



OA 5725A ROUTER

Installation Manual

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About This Guide

This is the installation guide for the OA 5725A router family contains the instructions that you need to follow in order to correctly install the device in the environment where it is going to operate.

Supported Devices

The information contained in this installation guide only applies to the OA 5725A router family.

Who should read this manual?

The audience for this users guide is personnel who are experienced in aftermarket installation and familiar with the general practices for installing electronic devices in vehicles.

When should I read this manual?

Read this guide as soon as you are ready to familiarize yourself with the device and its components.

This manual will help you understand your new device in greater depth.

What is in this manual?

This installation guide contains the following information:

- Description of the general characteristics available in the OA 5725A router family.
- Technical specifications.
- Power supply requirements.
- Description of the LEDs and the pinouts for the device.
- Troubleshooting.

What is not in this manual?

This does not contain information on the device software nor information on the configuration. For information on how to configure the device, please see the relevant manuals for the different protocols, which can be found in the following website: <http://enterprise.alcatel-lucent.com/UserGuides>.

How is the information organized?

Each chapter is centered on a specific part of the device hardware and its components. All the descriptions, technical specifications and information on a component can be found in the chapter dedicated to the said component.

Technical Support

Alcatel-Lucent technical support is committed to resolving our customer's technical issues in a timely manner. Customers with inquiries should contact us at:

Contact information:

North America	800-995-2696
Latin America	877-919-9526
EMEA	+800 00200100 (Toll Free) or +1(650)385-2193
Asia Pacific	+65 6240 8484
Web:	service.esd.alcatel-lucent.com
Email:	esd.support@alcatel-lucent.com

Related documentation

ALU-Dm 704-I *Configuration Monitoring*.

ALU-Dm 748-I *Software Updating*.

ALU-Dm 781-I *Cellular Interface*.

The manufacturer reserves the right to make changes and improvements in the appropriate features in either software or hardware of this product, modifying the specifications of this manual without prior notice.

The images presented on the front and back panels of the devices are provided as information guidelines only. Some small modifications may exist in the actual device.

OA 5725A Routers

Characteristics

The OA 5725A router family is a range of IP router with characteristics particularly orientated to operating in hostile and extreme environments and ambient. Due to its ruggedized mechanics and its special characteristics to support extreme temperatures, this is especially indicated for applications such as: automotive, industrial environments, industrial telecontrol, distribution installations for electricity, gas, water, etc.

The main characteristic of this router family lies in the possibility of accessing data networks through cellular or mobile telephony technologies. Thanks to its module design, this device can quickly be adapted to the latest technologies appearing in this field. In this way, the OA 5725A family is compatible with technologies such as GPRS, EDGE, UMTS, HSDPA, HSUPA, HSPA, HSPA+, LTE, CDMA 2000 1xRTT, CDMA Ev-Do, etc.

This can incorporate a second module thus permitting simultaneous connections to different carrier networks or for backing up the main module using a different technology.

In addition, the latest technology in internal GPS (SiRF® Start IV) can be incorporated for positioning tasks in on-board environments.

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The OA 5725A router family includes an integrated four-port Ethernet LAN Switch to access LAN networks and, optionally, can also have a Wireless LAN MINI-PCI module.

This manual will show you how to install and connect these devices.

Power supply

For further information on the different power supplies in the OA 5725A router family, please see the chapter on "[Components and power supplies](#)", in the section on "[Power Supply](#)".

Hardware Monitoring

The only way to monitor the OA 5725A router family hardware is through the LEDs on the rear panel. The LEDs provide visual information on what is happening in the device. These indicate the state of the hardware components, if there is connectivity, data flow, etc.

For further information on the LEDs panel, please see the section on “[Components](#)” in the following chapter.

Components and Power Supply

The following chapter provides detailed information on the chassis of the OA 5725A router family and its components. This information includes:

- Components.
- Information on assembly.
- Power supply.
- RESET button.
- Data connection.
- SIM card installation.

Components

Front Panel

The following figure shows the front panel.

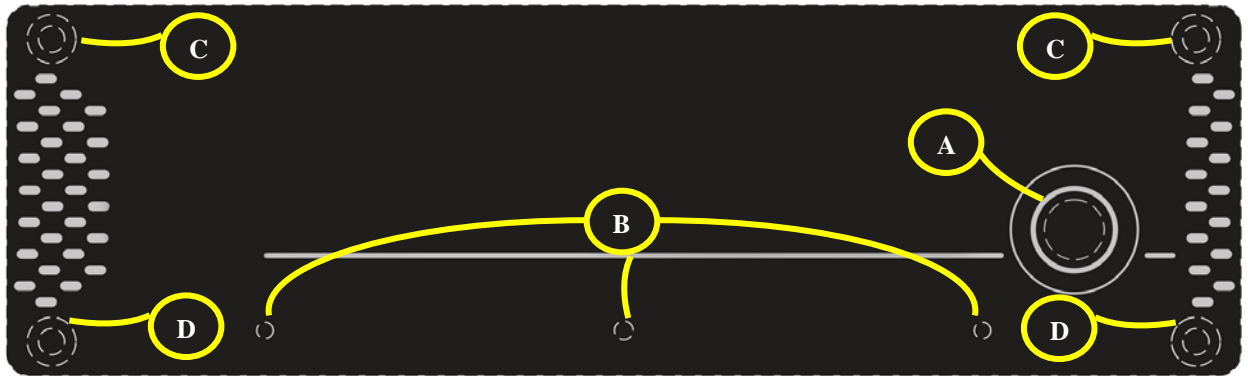


FIGURE 1. FRONT PANEL

The front panel elements are as follows:

Item	Description
A	ON. Illuminated indicator showing that the device is switched on or not.
B	Holes to install the accessory to secure the device.
C,D	Screws to remove the device's upper and underside panels.

TABLE 1. FRONT PANEL ELEMENTS TABLE

Rear Panel

The following figure shows the rear panel.

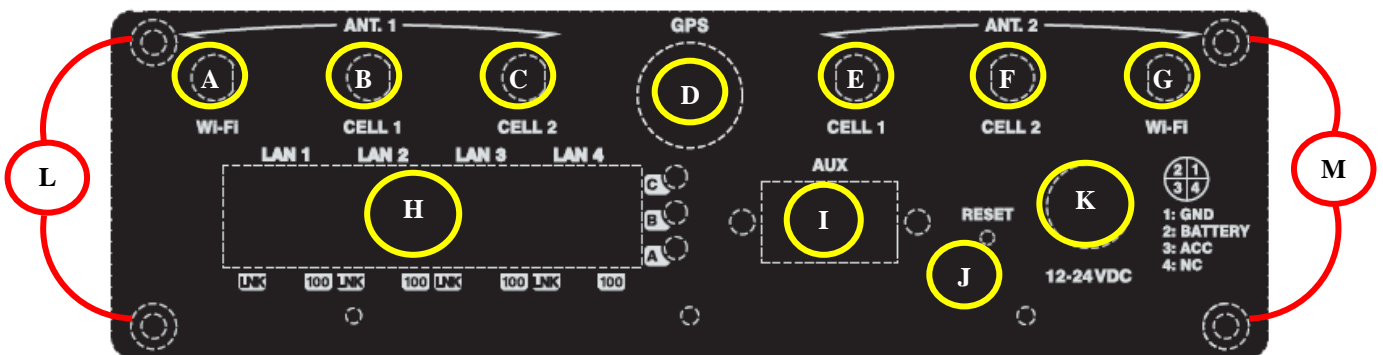


FIGURE 2. REAR PANEL

The rear panel elements are as follows:

Item	Description
A	ANT. 1 Wi-Fi. WiFi antenna for the Wireless LAN module. This module is optional; therefore it's possible that your device doesn't have any antennas.
B	ANT. 1 CELL 1. Main antenna for the OA 5725A cellular module.
C	ANT. 1 CELL 2. Main antenna for the OA 5725A cellular 2 module.
D	GPS. External GPS antenna for the GPS module. This module is optional; therefore it's possible that your device doesn't have internal GPS and therefore no antenna.
E	ANT. 2 CELL 1. Auxiliary antenna for the OA 5725A cellular 1 module.
F	ANT. 2 CELL 2. Auxiliary antenna for the OA 5725A cellular 2 module.
G	ANT. 2 Wi-Fi. WiFi antenna for the Wireless LAN module. This module is optional; therefore it's possible that your device doesn't have any antennas.
H	4-port Ethernet Switch.
I	AUX. DB9 connector that provides access to the device's local console for configuration and monitoring.
J	RESET. Reset button. For further information on how the reset button operates, please see the section on " RESET Button " in this chapter.
K	12-24 VDC. Power supply connection (DC).
L,M	Screws to remove the device's upper and underside panels.

TABLE 2. REAR PANEL CONNECTORS TABLE

In addition to the connections, you can see a set of luminous indicators, or LEDs, on the rear panel that provide information on what is happening in the router.

The LEDs on the rear panel of the router are shown in the following figure:

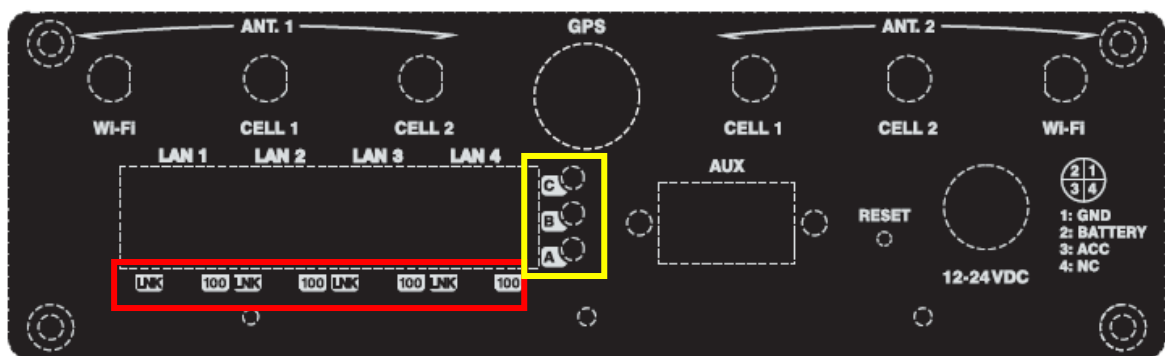


FIGURE 3. REAR PANEL LEDS

LED	Associated Interface	Statue	Description
A	Wireless WAN channel 0 (cellular0/1).	Monochrome green	<p>OFF→ Interface isn't available or not installed or not registered.</p> <p>ON→ Registering or registered and connected in the SIM carrier network:</p> <ul style="list-style-type: none"> - Steady: Is not transferring data. - Blinking: Transferring data.
B	Wireless WAN channel 1 (cellular1/1).	Monochrome green	<p>OFF→ Interface isn't available or not installed or not registered</p> <p>ON→ Registering or registered and connected in the SIM carrier network:</p> <ul style="list-style-type: none"> - Steady: Is not transferring data. - Blinking: Transferring data.
C	The device has a MINI-PCI slot where a Wireless LAN daughter can be installed.	Monochrome green	<p>OFF→ Interface isn't available or not installed or not established</p> <p>ON→ Connecting or connected and communications established:</p> <ul style="list-style-type: none"> - Steady: Is not transferring data. - Blinking: Transferring data.
LNK	Associated to each Ethernet switch (LAN1, LAN2, LAN3 and LAN4)	Monochrome green	<p>ON→ Ethernet connection (link) established:</p> <ul style="list-style-type: none"> - Steady: Is not transferring data. - Blinking: Transferring data.
100	Associated to each Ethernet switch (LAN1, LAN2, LAN3 and LAN4)	Orange	<p>ON→ Connection at 100 Mbps</p> <p>OFF→ Connection at 10 Mbps</p>

TABLE 3. REAR PANEL LEDS TABLE

Mounting options

The OA 5725A device can be mounted in various vehicles on the wall, ceiling or on a horizontal surface.

The front and rear device panels have three apertures so you can add a bracket with slots to firmly hold the device.

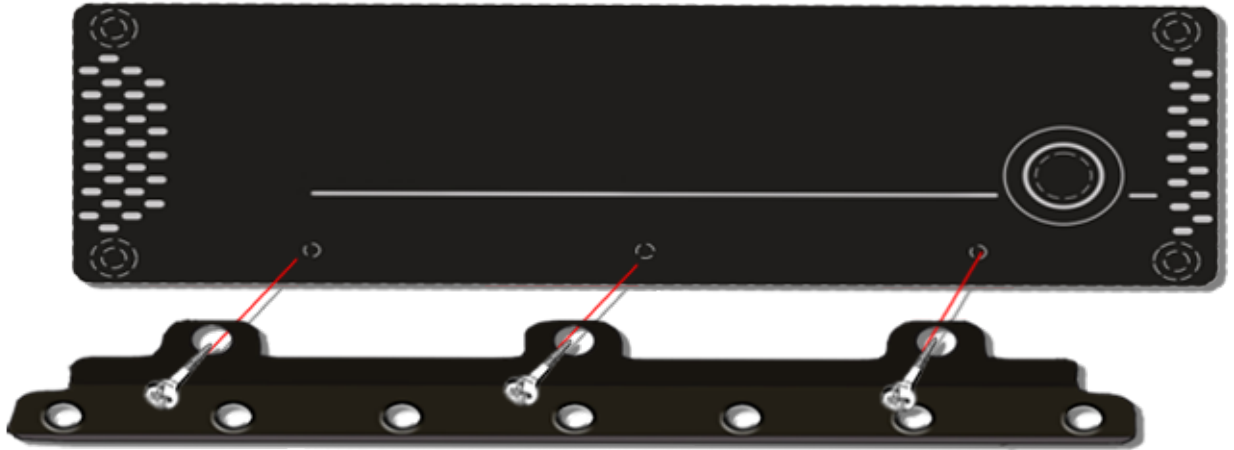


FIGURE 4. FRONT PANEL BRACKET MOUNTING

Assembly: Recommendations

We recommend that the device is mounted on a horizontal surface and the device is screwed to the said surface using the bracket slots.

Power Supply

The OA 5725A router family is powered using direct current (DC).

Workplace Conditions. Main Characteristics

- Avoid humid and or dusty locations.
- Direct exposure to sunlight should be avoided as well as other heat sources. The device should not be placed amongst papers, magazines or other elements that could hinder natural air circulation.
- The device should not be placed very close to strong electromagnetic fields such as speakers, engines, etc.
- The device should not be mounted in the driver's area of the vehicle.
- Knocks and/or strong vibrations should be avoided during transport, operation and storage.
- The device should be mounted in accordance with accepted aftermarket practices and materials.

WARNING: Electric supply current for telephone, communication and power cables is dangerous. To prevent electric shock while installing, moving or opening the device covers,

cables should be disconnected and connected as shown in the sections on ["Connecting"](#) and ["Disconnecting"](#).

Connecting the power cable to the vehicle

The device power supply cable must be connected to the vehicle's fuse panel; this installation depends on the manufacturer's recommendations. The fuse used must be between 5 and 10 A, maximum being 10A. The connections should use the UL listed connectors.

The cabling should be separated from other wiring in the vehicles and should be routed away from sharp edges.

The power supply cable goes from the fuse panel to the router along the vehicle wall, ALWAYS inside the vehicle cabin and must NOT cross the vehicle's fire wall protection.

Connecting the power cable to the device

To connect the power supply source to the device, please follow the steps given in the section on ["Connecting"](#).

To avoid electric shocks, residual current circulation and other unwanted effects, also affecting communications, the following is recommended:

It is highly recommended that all interconnected communication devices are plugged to THE SAME GROUNDED POWER OUTLET, which should at the same time be of good quality (lower than 10ohms).

Whether the workplace is provided with an uninterrupted power supply system (UPS), regulated supply or it is independent from the rest (such as lighting, etc.); it is highly recommended that all data devices should be connected to the same power source. This will avoid operating and premature aging problems of drivers and other components.

Connecting

- Make sure that the power supply cable is not connected to the device.
- Connect the data cables.
- Locate the 12-24 VDC connector, which is found on the rear part of the device.
- Insert the power cable connector.

Disconnecting

- Disconnect the power supply cable from the device.
- Disconnect the data cables.

Power connector pinout

PIN	Signal	Cable color
1	GND	NEGRO / BLACK
2	BATTERY / VCC	ROJO / RED
3	ACC / IGNITION	AMARILLO / YELLOW
4	NC	VERDE / GREEN

Replacing the lithium battery

The router has an internal lithium battery to maintain the internal clock.

To replace the said battery, you need to open the device's upper casing. To do this you need to remove the screws located in the upper part of the front and rear panels.

WARNING: There is a risk of the battery exploding if it is replaced with one that is not recommended or of a different type. Please dispose of the used batteries in accordance with the environmental recycling instructions given in this document.

Configuring Power Management

The OA 5725A is endowed with a power management system that permits the following:

- the device will only switch on when the vehicle has been switched on.
- when installed, the device switches off a short time after the vehicle has been switched off, i.e. there is a slight delay with respect to the vehicle being switched off. The feature means that the device, when installed, does not disconnect during short stops.

This feature is configured through the internal microswitches (**SW100**): the duration of the delay however is configured through the configuration command.

The microswitches are located in the device, as shown in la Figure 5.

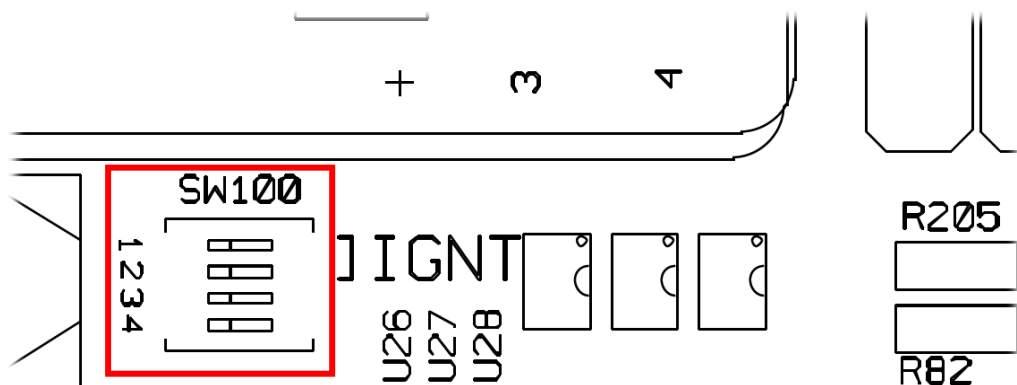


FIGURE 5. POWER MANAGEMENT SWITCH

Deactivating Power Management

The SW100 microswitches 1 and 2, labeled as IGNITION, must be in the OFF position.

ATTENTION: This is a factory setting i.e. the devices are already configured in this mode on exiting the factory.

Activating the Power Management

The SW100 microswitches 1 and 2, labeled as IGNITION, should be in the ON position

En In this operating mode, the device expects to be constantly powered and the ACC / IGNITION signal operates as a switch. When power is applied to the device (BATTERY /VCC) the device remains switched off. It will only switch on when the signal (+12V or +24V) is applied by the ignition pin (ACC / IGNITION).

Similarly, if the ignition signal deactivates once the device has switched on, the device remains switched on for the period of time configured through the “**set ignition-off-powerdown-timer <value>**” command.

```
*
*p 4

Config>set ?
  application-active      Permits you to select the code used to boot the router
  console                 Set console configuration
  contact-person          Assign a name or identification to the contact-person
  data-link               Type of data link for a WAN line
  default-conf            Restores the default configuration
  file-cfg                Configure a configuration file as active
  ftp                     Permits you to access the FTP configuration menu
  host-location           Physical location of the router
  hostname                Assign a name to a device
```

```
  ignition-off-powerdown-timer  Configure the time to router power down after car
                                ignition off
  inactivity-timer              Configure the maximum inactivity time
  login                          Configure login options
  password                       Configure the device access password
  pool                           Number of bytes assigned to each memory pool
  schedule-restart               Allows to configure router reset schedule
  telnet                         Access the TELNET protocol configuration
  web-probe                       Access the Web probe configuration
Config>set ignition-off-powerdown-timer ?
  <1..1440>      Power down timeout in minutes
  disabled       Disable ignition off power down timer
Config>set ignition-off-powerdown-timer 10
Config>
```

For further information on this command, please see manual *ALU-Dm 704-I Configuration and Monitoring*.

Protection Fuse

The OA 5725A router family has an internal protection fuse incorporated with the aim of preventing damage to the device and to the surrounding area

The following image shows where the protection fuse is located (F1).

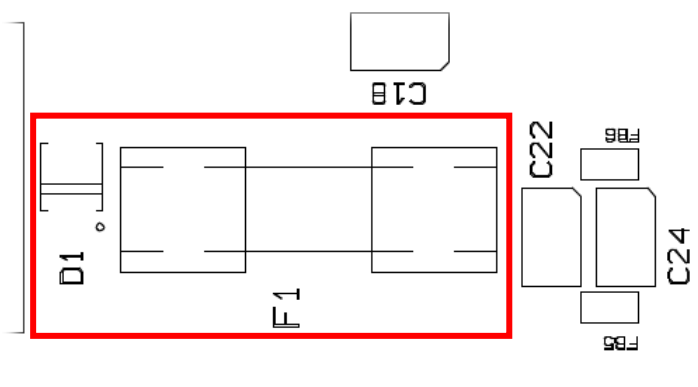


FIGURE 6. PROTECTION FUSE

In cases where the device is not functioning, please check that the fuse is correctly installed and has not blown.

Protection fuse: Characteristics	
Normal current value	3,15A
Voltage	250V
Type	FSF

WARNING: The fuse must have the characteristics indicated by Alcatel-Lucent.

Microswitches

The OA 5725A routers have a block of 8 microswitches available that are used for maintenance and test tasks. In this case, they are only used to load the default configuration.

This block of microswitches can be found inside the OA 5725A routers. You need to remove the top casing in order to handle them.

These switches should not be handled by the user except to establish the default configurations.

In order for the device to operate correctly, all the microswitches must be in the OFF position.

Procedure to ignore the configuration

This procedure is applied if you have to discard the whole configuration of the device, for example, if you cannot remember the password.

The procedure is as follows:

- Turn off the device through the ON/OFF switch.
- Using a screwdriver move microswitch '5' to the ON position.
- Turn the device on with the ON/OFF switch.

When the device is switched on, a message similar to the one shown below will appear on the configuration console:

```
*****
*****
*****
BOOT CODE VERSION: 04.09 Feb 13 2013 17:45:12
  gzip Feb 13 2013 17:39:06
P.C.B.: 19 MASK:0C10 Microcode:00E1
START FROM FLASH
BIOS CODE DUMP.....
BIOS DATA DUMP...
End of BIOS dump

BIOS CODE VERSION: 04.09
CLK=400000 KHz  BUSCLK=100000 KHz  PCICLK=33333 KHz  L0
Date: 07/13/10, Tuesday          Time: 09:11:38

SDRAM size: 64 Megabytes
  BANK 0: 64 Megabytes (detected)
MMU Mode: Dynamic
I_Cache: ON
D_Cache: ON  Write-Back
FLASH: 16 Mb.
NVRAM: 128 Kb.
```

```

EEPROM: 2048 Bytes.
DPRAM: 8192 Bytes.
SWITCH 10/100
CELLULAR PCM
GPS
SECURITY ENGINE
PCI device: Host bridge
  (Bus: 0, Device: 0, Function: 0)
  (Vendor: 0x1057, Device: 0x18C1)
  (Subs. Vendor: 0x0000, Subs. Device: 0x0000)
Slot 1 - PCI device: serial bus controller
  (Bus: 0, Device: 10, Function: 0)
  (Vendor: 0x1131, Device: 0x1561)
  (Subs. Vendor: 0x5444, Subs. Device: 0x3700)
Slot 1 - PCI device: serial bus controller
  (Bus: 0, Device: 10, Function: 1)
  (Vendor: 0x1131, Device: 0x1561)
  (Subs. Vendor: 0x5444, Subs. Device: 0x3700)
Slot 2 - PCI device: Ethernet controller
  (Bus: 0, Device: 29, Function: 0)
  (Vendor: 0x168C, Device: 0x0029)
  (Subs. Vendor: 0x168C, Subs. Device: 0x2096)
Current production date: 12 10
Current software license: 29 12
S/N: 777/000127
BIOS MAC Add: 00-a0-26-a4-00-1b
>>
.....
TRYING APP CODE DUMP
  (CONFIGURED) APPCODE1.BIN ver.: 0.11.0.01 0.0.0.0
.....
APP DATA DUMP.....
Running application
Default configuration used
Parsing text mode configuration ...
Configuration parsed
Initializing

Press any key to get started

```

On reaching this point, you can set microswitch ‘5’ in the OFF position (you don’t have to turn off the device), consequently, the next time you restart the device, the saved configuration is adhered to.

RESET Button

The OA 5725A router family has a button labeled RESET on the rear panel of the device. This button is physically protected so it isn’t accidentally pressed. A sharp pointed object is needed to activate it.

The features of the reset button are described below.

Rebooting the device

Once the device is operating normally, if you press the RST button, this will restart.

Data Connections

The OA 5725A router family has the following data connectors:

4-port Ethernet Switch

The OA 5725A router family incorporates a 4 port Switch, 10/100BaseT with automatic MDI/MDIX to connect to a local area network (LAN); this device has a LNK LED indicating the connection status and a 100 LED indicating connection rate.

Please pay careful attention to the labeling to avoid confusing this switch with other types of ports.

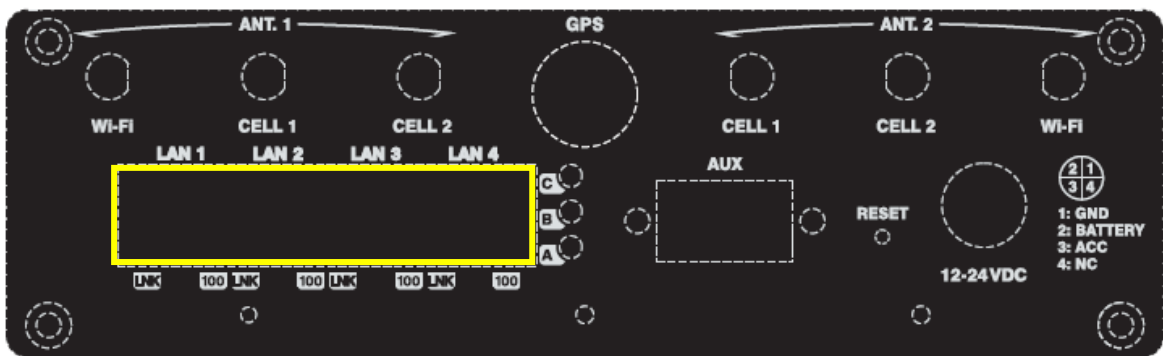


FIGURE 7. LAN SWITCH PORTS (4)

AUX Connector

The OA 5725A router family has a DB9 female connector on the front panel referred to as “AUX.” which can be used as a configuration port for the router or as a V.24 asynchronous serial port through a configuration command. The behavior or functionality of this interface must be previously configured. By default, this interface is configured in the router’s configuration port mode. This section only refers to the connection to operate in asynchronous port mode.

This interface permits you to connect asynchronous serial devices that do not need hardware control signals. E.g. this permits the connection of external modems or an asynchronous PPP WAN.

Another interesting feature of this port is the possibility of using it as a GPS data source, in NMEA sentences (GPS-DATA).

This interface only operates complying with the V24 norm; it does not have control signals and only has data signals. Therefore, this interface cannot control hardware flow. It does, however permit software flow control (XON/XOFF).

You cannot configure parity in MARK and SPACE modes.

In order to configure this you need to connect the **AUX** port to an asynchronous terminal (or to a PC with terminal emulation).

In order to be used as a configuration port for the router, please see the section on "[Connecting to the device](#)".

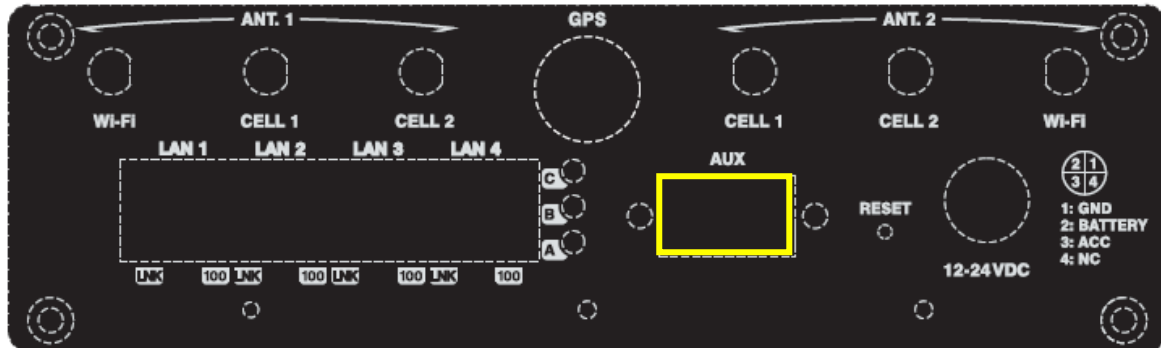


FIGURE 8. AUX CONNECTOR

Connecting to a WWAN Antenna (Cell connectors)

The OA 5725A routers can have two or four connectors in order to connect the WWAN antennas, depending on the number of WWAN modules incorporated in the device.

To assemble and dismantle the antennas, simply screw the antenna cable into the connectors labeled CELL1 and CELL2, which are located on the front of the device.

Antenna installation is essential in the OA 5725A routers in order to improve the quality of the signal received and transmitted by the Wireless WAN module (GPRS, UMTS, HSDPA, HSUPA, HSPA+, LTE, etc.).

To achieve optimum performance, the router should always have the WWAN antennas installed.

The device must have the corresponding software license installed to ensure the *Wireless WAN* interface is operative.

There are some cellular telephony technologies that use the antenna diversity mechanism to improve the quality of the received signal (HSUPA, HSPA+, LTE, CDMA EV-DO, etc.). Consequently the OA 5725A routers have two connectors incorporated (ANT.1 and ANT.2) for each module installed in the device (CELL1 and CELL2).

- The MAIN antenna for each module (CELL1 and CELL2) is installed in the ANT.1 connector.
- The auxiliary or DIVERSITY antenna for each module (CELL1 and CELL2) is installed in the ANT.2 connector.

Module 1	Module 2
ANT.1 CELL1 → MAIN Antenna	ANT.1 CELL2 → MAIN Antenna
ANT.2 CELL1 → DIVERSITY Antenna	ANT.2 CELL2 → DIVERSITY Antenna

The following image shows you where to find the antenna connectors for the CELL1 module.

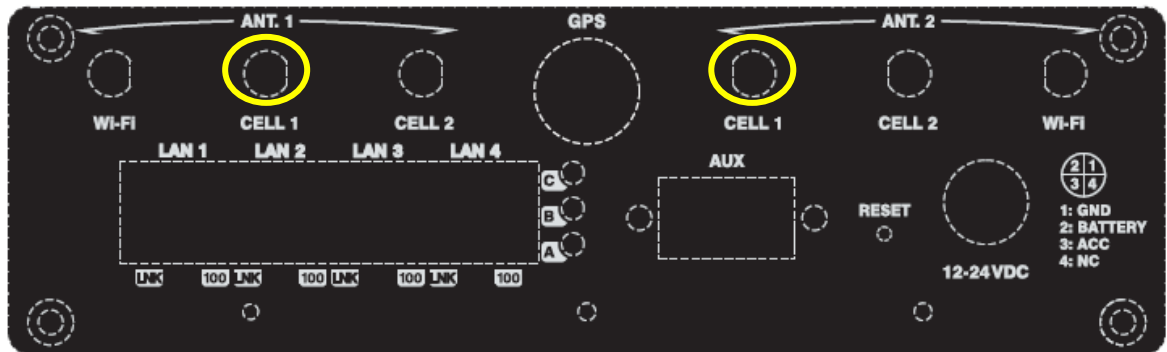


FIGURE 9. ANTENNA CONNECTORS FOR WWAN 1 (WITH DIVERSITY)

The following image shows you where to find the antenna connectors for the CELL2 module.

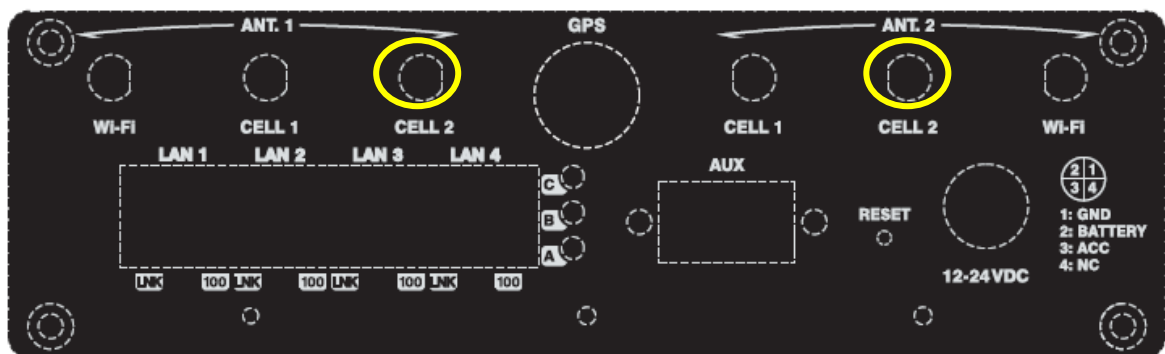


FIGURE10. ANTENNA CONNECTORS FOR WWAN 2 (WITH DIVERSITY)

The device incorporates two WWAN antenna connectors (**ANT.1** and **ANT.2**) for each module.

Depending on the technology you use for the connection, you will need to use one (e.g. GPRS) or two antennas (e.g. LTE).

You must always install the antenna for the **ANT.1 (Main)** connector (mandatory). The **ANT.2 (Ext.Diversity)** antenna connector is optional.

For some models, in cases where you are not going to install the ANT.2 Ext Diversity antenna then you need to suitably configure the router, disabling this antenna, in order to obtain optimum performance from the device.

When you install both the ANT.1 Main and the ANT.2 Ext.Diversity antennas, the minimum distance between them must be 7 cms and the maximum recommended distance is 25 cm.

In order to achieve optimum features, the installed radio frequency accessories (antennas and cables) should be those recommended by us.

We have a series of accessories so permitting the OA 5725A routers to be installed in different locations.

Positioning the antenna

The antenna orientation, its location with respect to other wireless devices and radiation devices, such as communication devices, personal computers, etc., can significantly influence device performance.

The antennas transmit and receive radio signals. Performance is also affected by environmental factors such as the distance between the device and the base station, physical obstacles and other interferences due to radiofrequencies (RF).

In order to achieve the best coverage, carry out the following instructions:

- Whenever possible, place the antenna where there are no physical obstacles. Obstacles between the antenna and the base station degrade the wireless signal. Situate the antenna above ground level and ensure that it is suitably orientated towards the nearest base station.
- Density of materials also affects the antennas. Place them away from any type of wall, metal screens, mirrors, etc.
- Do not place the antenna near columns that can produce shadow areas and reduce the coverage zone.
- Keep the antenna away from metal pipes such as canals air-conditioning.
- Please bear in mind that other wireless devices such as telephones, microwaves, etc., can temporarily interfere with the quality of the wireless signal.
- We do not recommend that you install the antennas near or between racks containing communication devices, computers, etc. Use an extension cable and position the antenna outside.

The following recommendations are applicable to all wireless devices:

- Do not touch or move the antenna while the device is transmitting or receiving.
- Do not touch any equipment that contains devices which radiate where the antenna is very close to or touching any exposed part of the body, particularly the face and eyes, when it is transmitting.
- Do not install the device in areas where the atmosphere is potentially explosive.
- Wireless devices can cause interference in other devices. Do not use the device in areas where medical equipment is installed.

Connecting the Wireless LAN Antenna (Wi-Fi connectors)

The OA 5725A routers have two connectors to connect an external antenna which improves the quality of the signal received and transmitted through the Wireless LAN module. This module is optional; it is possible that your device does not have Wireless LAN and consequently no antennas. To assemble and disassemble the antennas, simply screw antennas' cable connectors into the connectors labeled WI-FI.

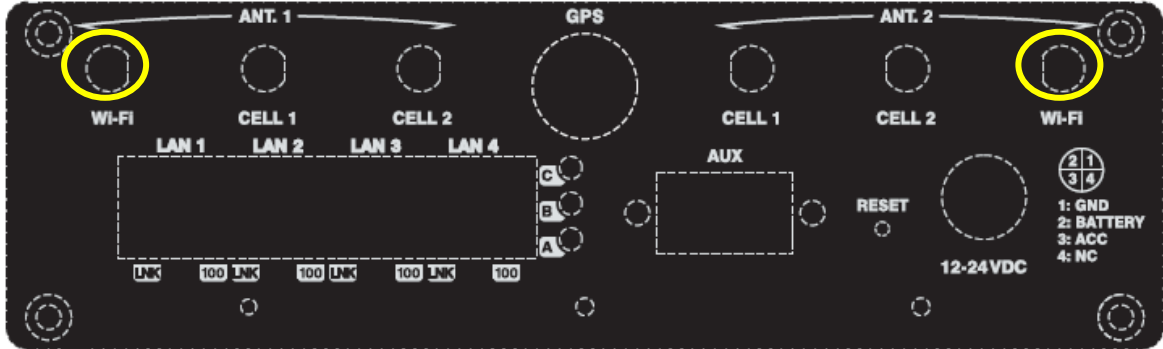


FIGURE 11. ANTENNA CONNECTORS FOR THE WIRELESS LAN

So that the Wireless LAN interface is operative, the device must have a plug-in Wireless LAN card and the corresponding software license. If your device does not have the Wireless LAN module incorporated, you can obtain this later on. The manual accompanying this module will indicate how to install it as well as the corresponding antenna cables in the device.

Connecting the GPS antenna

The OA 5725A routers have an additional connector to connect a GPS external antenna. This module is optional; it is possible that your device does not have internal GPS and consequently no antenna. To assemble and disassemble the antenna, simply screw antenna cable connector into the connector labeled GPS located on the device front panel.

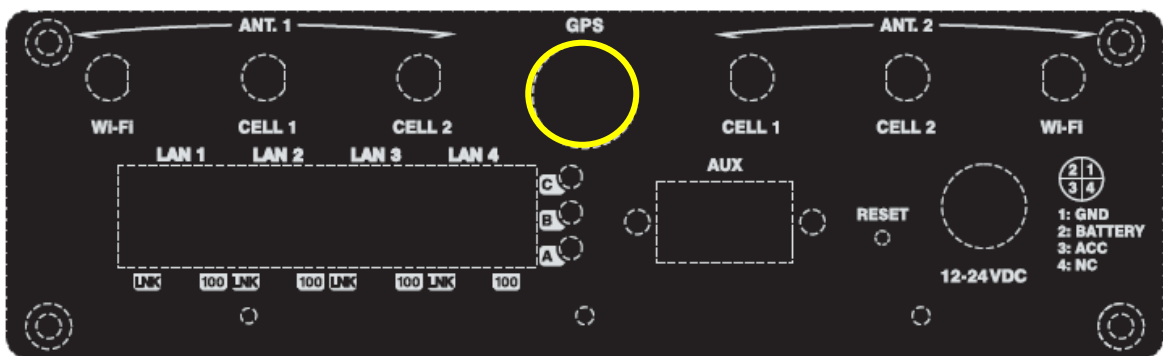


FIGURE 12. GPS ANTENNA CONNECTORS

The device permits connecting both active and passive GPS antennas, with excellent filtering for incoming signals and provides 3.3V power.

Installing the SIM card

The OA 5725A routers have a Wireless WAN interface, which in order to operate, may require at least one SIM card inserted in the device.

There are determined services (CDMA) provided by some carriers in certain countries that do not require SIM cards. In installations where a SIM card is required, you must always insert at least one SIM card.

The OA 5725A has two SIM trays. Both are located inside the device.

The OA 5725A can incorporate one or two Wireless WAN modules.

- In cases where it incorporates two modules, a SIM tray is automatically assigned to each module.
- In devices where there is only one WWAN module installed, when only one SIM card is used this can be placed in either one of the two SIM trays; however please must bear in mind it is essential that the router is configured to select the appropriate tray

In this case, in addition to having 2 SIM trays, you can carry out some special configurations. One example of this type of configuration is when you install two SIMs where one acts as backup to the other. In order to execute this type of configuration, it is essential that you identify the tray to be associated to each SIM as each SIM requires different configuration parameters.

This device is compatible with SIMs of 1.8V and 3V. Do not install SIMs that do not support these voltages.

Never install the SIM card when the device is switched on.

Always disconnect the device from the main power supply before inserting the internal SIM.

Always disconnect the device before removing the casing to get to the internal SIM.

When inserting the SIM card, please protect yourself against electrostatic discharges (ESD).

Do not touch the SIM card connectors.

To access the internal SIM you need to open the upper casing of the device. To do this you need to undo the four screws: two are located on the upper corners at the front of the device and the other two on the upper corners at the rear.

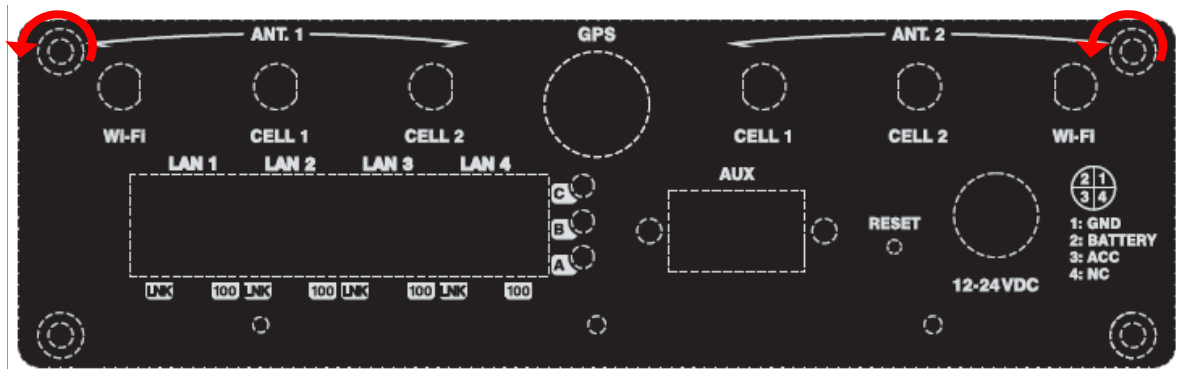


FIGURE 13. UPPER SCREWS ON THE REAR PANEL

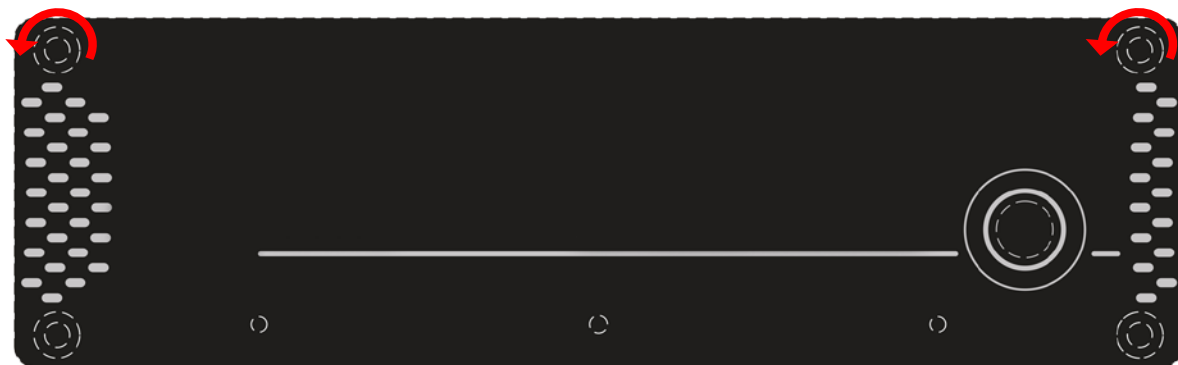


FIGURE 14. UPPER SCREWS ON THE FRONT PANEL

Identifying the SIM trays

When there are two modules installed, the SIMs' tray assignment is set and is as follows:

- Module MD1 → SIM #1
- Module MD2 → SIM #2

The location of the modules and the SIM trays are shown in the following figures.

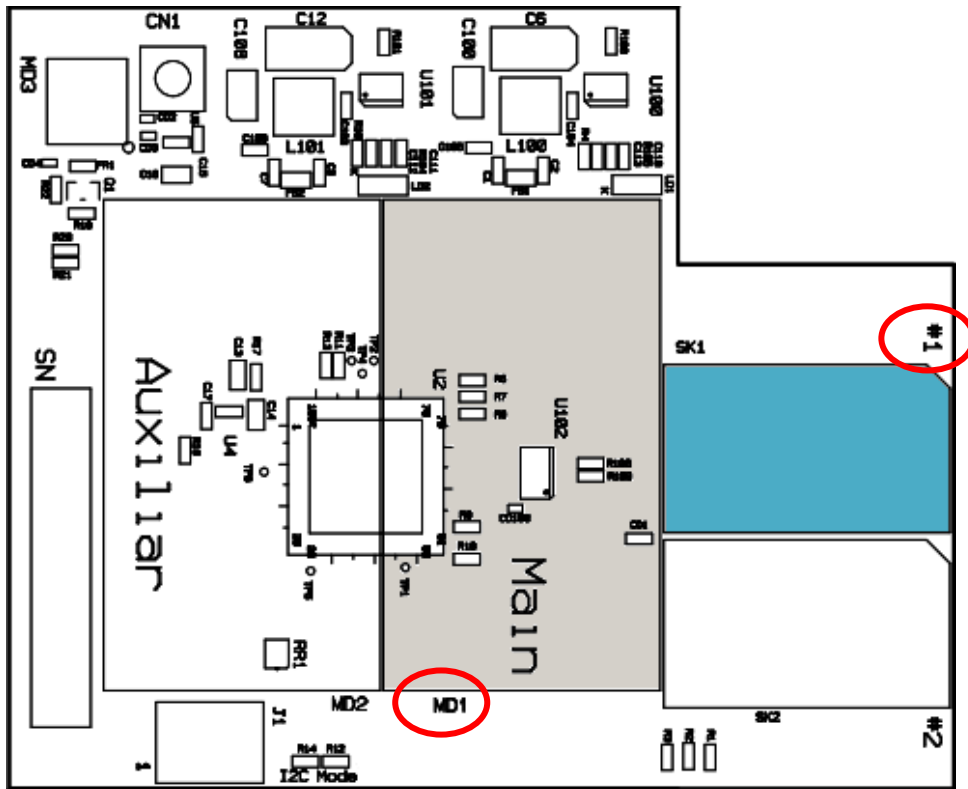


FIGURE 15. SIM TRAY #1 FOR MD1 MODULE (MAIN)

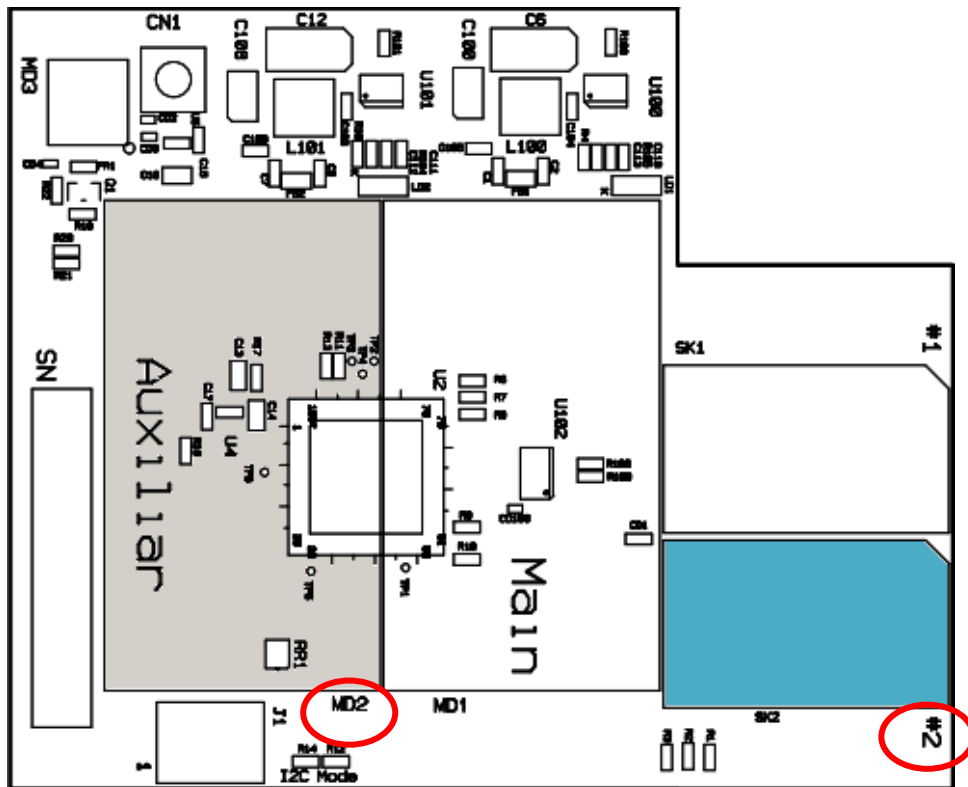


FIGURE 16. SIM TRAY #2 FOR MD2 MODULE (AUXILIARY)

In devices where a single WWAN module is installed (MD1), when only one SIM card is going to be used, it can be inserted into either of the two SIM trays (#1 or #2). However you must remember that you will need to suitably configured the router so it selects the appropriate tray.

- Module MD1 → SIM #1 (default) or SIM #2

Installing the SIM

In order to insert a SIM card in the internal tray, locate the retaining flange (metal fastening with OPEN and LOCK on it) so you can open the tray and place the SIM card on it. The steps are as follows:

1. Push the fastening in the direction indicated by the arrow with the Word OPEN.
2. Open the upper part of the tray.
3. Fully insert the SIM card using the guides.
4. Return the tray to its original position.
5. While pressing on the tray, push the fastening in the direction indicated by the word LOCK so it is firmly held in place.

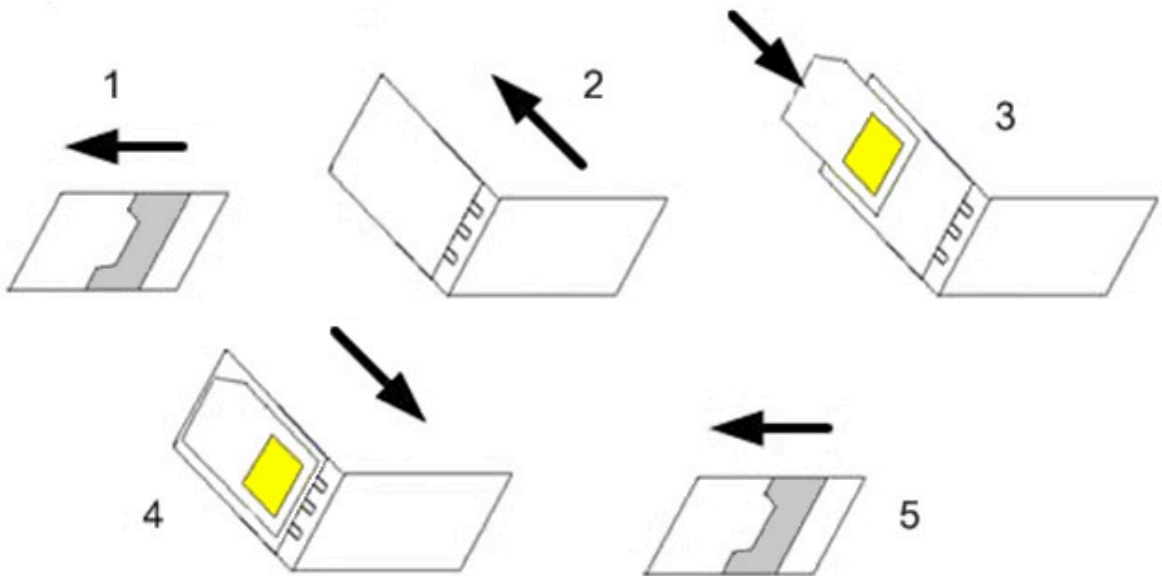


FIGURE 17. INSTRUCTIONS ON HOW TO INSERT THE SIM IN THE INTERNAL TRAY

Appendix A

Troubleshooting

Below, you will find a table, which will help you to solve problems during the installation of the device. If you cannot resolve the problem, please consult your distributor for further information.

Problem	Solution
None of the LEDs lights up on the device.	Check the power supply to the device (power supply cable, main power outlet).
The LNK LED does not light up in green.	Check that the LED after the LNK is lit up; if it isn't, check the Ethernet cable and the network connection.
LED A remains OFF.	Check that the SIM card has been inserted correctly, or Check that the SIM PIN is correct, or Check that the antenna is properly installed (been screwed in correctly) or Get your technical service to check that the device is in the optimum position for the service.

Upgrading the software

The OA 5725A routers can be upgraded to new releases. Please consult your distributor for further details on new releases.

There are various ways to upgrade one of our routers: please see the corresponding manual on software “*ALU-Dm 748-I Software Updating*” for further information.

The software required to upgrade one of our routers is supplied in a format known as **distribution**. This consists of a single file which contains all the files needed to update your device as well as in-depth information on the contents of the files.

The OA 5725A incorporates independent modules for the Wireless WAN interface. You can use modules from various manufacturers, or even various modules from the same manufacturer, depending on the technology used. Generally the modules' firmware is independent of the

device's software. There is an UPGRADE file for each Wireless LAN module. Please ask your distributor for the correct UPGRADE file for the module in your device. The document describing the Cellular interface (manual ALU-Dm 781-I) explains how to UPGRADE the module.

Connecting to the device

There are two ways to access the device CLI:

- Through the AUX connector.
- Through the Telnet protocol.

Connecting through the local console (AUX connector)

The OA 5725A routers have a DB9 female connector on the rear panel referred to as “AUX.” which provides access to the device's CLI or this can operate as an asynchronous serial port. The behavior or functionality of this interface must be previously configured. By default, this interface is configured in local console mode. This section only refers to the connection to operate in local console mode.

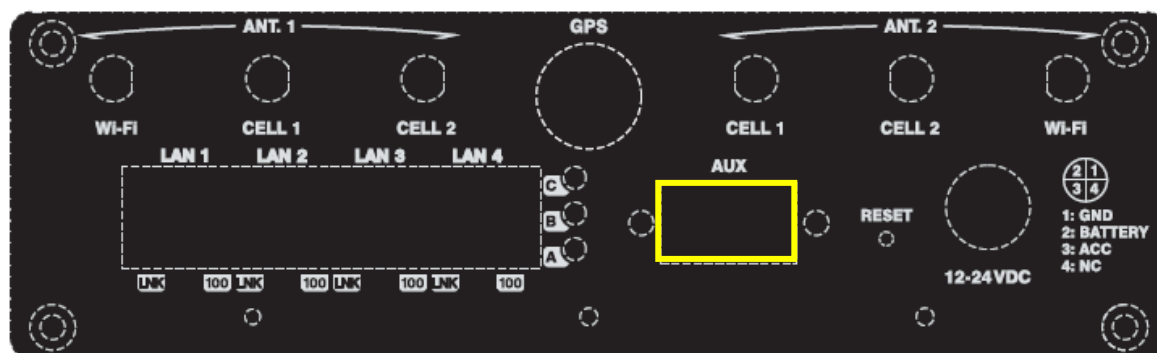


FIGURE 18. AUX CONNECTOR

In order to configure this, you must connect the “AUX.” port to an asynchronous terminal (or to a PC with terminal emulation).

Configuration for the terminal must be as follows:

- **Speed: 9600 bps**
 - **Eight data bits**
 - **One stop bit**
 - **No parity bit**
 - **No type of flow control**
-

Connection to the configuration port can be carried out using a DB9 Male connector to a DB9 Female. In cases where the terminal has DB25 connectors, you will need to use an additional adaptor.

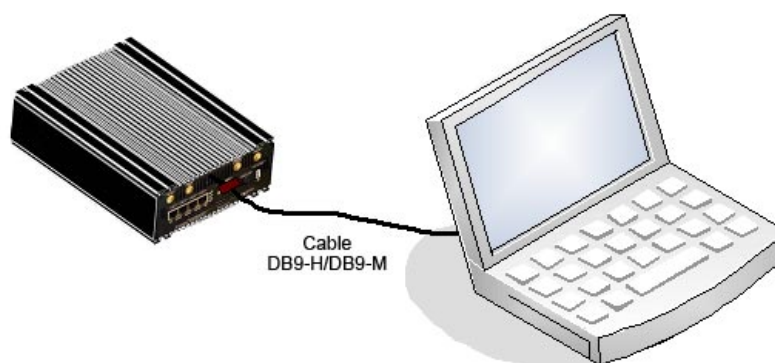


FIGURE 19. CONNECTING FOR CONFIGURATION

Connecting through OP terminal (LAN 1...4 connectors)

The OA 5725A router includes a default configuration that activates if the device has not been previously configured.

The router's default configuration establishes the following IP address and access mask:

- IP Address: 192.168.1.1
- IP Mask: 255.255.255.0

Some devices leave the factory with a customized configuration for a specific client. This personalization can mean that the default configuration maybe different from the one shown above.

This initial configuration means you can access the device's configuration console through the Telnet IP protocol. To do this, carry out the following steps:

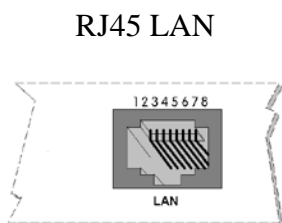
- Configure the Ethernet interface on the IP terminal (normally a PC) using the IP address from the following range [192.168.1.2, 192.168.1.254] and mask 255.255.255.0. E.g. 192.168.1.2, 255.255.255.0.
- Connect the IP terminal's Ethernet interface to any of the Ethernet Switch ports on the OA 5725A router (the LAN1...4 connectors) through the Ethernet cable (RJ45) provided.
- Start a Telnet session from the IP terminal to IP address 192.168.1.1 (the OA 5725A router's default address).

- The default configuration does not ask for login credentials (user/password) to access the console.

For further information on how to fully configure the device, please see the manuals included on the CD supplied with the router.

Connectors

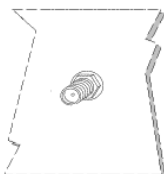
LAN Connector



RJ45 PIN	LAN
1	Tx+(input)
2	Tx- input)
3	Rx+(output)
4	--
5	--
6	Rx-(output)
7	--
8	--

TABLE 4. LAN CONNECTOR

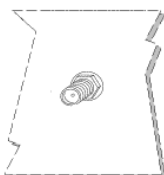
WWAN Connectors



PIN	ANT
Internal	RF in/out
External	GND

TABLE 5. WWAN CONNECTOR

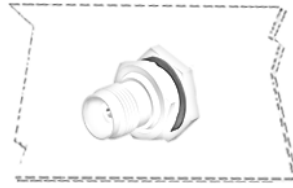
WLAN Connectors



PIN	ANT
Internal	RF in/out
External	GND

TABLE 6. WLAN CONNECTOR

GPS Connector

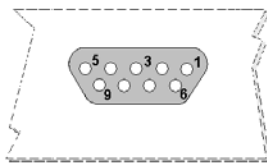


PIN	ANT
Internal	RF in/out
External	GND

TABLE 7. GPS CONNECTOR

AUX Connector

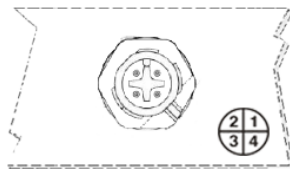
DB9 CONFIGURATION



PIN	CONF
1	--
2	RxD
3	TxD
4	--
5	GND
6	--
7	--
8	--

TABLE 8. AUX CONNECTOR

POWER Supply Connector



PIN	SIGNAL
1	GND
2	BATTERY / VCC
3	ACC / IGNITION
4	-

TABLE 9. POWER SUPPLY CONNECTOR

Technical Specifications

Architecture hardware

PROCESSORS	Motorola PowerPC MPC82xx.
MEMORY	64 Mbytes in SDRAM.
STORAGE UNIT	FLASH memory (16 Mbytes). EEPROM 2Kbytes, NVRAM 128Kbytes.

LAN Interface

PROTOCOLS	Ethernet (802.3).
PORTS	4 port switch managed through MDI/MDX autodetection.
SPEED	10/100/1000 Mbps (BaseT).
CONNECTOR	RJ45 Female.

Wireless WAN Interface

STANDARDS	GPRS, UMTS, HSDPA, HSUPA, HSPA+, LTE ... Depending on the wireless WAN version the device has incorporated.
SPEED	Depends on the wireless WAN version the device has incorporated. Please see the manual on the appropriate module.
CONNECTOR	2 RF SMA Female per module.
ANTENNA	Depends on the type of wireless WAN. Please see the manual on the antennas for Cellular interfaces.

Independent GPS Interface

STANDARDS	NIMEA
TECHNOLOGY	SiRF® star IV
FREQUENCY	1.575,42 MHz
CONNECTOR	RF FME female
ANTENNA	Active 3.3V max 80mA.

Wireless LAN Interface

STANDARDS	802.11n a/b/g 2x2
FREQUENCY	2.4 GHz / 5 GHz.
SPEED	802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps 802.11b: 1, 2, 5.5, 6, 9, and 11 Mbps 802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps 802.11n: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54, and m0-m15
CONNECTOR	2 RF SMA RP Female.

Configuration Interface

INTERFACES	This can be configured in two modes: <u>Asynchronous Port:</u> V24 DCE. Does not permit Hardware flow control. <u>Local Console:</u> V.24 DCE only 8-N-1, without flow control
PROTOCOLS	<u>Asynchronous Port:</u> AT, PPP, GPS-DATA
SPEED	<u>Asynchronous Port:</u> 300 to 115.200 bps

CONNECTOR	Local Console: 9.600 bps (configurable up to 115.200)
	DB9 female, on the front panel of the device.

Power Supply

INPUT VOLTAGE	Nominal: 12-24VDC, Absolute minimum: 10,5VDC Absolute maximum: 36VDC
INPUT CURRENT	2 A@12Vdc.
FUSE	3,15 A 250 VAC Type:FSF
MAXIMUM POWER	With a WWAN module installed: 12W With a WWAN+WIFI module installed: 15W With two WWAN+WIFI modules installed: 19W
ACC/IGNITION	Input voltage: +12-24V DC. Current: 7mA@12Vdc, 14mA@24Vdc Control Levels: - ON: the same level as the INPUT VOLTAGE (+12 or +24 V DC) - OFF: GND or not connected.
CONNECTOR	Male M12, 4 PIN, A Codification

Dimensions and Weight

TYPE	Ruggedized casing with multiple support positions...
LENGTH x WIDTH x HEIGHT	238 x 165 x 62 mm.
WEIGHT	0,9 Kg.

Environmental Specifications

TEMPERATURE	Operating: -25°C to 70°C
RELATIVE HUMIDITY	ON: 8% to 85%. ("non condensing") OFF: 5% to 90%. ("non condensing")

Appendix B. Compliance and Security Information

Recycling and the Environment

Please do not under any circumstances throw away any OA 5725A with normal domestic waste. Ask your local town hall for information on how to correctly dispose of them so protecting the environment against e-waste. Always respect the current laws regarding waste material. Anyone found violating the environmental laws will be subject to fines and any additional steps established by law.

All the packing materials i.e. the cardboard box, plastic and any other packaging together with the pieces making up a OA 5725A must be recycled complying with the current active laws regarding recycling materials.

The below symbol with a cross over the rubbish container can be seen on the device. This means that when a device reaches the end of its life, it must be taken to the official recycling/disposal centers where it must be disposed of in an environmentally responsible manner and separately from normal domestic waste.



Security Warnings

The equipment must be handled by qualified personnel; contrariwise, the device may be damaged and consequently malfunction.

This device contains elements that are sensitive to electrostatic surges and shocks, therefore it is essential when handling the equipment that an antistatic wriststrap is connected to the device chassis and this is placed on an antistatic mat; and furthermore avoiding any kind of contact between the device components and necklaces, bracelets, rings, ties etc.

NOTE:

Please note that when this device operates for prolonged periods of time under extreme conditions including temperature and humidity, this considerably shortens the useful life of this device.
