

SFCE Wireless Router

Model 4GWiFi-11/12

User Manual

Version 20171219

meteocontrol | Suite 1203, Level 12, Tower 2, 475 Victoria Avenue | Chatswood 2067, NSW | Australia | phone (02) 8188
2450 fax (02) 8188 2440 | email services@meteocontrol.com.au | web www.meteocontrol.com

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1. Hardware Installation

1.1 Physical Structure

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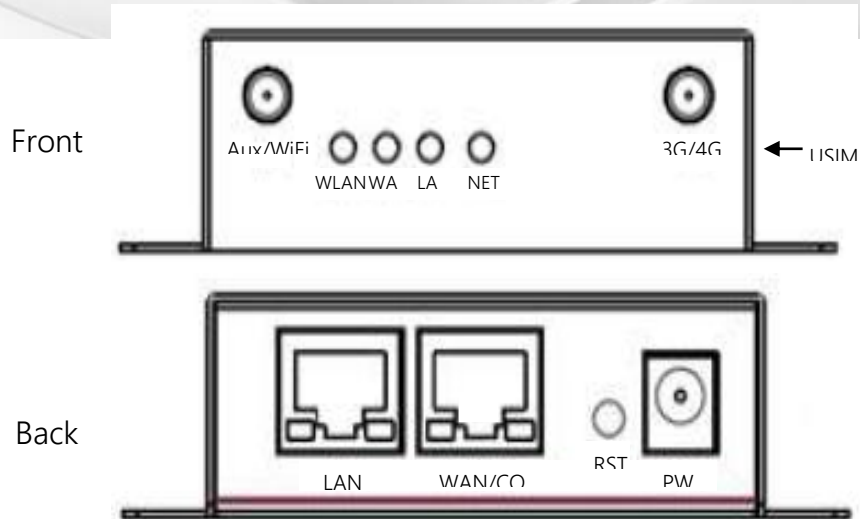


Figure 1: Router physical structure

Table 1: Router port description

Port	Description
USIM	Plug type SIM Slot, support 1.8/3V/5V automatic detection
3G/4G	3G/4G antenna, SMA connector, 50Ω
Aux/WiFi	Wi-Fi antenna, SMA connector, 50Ω
LAN	Ethernet downlink service interface, 10/100Base-TX, MDI/MDIX self-adaption, connect Ethernet port of computer or switchboard, concentrator
WAN/CON	Ethernet uplink service interface, 10/100Base-TX, MDI/MDIX self-adaption, connect switchboard or Router. CON for debug test
RST	Reset button
PWR	Power connector

1.2 LED Status

Table 2: Router LED status description

LED Tag	Colour	Status	Description
NET	Green	Solid Light	Signal is strong. Normal router and SIM operation
		Solid Light	Adequate 3G/4G signal strength. Normal router and SIM operation
		Solid Light	Weak 3G/4G signal. Normal router and SIM operation
	Red	Slow Flashing (2 s intervals)	Already logged in network or dialling online
		Quick Flashing (0.5 s intervals)	Dialling
WLAN	Green	Solid Light	WLAN port is enabled but no data transmission
		Quick Flashing	Data transmission
		Off	WLAN port disabled
LAN	Green	Solid Light	LAN port connected
		Flashing	Data transmission
		Off	LAN port not connected
WAN	Green	Flashing	Link to Ethernet device established. No data transmission
		Quick Flashing	Data transmission
		Off	No link to Ethernet device

1.3 Router Dimensions

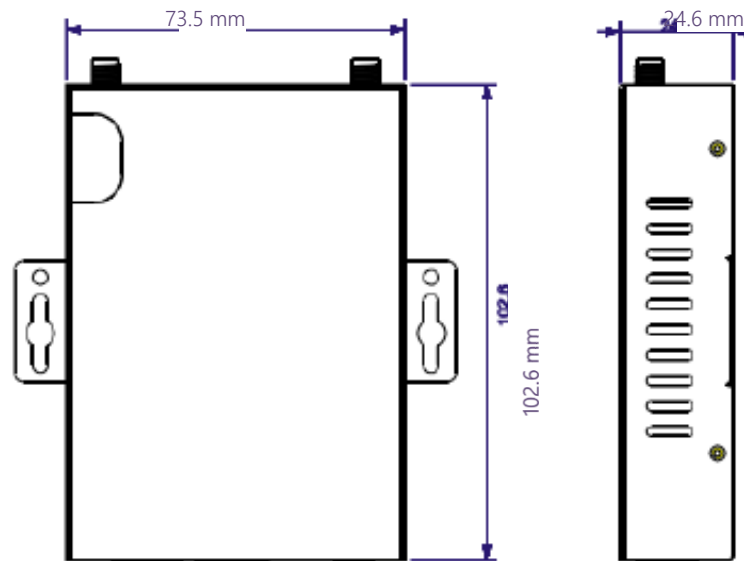


Figure 2: 3GWiFi-11 router dimensions

1.4 Installation

1.4.1 SIM/UM card installation

Remove screw on the side of the router to open the SIM card cover, and insert the SIM/UM card

WARNING



Before installing the SIM/UM card, please disconnect any power resource of router.

Please insert the SIM card correctly by following the illustrated Sim profile as shown at the bottom of the SIM Slot

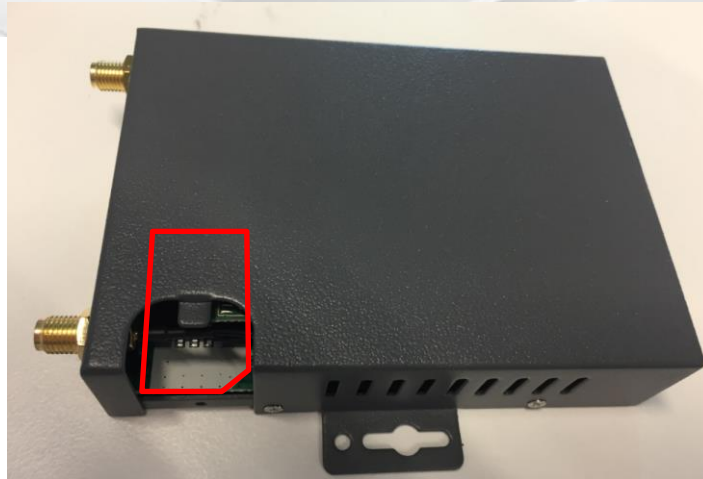


Figure 3. 3G/4G WiFi-11 Router Sim Card Installation

Reinstall the SIM card cover in order to protect the SIM card during router operation

1.4.2 Ethernet cable connection (LAN Port)

LAN Port: Use Ethernet cable to connect the 3G/4GWiFi-11 Router to downlink devices, i.e. computer, data concentrator, switch, etc

WAN Port: Use Ethernet cable to connect the 3G/4GWiFi-11 to uplink devices, i.e. ADSL router, etc

1.4.3 Power supply

Connect the 3G/4GWiFi-11 routers to a proper DC Power Supply. In order to get high reliability, the 3G/4GWiFi-11 router adapts to a wide voltage input range i.e. +5V~+26VDC, support hot plug and complex application environment. The equipped router power supply is rated at 12V 1.5A DC.

1.4.4 Antennas

Connect the 3G/4G antenna to the 3G/4G SMA connector on the router (Figure 1); similarly connect the WiFi antenna to the Aux/WiFi SMA connector. The antennas are Omni-directional; therefore it is imperative that it is mounted upright. See below for router Antenna installation guidelines

The high gain (10 dBi) antenna comes with 3 sections. Follow the below steps to setup the antenna:

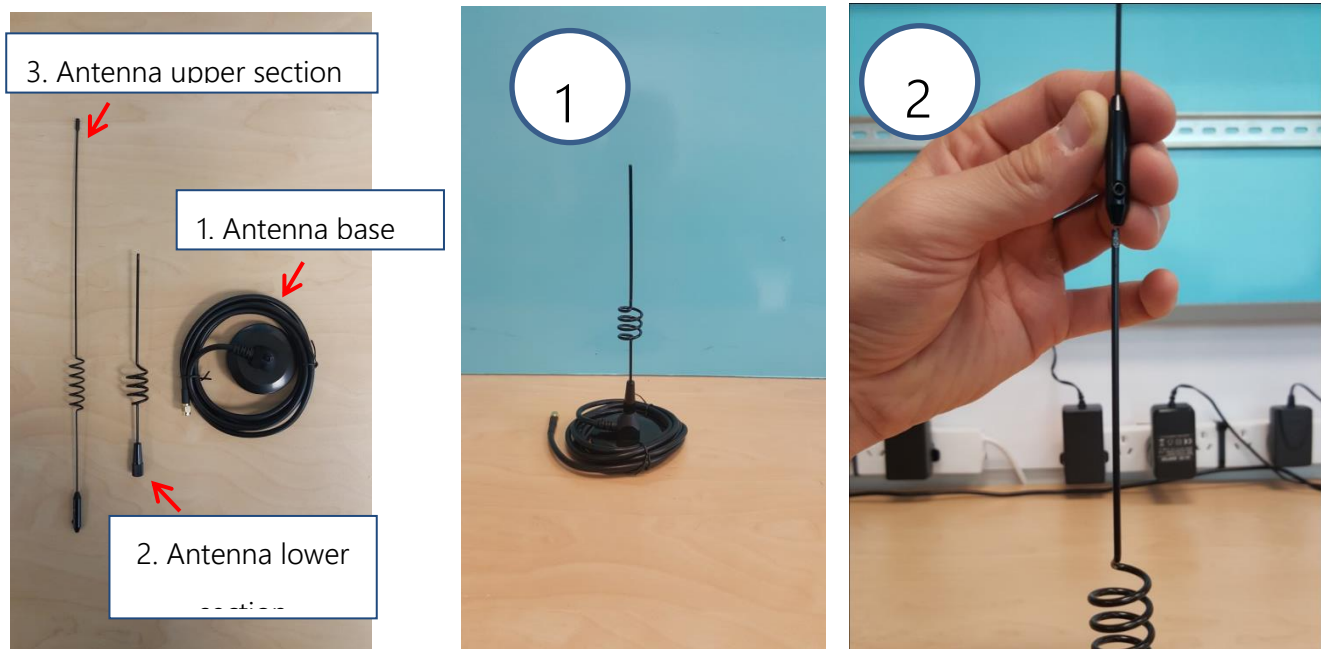
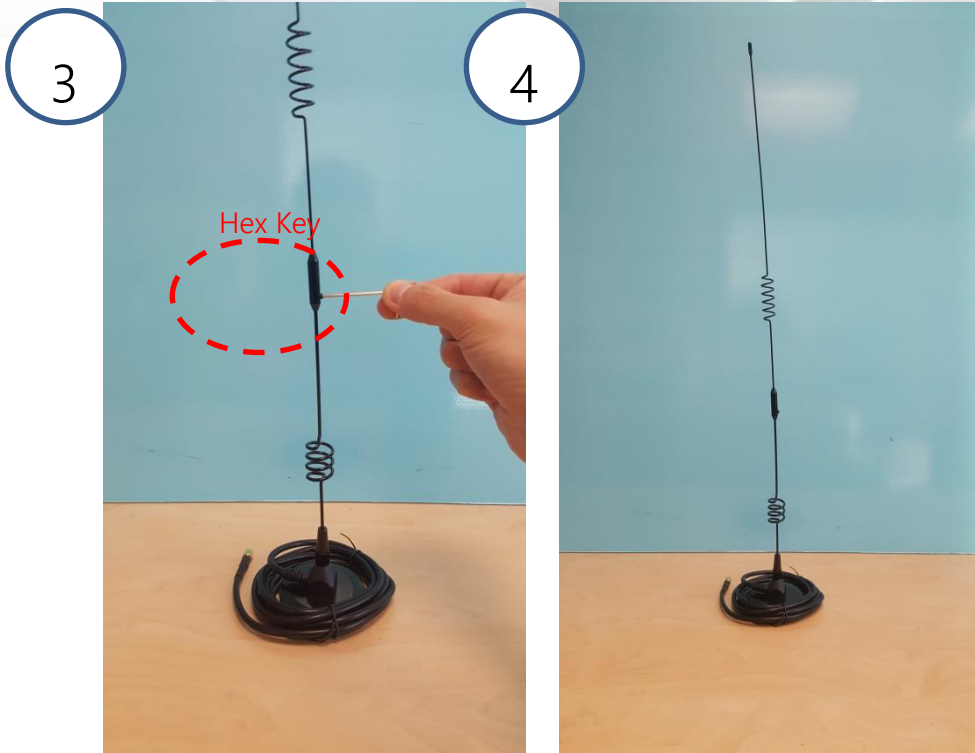


Figure 4: Antenna setup procedure

1. Screw on the lower antenna section to the antenna base.
2. Place the upper antenna section onto the lower antenna section.

Ensure the screw lines up with the flat surface of the lower section.

3. Screw and tighten the



ATTENTION

6

Please connect the antenna before energizing the router to avoid impedance mismatching which may result in poor signal.

Make sure that the right antenna is connected to the right SMA connector. Wrong connection may result in poor signal.

Ensure that the magnetic-base antenna is mounted upright on a metal surface and outside an enclosure, clear from obstructions for maximum performance, see below for reference. A metal surface acts as a ground plane for the antenna, which acts as the second half of the antenna. The larger the metal surface the better the performance.

The Antenna must always be mounted upright unless certain situations where the Antenna is located in a basement, it can be adjusted to horizontal to achieve a better signal.



3G/4G Antenna
mounted upright on
metal surface



3G/4G Antenna
mounted upright on
non-metal surface



3G/4G Antenna is
horizontal



WiFi antenna is mounted upright



WiFi antenna is mounted horizontally

1.5 Network Quality Assessment

Determine whether 3G or 4G is more prevalent at your site by checking on www.opensignal.com.

1. Enter the address
2. Select cellular type
3. Select provider

The map will generate blocks that scale in colour where green is good and red is poor signal strength. This is a useful tool to quickly check whether there your site has

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adequate signal for the router. If poor signal is experienced onsite after checking coverage maps, please contact technical support and you may have to install a directional antenna to improve the signal strength.

NOTE: This is a recommended open source tool used as an indicator and we do not guarantee this to reflect the signal quality experienced on site. For most accurate measurement we suggest bringing both the 3G and 4G router to site to check which network is available.

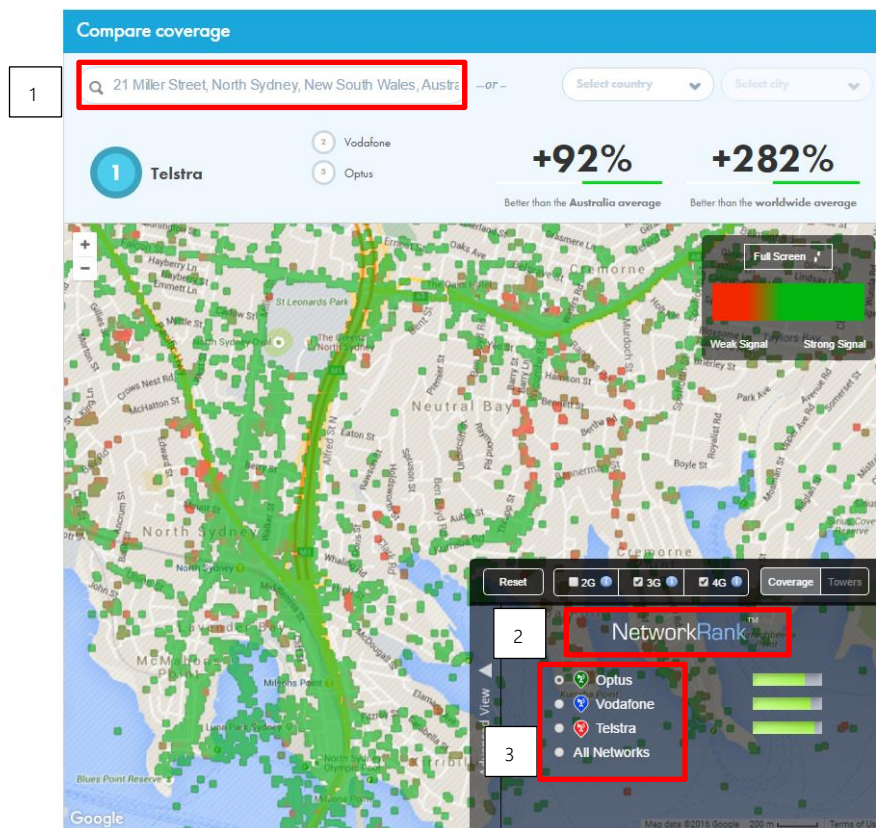


Figure 5: Network coverage map - www.opensignal.com

2. Router Configuration

2.1 Router Firmware

The 4G SFCE Wireless Router can be configured to either of the following modes with the different Model Name

Standard Modes: Model 4GWiFi-12

Main Features:

- (1) Support Dual LAN Port Configuration
- (2) Multi SSIDs function for enabling "Access Point" & "Wireless Client"

Backup Modes: Model 4GWiFi-11

Main Features:

- (1) Internet Backup mode Configuration

Prior to set-up the router for the required configuration, please confirm the model number/Internet Support Modes in order to install the correct firmware to the router.

The Standard Modes internet connection and the Backup Modes connections are illustrated and explained in the following sections.

2.2 Router Standard Modes (Internet Connection)

There are three ways that this router can receive internet in the Standard Mode. This section points out the relevant sections for each setup. It is recommended to start from section 2.2 before jumping to other sections.

1. Cellular connection (see Section 2.5 for configuration details)

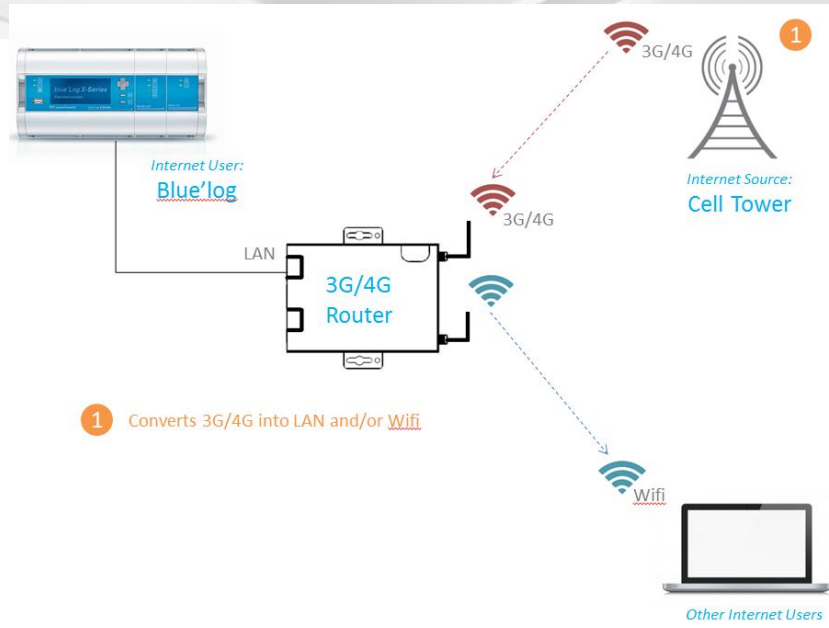


Figure 6: Cellular connection plan

2. Wireless client connection (see Section 2.8 for configuration details)

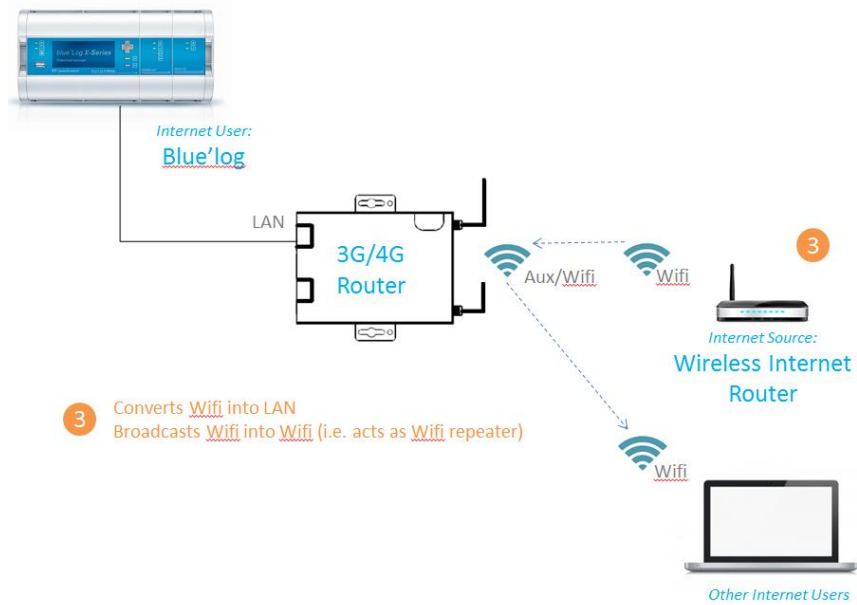


Figure 7: Wireless client connection plan

3. WAN connection

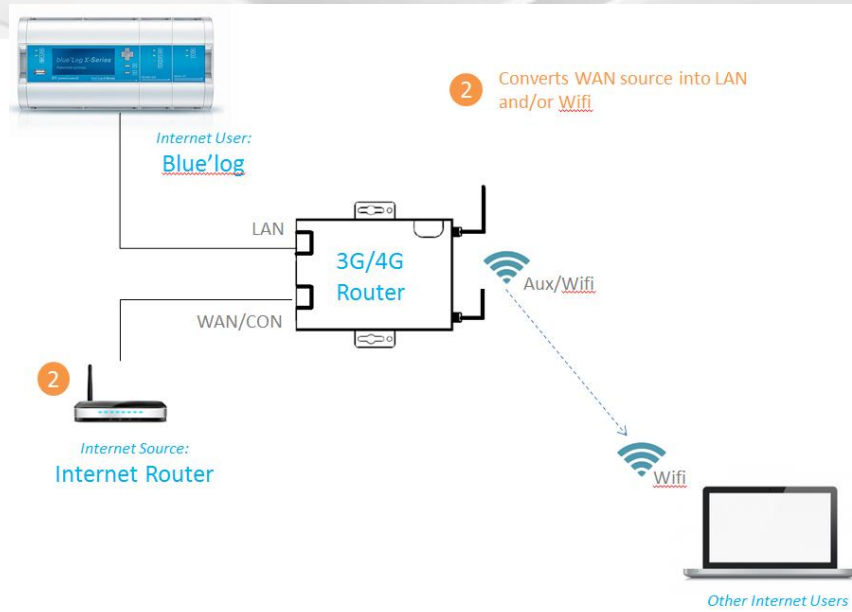


Figure 8: WAN connection plan

2.3 Router Backup Modes (Internet Connection)

The above internet connection options for Standard Modes could be also used as backup purposes. Backup mode ensures a redundant connection by falling back to another internet connection. For example, Cellular preferred, WAN backup means that it will prioritise a cellular over a WAN connection when there is a cellular connection. This option is possible when there is a WAN connection on site.

The 3G/4GWiFi-11 routers can be configured to use the following back-up mode options to allow internet accessibility to become more robust:

1. Cellular Preferred, WAN Backup Connection ((see Section 2.5 & 2.9 for configuration details)

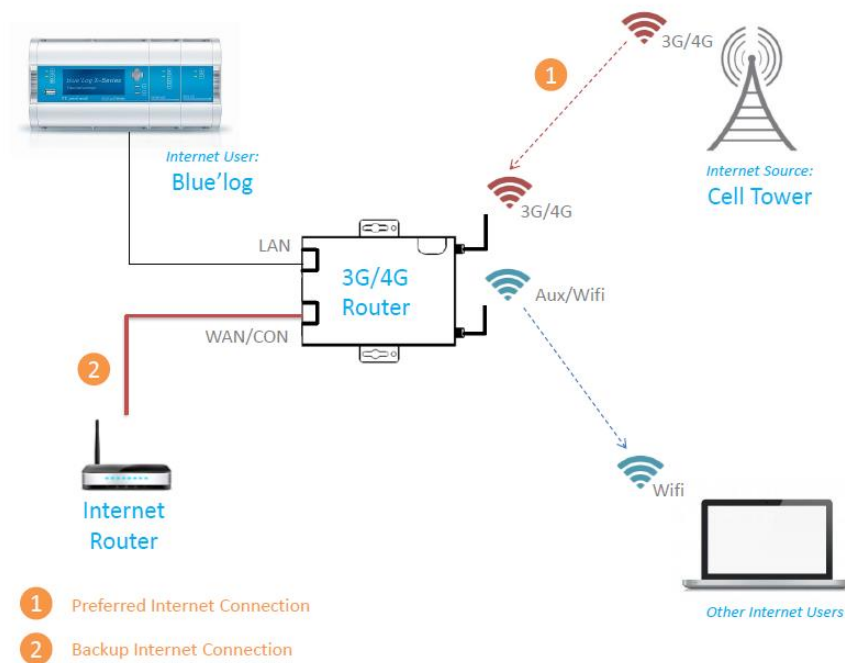
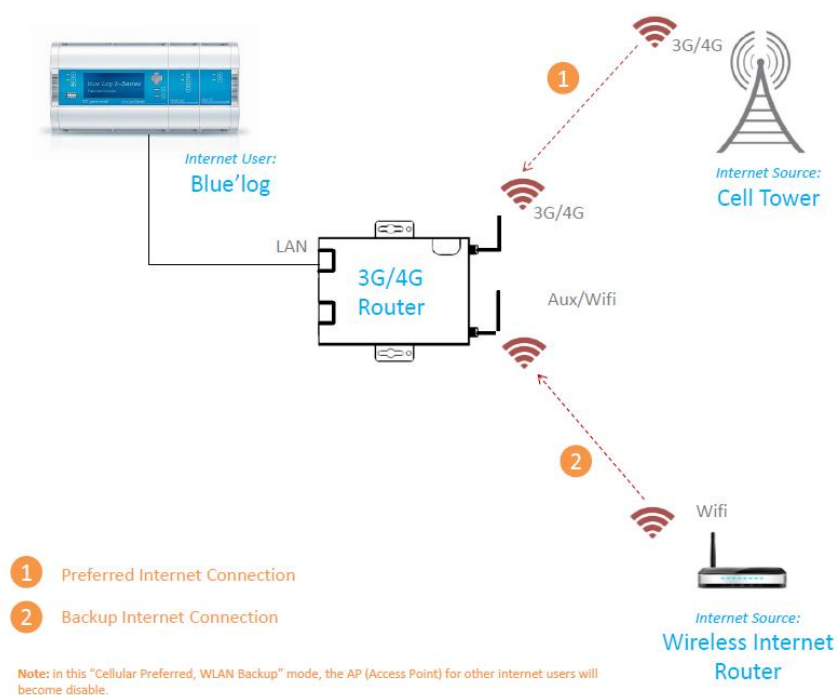


Figure 9: Cellular Preferred, WAN Backup Plan

2. Cellular Preferred, WLAN Backup (see Section 2.5, 2.8 & 2.9 for configuration details)



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Figure 10: Cellular Preferred, WLAN Backup Plan

3. WAN Preferred, Cellular Backup (See Section 2.5 & 2.9 for configuration details)

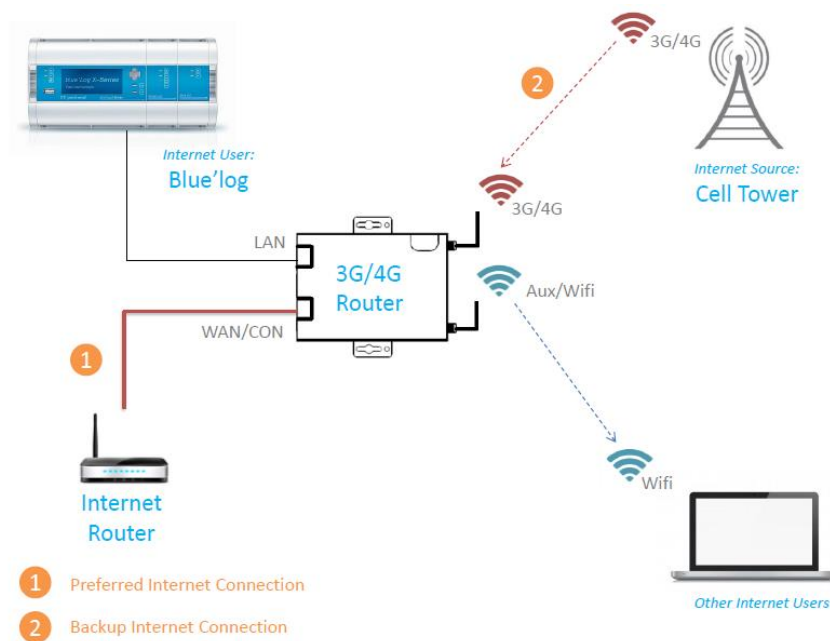


Figure 11: WAN Preferred, Cellular Backup Plan

IMPORTANT NOTE:

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- (1) When the WAN/CON port is required to be converted to a LAN port, this option is only applicable for Standard mode - the back-up mode does not support this function.
- (2) When the 3G/4GWiFi-11 Router is on "Cellular Preferred, WLAN Backup" mode, the AP (Access Point) will become disabled.

2.4 Computer Connection

In order to configure the router, it needs to be connected to a computer via a direct connection or wireless connection.

To establish the connection, the IP address can be either set as static or DHCP. The default IP address and subnet mask of the router are 192.168.1.1 and 255.255.255.0, respectively.

The IP settings on the computer can be set as follows:

1. Click "start > control panel", double click on "Network and Sharing Center" icon then select "Local Area Connection". Double click on the "Properties" icon, select "Internet Protocol Version 4 (TCP/IPv4) then double click "Properties"

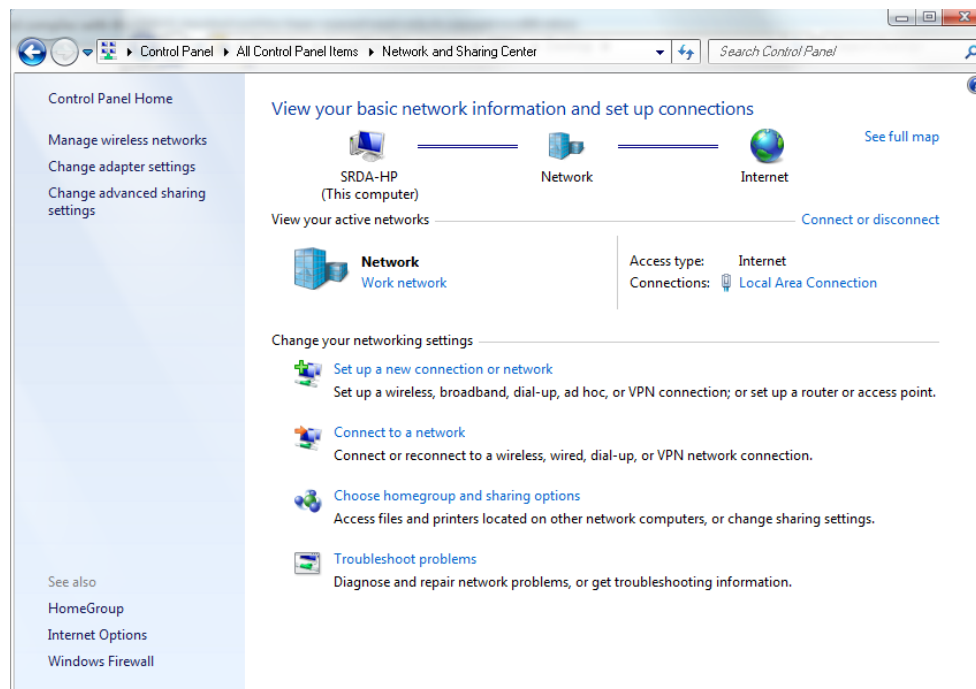


Figure 12: Network Connection Step 1

2. Select either to obtain the IP address automatically or set up IP address, 192.168.1.xxx (XXX can be any number between 2~254)

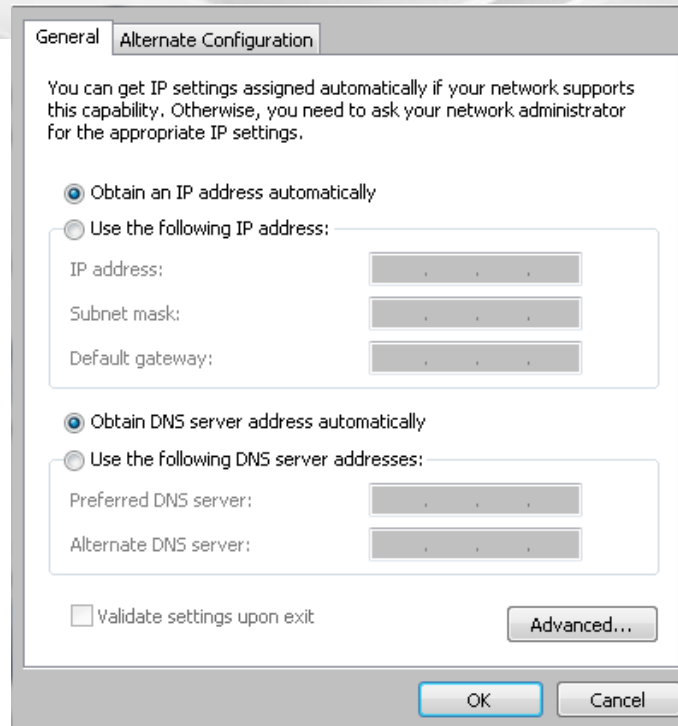


Figure 13: Network Connection Step 2

- Open the web browser and type in the IP address of the router (default value 192.168.1.1). Then the user will be prompted to enter a username and password which by default are:

User name	admin
Password	admin

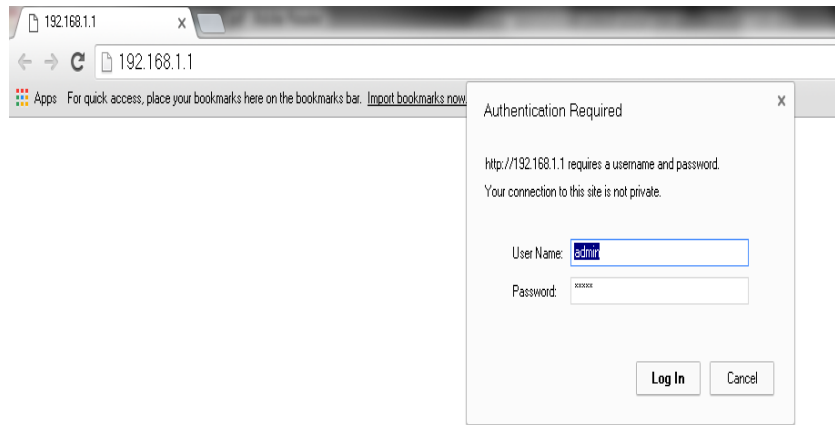


Figure 14: User identify page

- Now the WEB interface can be accessed to check the status of the router and modify its settings. Once the user is logged in, the WEB interface will show the router and internet access status

Cellular Router SFCE+

Status

- Overview
- LAN
- Device List

Basic Network

WLAN

Advanced Network

VPN Tunnel

Administration

Debugging

Logout

Router

System Status

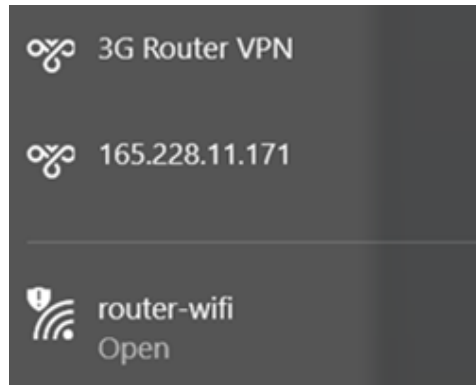
Router Name	Router
Hardware Verion	C11-D20
Firmware Version	Router-4.2.1.1-171121-181828
Time	Tue, 19 Dec 2017 17:37:37 +1100 Click Sync
Uptime	00:32:32
CPU Load (1 / 5 / 15 mins)	0.11 / 0.19 / 0.15
Total / Free Memory	60.09 MB / 48.94 MB (81.45%)

Internet Status

MAC Address	34:0A:7C:05:20:44
IMEI	861107032959240
Modem Status	Ready
ISP	"Telstra Mobile Telstra"
Cellular Network	LTE
USIM Status	Ready
CSQ	21 (67%)
IP Address	10.100.19.96
Subnet Mask	255.255.255.192
Gateway	10.100.19.97
DNS	10.4.58.204:53, 10.5.136.242:53
Status	Cellular Connected
Connection Uptime	00:31:40

Figure 15: Router Status

When use a wireless connection, the default SSID of the router is "router-wifi" without password setup. Again you would require to set up the Wi-Fi Ethernet Option similar with the above steps of Ethernet cable connection.



2.5 Cellular Network Configuration

In order to set the router to access internet using the 3G/4G network, apply the following steps (it is recommended to configure all steps below). This configuration is applicable on the following scenarios:

Standard Modes:

- (a) Cellular connection

Backup Modes:

- (a) Cellular Preferred, WAN Backup Connection

- (b) Cellular Preferred, WLAN Backup Connection
- (c) WAN Preferred, Cellular Backup

To setup 3G/4G settings:

1. Access the cellular network configuration page, by clicking on “Basic Network” then select “Cellular”
2. Make sure the APN is set correctly. Check with your Cellular service provider for this information. Leave other parameters to the default values
3. Click “save” to apply settings and wait for page to reload

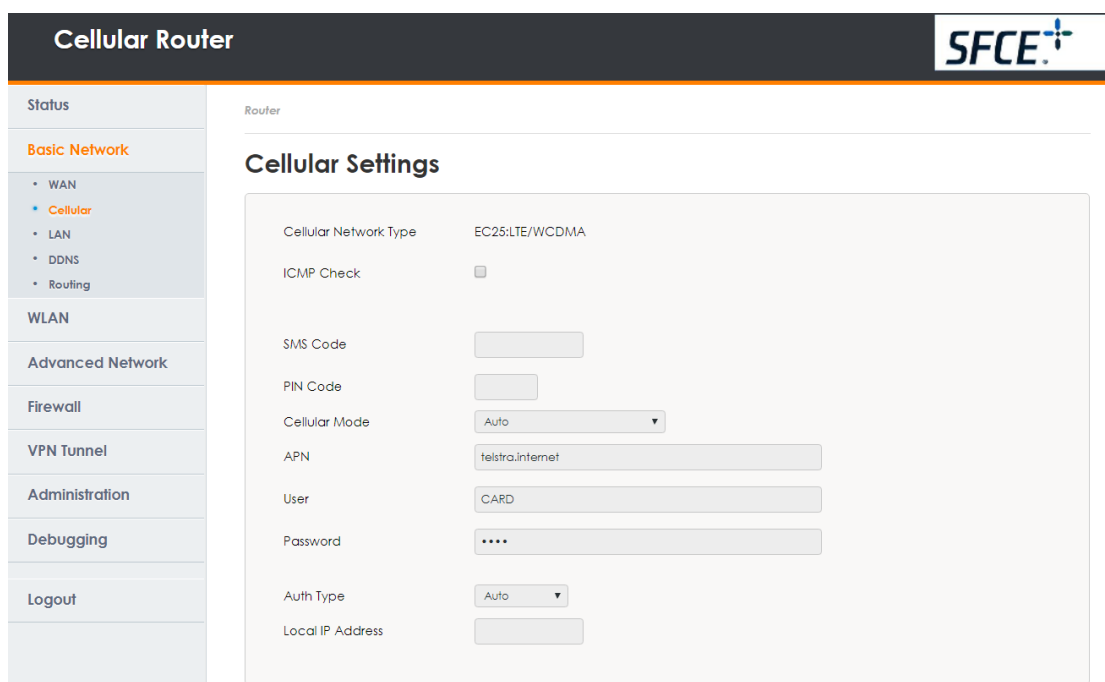


Figure 16: Cellular network setting page

NOTE: Return to the “Status” page after you have connected to the cellular network. It is important to note that an average CSQ value of 18 and above is recommended, otherwise the connectivity becomes unsteady. Also take into consideration that the CSQ value is a momentary value and can fluctuate. Refer to the table below for signal conditions in terms of the CSQ value. In general, increasing the gain of the antenna will result in improved signal strength at the router, but direction and location of the antenna becomes crucial.

Table 3: CSQ Condition Reference

CSQ	RSSI (dBm)	Condition
2	-109	Marginal
3	-107	Marginal
4	-105	Marginal
5	-103	Marginal
6	-101	Marginal
7	-99	Marginal
8	-97	Marginal
9	-95	Marginal
10	-93	OK
11	-91	OK
12	-89	OK
13	-87	OK
14	-85	OK
15	-83	Good
16	-81	Good
17	-79	Good
18	-77	Good
19	-75	Good
20	-73	Excellent
21	-71	Excellent
22	-69	Excellent
23	-67	Excellent
24	-65	Excellent
25	-63	Excellent
26	-61	Excellent
27	-59	Excellent
28	-57	Excellent
29	-55	Excellent
30	-53	Excellent

2.6 Dual LAN port configuration

Please note there is an option to convert the WAN port to the LAN port in the Router Standard Mode. This configuration is applicable on the following scenarios:

Standard Modes:

- (a) Cellular connection

To setup Dual LAN port configuration:

1. Access WAN network configuration page, by clicking on "Basic Network" then select "WAN"
2. Ensure the "Bridge WAN port to primary LAN(br0)" is ticked
3. Click "save" to apply settings and wait for page to reload

Cellular Router

Status

Basic Network

- WAN
- Cellular
- LAN
- DDNS
- Routing

WLAN

Advanced Network

Firewall

VPN Tunnel

Administration

Debugging

Logout

Router

WAN / Internet

Type 3G/4G ▼

Dial Mode ECM ▼

Bridge WAN port to primary LAN (br0)

Save
Cancel

2.7 WLAN Communication– Access Point (AP) Configuration

The router could be configured as an “Access Point (AP)” for Internet WiFi sharing to a computer or external devices & users. Please note this configuration is applicable on the following scenarios:

Standard Modes:

- (a) Cellular connection
- (b) Wireless client connection

(c) WAN connection

Backup Modes:

- (a) Cellular Preferred, WAN Backup Connection
- (b) WAN Preferred, Cellular Backup

Please note for the backup mode "Cellular Preferred, WLAN Backup Connection", the wireless mode is required to be setup as "Wireless Client", and does not support "Access Point" for this scenario.

To setup Access Point Configuration:

In order to configure the router to operate as an AP, apply the following steps:

1. First, the WLAN needs to be enabled by clicking on "WLAN" then selecting "Basic Settings"
2. Make sure the "Enable WLAN" is ticked
3. Set the "Wireless Mode" to "Access Point"
4. Enter the preferred router SSID. The default value is "router"
5. Set the appropriate security protocols from the "Security option" and "Encryption". Usually set the aforementioned parameters to "WPA/WPA2 Personal" and "TKIP/AES", respectively which will work with most Wi-Fi router settings
6. Make sure a security key is selected for the SSID to prevent unwanted access from other parties by setting the "Shared Key"
7. Click the "Save" button below to save the settings

Cellular Router **SFCE+**

Status

Basic Network

WLAN

- Basic Settings
- MultiSSID
- Wireless Filter
- Advanced Wireless
- Wireless Survey

Advanced Network

Firewall

VPN Tunnel

Administration

Debugging

Logout

Router

Wireless (2.4 GHz / eth1)

Enable WLAN

MAC Address 34:0A:81:26:20:54

Wireless Mode Access Point

Wireless Network Mode Auto

SSID router-wifi

Broadcast SSID

Channel 7 - 2.442 GHz Scan

Channel Width 40 MHz

Control Sideband Upper

Security option WPA / WPA2 Personal

Encryption AES

Shared Key Random

Group Key Renewal 3600 (seconds)

Save Cancel

2.8 WLAN Communication – Wireless Client Configuration

Instead of accessing Internet through an Internet modem using Ethernet cable, the router can also be set as “Wireless Client” via Wi-Fi (Wireless communication) to connect with a Wireless Internet modem. Please note this configuration is applicable on the following scenarios:

Standard Modes:

- (a) Wireless client connection

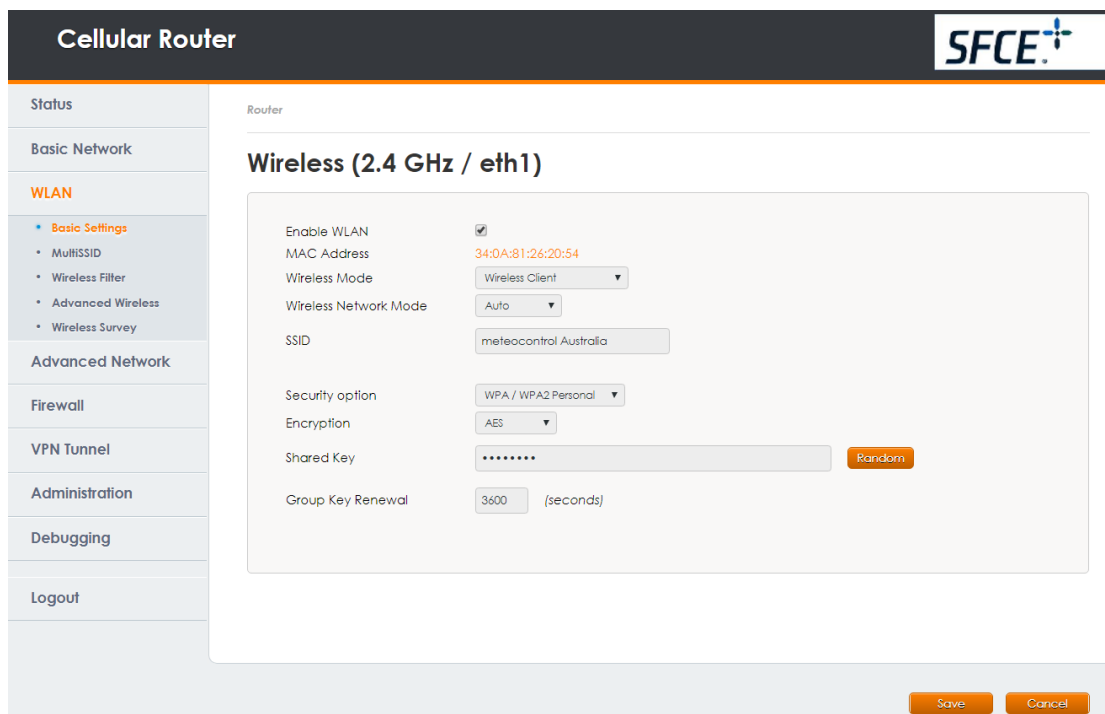
Backup Modes:

- (b) Cellular Preferred, WLAN Backup

To setup Wireless Client Configuration:


In order to configure the router to operate as “Wireless Client”, apply the following steps:

1. Click on “WLAN” then “basic settings”. Under wireless mode, select “wireless client”.
2. Fill in the SSID of the local network (e.g. at meteocontrol’s office, the SSID is meteocontrol Australia).
3. Select the type of security mode that is configured for that SSID (e.g. Network security has WPA/WPA2 and TKP/AE3 encryption type).
4. Lastly, fill in the password under “Shared key” and click “save”. The router will then reboot.



Please note that although the “Access Point” and “Wireless Client” cannot be applied simultaneously on any Router Backup Modes, it could be setup in the Router Standard Modes via the following steps:

1. Configure the "Wireless Client" from the following steps on "WLAN" and then "Basic Settings"
2. Click on "WLAN" then "MultiSSID". All the Wireless Connection is shown on the page. The configured WLAN connection are shown "Enabled" in the list:

Cellular Router


- Status
- Basic Network
- WLAN**
- Basic Settings
- **MultiSSID**
- Wireless Filter
- Advanced Wireless
- Wireless Survey
- Advanced Network
- Firewall
- VPN Tunnel
- Administration
- Debugging
- Logout

Router

MultiSSID

Overview
eth1 (w10)
w10.1
w10.2
w10.3

Interface	Enabled	SSID	Mode	Bridge
eth1 (w10)	Yes	meteocontrol Australia	Wireless Client	LAN (br0)
w10.1	Yes	router-wifi	Access Point	LAN (br0)
w10.2	No	router-wifi2	Access Point	LAN (br0)
w10.3	No	router-wifi3	Access Point	LAN (br0)

w10.1
+

Access Point

Add

Save
Cancel

- Configure WLAN "Access Point" by clicking the interface option on the top of list, and following "2.7 WLAN Communication– Access Point (AP) Configuration"

The screenshot shows the 'Cellular Router' configuration page for 'SFCE+'. The left sidebar contains navigation options: Status, Basic Network, WLAN (selected), Advanced Network, Firewall, VPN Tunnel, Administration, Debugging, and Logout. Under 'WLAN', 'Multissid' is selected. The main content area is titled 'Router Multissid' and shows tabs for 'Overview', 'eth1 (wlan)', 'wlan.1' (active), 'wlan.2', and 'wlan.3'. The 'wlan.1' configuration form includes the following fields:

- Enable WLAN:
- MAC Address: 36:0A:7B:15:20:57
- Wireless Mode: Access Point
- SSID: router-wifi
- Broadcast SSID:
- Security option: WPA / WPA2 Personal
- Encryption: AES
- Shared Key: [masked] with a 'Random' button
- Group Key Renewal: 3600 (seconds)

Buttons for 'Overview' and 'Cancel' are located at the bottom right of the configuration area.

- Go back to "Overview" and click "save". Now both "Wireless Client" & "Access Point" WLAN communication are activated in the same router

2.9 Router Backup Mode Configuration

Backup mode ensures a redundant connection by falling back to another internet connection. For example, Cellular preferred, WAN backup means that it will prioritise a cellular over a WAN connection when there is a cellular connection. The configuration is only applicable if the backup mode firmware is installed for the router – please refer to "2.1 Router Firmware" for more details

To set up Router Backup Mode Configuration:

In order to configure the router to operate for back-up modes, apply the following steps:

1. Prior to configure the Back-up mode settings, please ensure the Preferred Network Mode, as well as the Backup Network Mode are both configured in the router interface. (For example, refer to *2.5 Cellular Network Connection* for Cellular Mode, and refer to *2.8 Wireless Client Connection* for WLAN mode.
2. Go to Basic Network > WAN. Make sure that the preferred backup mode is selected as shown in Figure below. For example, "Cellular preferred, WAN Backup" mode prioritises a cellular connection before falling over to a local area connection if there is a fault.

Note:

- (1) *WAN is equivalent to WLAN. So if you setup WLAN then it will be the fall-back network. Only one fall-back network could be utilised for this features*
- (2) *Single Network Mode could also be applied.*

3. Click the "Save" button below to save the settings

The screenshot shows the configuration interface for a Cellular Router. The left sidebar contains navigation options: Status, Basic Network (with WAN selected), WLAN, Advanced Network, Firewall, VPN Tunnel, Administration, Debugging, and Logout. The main content area is titled 'WAN / Internet' and includes the following settings:

- Backup Mode: Cellular Preferred, WAN Backup
- WAN Type: DHCP
- WAN ICMP Check:
- Check mode: Successive Fails Number
- WAN Check Interval: 5 (seconds)
- Fails Number: 2 (Times)
- WAN Check IP1: 208.67.222.222
- WAN Check IP2: 208.67.220.220
- MTU: Default (1500)

At the bottom right, there are 'Save' and 'Cancel' buttons. A copyright notice at the bottom center reads: ©2012-2015, Shenzhen Detran Technology Co., Ltd. All rights reserved.

2.10 ICMP Check Configuration

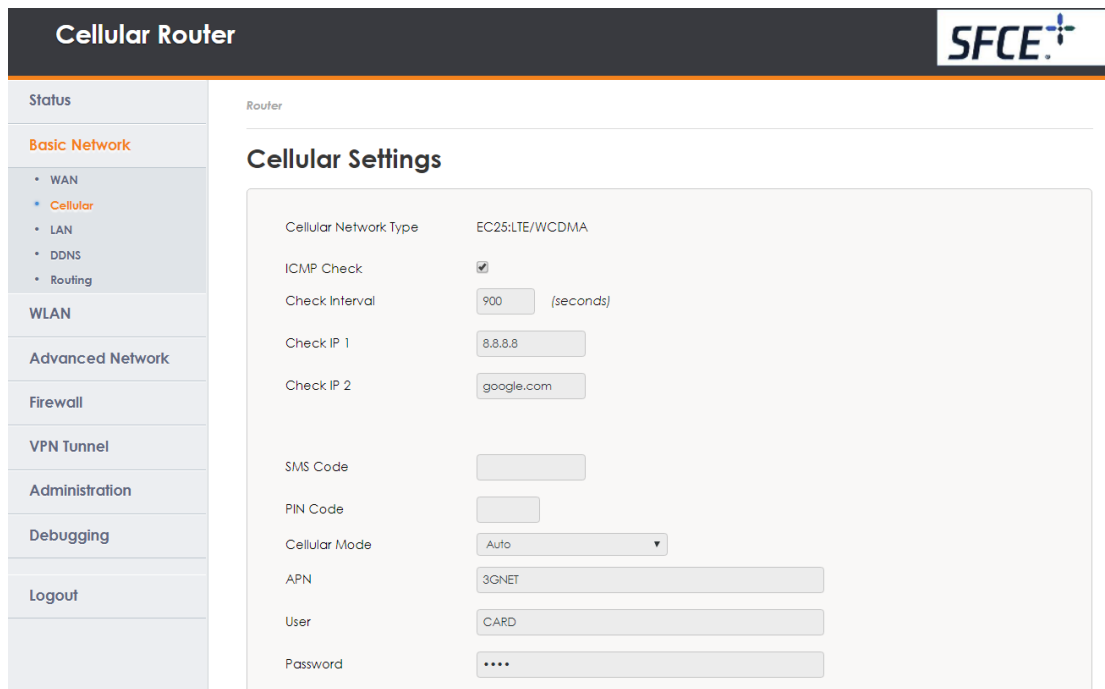
ICMP is an error checking protocol which checks for an internet connection by pinging an IP address, if there is no response then the router will reboot and usually a reboot will refresh the internet connection. This feature will take up some data as it is constantly sending out a signal (pinging) to google every check interval (this is why we recommend 900 seconds).

To set up ICMP Check:

1. Access the cellular network configuration page, by clicking on "Basic Network" then select "Cellular"
2. Enable ICMP (internet control message protocol) by clicking the radio button. Under "check interval", fill in the amount of seconds you would like the router to ping the

IP address (e.g. 900 seconds is recommended). By default “check IP1” is 8.8.8.8 (googles IP address)

3. Click the “Save” button below to save the settings



The screenshot shows the 'Cellular Router' configuration interface. On the left is a navigation menu with categories: Status, Basic Network (selected), WLAN, Advanced Network, Firewall, VPN Tunnel, Administration, Debugging, and Logout. Under 'Basic Network', sub-items include WAN, Cellular (selected), LAN, DDNS, and Routing. The main content area is titled 'Cellular Settings' and contains the following fields:

- Cellular Network Type: EC25:LTE/WCDMA
- ICMP Check:
- Check Interval: 900 (seconds)
- Check IP 1: 8.8.8.8
- Check IP 2: google.com
- SMS Code: [empty text box]
- PIN Code: [empty text box]
- Cellular Mode: Auto (dropdown menu)
- APN: 3GNET
- User: CARD
- Password: [masked with dots]

2.11 Router M2M Platform Registration Configuration

meteoControl can connect to each router via M2M communication. It is advised that you set this up on your router for optimal support. This is beneficial for technical support, configuration, monitoring and troubleshooting. Unlike VPN, it gathers key information for analysis and can act as a basic command centre.

To set up M2M Platform Registration:

1. Click on Administration
2. Click on M2M Settings
3. Enable M2M Access
4. Enter the router name on "Device ID" you would like to display on the M2M Platform (User defined)
5. The M2M server Domain address is m2m.suntech-power.com.au with port 8002 and enter other input as the same settings from below
6. Finally, click Save.

Cellular Router



Status

Basic Network

WLAN

Advanced Network

Firewall

VPN Tunnel

Administration

- Identification
- Time
- Admin Access
- Scheduler Reboot
- M2M Settings
- Configuration
- Logging
- Upgrade
- Reboot...

Debugging

Logout

Router

m2m

M2M Enabled

Fail Action Restart M2M

Device ID New Router

M2M Server/Port m2m.suntech-power.com.au : 8002

Heartbeat Intval 10 (seconds)

Heartbeat Retry 10 (Range:10-1000)

Named-Pipe Enabled Auto Connect

Named-Pipe Server Port 8004 (Range:1024-65535)

Named-Pipe Status Offline

Named-Pipe Address 0.0.0.0

Figure 17: M2M Settings

2.12 Scheduled Reboot Configuration

The router is able to be configured to reboot automatically to refresh the network connection. It is highly recommended to select a time for the router to be reboot when there is poor data communication from the network provider.

To set up Scheduled Reboot:

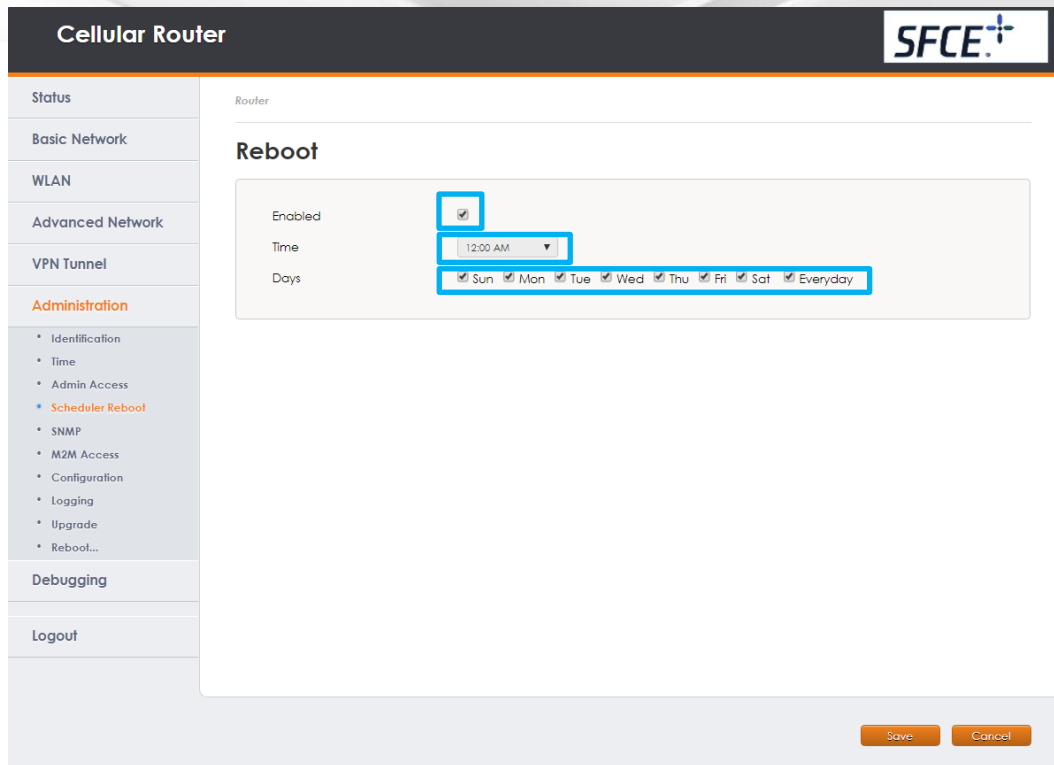
1. Access the Scheduler Reboot configuration page by clicking on "Administration" and then "Scheduler Reboot"

The screenshot shows the 'Cellular Router' configuration page for 'SFCE+'. The left sidebar contains a menu with 'Administration' and 'Scheduler Reboot' highlighted. The main content area is titled 'Reboot' and contains the following settings:

- Enabled:
- Time: 12:00 AM (dropdown menu)
- Days: Sun Mon Tue Wed Thu Fri Sat Everyday

At the bottom right of the configuration area, there are 'Save' and 'Cancel' buttons.

2. Tick "Enable" to active Automatic Reboot function of the router. Select a time that automatic reboot for the router to be conducted for *a particular day or days*. Select a day or days that the automatic reboot will be scheduled to recur *during a week*



2.13 Firmware upgrade

Important note

This firmware upgrade instruction is applicable for Single LAN port firmware 4.2.1.1 installed environment only. Please double-check the router firmware types (as illustrated in the below router Web interface) before the router firmware upgrade:

- 4.2.1.1 – Single LAN Port SW (Follow the instruction below)
- 4.3.4.4 – Dual LAN Port SW (Contact services@suntech-power.com.au, and we will forward you the latest version of this SW type and provide upgrade instruction)

Cellular Router



Status	Router														
<ul style="list-style-type: none"> Overview LAN Device List 	<h3>System Status</h3> <table border="1"> <tr> <td>Router Name</td> <td>Router</td> </tr> <tr> <td>Hardware Verion</td> <td>C11-D20</td> </tr> <tr> <td>Firmware Version</td> <td>Router-4.2.1.1-200721-162747</td> </tr> <tr> <td>Router Time</td> <td>Wed, 07 Oct 2020 16:15:41 +1100 Clock Sync</td> </tr> <tr> <td>Uptime</td> <td>00:12:38</td> </tr> <tr> <td>CPU Load (1 / 5 / 15 minute)</td> <td>0.32 / 0.32 / 0.15</td> </tr> <tr> <td>Total / Free Memory</td> <td>60.08 MB / 47.80 MB (79.56%)</td> </tr> </table>	Router Name	Router	Hardware Verion	C11-D20	Firmware Version	Router-4.2.1.1-200721-162747	Router Time	Wed, 07 Oct 2020 16:15:41 +1100 Clock Sync	Uptime	00:12:38	CPU Load (1 / 5 / 15 minute)	0.32 / 0.32 / 0.15	Total / Free Memory	60.08 MB / 47.80 MB (79.56%)
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Total / Free Memory	60.08 MB / 47.80 MB (79.56%)														
Basic Network															
WLAN															
Advanced Network															
Firewall															
VPN Tunnel															

Recommended equipment to bring on site

To conduct a router firmware update, it is highly recommended for the technician to bring the below equipment on-site

1. A Laptop
2. 1 x CAT5/CAT6 Ethernet cable (1 or 3m length) with both RJ45 Plug at both ends
3. SFCE 4G Router Firmware Upgrade Kit (saved in the laptop) which contains
 - Latest Router Firmware (.trx file)
 - Quick Guide of Firmware Upgrade (.docx file)

A quick walkthrough for 4G router firmware upgrade:

1. Connect your laptop via a direct LAN connection or Wireless connection to the 4G router
2. Open the web browser and type in the IP address of the router (default IP: 192.168.1.1). Then the user will be prompted to enter a username and password which by default are both "admin".



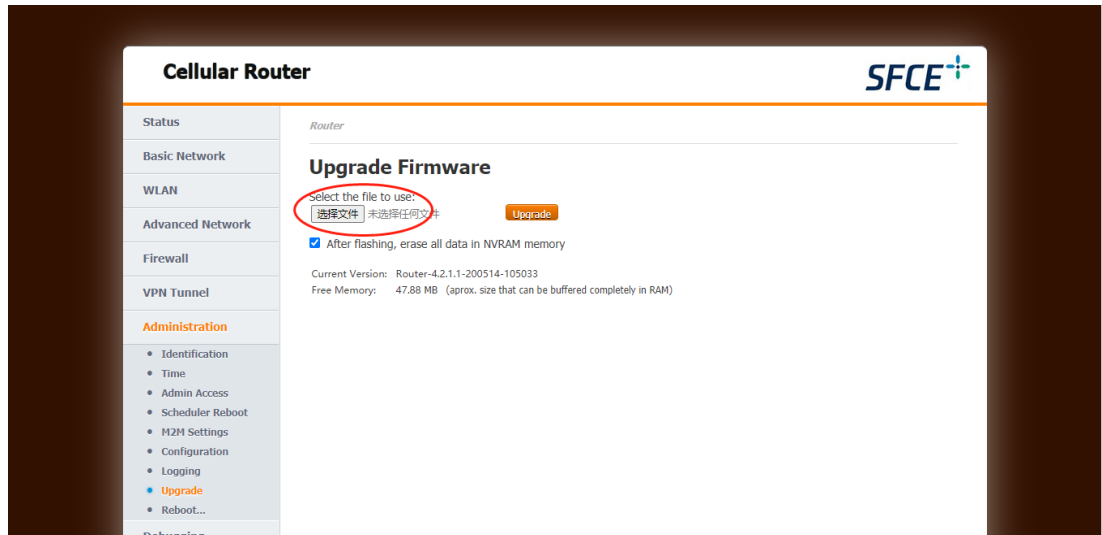
3. Now the Router Web interface can be accessed to check the status of the router and modify its settings. Once logged in, the Web interface will show the router and internet access status as shown below - please double-check the Firmware type & version:

4.

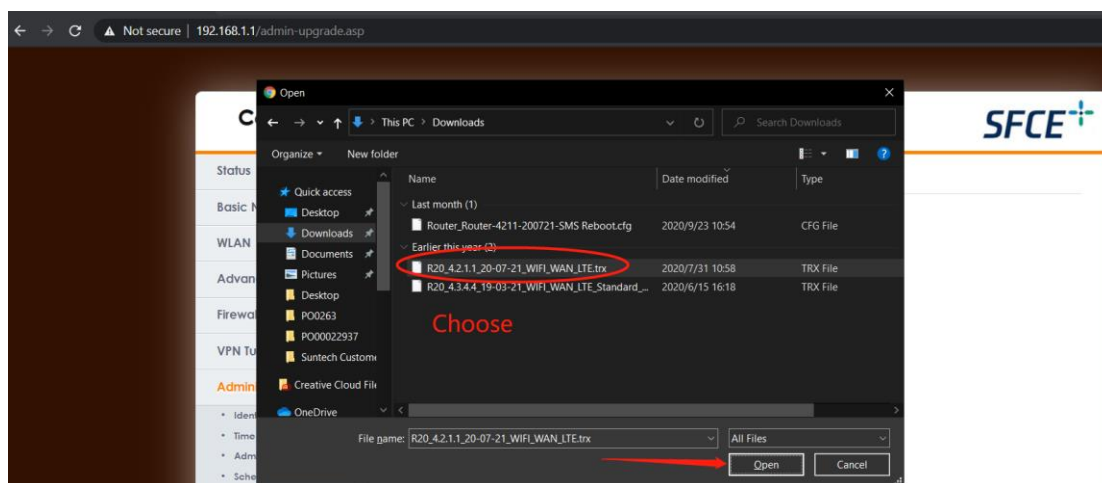
Cellular Router

<p>Status</p> <ul style="list-style-type: none"> • Overview • LAN • Device List <p>Basic Network</p> <p>WLAN</p> <p>Advanced Network</p> <p>VPN Tunnel</p> <p>Administration</p> <p>Debugging</p> <p>Logout</p>	<p style="text-align: center; font-size: small;">Router</p> <hr/> <h3>System Status</h3> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Router Name</td> <td>Router</td> </tr> <tr> <td>Hardware Verion</td> <td>C11-D20</td> </tr> <tr> <td>Firmware Version</td> <td>Router-4.2.1.1-171121-181828</td> </tr> <tr> <td>Time</td> <td>Tue, 19 Dec 2017 17:37:37 +1100 Click Sync</td> </tr> <tr> <td>Uptime</td> <td>00:32:32</td> </tr> <tr> <td>CPU Load (1 / 5 / 15 mins)</td> <td>0.11 / 0.19 / 0.15</td> </tr> <tr> <td>Total / Free Memory</td> <td>60.09 MB / 48.94 MB (81.45%)</td> </tr> </table> <h3>Internet Status</h3> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>MAC Address</td> <td>34:0A:7C:05:20:44</td> </tr> <tr> <td>IMEI</td> <td>861107032959240</td> </tr> <tr> <td>Modem Status</td> <td>Ready</td> </tr> <tr> <td>ISP</td> <td>"Telstra Mobile Telstra"</td> </tr> <tr> <td>Cellular Network</td> <td>LTE</td> </tr> <tr> <td>USIM Status</td> <td>Ready</td> </tr> <tr> <td>CSQ</td> <td>21 [67%]</td> </tr> <tr> <td>IP Address</td> <td>10.100.19.96</td> </tr> <tr> <td>Subnet Mask</td> <td>255.255.255.192</td> </tr> <tr> <td>Gateway</td> <td>10.100.19.97</td> </tr> <tr> <td>DNS</td> <td>10.4.58.204:53, 10.5.136.242:53</td> </tr> <tr> <td>Status</td> <td>Cellular Connected</td> </tr> <tr> <td>Connection Uptime</td> <td>00:31:40</td> </tr> </table>	Router Name	Router	Hardware Verion	C11-D20	Firmware Version	Router-4.2.1.1-171121-181828	Time	Tue, 19 Dec 2017 17:37:37 +1100 Click Sync	Uptime	00:32:32	CPU Load (1 / 5 / 15 mins)	0.11 / 0.19 / 0.15	Total / Free Memory	60.09 MB / 48.94 MB (81.45%)	MAC Address	34:0A:7C:05:20:44	IMEI	861107032959240	Modem Status	Ready	ISP	"Telstra Mobile Telstra"	Cellular Network	LTE	USIM Status	Ready	CSQ	21 [67%]	IP Address	10.100.19.96	Subnet Mask	255.255.255.192	Gateway	10.100.19.97	DNS	10.4.58.204:53, 10.5.136.242:53	Status	Cellular Connected	Connection Uptime	00:31:40
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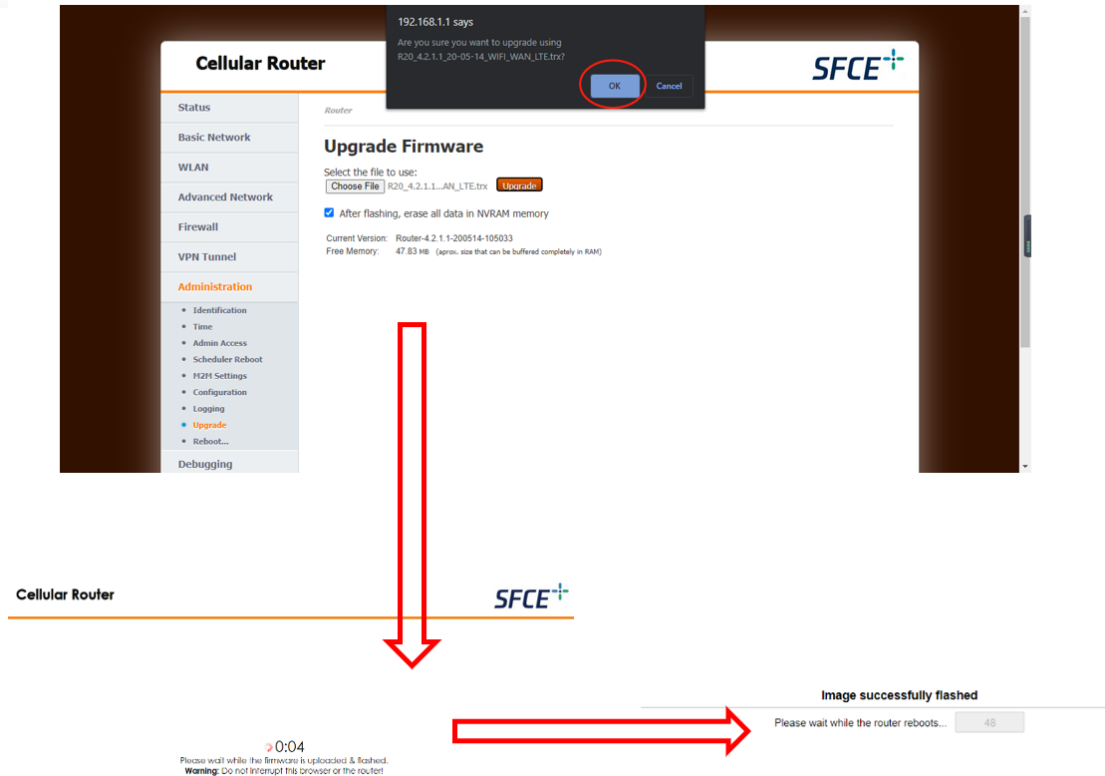
- On the LHS tabs, Click "Administration" and then go to "Upgrade". Select & insert the latest firmware file (see step 5). Please also make sure the "memory erase" box is ticked before clicking the "Upgrade" Bottom



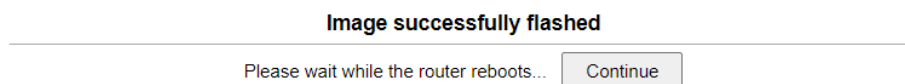
- In your laptop, locate the firmware file named: "R20_4.2.1.1_20-07-21_WIFI_WAN_LTE.trx" and click "Open".



- A window will pop up to confirm the upgrade. Click "OK" and the upgrade program will initial and finish within 2 minutes. During the upgrade process, please do not refresh or close the page. Wait until the router reboot starts.



- Once the router firmware upgrade completed, a router reboot will need to be initiated, please click "Continue" to initial the router reboot. After that, you will lose the connection to the router web interface. (Note: if Wireless connection is used, you will need to reconnect the router WIFI again before opening the router Web interface – refer to step 2)



8. Login to the router Web interface again and double-check if the Firmware version is "Router-4.2.1.1-200721-XXXXXX" on the "System Status" to confirm the Firmware has been upgraded successfully.

Cellular Router **SFCE+**

Status

- Overview
- LAN
- Device List

Basic Network

WLAN

Advanced Network

Firewall

VPN Tunnel

Router

System Status

Router Name	Router
Hardware Verion	C11-D20
Firmware Version	Router-4.2.1.1-200721-162747
Router Time	Wed, 07 Oct 2020 16:15:41 +1100 Clock Sync
Uptime	00:12:38
CPU Load (1 / 5 / 15 minute)	0.32 / 0.32 / 0.15
Total / Free Memory	60.08 MB / 47.80 MB (79.56%)

2.14 SMS Reboot Configuration

SMS reboot can be triggered by sending a certain text message to 4G router's sim card number. It is highly recommended to set this function up before you leave your router in a remote area.

To set up SMS Reboot:

To enable the SMS reboot function, go to "Basic Network" → "Cellular". Under "Cellular Settings", locate the "SMS Code" and type in "s" in the column to trigger the SMS reboot. Click the "SAVE" button, the router will start reboot. The SMS reboot should be configured successfully after the reboot, you could login to the web interface again to double-check.

Cellular Router SFCE+

Status

Basic Network

- WAN
- **Cellular**
- LAN
- DDNS
- Routing

WLAN

Advanced Network

Firewall

VPN Tunnel

Administration

Debugging

Logout

Router

Cellular Settings

Cellular Network Type: EC25:LTE/WCDMA

ICMP Check:

Check Interval: 900 (seconds)

Check IP 1: 8.8.8.8

Check IP 2: 8.8.4.4

SMS Code: s

PIN Code:

Cellular Mode: Auto

APN Mode: Auto Apn

APN: telstra.internet

User:

How to trigger SMS reboot:

Type in the whole word string below in your cell phone with the SIM phone number used in the router (The SMS Code configured earlier is "s", and we recommended to use "s" for the SMS Code for default configuration)

SMS Text message: "s*reboot"