

5G Sub-6GHz Small Cell

Product Manual

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1. Quick configuration

1.1 Configuration overview

1.1.1 Configuration process

After the base station is powered on, it is necessary to configure the data base station and enable the base station to access users and provide users with voice and data services. Figure 1-1 shows the activation process of the base station .

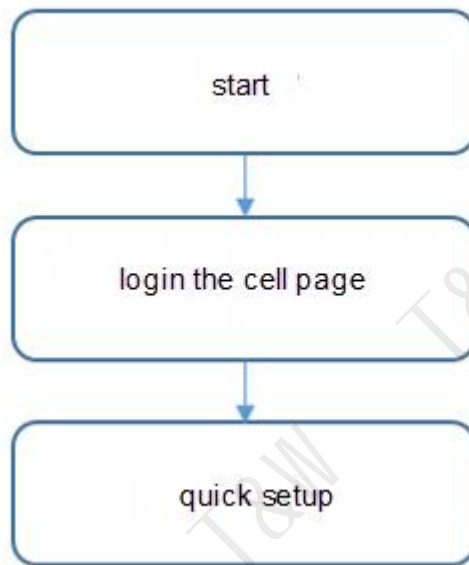


Figure 1-1 Configuration process _

1.1.2 Network port connection instructions

Base station network interface includes 1G WAN port , 10G optical port , 1G LAN port .

- 1G WAN port (dpdk1.kni) is usually used as a backhaul interface, which can provide a backhaul bandwidth of 1 Gbps for data transmission between the base station and the core network .
- 10G optical port (dpdk2.kni) as a backhaul interface can provide a backhaul bandwidth of 10Gbps for data transmission between the base station and the core network .
- 1G LAN port (eth0) is used for operation and maintenance .

Notice:

The first time you login the base station, you can access it through the default management IP 192.168.200.200 of the WAN port . If the service IP of the WAN port is forgotten , you can use the management IP 192.168.200.200 to access (this IP will not change).

the three network interfaces cannot be set on the same network segment.

1.1.3 Data preparation

Before configuring the base station, data planning is required. The configuration data includes local parameters and interconnection parameters , which need to be determined after consultation with the core network according to the actual deployment situation , including transmission network addresses , wireless parameters, and software versions . AMF IP , PLMN, TAC, GNBID , SD SST, etc.

1.2 Login to the web client

The WEB page of the base station can be accessed through any one of the three interfaces .

The browser requirements for client computers are shown in Table 1-1 .

project	Require
browser	Chrome 6 or later

Table 1-1 Client environment requirements _

1.2.1 Setting up client computers

The computer can be directly connected to the WAN port for configuration, and the default management IP of the WAN port is 192.168.200.200. The following content is described by connecting the computer to the WAN port to configure.

Before logging in to the web client, first set the IP address of the client computer to ensure that the client computer is connected to the base station . Take Windows 7 as an example .

1. Click " Start > Control Panel", and click "Network and Internet " in the pop-up window .
2. Click View Network Status and Tasks, and click Local Area Connection in the pop - up window .
3. In the pop-up " Local Area Connection Status" dialog box, click " Properties " , and the "Local Area Connection Properties" will pop up .
4. Select " Internet Protocol Version (TCP/IPV4) " , click " Properties " , and the pop-up window is shown in Figure 1-2 .

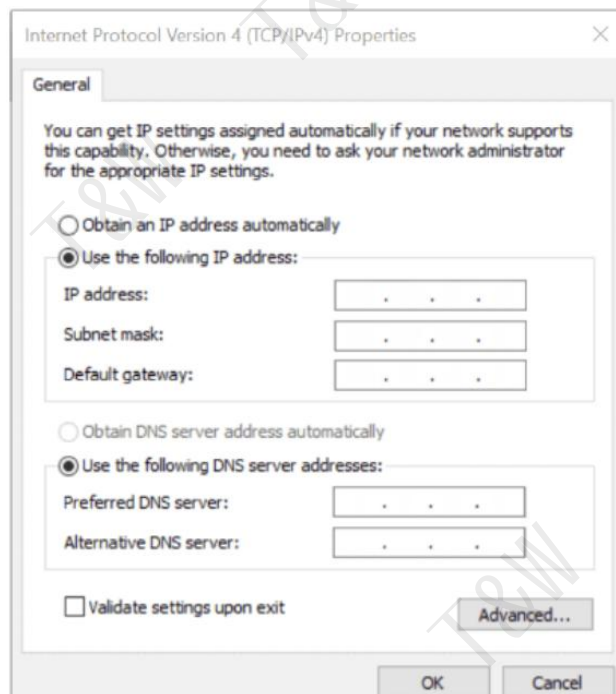


Figure 1-2 Set the client IP address

5. Check " Use the following IP address" .
6. Enter the IP address , subnet mask , and default gateway, and click OK .

-
- IP address: 192.168. 200 .XXX : (the recommended value of XXX is 103~199)
-

 **Notice:**

The default IP address of the base station WAN port is 192.168.0.102 , and the management interface IP is 192.168.200.200. In most cases , 192.168.0.102 has been modified to other addresses, so it can be accessed with 192.168.200.200 . This address is only suitable for access when there is only one base station in the network .

- Subnet mask: 255.255.255.0
 - Default gateway: optional
7. ping 192.168. 200.200 in the command line window to check whether the network between the client computer and the device is connected .

1.2.2 Login to the Web maintenance page

1. Enter https://192.168.200.200 in the address bar of the browser , (the http method can open the web but cannot log in) , click "login" to open the web client login page , as shown in Figure 1-3 .

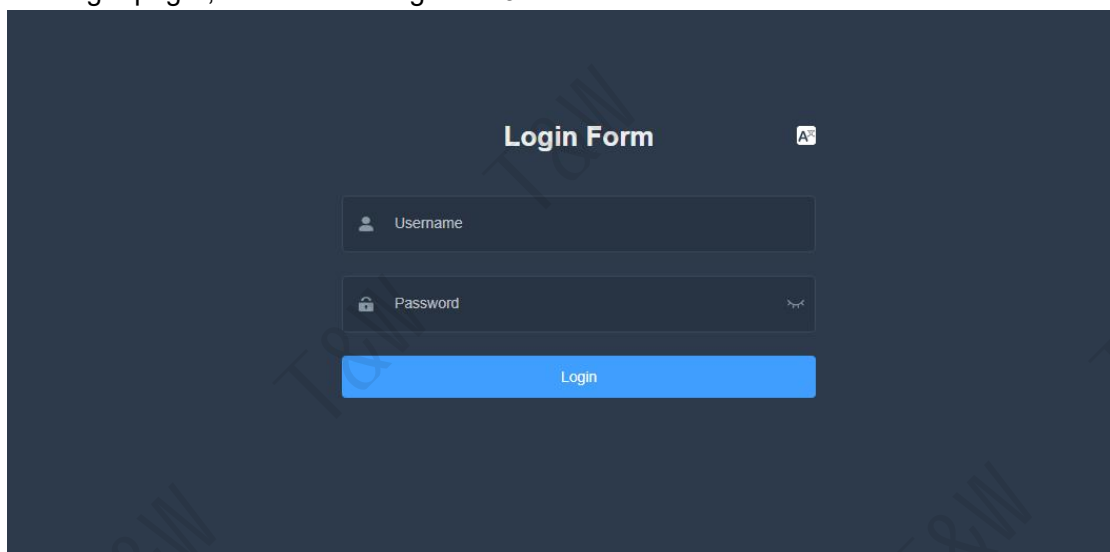


Figure 1-3 Logging in to the web page of the base station

2. Enter the user name and password , and click " Login " . The home page of the web client is shown in Figure1-4.

Default username : admin , default password: Pico@2018

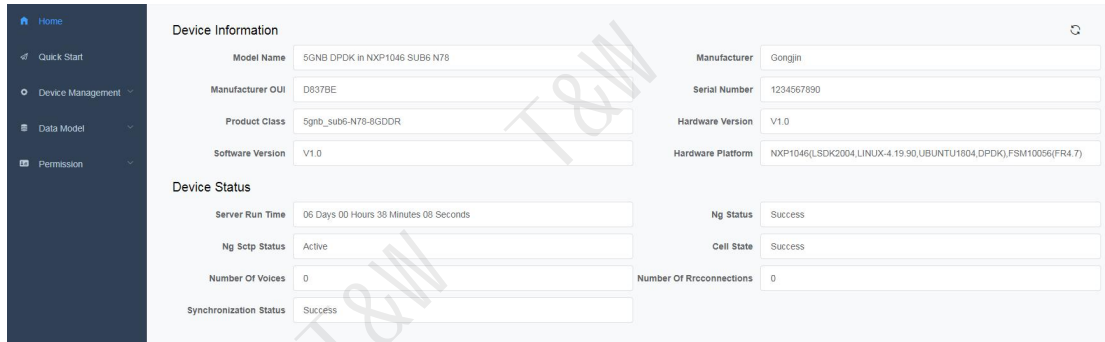


Figure 1 - 4 base station web client home page

The home page is the basic information. Including OUI (Organization Unique Identifier), product model, product serial number, software and hardware version, and device status information.

1.3 Quick setup

The quick setup includes the following configuration page. Some page do not need to be configured and can be skipped directly to the next step.

- Networking setting : You can configure the IP address routing of the interface and other related information.
- Tr069 Server: Configure the relevant information of the base station connecting to the network management system. If the base station is to be connected to the network management system, this item needs to be filled in.
- IPsec management: configuration is only required when there is a security gateway .
- AMF: fill in the core network AMF address .
- Device: configure synchronization mode and GNB ID , etc.
- Cell Setting: Configure cell- related information.

1.3.1 Quick start - Networking setting

- Interface IP related configuration

The WAN interface and SFP interface are the external communication interfaces of the base station , which are mainly used to connect the base station with external devices, such as: OMC , 5GC , gateway and other equipment , and support the configuration of multiple VLANs to connect with different devices.

Select the corresponding interface in the network settings, select the item to be modified and modify it directly (IPV4 and IPV6 cannot be enabled at the same time) , click the save button after modification , and restart to take effect



Notice:

dpdk1.kni corresponds to the WAN port , dpdk2.kni corresponds to the 10G SFP port , and eth0 corresponds to the 1G LAN port.

The three network ports cannot be set to the same network segment .

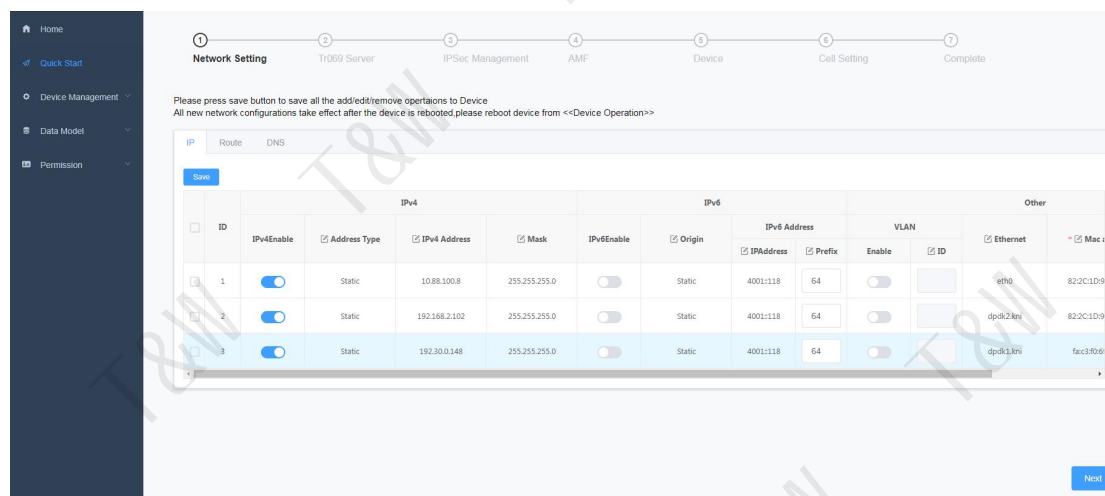


Figure 1-5 Network interface configuration

Interface parameter descriptions are shown in Table 1-2 , Table 1-3 , and Table 1-4 .

parameter name	illustrate
AddressType	The interface obtains the IPv4 address method . support: <ul style="list-style-type: none"> DHCP: Obtain an IP address dynamically , there is no need to configure other parameters ; Static : IP address and mask need to be configured manually; Disabled : Indicates that the IP protocol function of the interface is disabled ;
IP v4 address	IPv4 address of the interface . <ul style="list-style-type: none"> DHCP mode, it is assigned by the DHCP server ; Static mode , manual configuration is required;
Mask	IPv4 subnet mask of the interface . <ul style="list-style-type: none"> DHCP mode, it is assigned by the DHCP server ; Static mode , manual configuration is required;

Table 1-2 Description of interface I Pv4 parameters

parameter name	illustrate
origin	The interface obtains the IPv6 address method . support: <ul style="list-style-type: none"> DHCPv6 : Obtain an IP address dynamically without configuring other parameters ; Static : Static mode, need to configure IPv6 address and mask ; Disabled : Indicates that the IPv6 protocol function of the interface is disabled (IPv6 protocol is disabled by default) ;
	IPv6 address and mask of the interface .

parameter name	illustrate
IPv6 address	<ul style="list-style-type: none"> DHCPv6 mode, it is assigned by the DHCPv6 server ; Static mode , manual configuration is required;

Table 1-3 __ Interface I Pv6 parameter description

parameter name	illustrate
Mac address	MAC address of the interface
MTU	MTU size of the interface

Table 1-4 __ Description of other public parameters of the interface

Table 1-5 for VLAN parameter description .

parameter name	illustrate
enable	VLAN function switch
VLAN ID	VLAN ID

Table 1 - 5VLAN parameter description

- Routing related configuration

1. Switch to the route interface for routing settings
2. Manually add a route and click Add, if you add a network segment route, you need to turn on the StaticRoute switch, fill in the ip address in DestIPAddress, and fill in the mask in DestSubnetMask. If you add a default route, you don't need to enable the StaticRoute switch .
3. Gateway IPAddress fills in the gateway address . Ethernet must choose the corresponding interface to use.
4. After the modification is complete, click Save and restart the base station to take effect

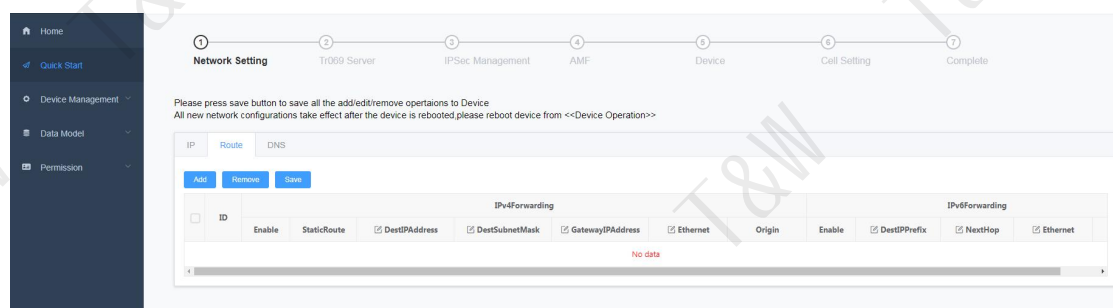


Figure 1-6 Routing configuration _

1.3.2 Quick start - Tr069 Server

After configuring the network settings, click Next to enter the Tr069 Server settings . If there is no network management system to connect , you can directly skip this page and enter the next step .

Figure 1-7 Configuring the network management

The description of network management parameters is shown in Table 1-6 .

parameter name	illustrate
Hems Server URL	Base station network management address, such as http://192.168.104.5:8080/itmscope/inform
Hems User Name	Network management user name, fill in as required.
Hems User Password	Network management password, fill in as required.
IPSec Server Addr	According to the actual network deployment, this item needs to be filled in when the security gateway needs to be connected before the network management can be connected.
Periodic Inform Enable	It is recommended to turn on , the base station periodically sends inform messages to the network management system to maintain the connection between the base station and the network management system
Periodic Inform Interval(s)	Recommended setting 180

Table 1 - 6 Network management parameter description

1.3.3 Quick start - IPSec Management

Ipssec is usually used for the base station connected to the public network to connect to the core network of the operator. This step usually can be skipped if it don't have SecGW in your environment. If you need ipsec configuration, you can contact technical support .

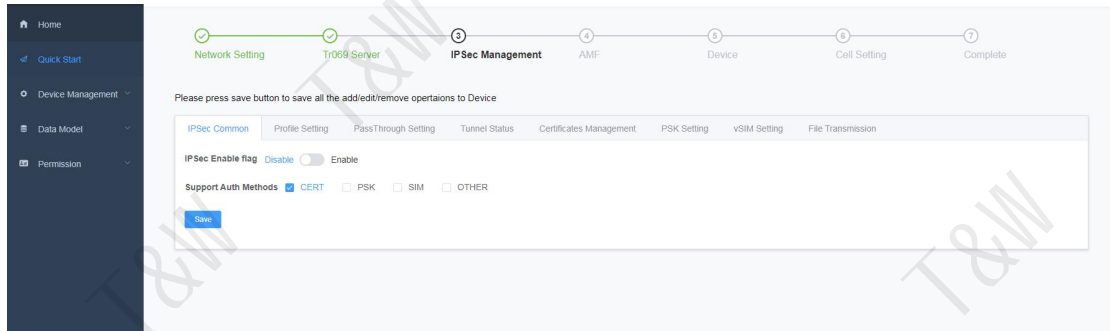


Figure 1-8 | PSEC configuration __

1.3.4 Quick start - AMF

This interface is used to fill in the relevant information of the core network

parameter name	illustrate
AMFIP1	address of the AMF is consistent with the IP address of the AMF on the 5GC side .
AMF port	The default is 38412
AMF local port	does not need to be modified
Security Gateway Server	Ipsec network environment, you need to fill in the IP of the security gateway , otherwise you can leave it blank .

Table 1 - Description of 7 core network parameters

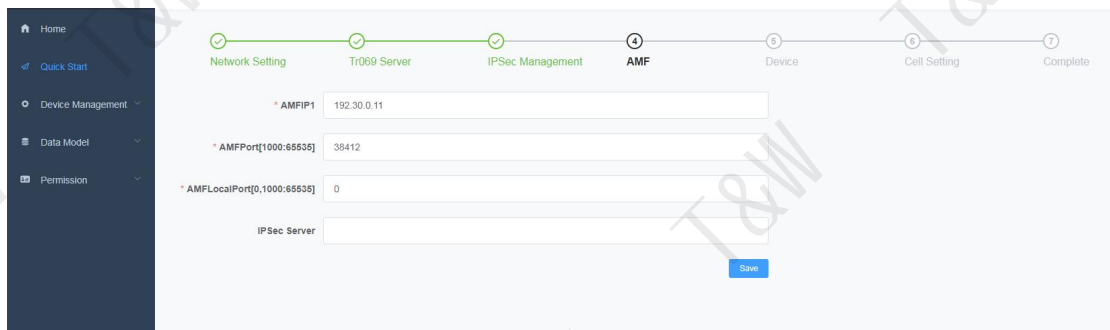


Figure 1-9 Core network configuration

1.3.5 Quick start - Device

parameter name	illustrate
GNBID	gNB ID
GNBID length	Indicates the number of digits encoded by the gNB ID. See "Global gNB ID" in clause 9.3.1.6 of TS 38.413[5]
frame offset	Consistent with local operator frame offset.
syncmode	Set cell synchronization mode, GNSS, IEEE1588, FREEDOM

Table 1 – 8 equipment parameter description



Figure 1-10 Device parameter configuration

1.3.6 Quick start - cell setting

parameter name	illustrate
Adminstate	Cell blocking switch, disabled by default . After enable, the cell will be disable . (effective immediately after modification)
PLMN ID	The PLMN ID to which the cell belongs
CellLocalID	Identify the cell id of GNB .
frequency	SSB frequency points, the frequency points that provide quick setting for N78 base station system are 620544, 627264, 633984. If other frequency point settings are required , they need to be set in the tr069 data model.
FrameStructure	Support DDDSUDDSUU_D10U2 , DDDDDDDSUU_D6U4 , DSUUU_D10U2.
SsPBCHBlockPower	The max value is 7 for 100M bandwidth(2*20w)
RootSequenceIndex	PRACH root sequence index (see TS 38.211 clause 6.3.3.1). Default is 0
TAC	Set the tracking area code where the base station is located
PHYCELLID	Physical Cell Identification Code
bandwidth	Support 100, 80, 60, 40, 20M bandwidth configuration , the

parameter name	illustrate
	system defaults to 100m bandwidth.
Service Interface	Dpdk1.kni is the backhaul of the WAN port, and dpdk2.kni is the backhaul of the 10G SFP port .

Table 1 – Description of 9 Cell Parameters

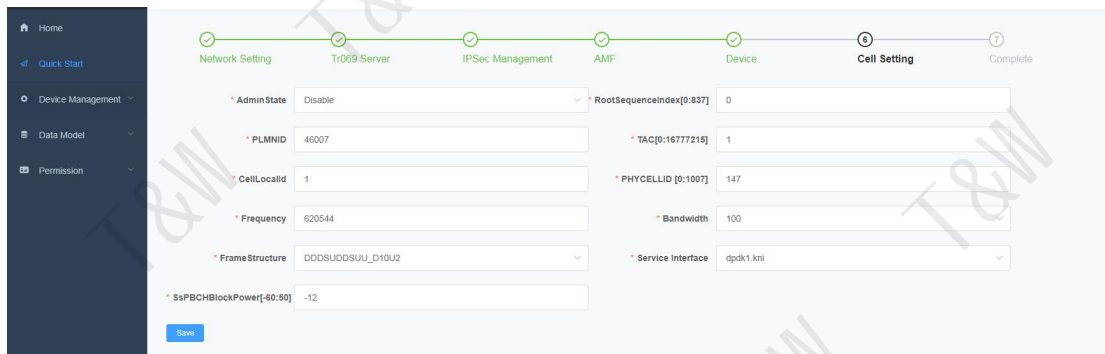


Figure 1-11 Cell configuration

1.3.7 Quick start - completed

On the Complete page, click Device Reboot to make the previously modified parameters take effect.

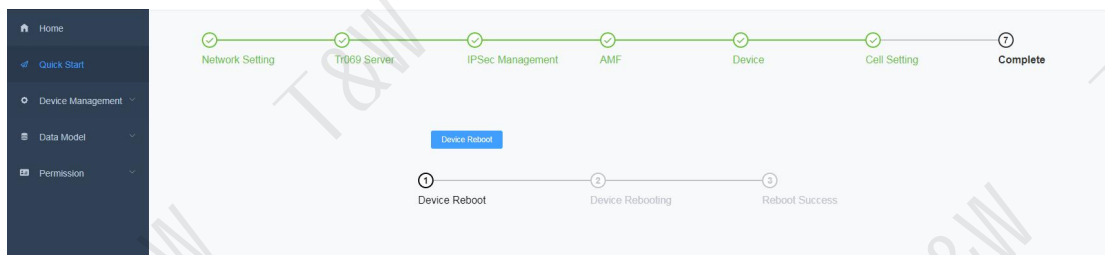


Figure 1-12 Complete configuration

1.3.8 SST SD settings

slice information setting , the SNSSAI (decimal) value is set in the base station . The conversion method is that the upper 8 bits are SST, and the lower 24 bits are SD. The default parameter of the base station is 33554431, indicating that SST is 1, and SD is not reported .

16777217 (SST is 1, SD is 1)

16843267 (SST is 1, SD is 010203 (hexadecimal))

Parameter path

Device.Services.FAPService.1.CellConfig.1.NR.CN.TA.1.PLMNList.1.SliceList.1.SNSSAI

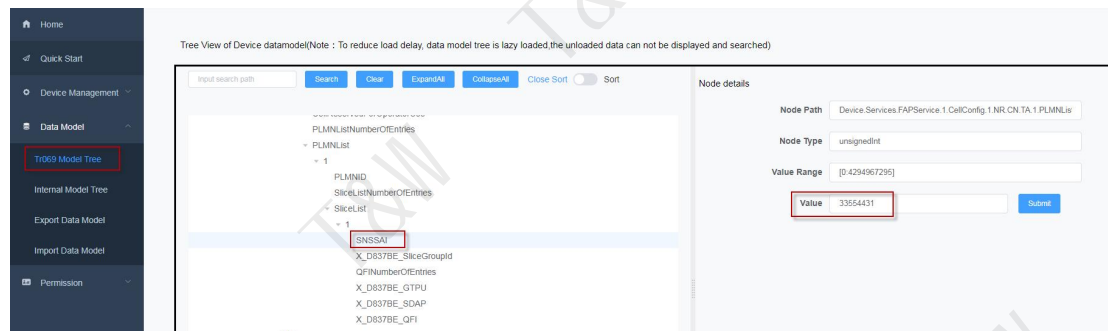


Figure 1-13 SST SD configuration

1.3.9 Base Station Status Query

1. Click on the home page to view the device status

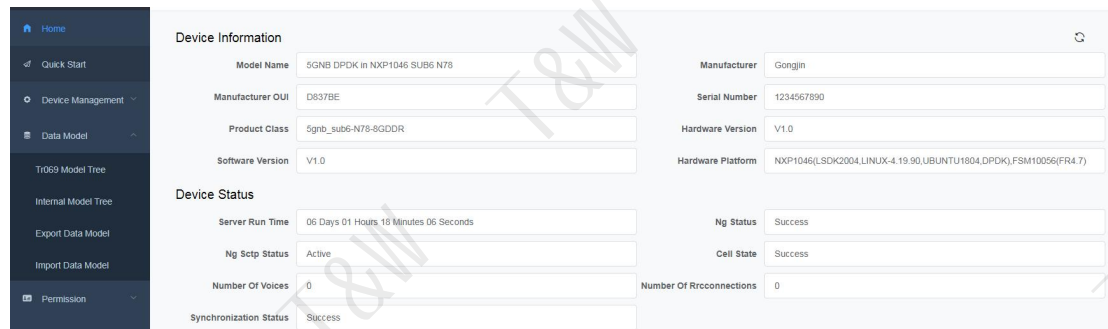


Figure 1 - 14 Status query path

Figure 1 – 8 base station status query

parameter name	illustrate
Ng status	Ngc connection status. Success successfully established a link for NG
Ng Sctp Status	Ngc coupling state
Cell state	Success indicates that the cell is established successfully.

Table 1 - 10 Status Description

2. Commonly used configurations

2.1 Mobility Management

2.1.1 Configuring NR Neighboring Cells

- 1) Manually configure the neighbor list: click Add Object to add neighbors .

Data model path:

Device.Services.FAPService.1.CellConfig.1.NR.RAN.NeighborList.NRCell.

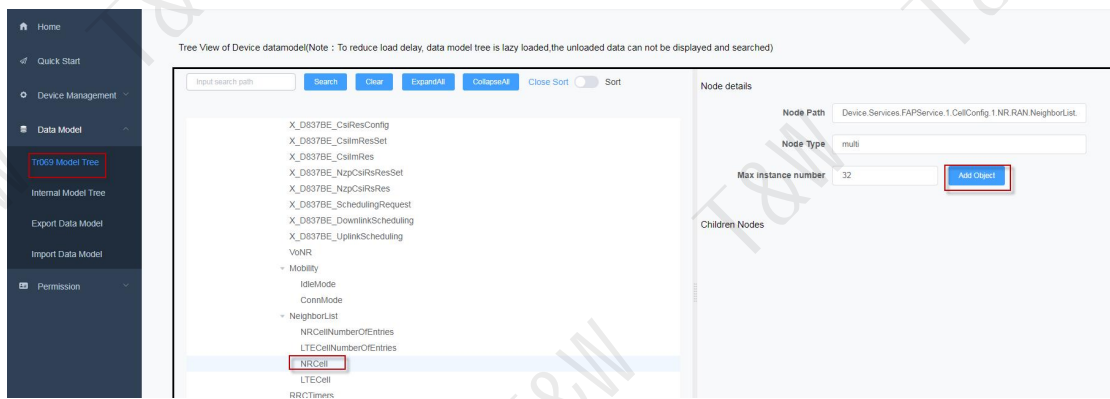


Figure 2-4 Adding NR neighbors

- 2) added neighbors will be displayed in the following interface . To change the parameters of the neighbors, you need to go to the node where the parameters are located for modification .

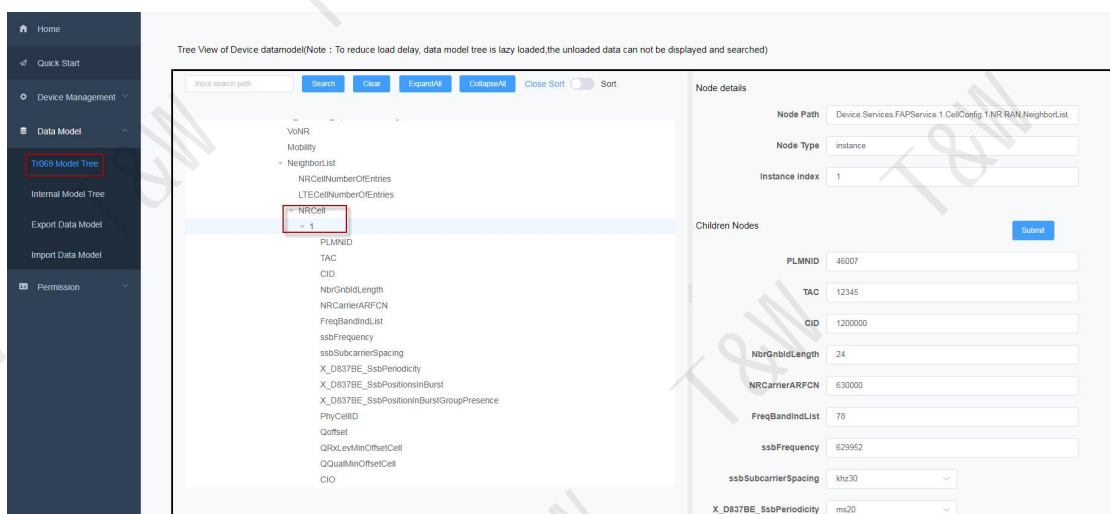


Figure 2-5 Adding NR neighbors

- 3) Table 2 - 6 for the description of main parameters .

parameter name	illustrate
PLMNID	Neighboring cell PLMN ID
CID	Neighboring cell ID
NRCarrierARFCN	The absolute frequency point of the center of the neighbor cell
FreqBandIndList	Neighbor cell Band
ssbFrequency	Neighbor cell SSB frequency point
ssbSubcarrierSpacing	Neighbor cell subcarrier spacing
SsbPeriodicity	Neighbor cell SSB time domain transmission period
SsbPositionsInBurst	Neighbor cell SSB time domain position
SsbPositionInBurstGroupPresence	Neighboring cell SSB sends index indication
PhyCellID	neighbor PCI
TAC	Neighborhood TAC
Qoffset	Neighboring cell offset, cell reselection in Idle mode, the larger the value, the easier it is to reselect to this cell
QRxLevMinOffsetCell	Neighbor cell minimum receiving level offset
QQualMinOffsetCell	Minimum receiving quality offset neighbor cells
CIO	Neighbor cell individual offset, used for cell handover , the larger the value, the easier it is to handover to this cell
Blacklisted	Disabled by default, if enabled, this neighboring cell will not be the UE 's handover target
BlackListedIdleMode	by default , indicates whether this neighbor cannot be reselected or redirected

Table 2-6 Description of NR neighbor cell parameter configuration

2.1.2 Configuring LTE Neighboring Cells

- 1) Manually configuring the LTE neighbor list

Data model path:

Device.Services.FAPService.1.CellConfig.1.NR.RAN.NeighborList.LTE Cell.1.

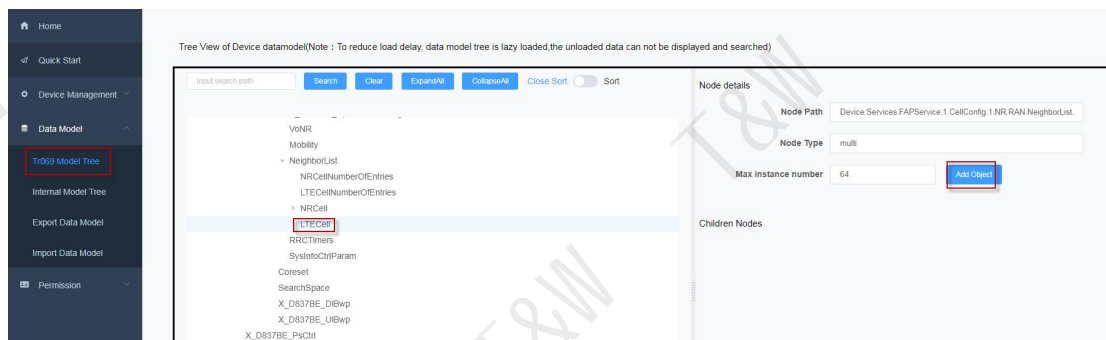


Figure 2-6 Manually add LTE neighbors

- 2) The added LTE neighbor cell will be displayed in the following page. To change the parameters of the neighbor cell, you need to go to the node where the parameter is located to modify it ;

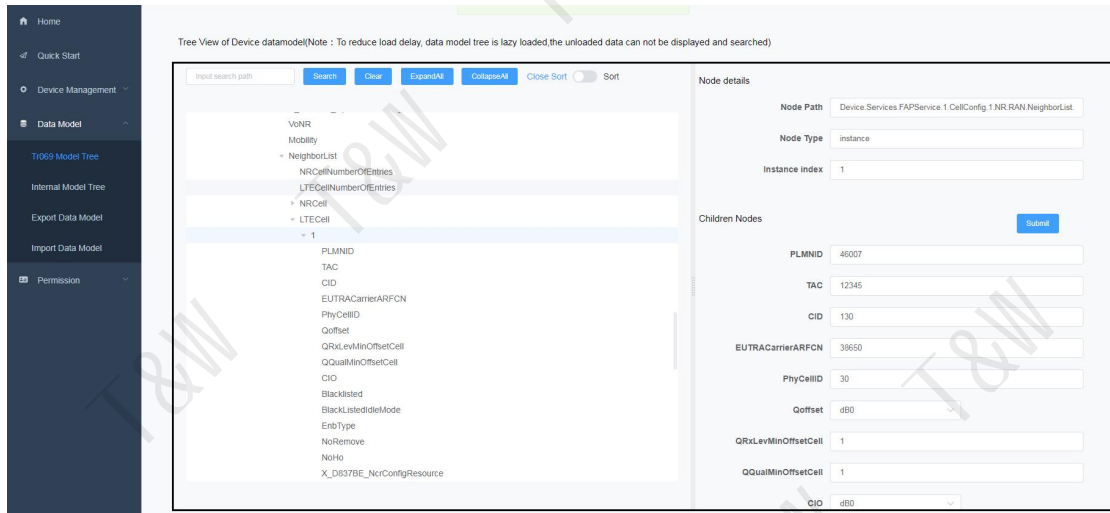


Figure 2-7 Manually add LTE neighbor cells

parameter name	illustrate
PLMNID	Neighboring cell PLMN ID
CID	Neighboring cell ID , When the neighbor cell type is Home , the length is 28 bits the neighbor cell type is Marco , the length is 20 bits (i.e. eNodeB ID)
EUTRACarrierARFCN	Neighborhood Absolute Frequency
PhyCellID	neighbor PCI
QOffset	Neighboring cell offset, cell reselection in Idle mode, the larger the value, the easier it is to reselect to this cell
CIO	Adjacent cell offset, used for cell switching in connection mode, the larger the value, the easier it is to switch to this cell
Blacklisted	Disabled by default, if enabled, this neighboring cell will not be the UE 's handover target
TAC	Neighborhood TAC
EnbType	0 : macro station, 1 : small station
No Remove	Disabled by default, if enabled, this neighbor will not be automatically deleted from the InUse list
NoHO	Disabled by default. If enabled, the base station will not perform handover with this neighboring cell

Table 2-7 _ LTE Neighboring Cell Parameter Configuration Instructions

2.1.3 Configure XN relationship

If you want to perform an XN based handover test, you need to add an XN relationship , as shown in the figure below to add an XN relationship .

Path : Device.Services.FAPService.1.FAPControl.NR.XnIpAddrMapInfo.

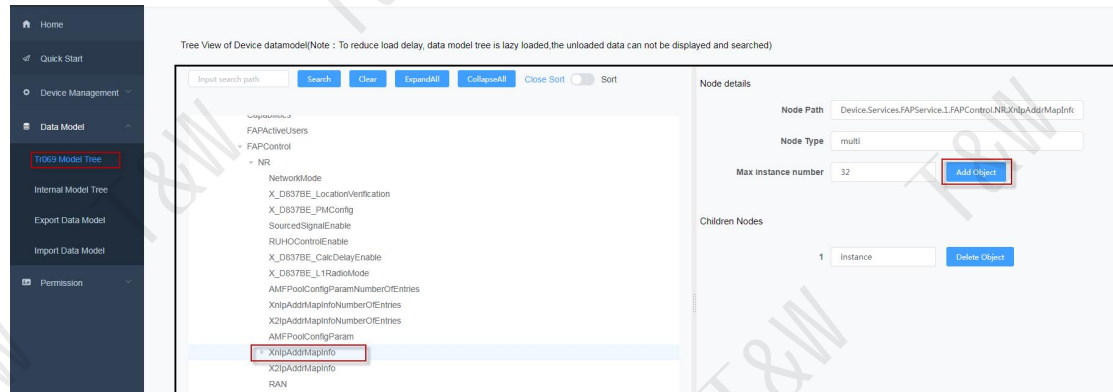


Figure 2 – 8 Adding XN Relationships

clicking Add Instance, enter the following page . need to configure RemoteAddress , which is the IP address of the peer base station , and other parameters are automatically updated through XN messages .

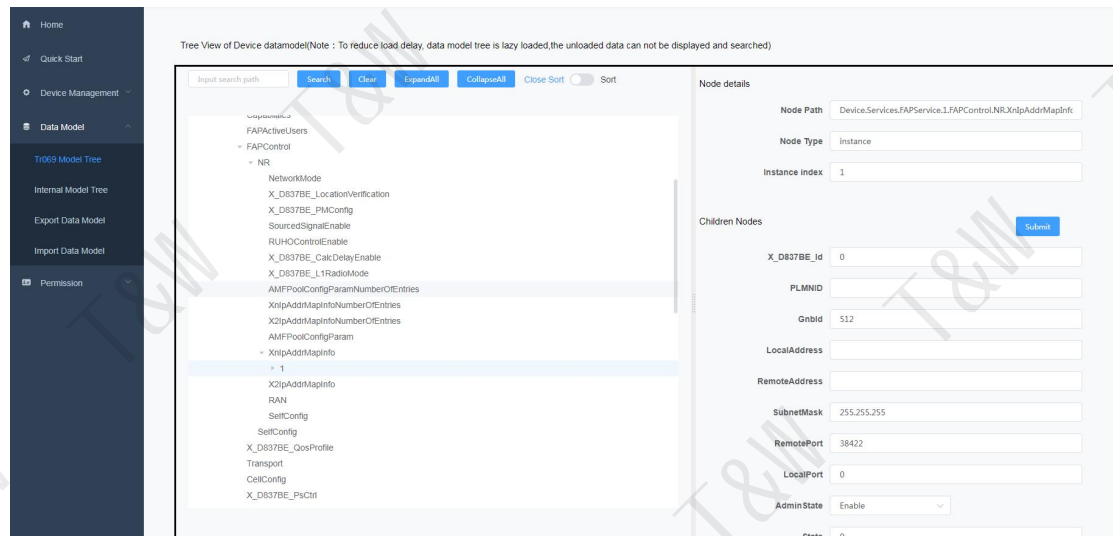


Figure 2 – 9 Adding XN Relationships

2.1.4 Inter frequency/system measurement configuration

If the added NR neighbor cell is an inter-frequency cell , or add an LTE neighbor cell. You

also need to add configuration in the following page.

1 NR inter-frequency test

The path is as follows.

Device.Services.FAPService.1.CellConfig.1.NR.RAN.Mobility.IdleMode.InterFreq.Carrier.

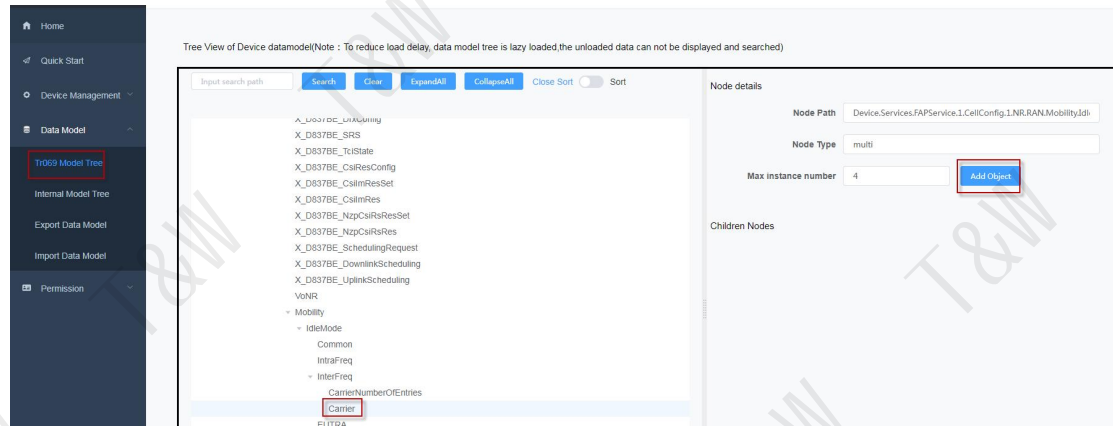


Figure 2- 10 Increase the inter-frequency relationship

clicking Add Object, then you need to configure related parameters . DICarrierFreq is the SSB frequency point of the inter frequency, and FrequencyBandList is the frequency band to which the inter frequency belongs. Other parameters can be left as default. CellReselectionPriority is flexibly adjusted according to the test case.

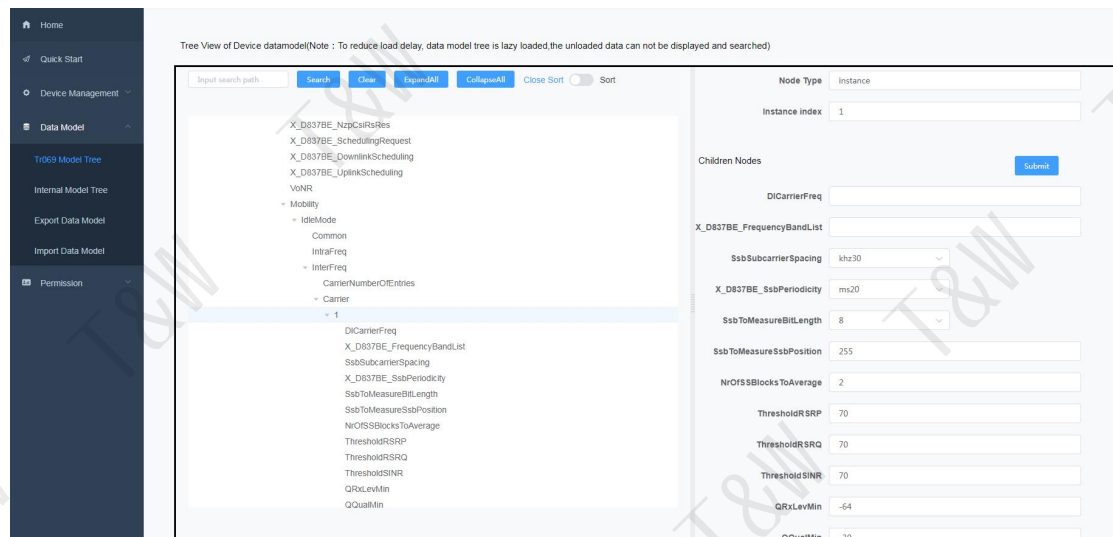


Figure 2-11 Inter – frequency relationship

2 inter system related tests

The path is as follows.

Device.Services.FAPService.1.CellConfig.1.NR.RAN.Mobility.IdleMode.EUTRA.Carrier.

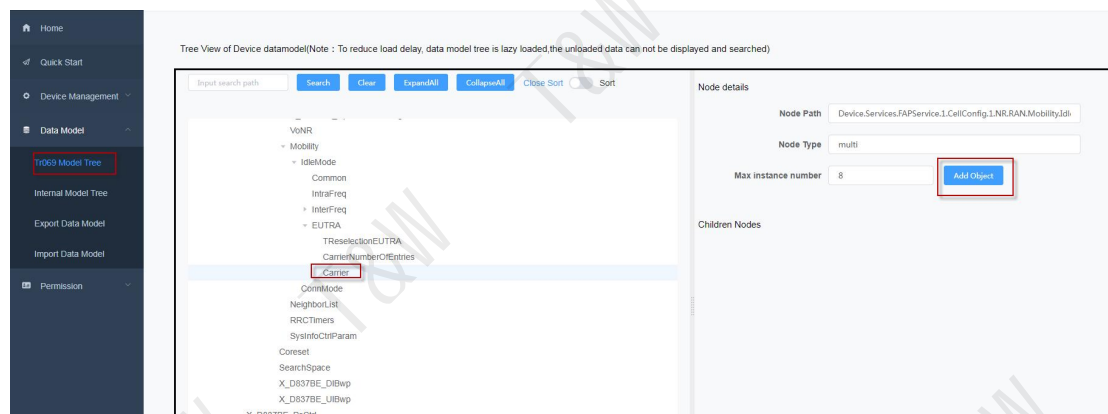


Figure 2-12 Adding LTE frequency points _

clicking Add Object, then you need to configure related parameters . EUTRACarrierARFCN is the center frequency of LTE, AllowedMeasBandwidth is the system bandwidth of the LTE cell , and CellReselectionPriority is flexibly adjusted according to the test case. Other parameters can be left as default .

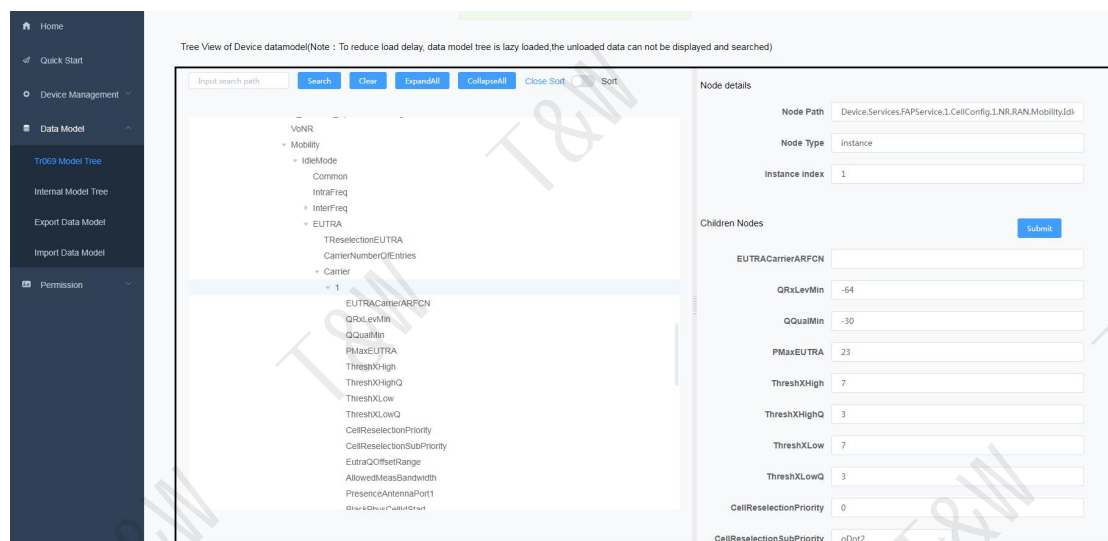


Figure 2 – 13 LTE frequency points

2.1.5 EPS fallback configuration

Refer to 2.1.2 and 2.1.4 to configure LTE neighbor cells and LTE measurement frequency point .

1. Configure the voice type as EPS_Fallback , and the path is as follows

Device.Services.FAPService.1.FAPControl.NR.RAN.Common.X_D837BE_VoiceServiceType

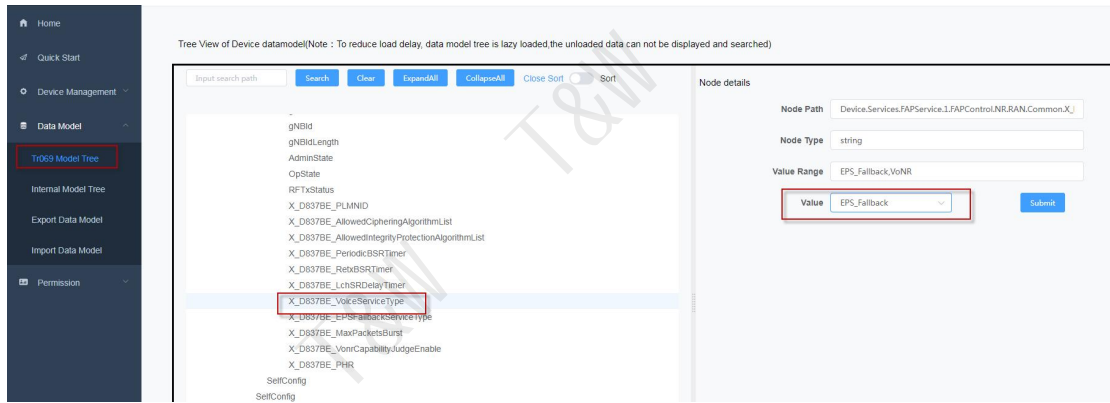


Figure 2- 14 LTE voice type setting

2. The path to configure the fallback method is as follows , It supports handover and Redirection .

Device.Services.FAPService.1.FAPControl.NR.RAN.Common.X_D837BE_EPSFallbackServiceType

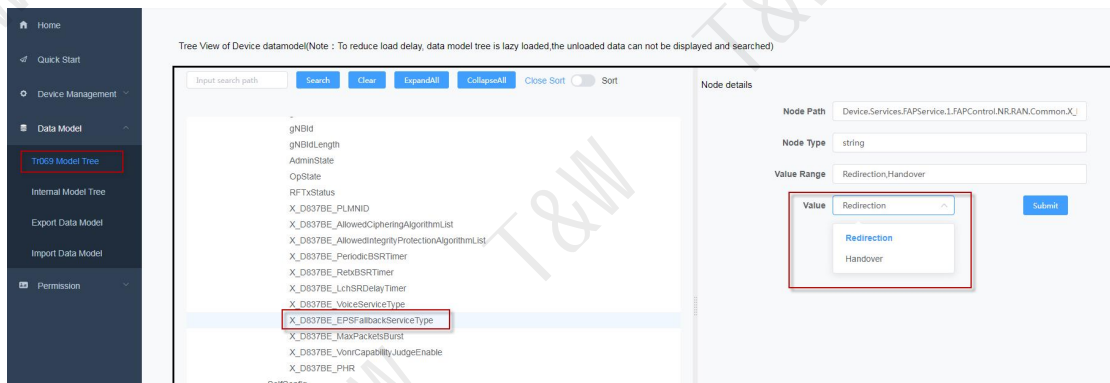


Figure 2-15 EPS fallback mode setting

3. Configure the N26 interface status as available , the path is as follows

Device.Services.FAPService.1.FAPControl.NR.AMFPoolConfigParam.1.X_D837BE_N26ConfigStatus

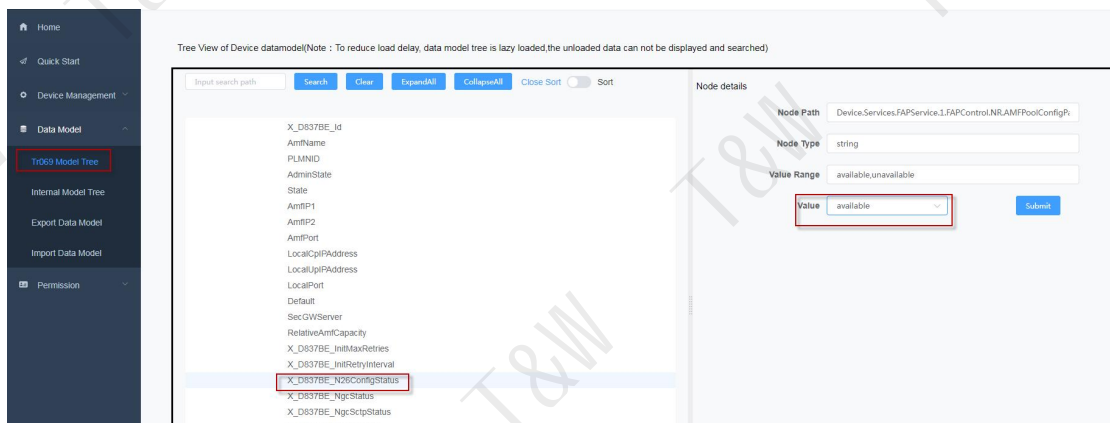


Figure 2-16 Enabling the N26 interface

2.1.6 Start inter frequency/system measurement

1. The base station starts inter-frequency / inter-system measurement is triggered by the A2 event, as shown in Figure 2-17 . There are 3 sets of configurations for the A2 event , which are used in different scenarios:

path :

Device.Services.FAPService.1.CellConfig.1.NR.RAN.Mobility.ConnMode.NR.A2MeasureCtrl.

A2MeasureCtrl.1: inter frequency measurement

A2MeasureCtrl.2: 4G measurement

A2MeasureCtrl.3: Inter-frequency redirection measurement

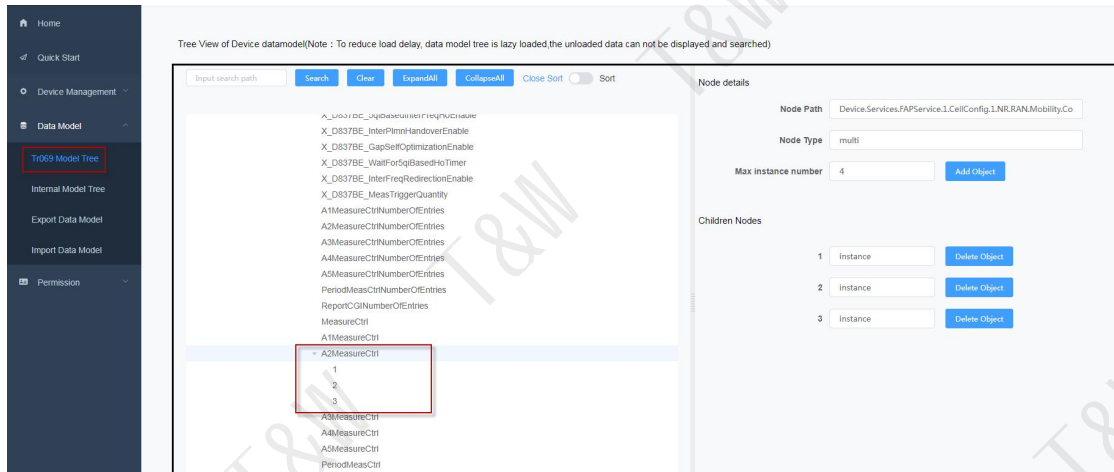


Figure 2-17 A2 event _

2. Regarding the parameter configuration of the A2 event, the commonly used inter-frequency measurement scenario is taken as an example.

When the UE's measurement result of the primary cell is less than $A2ThresholdRSRP - Hysteresis$ (both are actual values after conversion, take Figure 2-18 as an example, $56-156-2*0.5=-101$ dBm), and the hold time is greater than $TimeToTrigger$, will trigger the A2 event, and will report continuously at the interval of $ReportInterval$.

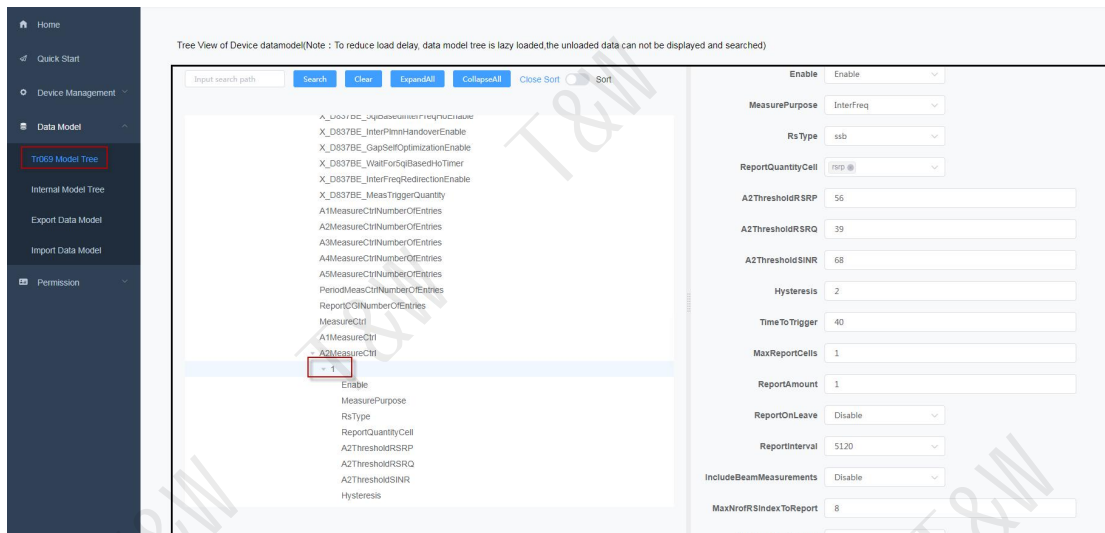


Figure 2-18 A2 Event Parameters

parameter name	illustrate
enable	Check to enable
A2ThresholdRSRP	A2 RSRP trigger threshold
A2ThresholdRSRQ	A2 RSRQ trigger threshold
A2ThresholdSINR	A2 SINR trigger threshold
ReportOnLeave	Indicates whether the UE should start the measurement reporting procedure when a cell in the cellsTriggeredList meets the leaving condition
Hysteresis	Trigger hysteresis, multiplied by 0.5 is the actual value (in dB)
MaxReportCells	Maximum number of neighbors to include in a measurement report
MeasurePurpose	Keep default value
ReportAmount	Number of reports, 0 means unlimited
ReportInterval	report interval in ms
ReportQuantityCell	Character type, the values are as follows: SameAsTriggerQuantity : The reported quantity is the same as the trigger quantity
TimeToTrigger	Trigger time, in ms
Include Beam Measurements	Whether to use beam measurement
RsType	Measured RS type SSB or csi -rs
RptQuantityRsIndex	Trigger amount, default is RSRP

2.1.7 Stop inter-frequency / system measurement

1. The stop of inter-frequency / inter-system measurement by the base station is triggered by the A1 event, as shown in the figure below, there are 2 sets of configurations for the A1

event , which are used in different scenarios

path

Device.Services.FAPService.1.CellConfig.1.NR.RAN.Mobility.ConnMode.NR.A1MeasureCtrl.

A 1 MeasureCtrl.1: inter frequency measurement

A 1 MeasureCtrl.2: 4G measurement

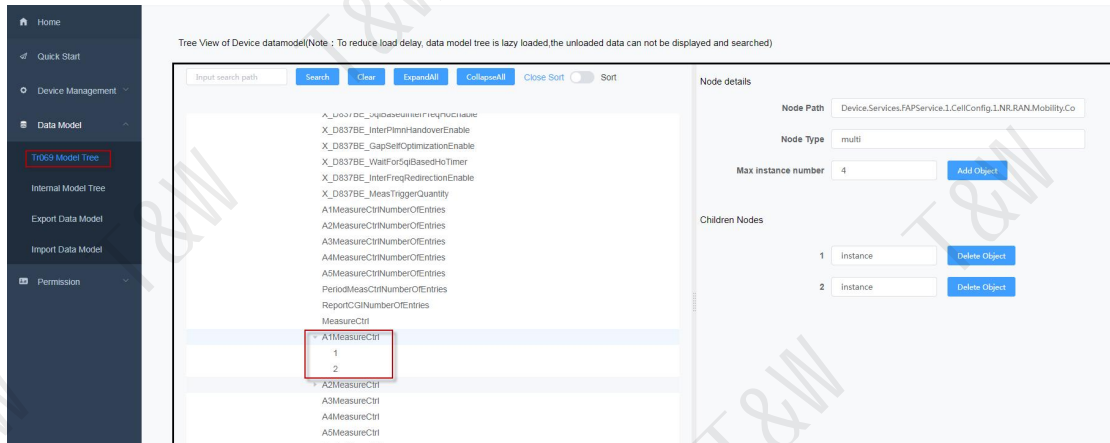


Figure 2 – 19 A1 event

2. Regarding the parameter configuration of the A1 event, the commonly used inter-frequency measurement scenario is taken as an example.

When the UE 's measurement result of the primary cell is greater than $A1ThresholdRSRP + Hysteresis$ (both are actual values after conversion, take the figure below as an example, $61-156+2*0.5=-94$ dBm), and the hold time is greater than $TimeToTrigger$, it will The A1 event is triggered and will be reported continuously at the interval of $ReportInterval$.

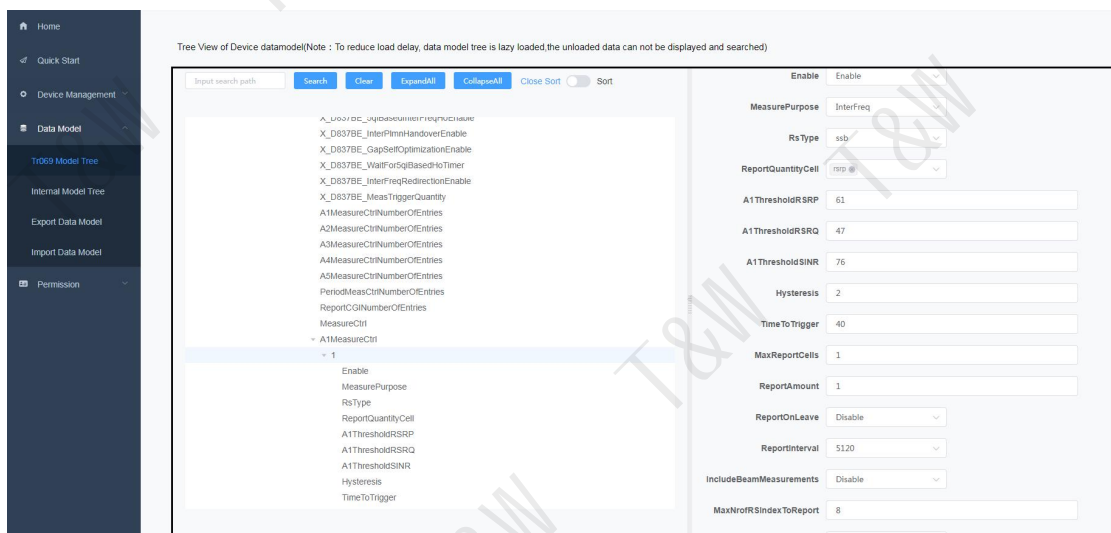


Figure 2 – 20 A1 Event Parameters

2.1.8 5G intra-frequency / inter-frequency handover measurement

1. The 5G intra-frequency / inter-frequency handover is triggered by the A3 event. As shown in the figure, the A3 event has 2 sets of configurations, which are used in different scenarios:

path :

Device.Services.FAPService.1.CellConfig.1.NR.RAN.Mobility.ConnMode.NR.A3MeasureCtrl.

A3MeasureCtrl.1: same frequency switching

A3MeasureCtrl.2: different frequency switching

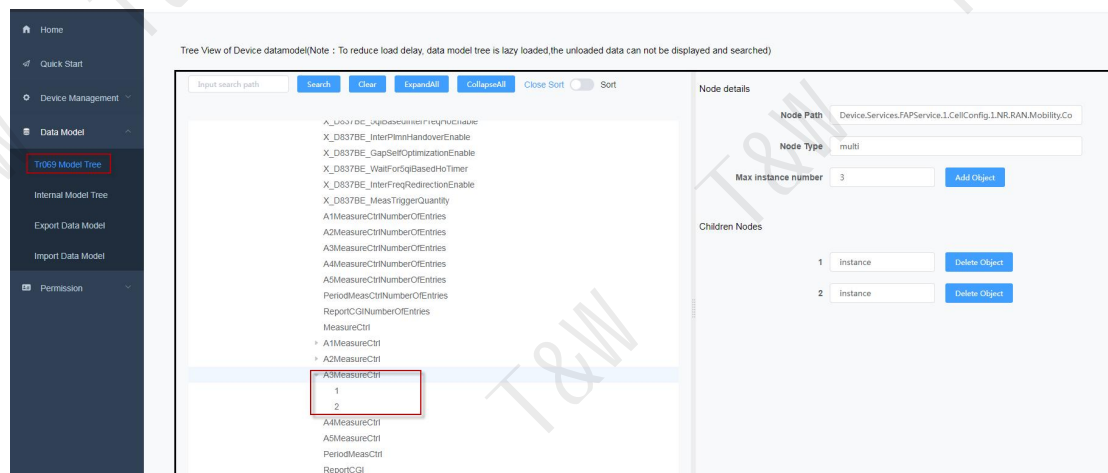


Figure 2 – 21 A 1 event

2. triggering A3 is: when the UE's measurement result of the neighboring cell is greater than $A3Offset + Hysteresis$ (both are actual values after conversion, the following figure is an example, $2 * 0.5 + 2 * 0.5 = 2$ dB), and when the hold time is longer than TimeToTrigger, the A3 event will be triggered and reported continuously at the interval of ReportInterval.

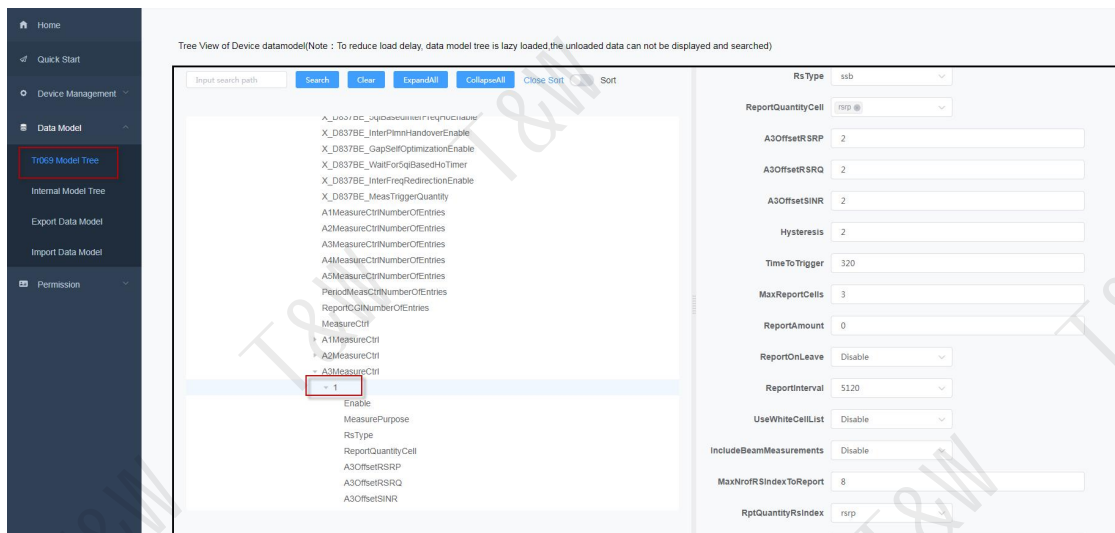


Figure 2-22 A 1 Event Parameters

2.1.9 Inter-system (LTE) handover measurement

- 5G to 4G is triggered by the B1 event, as shown in the figure:

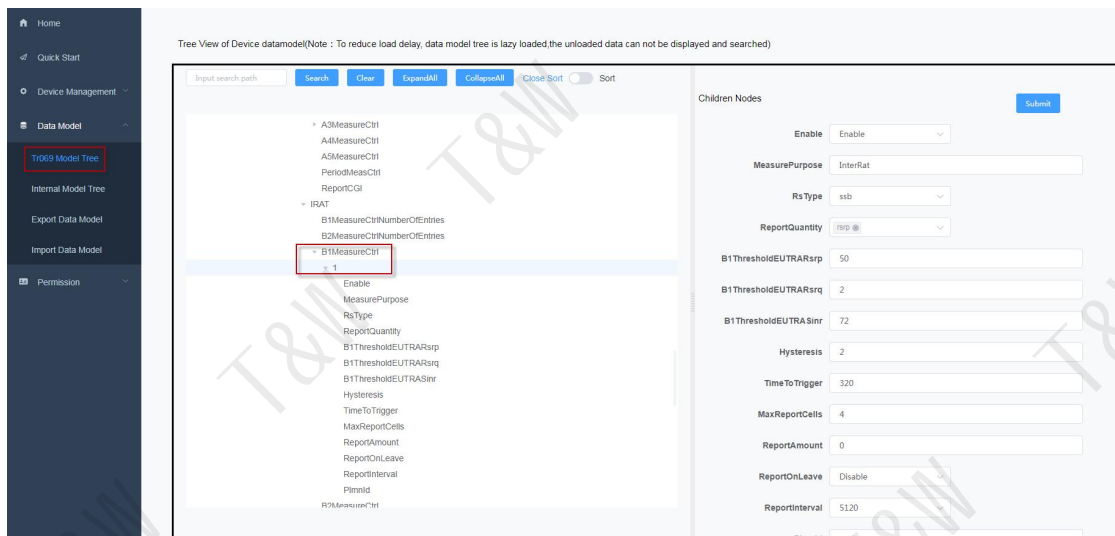


Figure 2-23 B1 event

- The trigger condition of the B1 event in the above figure is that when the UE measures that the level value of the 4G cell is greater than $B1ThresholdEUTRAsrp + Hysteresis$ ($50 - 140 + 2 * 0.5$) 91 dBm and the holding time is greater than $timetotrigger$, the B1 event is reported.

2.2 Software version upgrade

Select " Device Management → Firmware Upgrade " in the navigation bar to enter the version upgrade page, as shown in the figure below .

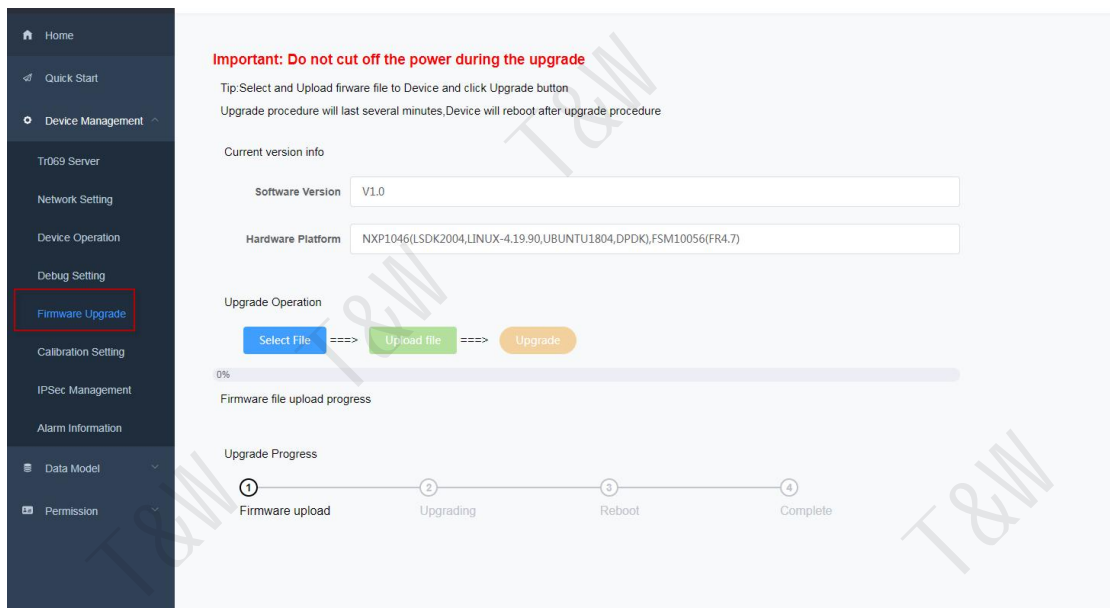


Figure 2 – Version 24 upgrade

Software upgrade steps:

1. Click Select File to select the upgrade file and upload it to the base station.
2. Click Upload File to upload the upgrade package .
3. Click "Upgrade" to upgrade . The upgrade will take about 10 minutes . There will be a prompt on the page whether the upgrade is successful or not . Do not power off during the upgrade .
4. You can check the upgraded version from the home page.

2.3 Import/export configuration files

1. Select " Data Model -> Export Data Model" in the navigation bar to enter the export interface page, as shown in the figure below .

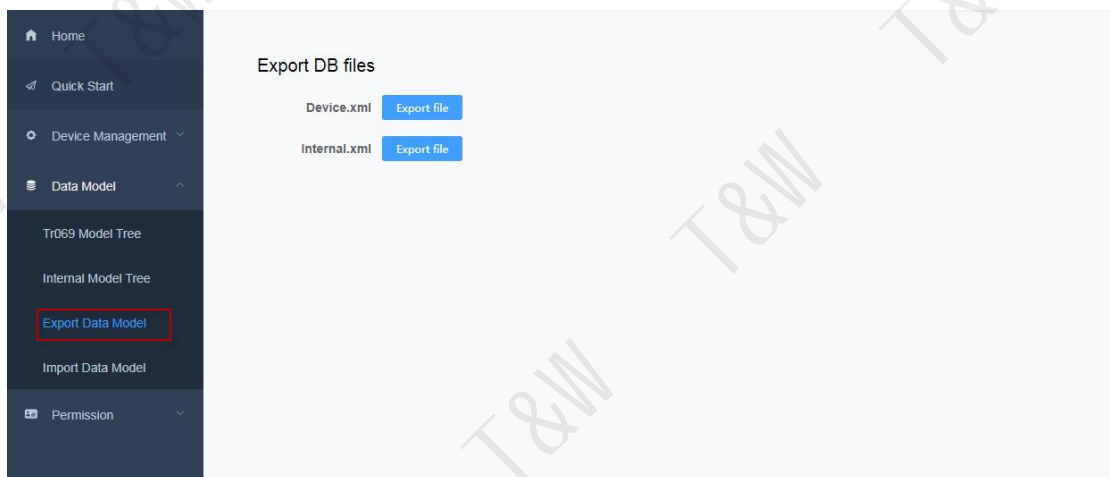


Figure 2-25 Export system backup file

2. Select "Data Model -> Import Data Model" in the navigation bar to enter the import interface page, as shown in the figure below. After the import is successful, the base station will automatically restart.

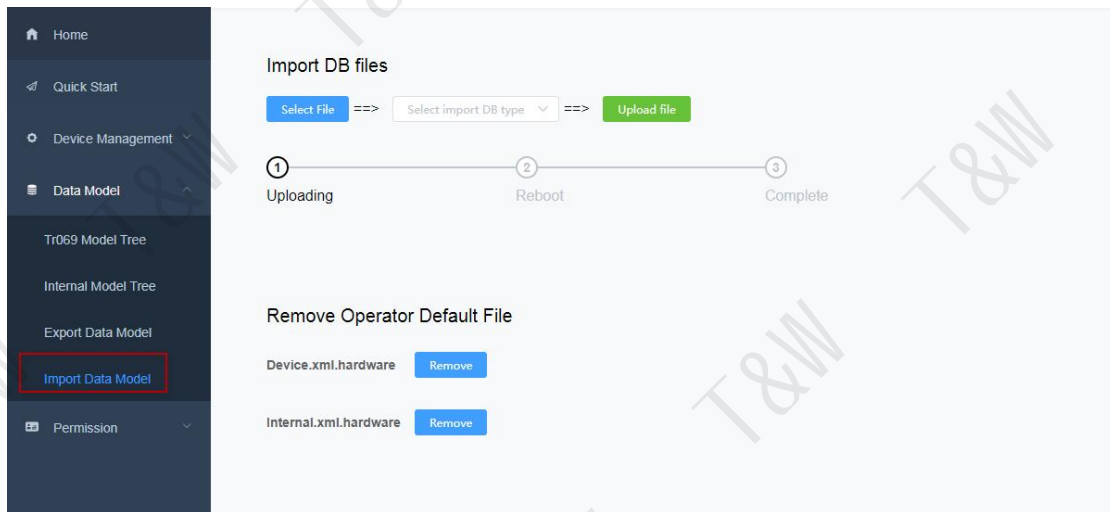


Figure 2-26 Import system backup file

2.4 Export log file

1. Debug Settings" in the navigation bar to enter the log operation interface, as shown in the figure. →

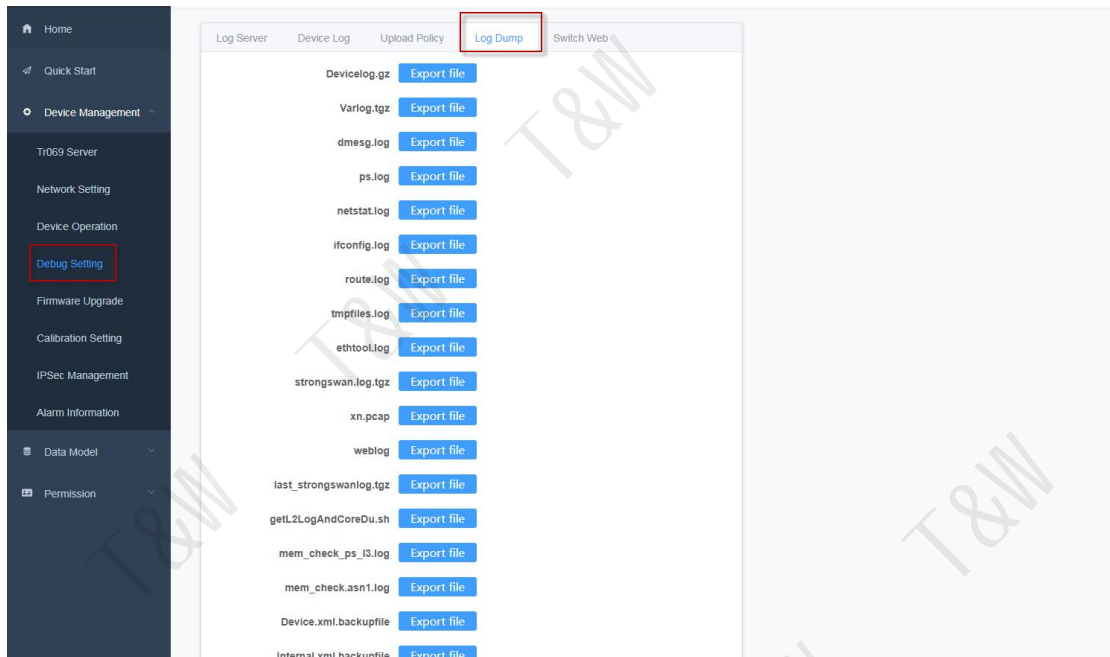


Figure 2-27 export log file

2. the log to be exported, and click Export File .
3. In the pop-up download dialog box , select a save path to save the log file locally.

2.5 Tr069 Model Tree

All parameters of the base station can be modified under the Tr069 data model tree . After knowing the parameter path, the parameter can be searched step by step according to the path.

Take modifying SsPBCHBlockPower as an example , the parameter path is

Device.Services.FAPService.1.CellConfig.1.NR.RAN.RF.SsPBCHBlockPower

Under the Tr069 data model tree, the parameter can be queried step by step according to the above path, and the parameter modification must enter the last level node to modify.

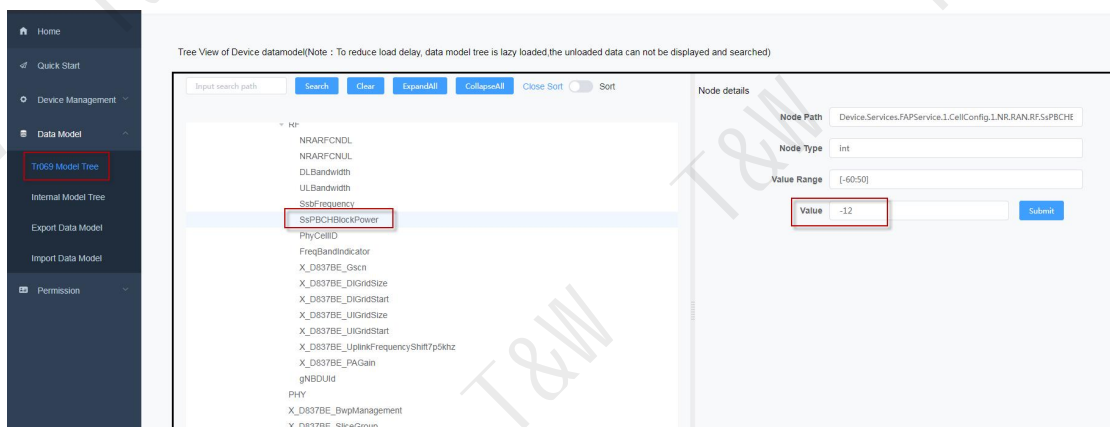


Figure 2 – 28 Tr069 data model tree

3. Other configurations

3.1 Restart the base station

1. Select "Device Management →Device Operation" in the navigation bar.
2. Click "Device Restart" to restart the base station.
3. It usually takes 2-3 minutes for the base station to restart.

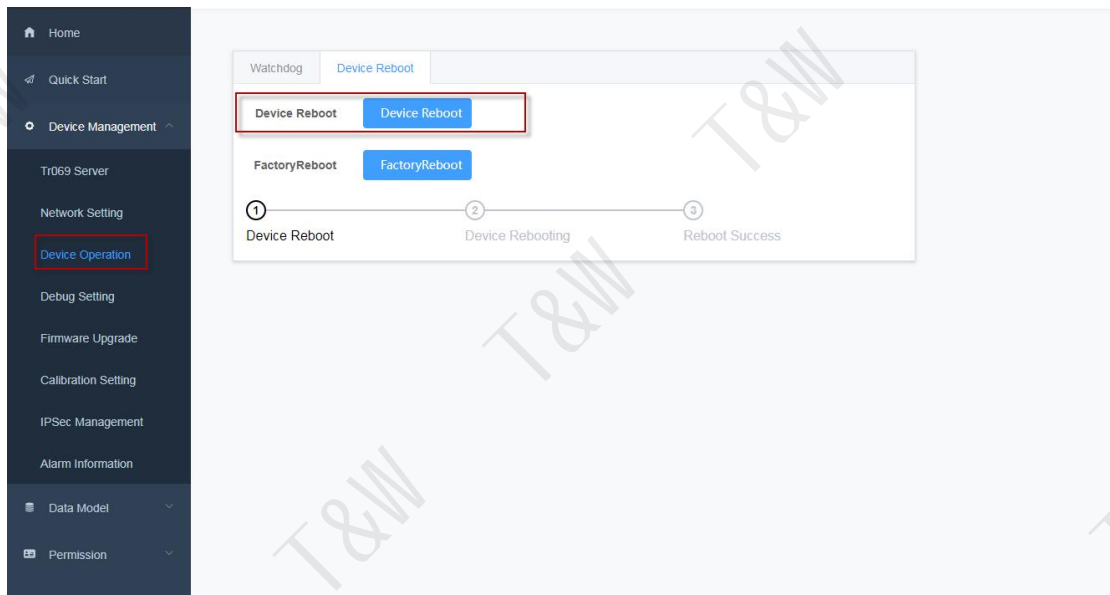


Figure 3-1 Device restart

3.2 Restore factory settings

1. Select "Device Management →Device Operation" in the navigation bar.
2. Then click the Restore Factory Settings button to restore the factory settings (this method restores the factory settings will not reset the IP).

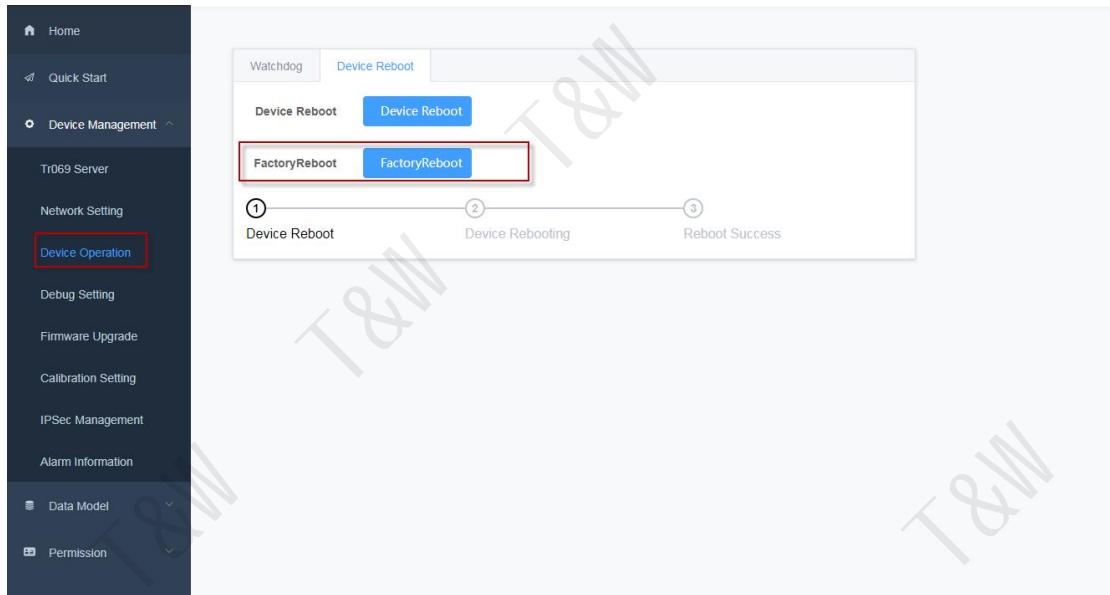


Figure 3-2 Restoring factory settings

To completely restore the factory settings , you can log in to the base station through the serial port or SSH to execute the following three commands .

```
echo ResetDbAfterNextBooting >/data/ResetDbAfterNextBooting
```

```
sync
```

```
reboot
```

3.3 Serial port or SSH login

Serial port and SSH login user name root password root.

- using the serial port

1 Use a type -c data cable to connect to the debug port of the base station, and connect the other end to the computer.

2 To update the driver, you can use the driver wizard to automatically update the driver, or contact the technical contact person to obtain the driver.

3 After the driver update is completed, there will be 2 COM ports , select the serial port tool to open the standard COM .

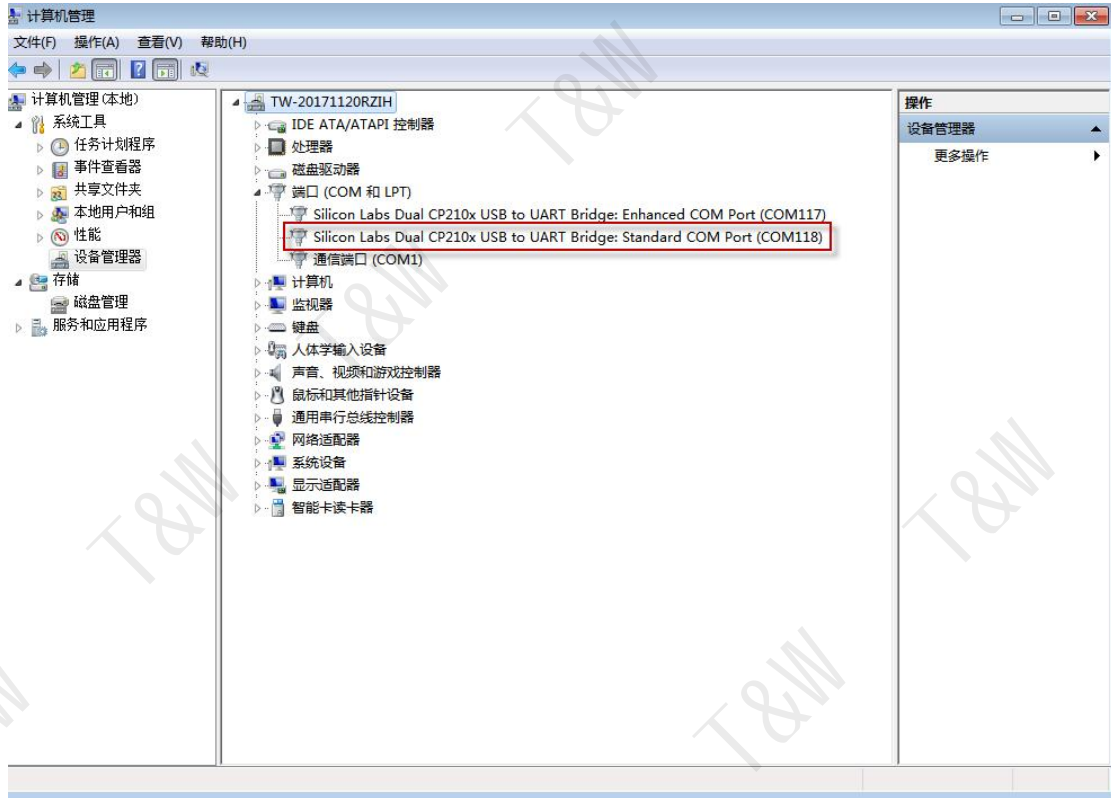


Figure 3-3 Schematic diagram of serial port

4 The serial port configuration information is as follows

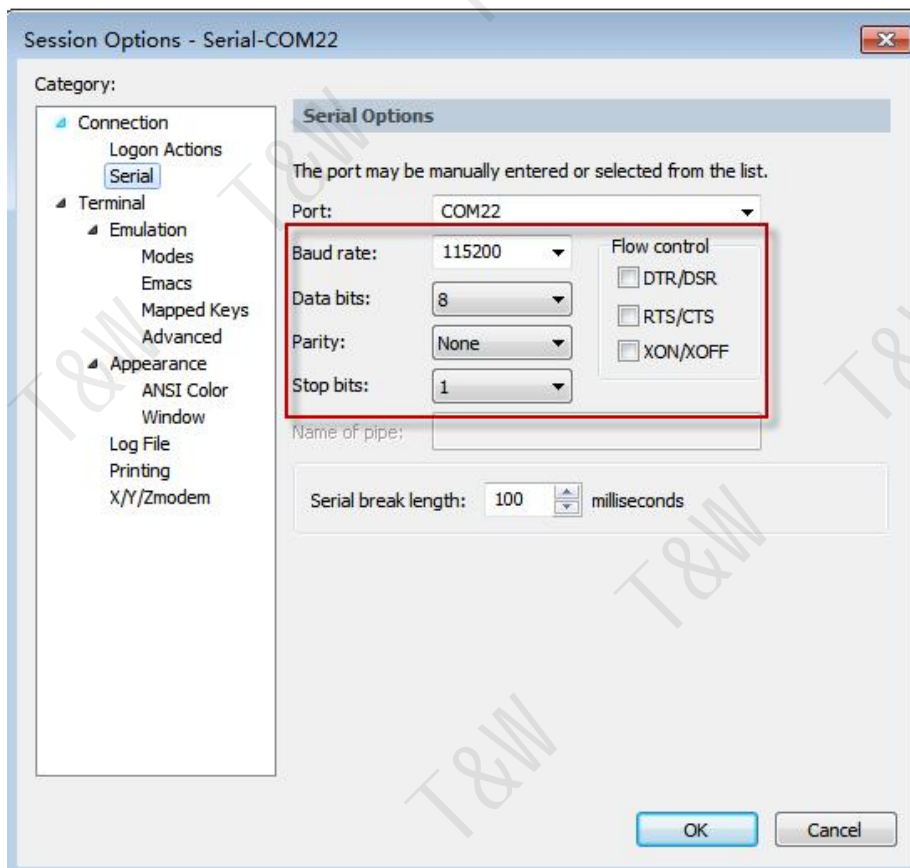


Figure 3-4 Serial port parameter configuration

- Use SSH to log in to the base station

Use the serial port tool to select the ssh protocol to log in to the base station.