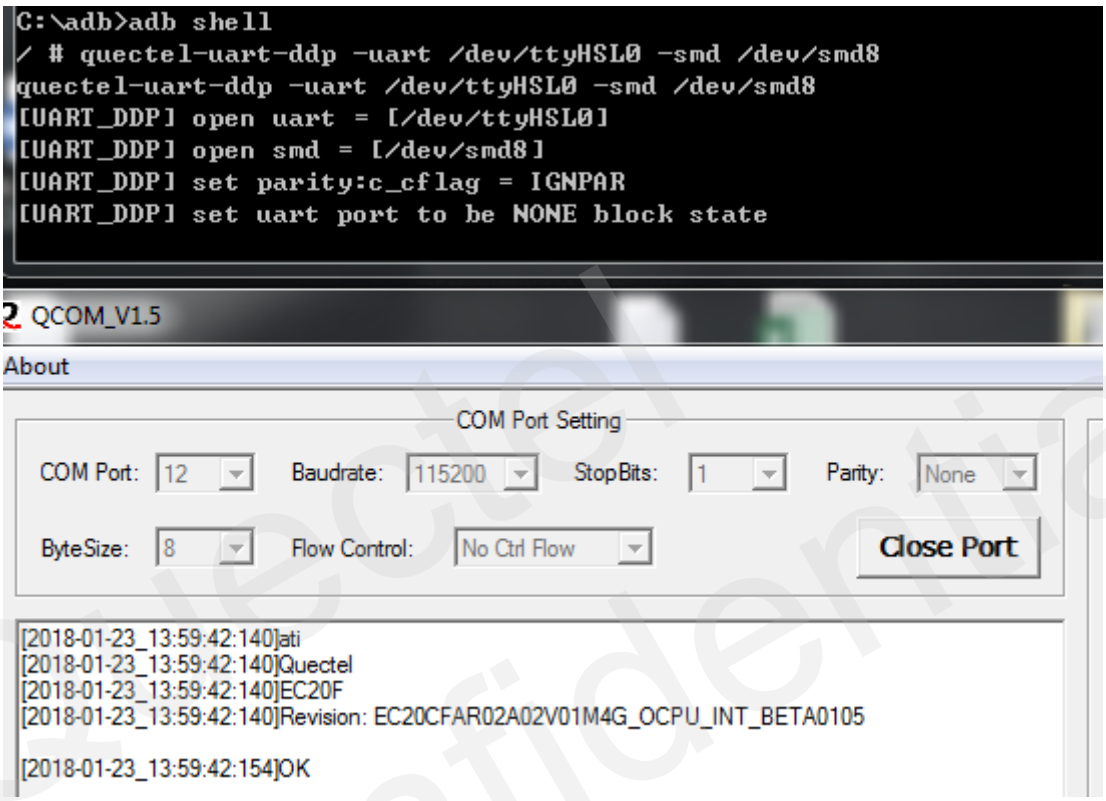
```
root@mdm9607-perf:/# quectel-uart-ddp -uart /dev/ttyHS0 -smd /dev/smd8
[UART_DDP] open uart = [/dev/ttyHS0]
[UART_DDP] open smd = [/dev/smd8]
[UART_DDP] set parity:c_cflag = IGNPAR
[UART_DDP] set uart port to be NONE block state
```



3.2. Send/Receiving AT Command via Debug UART

Set to forward data between Debug UART and SMD8:

```
quectel-uart-ddp –uart  /dev/ttyHSL0  -smd  /dev/smd8
```



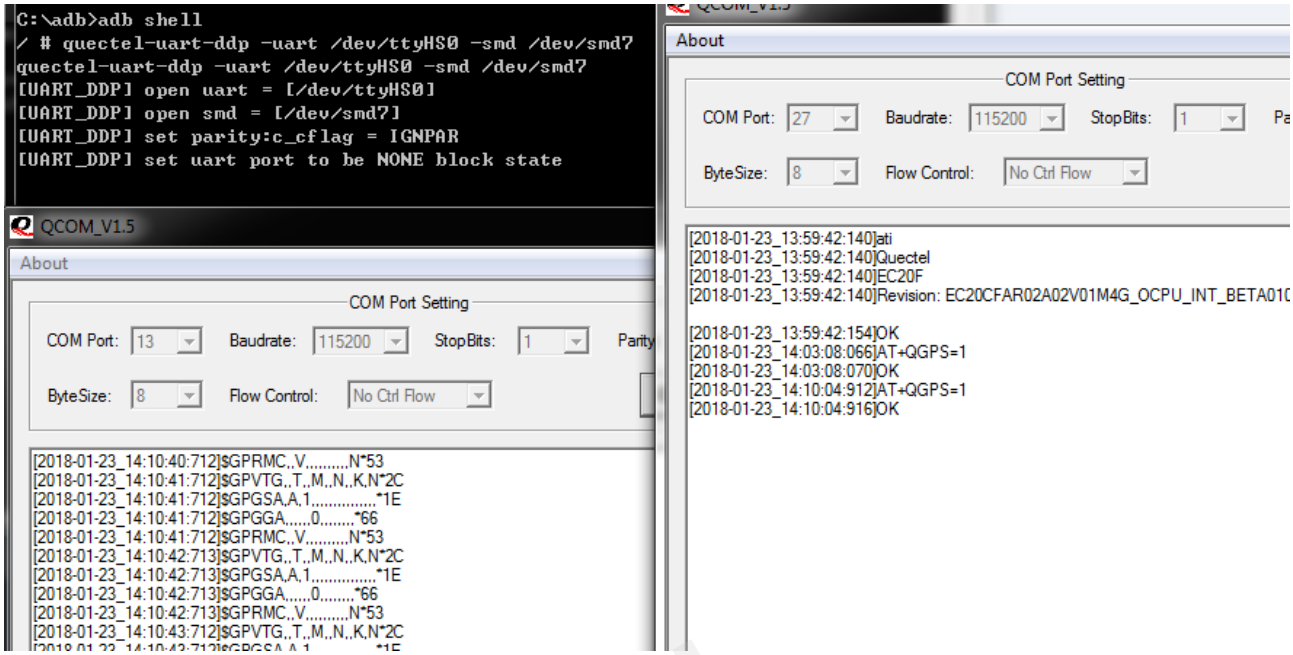
3.3. Outputting NMEA Data via Main UART

NMEA output is exactly the function of quectel-gps-handle, and actually quectel-gps-handle is one copy of quectel-uart-ddp.

Set to forward data between Main UART and SMD7:

```
quectel-uart-ddp –uart  /dev/ttyHS0  -smd  /dev/smd7
```

Then send AT command **AT+QGPS=1** to enable GPS function via AT port. After this, users can see there is NMEA data output in the Main UART COM13:

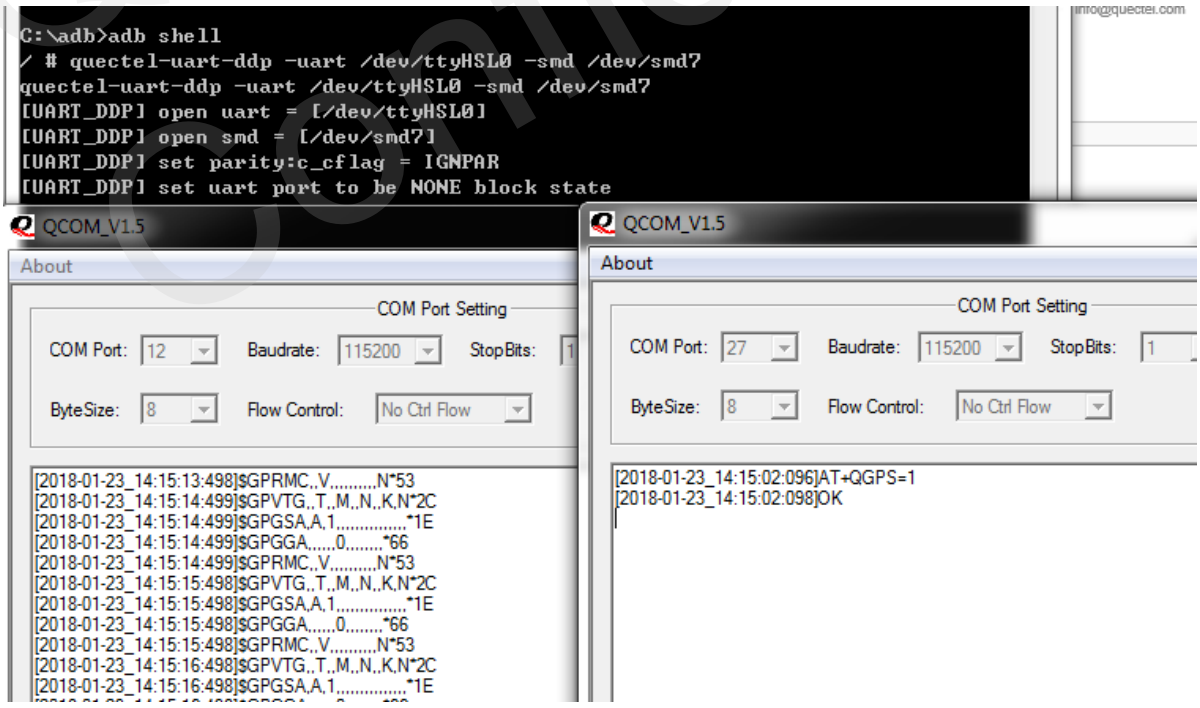


3.4. Outputting NMEA Data via Debug UART

Set to forward data between Debug UART and SMD7:

quectel-uart-ddp –uart /dev/ttyHSL0 -smd /dev/smd7

Then send AT command **AT+QGPS=1** to enable GPS function via AT port. After this users can see there is NMEA data output in the Debug UART COM12:



3.5. Outputting NMEA Data via USB NMEA Port

Set to forward data between NMEA port COM26 and SMD7:

```
quectel-uart-ddp –uart    /dev/ttyGS0 -smd /dev/smd7
```

Then send AT command: AT+QGPS=1 to enable GPS function via AT port. After this users can see there is NMEA data output in the USB NMEA port COM26: