User Manual and Test Guide

HTTP



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1. DEVELOPMENT KIT INTRODUCTION

This document is applicable to High Flying's IoT equipment. The specific supported models are as follows. This document introduces HF5111B. Other products are used in the same way.



2. HARDWARE REQUIREMENTS

HF5111B 1 Pcs



4. HTTP TEST

4.1. Device Connection

Connect PC and HF5111B to router LAN.

Sending data in HTTP format to HTTP server (Set product socket to HTTP by IOTService software or webpage). When device socket works in HTTP mode. All received UART data will automaticly transform to HTTP format (add HTTP header) and send to HTTP server. For the received HTTP data from HTTP server, it will automatically remove HTTP header and only output the data packet to UART.





Device Setting			×
Jser:	admin admin	SOCKET SOCKET Name: Protocol:	netp HTTP 192 168 83 107
Type: GET Path: /1111 Host:192.168.83.107	▼ Version: 1.		8899 0 60
		[uart v
	Conf	firm Cancel	SOCKET Del
Stop Bits:		Export	VirPath
Parity:		Import	Detail
now control.	nan-bupiex V		

Figure 2. IOTService Configure

Protocol Settings		
Protocol	Http	T
Local Port	0	
Server	192.168.83.107	
Server Port	8899	
Connect Mode	Always	Ŧ
Method	GET	Ŧ
Version	HTTP/1.1	Ŧ
Path	/1111	
	Headers	•
Host	192.168.83.107	•

Figure 3. Webpage Configure

For GET request, the received UART packet AAA will put after the HTTP path (auto add "?" between path and parameters), for POST request, packet is put in the content (auto add Content-Length header information).

Product will send the below data to HTTP Server when UART receive "pppp" data for GET request.

GET /1111?pppp HTTP/1.1 Host: 192.168.83.107



Product will output "DDDDD" when get response from the HTTP server. HTTP/1.1 200 OK

Server: nginx

DDDDD



Figure 4. HTTP GET Request Example

Product will send the below data to HTTP Server when UART receive "pppp" data for POST request.

POST /1111 HTTP/1.1 Host: 192.168.83.107 Content-Length:4

рррр

Product will output "DDDD" when get response from the HTTP server.

HTTP/1.1 200 OK

Content-Length: 4

Connection: close

DDDD

			I.O.T
★ TCP&UDP测试工具 - [192.168.83.100:2381] Operate(②) View(Y) Windows(W) Help(F) G CreateConnn S CreateServer 3 StartSer Properties 4 × Client Mode Client Mode Server Mode Local(192.168.83.107):8899 192.168.83.100:2381	 Language Ver 2 Connect 192.168.83.100 DestIP: 192.168.83.100 DestFort: 2381 LocalPort 8899 Type TCP v AtuoConn Eve Qoend Eve 42672544 ms Count 	t Send DisconnAll Send Send AtuoSend Send Hex Send Fi HTTP/1.1 200 OK Content-Length: 4 Connection: close DDDD Rec StopShow C	LeleteConn % 回 念 LeleteConn % 回 念 Eve 100 ms Send Stop Lel Send Received Clear Option G Serial-COM4 - SecureCRT 文件(D 编辑(E) 查看(Y) 选项(D) 第 第 章 》 》 》 》 》 》 》 》 》 》 》 》 》 》 》 》 》
	Send 122 Recv 67	Content-Length:4	🕶 + 🕡 a 🕡 STA 🕡 W 🚱
	Send Speed(b/S): 0	Receive speed(E	

Figure 5. HTTP POST Request Example

4.2. HTTP Test

Step 1: Browser open <u>http://115.29.164.59:8432/iot?msg=123456788</u>, got the response as following:

🗥 Bug	#4404: modbus配置信!	息修 🗙 🛛 🕁 软件开发	这工具包	×	115.29.164.59:	8432/iot?msg=1	× +
$\leftarrow \ \rightarrow$	C ① 不安全	115.29.164.59:8432	2/iot?msg=12	3456788			
1 应用	📙 汉枫 📙 工作	📙 购物 📸 百度	🤶 百度地图	S 211C电子网	3 谷歌邮箱		
Get:msg=1	23456788						

Step 2: Input the HTTP parameters as the following steps.



-			
System		SOCKET	
User:	test	SOCKET Name:	netp 💌
Password:	admin	Protocol:	НТТР 🔽
HostName:	Eport-HF5111B	Server Addr:	115.29.164.59
DHCP:	Enable 💌	Server Port:	8432
IP Address:	192.168.83.103	Local Port:	0
Http Setup		×	60
7			0
Type: GET	Version:		
Path: /iot			uart
Host-115 20 16/	1 50 8/32		512
11050.115.25.10	1.35.0432	-	SOCKET Del
	$\langle \rangle$		
		-	Cancel
			VirPath
	Cor	firm Cancel	Detail
			Detail

Protocol: HTTP Server Addr: Server address, IP or domain name. Server Port: Server port. Type: HTTP Type, GET or POST. Version: HTTP Version, 1.1. Path: HTTP path HTTP header input: Input HTTP header. Usually is Host information.

Step 3: Reboot and wait for SOCKA connection.

10.1	Device	Status	

System		Network			SOCKET	
\sim	s	HostName:	Eport-HF5111B		SOCKET Name:	netp 💌
10370		DHCP:	Enable		Protocol:	HTTP
		IP Address:	192.168.83.103		Status:	Connected
	6	Mask:	255.255.255.0		Server IP:	
******	9	Gate Way:	192.168.83.1		Recv Bytes: 0	Recv Frames: 0
•		MAC Address:	ACCF23202222		Send Bytes: 0	Send Frames: 0
Product ID:	aaaa				Fail Bytes: 0	Fail Frames: 0
Software Version:	1.34.7	UART No:			run bytesi e	run run of o
RTC Time: N1	TP Disabled	Configu 115200 8 1 NONE	OART			
Up Time: 0-I	Day 0:22:37	Comig: 115200,0,1,10010E		[
Total Error Manager	22049	Recv Bytes: 0	Recv Frames: 0		Reload	
rotal free Memory:	25940	Send Bytes: 0	Send Frames: 0			Edit
Max Block Size:	14728	Fail Bytes: 0	Fail Frames: 0		Restart	
	System	System	System Network HostName: DHCP: IP Address: Mask: Gate Way: MAC Address: UART UART No: Config: 115200,8,1,NONE Recv Bytes: 0 Send Bytes: 0 Fail Bytes: 0 Fail Bytes: 0	SystemNetworkVetworkHostName:Eport-HF5111BDHCP:EnableIP Address:192.168.83.103Mask:255.255.05Gate Way:192.168.83.1MAC Address:ACCF23202222UARTUARTUART No:UART 1UART No:Config: 115200,8,1,NONEProtal Free Memory:23948Max Block Size:14728	SystemNetworkVersionHostName:Eport-HF5111BDHCP:EnableIP Address:192.168.83.103Mask:255.255.255.0Gate Way:192.168.83.1MAC Address:ACCF23202222UARTUART 1UART No:UART 1UART No:Config: 115200,8,1,NONEProtal Free Memory:23948Max Block Size:14728	SystemNetworkSOCKETVersionic192.168.83.103SocKet Name:Product ID:aaaaMask:255.255.05Software Version:1.34.7MAC Address:ACCF23202222VARTUARTUART 1Send Bytes: 0Up Time:0-Day 0:22:37Config: 115200,8,1,NONERecv Frames: 0Max Block Size:14728Send Bytes: 0Send Frames: 0

Х



🧱 大傻串口调试软件-3.0AD	QQ:6972972			_		×
端 □: COM4 波特室: 115200 数据位: 8 校验位: 元 停止位: 1 犬ぶ ● 关闭串口 发送 ● 後收	发帧数 4 发字节数 52 收帧数 4 收字节数 68 清空计数 关于程序 文件行数	[2019:08:15:09:55:31][发送]。 [2019:08:15:09:55:32][接收](nsg=123456788 Set:msg=123456788			
清空接收区 □ 16进制 停止显示 ✓ 自动清 保存数据 更改文件 data txt	 ✓ 显示保存发送 ✓ 显示保存时间 ✓ 帧换行 ✓ 帧换行 ✓ 关键字过返接收 关键字 					
发送区1 清空 手动发送	msg=123456788					0
发送区2 清空 手动发送 发送区3 清空 手动发送	CP3:20190712224103:AC	D 13 01 8A 20 30 00 00 00 00	00 09 06 08 08 00 00 0	0 00 34 1C		\sim
- 发送区及发送文件轮发属性 □ 只轮发一遍 周期 100 ○ 收到回答后发下一帧 超时时间 5 s 重发次	image: 10 ms 选择发送文件 ● 定时 开始文件轮发 軟 1 开始发送区轮发	发送区1属性 16进制 白动发 台动发 发送周期	「发送区2属性」 ▼ 16进制 校验 □ 自动发 「参加轮」 发送周期 1000	- 发送区3属 ▼ 16进制 5 自动发 发送周期	性 校验 5 参加報 1000 ,	。 泼 ns

Step 4: UART send data id=1, and got response of the server.



5. WIRESHARK PACKAGE CAPTURING SOFTWARE

5.1. Tool Introduction

Wireshark can be used to analyze network packages about sending and receiving data. Please download and install this software from searching tools.

Step 1: Open wireshark tool and click interface tab control.

Λ	Capturing from Realtek PCIe GBE Family Controller: \Device\NPF_{03206AC7-7763-41C0-99F7-AC9D4DE099DA} [Wire																	
<u>F</u> ile	<u>E</u> dit	t <u>V</u> iev	w <u>(</u>	<u>G</u> o	<u>C</u> ap	ture	<u>A</u> nalyze	<u>S</u> tatist	ics	Telephon	<u>y T</u> ools	<u>I</u> nter	nals	<u>H</u> elp				
		M 🔒	(👜	(<u>I</u> nterfa	aces	(Ctrl+	l 🕸 🎝	₹		¥	€€		•	¥	
Filte	r: ip	.addr=	=19	92.1		<u>O</u> ptio <u>S</u> tart	ns	0	trl+K trl+E		~	Expr	ession	Clea	r Apply	Save		
No.		Time			: 10	S <u>t</u> op		C	trl+E		Desti	nation	1		Protoco	ol Leng	yth I	nfo
	1211	76.7	791.	218	<u>ا</u> ال	<u>R</u> esta	rt	C	trl+F	101	192.	168.	0.11	3	UDP		228 3	Sourc
	1212	2 76.7	797	270		_ Captu	re Filters			101	192.	168.	0.11	3	UDP		228 9	Sourc
	1213	5 //.2	210	559		capta	<u>-</u>			101	192.	168.	0.11	5	ICP		60 5	snapp
<u> </u>	1214	77.2	210	6830	00		0	192.1	68.0	0.101	192.	168.	0.11	3	TCP		60 8	3117
Ste	1214 p 2 Wire	: 77.2 : Tio	210 ck k: C	sesso rela aptu	ate Ire I	ed P Inter	'C net faces	^{192.1} work	68.0 car	d and	192. click S	tart	o.11 but	on.	TCP		60 8	×
Ste	1214 p 2 Wire	: 77.2 : Tio	210 Ck k: C	sesso rela aptu	ioo ate ire l De	ed P Inter escrip	C net faces	192.1 work	68.0 car	and	192. click S	start	o.11 but	3 :ON. ackets	тср — Packet	□ ts/s	60 8	× t
Ste	1214 p 2 Wire	i 77.2 : Tio esharl	ck ck k: C	sesso rela aptu	ioo ate ire l De	ed P Inter escrip	C net faces otion	192.1 work	68.0 car	o. io1 od and	IP2. click S IP 3b:f06:7b	f:6a8	0.11 but P	3 CON. ackets 0	TCP — Packet 0	ts/s	<u>00</u> 8	× ils
Ste	1214 p 2 Wire] 🔎	1 77.2 : Tic eshark] Mic	ck ck k: C	seft	ate Ire I De	ed P Inter	C network	vork	68.0 car). 101 rd and fe80::958 192.	192. click S IP 3b:f06:7b	168. Start	0.11 but P	on.	Packet	□ ts/s [<u>D</u> eta	× ils ils

<u>S</u>tart

Stop

Options

<u>C</u>lose

Step 3: Send test data by TCP&UDP tool.

<u>H</u>elp

Operate(O) View(V) Windows(W) Help(H)	Longuago		
	Language		×
🗄 🔛 CreateConnn 🔕 CreateServer 🐰 StartServer	er 😤 🙆 😤 Connec	t 🗝 🗟 DisconnAll 💥 DeleteConn ಜ 🔟 ಿ 💂	P
Properties # ×	× 183.230.40.33:80	192.168.0.101:1061	4 Þ 🗙
Client Mode ■ Server Mode ■ Server Mode ■ Server Mode ■ 192.168.0.113):80 ■ 192.168.0.101:1061	DestIP: 183.230.40.33 DestPort: 80 LocalPort 4001 Type TCP = AtuoConn Eve 0 s AutoSend Eve 0 ms Disconnect Send 370 Recv 406 Clear	Send AtuoSend Eve 100 ms Send Send	
S	Send Speed(B/S): 0	Receive Speed(B/S): 0	

Step 4: Input filter option. The following color marked packets are captured by this tool, which is from device uploading and server reposing.



	apturing from Realte	k PCIe GRE Eamily Controllers \Device\NPE	/02206AC7-7762-41C0-00E		NEORODAL DWineshark 1.8.2 (SVNI Rev 44520 from Arunk-1.8)]
-	apturing from iteatte	R Pele Obe Family Controller. (Device (14P1_	03200/01-1103-4100-331	-AC5D4D	
Eile	Edit View Go (_apture <u>A</u> nalyze <u>S</u> tatistics Telephon <u>y</u>	<u>T</u> ools <u>I</u> nternals <u>H</u> elp		
8	M	B 🖩 X 2 🕹 9, 🗢 🔿 7	F 🕹 🔳 🖩 🔍 e	. 🔍 🖭] 🔐 📧 🎭 💢
Filter	: ip.addr==183.230	.40.33	✓ Expression Clea	Apply	Save
No.	Time	Source	Destination	Protocol	Length Info
	122 26.7647940	00 192.168.0.113	183.230.40.33	TCP	66 56482 > http [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=256 SACK_PERM=1
	123 26.8230450	183.230.40.33	192.168.0.113	TCP	66 http > 56482 [SYN, ACK] Seq=0 Ack=1 win=14600 Len=0 MSS=1332 SACK_PERM=1 WS=128
	124 26.8232060	00 192.168.0.113	183.230.40.33	тср	54 56482 > http [ACK] Seq=1 Ack=1 Win=66560 Len=0
	129 28.9297340	00 192.168.0.113	183.230.40.33	HTTP	239 POST /devices/1083662/datapoints HTTP/1.1
	130 28.9809160	183.230.40.33	192.168.0.113	TCP	60 http > 56482 [ACK] Seq=1 Ack=186 Win=15744 Len=0
	131 28.9844260	183.230.40.33	192.168.0.113	HTTP	257 HTTP/1.1 200 OK (application/json)
	134 29.0134170	192.168.0.113	183.230.40.33	тср	54 56482 > http [ACK] Seq=186 Ack=204 Win=66304 Len=0
	215 49.8604/10	JO 192.168.0.113	183.230.40.33	ICMP	74 Echo (ping) request 1a=0x0001, seq=1/256, tt1=64
	216 49.9146500	JU 183.230.40.33	192.168.0.113	ICMP	74 Echo (ping) reply 1d=0x0001, seq=1/256, ttl=46
	210 50.0051500	192.108.0.115	102 168 0 112	TCMP	74 Echo (ping) request id=0x0001, seq=2/512, tt1=64
	225 54 55180020	102 168 0 112	182 220 40 22	TCD	54 Echo (phig) Tephy interview ($34z^{-2}/31z$, ct^{-4})
	236 54 6044290		192 168 0 113	TCP	50 bttp > 56482 [ETN ACK] SEQ=304 Ack=387 win=55744 [en=0
	237 54 6045200	192 168 0 113	183 230 40 33	TCP	56 5642 > bttp [ack] seg 37 ack=205 win=66304 Len=0
	255 61, 3591990	192,168,0,113	183,230,40,33	TCP	66 56490 > http://see=0.win=8192.len=0.MSS=1460.WS=256 SACK PERM=1
	256 61.4151830	183.230.40.33	192.168.0.113	TCP	66 http > 56490 [SYN, ACK] Seg=0 Ack=1 win=14600 Len=0 MSS=1332 SACK_PERM=1 WS=128
	257 61 4154530	102 168 0 113	183 230 40 33	TCP	54 56490 > http://www.senet.ack-1.win=66560 Len=0
	274 67.1787690	00 192.168.0.113	183.230.40.33	HTTP	239 POST /devices/1083662/datapoints HTTP/1.1
	275 67.2703940	183.230.40.33	192.168.0.113	HTTP	257 HTTP/1.1 200 OK (application/json)
	2/6 6/.2998630	JU 192.168.0.113	183.230.40.33	TCP	54 56490 > NTTP [ACK] 560=186 ACK=204 W1N=66304 LeN=0
	579 132.237364	183.230.40.33	192.168.0.113	TCP	60 http > 56490 [FIN, ACK] seq=204 Ack=186 win=15744 Len=0
	580 132.237443	000 192.168.0.113	183.230.40.33	тср	54 56490 > http [ACK] Seq=186 Ack=205 win=66304 Len=0
	581 132.237577	000 192.168.0.113	183.230.40.33	тср	54 56490 > http [FIN, ACK] Seq=186 Ack=205 Win=66304 Len=0

