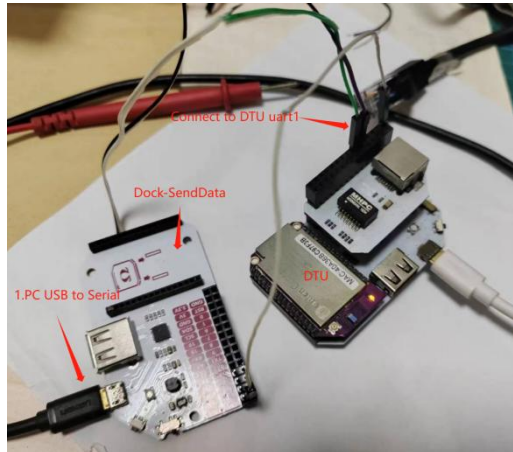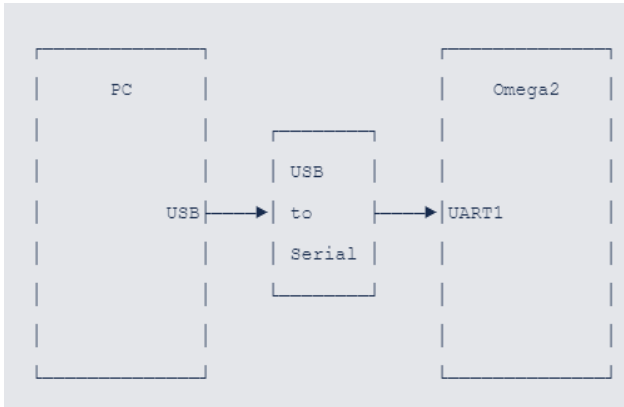# Analysis report document

1. Problem description

There's a customer reporting issues with serial transmissions on UART1 when the Omega's network is restarted.

2. Build testing environment

Here i used two expansion dock（USB to Serial） to build the testing environment.

Dock-SendData： Send data to DTU(Omega2).

DTU : receive data from Dock-SendData.

3. TestFLow

1) Sending device.

Using "TestUart.exe" Tool to send data from pc to DTU's uart1(ttyS1).

Test CMD : TestUart.exe [COM]:[Baudrate],n,8,1

Example : TestUart.exe COM4:9600,n,8,1

When it show "Press ESC to sop,G to start transmit", just enter "G", it will send the data to uart1.

2) Receiving device

Type A. Using customer's receive script ——testserial

Test CMD : ./testserial

During the receiving time,you can pull out or insert a the ethernet cable. After a few moments, Using "Ctrl + C" to stop the DTU receiving the uart data.

Type B. Using onion's Python receive script ——recv_serial.py

Test CMD : python rec_serial.py

4. Problem confirmation

1) **Type A TEST**

Test 01: Baudrate :9600

Operation: Start recevied script , After a few moments, stop the recevied script.During the testing,we don't change the ethernet state.

Test result: Data reception is normal.

Test 02: Baudrate :9600

   Operation: Start recevied script , After a few moments, stop the recevied script.During the testing,**we change the ethernet state by pulling out or inserting a the ethernet cable**.

   Test result: Data reception is normal.

Test 03: Baudrate :460800

   Operation: Start recevied script , After a few moments, stop the recevied script.During the testing,**we change the ethernet state by pulling out or inserting a the ethernet cable**.

   Test result: Data reception is abnormal,the value of overrun will increase when the **ethernet state changed.**

Analysis results 1 : When we used customer's testserial, the uart data will be lost when the ethernet state changed.

2) **Type B TEST**

Test 01: Baudrate :9600

Operation: Start recevied script , After a few moments, stop the recevied script.During the testing,we don't change the ethernet state.

Test result: Data reception is normal.

Test 02: Baudrate :9600

Operation: Start recevied script , After a few moments, stop the recevied script.During the testing,**we change the ethernet state by pulling out or inserting a the ethernet cable**.

Test result: Data reception is normal.

Test 03: Baudrate :115200

Operation: Start recevied script , After a few moments, stop the recevied script.During the testing,we change the ethernet state by pulling out or inserting a the ethernet cable.

Test result: Data reception is normal.

Test 04: Baudrate :230400

Operation: Start recevied script , After a few moments, stop the recevied script.During the testing,we change the ethernet state by pulling out or inserting a the ethernet cable.

Test result: Data reception is normal.

Test 05: Baudrate :460800

Operation: Start recevied script , After a few moments, stop the recevied script.During the testing,**we change the ethernet state by pulling out or inserting a the ethernet cable**.

Test result: The displayed data is garbled and cannot be determined whether it is correct

Analysis results 2 : When we used Onion's test script, at the baudrate 9600/115200/230400,the uart data reception is normal when the ethernet state changed.

5. Analysis results

1) The hardware of uart1 port is normal.

2) By comparing test scripts, first we can know that there are some issue of the customer's testserial program.