User Manual and Test Guide

IOTService Tool

Update List 2.4.24:

1、Add HF6508, HF6408, HF6208 Type IO test tools

🔝 I.O.T Service					- 🗆 X
<u>M</u> anagement (M) Setting (C) Help (H)					* ^注 中文
Serial Config	atus 🕞 VirPat	h 10 IO Ctrl		(Disconnected
SN DevType MAC Address HostName	IP	Position	VirPath	Status	SW Ver

CONTENT

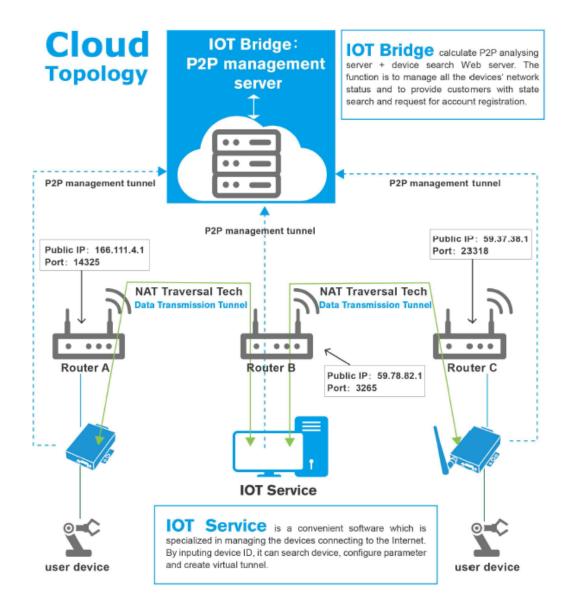
1.		TRODUCTION	
2. 3.		STALLATION	
5.		Device Connection	
	3.2. Serial Port	Configuration	9
	3.3.1. Serial po	ort tool:SecureCRT	9
	3.3.2. Serial Pa	arameter Configuration	10
4.	IOTSERVICE IN	TRODUCTION	11
	4.1. Main Page	Introduction	11
	4.2. Device Sta	tus Interface	16
	4.3. Edit Page.		17
	4.4. Test CASE		19
	4.4.1. EVK Tes	t Topology	19
	4.4.2. TCP Ser	ver Test	19
	4.4.3. TCP Clie	ent Test	21
	4.4.4. TCP Clie	ent Connect to Remote Test Server	22
	4.5. VIRTUAL F	Path Function	24
	4.5.1. Virtual C	om Local Network Communication	24
	4.5.2. Virtual C	OM Remote Communication	27
	4.5.3. Virtual T	hrough Local Communication	29
	4.5.4. Virtual T	hrough Remote Communication	31
	4.6. D2D Funct	ion	
5.	IOTBridge ALAR	M function	34

	5.1.	Set IOTBridge Parameters	.34
	5.2.	Set Mail Information	.34
6.	IOTB	ridge Cloud	.35
7.	OTA	Upgrade	.39

1. IOTSERVICE INTRODUCTION

IOTService is a management tools for our serial server devices. Add the feature of our IOTBridge cloud for remote device setting and data transfer.

IOTBridge cloud use UDP/P2P/NAT to make the IOTService software remote setting and control devices. The detailed structure is as following picture.



Scenario

- Virtual Tunnel: TCP/UDP after NAT Traversal can be recognized as a COM. Third-party can communicate with user devices with virtual com, which called virtual tunnel.
- Transparent Transmission Tunnel: When TCP/UDP is experienced with NAT Traversal, IOTService will create a Socket port number. Third-party software can communicate with this Socket directly, which called virtual tunnel.

IOTBridge website(<u>http://bridge.iotworkshop.com</u>) can see all the user device, to check its status and config parameters.

IOTBRIDGE	I.O.T Bridge										kyo4229 Eng
Home	a Device Manag	e									My Device System Dev
My UserID	HostName	HostName		Mac	Mac		Module	Туре	ModuleType		Query
User Manage	User ID	User ID		Version	Version		Protocol				
Device Manage	Wan Ip	Wan Ip		State	Unlimited						
Firmware Manage	Number	HostName	Mac	ModuleType	Wan Ip	User ID		Version	Protocol	State	Operation
I.O.T Service	1	Eport-HF2211	F0FE6B536CF8	HF2211	58.33.115.200	91459f09-6c4d-11e7-b9f2-c58c5	i9966d1f	1.34.04	2	Offline	View Config
My Info 🗸 🗸	2	Eport-EP20	F0FE682148D6	EP20	58.33.115.200	91459f09-6c4d-11e7-b9f2-c58c5	i9966d1f	1.34.7_PuZh	ong 2	Offline	View Config
	3	Eport-HF8104W	F0FE6BE05808	HF8104W	58.33.115.200	91459f09-6c4d-11e7-b9f2-c58c5	i9966d1f	1.30.13	2	Online	View Config
Exit	4	Eport-HF8104	F0FE6BE04D1C	HF8104	36.113.163.181	91459f09-6c4d-11e7-b9f2-c58c5	i9966d1f	1.61.6	2	Offline	View Config
	5	Eport-HF5111B	ACCF23202222	HF5111B	58.33.115.200	91459f09-6c4d-11e7-b9f2-c58c5	i9966d1f	1.34.3	2	Offline	View Config
	6	ADB	262040056110	G43	101.84.130.250	91459f09-6c4d-11e7-b9f2-c58c5	i9966d1f	1.1.10	2	Offline	View Config
	7	Eport-HF2411	262040285206	HF2411	117.132.196.126	91459f09-6c4d-11e7-b9f2-c58c5	i9966d1f	1.0.50	2	Online	View Config
	8	Eport-HF2411	262040287111	HF2411	221.178.125.231	91459f09-6c4d-11e7-b9f2-c58c5	i9966d1f	1.0.50	2	Online	View Config
	9	Eport-HF2411	262040591793	HE2411	221.178.126.217	91459f09-6c4d-11e7-b9f2-c58c5	i9966d1f	1.0.50	2	Online	View Config
	10	Eport-HF2411	262040074444	HF2411	117.132.194.16	91459f09-6c4d-11e7-b9f2-c58c5	i9966d1f	1.1.8b	2	Online	View Config

IOTService is tools for config HF IOT Device. (Except HF2111, it use IOTSerial Tools) create virtual com, remote monitor device, OTA upgrade function. It is used for the following product

Ethernet IOT	🛞 WI-FI IOT	(m) GPRS IOT	4G IOT
FreeRTOS Embedded Network Device [Eport-E20-PIN] [Eport-E20]	Wi-Fi Serial Module [Wport-W20] [Wport-W10]	GPRS Serial Server	4G Serial Server [HF2411]
[Eport-E30]	Wi-Fi Serial Server [HF2211] [DTU-H100]		4G+WIFI+GPS Serial Server Device [HF2421G]
Linux Embedded Network Device [Eport Pro-EP20-PIN] [Eport Pro-EP20]	Multiple Port Wi-Fi Serial Server [HF2221]		4G+WIFI Serial Server [HF2421]
Ethernet Serial Server [HF5111A] [HF5111B]	Wifi router (rail) [HF8104W]		Rail 4G Router [HF8102] [HF8104]
Multiple Port Ethernet Serial Server HF5142A] [HF5142B]			

4G_LTE [Elfin-EG4X] GPRS [Elfin-EG1X] Wi-Fi [Elfin-EW1X] Ethernet [Elfin-EE1X]

NB Elfin IOT

(IO) IO Control

Wi-Fi IO [HF6208] Ethernet IO [HF6508]

2. IOTSERVICE INSTALLATION

Step 1:Download the IOTService tool as the following link. <u>http://www.hi-flying.com/download-center-1/applications-1/download-item-iotservice</u> Step 2:Install IOTService tool according to the PC OS(x64 for 64 bit Windows OS, x86 for 32 bit Windows OS). **If already installed old version, please uninstall and reboot, then install this new version.**

控制面板主页	查看有关计算机的基	本信息		1
💡 设备管理器	Windows 版本			
💡 远程设置	Windows 10 企业版			
👎 系统保护	© 2016 Microsoft Co	orporation。保留所有权	Wind	dows10
👎 高级系统设置	利。			
	系统 处理器: 已安装的内存(RAM): 系统类型: 笔和触摸:	Intel(R) Core(TM) i5-63 12.0 GB (11.8 GB 可用) 64 位操作系统,基于 x6 没有可用于此显示器的笔	4 的处理器	iHz
👸 IOTServiceSetupX	54_2.3.07.msi	2018/12/7 16:45	Windows Install	111,272 KB
🐻 IOTServiceSetupX	36_2.3.07.msi	2018/12/7 16:51	Windows Install	111,022 KB

Step 3:After installation, there is a folder for IOTService under the installation path.

(C:) > Hi-Flying > IOTService >			
名称	修改日期	类型	大小
IOTService	2019-10-29 10:30	文件夹	
IOTService_V2	2019-10-29 10:30	文件夹	
, jre	2019-10-29 10:30	文件夹	
📊 upgrade	2019-10-28 17:59	文件夹	
AppIOMain.bat	2019-10-28 17:04	Windows 批处理	1 KB
IOTService.bat	2019-10-28 17:04	Windows 批处理	1 KB
🔠 IOTService.exe	2019-10-28 17:04	应用程序	1,850 KB
IOTService.vbs	2019-10-28 17:05	VBScript Script	1 KB
🕌 ISJDK32bit.jar	2019-10-28 17:05	Executable Jar File	1 KB
🕌 SDKCheck.jar	2019-10-28 17:04	Executable Jar File	2 KB
💿 Upgrade.bat	2019-10-28 17:04	Windows 批处理	1 KB
🚸 Upgrade.exe	2019-10-28 17:05	应用程序	10 KB
📓 Upgrade.vbs	2019-10-28 17:04	VBScript Script	1 KB

Click IOTService.exe to start the tool after installation.

Step 4: The tool will show the following UI.

🔛 I.O.T Service					– 🗆 X
Management (M) Setting (C) Help (H)					* 中文
Serial Config Config S	tatus 関 VirPat	th			Connected
SN DevType MAC Address HostName	IP	Position	VirPath	Status	SW Ver
1 EE10 ACCF23201236 Eport-EE10	192.168.83.107	Local		Online	1.32.4

Step 5:Enable Auto Start when needed. (May fail in some OS, pleae google to find soluction about make program auto start)



🔡 I.O.T Service						- 🗆 X
<u>M</u> anagement (M)	Setting (C) Help (H)	_				* 中文
Serial Conf	Deladit Setting Cirib	5 🔛 VirPat	th			Connected
SN DevType MA		IP	Position	VirPath	Status	SW Ver
1 EE10 ACC	BroadCast Scan	2.168.83.107	Local		Online	1.32.4
	Firmware Setting					
	🗆 Auto Start					

Notes:

This tools need JRE environment and will automatically install it. Run following IOTService.bat to send us the log information if encounter tools problem, note this startup method does not support virtual com function.

:) > Hi-Flying > IOTService					~ Ū
	~	修改日期	类型	大小	
IOTService		2018/12/6 15:26	文件夹		
IOTService_V2		2018/12/6 15:26	文件夹		
jre		2018/12/6 15:26	文件夹		
upgrade		2018/12/6 16:09	文件夹		
💿 AppIOMain.bat		2018/12/4 14:01	Windows 批处理	1 KB	_
IOTService.bat		2018/12/4 14:01	Windows 批处理	1 KB	1
🛃 IOTService.exe		2018/12/4 14:01	应用程序	1,840 KB	-

This tools some function need administrator permission and close firewall, suggest

to do as following.

規	快捷方式	兼容性	安全	详细信息	以前的版	*
	比程序不能在 超進解答。	这个版本	的 Win	dows 上正 ^g	常工作,请望	戲试运行兼
	运行兼罪	習性疑难角	解答			
如何	手动选择兼容	胜设置?				
兼容	課模式					
	以兼容模式這	行这个	呈序:			
W	indows 8				4	
(2)	ŧ					
	简化的颜色植	読式				
8	位(256)色		Y			
	用 640 x 48	0 屏幕分	辨率运行	Ŧ		
	禁用全屏优化	Ł				
	以管理员身份	法行此和	野			
	更改	高 DPI i	受置			
	令更改所	有用户的	设置			
				E		

🔐 自定义设置	
$\leftarrow \rightarrow \cdot \cdot \uparrow$	🔗 > 控制面板 > 所有控制面板项 > Windows Defender 防火墙 > 自定义设置
	自定义各类网络的设置
	你可以修改使用的每种类型的网络的防火墙设置。
	专用网络设置
	🥏 🛛 启用 Windows Defender 防火墙
	□ 阻止所有传入连接,包括位于允许应用列表中的应用
	☑ Windows Defender 防火墙阻止新应用时通知我
	🚫 💿 关闭 Windows Defender 防火墙(不推荐)
	公用网络设置
	💎 🔿 启用 Windows Defender 防火墙
	□ 阻止所有传入连接,包括位于允许应用列表中的应用
	☑ Windows Defender 防火墙阻止新应用时通知我
	● 关闭 Windows Defender 防火墙(不推荐)

If using virtual Network function, install the following driver. This function only support for HF9624, other products do not need to install this.

E (E:) > hiflying > DTU_Product > 3_IOTSe	lying > DTU_Product > 3_IOTService > IOTService2.4.03_20191029										
へ 名称	修改日期	类型	大小								
🛃 IOTServiceSetupX64_2.4.03.msi	2019-10-28 17:05	Windows Install	126,783 KB								
📳 IOTServiceSetupX86 2.4.03.msi	2019-10-28 17:09	2019-10-28 17:09 Windows Install									
📑 Virtual Network Driver.zip	2019-10-10 13:22	209 KB									

3. PRODUCT CONNECTION

3.1. Elfin-EE10 Device Connection

Connect the EE10 Ethernet to router LAN, and connect RS232 to PC.



3.2. Serial Port Configuration

3.3.1. Serial port tool:SecureCRT

Download address:

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

Unzip the file and find the following icon,



Open and click quick

connect button 🔀 to create connection.

1	not con	nected	- SecureCR	т								x
Fil	e Edit	View	Options	Transfer	Script	Tools	Help					
5	3 🕄 C	333	8) Pa f	ه کې	ş 🖨	6 2	š 1	8	F-B			
	Qu	iick Coi	nnect									×
												*

3.3.2. Serial Parameter Configuration

Protocol:Serial

Port:Check PC device management, port number should be shown like this figure

		4 🚏 端口	(COM 和 LPT)	
		- 👎 i	甬信端口 (COM1)	
Baud rate:11 Data bit:8	5200			
Parity check:	:None			
Stop bit:1				
Flow control	:NONE(Please	e remove "√"	in front of RTS/CTS)	
	Quick Connect			×
	Protocol: Port: Baud rate: Data bits: Parity: Stop bits:	Serial ▼ COM2 ▼ 115200 ▼ 8 ▼ None ▼ 1 ▼	Flow Control DTR/DSR RTS/CTS XON/XOFF	
	🔲 Show quick	connect on star	☑ Save session ☑ Open in a tab Connect Ca	ancel

4. IOTSERVICE INTRODUCTION

4.1. Main Page Introduction

When it starts, it will show the scanned products in the local area network

or remote device in user account. The scan service can be begun or stopped.

🔡 I.O.T Servic	e								×		
<u>M</u> anagement	Management (M) Setting (C) Help (H)										
Begin Service Ctrl-B Config Status Image: Config Connected Stop Service Ctrl-S Config Connected Connected											
Device Setting	Ctrl-E	dress	HostName	IP	Position	VirPath	Status	SW Ver			
Device Status	Ctrl-T	1236	Eport-EE10	192.168.83.107	Local		Online	1.32.4			
VirPath	Ctrl-K										
Exit	Ctrl-Q										

Check or set the selected device parameters(or double click the selected device)

🐏 LO T Service

🔝 I.O.T Servic	e								×	
<u>M</u> anagement (Management (M) Setting (C) Help (H)									
Begin Service	Ctrl-B									
Stop Service	Ctrl-S	₿, c	onfig 🔇 St	atus 🛛 🖓 VirPat	h			Connect	ed	
Device Setting	Ctrl-E	dress	HostName	IP	Position	VirPath	Status	SW Ver		
Device Status				192.168.83.107	Local		Online			
VirPath	Ctrl-K									
Exit	Ctrl-Q									

VirPath:Virtual serial setting and virtual throughput function. See examples for more detailed usage.

🔝 I.O.T Service						_	\times			
Management (M) Set	Management (M) Setting (C) Help (H)									
Begin Service Ctrl-B										
Stop Service Ctrl-S	Config 🔇 St	atus 📮 VirPatl	י			Connec	cted			
Device Setting Ctrl-E	dress HostName	IP	Position	VirPath	Status	SW Ver				
Device Status Ctrl-T	1236 Eport-EE10	192.168.83.107	Local		Online	1.32.4				
VirPath Ctrl-K										
Exit Ctrl-Q]									

Setting:Tool setting.

🔝 I.O.T Service						- 🗆 X
<u>M</u> anagement (M)	Setting (C) Help (H)					** 中文
Serial Cont	Software Setting Ctrl-M Default Setting Ctrl-D Add Device Ctrl-I	5 🔛 VirPa	th			Connected
SN DevType MA	BroadCast Scan	IP 2.168.83.107	Position Local	VirPath	Status Online	SW Ver 1.32.4
	Firmware Setting					
	🗆 Auto Start					

emote Access		Communication	
Remote Access Enable:	Enable 💌	VirPath UDP Port:	28987
Service Id:	I-e639-11e8-882b-3151a0887c4d	VCOM Parameter Synch:	Enable 💌
OTBridge Server Addr:	bridge.iotworkshop.com:49899	VCOM Frame Time (ms):	50
		Others	
Mail Alarm		Language:	English 💌
EMail Alarm Enable:	Disable 💌	Start up to Tray:	Disable 🔻
SMTP Address:		Auto Upgrade:	Disable 🔻
SMTP Port:			
EMail Account:		New Ver:	2.3.41
EMail Password:			Upgrade
EMail Send List (eg. a@a.cor	n;b@b.com):		

Remote Access Enable:Enable/Disable our remotely control function, IOTBridge server is used for P2P device management and data transfer if enable.

- Service Id: This id is used for IOTBridge to distinguish different user device. Recommend to write write User Id in device side, it will automatically bound device to account, otherwise, need manually bound. See IOTBridge chapter for details to get Service Id and User Id.
- IOTBridge Server Addr:Show IOTBridge server information.

 Communication:Virtual Path Communication relevant setting. Normally keep default.

- Email Alarm:Alarm when device offline.
- Others:Other settings.
 - Language:Chinese or English.
 - Start up to Tray:Minimize to pallets at startup
 - Auto Upgrade:Auto upgrade.
 - Upgrade:click to upgrade when tools have new version.
- Default Setting:Restore tool setting to default.

➡ HF 物联·改变生活

			4	HF	物联·改变生活
😸 I.O.T Service					x
Management (M) Setting (C) Help (H)	_				* 中文
Software Setting Ctrl-M Serial Conf Default Setting Ctrl-D	s 📮 VirPat	:h			Connected
SN DevType MA Add Device Ctrl-I 1 EE10 ACC BroadCast Scan Acc	IP 2.168.83.107	Position Local	VirPath	Status Online	
Firmware Setting	_	· · · · ·			
Auto Start					

Add Device:Add remote device under Service Id(The User Id should first be written via Cli SYS/UserID command), if IOTService locally scan find device, it will be added automatically.

🔝 I.O.T Service						- [
Management (M) Setting	C) Help (H)						× 中文
Serial Conf	are Setting Ctrl-M It Setting Ctrl-D	5 🕞 VirPat	th				Connected
SN DevType MA	Device Ctrl-I	IP	Position	VirPath	Status	SV	V Ver
1 EE10 ACCI Broad	dCast Scan	2.168.83.107	Local		Online	1.32.4	
Firmw	are Setting						
🗆 Auto	Start						
🔝 I.O.T Service							×
<u>M</u> anagement (M) Setting (C) Help (H) Add Device			×]		* 中文
Serial Config	F0FE6B111122	MAC Address		Delete Delete			Connected
SN DevType MAC Addres					Status Online		/ Ver
2 EE11 98D8635904D					Online		
			$\backslash \backslash$				
			-				
	MAC Addr FOR	E6B111122		Add			
			Confirm	Close			

■ BroadCast Scan:Send 255.255.255.255 broadcast packet to search device. This is useful when forgot device static IP. Ex, in subnet mask 255.255.255.0 device set to 192.168.84.XXX, but router is 192.168.83.XX, use this broadcast scan to search device and modify device IP to 192.168.83.XXX, then the device will show in the IOTService main page.

		e mani pe	ige.			
🔝 I.O.T Service						- 🗆 ×
<u>M</u> anagement (M)	Setting (C) Help (H)					* 中文
Serial Conf	Software Setting Ctrl-M Default Setting Ctrl-D Add Device Ctrl-I	5 🔛 VirPat	th			Connected
SN DevType MA	BroadCast Scan	IP	Position	VirPath	Status	SW Ver
1 EE10 ACC	broadcast scan	2.168.83.107	Local		Online	1.32.4
	Firmware Setting					
	🗆 Auto Start					
11		_				

🔛 I.O.	.T Service							– 🗆 X
<u>M</u> anag	gement (M)	Setting (C) He	elp (H)					中文
Ø) Serial Con	fig (the Config	g 🕼 St	atus 🕞	VirPat	h		(Ph) Connected
\vdash							🔛 Fast Setting	×
SN D			ostName	IP		Positio	MAC Addr	ACCF23201236
	🔛 🔡 🔡	Cast Scan						
	SN	DevType	MAC	Address		IP	DHCP:	Disable
	1	EE10	ACCF2320		192.1	68.84.107	IP Address:	192.168.84.107 192. 168. 83. 107
							Mask:	255.255.255.0
							Gate Way:	10.10.100.254 192. 168. 83. 1
							DNS:	223.5.5.5
								1
							-	Confirm Cancel

♣ HF 物联·改变生活

■ Scan List: If there is multiple router connected, PC and device may not in the same LAN, use this function for single scan.

🔝 I.O.T Service						-	\times
<u>M</u> anagement (M)	Setting (C) Help (H)	_				*)	中文
Serial Conf	Software Setting Ctrl-M Default Setting Ctrl-D Add Device Ctrl-I	s 🔛 VirPa	th			Conne	ected
SN DevType MA	BroadCast Scan	IP	Position	VirPath	Status	SW Ver	
1 111111 ACC		3.104.210.92	Remote		Online	1.34.8	
2 HF9624 ACC	Firmware Setting	3.104.210.92	Remote		Online	1.63.1e	
3 HF2411 2620	ScanList Setting	3.104.254.51	Remote		Offline	1.2.2i	
4 HF2111A 3000	🗆 Auto Start	7.136.8.108	Remote		Offline	2.0.2d KAS 4	
😭 I.O.T Service						_	\times
<u>M</u> anagement (M)	Setting (C) Help (H)					*)	中文
Serial Confi	g 😭 config ScanList Setting	(B) VirDa	th		×	Conn	ected
SN DevType MA	-23				H	SW Ver 1.34.8	
2 HF9624 ACCF 3 HF2411 2620	-				H	1.63.1e 1.2.2i	_
4 HF2111A 3000		3.3.50			H	2.0.2d KAS 4	
	e.g. 192.168.2.1~10.192.	169.2.10					

Firware Setting:OTA upgrade device, more details in the following chapter.

T.O.T Service								_		X
<u>M</u> anagement (M)	Setting (C)	Help (H)		_					*)	中文
Serial Conf	Software Default S Add Dev		trl-M trl-D trl-I	5 🔛 VirPat	:h			P	Conne	ected
SN DevType MA	BroadCa		tri-i	IP 2 168.83.107	Position Local	VirPat	h Status Online		N Ver	
	Firmware	e Setting								
	🗆 Auto Sta	rt								

Serial Config:Config device via UART, only support AT command device(G10, G11, G12, EG10, EG11, EG40, EG41, G43, HF2111A, HF2411). Cli command device is not supported to use this.



🔝 I.O.T Service		- 🗆 X
Management (M) Setting (C) Help (H)		* 中文
Serial Config		Connected
SN DevType MAC Address HostName IP Position	VirPath	Status SW Ver
1 EE10 ACCF23201236 Eport-EE10 192.168.83.107 Local	1111/Connect	Online 1.32.4
🔯 I.O.T Service Serial		- 🗆 X
Image: Constraint of the second sec	Read Device	e Write Device Batch Set
PC Serial Para COM: COM3 ▼ Baudrate: 115200 ▼ Data Bits: 8 ▼ Parity: NONE ▼ Stop Bits: 1 ▼		
DUT Para		
UART Para		
UART No: Baudrate: 57600 Tota Bits: 8 Parity: NONE T	Stop Bits: 1 💌	
Flow Control: Disable VART Protocol: NONE V		
HeartBeat Time: HeartBeat Serial:		
SOCKET		
SOCKET Name: A 💌 Protocol: OFF 💌 Rout:	-	
Server Addr: Server Port:		
Connect Mode: Always Time:		
HeartBeat Time: HeartBeat Serial:		
Regist Mode: Visable Regist Code:		
Data Tag: 🖉 Data Tag Code:		
SIM Para		
IMEI: ICCID:		
Status: RSSI:	Refresh	
Others		
ModuleSN: Welcome: HostName:		
APN: APN User: APN Passw		
	Detail	
		Clear Send
VirPath:The virtual channel, virtual serial	port information	h. Show status.
1.O.T Service		- X
Management (M) Setting (C) Help (H)		* ^注 中文
Serial Config (Config (Status) VirPath		Connected
CNI Deutine MAC Address Unething ID	V. D-th	Chature CIMI Mare
SN DevType MAC Address HostName IP Position 1 EE10 ACCF23201236 Eport-EE10 192.168.83.107 Local 1	VirPath 1111/Connect	Status SW Ver Online 1.32.4
VirPath List	×	
Vircom:1111 Rout:uart,Connected	_	
ACCF23201236 COM1		
RX:0,TX:0		
Connected:the status of connecting to or	ur IOTBridge serv	ver.
🔛 I.O.T Service		– 🗆 X
<u>M</u> anagement (M) Setting (C) Help (H)		<u>*</u> 中文
Serial Config Config Status 🖓 VirPath		Connected
SN DevType MAC Address HostName IP Position	VirPath	Status SW Ver
1 EE10 ACCF23201236 Eport-EE10 192.168.83.107 Local	1111/Connect	Online 1.32.4

 DeviceType:device name. This name can be changed by cli command (SYS/CustomerId)

- Position:Show device position.
- VirPath:Show virtual path status.

🔛 I.O.T Service				-		
<u>M</u> anagement (M) Setting (C) Help (H)					<mark>*</mark> 注 中3	文
Serial Config 🔞 Config 🔇 S	tatus 関 VirPat	h		(Connected	
SN DevType MAC Address HostName	IP	Position	VirPath	Status	SW Ver	
1 EE10 ACCF23201236 Eport-EE10	192.168.83.107	Local	1111/Connect	Online 1.3	2.4	

4.2. Device Status Interface

Device Status:Indicates the device information, including software version, network, serial port and socket communication status.

- Reload button:Restore parameter to the factory parameter.
- Restart button:Restart product
- Edit button:Enter into parameter setting interface

		SOCKET	
HostName:	Eport-EE10	SOCKET Name:	1111 💌
DHCP:	Disable	Protocol:	UDP-CLIENT
IP Address:	192.168.83.107	Status:	Disconnect
Mask:	255.255.255.0	Server IP:	192.168.83.106
Gate Way:	192.168.83.1	Recv Bytes: 0	Recv Frames: 0
MAC Address:	ACCF23201236	Send Bytes: 0	Send Frames: 0
2.4 UART VART VART No:		Fail Bytes: 0	Fail Frames: 0
:57 Recv Bytes: 0 144 Send Bytes: 0	Recv Frames: 0 Send Frames: 0	Reload	Edit
	E10 UART UART UART UART UART No: Config: 115200,8,1 Recv Bytes: 0	DHCP: Disable IP Address: 192.168.83.107 Mask: 255.255.255.0 Gate Way: 192.168.83.1 MAC Address: ACCF23201236 UART UART UART No: UART 1 Config: 115200,8,1,NONE :57 Recv Bytes: 0 Recv Frames: 0 Send Bytes: 0 Send Frames: 0	DHCP: Disable IP Address: 192.168.83.107 Mask: 255.255.0 Gate Way: 192.168.83.1 MAC Address: ACCF23201236 UART Send Bytes: 0 124 Config: 115200,8,1,NONE 152 Recv Bytes: 0 Send Bytes: 0 Send Frames: 0

4.3. Edit Page

Device Setting			
System		SOCKET	
User:	admin	SOCKET Name:	1111 💌
Password:	admin	Protocol:	UDP-CLIENT
HostName:	Eport-EE10	Server Addr:	192.168.83.106
DHCP:	Disable 💌	Server Port:	28987
IP Address:	192.168.83.107	Local Port:	
Mask:	255.255.255.0	Keep Alive:	
Gate Way:	223.5.5.5	Time Out:	
		Rout:	uart 💌
UART No:	UART 1	Buffer Size:	1400
Baudrate:	115200 💌	New SOCKET	SOCKET Del
Data Bits:	8 💌	·	
Stop Bits:	1	Confirm	Cancel
Parity:	NONE	Export	VirPath
Flow Control:	Disable 💌	Import	Detail
Buffer Size:	512	F-Set Update	F-Set Clear

- New SOCKET: Create new SOCKET.
- SOCKET Del: Delete current SOCKET
- Confirm: Confirm modified parameter
- Cancel: Exit edit page
- Export: Export current config file. This file can be used to config another device.
- Import: Import config file.
- VirPath: Set virtual path function, the following chapter will describe this function.
- Detail: More advanced parameter settings.

🎡 Setup Detail				:
System	UART		SOCKET	
Telnet: En	uable VART No:	UART 1 💌	SOCKET Name:	1111
Telnet Port:	23 UART Protocol	NONE 🔻	Security:	Disable 💌
Telnet Echo: En	able 🔻 Frame Length:		Security Key:	
Embedded Web: En	Frame Time:			
Web Port:	Tag Enable:	Disable 💌	Connect Mode:	Always
	sable		Stop Serial:	
	Tag End:		HeartBeat:	Disable v
NTP Server:	SW Flow Contr	ol: Disable 🔻	HeartBeat Time:	
NTP Port:	123	11	HeartBeat Serial:	
NTP GMT: 8			Regist Mode:	Disable
	Xoff:	13	Regist Code:	
WiFi Roaming	Cli GetIn:	Serial-String	Max Client NumMax	
WiFi Roaming:	isable Serial-String:	+++		
Scan RSSI Threshold:	50 Cli Wait Time:	300		
Connect RSSI Threshold:	70 Gap Time:	50		
Edit Script	Confirm	Cancel		

• Edit Script: HIS script function. See following for more detail.

http://www.hi-flying.com/download-center-1/application-notes-1/download-item-his-script

Load Script
Update Script
Delete Script
Read Script Para
Add Script Para
Confirm
Close

• F-Set Update: Set the current parameters as factory setting, when do reload operation, restore to this saved setting.

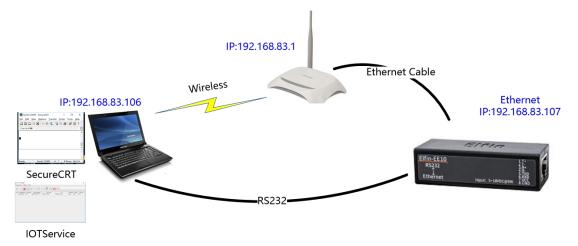
• F-Set Clear: Clear the factory setting, when do reload operation, restore to the default factory setting.

Notes:.

Some device has hardware protect DIP switch(HF5111A/HF5111B/HF2211), when the protect DIP switch is set to "on", then some setting of the tools is forbidden.

4.4. Test CASE

4.4.1. EVK Test Topology



4.4.2. TCP Server Test

Step 1: Open TCP&UDP test tool and build TCP connection as following steps.

- Products provides with a built TCP server (Port 8899)
- TCP&UDP test tool can be downloaded from website:
 - <u>http://www.hi-flying.com/index.php?route=download/category&</u> path=1_4
- DestIP: Destination IP address
- Port: Destination Port

🖉 TCP&UDP-Debug	_	×
🗄 CreateConnn 🗞 CreateServer 🐰 StartServer 🛞 🐼 😒 Connect 😒 🌺 DisconnAll 💥 DeleteConn 🎇 🧕	- 🥫 📮	
Operate(Q) View(V) Windows(W) Help(H) Language		
Properties # X Client Mode Server Mode Create Connection Type: TCP DestIP: 192.168.83.107 Port: 8899 LocalPort © Auto AutoConn: Eve Send When Conn: Eve ms		
Create Cancel		

Step 2: Click Connect to build TCP connection.

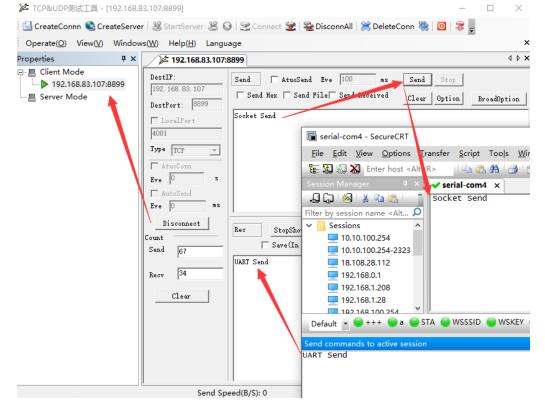
■ After build successfully, the left arrow will turn to green.

»≏ TCP&UDP)	则认工具 - [192.168.8	33.107	:8899]		
실 CreateCon	inn 🔕 Cre	eateServe	r 8	StartServe	r 8 6	3
Operate(<u>O</u>)	View(<u>V</u>)	Window	vs(<u>W</u>)	Help(<u>H</u>)	Langu	ag
Properties		Ψ×		🖄 192.168	.83.107:	889
□	68.83.107:	8899	192 Des 400 Typ Eve	e TCP AtuoConn 0 AutoSend		S

Step 3: Open the serial port as following parameters (115200 baud rate default)

- Connection	Serial O	ptions		
-Logon Scripts Serial	Port:	COM5	~	Flow Control
- Terminal	Baud rate:	115200	~	DTR/DSR
Modes	Data bits:	8	\sim	<u>R</u> TS/CTS
-Mapped Keys	Parity:	None	~	
Advanced	Stop bits:	1	4	

Step 4: Transmit data between TCP tool and serial port tool.



4.4.3. TCP Client Test

Step 1: Open TCP&UDP test tool and build TCP connection as following steps.

- Local IP: PC IP address. Do not select it, tool will automatically recognize PC IP.
- Local Port: TCP Server port number

🔀 TCP&UDP测试工具		—	\times
🔄 CreateConnn 🔌 CreateServ	er 🐰 StartServer 🗏 😡 😤 Connect 🗝 🙅 DisconnAll 💥 DeleteConn 🎇 🔯	₴ 📮	
Operate(<u>O</u>) View(<u>V</u>) Windo	ws(<u>W</u>) Help(<u>H</u>) Language		
Properties 4 × Client Mode Server Mode	Create Server X Local I 10.100.103 LocalPort 9999 Eve 30 (s) Disconnect All Create Cancel		

Step 2: Click StartServer to launch PC TCP Server function

After created successfully, the icon has the following changes.

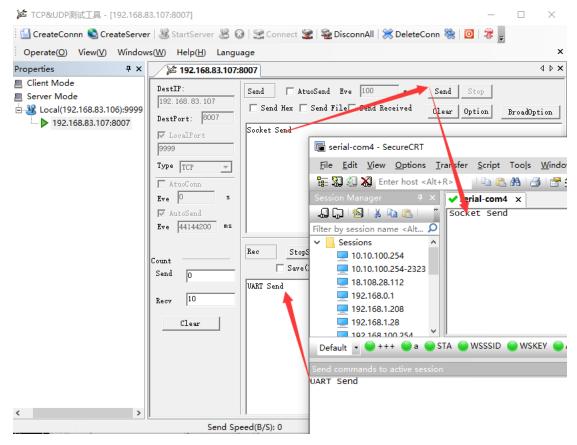


Step 3:Open IOTService tool and create socket to connect tool as following step.

- Socket Name: Socket name can be set randomly (differ from other sockets), maximum 5 sockets.
- Protocol: Select TCP-Client
- Server Addr: Server IP address, fill in the above PC IP
- Server Port: Server port number, fill in the above PC port (9999)

Device Setting			×	Mew SOCKET			
System		SOCKET		Basic		Detail	
User:	admin	SOCKET Name:	netp 💌	SOCKET Name:	client	Security:	Disable 🔻
Password:	admin	Protocol:	TCP-SERVER			Security Key:	
HostName:	Eport-EE10	Server Addr:	47.103.4.244	Protocol:	TCP-CLIENT	Connect Mode:	Always
DHCP:	Disable 🔻	Server Port:	80	Server Addr:	192.168.83.106	Stop Serial:	
IP Address: 19	92.168.83.107	Local Port:	889	Server Port:	9999	HeartBeat:	Disable
	255.255.255.0	Keep Alive:	60	Local Port:	0	HeartBeat Time:	0
Gate Way:	192.168.83.1	Time Out:	0	Keep Alive:	60	NeartBeat Serial:	
DNS:	223.5.5.5	Rout:	uart 🔻	Time Out:	0	Regist Mode:	Link
UART		Buffer Size:	512	Rout:	uart 💌	Regist Code:	
UART No:	IART 1 💌	Buffer Size:	512	Buffer Size:	512	Max Client Num:	5
Baudrate: 1	15200 💌	New SOCKET	SOCKET Del	builer size.	512		
Data Bits: 8	-						Confirm Cancel
Stop Bits: 1	-	Confirm	Cancer				
Parity:		Export	VirPath				
-	isable 🔻	Import	Detail				
Buffer Size:	512	F-Set Update	F-Set Clear				

Step 4: Transmit data between TCP tool and serial port tool



4.4.4. TCP Client Connect to Remote Test Server

Step 1: Open IOTService and create TCP client socket, HF test server: test.server.iotworkshop.com,TCP port: 404325, UDP port: 40431

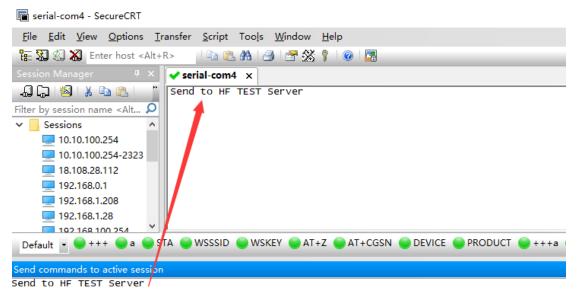


Device Setting			×	1 New SOC	KET					
System		SOCKET		Basic				Detail		
User:	admin	SOCKET Name:	netp 🔻	SOCKET N	ame:	client		Security:	Disable	-
Password:	admin	Protocol:	TCP-SERVER 💌					Security Key:		
HostName:	Eport-EE10	Server Addr:		Protocol:		TCP-CLIENT		Connect Mode:	Always	•
DHCP:	Disable 💌	Server Port:	80	Server Ad	dr: te	st.server.iotworks	hop.com	Stop Serial:		
IP Address:	192.168.83.107	Local Port:	887.0	Server Por	t:		40432	HeartBeat:	Disable	•
Mask:	255.255.255.0	Keep Alive:	60	Local Port	[0	HeartBeat Time:	0	
Gate Way:	192.168.83.1	Time Out:	ol	Keep Alive	. [60	AeartBeat Serial:	·	
DNS:	223.5.5.5			Time Out:	ſ		0	Regist Mode:	Link	•
UART		Rout:		Rout:		uart	•			
UART No:	UART 1	Buffer Size:	512			uart		Regist Code:		
Baudrate:	115200 💌	New SOCKET /	SOCKET Del	Buffer Size	÷ ا.		512	Max Client Num:		
Data Bits:	8								Confirm	Cancel
		Confirm	Cancer							currect
Stop Bits:		Export	VirPath							
Parity:	NONE	Import	Detail							
Flow Control:	Disable 💌									
Buffer Size:	512	F-Set Update	F-Set Clear							

Step 2: Device status page to confirm if server is connected

Device Status					
System		Network		SOCKET	
		HostName:	Eport-EE10	SOCKET Name:	TCP client 💌
		DHCP:	Disable	Protocol:	TCP-CLIEN
Elfin-EE10	-	IP Address:	192.168.83.107	Status:	Connected
R\$232 Ethernet Hout: 5-18V00		Mask:	255.255.255.0	Server IP:	115.29.164.59
	ACHE	Gate Way:	192.168.83.1	Recv Bytes: 0	Recv Frames: 0
		MAC Address:	ACCF23201236	Send Bytes: 10	Send Frames: 1
Product ID:	EE10	UART		Fail Bytes: 0	Fail Frames: 0
Software Version:	1.32.4	UART No:	UART 1	-	
RTC Time: N	ITP Disabled	Config: 115200,8,1,NC	DNE		
Up Time: 0	-Day 1:33:33	Recv Bytes: 44	Recy Frames: 7		
Total Free Memory:	18352	Send Bytes: 67	Send Frames: 8	Reload	Edit
Max Block Size:	5356	Fail Bytes: 0	Fail Frames: 0	Restart	

Step 3: Serial port sends "Send to HF TEST Server" and the server will respond with the same data. The UART tools shows the server feedback packet.

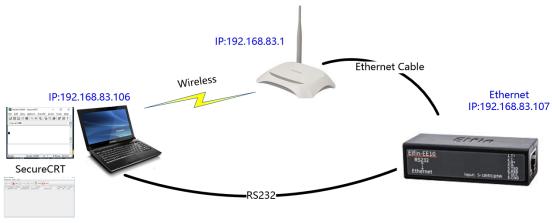


4.5. VIRTUAL Path Function

The virtual path uses the serial port or the network way to transfer the data locally or remotely. The two methods are introduced.

4.5.1. Virtual Com Local Network Communication

Virtual com is used for communication from PC COM to device COM. Use the following topology for test.



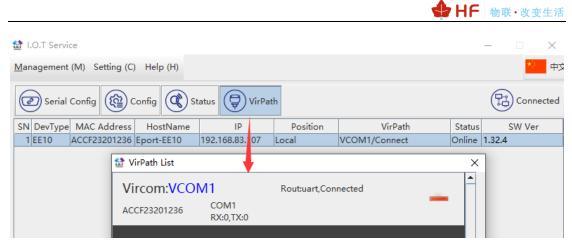
IOTService

Step 1: Open IOTService Tool and create virtual com as follows:

- Add Vpath: Add the virtual path.
- VCOM Name: Virtual COM name. it should be unique.
- Serial Port: Virtual COM serial number.
- Rout: The data transfer route after receiving from virtual COM, usually is sent to hardware uart, but can also be set to other created socket.

😫 VirPath List 🛛 🕹	🔯 Device Setting	>
≜	System	-
	User: admin SOCKET Name: TCP client 🔻	
tir VirPath Edit X	Password: admin Protocol: TCP-CLIENT V	
Vircom VirThrough VPath D2D	HostName: Eport-EE10 Server Addr: test.server.iotworkshop	
VCoM Name: VCOM1	DHCP: Disable Server Port: 40432	
Serial Por	IP Address: 192.168.83.107 Local Port: 0	
	Mask: 255.255.255.0 Keep Alive: 60	
Rout:	Gate Way: 192.168.83.1	
	DNS: 223.5.5.5 Rout: uart	
	UART	
Confirm Cancel	UART No: UART 1 V	
	Baudrate: 9600 V New SOCKET SOCKET Del	
	Data Bits: 8	
	Stop Bits: 1 Confirm Cancel	
Add VPath Close	Parity: NONE 🗸 Export VirPath]
	Flow Control: Disable 💌 Import Detail	
	Buffer Size: 512 F-Set Update F-Set Clear	

Step 2: Check status in the VirPath menu. It shows connection status and data transfer status. Click the red button to delete the virtual COM.



The virtual COM will occupy one Socket resource.

🔡 Device Setting	I		×
System		SOCKET	
User:	admin	SOCKET Name:	VCOM1
Password:	admin	Protocol:	VCOM1
HostName:	Eport-EE10	Server Addr:	TCP client netp
DHCP:	Disable 💌	Server Port:	28987
IP Address:	192.168.83.107	Local Port:	9966
Mask:	255.255.255.0	Keep Alive:	60
Gate Way:	192.168.83.1	Time Out:	0
DNS:	223.5.5.5	Rout:	uart
UART			
UART No:	UART 1	Buffer Size:	1400
Baudrate:	9600 💌	New SOCKET	SOCKET Del

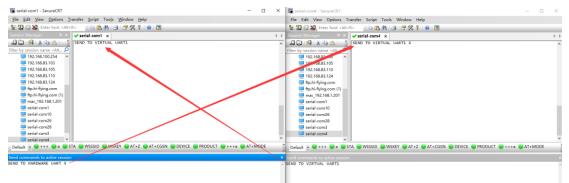
Step 3: Open serial port tool and set virtual port baud rate.

serial-com1 - SecureCRT	and a color to be a	e			_	
File Edit View Options T						
🔚 🕅 🎣 🕷 Enter host <alt+< th=""><th>-R> 🗎 🖹 👫 🎒</th><th>🚰 🕸 📍 🔇</th><th>) 🔚</th><th></th><th></th><th></th></alt+<>	-R> 🗎 🖹 👫 🎒	🚰 🕸 📍 🔇) 🔚			
Session Manager 🛛 📮 🗙	✓ serial-com1 ×					4 Þ
-6 🖓 🐇 🖻 🖺 🎽	Session Options - serial-	com1		×		^
Filter by session name <alt td="" 🔎<=""><td>Category:</td><td></td><td></td><td></td><td></td><td></td></alt>	Category:					
192.168.100.254 🔨		Serial Option	16			
192.168.83.103	✓ Connection	Senaroption	15			
192.168.83.105	Logon Actions Serial	The port may be	e manually entered or selected from the list.			
192.168.83.110	✓ SSH2	Port:	COM1 FabulaTech Virtual Serial Port			
192.168.83.124	Advanced					
💻 ftp.hi-flying.com	✓ Terminal	Baud rate:	115200 V Flow control			
💻 ftp.hi-flying.com (1)	✓ Emulation Modes	Data bits:	8 ~			
💻 mac_192.168.1.201	Emacs	Parity:				
💻 serial-com1	Mapped Keys		None V			
💻 serial-com10	Advanced	Stop bits:	1 ~			
💻 serial-com26	✓ Appearance Window	Name of pipe;				
💻 serial-com28	Log File					
💻 serial-com3	Printing	Serial break le	ength: 100 🚔 milliseconds			
🔜 serial-com4 🛛 🗸	X/Y/Zmodem					¥
Default 🔻 🔵 +++ 🔵 a 🥌 S	T File Transfer FTP/SFTP				AT+M0	DDE
	Advanced					-
		1				~

Device supports VCOM parameter synchronize function, if virtual COM UART parameters changed, the hardware device baud rate also changed. This function can be disabled.

🔝 I.O.T Service					_	\times
Management (M) Setting (C) Help (H)				*	中文
Serial Config (Config	Status 🕞 VirPa	ath			Conne	ected
SN DevType MAC Address HostN	lame IP	Position	VirPath	Status	SW Ver	
1 EE10 ACCF23201236 Eport-EE	192.168.83.107	Local	VCOM1/Connect	Online	1.32.4	
Software Setting						×
Remote Access			Communication			
Remote Access Enable:	Enable	•	VirPath UDP Port:		28987	
Service Id:	l-e639-11e8-882b-315	1a0887c4d	VCOM Parameter Synch:		Enable 🔻	
IOTBridge Server Addr:	bridge.iotworkshop.co	om:49899	VCOM Frame Time (ms):		50	

Step 4:Send and receive data



Note: If the virtual COM does not work, chck the COM status. If not shown in the list.

La 设备管理器	_	×
文件(E) 操作(A) 查看(V) 帮助(H)		
V 🛃 LAPTOP-EO6PU2UU		~
> 📷 IDE ATA/ATAPI 控制器		
> 🚽 SIMATIC NET		
> 単 USB 连接器管理器		
> 🔐 安全设备		
> 🔲 处理器		
> 🔜 磁盘驱动器		
> 🎥 存储控制器		
> 💼 打印队列		
> 邊 电池		
✓ 員 端□ (COM 和 LPT)		
🛱 FabulaTech Virtual Serial Port Control (COM20)		
💭 USB Serial Port (COM11)		
💭 USB Serial Port (COM3)		
USB Serial Port (COM4)		

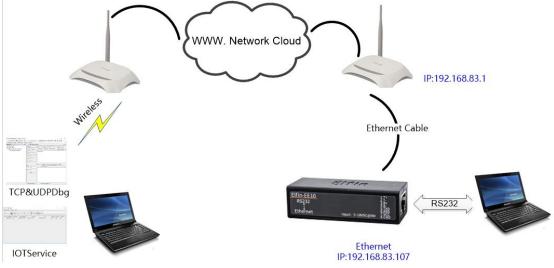
Enable it in the service as following picture.



打开(0)	🚡 计算机管理									-
固定到快速访问	文件(F) 操作(A) 查看(V) 考	RED (HI)								
管理(G)										
固定到"开始"屏幕(P)								Virtual S	erial Port (Control service 的曙性(本地计算机)
	_ ▲ 计算机管理(本地) > > 11 系统工具	④ 服务	â					_		
TortoiseSVN	> ▼ [] 系統工具 → ○ ① 任务计划程序	Virtual Serial Port Control	名称	描述	状态	启动类型	登录为	常規	登录 化	灰履 依存关系
映射网络驱动器(N)	> 10 在SFT 3005	service	Q Telephony	提供		手动	网络服务			
断开网络驱动器的连接(C)	> 10 共享文件央		Q. Themes	为用	正在	自动	本地系统	服务名	称:	ftvspcsrv
创建快捷方式(S)	- N 性能	停止此服务 暂停此服务	🚇 Time Broker	协调	正在	手动(触发	本地服务	思示名	称:	Virtual Serial Port Control service
回連943年/512(5) 創除(D)	長 没着管理器	里向动此服务	🚇 Touch Keyboard and Handwriting Panel S	启用	正在	手动(触发	本地系统			
anso (o)	▼ 祭 存储		ConceptX		正在_	自动	本地系统	描述:		Hi-Flying Virtual Serial Port Control service
重命名(M)	一 確由管理		Q UPnP Device Host	允许		手动	本地服务			
屬性(R)		描述: Hi-Flving Virtual Serial Port	Quuer Data Access_35459a9	提供		手动	本地系统			
	(3) 服务	Control service	Q, User Data Storage_35459a9	处理		手动	本地系统		文件的路径	
	ali WMI 控件		🚇 User Manager	用户	正在	自动(触发	本地系统	C:\Wi	ndows\syst	tem32\ftvspcsrv.exe
			Quuer Profile Service	此服	正在	自动	本地系统	启动等		手动
	1		🖾 Virtual Disk	提供		手助	本地系统	10110154	1028(E):	(7 - 3)
			Virtual Serial Port Control service		正在	自动	本地系统			
			When the Authorization Service	Auth	正在	自助	本地系统			
			Q VMware DHCP Service	DHC	正在	自动	本地系统		-	
			Why Ware NAT Service	Net	正在	自动	本地系统	服务材	恋 :	已停止
			When the service was a serv	Arbit	正在	自动	本地系统		目助(S)	停止(T) 暫停(P) 恢复
			Why Workstation Server	Rem	正在	自动	本地系统	,	14J(5)	1911(1) Tall9(P) 97.86
			Q. Volume Shadow Copy	管理		手助	本地系统	₩A	사용관태교	时,你可指定所活用的启动参数。
			WalletService	电子		手助	本地系统			and a second second second second
			Q WarpJITSvc	Prov		手动(触发	本地服务			
			🖏 Web 帐户管理器	Web	正在	手助	本地系统	启动参	퀯(M):	
			Q. WebClient	使基		手动(触发	本地服务			L
		1	Q Windows Audio	管理	正在	自动	本地服务			
		1	🖏 Windows Audio Endpoint Builder	管理	正在	自动	本地系统			油 症 取消
	1		Windows Biometric Service	Win	正在	手动(触发	本地系统			MULE 50H

4.5.2. Virtual COM Remote Communication

The following device is in the remote environment and UART connect to PC, the two PC can also send/receive packet to each other via virtual COM.



Step 1: Bound device to IOTBridge account. Refer to IOTBridge chapter for detail.

<u>M</u> ar	Management (M) Setting (C) Help (H)								
C	Serial Config Config Status VirPath								
SN	SN DevType MAC Address HostName IP Position VirPath Status SW Ver								
1	EE10	ACCF23201236	Eport-EE10	180.164.18.226	Remote		Online	1.32.4	<u> </u>

Step 4:Create Virtual Com. The setting is the same as previous.

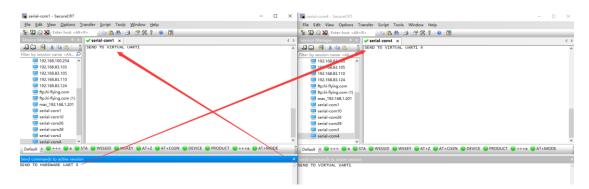


	😫 Device Setting	×
	System User: admin	SOCKET SOCKET Name:
VirPath Edit × Vircom VirThrough VPath D2D VCOM Name: VCOM1 Serial Pot COM1 Rout:	Password: admin HostName: Eport-EE10 DHCP: Disable ▼ IP Address: 192.168.83.107 Mask: 255.255.255.0 Gate Way: 192.168.83.1 DNS: 223.5.55	SOCKET Name: ICP client Protocol: TCP-CLIENT Server Addr: test.server.iotworkshop Server Port: 40432 Local Port: 0 Keep Alive: 60 Time Out: 0
Confirm Cancel	UART UART No: UART 1 V Baudrate: 9600 V	Rout: uart Buffer Size: 512 New SOCKET SOCKET Del
Add VPath Close	Data Bits: 8 Stop Bits: 1 Parity: NONE Flow Control: Disable Buffer Size: 512	Confirm Cancel Export VirPath Import Detail F-Set Update F-Set Clear

Step 3: It show VCOM1/Connect, means virtual COM works OK.

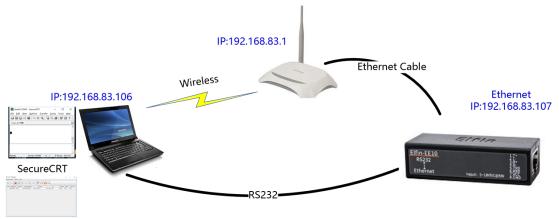
1	🕈 I.O.T Servi	ce						_	×
1	<u>M</u> anagement	(M) Setting (C	C) Help (H)					*2	中:
	Serial	Config	Config 🔇 S	itatus 🔛 VirPa	ath			Connec	ted
	SN DevType	MAC Address	HostName	IP	Position	VirPath	Status	SW Ver	
	1 EE10	ACCF23201236	Eport-EE10	180.164.18.226	Remote	VCOM1/Connect	Online	1.32.4	
	oluro ese	0.000.00000000	 Constant 		- ·	1	0.12	4 9 5 9	

Step 4: Sending and receiving serial port data



4.5.3. Virtual Through Local Communication

Virtual Through can use TCP or UDP method to transfer data with device. (While virtual COM use serial COM)



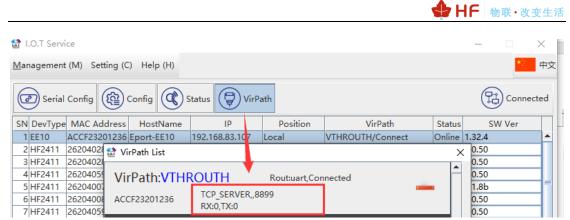
IOTService

Step 1: Open IOTService tools, follow the following steps to create virtual through path.

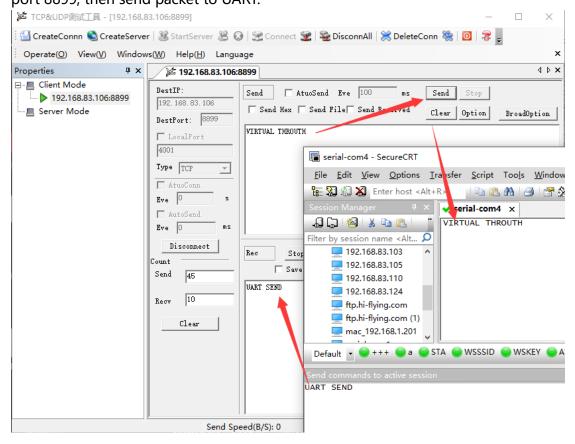
- VTH Name: The name of virtual through, must be unique.
- Protocol: TCP Server, TCP Client or UDP.
- Server Addr: PC itself IP for TCP Server. Destination IP for TCP Client and UDP.
- Server Port: Server Port.
- Rout: Packet destination route, usually is UART, can also set to other Socket created in device.

/irPath List	× 😫	Device Setting				
	^	System	1	SOCKET		
2		User:	admin	SOCKET Name:	netp	
	×	Password:	admin	Protocol:	TCP-SERVER	•
Vircom VirThrough VPath D2D	E	HostName:	Eport-EE10	Server Addr:	47.103.4.2	24
VTH Name: VTHROUTH		DHCP:	Disable 💌	Server Port:		
Protocol:		IP Address:	192.168.83.107	Local Port:	88	
		Mask:	255.255.255.0	Keep Alive:		6
Server Addr:		Gate Way:	192.168.83.1	Time Out:	· · · · · · · · · · · · · · · · · · ·	
Server Port: 8899 Local Port:		DNS:	223.5.5.5	Time Out:		_
Rout:		UART		Rout:	uart	
	-	UART No:	UART 1	Buffer Size:	5	51
Cancel		Baudrate:	9600 -	New SOCKET	SOCKET Del	-
	-	Data bits	8	Confirm	Cancel	
		Stop Bits:	1			
Add VPath	Close	Parity:	NONE	Export	VirPath	
		Flow Control:	Disable 🖉 💌	Import	Detail	
		Buffer Size:	512	F-Set Update	F-Set Clear	r

Step 2: Check the created Virtual Through information. It created it TCP Server with port number 8899.

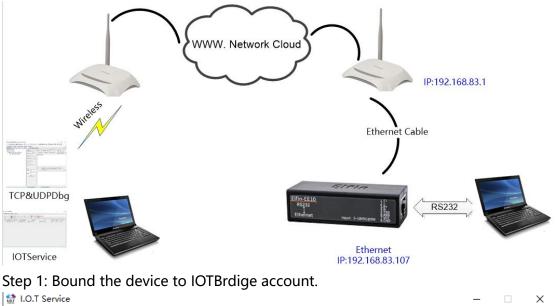


Step 3: PC create a TCP client, connect Virtual Through, set destination PC IP and port 8899, then send packet to UART.



4.5.4. Virtual Through Remote Communication

The following test case is in remote environment, the PC can create virtual through path to transfer data with remote PC.



I.O.I Service					_	×
Management (M) Setting (C) Help (H)					*1	中文
Serial Config 🔞 Config 🔇 Status 🖗 VirPath						ted
SN DevType MAC Address HostName	IP	Position	VirPath	Status	SW Ver	
1 EE10 ACCF23201236 Eport-EE10	180.164.18.226	Remote	VCLIENT/Connect	Online	1.32.4	

Step 2: Create the Virtual Through Path as following . Create a TCP Client and fill in the TCP Server information created by the TCP&UDP tools (PC IP 172.20.10.2 and port 1234)

🕈 VirPath List	
🕼 VirPath Edit	×
Vircom VirThrough VPa	ith D2D
VTH Name: VClie	nt
Protocol:	TCP-CLIENT
Server Addr: 17200).10.2
Server Port: 1234	Local Port:
Rout:	uart
	Confirm Cancel
	Add VPath Close
	Add VPath C



⊯ TCP&UDP-Debug	_	×
🗄 🚰 CreateConnn 🔕 CreateServer 🐰 StartServer 淃 🐼 😤 Connect 😹 🏖 DisconnAll 💥 DeleteConn 🇞 🔯	;	
Operate(O) View(V) Windows(W) Help(H) Language	_	
Properties 4 ×		
Client Mode		
🗄 🔄 Server Mode		
Local(172.20.10.2):1234		
Local(172.20.10.2):1234		

Step 3: Check Virtual Path Status.

1.O.T Service				– 🗆 X
Management (M) Setting (C)	Help (H)			中文
Serial Config	nfig 🔇 Status 🧲	VirPath		Connected
1 EE10 ACCF23201236 Ep 2 HF2411 26204028 ☑ VirP 3 HF2411 26204028 ☑ VirP 4 HF2411 26204028 ☑ VirP 5 HF2411 26204029 ☑ VirP 5 HF2411 26204007 ☑ VirP	ath List ath:VCLIENT	8.226 Remote Rout:uart,Co IENT,172.20.10.2,1234		Status SW Ver Online 1.32.4 X 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50
➢ TCP&UDP测试工具 - [172.20.10 □ GreateConnn S CreateServe		🕽 🚉 Connect 🙀 🕯	🗟 DisconnAll 🛛 💥 DeleteCo	X
Operate(O) View(V) Window				×
Properties 7 ×	172.20.10.2:591	43		4 Þ ×
☐ Client Mode ☐ Server Mode ☐ 2 Local(172.20.10.2):1234 ☐ 172.20.10.2:59143	DestIP: 172.20.10.2 DestPort: 59143 V LocalPort		nd Eve 100 ms d File Send Received	Send Stop Clear Option BroadOption
	1234 Type TCP			
Step 4: Data transfer				
🎽 TCP&UDP测试工具 - [172.20.10				-
실 CreateConnn 🔇 CreateServer	🛛 🏂 StartServer 😤 🤇	🕽 🔮 Connect 🧝 🕯	🛓 DisconnAll 💥 DeleteCo	
Operate(O) View(V) Window				×
Properties	¹ 72.20.10.2:591. DestIP: 172.20.10.2 DestPort: 59143 ✓ LocalPort 1234 Type TCP ▲ AtuoConn Eve Ø AtuoSend Eve 44344632 ms Count Send 22 Recv 10	Send AtuoSen Send Hex Send Client Send	d Eve 100 ms d File Send Rootved serial-com4 - SecureCRT File Edit View Options Solution Manager 192.168.83.103 192.168.83.105 192.168.83.110 192.168.83.124 ftp.hi-flying.com	Alt R> I I III IIII IIII IIIIIIIIIIIIIIIII

4.6. D2D Function

D2D is the used for device to device transmission via IOTBridge.

🔛 VirPath List	×
🔛 VirPath Edit 🛛 🕹	
Vircom VirThrough VPath D2D	-
D2D Name:	
Select Dev: 🗸 Add	
Rout:	
Confirm Cancel	
	_
Add VPa	th Close

See following for this test case.

http://www.hi-flying.com/download-center-1/application-notes-1/download-item-industry-prod ucts-application-manual-20190528

5. IOTBRIDGE ALARM FUNCTION

5.1. Set IOTBridge Parameters

Remote Access				
Remote Access Enable:	Enable 👻			
IOTBridge Server Addr:	bridge.iotworkshop.com			
Service Id:	5-7b57-11e7-a6a0-b7685b134cb1			
Service Name:	My Service			

5.2. Set Mail Information

When IOTBridge find device is off line, it will auto send mail to the mail address.

- EMail Alarm				
EMail Alarm Enable:	Enable			
SMTP Address:	smtp.hi-flying.com			
SMTP Port:	25			
EMail Account:	yuhui_gong@hi-flying.com			
EMail Password:	200000000			
EMail Send List (eg. a@a.com;b@b.com):				
yuhui_gong@hi-flying.com;				

Example:

IOTService Alarm, ServId=43d7412a-1457-11e7-b385-8f5e7d048f71 ★			
IOTService 发给 yuhui_gong@hi-flying.com			
发件人: IOTService < yuhui_gong@hi-flying.com> 收件人: yuhui_gong@hi-flying.com < yuhui_gong@hi-flying.com> 时间: 2017年4月24日 (周—) 18:49 大小: 575 B			
Device (F0FE6B38765C) is offline!			

6. IOTBRIDGE CLOUD

IOT Bridge cloud is for customer to check device status in its account and used for remote setting and data transfer with IOTService tools. The user guide is as following.

Step 1:Open http://www.hi-flying.com/, click Cloud to login

← → C ① 不安全 hi-flying.com/index.php?route=common/home	् 🖈 💹 🔂 :
🏭 应用 📙 汉纲 📙 工作 📒 购物 🎽 百歲 🤦 百歲地間 🤣 2110电子网 🤡 谷歌郎柳 🚺 八八网	
◆ HF 物联・改変生活	● Allispresz ● Lawy Wy Official Mail ■ #12 (Search: ④)
Home IOT Module IOT Device Support Resource N	iews Company Cloud

Step 2: Open I.O.T bridge and fill in the account information

 · · · · · · · · · · · · · · · · · · ·	* 🖩 Θ :
	4-32. Register Login
	IOT Bridge
Super P2P (oud Resolution Easy Cloud Management

Step 3: Fill in the personal information.

← → C ① 不安全 bridge.iotworkshop.com/page-register.html			0v ☆	弄	Θ :	
🛗 应用 📕 汉枫 📕 工作 📕 购物 😤 百度 🍷 百度地图 📀 2110电子网 📀 谷歌劇	邮稿 🚺 人人同					
IOTBRIDGE LO.T Bridge				Englisi	sh 🔻	Î
		REGISTER				l
	Account Set	Thease set your member name and password for login				l
	UserName	UserName				l
	Password	Password				l
	ConfirmPass					l
	Essential Inf				l	
	Email	Email				l
	Captcha	Captcha SendCaptcha				l

Step 4: After login, add a Service ID, this Service ID is used for IOTService tools.

← → C (0) 不完全 bridge.lotworkshop.com/iolService.html?page=0												
🔜 应用 📕 汉枫 📕 工作 📕 购物	1 😤 百度 🍷 百度地面	③ 21IC电子同 ④	谷歌邮稿 🚯 人人同									
	LO.T Bridge			yuhui_gong English 💌								
C Home	E I.O.T Service	LO.T Service My Service System Service										
My UserID				Add Enable Delete								
😤 User Manage												
🔒 Device Manage		Number	Service ID	Operation								
8 Firmware Manage		1	bdedfdef-d5ce-11e8-8462-8f0601c69412	View Disable Delete								
I.O.T Service				_								
 I.O.T Service Open Api 												
				•								

Step 5: Fill Service ID in IOTService.

		🚸 H	Ⅰ 物联·改变生活
🎡 Software Setting			×
Remote Access		Communication	
Remote Access Enable:	Enable	VirPath UDP Port:	28987
Service Id:	₀f-d5ce-11e8-8462-8f0601c69412	VCOM Parameter Synch:	Enable 💌
IOTBridge Server Addr:	bridge.iotworkshop.com:49899	VCOM Frame Time (ms):	50
		Others	
EMail Alarm		Language:	English 💌
EMail Alarm Enable:	Disable	Start up to Tray:	Disable 💌
SMTP Address:		Auto Upgrade:	Disable 🔻
SMTP Port:			
EMail Account:		New Ver:	2.4.03
EMail Password:			Upgrade

Step 6: Add device into IOTService. The device must be online once before. If not, better to fill in the UserID at device side, it will automatically bound to account if got online.

1.O.T Service						_	×
Management (M) Setting (C)) Help (H)						*) 中
	re Setting Ctrl-M t Setting Ctrl-D evice Ctrl-I	VirPat	h				Connected
SN DevType MA	Cast Scan	IP	Position	VirPath	Status		W Ver
1 EE10 ACC	re Setting	2.168.83.107	Local		Online	1.32.4	
Auto St							
	lari						
🔛 I.O.T Service						-	
Management (M) Setting (C)) Help (H) Add Device			>	<		* ^{>} 中3
Serial Config	M/ 0FE6B111122	AC Address		Delete Delete		P	Connected
SN DevType MAC Addres 1 EE10 ACCF2320123 2 EE11 98D8635904D					Status Online Online	1.32.4	W Ver
	MAC Addr FOFE	6B111122	Confirm	Add Close			

Step 7: For once online device, the device already bound to account after Step 6, UserID does not need to be written in. For mass production, better use this way to bound. Give this information to us, we can also support to write it before shipment. Copy User ID.



← → C ① 不安全 bridge.io		☆ 📕 🖨 :
🔜 应用 📕 汉枫 📕 工作 📕 购物	🐕 百度 🤶 百度地图 💿 21IC电子网 💿 谷歌邮箱 🚺 人人网	
	LO.T Bridge	yuhui_gong English 🔻
🖵 Home	🗟 My UserlD	
My UserID	UserID:	
😤 User Manage	b7e0c45c-d5ce-11e8-8462-d50f7b3148d3	
🖀 Device Manage		
🕄 Firmware Manage	Dear users, each user has only one UserKey, the UserKey is used to identify the device in the I.O.T Bridge system belongs to you,	

UART send "+++" to enter CLI command mode.

🕞 Serial	-COM12 -	SecureCR	r							- • •
文件(F)	编辑(E)	查看(V)	选项(O)	传输(T) 脚	印本(S)	工具(L) 帮	昏助(H)			
XI XI (ឯ 🕄 🗶		AA 😼 🗟	3 🥔 🚰	28 1	🕜 🛃	Ŧ			
Serial-C	OM12									×
										•
										=
	_									-
+++	💿 a	🥥 ND	🎯 WS	AT+Z	0	💿 shov	w 🕥 重	启 🎯	0	Defai 👻
										*
就绪					Carlo	L COM12	1 1	24/E 00E	VT100	▼ += **=
财猪					Seria	I: COIVI12	1, 1	241丁, 80列	01100	大写数字。

Input "SYS" to enter SYS directory, and then input UserID XXXX to fill User ID into device. (Note case sensitive)

Serial-COM1	2 - SecureCRT				×
文件(F) 编辑(E) 查看(V) 选项(O)	传输(T) 脚本(S)]	[<mark>具(L) 帮助(H</mark>)		
10 10 10 10 10 10 10 10 10 10 10 10 10 1	🗶 🕒 🛍 🐴 🖓 🍕	3 3 3 11	🙆 🛃 🖕		
Serial-COM12					×
EPORT>SYS EPORT/SYS> Version NTP ProductID Script EPORT/SYS>U	Auth MAC CustomerID Quit serID	Network JCMD UserID	Telnet NAT CfgProtect	web Ping FactoryCfg	*
EPORT/SYS>U SET-OK EPORT/SYS>	serID f4d3df3b-7b5	2-11e7-a6a0-ef6	5fe07b78c1		

Step 8 :The device will be shown in IOTBridge website.



→ C ③ 不安全 bridge	iotworkshop.com	/devices.html?page=0									☆ <u>M</u>
应用 📙 汉枫 📙 工作 📕 駒	19 😤 Eg 🤶 E	調地圏 🥝 2110电子网 🕝 谷数加速	ब 🔕 🙏 🕅								
	LO.T Brid	ige									yuhui_gong Eng
Home	Device M	lanage									My Device System Dev
My UserID	HostNam	HostName		Mac		Mac	Module	Type	ModuleType		Query
User Manage	User ID	User ID		Versi	on		Protocol				
Device Manage	Wan Ip	Wan Ip		State		Unlimited					
Firmware Manage	Number	HostName	Mac	ModuleType	Wan Ip	User ID	Version	Protocol	High Through Put (HTP)	State	Operation
LO.T Service	1	Eport-HF2411	262040055641	HF2411	223.104.254.51	b7e0c45c-d5ce-11e8-8462-d50f7b3148d3	1.2.2i	2		Offline	View Config HTP
Open Api 🗸 🗸	2	41288559U000002158102569	300037614702	HF2111A	117.136.8.108	b7e0c45c-d5ce-11e8-8462-d50f7b3148d3	2.0.2d_KAS_4	2		Offline	View Config HTP
My Info 🗸 🗸	3	HF9624	ACCF2112340C	HF9624	223.104.210.92	b7e0c45c-d5ce-11e8-8462-d50f7b3148d3	1.63.1e	2		Online	View Config HTP
Exit	4	Eport-HF51118	F0FE6B111122	HE5111B	223.104.210.92	b7e0c45c-d5ce-11e8-8462-d50f7b3148d3	1.34.8	2		Online	View Config HTP

Click the following check device online history information

← → C ① 不安全 bridge.i	🗧 🔶 C 🛈 🕸 🕸 🔁 🕴 🔂 😵 🕹 🕅 🕹 🕹 😵 🕹 🕹 😵										
🔛 应用 📙 汉枫 📕 工作 📕 购物	🖀 百家 🤶 百家地画 🔮	211C电子网 ③ 谷歌邮稿 🐧 人人同									
	LO.T Bridge	LO.T.Bridge yuhui,gong English •									
C Home	Time	2019-11-01 11:12:00	PowerOnTime		User ID	b7e0c45c-d5ce-11e8-8462-d50f7b3148d3					
团 My UserID	Local Ip	10.10.100.101	Local Port	9400	Wan Ip	223.104.210.92					
😤 User Manage	Wan Port	25706	Latitude	0	Longitude	0					
🚔 Device Manage	Version	1.34.8	Protocol	2	State	Online					
😂 Firmware Manage	Description		Position	中国 上海							
LO.T Service											
🖶 Open Apl 🗸 🗸											
A My Info ✓						重史款源查询					

Click the Config to config device, same UI with local device webpage.

← → C ① 不安全 bridge.	lotworkshop.com/	devices.html?page=0									☆ 💹 🤤	
🔜 应用 📕 汉枫 📕 工作 📕 陶板	😤 百度 🤶 百	北地田 🔮 2110电子河 🧐 谷間部の	育 🔕 八八同									
	LO.T Brid	ge									yuhui_gong English	
Home	Cevice Ma	Device Manage My Device System Device										
My UseriD	HostName	HostName		Mac		Mac	Module	Type	ModuleType		Query	
🛠 User Manage	User ID			Versic	n		Protoco					
2 Device Manage	Wan Ip	Wan Ip		State		Unlimited						
B Firmware Manage	Number	HostName	Mac	ModuleType	Wan Ip	User ID	Version	Protocol	High Through Put (HTP)	State	Operation	
I.O.T Service	1	Eport-HF2411	262040055641	HF2411	223.104.254.51	b7e0c45c-d5ce-11e8-8462-d50f7b3148d3	1.2.2i	2		Offline	View Config HTP	
🕈 Open Api 🗸 🗸	2	41288559U000002158102569	300037614702	HF2111A	117.136.8.108	b7e0c45c-d5ce-11e8-8462-d50f7b3148d3	2.0.2d_KAS_4	2		Offline	View Config HTP	
🚡 My Info 🗸 🗸	3	HF9624	ACCF2112340C	HF9624	223.104.210.92	b7e0c45c-d5ce-11e8-8462-d50f7b3148d3	1.63.1e	2		Online	View Config HTP	
🗘 Exit	4	Eport-HF5111B	F0FE6B111122	HF5111B	223.104.210.92	b7e0c45c-d5ce-11e8-8462-d50f7b3148d3	1.34.8	2		Online	View Config HTP	

* 0

7. OTA UPGRADE

Step 1:Remote upgrade is using our IOTBridge cloud, download firmware from our IOTBridge. Bound device to account as the previous steps.

Step 2:Login http://bridge.iotworkshop.com/, upload firmware in IOTBridge.

🔜 应用 📕 汉枫 📕 工作 📕 购物	📙 有人科技 🎂 百會	t 🤶 百歲地國 🗋 21	ICRE子网 🗋 谷動影响 🚺 人人同							
	LO.T Bridge			kyo4229 English 💌						
Home	😢 Firmware Manage	😚 Firmware Manage / 🗴 Upload Firmware								
My UserID										
a Device Manage		ModuleType	HF2411	*						
Firmware Manage		Version	10.5							
LO.T Service		Туре	APP	*						
A₁ My Info ∨		Description	Description							
🖒 Exit				A						
		Firmware	HF2411_V1.0.5_UPGARDE.bin Select Firmware							
				Preservation						

Step 3:Copy the download link as following.

	LO.T Bridge									
Home	8 Firmware Manage / R Firm	ware Info								
My UserID	FirmwareName	HF2411_V1.0.5_UPGARDE.bin	Туре	APP						
🖀 Device Manage	ModuleType	HF2411	UploadUser	kyo4229						
Firmware Manage										
LO.T Service	Version	1.0.5	State	意用						
A My Info 🗸 🗸	Time	2018-11-30 15:01:58	Md5	af199ff81e66b7ec879b30c9b1e9d02c						
ළු Exit					li.					
	FilePath	/alidata/www/download_center/iotbridge/firmwares/HF2411/HF2411_V1. 0.5_UPGARDE_5f2882cdf173aa6c718585261faa9ca3.bin	Description							
	Download									

Step 4:Copy the download link into the IOTService tools. And do upgrade operation.

I.O.I Service							×	2 h h
Management (M) Set	ting (C) Tools (T) H	elp (H)						P
Begin 💥 S	top	🔍 Status 🖤	VirPath			Connect	东 阿里 ed	HF-A21
SN DevType MAC Ad	dress HostName	IP	Position	VirPath	State	SW Ver		1.0
2 HF2211 F0FE6BB	82E88 Eport-HF2211	12.246.121.150	China.Jinan		Offline	1.31		
1 EG10 ACCF201	23404 Gport-EG10	112.65 61.35	China.Shanghai		Online	1.4.11	片 云智易	HF-LPB100
3 G10 5750239	03232 Gport-G10	122.97.179.232	Remote		Offline	1.03.28		
🙆 Customer Firmwa	ire Setting							×
DevType Firmw	DevType Firmware Version Upload					Firmware UI	RL	
Firmware Info Input URL: Firmware Info						X Submit		
Firmware Name:	Firmware Name:							
DevType:	pe:							
Upload Time:			MD5:					
Firmware URL:								
Descript:								
							nfo Delete	Add Close
					Confirm	Cancel		



	(1. D)	-	1 4 5							-	
ianagement	(M) Setting (C)) Tools (T) He	elp (H)								
Begin	💥 Stop 🤅	🔅 Config	Status 🔍	Ŷ	VirPa	ath					Connec
SN DevType	MAC Address	HostName 🔺	IP			Position	VirPath		State	S	W Ver
2 HF2211	F0FE6BB82E88	Eport-HF2211	112.246.12	1.150	China.Jinan				Offline	1.31	
1 EG10	ACCF20123404	Gport-EG10	112.65.61.3	5.61.35		a Shanqhai	Shanohai		Online	1.4.11	
3 G10	575023903232	Gport-G10	122.97.179.	.232	Rem	Copy Devi	ce MAC		Offline	1.03.28	
						Device Tab	le Filter				
						Refresh					
						Delete Sele	ected Device				
						Upgrade F	irmware Selected				
						Upgrade F	irmware All				
						Upgrade V	Veb Selected				
						F-Setting L	ocal				
						Application	1 >				