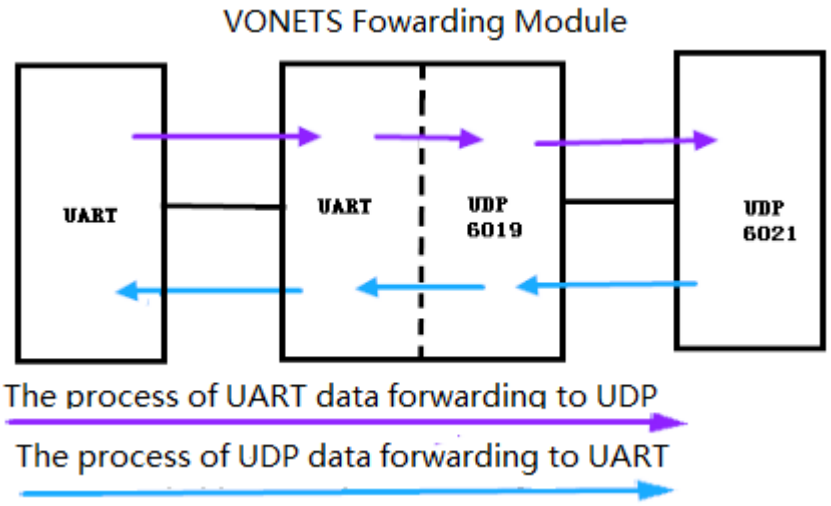
VONETS--UART/UDP Data Forwarding Instruction (2.0)

I. Function definition

- **Forwarding topology**



- **Forwarding Direction**

1.After receiving a data sent by the UART device, the device forwards it to another UDP server through the UDP forwarding port;

2.After receiving a UDP data from the network, the UDP forwarding port of the device forwards it to another UART device through UART communication;

- **Data forwarding type**

1. Text line forwarding

The content of the forwarded data is text data, with 0A (line feed) as the end character, and a line of text as the basic size of the data packet, the maximum line length is 512 bytes, including line feed (0A), UART or UDP local port (default 6019) to forward all received data (including 0A)

2.Instant forwarding: no limited the format of the data packet, the data is forwarded immediately upon receipt. Because the network data packets are sent first and then arrived, it is recommended to add a packet ID to the data packet to ensure that the order of the data packets is correct;

- **Heartbeat packet**

1.The purpose of the heartbeat packet is to keep the connection between the forwarding module and the UDP server, so that the data forwarding will not be interrupted, if UDP server and VONETS forwarding module are in the same Subnet, then no need enable heartbeat packet;

2.The heartbeat packet is sent regularly by the forwarding module, and the heartbeat cycle is set by the "heartbeat cycle" (unit is seconds, default is 180) on the configuration page;

3.Heartbeat packets will only be sent periodically if they meet the following conditions at the same time:

3.1 Use UDP protocol

3.2 UDP server IP is valid

3.3 heartbeat cycle>0

4.Heartbeat packet structure as below:

Heartbeat packet structure				
Packet type(2 bytes)	Packet length(2 bytes)	Packet ID(2 bytes)	Packet content(24 bytes)	
66 66	00 18	ff ff	Device MAC	Device IP (12 bytes)

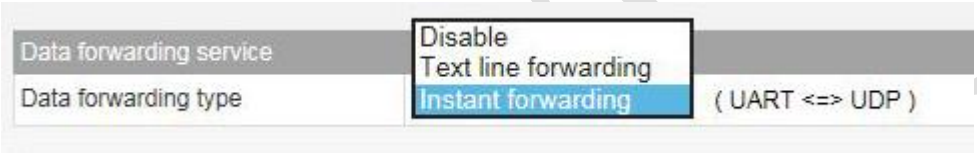
- **Supported device**

This function is developed based on VM300/VM5G hardware board, VM300 uses UART2(UART_LITE), VM5G uses UART1(UART_FULL).

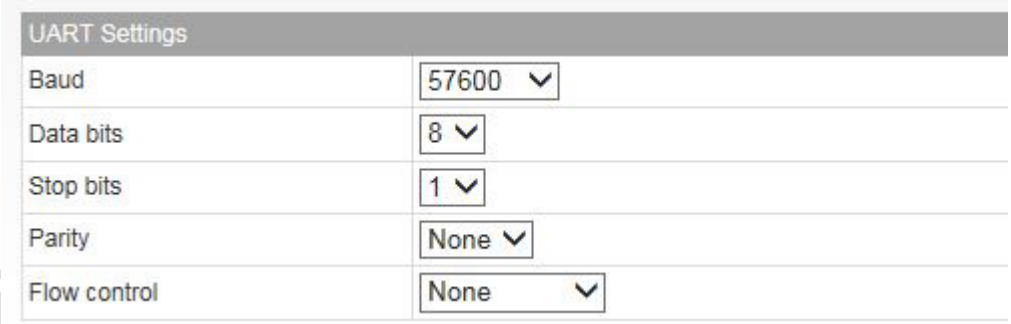
Ⅱ Configuration page instruction (after configuration is finished, restart to take effect)

- **Configuration page position**

System Settings-->Advanced Setting-->Data forwarding service



- **UART Settings**



- **Forwarding target server setting**

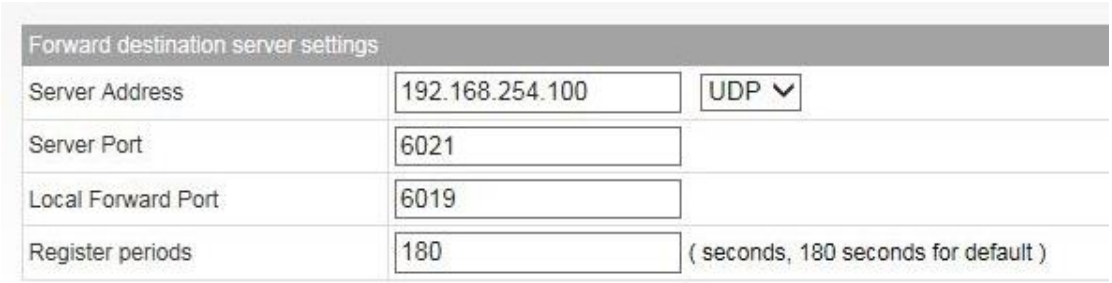
Server address: Address that the target server need be forwarded to;

Network protocol of forwarding services: UDP or TCP (TCP is not supported yet)

Server monitoring port: the server port that need to be forwarded to;

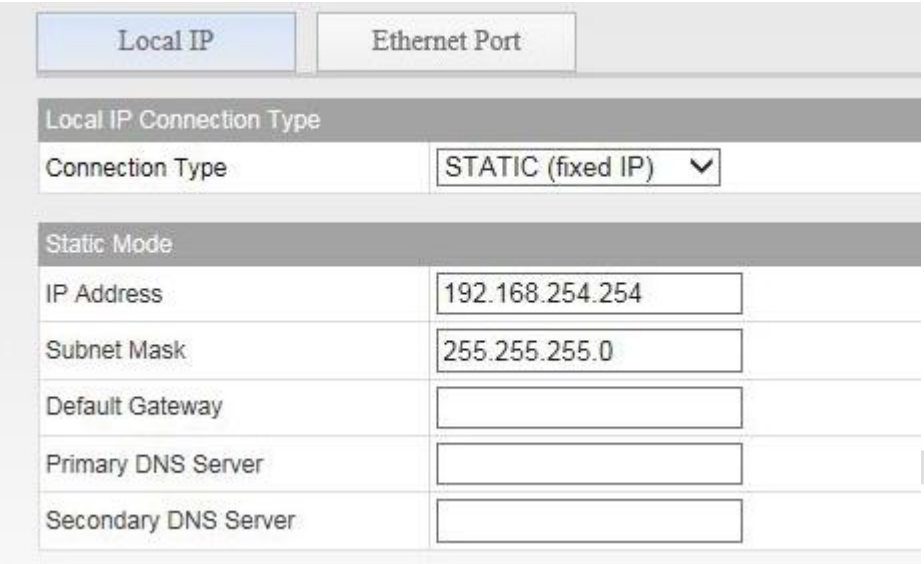
Local forwarding port: the local forwarding port

Heartbeat cycle: The time interval for the device to register with the UDP server (only UDP is valid);



Ⅲ Forwarding test example

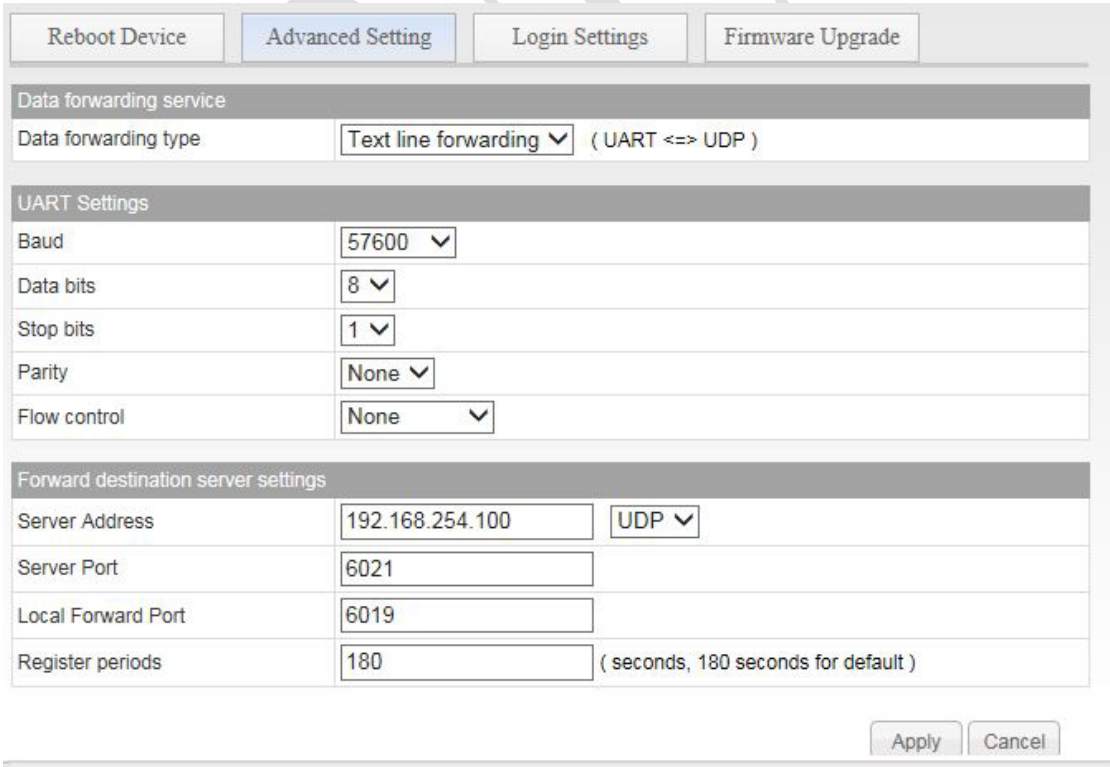
1. Local IP address setting of forwarding module



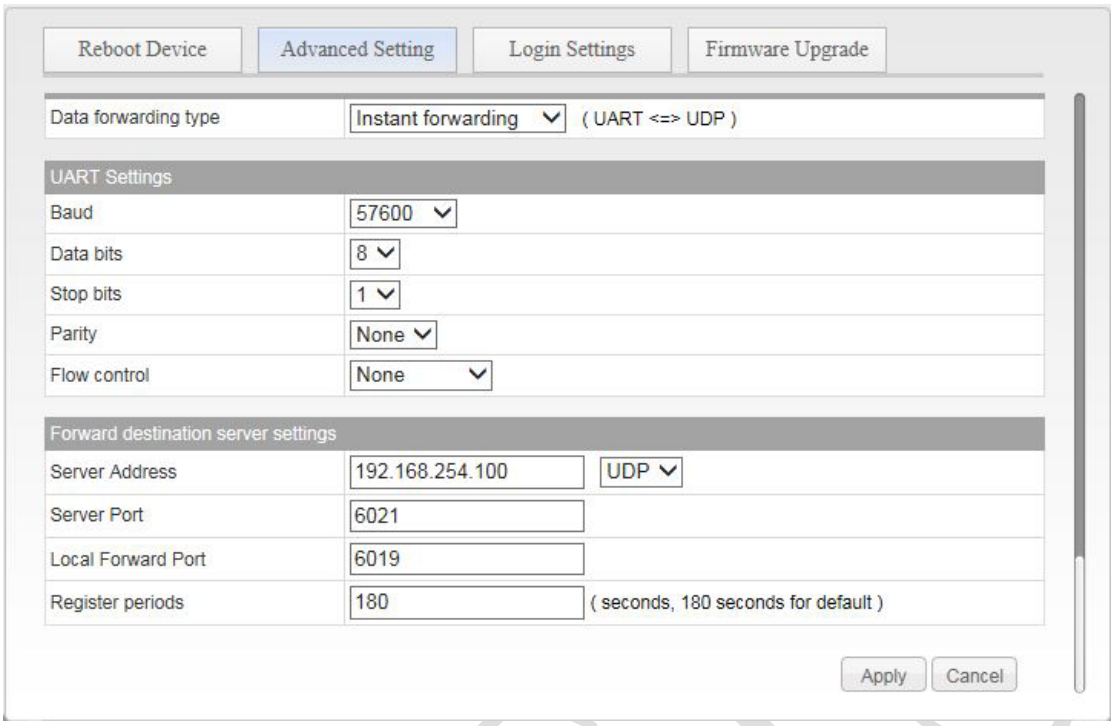
2.UDP server IP setting (PC/WINDOWS system): Set static IP address, subnet mask, default gateway and DNS server.

3.UART and UDP data transfer test

- Text line forwarding, OA as the end character, forward all data



- Instant forwarding, after UART or UDP receiving data, it will immediately forward to UDP or UART



- Heartbeat cycle

```
48 2a e3 29 2c 33 00 17  13 27 0d c6 08 00 45 00   H*·),3·· ·'····E·
00 3a 00 00 40 00 40 11  43 33 0a f0 f0 ae 0a f0   ·:··@·@· C3······
f0 f1 17 83 17 85 00 26  0c 22 66 66 00 18 ff ff   ·······& ·"ff····
30 30 31 37 31 33 32 37  30 44 43 36 30 31 30 32   00171327 0DC60102
34 30 32 34 30 31 37 34                            40240174
```

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