# SRT853L 5G Outdoor CPE

# **User Manual**

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## **1** Product Introduction

## 1.1 Product Overview

SRT853L is designed for outdoor user scene which can support 5G mmWave and Sub-6G technology and provide customer internet access through 10G Ethernet which give customer a stable high speed 5G access experience. SRT853L support IP65 to meet outdoor user scene.

The Qualcomm SDX65 chipset is used in the product which conform to 3GPP Release 16 standard. The product support 5G Sub6 in SA or NSA mode.

## 1.2 Key Features

### **5G Technology Support**

- SDX65 inside conform to 3GPP R16;
- Up to 10Gbps DL(800MHz) & 3.38Gbps UL(400MHz)
- NRDC(FR1 + FR2 Dual connectivity)
- mmWave 200MHz/CC
- Sub6 NSA or SA mode;
- MIMO 4\*4;

#### 5G/4G/3G support

• Support 5G mmWave&Sub-6G/4G/3G technology.

#### Ethernet

SRT853L support 10G Ethernet

### POE

SRT853L can be powered by POE, power and ethernet signal on same cable which easy for user to arrange wire and install.

### Waterproof

Support IP65 for outdoor scene.

#### WebUI

Support WebUI to configure network or device parameter, easy for setting.

## 2 ID and Interface

Your SRT853L is a CPE device for outdoor use. Computer, router or switch can be connected to the CPE to access the 5G/4G/3G Internet.

## 2.1 Product Interface



- 1. mmWave indicate led
- 2.5G indicate led
- 3. 4G indicate led
- 4. Ethernet Port indicate led
- 5. Micro-USB port
- 6. Standard nano-SIM card slot
- 7. Reset button
- 8. POE port

## 2.2 LED Introduction

The LED indicators display the router's status.

Indicator	Color	Status	Function
	Plue	Solid	Strong 5G signals and have no dial up
	Diue	Blinking	Strong 5G signals and dial up success
	Croon	Solid	Medium 5G signals and have no dial up
	Green	Blinking	Medium 5G signals and dial up success
5G LED	Vollow	Solid	Weak 5G signals and have no dial up
	Yellow	Blinking	Weak 5G signals and dial up success
	Red	Solid	During boot up or not registered to network
		Off	Registered to 4G network and have no registered to 5G network in NSA mode or power off
	Blue	Solid	Strong 4G signals and have no dial up
		Blinking	Strong 4G signals and dial up success
	Green	Solid	Medium 4G signals and have no dial up
		Blinking	Medium 4G signals and dial up success
4G LED	Vallau	Solid	Weak 4G signals and have no dial up
	Yellow	Blinking	Weak 4G signals and dial up success
	Ded	Solid	During boot up or not registered to network
	Red	Off	Registered to 5G network in SA mode or power off

	Green	Solid	Registered to mmWave network
mmWave LED		Off	Not registered to network or during boot up
	Green	On	Connect to Ethernet network or PC
ETH LED		Off	Not connect to Ethernet network or PC
	Green	Blinking	Data transfer

### Note :

It's suggested to select a location with best signal quality to install (strong 5G/4G signals).

## **3 Installation Materials and Tools**

Packing list: Before installing the ODU CPE, verify that you have all the items listed in the packing list. If any of the items is missing or damaged, contact your device vendor.

Item	Qty
SRT853L	1
QSG	1
Accessories (mounting kit)	1
Anchoring screws	2
Hose clamp	1
Hexagon wrench	1
Ethernet cable	1
Power adapter	1

If you need to install mounting kits on wood materials, prepare screws (recommended model: ST4.2 with length  $\ge$  25 mm).

An outdoor Ethernet cable requires a PVC conduit and must be installed far away from the parapet and lightning strip (recommended distance: more than 0.5 m).

If an Ethernet cable is routed within a street lamp pole, no PVC conduit is required.

## 4 Installing the SIM Card

Your ODU only supports the nano-SIM card. You can get a standard nano-SIM card from your service provider.

Follow the instructions as below to install the SIM card:

- 1. Use a hexagon bar to open the SIM Card cover.
- 2. Insert the SIM card into card slot in the correct position.
- 3. Use a hexagon bar to close the SIM Card cover.



#### Notes :

Do not bend or scratch your SIM card, and avoid exposing the SIM card to static electricity, water or dirt.

Tighten screws to prevent water from entering the ODU.

## **5** Application Scenario

Connect Ethernet Cables and power on the device as below, and then your PC can access the internet.

1. Connect the Ethernet port of the Adapter which is marked with "POWER" to the Ethernet port of the ODU through Ethernet Cable;

2. Connect the Ethernet port of the Adapter which is marked with "DATA" to the Ethernet port of the PC through Ethernet Cable.



### Note :

PC/user terminals should be set with automatically to obtain IP address.

The Ethernet port of the Adapter which is marked with "POWER" only can be connected to the ODU. This interface may damage the PC or user terminals. There is no "Power" button on the ODU, It can be powered on once the cable connected,.

The Ethernet Cable which is used to connect the "POWER" port can be found in the default box. And users should prepare another Ethernet Cable to connect to the "DATA" port.

## 6 **ODU Installation**

1. Install mounting kits.

Installation scenario 1: mounting on the wall



Mark the screw position in the selected position according to the hole spacing of the rack.



According to the position of the mark, punch the hole in the wall, install the expansion screw, and fix the rack.



Attach the device to the rack.



Installation scenario 2: mounting on a pole



2. Align the mounting slot with the guide rail and press down. When you hear the click sound, the installation is in place. You can press the buckle on the mounting kits and pull the device up to remove it.



3. Connect the Power Adaptor of the ODU with Ethernet cable. See Application Scenario Chapter to connect cables and power on the device.

## 7 Product WebUI Function

## 7.1 Login

Connect computer to POE adapter using ethernet cable and power on the SRT853L according to the process in Chapter 5. Then open the browser on PC, input the URL, username, and password to login.

The default URL of device is <u>http://192.168.1.1</u>, username is admin, and password is admin. This information also can be found on the tag of CPE device. Please modify the username and password to prevent from tampering.

Then you can manage the CPE through WebUI.

5G ODU	
	Login to your account
	UserName admin
	PassWord
	···· ··· ··· ··· ··· ··· ··· ··· ··· ·
	LOGIN Forget password?

## 7.2 Home Page

In the home page, you can click status button, then the basic information of device can be get which include: network mode, network status, connection time, MAC address, IP address and so on.

5G ODU		Home Status	<b>□</b> †↓
傓	Home ~	Internet Info	
	Status		
$\square$	sms >	Internet Mode:	Mobile Data
	Mobile Network >	Network Status:	Disconnected
ح	Internet >	Connection Type:	No service
00		Connection Uptime:	0 Min
Ŧ	Security >	IP Address:	Unknown
ţţţ	Management >	Subnet Mask:	Unknown
		Default Gateway:	Unknown
		Primary DNS Server:	Unknown
		Secondary DNS Server:	Unknown
ß		IPv6 Address:	Unknown
E		IPv6 Primary DNS Server:	Unknown

## 7.3 Mobile Network

From the Mobile Network menu, the mobile network, data roaming, network mode, network searching mode and APN parameter can be configured.

#### **Mobile Connection**

Mobile Connection: Enable/Disable 5G/4G data connection;

Data Roaming: Enable/Disable data roaming function;

5G ODU	Mobile Network Mobile Connection			ant 14
Home >				
Mobile Network      ✓		Mobile Data:	On *	
Mobile Connection		Data Roaming:	Disable ~	
Profile Management				
Network Setting				
RF Parameters				
PIN Management				
A internet				
(+) Security >				
, åå Management →				
			COPYRIGHT ID 2021   Open Source Notice	
BA				

#### **Profile Management**

Device can match proper APN parameter according to SIM card automatically. If device cannot match APN, you can click "New profile" to create a new profile, you can contact local network provider to get correct APN information.

	5G ODU	Mobile Network Profile Management			ant †4
傓	Home >				
۲	Mobile Network $\checkmark$		Carrier Name:	中国电馈CTNET (Default) ッ	
			Authentication Type:	Auto	
	Profile Management		APN:	CINET	
			User Name:		
			Password:	Prevel	
ጽ	Internet >		IP Туре:	IPV4V6 ~	
	Security >				
	Management >			Apply New Profile	
				CPYRIGHT © 2021   Open Source Notice	
E					

#### **Network Setting**

5G ODU	Mobile Network Network Setting			ail 14
Ĥ Home →				
💮 Mobile Network 🗸 🗸		Network Mode:	Auto(SG Pref)	
Mobile Connection			Auto(SG Pref)	
Profile Management			4G Only Apply	
Network Setting				
RF Parameters				
PIN Management				
0 Internet >				
$\leftrightarrow$ Security $\rightarrow$				
ļļļ Management >				
			COPYRIGHT © 2021   Open Source Notice	

Network mode and Network searching mode, suggest to set Auto.

### **RF** parameters

From the menu of RF parameters, you can get the network information about current device.

	5G BOX	<b>#</b> :	lobile Network F Parameters			5G at <b>il †</b> 4
傓	Home					
۲	Mobile Network 🗸			CA Info:	NA	
	Mobile Connection			RSRP:	-102.0dBm	
				RSSI:	-77.0dBm	
	Profile Management			RSRQ:	-12.0dB	
				SNR:	S.OBB	
	RF Parameters			Bane:	181 E0	
				ENDC DSDD	30 -104 048m	
	PIN Management			ENDC RSRO	-12.048	
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Internet >			ENDC SNR:	10.048	
141	Management >			ENDC Band:	N78	
VIT				ENDC PCI:	27	
					COPYRIGHT © 2021   Open Source Notice	
G						
2						

#### **PIN Management**

	5G ODU	Mobile Network PIN Management			
	Home >				
۲	Mobile Network 🗸 🗸 🗸		PIN operation:	Enable ~	
	Mobile Connection		PIN code:	Ineri	
	Profile Management		Remaining attempts:	3	
	Network Setting			_	
	RF Parameters			Ap	рly
	PIN Management				
ጽ	internet >				
	Security >				
	Management >				
				COPYRIGHT IC 2021   Open Source Notice	
B	۵				

From the PIN Management menu, you can disable or enable PIN, set PIN code.

## 7.4 Internet

#### DHCP

 SG ODU
 Image: Image

From the menu of DHCP, you can change the device IP address, DHCP IP range and DHCP lease time.

## 7.5 Security

#### **DMZ Setting**

From DMZ setting menu, the machine in internet can communicate with device in Ethernet which set as DMZ IP.

5G ODU	Security DMZ Settings		ant 14
G Home	>		
Mobile Network	>	DMZ status:	
Co Internet	· · · ·	DMZ IP address: 192.168.1.100	
+ Security	~		
DMZ Settings		Apply	
IP Passthrough			
IPacm gre config			
htanagement کې	>		
		COPYRIGHT © 2021   Open Source Notice	
EA			

### IP Passthough

Enable IP Passthrough function, click apply.

5G ODU	Security IP Passthough	.nti 11n
Home >		
Mobile Network >	IP Passthrough: Disable v	
A Internet	Note: 1. In IP Passthrough mode, you can only access the Internet using mobile data.	
🕂 Security 🗸 🗸	2 you will be logged out of the page. You will need to manually assign a static IP to your computer to log in again.	
DMZ Settings	Acoly	
IP Passthrough		J
IPacm gre config		
¦¢¦ Management >		
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EA		

PC can get the IP address from network.

C:\>ipconfig /all	
Windows IP 配置	
主机名 YH-20170410BMKP 主 DNS 后缀	
以太网适配器 本地连接 10:	
连接特定的 DNS 后缀	
本地链接 IPv6 地址	
DHCPv6 IAID : 702419132 DHCPv6 客户端 DUID : 00-01-00-01-20-7C-C2-AA-70-4D-7B-32-11-F7 DNS 服务器 : 221.11.1.67 221.11.1.68 TCPIP 上的 NetBIOS : 已启用	

5G BOX	Home Status	
Ġ Home ∽	Internet Info	
Status		
Mobile Network >	Internet Mode: Mobile Data	
0 Internet >	Network Status: Connected	
+ Security >	Connection Type: UNICOM 4G	
çor de la constante de la con	IP Address: 10.115.96.166	
	Subnet Mask: 255.255.255.255	
	Default Gateway: 10.115.96.165	
	Primary DNS Server: 221.11.1.67	
	Secondary DNS Server: 221.11.1.68	
	IPv6 Address: Unknown	
	IPv6 Primary DNS Server: Unknown	
	IPv6 Secondary DNS Server: Unknown	

## 7.6 Management

### SNTP

From SNTP menu, you can set the time of network sync, network sync server, time zone and summer time.

5G ODU		Current Time:	1980-01-06 00:23:47	Change Time
Hobile Network	>	Status:	Unsynchronized	
员 Internet	>	Last Synchronize:	2022-09-24 09:19:54	
		Time Zone:	Asia/Chongqing	Change Timezone
(+) security	`	Time Format:	24-hour format	-
¦¢¦ Management	~	@ Enchla Auto Curr	- Mithe Mathematica	
SNTP		🖲 Enable Auto-Syn	c with Network Time	
Device Information		Time Server1:	time.windows.com	-
Statistics		Time Server2:		~
Third App		Time Server3:		•
System Log		Time Server4:		
System Admin				
Upgrade		Time Server5:		•
Reboot & Reset		Enable Daylight	Saving Time	
				Apply

#### **Device Information**

	5G ODU		Management Device Information	<b>□</b> †↓
⊕	Mobile Network	>		
ጽ	Internet	>	Device Name:	SRT853M
Ŧ	Security	>	Software Version:	SRT853M_6.0.1_EQ101
161	M		Modem Version:	SRT853M_EQ100_00B.C00000.B12CS2_220828_600_C162_V01
\$ Ŷ	Management	Ý	Hardware Version:	SRT853M_PCB_V1.00
	SNTP		IMEI:	865171057221809
	Device Information		MAC Address:	Unknown
			Serial Number:	T853M0712X00000034
	Statistics			
	Third App		Device Status	
	System Log		CPU Usage:	3%
	System Admin		Memory Usage:	175.48MB/183.38MB
	Upgrade		System Uptime:	24 Mins
	Reboot & Reset			
		COF	YRIGHT © 2022   Open Source Notice	

From the device information menu, you can get device name, software version, and hardware version and so on.

#### **Statistics**

From the menu of Statistics, you can get the data used which include update data and download data.

5G BOX	<b>o Management</b> <b>O Statistics</b>			5G 📶 🏪 🗇 🛃
Home >	ſ			
🖂 sms 🛛 🔿		Upload Data:	70.27 MB	
Mobile Network >		Download Data:	97.24 MB	
So Internet		Total Data Osage:	107-21 MR	
		The Bandwidth monitor tab shows approxima	te data usage. For a more accurate solution, Please contact your data provider.	
C Voice >			Clear History	
Security >	l			
  ¢↓ Management ∽				
NTP				
Device Information				
Statistics				
System Log		СО	PYRIGHT © 2021   Open Source Notice	
System Admin				
Backup & Restore				
Upgrade				
Reboot & Reset				

### System Admin

5G ODU	∮∮↓ Maragement System Admin	ail †4
Ĥ Home →		
Mobile Network >	Admin Username	
Conternet >	Current Username:	
↔ Security >	New Username:	
ļộ↓ Management ∽	Current password: hur	
Device Information		
System Log	Apply	
System Admin	Admin Deceword	
Upgrade	Admin Password	
Reboot & Reset	Current password: Yest	
	New password:	
	Confirm password: Net	
	Apply	
		)
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From the menu of system admin, you can change the username and password of WebUI.

### Upgrade

From the update menu, you can check whether new software version exist on line and can start upgrade new firmware.

5G ODU	Management Upgrade				.nil †4
Home >					
Mobile Network >		Update Type:	Online Update		
on Internet		Current Software version:	SRT853_601_EQ101		
+ Security >				Check for update	
¢¢ Management ∽					
Device Information					
System Log					
System Admin					
Upgrade					
Reboot & Reset					
			COPTRIGHT © 2021   Open Source Notice		

#### **Reboot & Reset**

From the Reboot & Reset menu, you can reboot the device and restore the parameter in device to factory default value.

	5G ODU	Hanagement V Reboot & Reset			ail †4
窗	Home				
۲	Mobile Network				
品	Internet		0		
Ŧ	Security				
ţţţ	Management				
		Rebootin	ng the device will takes about 60 seconds.	Click the button below to reset the device to its	
			Click the button below to reboot.	factory settings.	
			Reboot	Reset	
	Reboot & Reset				
			СОРУВЕНТ © 2021	Open Source Notice	
E					

## 7.7 Logout

Click the menu on the left bottom, you can logout from WebUI.

5G BOX	Mobile Network Profile Management		5G at <b>l †</b> ‡
Home       >		Carrier Name: Unicom (Default) * Authentication Type: Auto * APP:: 3gnet User Name: Password: Pa	
3		COPYRIGHT © 2021   Open Source Notice	

## 8 Troubleshooting

Please refer the content in this chapter when the device function abnormal, this can save lots of time. If it still not works, you can contact the provider to get help.

## 8.1 Cannot access WebUI

Description: Cannot access WebUI though internet browser.

Step:

- 1: Check the CPE device power state;
- 2: Check the cable between computer and device;
- 3: Check the address input in browser;
- 4: If all above are OK, you can try to reboot device or restore device to factory setting.

## 8.2 Data connection fail

Description: Device cannot connect data service.

Step:

- 1: Check the CPE device power state;
- 2: Check the SIM card insert state and service state;
- 3: Check the network camp state according to LED;
- 4: If all above are OK, you can try to reboot device or restore device to factory setting.

## 9 Common Operation and Questions

## 9.1 What Is the Operating Temperature of the CPE?

The operating temperatures are as follows:

- Outdoor CPE
  - Operating temperature: -40°C to +50°C
  - Storage temperature: -40°C to +70°C

### Note:

-40°C to +50°C is an ideal operating temperature range for the CPE. In a low-temperature or high-temperature environment, the performance of the CPE may be affected, or the CPE cannot work properly.

## 9.2 How to Log in to the CPE and Which Browser Can Be Used?

After the CPE is connected to pc, log in to the management page (http://192.168.1.1) using the device browser.

The CPE supports the following browsers:

- Google Chrome 86and later
- Firefox 69and later
- Opera 44 and later
- Safari 10.1and later
- Microsoft Edge 91.0.864.59 and later

# 9.3 Does the CPE Support Online Upgrades? How to Perform an Online Upgrade?

The CPE supports online upgrades. Click Management -> Update Check for Updates.

5G ODU	¢   Management Upgende	ant 14
Home >		
Mobile Network	Update Type: Online Update	
o internet >	Current Software version: SRT853_601_EQ101	
↔ Security >	Check for update	
ļļļ Management ∽		
Device Information		
System Log		
System Admin		
Upgrade		
Reboot & Reset		
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## 9.4 How to Restore the CPE to Factory Settings?

#### Method 1: Using the RST PIN hole

Ensure that the CPE is powered on and press the RST PIN hole for more than 10 seconds.

#### Method 2: Using the Management Page

Log in to the management page and choose Reboot&Rest -> Reset.

### 9.5 How to Change the Login Password?

- **Step 1** Connect the computer to the CPE. Enter 192.168.1.1 in the address box of the browser to log in to the CPE. Enter the login password to access the management page.
- Step 2 Choose Management > System Admin
- **Step 3** Enter the current password.
- Step 4 Enter and confirm the new password.
- Step 5 Click Apply.

### 9.6 How Long Does It Take to Start the CPE?

Generally, the CPE can access the network within 3 minutes after the SIM card is inserted and the CPE is powered on. If the signal quality is poor, it takes longer for signal searching.