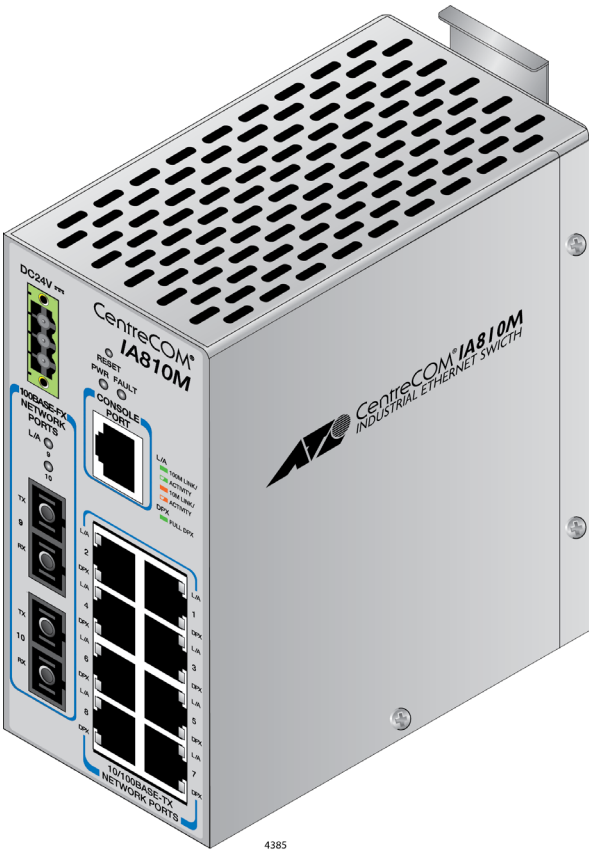
IA Series

INDUSTRIAL ETHERNET SWITCHES

AT-IA708C
AT-IA810M

4381



4385

Installation Guide

the **solution** : the **network**

613-002440 Rev. A

Electrical Safety and Emissions Standards

This section contains the following:

US Federal Communications Commission

Radiated Energy

Note
This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Note
Modifications or changes not expressly approved of by the manufacturer or the FCC, can void your right to operate this equipment.

Industry Canada

Radiated Energy

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Electrical/Mechanical Approvals

Compliance Mark	CE FCC ICES UL VCCI
EMS	IEC61000-4-2 IEC61000-4-3 IEC61000-4-4 IEC61000-4-5 IEC61000-4-6 IEC61000-4-8
Safety	EN60950-1
EMC	EN55024 FCC Part15 Sub B ICES-003 Issue6 VCCI Class A EN55032 Class A
International Protection	IEC60529 IP30
Stability Testing	IEC60068-2-27(Shock) IEC60068-2-6(Vibration) IEC60068-2-32(Free fall)

Warning
In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures. E84

Translated Safety Statements

Important: The indicates that translations of the safety statement are available in the PDF document ***Translated Safety Statements*** posted on the Allied Telesis website at ***alliedtelesis.com/support***.

Contents

Preface

This guide contains the installation instructions for the IA Series Industrial Ethernet switches. The switch models included in this manual are:

- AT-IA708C
- AT-IA810M

The preface contains the following sections:

Document Conventions

This document uses the following conventions:

Note
Notes provide additional information.

Caution
Cautions inform you that performing or omitting a specific action may result in equipment damage or loss of data.

Warning
Warnings inform you that performing or omitting a specific action may result in bodily injury.

Contacting Allied Telesis

If you need assistance with this product, you may contact Allied Telesis technical support by going to the Support & Services section of the Allied Telesis web site at **www.alliedtelesis.com/support**. You can find links for the following services on this page:

- 24/7 Online Support — Enter our interactive support center to search for answers to your product questions in our knowledge database, to check support tickets, to learn about RMAs, and to contact Allied Telesis technical experts.
- USA and EMEA phone support — Select the phone number that best fits your location and customer type.
- Hardware warranty information — Learn about Allied Telesis warranties and register your product online.
- Replacement Services — Submit a Return Merchandise Authorization (RMA) request via our interactive support center.
- Documentation — View the most recent installation and user guides, software release notes, white papers, and data sheets for your products.
- Software Downloads — Download the latest software releases for your managed products.

For sales or corporate information, go to **www.alliedtelesis.com/purchase** and select your region.

Chapter 1
Overview

This chapter contains the following sections:

Product Overview

The IA Series switches are industrial Fast Ethernet switches, which support wide operating and storage temperatures.The eco-friendly feature can save power consumption on each port when the port has not established a link. The AT-IA708C model is an unmanaged switch; the AT-IA810M model is a managed switch.

AT-IA708C Switch

The AT-IA708C unmanaged switch is equipped with:

- 8 10/100 Base-TX twisted pair ports
- 2 dip switches
- 1 DC power connector

See Figure 1 for the port layout of the AT-IA708C switch.

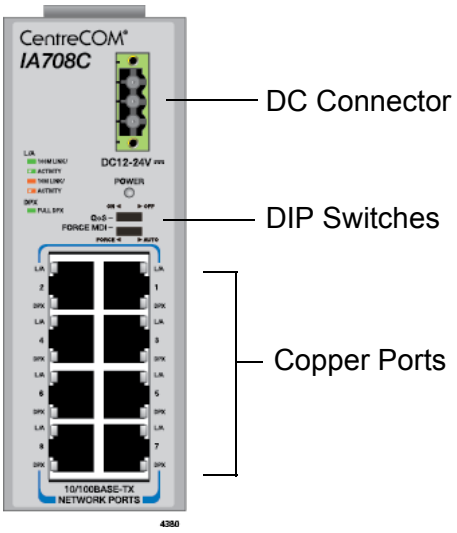


Figure 1. AT-IA708C Switch

The AT-IA708C switch has two dip switches:

- QoS - Turns the QoS feature On or Off.
- FORCE MDI - Specifies the ports with MDI or auto-MDI/MDI-X. See “Wiring Configuration for the AT-IA708C Switch” on page 12.

AT-IA810M Switch

The AT-IA810M managed switch is equipped with:

- 8 10/100Base-TX twisted pair ports
- 2 100Base-FX SC fiber optic ports
- 1 console port
- 1 DC power connector

See Figure 2 for the port layout of the AT-IA810M switch.

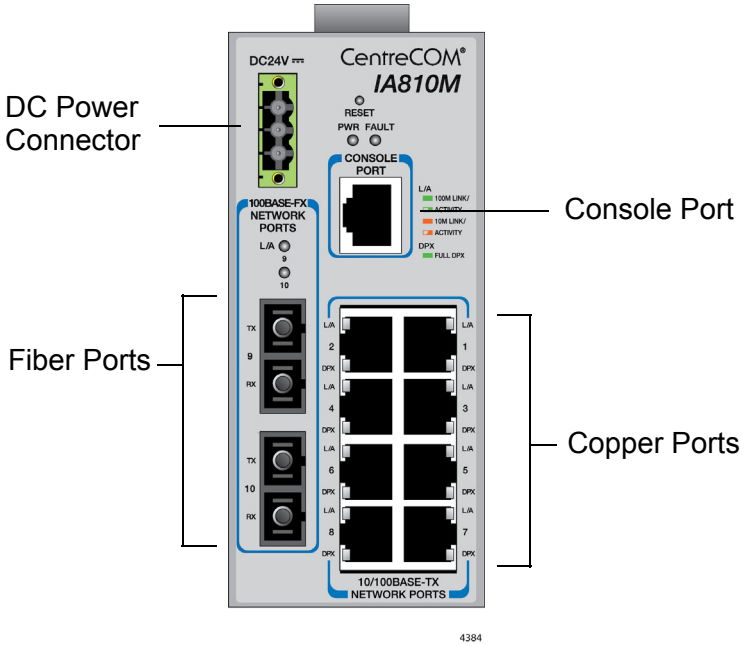


Figure 2. AT-IA810M Switch

Warning
Power cord is used as a disconnection device. To de-energize equipment, disconnect the power cord. E3

Fiber Optic Ports

The AT-IA810M switch is equipped with two fiber optic ports. Here are the basic features of the ports:

- 100Base-FX compliant
- Duplex SC connectors

Management Software and Interfaces

The AT-IA810M switch is a managed Fast Ethernet switch. Here are the management software and management interfaces:

- Command line interface
- Web browser interface

Management Methods

Here are the methods for managing the switches:

- Local management through the Console port
- Remote Telnet and Secure Shell management
- Remote HTTP and HTTPS web browser management
- SNMPv2c

10/100Base-TX Twisted Pair Ports

The IA series switch has 8 10/100Base-TX ports.

Basic Features

Here are the basic features of the 10/100 Mbps twisted pair ports:

- 10Base-T and 100Base-TX compliant
- IEEE 802.3u Auto-Negotiation compliant
- Auto-MDI/MDIX
- 100 meters (328 feet) maximum operating distance
- IEEE 802.3x flow control in 10/100Base-TX full-duplex operation
- Support for jumbo frames up to 10KB
- Support for store-and-forward switching
- RJ-45 connectors

Speed

The ports can operate at either 10 or 100 Mbps. On the AT-IA708C switch, the speeds are fixed to Auto-Negotiation. On the AT-IA810M switch, the speeds can be set manually using the management software or automatically with Auto-Negotiation (IEEE 802.3u). The default setting is Auto-Negotiation.

Duplex Mode

The twisted pair ports can operate in either half- or full-duplex mode. The duplex mode determines the manner in which a port transmits data. A port set to half-duplex can either transmit or receive data at one time, while a port operating in full-duplex can transmit and receive data at the same time. The best network performance is achieved with the full-duplex setting, but not all network equipment is designed to support that duplex mode.

On the AT-IA708C switch, the duplex modes are fixed to Auto-Negotiation. On the AT-IA810M switch, the duplex modes, like port speeds, can be set manually using the management software or automatically with Auto-Negotiation (IEEE 802.3u). The default setting is Auto-Negotiation.

The speed and duplex mode settings of a port may be set independently of each other. For example, a port may be configured such that its speed is set manually while its duplex mode is established through Auto-Negotiation.

Note
A switch port that is connected to a network device that does not support Auto-Negotiation and has a fixed duplex mode of full-duplex should not set its duplex mode with Auto-Negotiation. A duplex-mode mismatch in which a switch port and a network device operate at different duplex modes, may occur. The duplex modes of switch ports that are connected to network devices that do not support Auto-Negotiation should be set manually through the management software.

Wiring Configuration

The wiring configuration of a port can be MDI or MDI-X. The wiring configurations of a switch port and a network device connected with straight-through twisted pair cabling have to be opposite, such that one device is using MDI and the other MDI-X. For instance, a switch port has to be set to MDI-X if it is connected to a network device set to MDI.

You may set the wiring configurations of the ports manually or let the switch configure them automatically with auto-MDI/MDI-X (IEEE 802.3ab-compliant). This feature enables the switch to negotiate with network devices to establish the proper settings, so that the ports on the devices are using different wiring configurations.

You can specify the wiring configuration on ports on AT-IA810M switch from the management software. For the AT-IA708C switch, you can use the dip switch on the front panel.

Wiring Configuration for the AT-IA708C Switch

Using the FORCE MDI dip switch, you can configure the ports on the AT-IA708C switch with auto-MDI/MDI-X or MDI. Because the switch has only one FORCE MDI dip switch, the setting applies all the ports on the switch.

Wiring Configuration for the AT-IA810M Switch

You may specify the wiring configuration auto-MDI/MDI-X, MDI, or MDI-X from the management software. You can set the ports on the switch individually.

Maximum Distance

The ports have a maximum operating distance of 100 meters (328 feet).

Cable Requirements

The cable requirements of the ports are given in Table 1.

Table 1. Twisted Pair Cable for the 10/100Base-TX Ports

Cable Type	10Mbps	100Mbps
Standard TIA/EIA 568-B-compliant Category 3 shielded or unshielded cabling with 100 ohm impedance and a frequency of 16 MHz.	Yes	No
Standard TIA/EIA 568-A-compliant Category 5 shielded or unshielded cabling with 100 ohm impedance and a frequency of 100 MHz.	Yes	Yes
Standard TIA/EIA 568-B-compliant Enhanced Category 5 (Cat 5e) shielded or unshielded cabling with 100 ohm impedance and a frequency of 100 MHz.	Yes	Yes
Standard TIA/EIA 568-B-compliant Category 6 or 6a shielded cabling.	Yes	Yes

Port Pinouts

See Table 12 on page 49 for the port pinouts of the 10/100Base-T twisted pair ports.

LEDs

Here are descriptions of the switch's LEDs.

AT-IA708C Model

The AT-IA708C switch has power and port LEDs as shown in Figure 3.

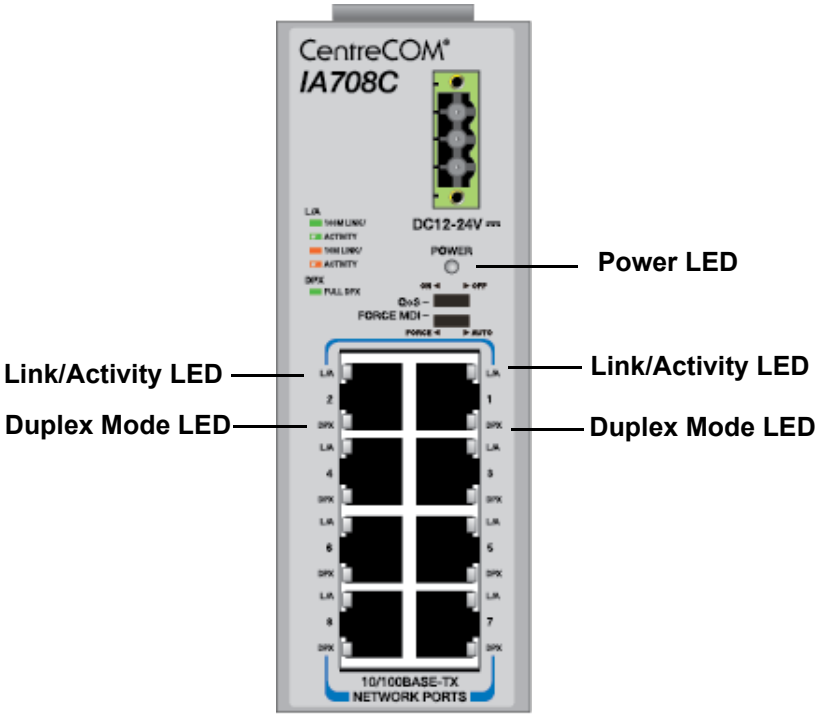


Figure 3. AT-IA708C LEDs

The LEDs on the AT-IA708C switch are described in Table 2.

Table 2. The AT-IA708C LEDs

LED	State	Description
POWER	Off	The switch is not receiving power.
	Solid green	Power is on.

Table 2. The AT-IA708C LEDs (Continued)

LED	State	Description
L/A (Link/Activity)	Off	The port has not established a link, or the eco-friendly feature is on.
	Solid green	The port has established a link at 100Mbps speed.
	Flashing green	The port is receiving or transmitting frames at 100Mbps speed.
	Solid amber	The port has established a link at 10Mbps speed.
	Flashing amber	The port is receiving or transmitting frames at 10Mbps speed.
DPX (Duplex mode)	Off	The off state indicates one of the following: ❒ The port is operating in half-duplex mode. ❒ The port is not established a link. ❒ The eco-friendly feature is on.
	Solid green	The port is operating in full-duplex mode.

AT-IA810M Model

The AT-IA810M switch has power, fault, and port LEDs as shown in Figure 4.

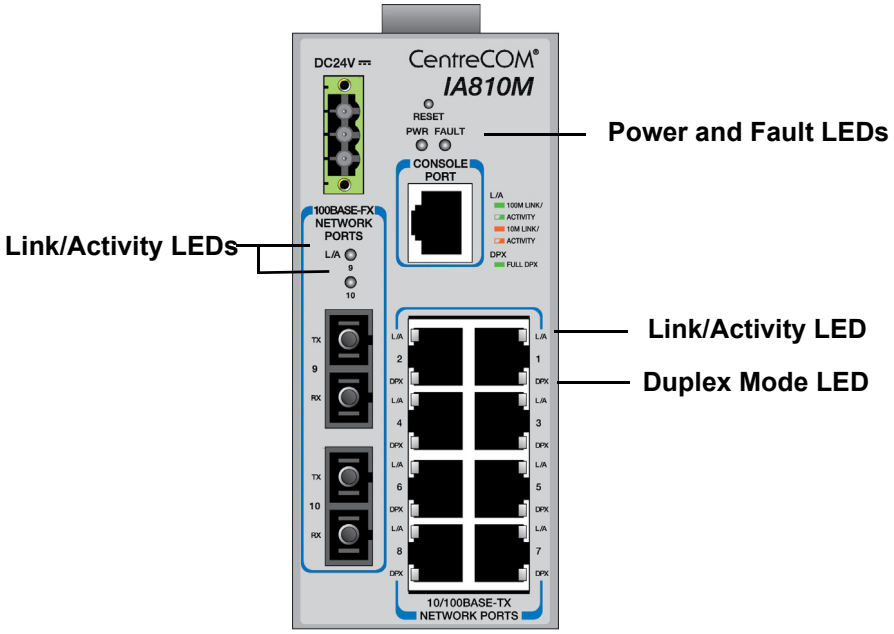


Figure 4. AT-IA810M LEDs

The LEDs on the AT-IA810M switch are described in Table 3.

Table 3. The AT-IA810M LEDs

LED	State	Description
PWR (Power)	Off	The switch is not receiving power.
	Solid green	Power is on.
Fault	Off	The switch is operating normally or powered is off.
	Solid Red	A system error occurred.
	One red flash in two seconds	The switch is downloading the firmware or accessing the flash drive.
	Three red flashes in two seconds	The power supply fails.
	Six red flashes in two seconds	The temperature exceeded the operating temperature limit.
L/A (Link/Activity) for the copper ports	Off	The port has not established a link, or the eco-friendly feature is on.
	Solid green	The port has established a link at 100Mbps speed.
	Flashing green	The port is receiving or transmitting frames at 100Mbps speed.
	Solid amber	The port has established a link at 10Mbps speed.
	Flashing amber	The port is receiving or transmitting frames at 10Mbps speed.
DPX (Duplex mode) for the copper ports	Off	The off state indicates one of the following: ❒ The port is operating in half-duplex mode. ❒ The port is not established a link. ❒ The eco-friendly feature is on.
	Solid green	The port is operating in full-duplex mode.

Table 3. The AT-IA810M LEDs (Continued)

LED	State	Description
L/A (Link/Activity) for the fiber ports	Off	The port has not established a link, or the eco-friendly feature is on.
	Solid green	The port has established a link.
	Flashing green	The port is receiving or transmitting frames.

DC Power and Ground Connectors

The IA series switch is equipped with the DC power connectors. The ground wire connector is located next to the DC power connectors.

The DC power connectors are for DC power supplies. For cabling DC power cables, see “Wiring and Powering on the Switch” on page 30. The ground wire connector is to connect the switch to the earth ground at the installation site.

Note
The switch must be connected an earth ground. Do not operate the switch without an earth ground.

Console Port

The AT-IA810M switch has a console port to configure the features and parameter settings of the switch. This type of management uses serial RS-232 and is commonly referred to as local or out-of-band management because it is not conducted over your network. To perform local management, you must be at the location of the switch and must use the management cable included with the switch.

To establish a local management session with the switch, you connect a terminal or a personal computer with a terminal emulation program to the Console port, which has an RJ-45 style (8P8C) connector, using the provided management cable. The cable which has RJ-45 RJ-style (8P8C) and DB-9 (D-sub 9-pin) connectors.

The Console port is set to the following specifications:

- Default baud rate: 9600 bps
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow control: None

Note
These settings are for a DEC VT100 or ANSI terminal, or an equivalent terminal emulation program.

Reset Button

The AT-IA810M switch has a reset button to reset the switch. The switch reinitializes its operating system. You may reset the switch when experiencing a problem. The reset button is recessed in the chassis. To press it, uses a straightened paper clip or similar object.

Caution
The switch does not forward the network traffic during the reset process. E87

Note
Unsaved changes to the configuration settings of the switch are discarded when you reset the device.

Chapter 2

Installing the Switch

This chapter contains the following procedures:

Reviewing Safety Precautions

Please review the following safety precautions before you begin the installation procedure.

Note
The ✍ indicates that a translation of the safety statement is available in a PDF document titled “Translated Safety Statements” posted on the Allied Telesis website at www.alliedtelesis.com.

Warning
Class 1 Laser product. ✍ L1

Warning
Do not stare into the laser beam. ✍ L2

Warning
Do not look directly at the fiber optic cable ends or inspect the cable ends with an optical lens. ✍ L6

Warning
To prevent electric shock, do not remove the cover. No user-serviceable parts inside. This unit contains hazardous voltages and should only be opened by a trained and qualified technician. To avoid the possibility of electric shock, disconnect electric power to the product before connecting or disconnecting the LAN cables. ✍ E1

Warning
Do not work on equipment or cables during periods of lightning activity. ✍ E2

Warning
Power cord is used as a disconnection device. To de-energize equipment, disconnect the power cord. ✍ E3

Warning
Class I Equipment. This equipment must be earthed. The power plug must be connected to a properly wired earth ground socket outlet. An improperly wired socket outlet could place hazardous voltages on accessible metal parts. E4

Caution
Air vents must not be blocked and must have free access to the room ambient air for cooling. E6

Note
All Countries: Install product in accordance with local and National Electrical Codes. E8

Warning
Only trained and qualified personnel are allowed to install or replace this equipment. E14

Caution
Circuit Overloading: Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern. E21

Warning
Mounting of the equipment in the rack should be such that a hazardous condition is not created due to uneven mechanical loading. E25

Note
Use dedicated power circuits or power conditioners to supply reliable electrical power to the device. E27

Note
If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than the room ambient temperature. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (Tmra). E35

Caution
Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised. E36

Warning
Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuits (e.g., use of power strips). E37

Caution
The unit does not contain serviceable components. Please return damaged units for servicing. E42

Warning
Switches should not be stacked on top of one another on a table or desktop because that could present a personal safety hazard if you need to move or replace switches. **E91**

Choosing a Site for the Switch

Observe these requirements when planning the installation of the switch.

- ❒ If you plan to install the switch in an equipment rack, the rack should be safely secured so that it will not tip over. Devices in a rack should be installed starting at the bottom, with the heavier devices near the bottom of the rack.
- ❒ If you plan to install the switch on a table, the table should be level and stable.
- ❒ The power outlet should be located near the switch and be easily accessible.
- ❒ The site should allow for easy access to the ports on the front of the switch, so that you can easily connect and disconnect cables, and view the port LEDs.
- ❒ The site should allow for adequate air flow around the unit and through the cooling vents on the front and rear panels. (The ventilation direction in units that have a cooling fan is from front to back, with the fan on the back panel drawing the air out of the unit.)
- ❒ The site should not expose the switch to moisture or water.
- ❒ The site should be a dust-free environment.
- ❒ The site should include dedicated power circuits or power conditioners to supply reliable electrical power to the network devices.

Warning
Switches should not be stacked on top of one another on a table or desktop because that could present a personal safety hazard if you need to move or replace switches. **E91**

Unpacking the Switch

To unpack the IA series switch, perform the following procedure:

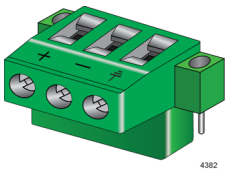
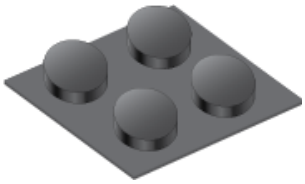
1. Remove all components from the shipping package.

   Note
   Store the packaging material in a safe location. You must use the original shipping material if you need to return the unit to Allied Telesis.

2. Place the switch on a level, secure surface.

3. Verify that the hardware components are included in your switch package. Table 4 shows a list of the hardware components.

Table 4. Components in the Bracket Kit

One 3-pin terminal block for DC power and ground wire	
Four rubber feet	
Console cable (for the AT-IA810M model only)	

4. If any item is missing or damaged, contact your Allied Telesis sales representative for assistance.

Installing the Switch on a Table or Desktop

You may install the switch on a table or desktop. To install the switch on a table or desktop, perform the following procedure:

1. Remove all the items from the packing.
2. Store the packaging material in a safe place.
3. Attach the 3-pin terminal block to the switch as shown in Figure 5.

Figure 5. Attaching the 3-in Terminal Block

4. Attach rubber feet as shown in Figure 6.

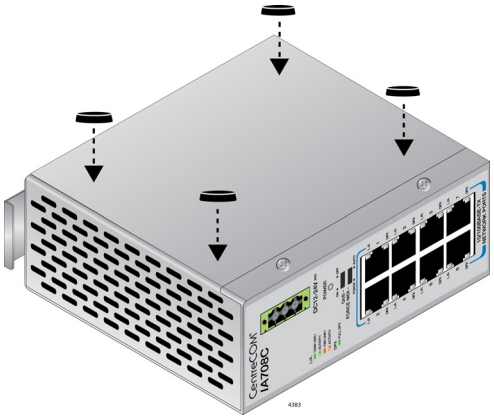


Figure 6. Attaching the Rubber Feet

5. Place the switch on a flat and secure surface, leaving ample space around the switch for ventilation.
6. Proceed to Chapter 4, “Cabling the Networking Ports” on page 35 for the cable installation.

Installing the Switch on a DIN Rail

The series switch comes with a DIN rail bracket pre-installed on the back panel. The bracket is compatible with DIN 35x7.5mm rails.

Here is the procedure for installing the switch on a DIN rail:

1. See “Reviewing Safety Precautions” on page 22.
2. See “Choosing a Site for the Switch” on page 25.
3. Attach the 3-pin terminal block to the switch as shown in Figure 5 on page 27n
4. While holding the switch with one hand, press the bracket from the top and snap the bracket onto the DIN rail as shown in Figure 7.

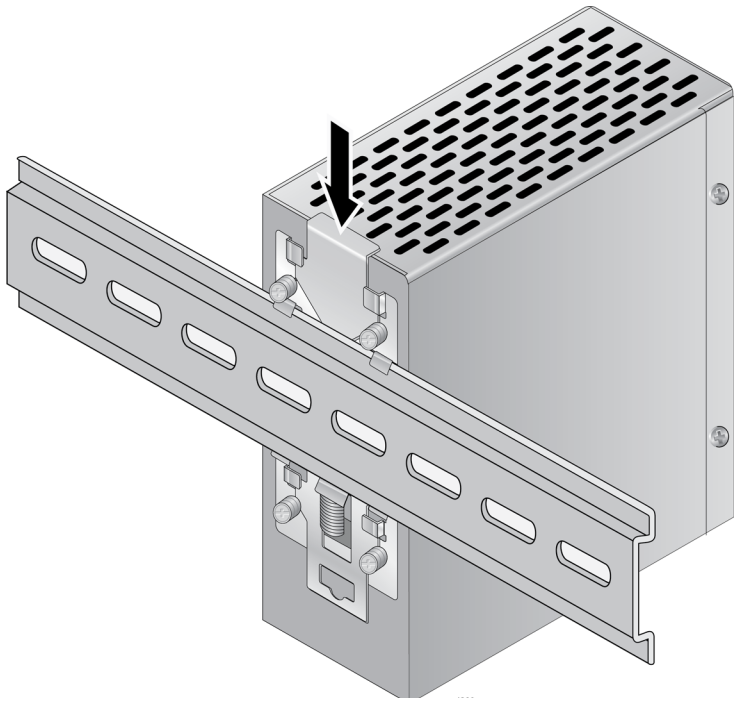


Figure 7. Installing the Switch on the DIN Rail

5. Visually inspect the bracket to verify that the DIN rail is fitted into the top and bottom slots.
6. Go to Chapter 4, “Cabling the Networking Ports” on page 35.

Chapter 3

Powering On the Switch

This chapter contains the following procedures:

Wiring and Powering on the Switch

To wire and power on the IA series switch, perform the following procedure:

Warning
As a safety precaution, install a circuit breaker with a minimum value of 15 Amps between the equipment and the DC power source.

Always connect the wires to the LAN equipment first before you connect the wires to the circuit breaker. Do not work with HOT feeds to avoid the danger of physical injury from electrical shock. Always be sure that the circuit breaker is in the OFF position before connecting the wires to the breaker. **E9**

Warning
Only trained and qualified personnel are allowed to install or to replace this equipment. **E14**

1. Identify the **positive, ground**, and **negative** terminals on the DC power supply terminal block, as shown in Figure 8.

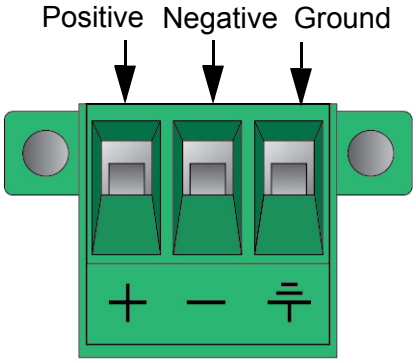


Figure 8. Locating the Terminals on the DC Terminal Block

2. Before you strip and attach the wires, review the following safety precautions:

Note
This system works with positive grounded or negative grounded DC systems. **E13**

Warning
For centralized DC power connection, install only in a restricted access area. **E23**

Note
A tray cable is required to connect the power source if the unit is powered by centralized DC power. The tray cable must be a UL listed Type TC tray cable and rated at 600 V and 90 degrees C, with three conductors, minimum 14 AWG. **E24**

Warning
Circuit breaker is used as a disconnection device. To de-energize equipment, shut down the circuit breaker and then disconnect the input wire. **E38**

Warning
DC input shall be from a secondary source isolated from the mains by reinforced insulation. **E**

3. With a 14-gauge wire-stripping tool, strip the three wires in the tray cable coming from the DC input power source to 8 millimeters ± 1 millimeters (0.31 inches ± 0.039 inches), as shown in Figure 9.

Warning
Do not strip more than the recommended amount of wire. Stripping more than the recommended amount can create a safety hazard by leaving exposed wire on the terminal block after installation. **E10**

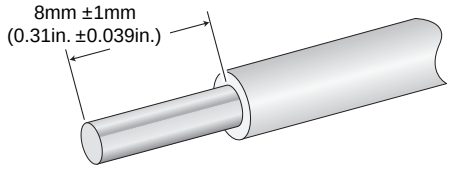


Figure 9. Stripped Wire

4. Connect the frame ground wire to the terminal marked with the ground symbol by inserting the wire into the terminal block and tightening the connection with a flathead screwdriver, as shown in Figure 10 on page 32.

Warning
When installing this equipment, always ensure that the frame ground connection is installed first and disconnected last. **E11**

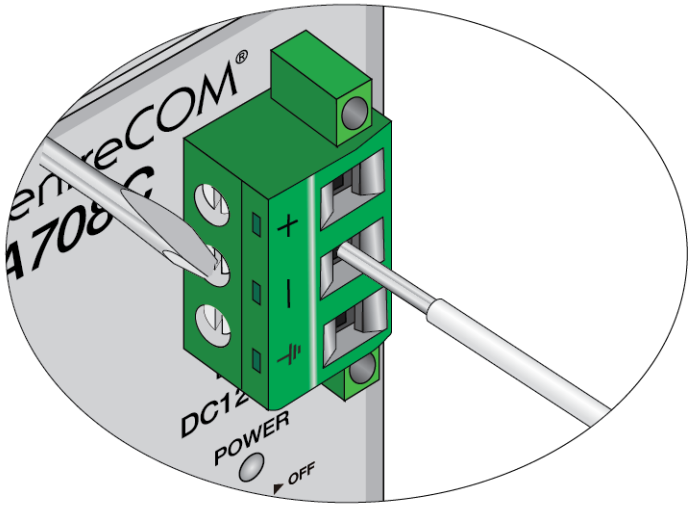


Figure 10. Connecting the Frame Ground Wire

5. Connect the positive feed wire to the terminal block marked **+** (**positive**).

6. Connect the negative feed wire to the terminal block marked **-** (**negative**).

Warning
Check to see if there are any exposed copper strands coming from the installed wire. When this installation is done correctly there should be no exposed copper wire strands extending from the terminal block. Any exposed wiring can conduct harmful levels of electricity to persons touching the wires. **E12**

7. Secure the cables near the rack using multiple cable ties (not provided) to minimize the chance of the connections being disturbed by casual contact with the wiring.

   Allied Telesis recommends that you use at least four cable ties 10 centimeters (4 inches) apart with the first one located within 15 centimeters (6 inches) of the terminal block.

8. Ensure that the circuit breaker is in the Off position.

9. Connect the DC wires to the circuit breaker.

10. Power on the circuit breaker.
11. Verify that the Power LED is green.

    If it is not, refer to Chapter 6, “Troubleshooting” on page 45.

Chapter 4

Cabling the Networking Ports

This chapter contains the following procedures:

Cabling the Twisted Pair Ports

This section contains the guidelines to cabling the twisted pair and fiber optic ports.

Twisted Pair Ports

Here are the guidelines to cabling the 10/100Base-TX twisted pair ports:

- The cable specifications are listed in Table 1 on page 13.
- The connectors on the cables should fit snugly into the ports, and the tabs should lock the connectors into place.
- The default setting for the wiring configurations of the ports is auto-MDI/MDI-X. The default setting is appropriate for switch ports that are connected to 10/100Base-TX network devices that also support auto-MDI/MDI-X.
- The default auto-MDI/MDI-X setting is not appropriate for switch ports that are connected to 10/100Base-TX network devices that do not support auto-MDI/MDI-X and have a fixed wiring configuration. For switch ports connected to those types of network devices, you should disable auto-MDI/MDI-X and set the wiring configurations manually.
- The appropriate MDI/MDI-X setting for a switch port connected to a 10/100Base-TX network device with a fixed wiring configuration depends on the setting of the network device and whether the switch and network device are connected with straight-through or crossover cable. If you are using straight-through twisted pair cable, the wiring configurations of a port on the switch and a port on a network device must be opposite each other, such that one port uses MDI and the other MDI-X. For example, if a network device has a fixed wiring configuration of MDI, you must disable auto-MDI/MDI-X on the corresponding switch port and manually set it to MDI-X. If you are using crossover twisted pair cable, the wiring configurations of a port on the switch and a port on a network device must be the same.
- The default speed setting for the ports is Auto-Negotiation. This setting is appropriate for ports connected to network devices that also support Auto-Negotiation.
- The default speed setting of Auto-Negotiation is not appropriate for ports connected to 10/100Base-TX network devices that do not support Auto-Negotiation and have fixed speeds. For those switch ports, you should disable Auto-Negotiation and set the port's speed manually to match the speeds of the network devices.
- The default duplex mode setting for the ports is Auto-Negotiation. This setting is appropriate for ports connected to network devices that also support Auto-Negotiation for duplex modes.
- The default duplex mode setting of Auto-Negotiation is not

appropriate for ports connected to network devices that do not support Auto-Negotiation and have a fixed duplex mode. You should disable Auto-Negotiation on those ports and set their duplex modes manually to avoid the possibility of duplex mode mismatches. A switch port using Auto-Negotiation defaults to half-duplex if it detects that the end node is not using Auto-Negotiation, which can result in a mismatch if the end node is operating at a fixed duplex mode of full-duplex.

Chapter 5

Starting a Management Session

This chapter contains the following procedures:

Note
This chapter only applies to the AT-IA810M switch.

Starting the Initial Management Session

The AT-IA810M switch provides two management interfaces: the Web interface and Command Line Interface (CLI); however, the initial management session of the switch must be through the CLI.

Note
This section only applies to the AT-IA810M switch.

What to Configure First

You must configure the following items during the initial management session through CLI. After the settings, you can access the switch through the Web interface in addition to the CLI.

- Assign an IPv4 address to the switch
- Enable the HTTP server

Starting the Initial Management Session

To start the initial management session through the CLI, perform the following procedure:

1. Connect the RJ45 connector of the console cable that comes with the switch to the Console port.
2. Connect the other end of the cable to an RS-232 port on a terminal or PC with a terminal emulator program.
3. Configure the terminal or terminal emulator program as follows:
   - Baud rate: 9,600bps
   - Date bits: 8
   - Stop bits: 1
   - Parity: None
   - Flow Control: None
4. Power on the switch as shown in “Wiring and Powering on the Switch” on page 30.
5. Press Enter on the terminal or terminal emulator program on the PC.

   You are prompted to login.

   ```
   login:
   ```

Note
The switch comes with one manager account with a user name of “manager” and the default password of “friend” for you to log in.

6. Type the user name and press Enter.

```
login: manager
password:
```

You are prompted to type the password.

7. Type the password and press Enter.

```
password: friend
```

You are logged in and see the prompt.

```
Manager>
```

Assigning an IPv4 address to the Switch

To assign an IPv4 address to the switch, perform the following procedure:

1. Log in to the switch as shown in “Starting the Initial Management Session” on page 40.

2. Name a system and press Enter.

```
Manager> set system name=sales
Operation successful.

Manger sales>
```

3. Assign an IPv4 address to VLAN1.

```
Manager sales> add ip interface=1
ipaddress=192.168.1.10 mask=255.255.255.0
gateway=192.168.1.1
```

4. To confirm the IPv4 address, use the `show ip` command.

```
Manger sales> show ip

IP Address Information
-----------------------------------------------
 Type...................Static
 Interface..............default
 IP address.............192.168.1.10
 Subnet mask............255.255.255.0
 Gateway address........192.168.1.1
 MTU....................1500
```

```
 DHCP Client.............Disabled
 Directed broadcast......No
-----------------------------------------------
```

Enabling HTTP Server

To enable HTTP Server, perform the following procedure:

1. Log in to the switch as shown in “Starting the Initial Management Session” on page 40.
2. Enable HTTP Server.

   ```
   Manager sales> enable http server
   ```

   You can access the switch through the Web interface.
3. To confirm that HTTP Server is enabled, use the `show http server` command.

   ```
   Manger sales> show http server

   HTTP Server Module Configuration
   -----------------------------------
   Status                      : Enabled
   HTTP Server Listen Port     : 80
   -----------------------------------
   ```

Saving the Changes to a Configuration File

To save your changes to a startup configuration file, perform the following procedure:

1. To save your changes, create a new configuration file.

   ```
   Manager sales> create config=config1.cfg
   ```

   The config1.cfg file is created and your changes are saved into the file.
2. Specify the new file as the startup configuration file.

   ```
   Manager sales> set config=config1.cfg
   ```

   The config1.cfg file is now the startup configuration file.

Ending the Management Session

To end the management session, enter the following command

```
Manager sales> logoff
```

Starting a Management Session using the Web Interface

You can access the AT-IA810M switch using the Web interface as well as the CLI. This section explains how to start a management session through the Web interface.

Note
This section only applies to the AT-IA810M switch.

Note
To access the switch using the Web Interface, the switch must have an IPv4 address and HTTP server is enabled on the switch. See “Starting the Initial Management Session” on page 40.

To start a management session using Web interface, perform the following procedure:

1. Connect the switch to your network.
2. Open Internet Explorer 7 or 8 on your management PC.
3. Enter the IP address of your switch into the Internet Explorer.
4. Enter the user name and password.

Figure 11. IA series switch Login Screen

5. Press OK.

   You are logged in and the Web interface appears. See Figure 12 on page 44.

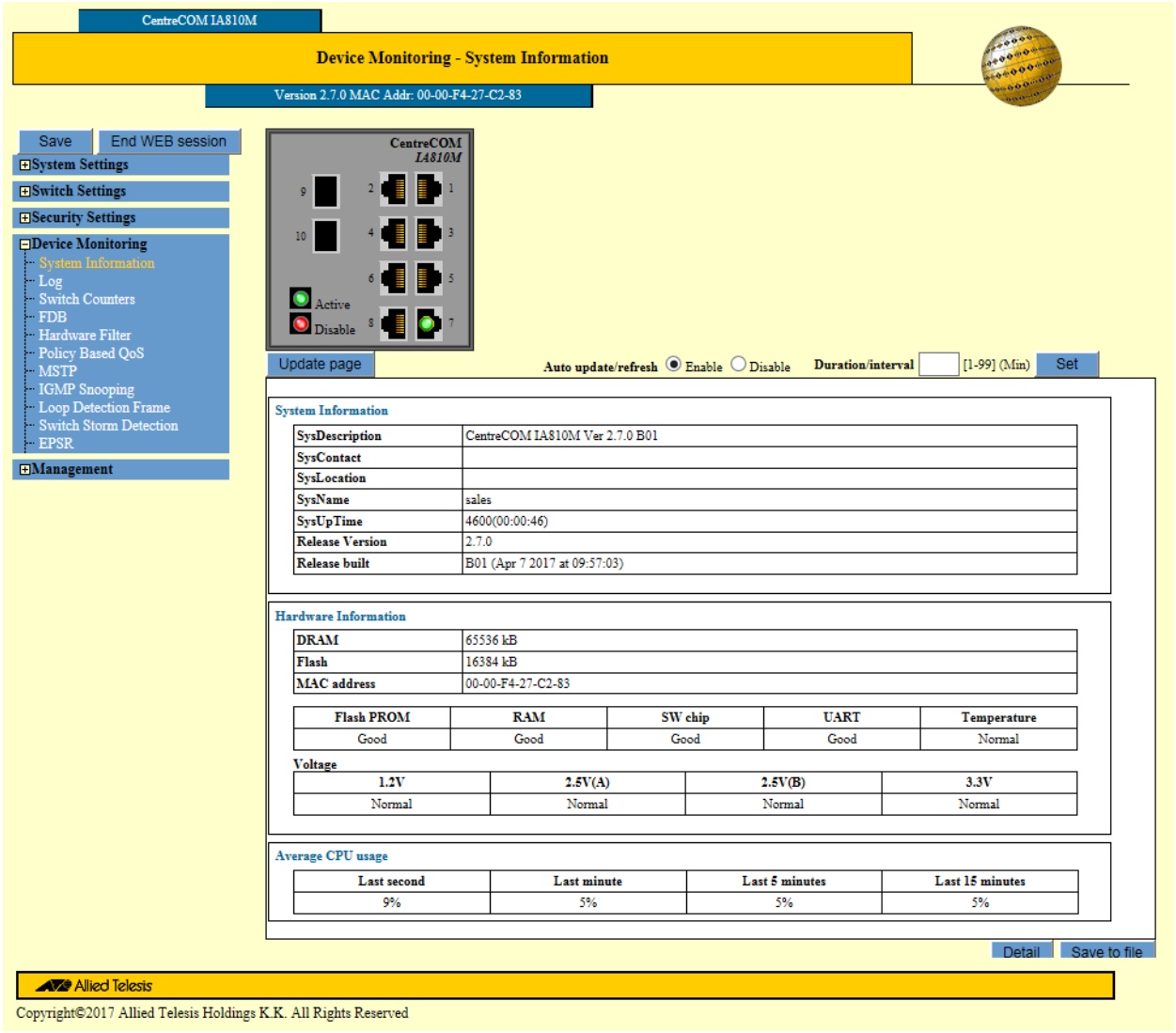


Figure 12. The AT-IA810M Switch Web Interface

Chapter 6
Troubleshooting

This chapter contains suggestions on how to troubleshoot the switch if a problem occurs.

> **Note**
> For further assistance, please contact Allied Telesis Technical Support at **www.alliedtelesis.com/support**.

Problem 1: All the LEDs on the switch are off.

Solutions: Try the following:

- Try connecting the unit to another power source.
- Try a different power cord.
- Verify that the voltage from the power source is within the required levels for your region.

Problem 2: A twisted pair port on the switch is connected to a network device but the port's LINK/ACT LED is off.

Solutions: The port is unable to establish a link to a network device. Try the following:

- Verify that the cable is securely connected to the ports on the switch and network device.
- Verify that the port is connected to the correct twisted pair cable.
- Verify that the network device connected to the twisted pair port is powered on and is operating properly.
- Try connecting another network device to the twisted pair port with a different cable. If the twisted pair port is able to establish a link, then the problem is with the cable or the other network device.
- Verify that the twisted pair cable does not exceed 100 meters (328 feet).
- Verify that you are using the appropriate category of twisted pair cable. The cable types are listed in Table 1 on page 13.

Problem 3: Network performance between a twisted pair port on the switch and a network device is slow.

Solution: There might be a duplex mode mismatch between the port and the network device. This occurs when a twisted pair port using Auto-Negotiation is connected to a device with a fixed duplex mode of full duplex. If this is the cause of the problem, adjust the duplex mode of the port on the network device or switch so that both ports are using the same duplex mode.

Problem 4: The switch functions intermittently.

Solutions: Check the system hardware status through the management software:

- (The AT-IA810M model only) Use the SHOW SYSTEM command to verify that the input voltage from the power source to the switch is stable and within the approved operating range. The unit will shutdown if the input voltage fluctuates above or below the approved operating range.
- Verify that the location of the switch provides adequate airflow. The unit will shutdown if it is in danger of overheating.

Appendix A
Technical Specifications

This section contains the following product technical specifications:

Physical Specifications

Dimensions (Width x Depth x Height)

Table 5. Product Dimensions

Model	Dimensions
AT-IA708C	46 mm x 100mm x 130mm (1.8 in. x 3.9 in. x 5.1 in.)
AT-IA810M	58 mm x 100mm x 130mm (2.3 in. x 3.9in. x 5.1in.)

Weights

Table 6. Product Weights

Model	Weight
AT-IA708C	510 g (1.1 lb.)
AT-IA810M	670 g (1.5 lb.)

Ventilation

Table 7. Ventilation Requirements

Description	Specification
Recommended Minimum Ventilation on All Sides	10 cm (4.0 in)

Environmental Specifications

The AT-IA708C Switch

Table 8. Environmental Specifications for the AT-IA8708C Switch

Description	Specification
Operating Temperature	-10° C to 70° C (14° F to 158° F)
Storage Temperature	-20° C to 70° C (-4° F to 158° F)
Operating Humidity	Less than 80% non-condensing
Storage Humidity	5% to 95% non-condensing

The AT-IA810M Switch

Table 9. Environmental Specifications for the AT-IA810M Switch

Description	Specification
Operating Temperature when installed vertically	0° C to 60° C (32° F to 140° F)
Operating Temperature when installed horizontally	0° C to 50° C (32° F to 122° F)
Storage Temperature	-20° C to 70° C (-4° F to 158° F)
Operating Humidity	Up to 80% non-condensing
Storage Humidity	5% to 95% non-condensing

Power Specifications

Maximum Power Consumptions

Table 10. Maximum Power Consumptions (watt)

Model	Max Power Consumption
AT-IA708C	3.7 watts
AT-IA810M	7.5 watts

Input Voltages

Table 11. Input Voltages

Model	Input Voltage
AT-IA708C	24 VDC
AT-IA810M	12-24 VDC

RJ-45 Twisted Pair Port Pinouts

Figure 13 illustrates the pin layout of the RJ-45 connectors and ports.

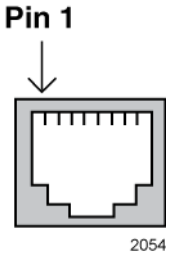


Figure 13. RJ-45 Socket Pin Layout (Front View)

Table 12 lists the pin signals for 10 and 100 Mbps.

Table 12. Pin Signals for 10 and 100 Mbps

Pin	MDI Signal	MDI-X Signal
1	TX+	RX+
2	TX-	RX-
3	RX+	TX+
4	Not used	Not used
5	Not used	Not used
6	RX-	TX-
7	Not used	Not used
8	Not used	Not used

RJ-45 Style Serial Console Port Pinouts

Table 13 lists the pin signals of the RJ-45 style serial Console port.

Table 13. RJ-45 Pin Signals

Pin	Signal
1	Request to send
2	Not used
3	Transmit Data
4	Ground
5	Ground
6	Receive Data
7	Not used
8	Clear to send