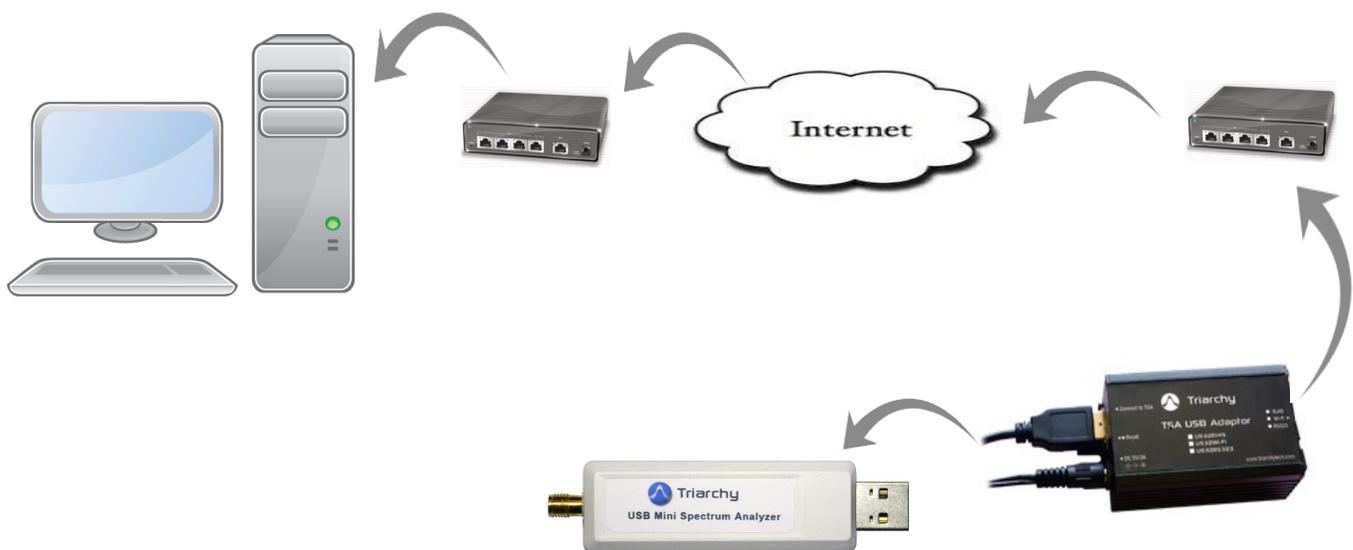




## Setup for USB2RJ45 of TSA USB Adapter

### 1: Introduction:

The USB2RJ45 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 USB2RJ45, USB2RJ45 will connect to Router. 5V power supply connects to the USB2RJ45 to provide power.

PC will be located far end to remote control the TSAUSB mini spectrum analyzer. TSA series of Spectrum Analyzers software must have be updated to at least v1.4 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.



## 2: USB2RJ45 configuration:

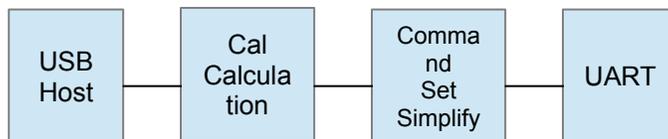
The USB2RJ45 consist of two sections: USB2UART and TCP/IP COM port module.



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 TCP/IP to COM port module will convert COM data into TCP/IP port. In this way, USB2RJ45 can directly connect with router without PC. The module is made by USR technology (<http://en.usr.cn/>)

The module models are USR-TCP232-E45 and USR-TCP232-T12.

E45 model support both static IP and DHCP/Auto IP connection. But T12 only support static IP connection.

## 3: USB2RJ45 setup.

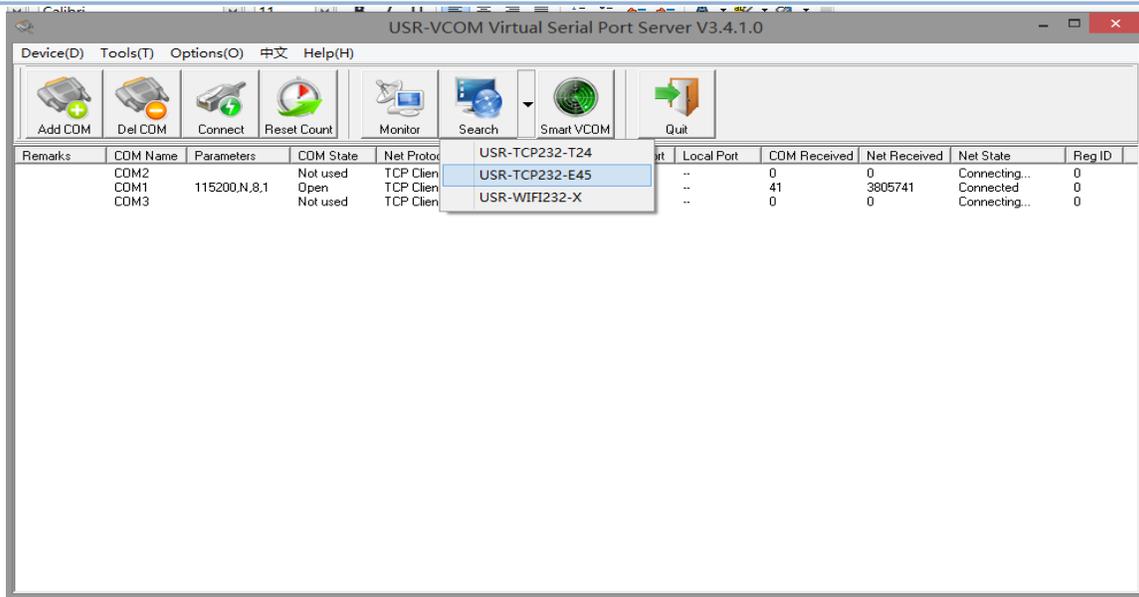
USB2RJ45 will have USB2UART converter and TCP/IC to COM port convert module USR-TCP232-E45.

First we need to setup USR-TCP-E45.

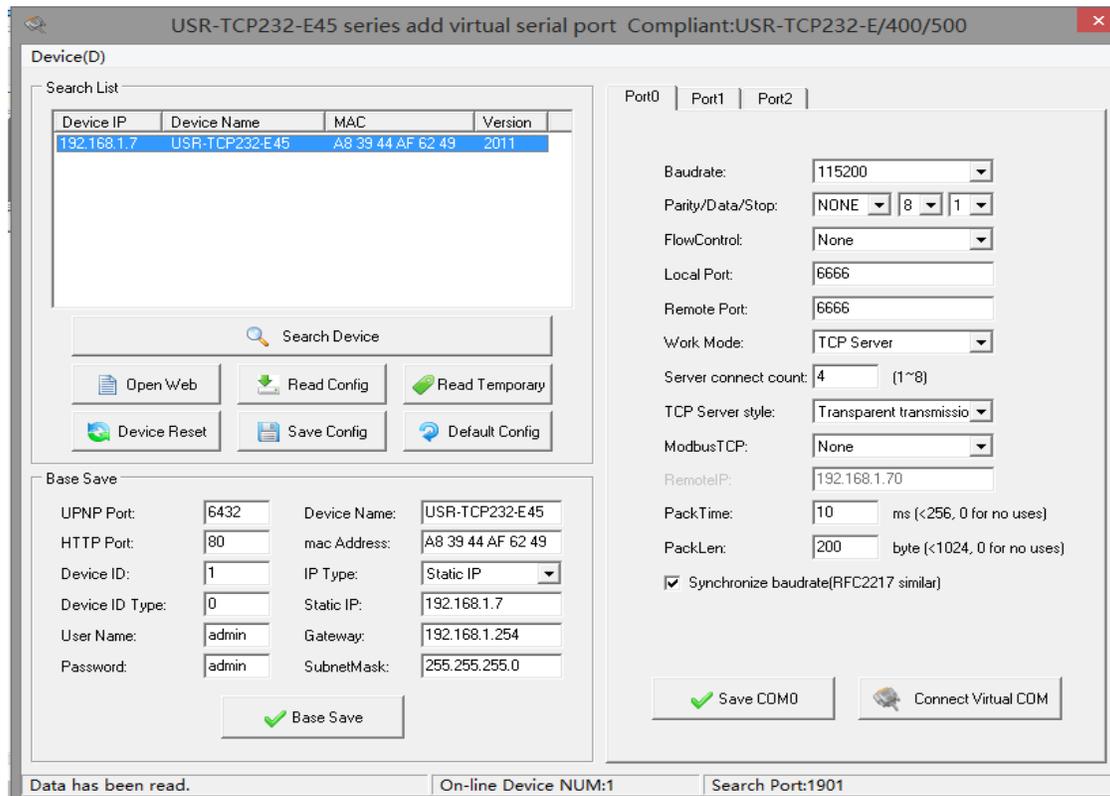
Your PC need to install the VCOM, please go into the web <http://en.usr.cn/USR-Software> , find USR software link, you can download VCOM software.

Plug 5V power to USB2RJ45, and using cable to connect USB2RJ45 into router.

Turn on the VCOM on the PC, and make sure your PC is linked with your LAN, (by Wifi or RJ45).



Look for Search item, you will find USR-TCP232-E45, click it, then go into:





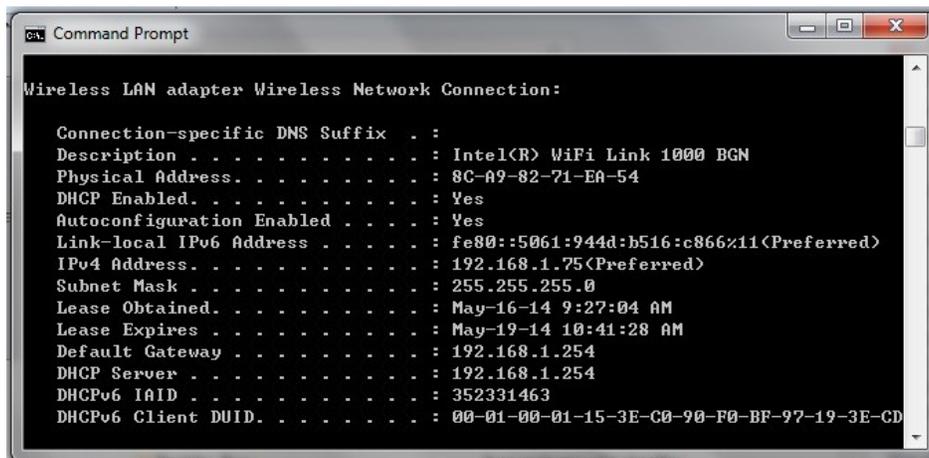
Click on "Search Device", you will find USB-TCP232-E45 information in the search list if you attached the USB2RJ45 into the router.

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

Input Gateway IP address and SubnetMask which is from DOS command window into VCOM Base Save area.

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 7, so that USB2RJ45 local IP address will be 192.168.1.7

Click Base Save, and then click Save Config to save the update

port0 setting:

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

Remote port or local port of IP can be any value, in this demo, we will set them into both 6666.

The work mode will be TCP sever.

Server connect count can be 4~8.



TCP server style will be transparent transmission.

Modbus TCP will be None

Follow demo setting to change some item in the block, after you modify, you shall Click “Save COM0” and “Save Config” to save the update.

#### 4: VCOM setup

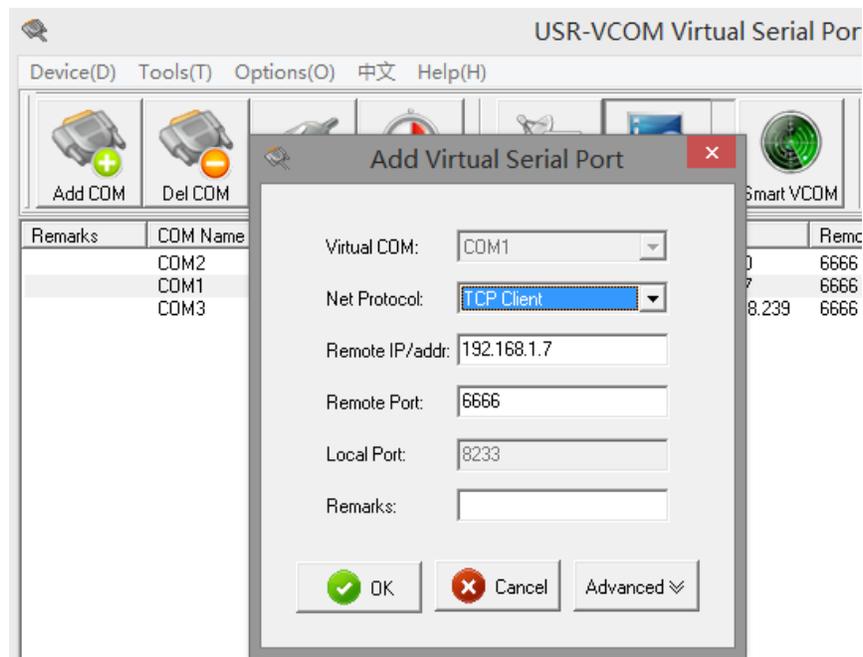
You can Add COM port in the VCOM, the settings will be:

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

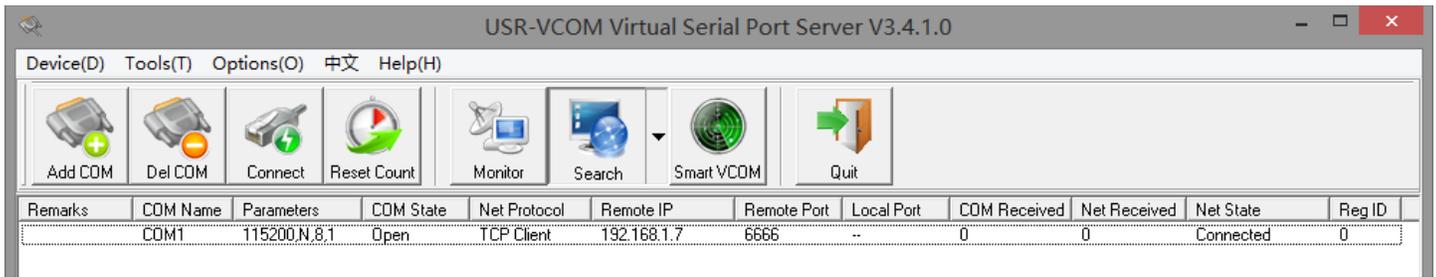
Net Protocol: TCP Client

Remote IP/addr: 192.168.1.7

Remote Port:6666

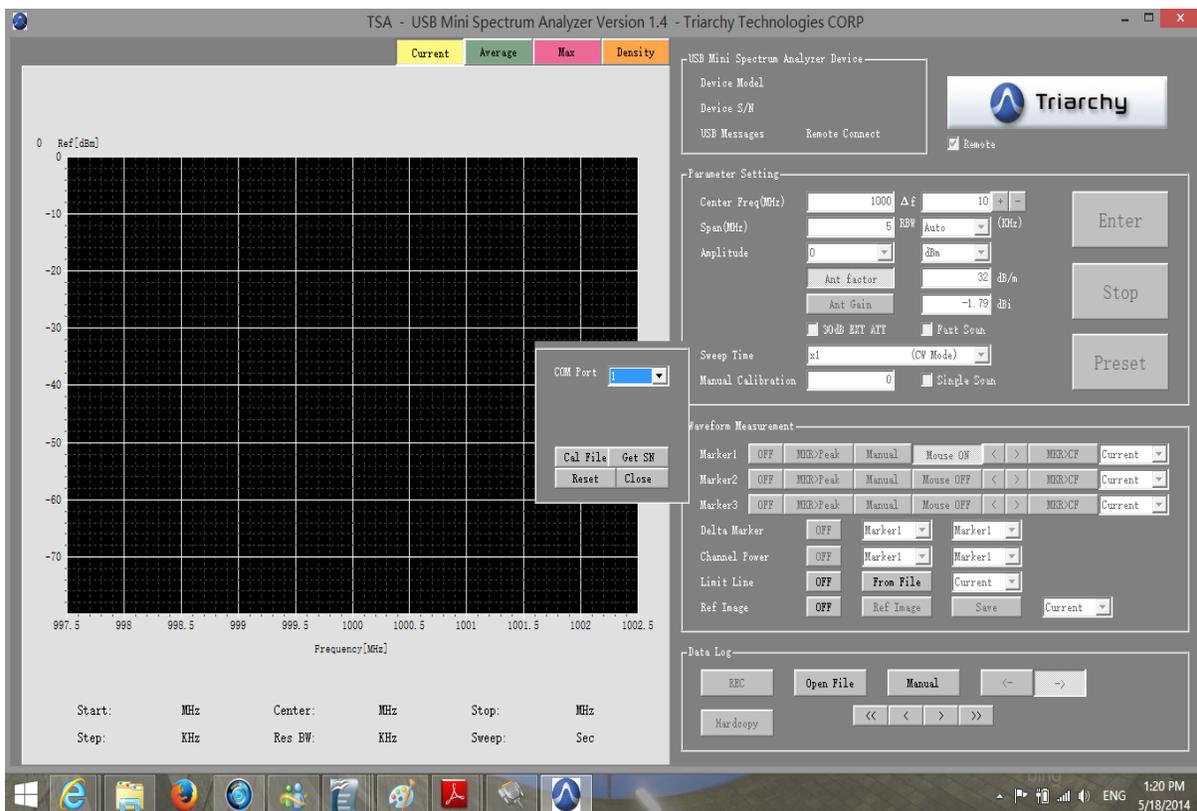


Click OK to add the TCP link. You will see the COM1 will setup at your VCOM, if USB2RJ45 is connect to the router and setting well, the TCP link will be setup, the Net state will shown the connected.



## 5: Setup TSA

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.

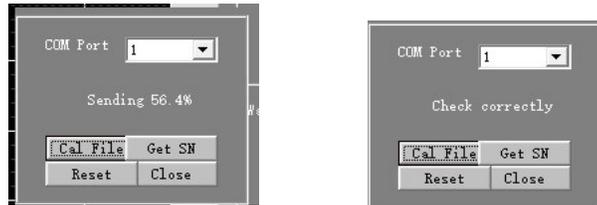
Click the Cal File; if the USB2RJ45 is first time to use, you need to download the calibration file from your PC into the USB2RJ45 converter. But you need make sure your PC has already installed the calibration file which is matching with the dongle on the USB2RJ45.

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

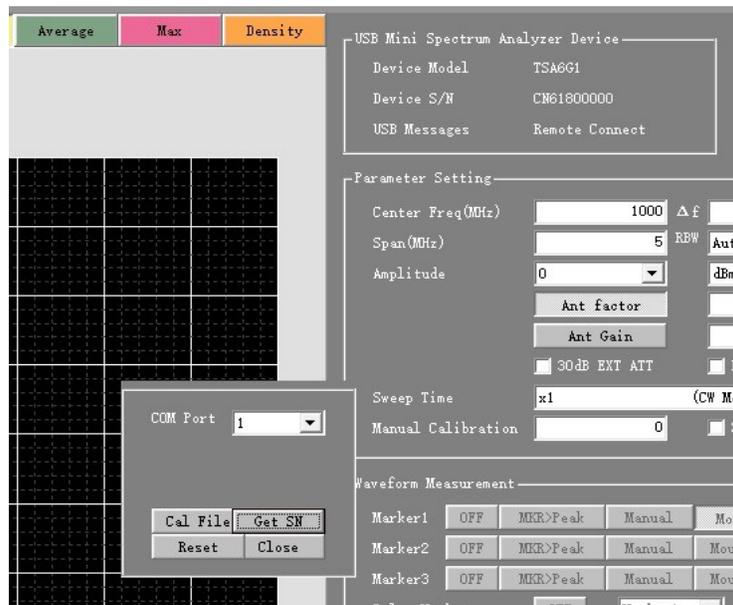


You may plug TSA dongle device into PC first, make sure it is working well, and then plug dongle in the USB2RJ45 adapter.

After click the Cal File, the calibration file on your PC will transfer into the USB2RJ45 adapter.

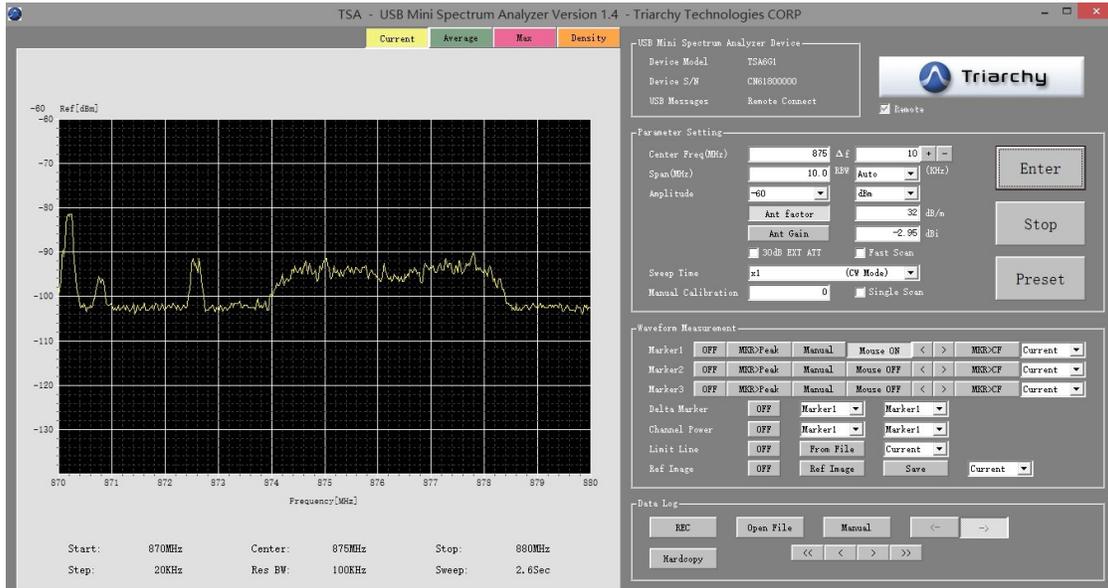


After transfer the calibration file, you can click the Get SN. It means to setup connection with far end TSA dongle. If the communication is successful, the TSA program will shown Device Model TSA6G1 name and Remote connect



Then click the close to turn off the remote setup window.

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



## 6: Port forward setting

Above setting is only for local area network, if you want to setup remote control over different city or country, 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.

**Firewall**

- ▶ Firewall
- ▶ IPv6 Firewall
- ▶ **Port Forwarding**
- ▶ Applications
- ▶ DMZ Hosting
- ▶ IPv6 DMZ Hosting
- ▶ UPnP

### Port Forwarding

Enter ports or port ranges required to forward Internet applications to a LAN device below.

**1. Set the LAN/WAN port and IP information.**

Select LAN Device: Manually enter the IP address

LAN IP Address: 192.168.1.11

External (WAN) Start Port: 6666

External (WAN) End Port: 6666

Internal (LAN) Start Port: 6666

Internal (LAN) End Port: 6666

Protocol: TCP

**2. Click Apply to save changes.**

Apply

**Applied Port Forwarding Rules**

LAN START/ END PORT	PROTOCOL	LAN IP ADDRESS	WAN START/END PORT	MODIFY	REMOVE
6666/6666	TCP	192.168.1.11	6666/6666	<span style="background-color: #4CAF50; color: white; padding: 2px 5px; border-radius: 3px; cursor: pointer;">Modify</span>	<span style="background-color: #4CAF50; color: white; padding: 2px 5px; border-radius: 3px; cursor: pointer;">Remove</span>



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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.