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

## I. Function definition

### Forwarding topology

VONETS Fowarding Module

The process of UART data forwarding to UDP

The process of UDP data forwarding to UART

### • 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 OA (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 (OA), UART or UDP local port (default 6019) to forward all received data (including OA)

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	Packet length(2 bytes)	Packet ID(2 bytes)	Packet cont	ent(24 bytes)
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

Data forwarding service	Disable Text line forwarding	
Data forwarding type	Instant forwarding	(UART <=> UDP)

### UART Settings

UART Settings	
Baud	57600 🗸
Data bits	8 🗸
Stop bits	1 🗸
Parity	None 🗸
Flow control	None V

### 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 Heartheat cycle: The time interval for the device to register with the UDP server (o

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

Forward destination server	settings	
Server Address	192.168.254.100	UDP V
Server Port	6021	
Local Forward Port	6019	
Register periods	180	( seconds, 180 seconds for default )

# $\blacksquare$ Forwarding test example

1. Local IP address setting of forwarding module

Local IP	Ethernet Port
Local IP Connection Type	
Connection Type	STATIC (fixed IP)
Static Mode	Line and the second
IP Address	192.168.254.254
Subnet Mask	255.255.255.0
Default Gateway	
Primary DNS Server	
Secondary DNS Server	

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

Reboot Device	Advanced Setting	Login Settings	Firmware Upgrade
Data forwarding service			
Data forwarding type	Text line forv	Text line forwarding V (UART <=> UDP )	
UART Settings			
Baud	57600 🗸		
Data bits	8 🗸		
Stop bits	1 🗸		
Parity	None V	None 🗸	
Flow control	None	None 🗸	
Forward destination ser	ver settings		
Server Address	192.168.254	.100 UDP \	✓
Server Port	6021		
Local Forward Port	6019		
Register periods	180	( seconds	s, 180 seconds for default )

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

Data forwarding type	Instant forwarding V (UART <=> UDP )	
JART Settings		
Baud	57600 🗸	
Data bits	8 🗸	
Stop bits	1 🗸	
Parity	None V	
Flow control	None V	
Forward destination server s	ttings	
Server Address	192.168.254.100 UDP V	
Server Port	6021	
Local Forward Port	6019	
Register periods	[180] ( seconds, 180 seconds for default )	

• Heartbeat cycle

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48 2a e3 29 2c 33 00 17 13 2	7 Od c6 O8 OO 45 OO H*·),3···'···E·
00 3a 00 00 40 00 40 11 43 3	3 0a f0 f0 ae 0a f0 🛛 : 🖓 @ C3 · · · ·
f0 f1 17 83 17 85 00 26 0c 2	2 66 66 00 18 ff ff ·····& ·"ff····
30 30 31 37 31 33 32 37 30 4	4 43 36 30 31 30 32 00171327 0DC60102
34 30 32 34 30 31 37 34	40240174

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