Quick Start Guide

Wi-Fi TO RS-232/422/485

CONVERTER

MODEL ATC-1000WF

(Version 2.1   Jan 25th, 2022)

CE FC

RoHS Compliant

1. Check Package Content

■ATC-1000WF unit   1Pcs

■Mono pole Antenna (2dBi RP-SMA)   1Pcs

■Software CD   1Pcs

■External power adapter   1Pcs

■RS-232 cross cable   1Pcs

■Quick Start Guide_Ver 2.1   1Pcs

2. Hardware Installation

■Connect RS-232 DB9 Female Crossing configuration cable to ATC-1000WF unit on RS-232 side.

■Connecting the Power Adapter to ATC-1000WF power jack. When the power is properly supplied. The Ready LED will on Green light and PWR LED will light in red.

RS-232/422/485 Pinout

RS-232 Pinout(DB9 Male)

PIN	RS-232	Input/Output
2	RXD	I
3	TXD	O
5	GND	-

RS-422/485 Pinout(6Bit-Block Terminal from left)

PIN	RS-422	RS-485
1	T+	485+
2	T-	485-
3	R+	-
4	R-	-
5	VIN+	VIN+
6	VIN-	VIN+

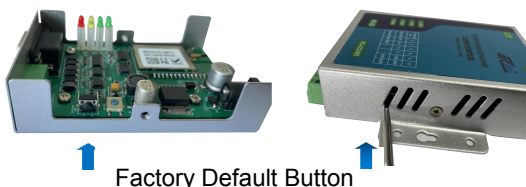## 3. LED indication&Factory default button

LINK ---- Indicate WLAN status.Light means ATC-1000WF (STA mode) collected to AP or laptop &mobile connect to ATC-1000WF(AP mode)

Ready ---- It show light when ATC-1000WF boot up ready.

Tx/Rx ---- It show data send or receive from serial port.

PWR ---- Indicate the Power supply

Factory Default- To restore ATC-1000WF to factory default.

Factory Default Button

Step1:Power on ATC-1200 and find the button above photo.

Step2:Press button near the terminal block wait about 5 seconds

Step3:Release the button and ATC-1000WF will be automatic to restart from factory default setting.

4.Software Installation

■Insert the software CD and search for such as F:/Tool/**Tera-Term** to install.Note: Be sure you have administrative rights &disable firewalls in windows XP

5. Configure the ATC-1000WF

■ATC-1000WF supports two methods to configuration parameters:**Web Accessing** and **AT+instruction** set. Web accessing means users can configure parameters through Web browser. When ATC-1000WF connected to wireless network. Parameters configuration is done on a PC connected to the same wireless network.

AT+instruction set configuration means user configure parameters through serial interface(RS-232/422/485) command.Refer to ATC-1000WF User's Manual. "AT+instruction set"chapter for more detail.

Before configuring the ATC-1000WF on AT+instruction mode, you should turn off the power and use a serial cable connect the ATC-1000WF to your computer's serial port(RS-232).

■We suggest using **Tera-Term** to operate.Firstly you should configure **Tera-Term** serial port like below:57600bps for baud rate ,8bits for data-length,NONE for parity bit ,1bit for stop bits .

■Upon power up.The ATC-1000WF will be in AP mode from factory producing. To enter command mode, you should send ""+++<CR>". The device will respond with **"a "**.Then input "a" While it change to command mode.It also show"+OK" and the ATC-1000WF will accept ASCII bytes as command. You can using"AT+H" for all the command you need . To exit command Mode and reset.Please send **"AT+Z".**The device will respond with "OK" restart and return AP mode.

The parameters such as the SSID, channel, IP address, serial port settings, And all other settings can be viewed and configured in command mode.

6. Factory Default WLAN &IP Address

UART Parameters

Mode:	RS-232		Baud-rate:	57600
Data-length:	8	|	Parity:	n (none)
Stop-bits:	1	|	Flow :	n (none)

IP Parameters

Protocol:	TCP Server
Local port::	8899
DHCP Client:	Enabled
Static IP Address:	10.10.100.254
Net Mask:	255.255.255.0
Gateway:	192.168.2.1
DHCP Server:	Enabled
IP Address:	0.0.0.0
Net Mask:	0.0.0.0
Default Gateway:	0.0.0.0
DNS:	0.0.0.0

WLAN Parameters

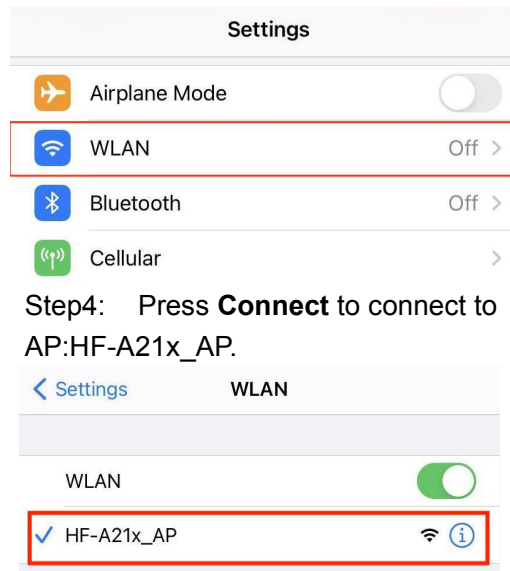| Channel:	11	|	Mode:AP
SSID:	HF-A21x_AP	|	Data-rate: Auto

7. Quick connection in AP mode

ATC-1000WF **AP Mode** is the default setting.
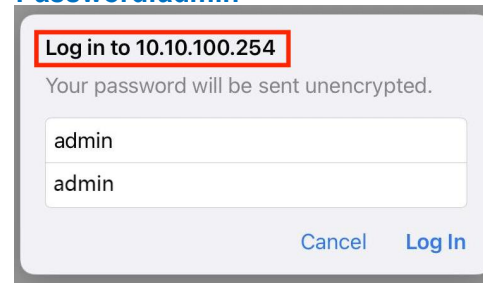
Step1: Power on ATC-1000WF.

Step2: Use a device(Laptop or mobile) with a wireless network card.We suggest using Mobile as well.

Step3: Pleas use iPhone or Android mobile.To use setting button search for WiFi network AP with SSID name is:**HF-A21x_AP**
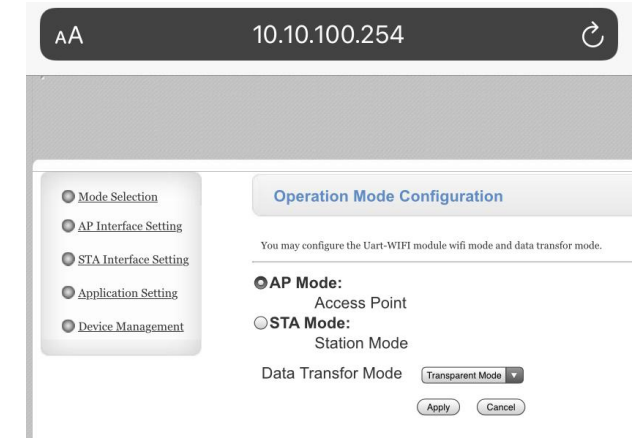
Step4: Press **Connect** to connect to AP:HF-A21x_AP.

Step5: On cellphone browser address input 10.10.100.254 then click you can get below page show ask you to input **User name** and **Password**

Log in IP Address:10.10.100.254
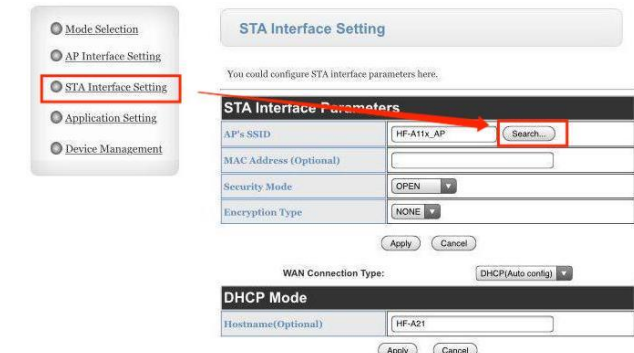
User Name:admin

Password:admin

Step6: You can get main page.The main menu include five pages: "Mode Selection"," AP Interface Setting"," STA Interface Setting"," Application Setting", and "Device Management"

On Mode Selection menu.User need to choose STA mode and then click below button "Apply" to confirm the modification.

Step7: This step is most important allow ATC-1000WF to access available Wi-Fi AP.Click STA Interface Setting.You can see web page on right side there have STA Interface Parameters list.

On first list we can see AP'S SSID.On right column there have Search Button.We click it and appear below SSID AP router list.We choose H3C AP to show how to setting below step.

Site Survey

	SSID	BSSID	RSSI	Channel	Encryption	Authentication	Network Type
○	ChinaNet-2.4G-C3B1	bc:2e:f6:80:c3:b8	0%	1	AES	WPA2PSK	Infrastructure
○	HideSSID	bc:2e:f6:80:c3:b9	0%	1	AES	WPA2PSK	Infrastructure
○	ChinaNet-qaeu	70:d3:13:f2:39:0c	0%	2	AES	WPA2PSK	Infrastructure
○	ChinaNet-crhC	90:86:9b:15:50:b8	34%	4	AES	WPA2PSK	Infrastructure
○	TP-LINK_47D8	fc:d7:33:5f:47:d8	76%	6	AES	WPA2PSK	Infrastructure
◉	H3C	34:6b:5b:08:44:36	100%	6	AES	WPA2PSK	Infrastructure
○	HideSSID	f0:e4:a2:f0:b8:9d	0%	6	AES	WPA2PSK	Infrastructure

After you apply to access H3C AP router then need you input wireless access password and click apply button.

STA Interface Setting

You could configure STA interface parameters here.

STA Interface Parameters

AP's SSID	H3C Search...
MAC Address (Optional)	
Security Mode	WPA2PSK ▼
Encryption Type	AES ▼
Pass Phrase	Szatc803803@@@###

Apply   Cancel

WAN Connection Type: DHCP(Auto config) ▼

DHCP Mode

Hostname(Optional)	HF-A21

Apply   Cancel

Now we have finished Wi-Fi setting and we will try to last step to setting WAN connection setting.We usually choose STATIC(Fixed IP) for ATC-1000WF. We need fill these parameters into below options. (You also need be to know the router assigned IP address range and Gateway IP address whatever your want to join it in).Our Wi-Fi router parameter

as following:

IP address range:192.168.1.2-255

Subnet Mask:255.255.255.0

Gateway Address:192.168.1.1

WAN Connection Type: STATIC(fixed IP) ▼

Static Mode

IP Address	192.168.1.125
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.1
DNS	

Apply   Cancel

Input below value and click apply button again.

Address:**192.168.1.125**

Subnet Mask:**255.255.255.0**

Default Gateway:**192.168.1.1**

After finished above setting we need to make the ATC-1000WF restart and make it effected.On the Device Management manual you need to Click **Restart** button to make all of setting take effect.

- ○ Mode Selection
- ○ AP Interface Setting
- ○ STA Interface Setting
- ○ Application Setting
- ◉ Device Management

Device Management

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You may configure administrator account and password, load default setting or update firware.

Adminstrator Settings

Account	admin
Password	admin

Apply   Cancel

Restart Module

Restart Module	Restart

Load Factory Defaults

Load Default Button	Load Default

Update Firmware

Location:	Choose File no file selected

Apply

8. Quick Connection by AT+Command:

User can input AT+ Instruction through hyper terminal or other serial debug terminal.Also can program the AT+ Instruction to script. User can also input "AT+H" to list all AT+ Instruction and description to start. See No.5 for detail enter AT+Command mode.

For example there have one Wi-Fi network as following parameter:

SSID:H3C

Encryption method:WPAPSK

Password:12345678

Preset ATC-1000WF Static IP address:**192.168.1.125**

Subnet Mask:**255.255.255.0**

Router gateway IP address:**192.168.1.1**

Step 1:

Setting ATC-1000WF working on **Station Mode.**

AT+WMODE=STA <CR>   (STA/AP)

+ok

Also can use **AT+WMODE<CR>** to see whether it effective.

Step 2:

Setting ATC-1000WF wireless encryption method to according wireless router requirement.

AT+ WSKEY=< auth,encry,key><CR>

- ■ Parameters:
- ◆ auth: Authentication mode
    OPEN
    SHARED
    WPAPSK
- ◆ encry:Encryption algorithm
    NONE: When "auth=OPEN", effective

WEP: When "auth=OPEN" or "SHARED", effective

TKIP: When "auth= WPAPSK", effective

AES: When "auth= WPAPSK", effective

◆ key: password, ASCII code, shall less than 64 bit an greater than 8bit.

This Instruction only effective for ATC-1000WF works as STA. After ATC-1000WF module boots up again, the setting will be effective.

AT+WSKEY=WPAPSK,AES,12345678<CR>

+ok

Type below command to see ATC-1000WF wireless parameter of encryption.

AT+WSKEY<CR>

+ok=WPAPSK,AES,12345678

Step 3,Set the SSID parameters of the wireless network.

AT+WSSSID

■ Function: Set/Query WIFI target AP SSID parameters as STA.

■ Format:

◆ Query Operation AT+WSSSID<CR> +ok=<ap's ssid><CR>< LF ><CR>< LF >

◆ Set Operation AT+ WSSSID=<ap's ssid ><CR> +ok<CR>< LF ><CR>< LF >

■ Parameters:

◆ ap's ssid: AP's SSID

AT+WSSSID=H3C

+ok

AT+WSSSID

+ok=H3C

Step 4,Query the current module IP address

AT+ WANN

■ Function: Set/Query WAN setting, only effective as STA mode;

■ Format:

◆ Query Operation AT+WANN<CR>

+ok=<mode,address,mask,gateway><CR>< LF ><CR>< LF >

◆ Set Operation AT+ WANN=< mode,address,mask,gateway ><CR> +ok<CR>< LF ><CR>< LF >

■ Parameters:

◆ mode: IP setting for WAN port

static: Static IP

DHCP: Dynamic IP

◆ address: WAN port IP address;

◆ mask: WAN port subnet mask;

◆ gateway: WAN port gateway address;

AT+WANN=STATIC,192.168.1.125,255.255.255.0,192.168.1.1

+ok

So after setting as above step1-step4.The ATC-1000WF will automatic to access existing Wi-Fi wireless network(SSID:H3C).More other detail AT+ Command see ATC-1000WF User's Manual (Ver2.1)as well.Please see below total AT+Command setting list again.

AT+WMODE=STA <CR>
AT+WSKEY=WPAPSK,AES,12345678<CR>
AT+WSSSID=H3C
AT+WANN=STATIC,192.168.1.125,255.255.255.0,192.168.1.1

9. General Specification

Class	Item	Parameters
Wireless Parameters	Certification	FCC/CE
	Wireless standard	802.11 b/g/n
	Frequency range	2.412GHz-2.484GHz
	Transmit Power	802.11b: +20 dBm (Max.)
		802.11g: +18 dBm (Max.)
		802.11n: +15 dBm (Max.)
	Receiver Sensitivity	802.11b: -89 dBm
		802.11g: -81dBm
		802.11n: -71dBm
	Antenna	External Antenna
Software Parameters	Network Type	STA /AP/AP+STA mode
	Security Mechanisms	WEP/WPA-PSK/WPA2-PSK/WAPI
	Encryption	WEP64/WEP128/TKIP/AES
	Work Mode	Transparent Transmission
	Serial command	AT+instruction set
	Network Protocol	TCP/UDP/ARP/ICMP/DHCP/DNS /HTTP
	Max. TCP Connection	32
	User Configuration	Web Server＋AT command config.
Hardware Parameters	Data Interface	Data Rate: 1200bps - 230400bps RS-232,RS-422,RS-485
	Operating Voltage	9-24VDC
	Operating Current	Avg:200mA, Peak:400mA
	Operating Temperature	-40℃ - 70℃
	Storage Temperature	-45℃ - 125℃
	Dimensions	100 x 86 x 26 mm