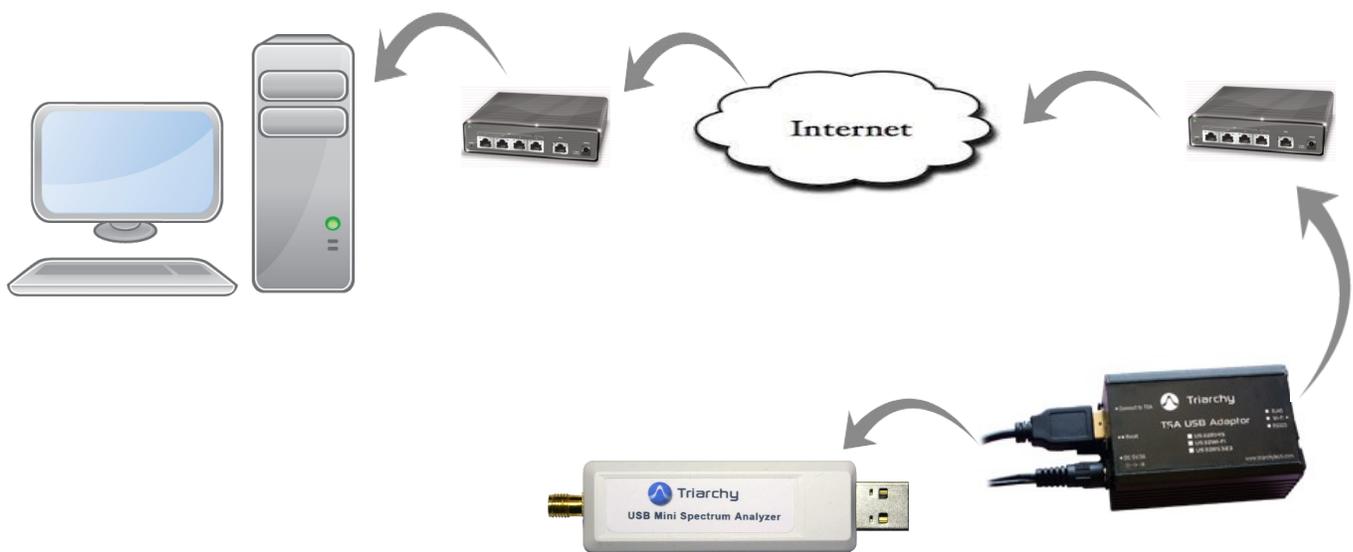# Setup for USB2WIFI of TSA USB Adapter

1: Introduction:

The USB2WIFI is an adaptor that allows TSA USB mini spectrum analyzer to setup remote control via internet.

The TSA USB mini spectrum will connect to the USB2WIFI, USB2RJ45 will communicate with Router via antenna. 5V power supply connects to the USB2WIFI to provide power.

PC will be located far end to remote control the TSA USB mini spectrum analyzer. TSA series of Spectrum Analyzers software must be at least V1.4~V1.6 to use the remote control functions.

The remote PC needs to install the VCOM and TSA program

VCOM is provided from USR (http://en.usr.cn/) which convert the TCP/IP port to COM port.

TSA program will get data from COM port to setup connection with far end TSA USB mini spectrum analyzer.

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**2: USB2WIFI configuration:**

The USB2RJ45 consist of two sections: USB2UART and WIFI COM port module.
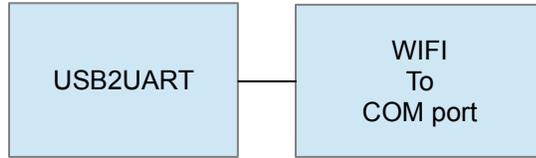
USB2UART is implemented by MCU which is K20 from Freescale. USB2UART will implement four functions:

- USB host, setup communicates with TSA USB mini spectrum analyzer.

- Implement the calibration calculation and store the calibration the file.

- Simplify the command set; end user will only be using two commands to control the TSA product: Start and Stop. Please check the document "Interface Control Document for TSA5G35 USB2UART Adapter" for detail command set.

- Setup COM port (UART) as new interface for end customer to use.

So that USB2UART is real converter which is converting from USB port to UART port.
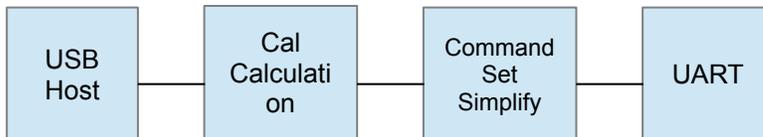
The WIFI to COM port module will convert COM data into WIFI interface. In this way, USB2WIFI can directly communicate with router without PC. The module is made by USR technology (http://en.usr.cn/)

The module models are USR-WIFI232-X.

USR-WIFI232-A model support both static IP and DHCP/Auto IP connection.

3: USB2wifi setup.

USB2wifi will have USB2UART converter and WIFI to COM port convert module USR-WIFI232-X.

First we need to setup USR-WIFI232-X.

USR-WIFI232-X Parameters Default Setting as follow:

SSID: HF-A11_AP

IP Address: 10.10.100.254

Subnet Mask: 255.255.255.0

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User Name: admin:

Password: admin

Plug 5V power to USB2WIFI, please connected 2.4G whip anttenna to SMA port on USB2WIFI .

Push the Reset key more than 3 second to factory default setting

Check you PC WIFI connection, you will find SSID of USR-WIFI (HF-A11x_AP) in the list. Please discount PC with your WIFI device and connect your PC with HF-A11x_AP
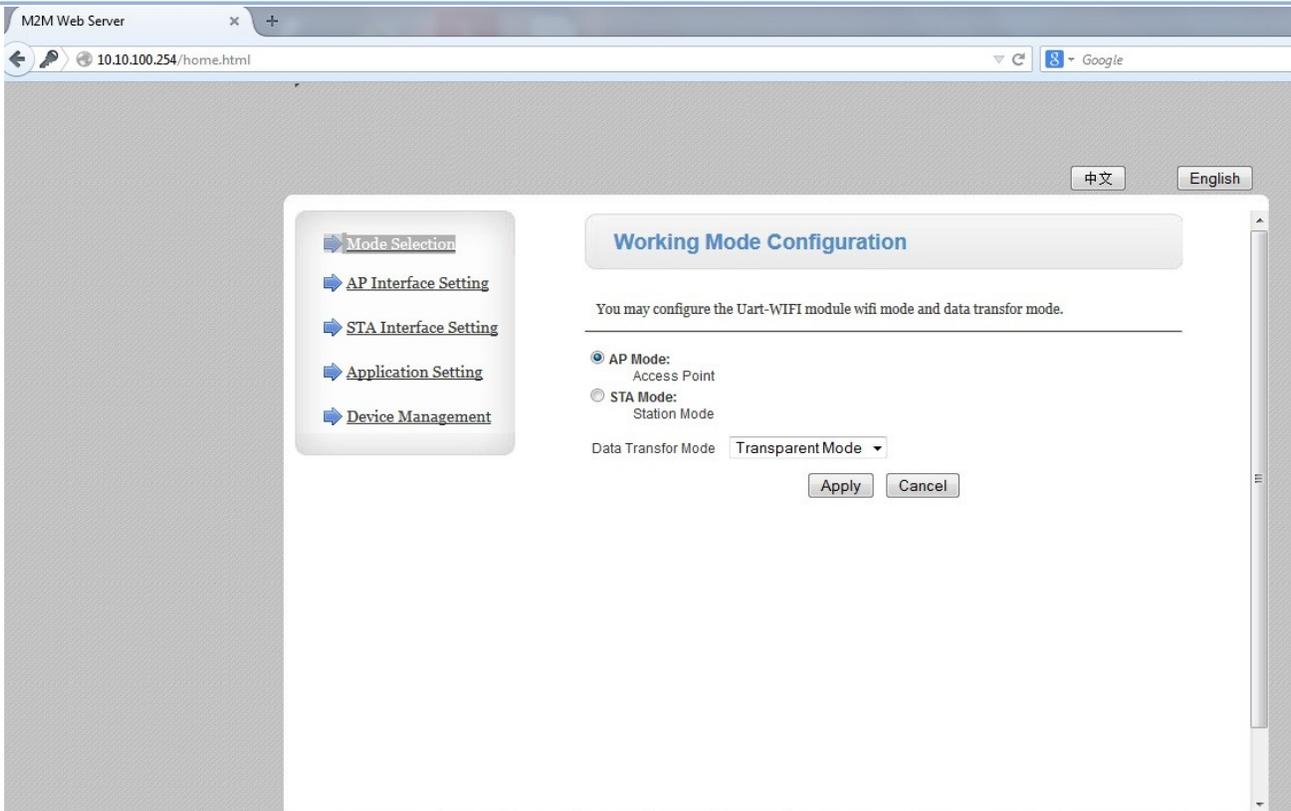

3.1 Open Web Management Interface

Step 1: After wireless connection OK. Open Web browser and access "**http://10.10.100.254**";

Step 2: Then input user name and password in the page as following and click "apply" button.

The user name: admin

Password is admin.

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3.2 AP interface setting:

USR-WIFI232-X module will work at STA mode, it is AP interface don't need to be set up. Just keep at default one.

3.3 STA interface setting:

first setup wifi connection, click the search to look the look for your local wifi SSID.

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Select your local SSID and click apply

Input the passwork into pass phrase block:

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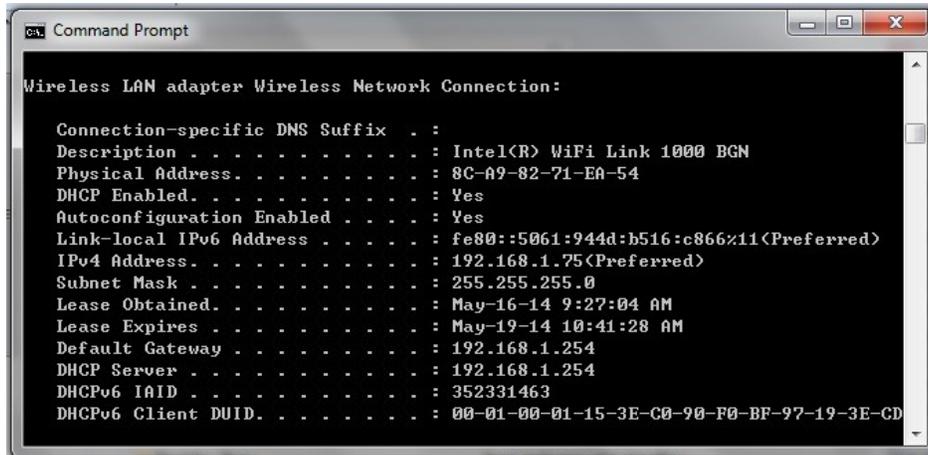67-15233 34th Ave.
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Looking for the IP address of your LAN, open the DOS command ICON and go into DOS command window.

Input DOS command: ipconfig/all

Your LAN IP information will be shown to you:

Please find IP address of Gateway and SubnetMask, in this demo, they will be:

Gateway: 192.168.1.254

SubnetMask: 255.255.255.0

 Go back to STA interface setting

the second item is IP address setting, in the demo, we select Static IP.

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Input Gateway address and SubnetMask into each block.

You also need to input your device IP address; it can be assigned by yourself.

It shall be 192.168.1.xxx in this case. You shall choice xxx as special digital which is not used by other device in your LAN. In this demo, we will choose xxx as 11, so that USR_WIFI232 local IP address will be 192.168.1.11

Click apply to save the IP address setting

If you select DHCP (atuo cofig), the IP address will be automicly generated.

3.4 Application setting:

The first item—UART setting:

The UART will be set to 115.2 Kb/s, 8N1, no hard flow control.

Click the apply to save the setting

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Second item is UART AutoFrame setting:

keep it as default, and don' t setup it.

Third item is Network setting:

just change port number to 6666.

keep all other item as default, they are :

Mode---Server

protocol--- TCP

click apply to save the setting.

3.5 Working mode confirguration

Go back to working mode, select SAP, keep the data transfer mode as transparant. Then click Apply to save the setting.

3.6 Device management

Before you restart the Wifi module, you shall go back each item to check all the setting youmodified .

If some item is not saved, it will still keep at default value, please setup again. Make sure that all the setting is done and saved, then go to last item Device manager to click the restart key to send all setting information to USR-WIFI232 module. The wifi module will work as station mode, so that your PC will lost link with this wifi module.

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Device Management

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You may configure administrator account and password, load default setting or update firware.
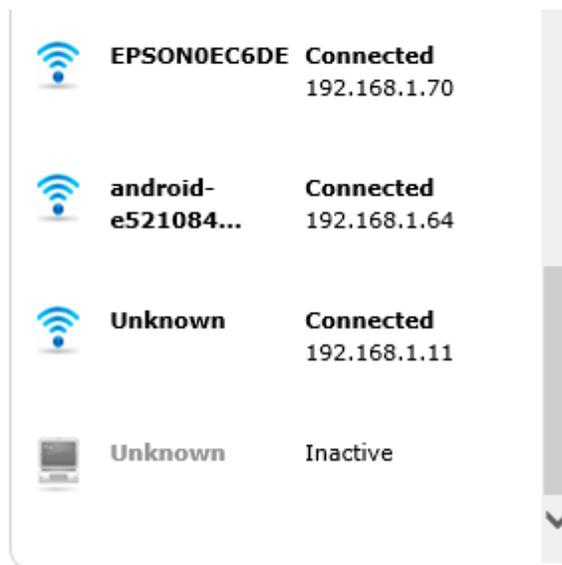
Adminstrator Settings	
Account	admin
Password	admin

[Apply] [Cancel]

Restart Module	
Restart Module	[Restart]

Load Factory Defaults	
Load Default Button	[Load Default]

Update Firmware	
Location:	[浏览...] 未选择文件。

[Apply]

3.7 Check the wifi link

after Wifi module setting, you shall set up your PC to link with with your local wifi , open your wifi setup web, (type Gateway address into you web browser: 192.168.1.254) you can find USR-WIFI232 module link with your local wifi device.

📶	EPSON0EC6DE	Connected 192.168.1.70
📶	android-e521084...	Connected 192.168.1.64
📶	Unknown	Connected 192.168.1.11
💻	Unknown	Inactive

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4 VCOM setup

PC need to install the VCOM program, which is software converter, it is tool to convert the TCP/IP port into the UART port.

Download the program from USR web:

http://en.usr.cn/USR-Software

Then you can Add COM port in the VCOM, the settings will be:

Virtual COM: COM1 (you can choice any other com port number)

Net Protocol: TCP Client

Remote IP/addr: 192.168.1.11

Remote Port:6666

Click OK to add the TCP link. You will see the COM1 will setup at your VCOM, if your USB2WIFI has setup wifi module, and link up with local wifi device. the TCP link will be setup, the Net state will shown the connected.
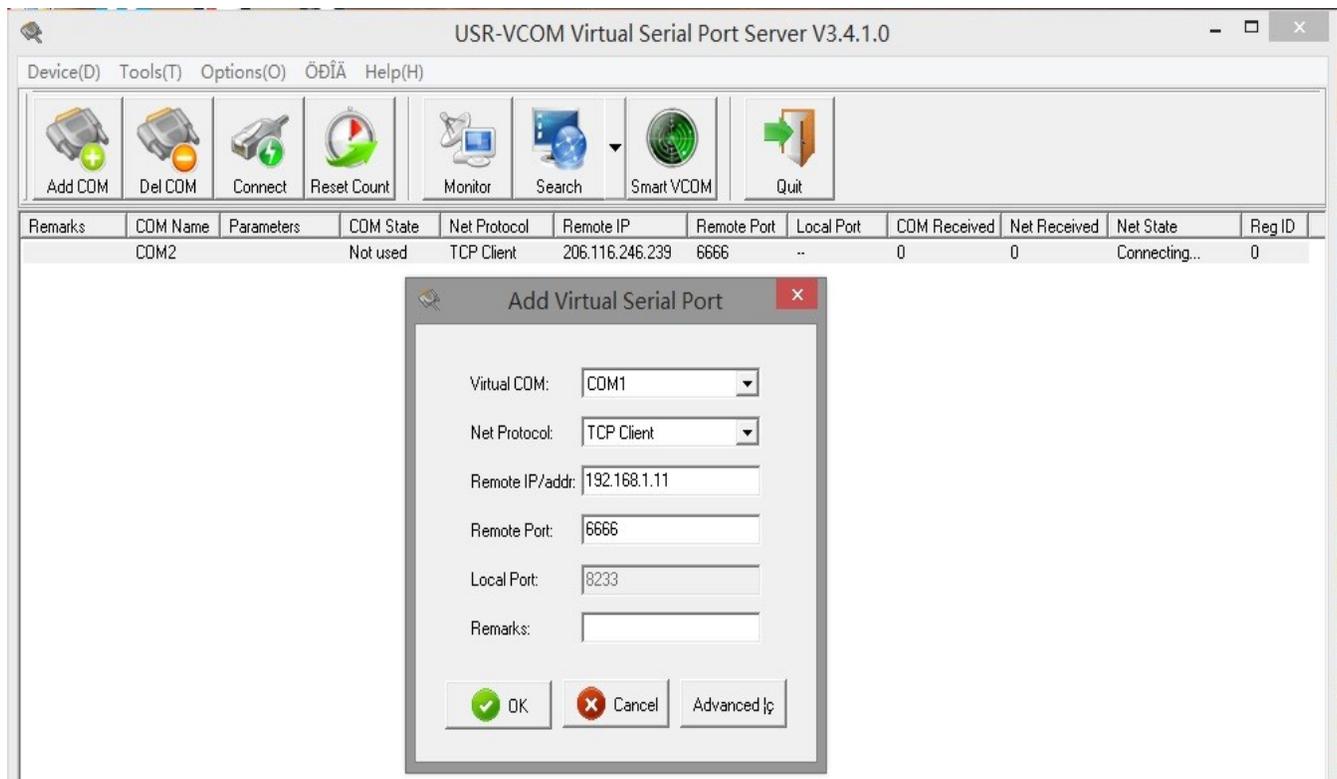
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5 TSA setup

Then turn on the TSA v1.6 on your PC. Tick local block, it will change to Remote. And Remote setting window will pop up.

Select the COM port same as VCOM setting; it will be COM1 in the demo.

Click the Cal File; if the USB2WIFI is first time to use, you need to download the calibration file from your PC into the USB2WIFI converter. But you need make sure your PC has already installed the calibration file which is matching with the dongle on the USB2RJ45.

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If your PC have calibration file in the TSA program is not match with dongle which you want to test, it may cause error.

You may plug TSA dongle device into PC first, make sure it is working well, and then plug dongle in the USB2 WIFI adapter.

After click the Cal File, the calibration file on your PC will transfer into the USB2RJ45 adapter.
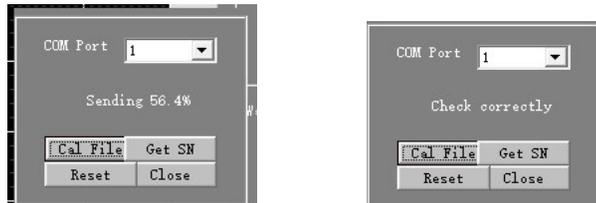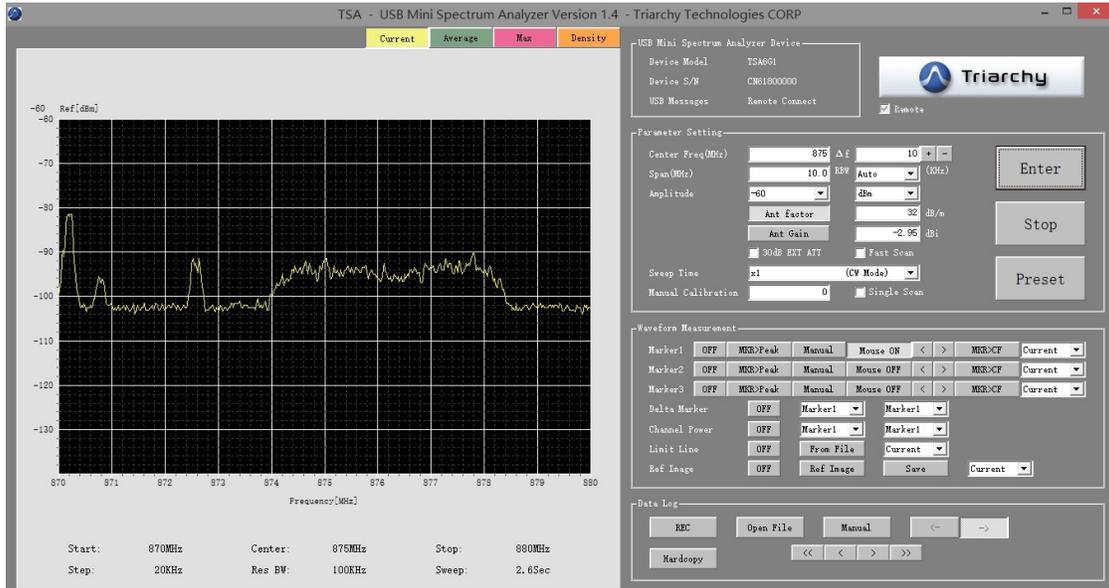
After transfer the calibration file, you can click the Get SN. It means to setup connection with far end TSA dongle. If the communication is successful, the TSA program will shown Device Model TSA6G1 name and Remote connect
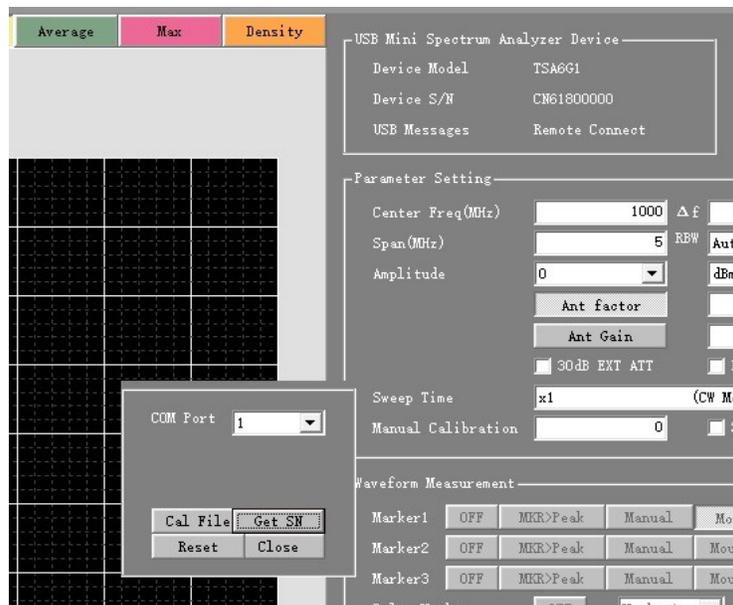
Then click the close to turn off the remote setup window.

You can input parameter of frequency, scan …. click Enter to start the measurement.

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6: Port forward setting

Above setting is only for local area netwrok, it you want to setup remote control over different city or conutry, you shall setup TCP/IP link over internet, it just need setup port forward at your router.

It will setup mapping from external IP address to your internal IP address.

Go into your router setup web, find port forwarding item in the firewall, input Local IP address and port number, the protocol shall be TCP.

After port forwarding setting, you can control TSA device over internet.