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4RF Aprisa LTE Smart Secure and Hardened LTE Router User Guide

Quick Start Guide

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Follow these steps to operate your Aprisa LTE router:

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April 2021
Version 1.3.0

Contents

Check the box contents

The box contains:

- One Aprisa LTE Router.
- One Aprisa LTE 1 meter power cable fitted with 4 pin Molex Micro-Fit 3.0 female connector and wire ended.
- One power connector locking plate and screw (secures the power connector to the Aprisa LTE).

Install the Aprisa LTE and connect the protection earth

The Aprisa LTE has four threaded holes (M4) in the base and two holes (for M5 screws) through the enclosure for mounting. Mounting options include:

- DIN rail mounting with the Aprisa LTE DIN rail mounting bracket (optional accessory part number 'APLB-MBRK-DIN').
- Wall and rack shelf mounting.
- Outdoor enclosures.
  The Aprisa LTE DIN rail mounting:
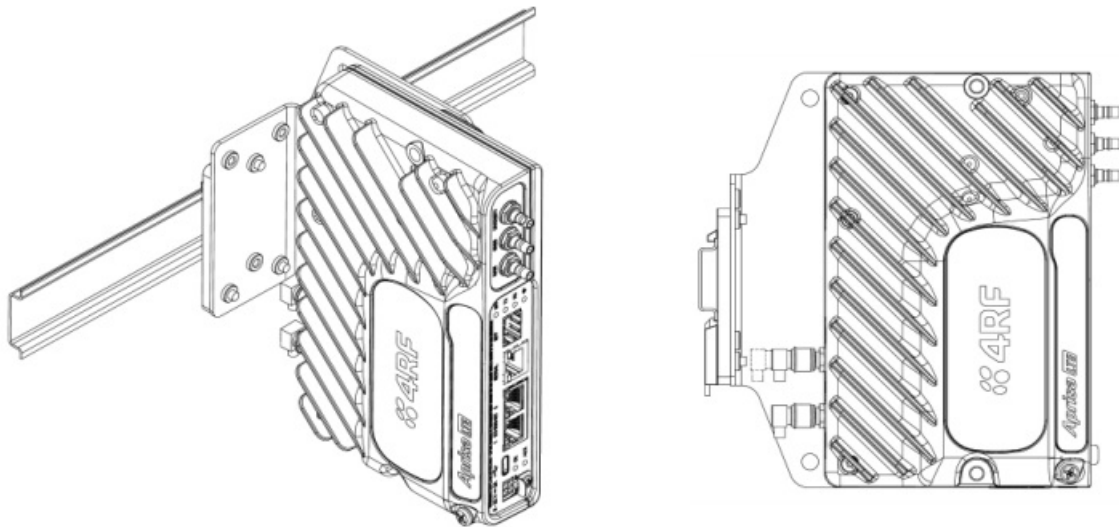
The Aprisa LTE has an earth connection point on the top left of the enclosure. Use the supplied M4 screw to earth the enclosure to protect the earth.

Warning: If the Aprisa LTE is operated in an environment where the ambient temperature exceeds 50°C, the Aprisa LTE must be installed within a restricted access location to prevent human contact with the enclosure heatsink.

Hereby, 4RF Limited declares that the Aprisa LTE router is in compliance with Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at the internet address
**https://www.4rf.com/library/en**.

	BE BG CZ DK DE EE IE EL ES FR HR IT CY LV LL AT PLPTROSI SK FI SE UK

Set up and apply power to the Aprisa LTE

A valid SIM provided by your local wireless carrier e.g. Verizon, AT&T, EE, and Vodafone is required for connectivity.
The LTE can accommodate two standard Micro SIMs (12 x 15mm) which fit into the product rear under the SIM cards cover plate.
Contact your carrier for details about selecting a data plan and about the process for activating your SIM.

SIM 1 Slot   SIM 2 Slot
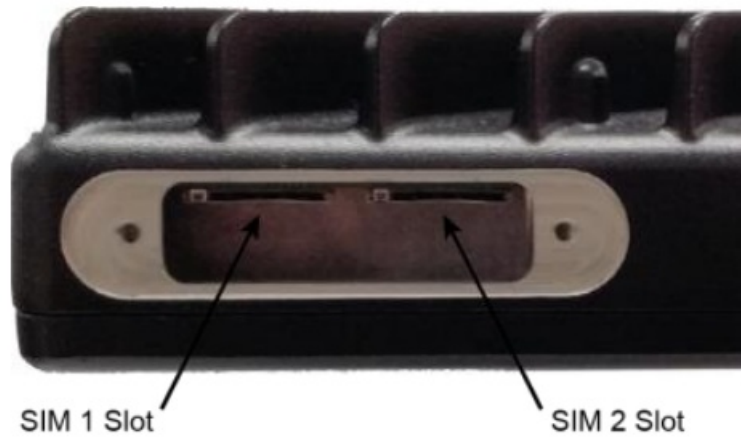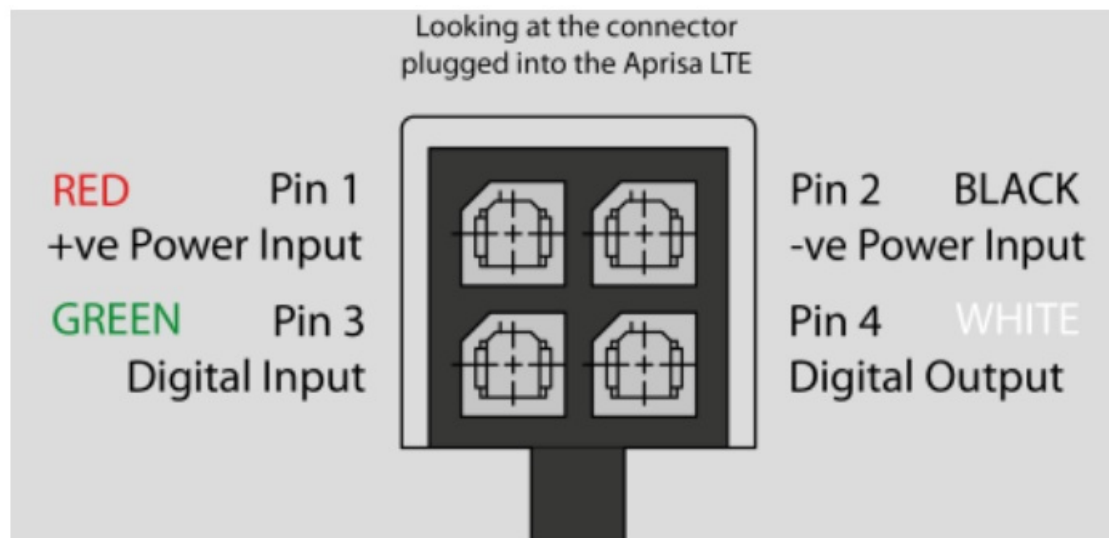
Install an activated SIM in the Aprisa LTE:

1. Ensure the power to the Aprisa LTE is turned off.
2. Unscrew the two screws on the SIM card's cover plate.
3. Fit the SIM to the 'SIM 1 Slot' slot notch-end first with metal contacts facing up.

Attach either separate antennas for LTE, GNSS, and Wi-Fi or a single combination antenna to the appropriate QMA connectors on the Aprisa LTE.

The Aprisa LTE is operated from a DC source of voltage between +9 VDC and +3VDC (negative earth) and consumes up to 15 watts. External power supplies are available from 4RF as accessories (see the Aprisa LTE User Manual).

The Aprisa LTE power connector is a Molex Micro-Fit 3.0 4 pin male connector. The power supply input connects to pin 1 +ve and pin 2 -ve. A 1 metre power cable fitted with a 4 pin Molex Micro-Fit 3.0 female connector and wire ended is supplied in the box with each Aprisa LTE.

Looking at the connector plugged into the Aprisa LTE

RED   Pin 1 +ve Power Input
GREEN   Pin 3 Digital Input
Pin 2   BLACK -ve Power Input
Pin 4   WHITE Digital Output

The Molex Micro-Fit 3.0 4 pin connector clips into the Aprisa LTE socket. It also has a locking plate and screw (supplied with the Aprisa LTE) that enables the connector to be secured to the Aprisa LTE with a screw.

Note: The Aprisa LTE internal fuses will blow if the connected power supply is over-voltage or the polarity is reversed. If this happens, the fuse(s) will need to be replaced. Spare fuses can be ordered from 4RF (see the 'Spare Fuses' section of the Aprisa LTE User Manual).

Turn your power source on. The Aprisa LTE OK and AUX LEDs will flash orange while the router is booting up.

The Aprisa LTE OK LED will light green when the router is ready to operate.

For vehicle installation, the Aprisa LTE power connector pin 3 is used as an ignition sense line and should be connected to a source of +12 or +24 volts that comes on when the vehicle is running. No connection is required for stationary applications.
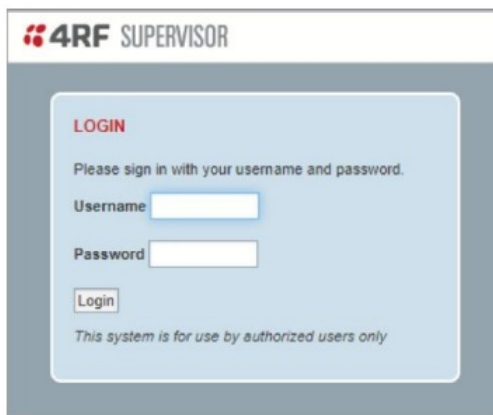
Connect to the Aprisa LTE

The Aprisa LTE has a factory default IP address of 192.168.4.1 with a subnet mask of 255.255.255.0.

- If your PC is set for DHCP (obtains an IP address automatically) you do not need to manually set an IP

  address. Alternatively, if your PC requires a static IP address, set up a compatible IP address e.g.

  192.168.4.100 with a subnet mask of 255.255.255.0.

- Connect your PC network port to one of the Aprisa LTE Ethernet ports.

- Open a browser and enter 192.168.4.1.

  Note: The default Aprisa LTE application protocol is HTTP.

- Login to the Aprisa LTE with the default login of Username 'admin' and Password 'admin'.

- Change the IPv4 address, IPv4 netmask, and IPv4 gateway as required for settings compatible with your

  network.

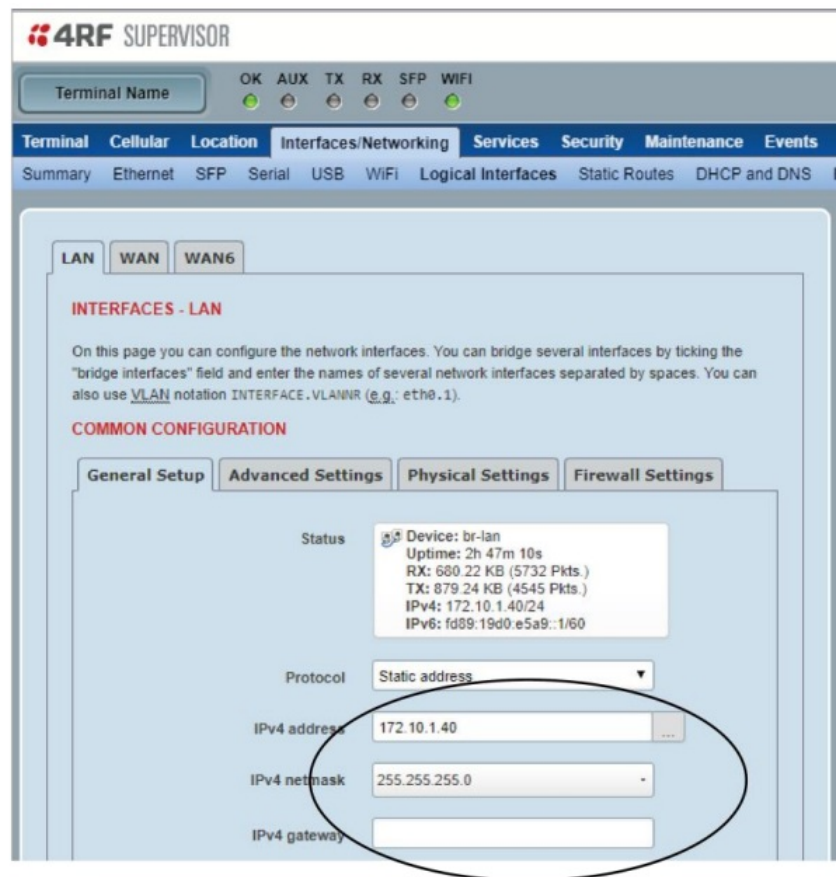**Configure the Aprisa LTE**

1. Go to Supervisor > Services > Date & Time and set the time zone offset, and format.
2. Verify that the Aprisa LTE active software and LTE module are correct for the provider.

   Go to SuperVisor > Cellular > Summary to view the currently supported bands.

   Go to SuperVisor > Cellular > General and select the specific band in use or leave the default 'Select All' option.
3. Go to SuperVisor > Cellular > General to view the SIM status.

   • Set the SIM PIN.

   Note: not all cellular operators use a pin to enable the SIM card so the SIM pin may not be required.

   • Set the Preferred Provider to match that of the SIM card.
4. Go to SuperVisor > Cellular > General (optional)

   • Set the Packet Data Network (PDN) Profile Name (if required).

   • Set the active/backup Access Point Names (APNs) per your installed SIM(s).

   • Set the SIM slot.

   • The Aprisa LTE features an auto APN feature, so only change the Packet Data Network details if required.

   Note that a corporate network requires both a private APN name and the Mode set to Enable.

   • Tick Roam to switch from the home network (i.e. the SIM network) to the roaming network when the Aprisa LTE is outside the range of its home network and connects to another available cellular network. When on the roaming network, charges may be applied per customer contract.

MODEM

Manufacturer	Sierra Wireless, Incorporated
Model	EM7565
IMEI	353533100758989
Max TX Rate(Mbps)	150
Max RX Rate(Mbps)	600
Supported Bands	B1, B2, B3, B4, B5, B7, B8, B9, B12, B13, B18, B19, B20, B26, B28, B29, B30, B32, B41, B42, B43, B46, B48, B66
Enabled Bands	B1, B2, B3, B4, B5, B7, B8, B9, B12, B13, B18, B19, B20, B26, B28, B29, B30, B32, B41, B42, B43, B46, B48, B66

SIM 1 SETTINGS

Use SIM PIN	☐
SIM PIN	••••••••••
Preferred Provider	None ⌄

Save Cancel

SIM Status	Not Locked
SIM PIN Retries Remaining	3

PDN PROFILE SETTINGS

Profile Name	APN	SIM	Addr	Mode	Roam
pdn1	internet1	SIM 1 ⌄	IPv4 ⌄	Enabled ⌄	☑
pdn2	internet2	SIM 1 ⌄	IPv4 ⌄	Disabled ⌄	☐
pdn3	internet3	SIM 1 ⌄	IPv4 ⌄	Disabled ⌄	☐
pdn4	internet4	SIM 1 ⌄	IPv4 ⌄	Disabled ⌄	☐

Save Cancel

5. If the Wi-Fi network module is installed on your LTE, and you want to enable this feature, go to SuperVisor > Interfaces/Networking > WiFi and click Edit.

• Under the General Setup tab click Enable. If required, you can change the Wi-Fi WLAN Operating Parameters (mode and channel). Note that the mode 802.11b/g/n will

provide the widest Wi-Fi compatibility while 802.11n/ac will provide the fastest Wi-Fi speeds.

• On the same page, use the Interface Configuration tabs to set the Wi-Fi password ESSID and required security settings.

INTERFACE CONFIGURATION

| General Setup | Wireless Security | MAC-Filter | Advanced Settings |

Mode — Access Point

ESSID — AprisaLTE

Network — lan:

Hide ESSID — ☐

Test the Aprisa LTE operation

- Check the Aprisa LTE is operating by checking the SuperVisor > Monitoring > Cellular page.

CELLULAR PARAMETERS

Modem Temperature (Celsius)	25
Current RSSI (dBm)	-86.5
Current RSRP (dBm)	-107.1
Current RSRQ (dB)	-3.6
Current SNR (dB)	17
Current SINR (dB)	17.6

Typical values are:

RF Conditions	RSSI (dBm)	RSRP (dbm)	RSRQ (db)	SNR (db)	SINR (db)
Excellent	>= -65	>= -80	>= -10	>= 20	>= 20
Good	-65 to -75	-80 to -90	-10 to -15	13 to 20	13 to 20
Fair	-75 to -85	-90 to -100	-15 to -20	0 to 13	0 to 13
Poor	-85 to -95	<= -100	< -20	<= 0	<= 0

- On a PC that is connected to either Wi-Fi or wired Ethernet port, do a ping to well know internet address.
- Test IPv4 connectivity by pinging a well know IPv4 address e.g. 8.8.8.8 (google DNS server).
- Test IPv6 connectivity by pinging a well know IPv6 address e.g. 2001:4860:4860::8888 (google DNS server).
- Test DNS connectivity by pinging a well know DNS address e.g. 4rf.com.
- Try browsing the internet from the configuration PC.

For more information, please refer to the 'Aprisa LTE User Manual' available from the 4RF website **www.4rf.com/secure/** (login required).
For access contact your distributor, 4RF sales representative, or contact 4RF directly at **www.4rf.com/contact/sales**.

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Documents / Resources

4RF Aprisa LTE Smart Secure and Hardened LTE Router [pdf] User Guide
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