# HF2211S\_EW1X\_PW1X Operation Guide

This document applies to the following series of products, please refer

to the user manual for product hardware description.



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# **1. INTRODUCTION**

Elfin-EW1X, HF2211S, Protoss-PW1X products software function is the same (integrate our HF-LPT230 module, talk to our sales if need modules only), but with different hardware interface and size. Here has a brief description of these products' hardware, and take EW for example of software introduction.

All tools can be download at following link: http://www.hi-flying.com/index.php?route=download/category&path=1\_4

# 1.1. Elfin-EW1X EVK

Elfin-EW10/Elfin-EW10-0 is RS232 interface and Elfin-EW11/Elfin-EW11-0 is RS485 interface. The EVK include the following attachment.

- Elfin-E1WX products
- Screw driver
- RJ45 connecter(4PIN or 8PIN)



1.2. Elfin-EW10 4PIN Connector



# 1.3. Elfin-EW11 4PIN Connector



## 1.4. Elfin-EW10 8PIN Connector



1.5. Elfin-EW11 8PIN Connector



# 1.6. Elfin-EW10/EW11 RJ45 Cable

The RJ45 cable can be done as following picture.





# 1.7. EW10 Interface Conversion Cable



# 1.8. EW11 Interface Conversion Cable



1.9. HF2211S Hardware



✤ HF 物联·改变生活

# 1.10. Protoss-PW11 Hardware



# 2. HARDWARE INTRODUCTION

# 2.1. Power Supply

## • EW1X

DC 5~18VDC@5W. Note: USB is not enough for power supply.

## • HF2211S

 $DC~5{\sim}36VDC@1A_{\circ}$ 

## • PW1X

-H AC Version, 100~240VAC -M DC Version, 9~48VDC@1A

# 2.2. Power Supply

See products user manual.

## 2.3. Interface Connection

Elfin-EW10 is RS232, 7V voltage, need to connect with Pin5(TX), Pin6(RX) and Pin8(GND).



Elfin-EW11 is RS485, use Pin5(A+), Pin6(B-), GND also can be connected in some extreme condition.





# **3. INITIAL SETUP**

HF Products provide multiple methods to config, webpage and IOTService tools. Webpage is easy to use, but only for local setup and can not manage multiple device, recommend to use IOTService tools.

# 3.1. Webpage Set

Power on product:

- EW1X green LED will be repeat flash on 0.3s, then off 0.3s, indicate it works normally.
- HF2211S Link LED will be repeat flash on 0.3s, then off 0.3s, indicate it works normally.
- PW1X Net LED will be repeat flash on 0.3s, then off 0.3s, indicate it works normally.

PC Wi-Fi to search AP, different products with different SSID, XXXX is the end 4 characters of MAC.

- EW1X SSID is EW10\_XXXX or EW11\_XXXX.
- HF2211S SSID is HF2211S\_XXXX
- PW1X SSID is PW11\_XXXX

Set PC IP with Auto DHCP.

Internet	t 协议版本 4 (TCP/IPv4) 属性		×
常规	备用配置		
如果阿 络系約	网络支持此功能,则可以获取自动推 充管理员处获得适当的 IP 设置。	派的 IP 设置。否则,你需要从网	
	自动获得 IP 地址(O)		
0	使用下面的 IP 地址(S):		
IP	地址():		
子	网掩码(U):		
課	认网关(D):		
۲	自动获得 DNS 服务器地址( <u>B</u> )		
-0	使用下面的 DNS 服务器地址(E):		
首	选 DNS 服务器(P):		
备	用 DNS 服务器(A):		
	退出时验证设置(L)	高级(⊻)	
		确定取消	

PC Wi-Fi connect to products and got IP as following picture





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adli WL	AN 2 状态		×	网络连接详细信息		×
常规				网络连接详细信息(D):		
连接				属性	值	
	Pv4 连接:	无 Internet 详	词权限	连接特定的 DNS 后缀		
	Pv6 连接:	无网络证	前权限	描述	Intel(R) Dual Band Wireless-AC 3165	
#1		201-344 <i>4</i> .		物理地址	04-D3-B0-22-67-B2	
~	*1440.325	-		已启用 DHCP	是	
S	SID:	EWI	1_4C/A	IPv4 地址	10.10.100.150	
ł	持续时间:	0	0:01:23	IPv4 子网掩码	255.255.255.0	
ě	<b>速</b> :	72.2	2 Mbps	获得租约的时间	2020年3月18日 15:14:32	
6	言己底母.		-11	租约过期的时间	2020年3月19日 15:14:32	
1				IPv4 默认网关	10.10.100.254	
	详细信息(E)	无线属性(W)		IPv4 DHCP 服务器	10.10.100.254	
				IPv4 DNS 服务器	10.10.100.254	
活动				IPv4 WINS 服务器		
				已启用 NetBIOS over Tc	是	
	已发	送— 🤧 —	已接收	连接-本地 IPv6 地址	fe80::79d4:d283:f685:a419%9	
		dll		IPv6 默认网关		
÷	字节:	2,342	5,423	IPv6 DNS 服务器		
		I				
	▶ 属性(P)	禁用(D) 诊断(G)				
					关闭(C)	
			关闭(C)		705(0)	

Brower input 10.10.100.254, input default user name and password with admin/admin to login in. The main page is as following.

← → C ① 不安全   10.10.10	0.254/index.html		☆ 📕 🌀 :
🚺 应用 📙 汉枫 📙 工作 📕 购物	📸 百度 🍳 百度地图 😵 211C电	子网 🔇 谷歌邮箱 🚺 人人网	其他书签
			English v
☆ STATUS	Status System running status overview		
SYSTEM SETTINGS	System State		Helper
SERIAL PORT SETTINGS	Product Name EW11	MAC 98D863584C7A	Status
COMMUNICATION SETTINGS	DHCP Enable	IP 0.0.0.0	
↔ ADVANCED SETTINGS ◀	Subnet Mask 0.0.0.0	Gateway 0.0.0.0	
OTHERS	DNS 223.5.5.5	Firmware Version 1.42.5i	
	System Time NTP Disabled	Total Running Time 0-Day 0:4:24	
	Remaining RAM 38072	Max Block Size 38072	
	Configuration Protected Disable	WiFi State Disconnected	
	WiFi Rssi -1		



#### Default UART parameters is as following.

STATUS	Serial Port S change the device serie	Settings al port settings		
SYSTEM SETTINGS	Basic Settings			Helper
SERIAL PORT SETTINGS	Baud Rate	115200	Y	Basic settings information
	Data Bit	8	<b>*</b>	
SETTINGS	Stop Bit	1	•	
↔ ADVANCED SETTINGS ◀	Parity	None	•	
OTHERS	Buffer Settings			

### Default socket parameters is as following.

					English v
☆ STATUS	Communica change the device sock	ation Settings et settings			
SYSTEM SETTINGS			netp +Add	Helper	
>_ SERIAL PORT SETTINGS	Basic Settings			Communication Settings	
SOCKET SETTINGS	Name	netp			
↔ ADVANCED SETTINGS ◀	Protocol	Tcp Server			
C OTHERS	Socket Settings				
	Local Port	8899			
	Buffer Size	512			
	Keep Alive(s)	60			
	<b>Timeout</b> (s)	0			

Products by default works as AP mode, if need to set it connect to router, set it to STA or AP+STA working mode as following. Select the scanned list and input the router password. Note: setting is valid after reboot.



WiFi Settings							
STA				•			
EW11							
STA K	(EY			<b>(</b>			
Scan	Rssi	Channel	Security	Choose			
-AP_aaaa	100	6	√	0			
5^&**(()_+	100	11	√	0			
ND	98	1	√	0			
DE-AP	96	11	×	0			
N_TEST	94	6	×	0			
114	92	10	×	$\bigcirc$			
	STA EW11 STA K STA K SCan SID E-AP_aaaa 6^&**(0_+ ND ADE-AP N_TEST	STA         EW11         STA KEY         Scan         SCan	STA         EW11         STA KEY         SCAN         SCAN	STA         EW11         STA KEY         SCAN         SCAN			

If need static IP in STA mode, set DHCP to off and input static IP. Note: setting is valid after reboot.

STATUS	System Settings Change the device system settings					
SYSTEM SETTINGS	Authentication			Helper		
SERIAL PORT SETTINGS	User Name	admin		Basic Settings		
	Password	•••••	٢			
ETTINGS	Basic Settings					
➢ ADVANCED SETTINGS ◀	Host Name	EW11				
ℬ others	WAN Settings	OFF				
	WAN IP	0.0.0.0 The WAN IP field must contain a valid IP.				
	Subnet Mask	0.0.0.0 The Subnet Mask field must contain a valid IP.				
	Gateway	0.0.0.0 The Gateway field must contain a valid IP.				
	DNS	223.5.5.5				

If upgrade firmware at the following position.

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English v

☆ STATUS	Others change the device other settings				
SYSTEM SETTINGS	Backup/Restore Configuration	Helper			
>_ SERIAL PORT SETTINGS	Backup Backup	Backup/Restore Configuration			
	Restore + Choose File				
SETTINGS	Upgrade				
○ ADVANCED SETTINGS ◀	Firmware + Choose File				
OTHERS	Factory Settings				

There is another internal webpage for upgrade the firmware and webpage (external config webpage as above, this source code is open at our website for customer to chagne). Login with IP/hide.

Webpage source file:

http://www.hi-flying.com/download-center-1/application-notes-1/download-item-iot-devicewebpage-source-code

← → C ③ 不安全   10.10.100.254/hide	☆	と
🏭 应用 📙 汉枫 📙 工作 📙 购物 潫 百度 🏆 百度地图 🚱 211C电子网 🚱 谷歌邮箱 🚺 人人网		🗖
Upgrade application		
选择文件 未选择任何文件 Eirmanaro filo		
Upload		
Upgrade customized webpage		
选择文件 未选择任何文件		
Upload		

## 3.2. IOTService Set

IOTService is simple to manage the products, config and even communicate with it. Download address:

http://www.hi-flying.com/download-center-1/applications-1/download-item-iotservice

Install IOTService and register account in the IOTBridge cloud(http://bridge.iotworkshop.com/) according to that tools doc.

PC connect to products AP(Same as previous chapter), and open tools, The device will be shown in IOTService.

🔡 I.O.T Service					- 🗆 ×
1anagement (M) Setting (C) Help (H)					
Serial Config Config Status VirPath					
SN DevType MAC Address HostName	IP	Position	VirPath	Status	SW Ver
1 EW11 98D863584C7A EW11	10.10.100.254	Local		Online	1.42.5i

Note: See IOTService doc for more detailed usage, here just simply use it.



 $\times |$ 

#### Double click the product list to see the device status.

🔝 Device Status

System	SOCKET		Network	
Elfin-EW11 R5485 WFFI GMT 0: 2560-2899 WFFI BMC 3-1800-0899 1055	SOCKET Name: Protocol: Status: Server IP: Recv Bytes: 0	netp MQTT Disconnect 47.115.117.98 Recv Frames: 0	HostName: DHCP: IP Address: Mask: Gate Way:	EW11 Enable 0.0.0.0 0.0.0.0 0.0.0.0
	Send Bytes: 0 Fail Bytes: 0	Send Frames: 0 Fail Frames: 0	MAC Address:	98D863584C7A
Product ID:EW11Software Version:1.42.5iRTC Time:NTP DisabledUp Time:0-Day 2:14:39Total Free Memory:16376Max Block Size:16376	UART UART No: Config: 115200,8,1,NO Recv Bytes: 9 Send Bytes: 0 Fail Bytes: 0	UART 1 V NE Recv Frames: 6 Send Frames: 0 Fail Frames: 0	Reload Restart	Edit

### Click Edit to change product setting.

Note: some setting need reboot to be valid. Better do restart operation after setting.

🔛 Device Setting		×
System User: admin Password: CW11 DHCP: CN000 DHCP: CN000 DNS: C23.5.55 Network Mode: C000 C00 CATE CO00 CO0 CO0 CO0 CO0 CO0 CO0 CO0 CO0 CO	SOCKET SOCKET Name: netp Protocol: MQTT  Server Addr: MQTT Server Port: MQTT Server Port: MQTT  Server Port: MQTT  Server Port: MQTT  Server Addr: MQTT  Server Addr: MQTT  Server Addr: MQTT  New SOCKET SOCKET SOCKET Del	WiFi Mode: AP AP SSID: EW11_4C7A Hide AP Key: AP Channel: AUTO STA SSID: EW11 STA Key: Scan
UART UART No: Baudrate: Data Bits: Stop Bits: Parity: Flow Control: Buffer Size: 512	LAN IP Address: 10.10.100.254 Mask: 255.255.0 DHCP: Enable ▼ Eth Wan: Disable ▼ LAN Separate	Confirm     Cancel     Detail       Export     Import     VirPath       F-Set Upd     F-Set Clear     DiDo

Set to STA or AP+STA mode to make products connects to router, and may also set static IP.





📷 Device Setting		Device	Setting
------------------	--	--------	---------

System		SOC	KET			WiFi		
User:	admin					Mode:	STA	<b>T</b>
Password	admin	so	CKET Name		netp	AP SSID:		7A Hide
		Pro	tocol:	MQ	тт 🔻	AD Kau		
HostName:	EW11					ар кеу:		
DHCP:	Enable 💌	Ser	ver Addr:	mq	tt.guanliyuan.vip	AP Channel:	AUTO	-
IP Address:	0.0.0.0	Ser	ver Port:		1883	STA SSID:		EW11
Mask:	0.0.0.0	Loc	al Port:		0	STA Key:		
Gate Way:	0.0.0.0	Kee	ep Alive:		60		Scan	
DNS:	223.5.5.5	T 🔛	Scan					>
Network Mode:	Router	F	Select	Channel	SSID	MAC Address	RSSI	Has Key
Longitude:	0.0		0	6	UPGRADE-AP aaaa	C8:3A:35:54:B3:70	100	Yes 🔺
congitude.	0.0	E	0	11	111!@#\$%^&**(()_+	78:44:FD:26:9A:7C	100	Yes
Latitude:	0.0		0	1	LAND	3C:33:00:A8:35:2C	94	Yes
			0	10	WX-114	28:2C:B2:D2:E5:96	88	No
				5	HF-LPB130	A8:CF:23:FF:88:88	84	No
		п	0	1	UPGRADE-AP	04:4A:6C:70:9B:9C	80	No _
				6	ChinaNet-xuanyin	78:44:FD:AB:73:76	64	Yes
			0	3	OPPO R15	D6:1A:3F:68:FB:DB	61	Yes
UART			0	13	tp jiehui	94:D9:B3:73:37:39	59	Yes
				11	HF2211 A990	98:D8:63:11:A9:90	59	No
UART No:	UARTI		0	11	yongheng	00:0E:E8:B6:57:2C	57	Yes
	445000		0	6	HF-Demo-Specia	54:75:95:73:88:38	54	Yes
Baudrate:	115200			13	JACK 2G	8C:AB:8E:66:85:F0	52	Yes
Data Bitar	0			1	ZXZ	24:69:68:7F:68:6E	49	Yes
Data Bits:	0	1	0	11	TP-LINK_4C6F	34:96:72:19:4C:6F	49	Yes
Stop Bits:	1	C		8	780	F4+28+53+67+D2+F4	47	Ves
Parity:	NONE	E				Rescan	Confirm	Close
Flow Control:	Half-Duplex 🔻		_		N Separate			
Buffer Size:	512					F-Set Upd	F-Set Clear	DiDo

# **4. SERIAL PORT SETTINGS**

# 4.1. Serial Port Tool SecureCRT

Open SecureCRT find an executable program, click Open. Click the Quick Connect button to create a connection.

🔳 se	rial-co	m4 - Se	cureCRT								
<u>F</u> ile	<u>E</u> dit	<u>V</u> iew	<u>Options</u>	<u>T</u> ransfer	<u>S</u> cript	Too <u>l</u> s	<u>W</u> indow	<u>H</u> elp			
B= 3	3	🕄 Ent	er host <a< th=""><th>lt+R&gt;</th><td>1 🖻 🛍</td><td><b>#</b>14</td><td>) 😁 🕉</td><td>1 🕐 🗖</td><td></td><td></td><td></td></a<>	lt+R>	1 🖻 🛍	<b>#</b> 14	) 😁 🕉	1 🕐 🗖			
Sessio					🗸 🗸 se	rial-com	14 X				

# 4.2. Setting Serial Port Parameters

Protocol: Serial

Port: The port that the computer is actually connected to (see "My Computer"-> "Device Manager"-> "Ports (COM and LPT)", as shown in the figure.

	⊿ · 管 端口 (CC	OM 和 LPT) 端口 (COM1) )	
Quick Connect			×
Protocol:	Serial	$\sim$	
The port may be	manually entered or	selected from the list.	
P <u>o</u> rt:	COM3 USB Serial Po	ort 🗸	
Baud rate:	115200 ~	Flow Control	
Data bits:	8 ~	RTS/CTS	
P <u>a</u> rity:	None $\sim$		
Stop bits:	1 ~		
Na <u>m</u> e of pipe;			
Sho <u>w</u> quick co	nnect on startup	✓ Sa <u>v</u> e session ✓ Open in a <u>t</u> ab Connect	Cancel

Note: The default serial port data of the device is as shown in the figure above. Users can modify the working parameters of the product by using IOTService.

# 4.3. Cli Instruction Mode

Data transmission needs to be in the transparent transmission mode (the default transparent transmission mode upon power-on). If you need to enter the Cli command mode for configuration, you can do as follows.

### • Serial port mode.

Set the parameters of the SecureCRT serial port software according to the above. Add "+++" button command to the button bar.

			_	~
Serial-COM4 - SecureCR1		_	Ш	~
文件(F) 编辑(E) 查看(V) 选项(O) 传输(T) 脚本(S) 工具(	_) 帮助(H)			
🏭 🎧 🎧 🍇 🗹 <sup>菜单栏(M)</sup> 🕴 💥 🕴 🔘				
I Serial-COM4 ✓ 工具栏(T)				×
EPORT> 学会活际签贝(B) Show 「	SOCK	DATA		^
Restart 🗹 交互箇口(C) [ Exit	FwUpgrade	Debug		
EPORT>Exit /				
🕞 Serial-COM4 - SecureCRT		—		$\times$
文件(F) 编辑(E) 查看(V) 选项(O) 传输(T) 脚本(S) 工具(I	.) 帮助(H)			
🖏 駾 🗔 🖏 🐚 🐔 👫 🖓 😼 🚰 💥 🏌 🎯				
Serial-COM4				×
EPORT> Show SYS LIART	50CK	DATA		^
Restart Reload WIFI	FwUpgrade	Debug		
EPORT>Exit				
映射按钮	×			
⊼h/E				
功能(E) 发送字符串				
发送字符串 ~ +++ ^	+++			
×				
发送字符串命令				
/r - 发送一个回车 (CR) /p - 暂停一秒 /e	- 发送一个ESC			
Vn - 发送一个新行 (LF) Vt - 发送一个TAB Vb	- 发送一个退格			
(注)(c)	協会 100%			
	NHAL AXA			
• +++ • a • STA • WSS • WS • AT+7	😡 AT+ 🙆 WSLO 🧀	10.2 🙆 10.1	1 Defa	V
		101211	Dela	u v

Click the button to send the corresponding data. When the interface displays "EPORT>", you have entered the CLI command mode.



Note:

Any serial tool can do this. Sending "+++" must be a continuous package of data, and there can be no other data before and after (such as carriage return and line feed).

• Telnet mode.

Step 1: Enter the IP address of the device (the IP address can be obtained by searching through the IOTService tool, which will be detailed later), port 23.

http://192.168.0.12	1 - 未连接 - SecureCRT	_		$\times$
文件(F) 编辑(E) 查	看(V) 选项(O) 传输(T) 脚本(S) 工具(L) 帮助(H)			
🏭 🔀 🖓 🖓 💷	a 🗈 👫   😼 😼   🚰 🌋 🕴   🞯   🗷 🖕			
http://192.168.0.121	快速连接			×
	协议(P):     Telnet       主机名(H):     192.168.0.121       端口(O):     23       防火墙(F):     None			~
	□启动时显示快速连接(W)	🕥 10	).1 Det	¥ fai V

Step 2: The default login name and password are both admin, then "EPORT>" is displayed, and you have logged in to the Cli command mode.

a 192.168.0.121 - SecureCRT	-	$\times$
文件(F) 编辑(E) 查看(V) 选项(O) 传输(T) 脚本(S) 工具(L) 帮助(H)		
🖏 🖏 🗔 🕄 🔏 🖻 🕞 😽 🖓 👘 🖉 🖓 🕴 🞯 🔤 🖕		
192.168.0.121		×
login:admin password:		^
EPORT>		

# **5. TEST EXAMPLE**

Elfin-EW1X use TCP/IP protocol for communication. There is two main parameters one for IP address and another for port number.

# 5.1. AP Wireless Networking

Product works in AP mode. All other STA devices connect to product AP. (Product AP does not support route function, so the STA can not transfer data to each other) The structure is t shown as below:



Step 1: The product default AP SSID is "EW1X\_+MAC(last 4 characters)". It can also search by cli "Show" command. Figure is as below:

===WIFI Status=== Mode:STA AP SSID:EW10_C69A Hide AP SSID:Off Disconnected
STA SSID:Upd Connected,7C:B5:40:4F:B2:CD
EPORT>

Step 2: Set PC IP to DHCP or static IP with (10.10.100.XXX, subnet:255.255.255.0, gateway:10.10.100.254), PC connect to product AP as following picture.



Step 3: Open IOTService and find the device. The device will allocate IP address to the STA connected. STA device IP address will be like 10.10.100.XXX.

🔛 I.O.T Service					- 🗆 ×		
Management (M) Setting (C) Help (H)							
Serial Config Config Status VirPath							
SN DevType MAC Address HostName	IP	Position	VirPath	Status	SW Ver		
1 EW11 98D863584C7A EW11	10.10.100.254	Local		Online	1.42.5n		

# 5.2. TCP Server Test in AP Mode

Step 1: Open TCP&UDP test tool and generate TCP connection as following steps. Device has already created a TCP Server (port 8899) for use. TCP&UDP test tool can be downloaded from our website:

- DestIP: IP address of device which can be found by IOTService.
- Port: Port of TCP Server which can be found by IOTService or set by users own.



✗ TCP&UDP-Debug
📔 CreateConnn 🚳 CreateServer   🐰 StartServer 🐰 🐼   😒 Connect 😒   🌺 DisconnAll   💥 DeleteConn 🎇   🔟   寒 💂
Operate(O) View(W) Windows(W) Help(H) Language
Properties 4 X Client Mode Server Mode Local Port: 0809 Local Port: 0809 Local Port: 0 Specia 4001 AutoCona: Eve as Create Cancel
友达速度(B/S): 0 按收速度(B/S): 0

Device Setting	and the second se			-	×
System		SOCKET		WiFi	
User:	admin	SOCKET Name:	neto 💌	Mode:	AP
Password:	admin			AP SSID:	EW10_C69A 🔲 Hide
HostName:	EW10	Protocol:	TCP-SERVER 🔻	AP Key:	
DHCP:	Enable 💌	Server Addr:		AP Channel:	AUTO
IP Address:	192.168.8.197	Server Port:	0	STA SSID:	
Mask:		Local Port:	8899	STA Key:	
Gate Way:		Keep Alive:	60		Scan
DNS:	10.10.100.254	Time Out:	0		
Network Mode:	Router 💌	Rout:	uart 💌	it can k	pe set by the user
Longitude:	0.0	Buffer Size:	512		
Latitude:	0.0	DI/DO Ctrl:	Disable <b>v</b>		
UART		New SOCKET	SOCKET Del		
UART No:	UART 1				
Baudrate:	115200 🔻	LANN			
Data Bits:	8	IP Address:	10.10.100.254		
Stop Bits:	1	Mask:	255.255.255.0		
Parity:	NONE	DHCP:	Enable 🔻	Confirm	Cancel Detail
Flow Control:	Half-Duplex 💌	Eth Wan:	Enable 💌	Export	Import
Buffer Size:	512		LAN Separate	F-Set Upd	F-Set Clear VirPath

# Step 2: Click Connection to generate TCP connection

After successful connection, the left turns to be green arrow, yellow if fails.

区 TCP&UDP测试工具 - [10.10.100.2	154:8899] — — — ×							
🗄 🚰 CreateConnn 🔕 CreateServer	🐰 StartServer 🐮 😡   😪 Connect 🗝   🛬 DisconnAll   💥 DeleteConn 🎇   🔟   ಿ 🖕							
Operate(O) View(V) Windows(W) Help(H) Language ×								
Properties <b>P</b> ×	✓ ¥ 10.10.100.254:8899							
Client Mode 10.10.100.254:8899 Server Mode	DestIP:       Send       AtuoSend       Eve       100       ms       Send       Stop         DestPort:       3899       Send Hex       Send File       Send Received       Clear       Option       BroadOption         LocalPort       4001       Type       TCP        AtuoConn       Eve       0       Send       Eve       Save       Save       Option       ShowHex         Disconnect       Count       Save (In Time)       Save (In Time)           Recv       0       Clear       Save (In Time)							
	Send Speed(B/S): 0 Receive Speed(B/S): 0							

Step 3: Open serial tool according to following parameters (115200 baud rates as default)

🕞 Serial-COM5 - Secu	CRT			
	Session Options - Serial-C	OM5		
File Edit View Opti	Catagon			
🔊 🕅 🗔 🕼 🗶 🚺	Category	<b>C</b> 10		
	Connection	Serial Up	tions	
Serial-COM5	Serial	P <u>o</u> rt:	COM5	Flow Control
-	En Terminal	<u>B</u> aud rate:	115200	DTR/DSR
	Modes	Data bits:	8	
	- Mapped Keys	P <u>a</u> rity:	None	~
	- Appearance	<u>S</u> top bits:	1	~
	Window Log File			
	- Printing	<u>S</u> erial brea	k 100	milliseconds
	Advanced Xmodem/Zmodem			
		· · · · · · · · · · · · · · · · · · ·		
		IMPORTANT: A	any changes yo	ou make will not take effec

Step 4: Data transmission between TCP and UART is as following.

# HF2211S\_EW1X\_PW1X Operation Guide

🎾 TCP&UDP测试上具 - [10.10.100.2	54:8899]		
🗄 🔄 CreateConnn 🔕 CreateServer	🔡 StartServer ⊁ 📀	😪 Connect 🗝   📽 DisconnAll   💥 DeleteConn 🎇   ]	0   😹 📮
Operate(O) View(V) Windows	s( <u>W)</u> Help( <u>H</u> ) Langua	ge	_
Properties         ₽ ×           □-□         Client Mode           □-□         10.10.100.254:8899           □-□         Server Mode	Io.10.100.254:88           DestIP:           10.10.100.254           DestPort:           B899           LocalPort           4001	Send AtuoSend Eve 100 ms Send Send Hex Send File Send Received Clear fsdfsfsf	Serial-COM5 - S 文件(E) 編辑(E) 記記記(A) 名(A) 名(A) Serial-COM6 (1) I Serial-COM6 (1) I
	Type TCP  AtuoConn Eve 0 s AutoSend Eve 0 ms		
	Count Send 16 Recv 21 Clear	Rec StopShow Clear Save Option ShowH	
	Send Spe	ed(B/S): 0 Receive Speed(B/S): 0	

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Step 4: Data count in following status.

🗟 Device Status				×
System	SOCKET		Network	
	SOCKET Name:	netp 💌	HostName:	EW11
	Protocol:	TCP-SERVER	DHCP:	Enable
ElfinEW11	Status:	Connected	IP Address:	0.0.00
R5485 OMIT ID: 20100 Page	Client IP:	10.10.100.150	Mask:	0.0.00
1045	Recv Bytes: 21	Recv Frames: 3	Gate Way:	0.0.00
	Send Bytes: 39	Send Frames: 10	MAC Address:	98D863584C7A
	Fail Bytes: 0	Fail Frames: 0		
Product ID: EW11			]	
Software Version: 1.42.5n	UART No:	UART 1		
RTC Time: NTP Disabled	Config: 115200.8.1 N	IONE		
Up Time: 0-Day 0:1:15	Recy Bytes: 42	Recy Frames: 11		
Total Free Memory: 41520	Send Butes: 21	Send Frames: 3	Beload	
Max Block Size: 41520	Fail Bytes: 0	Fail Frames: 0	Restart	Edit
			Kestart	

# 5.3. STA Wireless Networking



Elfin-EW1X is AP mode by default. If need to work in STA mode connecting to router. There are following ways. Recommend to set to STA mode only ,if AP is not used in mass application ,for test stage, may set to APSTA for convenience

• PC Wi-Fi connect to product AP, open IOTService tools to config.

System		SOC	CKET			WiFi		
User:	admin		CKET NISSE			Mode:	STA	
Password	admin	50	CKET Name		netp	AP SSID:		C7A Hide
	dannin	Pro	otocol:	MQ	TT 🔽	AD Kara		
HostName:	EW11					AP Key:		
DHCP:	Enable 💌	Ser	rver Addr:	mq	tt.guanliyuan.vip	AP Channel:	AUTO	
D Address:	0.0.00	Ser	ver Port:		1883	STA SSID:		EW
Address.	0101010					CTA Kan		
Mask:	0.0.00	Loc	cal Port:		0	STA Key:		
Gate Way:	0.0.00	Ke	ep Alive:		60		Scan	
DNS:	223.5.5.5	-	🕈 Scan					
Network Mode:	Router 💌	E	Select	Channel	SSID	MAC Address	RSSI	Has Key
ongitudou			0	6	UPGRADE-AP aaaa	C8:3A:35:54:B3:70	100	Yes
ongitude:	0.0	E	Ō	11	111!@#\$%^&**(() +	78:44:FD:26:9A:7C	100	Yes
atitude:	0.0		0	1	LAND	3C:33:00:A8:35:2C	94	Yes
			0	10	WX-114	28:2C:B2:D2:E5:96	88	No
			0	5	HF-LPB130	A8:CF:23:FF:88:88	84	No
		п	0	1	UPGRADE-AP	04:4A:6C:70:9B:9C	80	No
			0	6	ChinaNet-xuanyin	78:44:FD:AB:73:76	64	Yes
			0	3	OPPO R15	D6:1A:3F:68:FB:DB	61	Yes
JART			0	13	tp jiehui	94:D9:B3:73:37:39	59	Yes
			0	11	HF2211 A990	98:D8:63:11:A9:90	59	No
UART No:	UART 1		0	11	yongheng	00:0E:E8:B6:57:2C	57	Yes
			0	6	HF-Demo-Specia	54:75:95:73:88:38	54	Yes
Baudrate:	115200		0	13	JACK_2G	8C:AB:8E:66:85:F0	52	Yes
			0	1	ZXZ	24:69:68:7F:68:6E	49	Yes
Data Bits:	0	r.	0	11	TP-LINK 4C6F	34:96:72:19:4C:6F	49	Yes
Stop Bits:	1 💌	c i		8	7XCV	F4:28:53:67:D2:F4	47	Ves
Parity:	NONE 🔻	F				Rescan C	onfirm	Close
Flow Control:	Half-Duplex 💌	L	_		N Soporato			
Puffer Cizer	E10				in separate	E-Set Und	E-Set Clear	DiDo

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|--|

🔝 Device Setting

System		SOCKET		W(E)	
User:	admin	SOCKET Name:	netn 💌	Mode:	APSTA 💌
Password:	admin	Socker Hame.		AP SSID:	EW_XXXX 🔲 Hide
HostName:	EW11	Protocol:	TCP-SERVER 🔻	AP Key:	
DHCP:	Disable 🔻	Server Addr:		AP Channel:	AUTO
IP Address:	192.168.18.102	Server Port:		STA SSID:	Soneter1
Mask:	255.255.255.0	Local Port:	8899	STA Key:	Soneter1
Gate Way:	192.168.18.1	Keep Alive:	60		Scan
DNS:	223.5.5.5	Time Out:	0		,
Network Mode:	Router 💌	Rout:	uart 🔻		
Longitude:	0.0	Buffer Size	512		
Latitude:	0.0	buller size.			
		New SOCKET	SOCKET Del		
UART					
UART No:	UART 1	LAN			
Baudrate:	115200 💌	IP Address:	10.10.100.254		
Data Bits:	8 🔻	Mask:	255.255.255.0		
Stop Bits:	1 💌	DHCP:	Enable 💌		
Parity:	NONE 💌	Eth Wan:	Disable 💌	Confirm	Cancel Detail
Flow Control:	Half-Duplex 💌		LAN Separate	Export	Import VirPath
Buffer Size:	512			F-Set Upd	F-Set Clear DiDo

# PC also connect to the same router, and it will find the device with products STA WAN IP.

🔛 I.O.T Service						-	×	
Management (M) Setting (C) Help (H)							* 中文	
Serial Config Config	tatus 🔁 VirPa	th			(	Disco	onnected	
SN DevType MAC Address HostName	IP	Position	Vir	Path	Status	SW	Ver	
1 EW11  98D863584C7A EW11	192.168.18.102	Local			Online	1.42.5n		
🕆 Device Status								×
System Sol	CKET			Network				
so	CKET Name:	netp	-	HostName:				EW11
Pro	tocol:	Т	CP-SERVER	DHCP:			D	isable
Elfin-EW11 Sta	tus:	Serv	er Created	IP Address:			192.168.1	18.102
RS485 WEFI CHITIO: 2214071283	nt IP:			Mask:			255.255	.255.0
Rec	v Bytes: 0	Recv Frame	es: 0	Gate Way:			192.16	8.18.1
Ser	d Bytes: 0	Send Frame	es: 0	MAC Addre	ess:		98D8635	84C7A
Fail	Bytes: 0	Fail Frames	: 0	WiFi				
Product ID: EW11	۲							
Software Version: 1.42.5n	RT No:	UART 1	-	Status:	(	Connected,	/8:44:FD:20	5:9A:7C
RTC Time: NTP Disabled	-for 115200.9.1 N/			RSSI:				100
Up Time: 0-Day 0:1:1	ning: 115200,8,1,140							
Total Free Memory: 31880	cv Bytes: 0	Recv Frame	is: U					
Max Block Size: 31880 Se	nd Bytes: 0	Send Frame	es: 0	Re	load		Edit	
Fai	l Bytes: 0	Fail Frames	: 0	Re	start		Cont	

• PC Wi-Fi connect to product AP, login with 10.10.100.254, user and password input admin/admin, open its webpage to config.

WAN Settings		
DHCP	OFF	
WAN IP	192.168.18.102	
Subnet Mask	255.255.255.0	
Gateway	192.168.18.1	
DNS	223.5.5.5	
LAN Settings		
LAN IP	10.10.100.254	
Mask	255.255.255.0	
DHCP Server	ON	
WiFi Settings		
WiFi Mode	AP+STA •	
AP SSID	EW_XXXX	ລ
AP KEY	AP KEY	
AP Channel	AUTO	
STA SSID	Soneter1	
STA KEY	Soneter1	$\odot$
	Scan	

After reboot, PC connect to router, and login with the product static IP to confirm connection. If any problem, reconfig the product with its AP.

← → C ① 不安全   192.168.18.102/index.html			x 🗾 🙆	I
🗰 应用 🧧 汉枫 📑 工作 🧧 购物 😤 百度 🌻 百度地图 😵 2110月	电子网 😨 谷歌郎楠 🔇 人人网		□ 其他书	ŝ
				Î
find status	Status System running status overview			
SYSTEM SETTINGS	System State		Helper	
SERIAL PORT SETTINGS	Product Name EW11	MAC 98D863584C7A	System running status overview	
COMMUNICATION SETTINGS	DHCP Disable	IP 192.168.18.102		
○ ADVANCED SETTINGS	Subnet Mask	Gateway		
OTHERS	255.255.255.0	192.168.18.1		
	DNS 223.5.5	Firmware Version 1.42.5n		
	System Time NTP Disabled	Total Running Time 0-Day 0:5:39		
	Remaining RAM 32128	Max Block Size 32128		
	Configuration Protected Disable	WiFi State Connected,78:44:FD:26:9A:7C		ľ
	WiFi Rssi 100			

 SmartLinkV8 APP to config, smart phone connect to Router. Set product Reload pin to low for some time(0.2s < time < 1.5s) to make it in Smartlink config mode(green LED will be in fast flash status). See appendix Smartlink V8 APP for detail. The following is the final device find step for IOS and Android. After the Smartlink config successed,



the product works in STA mode and connect to router.

📶 中国移动 🗢	14:41		15:06		
	SmartLink	V 8.0.01	Custo	mizedActivity	
Soneter1					_
Soneter1				Customized Text	
			SSID:	Soneter	
SmartLink V	3.x support	$\bigcirc$	Password:	Soneter1	
Single Device	e Configure		Others:		
	connect		Mixed:	SmartLink V3	A
ACC	<b>OK</b> CF22201230:192.168.8	39.195	0	Waiting	
са	ncel	ok		Cancel	_
			-		
			New sma F0FE6BD	rt linked module: Id-FOFE6BDB656E N B658E lp-192 168.89.3	Aac-
			-		

Note: This method is very easy to config, but may encounter failure sometimes. Do as following to try again.

- > Check if phone connect to 2.4G router SSID.
- Set router 2.4G Wi-Fi to 802.11bg

无线基本设置	无线基本设置	帮助信息
无线加密	启用无线功能 🕑	此页面只要对无线基本信息进 行设要,建议中设要sstnam值
无线访问控制	无线信号名称(SSID) UPGRADE-AP_aaaa	道,其他违项保持默认。
无线客户诸	无线工作模式 ● 无线接入点(AP) ◎ 网括(NDS) 网络模式 11b/g/n混合模式 ▼	SSID: 无线网络中所有设备共 寧的网络名称。 SSID <mark>广播</mark> : 当无线客户端在本
	」 广播 (SSID) 11b(g語合機式 110(模式 110(模式 11b(m)漂合模式 110(m)漂合模式	地区域调查要兴彰的无线网络 时,它们将通过路由器检测 SSID广播。 如果选中,路由器
	信道带宽 ● 20 ◎ 20/40	将向所有的无线主机广播自己的SSID。

## 5.4. TCP Server Test in STA Mode

Open TCP&UDP test tool and generate TCP connection as following steps. Device has already created a TCP Server(port 8899) for use. TCP&UDP test tool can be downloaded from the website:

- > DestIP: Destination IP address.
- > Port: Destination Port.

### HF2211S\_EW1X\_PW1X Operation Guide

×	TCP&UDP测试工具 -	[192.168.18.102:88	99]						_		$\times$
1	CreateConnn 😂 Cre	eateServer   🐰 Sta	artServer ⊁ (	) <u>%</u> 0	onnect	🗝 🗟 🔡 Discon	nAll 🛛 💥 Delete(	Conn 🗞	0 🏾		
i o	perate( <u>O</u> ) View( <u>V</u> )	Windows( <u>W</u> ) H	Help( <u>H</u> ) Langi	lage							×
Prop	Create Connection			×	899						4 Þ 🗙
<b>--</b>	Type: TCP	•			Send	🗌 🗖 AtuoSend	Eve 100	ms	Send St	op	
E	DestIP: 192.168.1	8. 102 Po	ort: 8899	_	□ Sei	nd Hex 🥅 Send	File Send Rec	eived	Clear Opt	ion	Broad
			,		AT +Z						
	LocalPort (• Aut	o C Spe	cia 4001								
	T AutoConn:	Eve	0 5								
	🔲 Send When Conn	: Eve	m	5							
	Cr	eate Can	cel								
					Rec	StopShow	Clear Sava	Ontion	ShowHow		

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Click Connect to create TCP connection

> After successful connection, the left turns to be green arrow.

🎾 TCP&UDP测试工具 - [192.168.18.102:	8899] — 🗆	×
🔄 🔄 CreateConnn 🔕 CreateServer   🐰	StartServer 🗏 🐼   😒 Connect 🐲   🛬 DisconnAll   💥 DeleteConn 🇞   🔟   寒 💂	
Operate( <u>O</u> ) View( <u>V</u> ) Windows( <u>W</u> )	Help( <u>H</u> ) Language	>
Properties P ×	< ¥ 192.168.18.102:8899	< ▷ >
Client Mode 192.168.18.102:8899 Server Mode	DestIP:       Send       AtuoSend Eve       100 ms       Send       Stop         192.168.18.102       Send Hex       Send File       Send Received       Clear Option         DestPort:       8899       AT+Z         4001       AT+Z         4001       AtuoConn         Eve       0       s         Disconnect       Rec       StopShow       Clear         Count       Save(In Time)       Save(In Time)	Broad

Open serial tool according to following parameters (115200 baud rate as default)

🕞 Serial-COM5 - Secu		0.45		Г		
File Edit View Opti	Session Options - Serial-C	.OM5				
* T & C > Ø * * ! !	Category					
പ്പെപ്പം പ്പെപ്പം	🖃 Connection	Serial Op	ptions			
Serial=COM5	Logon Scripts <mark>Serial</mark>	P <u>o</u> rt:	COM5	→ F	low Control	
-	E. Terminal	<u>B</u> aud rate:	115200		D <u>T</u> R/DSR	
		Data bits:	8	~ [	<u>R</u> TS/CTS XON/XOFF	
		P <u>a</u> rity:	None	$\sim$		
	Advanced	<u>S</u> top bits:	1	$\sim$		
		Serial bree	ak 100	📥 mili	liseconds	
	Advanced			· · · · · · · · · · · · · · · · ·		
	Xmodem/Zmodem					
		IMPORTANT:	Any changes	you make	will not take e	ffec

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### Data transmission between TCP and serial port.



# 5.5. STA TCP Client Test

Products support 3 channel sockets, default netp socket works as TCP Server, here create another socket working as TCP client.

HF test server: test.server.iotworkshop.com

TCP Port: 40432

UDP Port: 40431

Our test server will send back the received data.

#### HF2211S\_EW1X\_PW1X Operation Guide



🕈 Device Setting					×
System		SOCKET		1 New SOCKET	×
User:	admin	SOCKET Name:	netp 💌	Basic	Detail
Password:	admin	Protocol:	TCP-SERVER 🔻	SOCKET Name: CLIENT	Security: Disable
HostName:	EW11	Server Addr	matt quaplivuan vip	Protocol: TCP-CLIENT	Security Key:
DHCP:	Disable 💌				Connect Mode: Always
IP Address:	192.168.18.102	Server Port:	1883	Server Addr: test.server.iotworkshop.c	Stop Serial:
Mask:	255.255.255.0	Local Port:	8899	Server Port:	HeartBeat: Disable
Gate Way:	192.168.18.1	Keep Alive:	60	Local Port: 0	HeartBeat Time: 0
DNS:	223.5.5.5	Time Out:	0	Keep Alive: 60	HeartBeat Serial:
Network Mode	e: Router 💌	Rout:	uart	Time Out: 0	Regist Mode:
Longitude:	0.0	Buffer Size:	512	Rout: uart 💌	Regist Code:
Latitude:	0.0	-		Buffer Size: 512	Max Client Num: 20
		New SOCKET	SOCKET Del		Confirm Cancel
UART					
UAKT NO:	UARTT	LAIN			
Baudrate:	115200 💌	IP Address:	10.10.100.254		
Data Bits:	8 💌	Mask:	255.255.255.0		
Stop Bits:	1	DHCP:	Enable 💌		
Parity:	NONE	Eth Wan:	Disable 💌	Confirm Cancel D	Detail
Flow Control:	Half-Duplex 💌		LAN Separate	Export Import Vi	rPath
Buffer Size:	512			F-Set Upd F-Set Clear	DiDo

It shows connected.

🕈 Device Status

System	SOCKET SOCKET Name: Protocol: Status: Server IP: Recv Bytes: 0	CLIENT TCP-CLIENT Connected 115.29.164.59 Recv Frames: 0	Network           HostName:         EW11           DHCP:         Disable           IP Address:         192.168.18.102           Mask:         255.255.255.0           Gate Way:         192.168.18.1
	Send Bytes: 0 Fail Bytes: 0	Send Frames: 0 Fail Frames: 0	MAC Address: 98D863584C7A WiFi
Product ID:     EW11       Software Version:     1.42.5n       RTC Time:     NTP Disabled       Up Time:     0-Day 0:29:23	UART UART No: Config: 115200,8,1,NON	UART 1	Status: Connected,78:44:FD:26:9A:7C RSSI: 100
Total Free Memory:24312Max Block Size:24312	Recv Bytes: 46 Send Bytes: 75 Fail Bytes: 0	Recv Frames: 5 Send Frames: 3 Fail Frames: 0	Reload Edit

UART received "33333333333" and send to server, the server sent back the packet, so the UART tools shows the received data.



 $\times$ 



 $\times$ 

#### 🔝 Device Status

System				Network	
	SOCKET Name:	CLIENT	-	HostName:	EW11
	Protocol:	TCP-CLIE	NT	DHCP:	Disable
Elfin-EW11	Status:	Connect	ed	IP Address:	192.168.18.102
RS485 WFFI CMITTIC: 20140P1893 Refload	Server IP:	115.29.164	.59	Mask:	255.255.255.0
-yet princesw (36)	Recv Bytes: 40	Recv Frames: 3		Gate Way:	192.168.18.1
	Send Bytes: 40	Send Frames: 3		MAC Address:	98D863584C7A
	Fall Bytes: 0	Fall Frames: 0		- WiEi	
Product ID: EW11				vviii	
Software Version: 1.42.5n	UART			Status:	Connected,78:44:FD:26:9A:7C
RTC Time: NTP Disabled	UART No:	UART 1		RSSI:	100
	Config: 115200,8,1,N0	DNE			
	Recv Bytes: 86	Recv Frames: 8	l r		
Total Free Memory: 24312	Send Bytes: 115	Send Frames: 6		Reload	
Max Block Size: 24312	Fail Putors 0	Fail Frameri O			Edit
	rail bytes: 0	rail frames; 0		Restart	

# 5.6. STA HTTP Client Test

HTTP data flow is as following.



### • HTTP GET Test:

Test server address: 115.29.164.59 Test server port: 8432 Path: /iot Header:



### Host:115.29.164.59:8432 Connection: keep-alive Products setting as following.

System       User:       admin         Password:       admin         HostName:       EW11         DHCP:       Disable         IP Address:       192.168.18.102         Mask:       255.255.255.255.0         Gate Way:       192.168.18.10         DNS:       223.5.55         Network Mode:       Contert         Longitude:       0.0         Rout:       uart         Buffer Size       512         VART       Http Setup         VART       Http Setup         Vart       Host: 115.29.164.59:8432         Connection: keep-alive       Connection: keep-alive         Data Bits:       Stop Bits:         Parity:       Connection: keep-alive         Connection: keep-alive       Confirm         Connection: keep-alive       Confirm         Connection: keep-alive       Confirm         Connection: keep-alive       Confirm         Confirm       Cancel       Export         Import       VirPath         Flow Control:       Confirm       Cancel	Device Setting			×
UART     Path:     /iot       UART No:     Host:115.29.164.59:8432       Baudrate:     Connection: keep-alive       Data Bits:     Stop Bits:       Parity:     Flow Control:       Confirm     Cancel       Detail       Flow Control:     Confirm	W Device Setting         System         User:       admin         Password:       admin         HostName:       EW11         DHCP:       Disable         IP Address:       192.168.18.102         Mask:       255.255.255.0         Gate Way:       192.168.18.1         DNS:       223.5.5         Network Mode:       Router         Longitude:       0.0         Latitude:       0.0	SOCKET SOCKET Name: CLIENT Protocol: HTTP Server Addr: 115.29.164.59 Server Port: 8432 Local Port: 0 Keep Alive: 60 Time Out: 0 Rout: uart Buffer Size: 512 X	WiFi Mode: AP SSID: AP Key: AP Channel: STA SSID: STA Key:	APSTA   EW_XXXX Hide  AUTO  Soneter1  Scan
Butter Size: 512 F-Set Upd F-Set Clear DiDo	UART     Type:     GET       UART     Path:     /iot       UART No:     Host:115.29.164.5       Baudrate:     Connection: keep       Data Bits:     Stop Bits:       Parity:     Flow Control:       Buffer Size:     512	9:8432 -alive	Confirm Export F-Set Upd	Cancel Detail Import VirPath F-Set Clear DiDo

Server response back and products UART output packet. It filter the HTTP response header and only output the header.

Access	Port - C	OM4(1152	200,N,8,1	I) Opened	
<u>F</u> ile <u>E</u> dit	<u>V</u> iew	<u>M</u> onitor	<u>T</u> ools	<u>Operation</u>	<u>H</u> elp

🍓 🙆 🛃 🗒 💲 🥝
Terminal Monitor
🖬 📴 Hex ab 🖾 🔝
Get:msg=AAA
Get:msg=AAA Get:msg=AAA
Send-> 🔿 Hex 💿 Char Plain Text 🗸 🗹 Real Time Send 🔂 Send 🗌 DTR 🗌 RTS 📗 Max Size < 64KB
msg=AAA
1

Data flow is as following.

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## • HTTP POST Test:

Test server address: 115.29.164.59 Test server port: 8432 Path: /iot Header: Host:115.29.164.59:8432 Connection: keep-alive Products setting as following.

i Device setting			/
System	SOCKET	WiFi	
User: admin	SOCKET Name:	Mode:	APSTA 💌
Password: admin		AP SSID:	EW_XXXX 🔲 Hide
HostName: EW11	Protocol:	AP Key:	
DHCP: Disable 🔻	Server Addr: 115.29.164.59	AP Channel:	AUTO
IP Address: 192.168.18.102	Server Port: 8432	STA SSID:	Soneter1
Mask: 255.255.255.0	Local Port: 0	STA Key:	Soneter1
Gate Way: 192.168.18.1	Keep Alive: 60		Scan
DNS: 223.5.5.5	Time Out: 0		
Network Mode:	Rout: uart 💌		
Longitude: 0.0	Buffer Size: 512		
Latitude: 0.0			
Http Setup	×		
Type: POST	Version: 1.1		
UART Path: /iot			
UART No:			
Baudrate: Connection: kee	p-alive		
Data Bits:			
Stop Bits:			
Parity:		Confirm	Cancel Detail
Flow Control:	Confirm Cancel	Export	Import VirPath
Buffer Size: 512		F-Set Upd	F-Set Clear DiDo

Server response back and products UART output packet. It filter the HTTP response header and only output the header.



📲 AccessPort - COM4(115200,N,8,1) Opened
<u>File Edit View Monitor Tools Operation H</u> elp
🎭 🙆 🔁 📃 🏂 🎯
Terminal Monitor
Post:msg=AAA
Send-> O Hex @ Char Plain Text v Real Time Send Clear Send DTR RTS    Max Size < 64KB
nsg=ÀÀÀ
Data flow is as following.



# 5.7. STA MQTT Client Test

Test server address: 112.124.43.15 Test server port: 1883 Device setting is as following.

TF22115 EWIA PWIA Operation Guide	HF2211S	EW1X	PW1X	Operation	Guide
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😭 Device Setting		🔯 MQTT Edit	
System	SOCKET		
User: admin	SOCKET Name:	Version:	4
Password: admin	Bratasak MOTT	Ping Time:	60
HostName: EW11		Client ID:	%MAC
DHCP: Disable 💌	Server Addr: 112.124.43.15		
IP Address: 192.168.18.102	Server Port: 1883	User:	1111
Mask: 255.255.255.0	Local Port: 0	Password:	2222
Gate Way: 192.168.18.1	Keep Alive: 60	Subscribe Topic:	%MAC/down
DNS: 223.5.5.5	Time Out: 0	Subscribe Qos:	0
Network Mode:	Rout: uart 💌	Publish Topic:	%MAC/up
Longitude: 0.0	Buffer Size: 512		
Latitude: 0.0		Publish Qos:	0
	New SOCKET SOCKET Del		Confirm
UART			
UART No: UART 1	LAN		
Baudrate: 115200 💌	IP Address: 10.10.100.254		
Data Bits: 8	Mask: 255.255.255.0		
Stop Bits: 1	DHCP: Enable 💌		
Parity: NONE 💌	Eth Wan: Disable 💌	Confirm	Cancel Detail
Flow Control: Half-Duplex 💌		Export	Import VirPath
Buffer Size: 512		F-Set Upd	F-Set Clear DiDo

Use MQTT.fx tools to test, set publish topic to the device Subscribe Topic and the publish data will be sent to device UART.

B MQTT.fx - 1.7.1		– 🗆 🗙			
File Extras Help	Count Disconnert	ず 🔵 dr	SOCKET		WiFi Mode:
Publish Subscribe Se	cripts Broker Status Log	dr :W	MI1 SOCKET Nat Protocol: M11 MQTT Edit	MQTT	AP SSID: AP Key:
	980863384C7A/down       P80863384C7A/down     Publich     Qx50     Qx51     Qx52       1111	Retained 0:- 8.1 25 3.1	1 5 Version: 1 Ping Time:	60	
	AccessPort - COM4(11520,N,8,1) Opened     Elie Edit View Monitor Tools Operation Help	- 0 ×	Client ID: User:	%MAC	
			Password: Subscribe Topic:	2222 %MAC/down	
			Subscribe Qos: Publish Topic:	0 %MAC/up	-
		. / 6470	Publish Qos:	0	•
	onder ∪ nex @Unar Frann iest ∨ Mreal Time Send Chear Send   NTA   KTS   Rex Sir nag=MAA		DHCP:     Eth Wan:	Enable V Disable V LAN Separate	rm Cancel
	Conn Status         CTS         DSR         RIMG         RLSD         CD         CTS         Hold         RLSD         Hold         IOFF         Hold           Ready         Tx         133         Rx 7399         Fragmentary         Fragmentary	COM4(115200,N,8,1) C	512		F-Set Upd

Set tools subscribe topic to the device publish topic and the send UART data, the MQTT.fx tools got the packet.

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MQTT.fx - 1.7.1		– 🗆 ×		
File Extras Help			SOCKET	WiFi
112.124.43.15	Connect Disconnect	<b>-</b>	dmin SOCKET Na	me: CLIENT  Mode: AP SSID:
Publish Subscribe Scripts Broker Status Log	2		W11 Protocol:	MQTT AP Key:
98D863584C7A/up	Subscribe QoS1 QoS1 QoS2	Autoscroll OST	2.1	
98D863584C7A/up	98D863584C7A/up	1	Version:	4
Dump Messages Mute Unsubscribe	D01042594778/up	QoS 0	9.1 Ping Time:	60
	AccessPort - COM4(115200,N,8,1) Opened	>	Client ID:	96MAC
	98D863584C7A/up <u>File Edit View Monitor Tools Operation H</u> elp		User:	1111
			Password:	2222
	Terminal Monitor		Cubacilla Tasia	Pébbac (deure
			Subscribe Topic:	75WAC/down
			Subscribe Qos:	0
			Publish Topic:	%MAC/up
			Publish Qos:	0
Topics Collector (0) Scan Stop 🔍	- 98D863584C7A/dp Send→ ○Hex @Char Plain Text ∨ ☑Real Time S	end Clear Send	Tr	
	19-03-2020 16:30:39. 222222		~	Confirm Cancel
			DHCP:	Enable 💌
			Eth Wan:	Disable  Confirm
			, <b>-</b>	LAN Separate
	Comm Status CTS DSR RING RLSD (CD) CTS Hol	d DSR Hold RLSD	Hol 2	F-Set Upd
	Ready	Tx 145		

## 5.8. Firmware Upgrade

Firmware download address:

http://www.hi-flying.com/index.php?route=download/category&path=1\_3

## • Webpage Local Upgrade:

PC connect to device ,login with device IP(10.10.100.254 or STA IP got from router)

f status	Others change the device other settings	
SYSTEM SETTINGS	Backup/Restore Configuration	Helper
> SERIAL PORT SETTINGS	Backup Backup	Backup/Restore Configuration
COMMUNICATION SETTINGS	Restore + Choose File	
	Upgrade	
↔ ADVANCED SETTINGS ◀	Firmware + Choose File	
⊕ OTHERS	Factory Settings	
There is enother internal a	Factory Settings	(automal config webpage

There is another internal webpage for upgrade the firmware and webpage (external config webpage as above, this source code is open at our website for customer to chagne). Login with IP/hide.



## • IOTService Remote Upgrade:

Refer to IOTService doc for remote upgrade.

# 5.9. Restore to Factory Setting

If device works in STA mode and not yet connect to router AP, do the following operation to recover and reconfig.

## • UART Cli command to reload

✓ Serial-COM4 ×	:				
EPORT>-COM4 Show Restart ScriptCrc EPORT>rekiad	SYS Reload Exit	UART FwUpgrade	SOCK Debug	DATA CfgVer	
EPORT>Reload					

## nReload button to restore to factory setting.

nReload Pin (Button) function:

- 1. After module is powered up, short press this button (0.2< "Low" <1.5s) and loose to make the module go into "<u>Smartl\_ink" config</u> mode, waiting for APP to set password and other information. (See Appendix to download SmartLink APP).
- 2. After module is powered up, long press this button ("Low" > 4s) and loose to make the module recover to factory setting...

## 5.10. More Application Case

See following for more.

http://www.hi-flying.com/download-center-1/application-notes-1/download-item-industry-productsapplication-manual-20180415

# **APPENDIX A:REFERENCES**

# A.1. Test Tools

IOTService Configure Software: http://www.hi-flying.com/index.php?route=download/category&path=1\_4

# A.2. Smartlink V8

http://www.hi-flying.com/download-center-1/applications-1/download-item-smartlink-v8