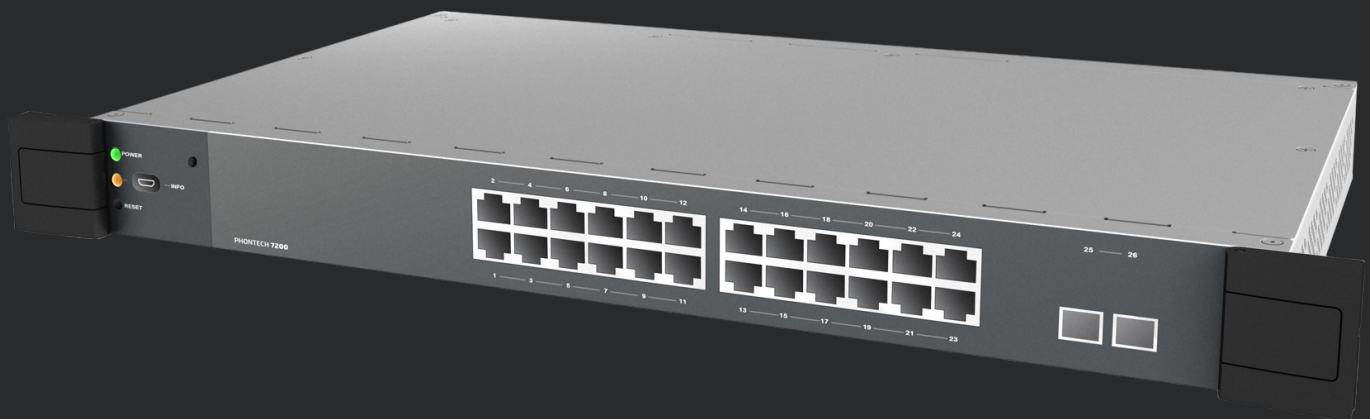


PHONTECH

by ZENITEL GROUP

USER MANUAL

Phontech P-7200



About this Document

Document Scope

This document describes the installation and configuration of the Phontech P-7200, 2 GBit Switch.

Product	Item Number
Phontech P-7200 Dual Power AC/AC, 24-Port PoE Gbit LAN Switch	4000082999
Phontech P-7200 Dual Power AC/DC, 24-Port PoE Gbit LAN Switch	4000087624

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Abbreviations

AC/DC	Alternating current/Direct current
ACL	Access Control List
CLI	Command Line Interface
CMOS	Complementary Metal-Oxide Semiconductor
DC	Direct current (input)
DHCP	Dynamic Host Configuration Protocol
DWRR	Deficit Weighted Round Robin
LACP.	Link Aggregation (control protocol).
EEE	Energy Efficient Ethernet
EIA	Electronic Industries Alliance
EMC	Electromagnetic compatibility
HTTP	Hypertext Transfer Protocol
IC	Integrated circuit (system)
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
IP	Internet protocol (address)
LACP	Link Aggregation
LAN	Local area network
LED	Light emitting diode
LLDP	Link Layer Discovery Protocol
MAC	Media Access Control
MHz	Megahertz
MSA	Multi-source agreement
PD	PoE powered device
PHY	Physical layer (connects link layer device)
PoE	Power over Ethernet
QCL	QoS Control Lists
QoS	Quality of service
RMA	Return Material Authorization number
RSTP	Rapid spanning tree protocol
SNMP	Simple Network Management Protocol
SQP	Strict Priority
SFP	Small form-factor pluggable
STP	Spanning tree protocol/Shielded twisted pair
TIA	Telecommunications Industry Association
USB	Universal Serial Bus
UTP	Unshielded twisted pair
VAC	Volts Alternating Current
VDC	Volts of direct current
VoIP	Voice over Internet Protocol
VLAN	Virtual Local Area Network
WP	Weatherproof (unit)

General

Zenitel develops and manufactures professional and state of the art products and communication systems for usage in air, on land and at sea. Zenitel supplies products and services that comply with the latest applicable standards. The use of modern test instrumentation and detailed test procedures ensures that you are supplied with quality products.

Copies of all Phontech documentation can be downloaded from our website: www.phontech.net

All information contained within this manual has been verified and is correct, however, no responsibility is assumed by Zenitel for inaccuracy. Zenitel reserves the right to make changes to any product(s) or module(s) described herein to improve reliability, function or design, without further notice.

Standards

The Phontech P-7200, 24 PoE Ethernet GBit Switch has been verified, tested and meets the following product standards:	
EMC:	EN60945 (2002), EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6
Environmental:	EN60945 (2002), EN60068-2-1, EN60068-2-2, EN60068-2-6, EN60068-2-30, EN60068-2-52
Ingress protection:	IEC 60529
Certification for marine computers:	IEC 60945

NOTE: All statements of conformity are available at: www.phontech.net

1 PRODUCT DESCRIPTION

The Phontech P-7200, 24 PoE Ethernet GBit Switch includes 24-Gigabit Ethernet and 2-Gigabit small form-factor pluggable (SFP) ports for the fiber connectivity, there are in total 26 ports. The switch is fully manageable through the web and command line interface.

The main features include:

- Virtual Local Area Network (VLAN)
- Quality of Service (QoS)
- Media Access Control (MAC)
- Link Layer Discovery Protocol (LLDP)
- Spanning Tree
- Power over Ethernet (PoE)
- Network security
- Power saving
- Port management

The Phontech P-7200, 24 PoE Ethernet GBit Switch is a computer networking device that connects devices together on a computer network, by using packet switching to receive, process and forward data to the destination device.

The Phontech P-7200, 24 PoE Ethernet GBit Switch is rack mountable.

Part Numbers:

- 4000082999 - Phontech P-7200, 24-Port PoE Ethernet GBit Switch, AC/AC
- 4000087624 - Phontech P-7200, 24-Port PoE Ethernet GBit Switch, AC/DC

CAUTION:

This equipment contains CMOS integrated circuits. Observe precautions for handling electrostatic sensitive device. Electrostatic discharge (ESD) may damage this equipment.



Figure 1: Phontech P-7200, 24 PoE Ethernet GBit Switch - product image

2 SYSTEM DESCRIPTION

The Phontech P-7200, 24 PoE Ethernet GBit Switch has 2 internal power supplies. One serves as the main power source and the other as a back up power source. There are 2 power input configurations, AC/AC and AC/DC. The unit also includes a built-in power supply voltage measurement circuit for monitoring purposes. The measurements are available both on the web and CLI interface.

For best power reduction results the Phontech P-7200, 24 PoE Ethernet GBit Switch should be implemented with an IEEE 802.3az power saving option, which automatically turns off the port when there is low to no traffic utilization.

This unit supports IEEE 802.3af (PoE) and IEEE 802.3at (PoE+) on all 24-Gigabit Ethernet (GbE) ports. The PoE system is capable of delivering up to 150 watts of power. The delivered power is managed and monitored per each port.

There are 3 modes for configuring power reservation by the ports (PDs):

1. Power allocation per port.
2. Power according to class.
3. Power reserved by exchanging PoE information using Link Layer Discovery Protocol (LLDP) protocol.

The system description of the Phontech P-7200, 24 PoE Ethernet GBit Switch includes details regarding each of the major functions.

2.1 MAJOR FUNCTIONS

The major functions of the Phontech P-7200, 24 PoE Ethernet GBit Switch are as follows:

- Management
- Monitoring and troubleshooting
- Network configuration
- Advanced security
- PoE
- QoS
- Layer 2 switching
- Layer 3 switching
- Power saving

2.1.1 MANAGEMENT

- Command line interface
- Web interface
- Software upload through web
- Configuration download and upload through web
- DHCP client
- SNMPv1/v2C/v3 Agent

2.1.2 MONITORING AND TROUBLESHOOTING

- Remote server logging using Syslog.
- Local in the flash and ram logging.
- Port based mirroring. The switch system can be configured to mirror frames from multiple ports to a mirror port. Both incoming (source) and outgoing (destination) frames can be mirrored to the mirror port.

2.1.3 NETWORK CONFIGURATION

- Auto-negotiating 10/100/1000 ports automatically configure port speed and duplex setting.
- Auto MDI/MDIX crossover detection feature for all three speeds on the twisted pair cable.
- IEEE 802.1AB LLDP for automated device discovery.

2.1.4 ADVANCED SECURITY

- Web and CLI authentication.
- RADIUS centralized access, authorization and accounting management.
- Port based IEEE 802.1X and MAC based authentication system and port settings.
- Access management filtering IP address. Maximum number of entries is 16. Access from HTTP, SNMP interface if the host IP address matches the IP address range provided in the table.
- ACLs (up to 256) for filtering, policing and port copy.

2.1.5 POWER OVER ETHERNET (POE)

- Support for IEEE 802.3af (PoE) or IEEE 802.3at (PoE+) compliant powered device.
- Power reservation by exchanging PoE information using the LLDP protocol.
- Configurable per port PoE mode, priority and maximum power limits.

2.1.6 QUALITY OF SERVICE (QOS)

- Priority queues: 8 hardware based queues per port for flexible QoS management
- Configurable scheduling algorithm: Strict Priority (SQP)
- Basic QoS classification: using QCL (QoS Control Lists)
- Bandwidth management: ingress rate limiting; egress rate shaping per port
- Storm control: unicast, multicast and a broadcast storm rate control

2.1.7 LAYER 2 SWITCHING

- IEEE 802.1D Bridge, auto address learning/aging and MAC addresses (static) (up to 8000 MACs).
- IEEE 802.1Q Virtual LAN (up to 4000 VLANs)
- Private VLAN (static)
- VLAN trunking
- Loop guard
- IEEE 802.3ad Link Aggregation Control Protocol (LACP) and supports static aggregation
- IEEE 802.1D STP and IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
- IGMPv2 snooping

2.1.8 LAYER 3 SWITCHING

- IPv4 Unicast: static routing (up to 8 IPv4 interfaces and 32 IPv4 static routes)

2.1.9 POWER SAVINGS

Energy Efficient Ethernet 802.3az: Low or no traffic utilization reduces power consumption.	
LEDs intensity configuration:	Lowering the intensity reduces power consumption.
PerfectReach:	Power savings depend on the cable length. Power savings depend on the cable length. Power savings depend on the port link. Powering down the ports if the temperature gets too high reduces power consumption.

2.2 MECHANICAL LAYOUT

Phontech P-7200, 24 PoE Ethernet GBit Switch is a standard 19" rack mountable product, that fits in all industry standard 19" cabinets.

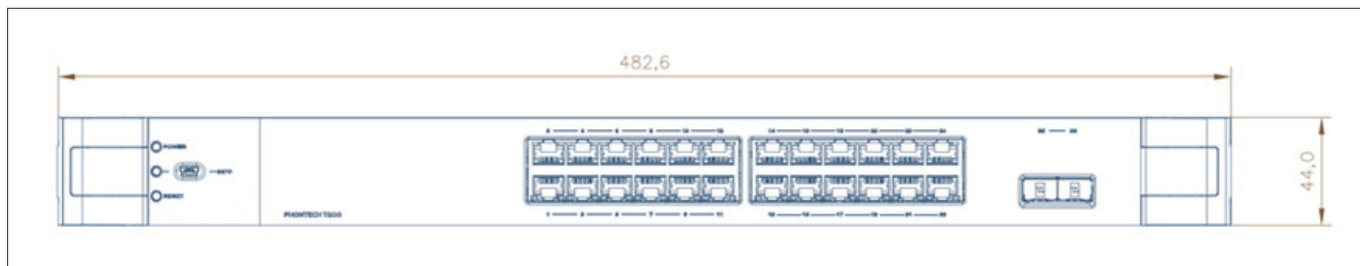


Figure 2: Phontech P-7200, 24 PoE Ethernet GBit Switch - front view

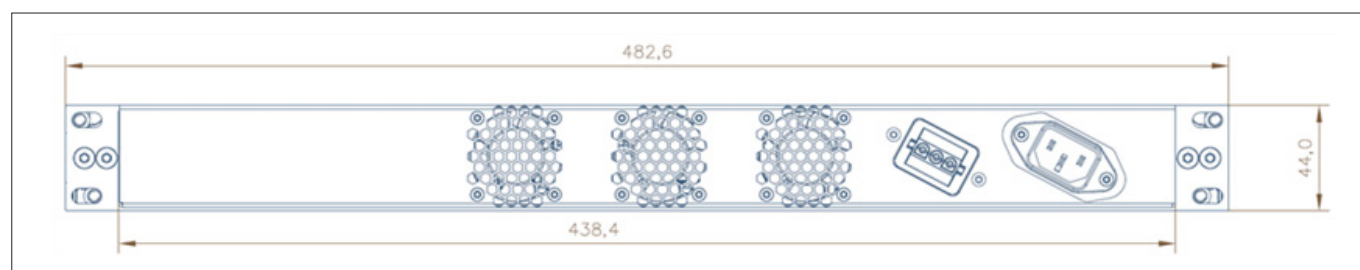


Figure 3: Phontech P-7200, 24 PoE Ethernet GBit Switch - rear view

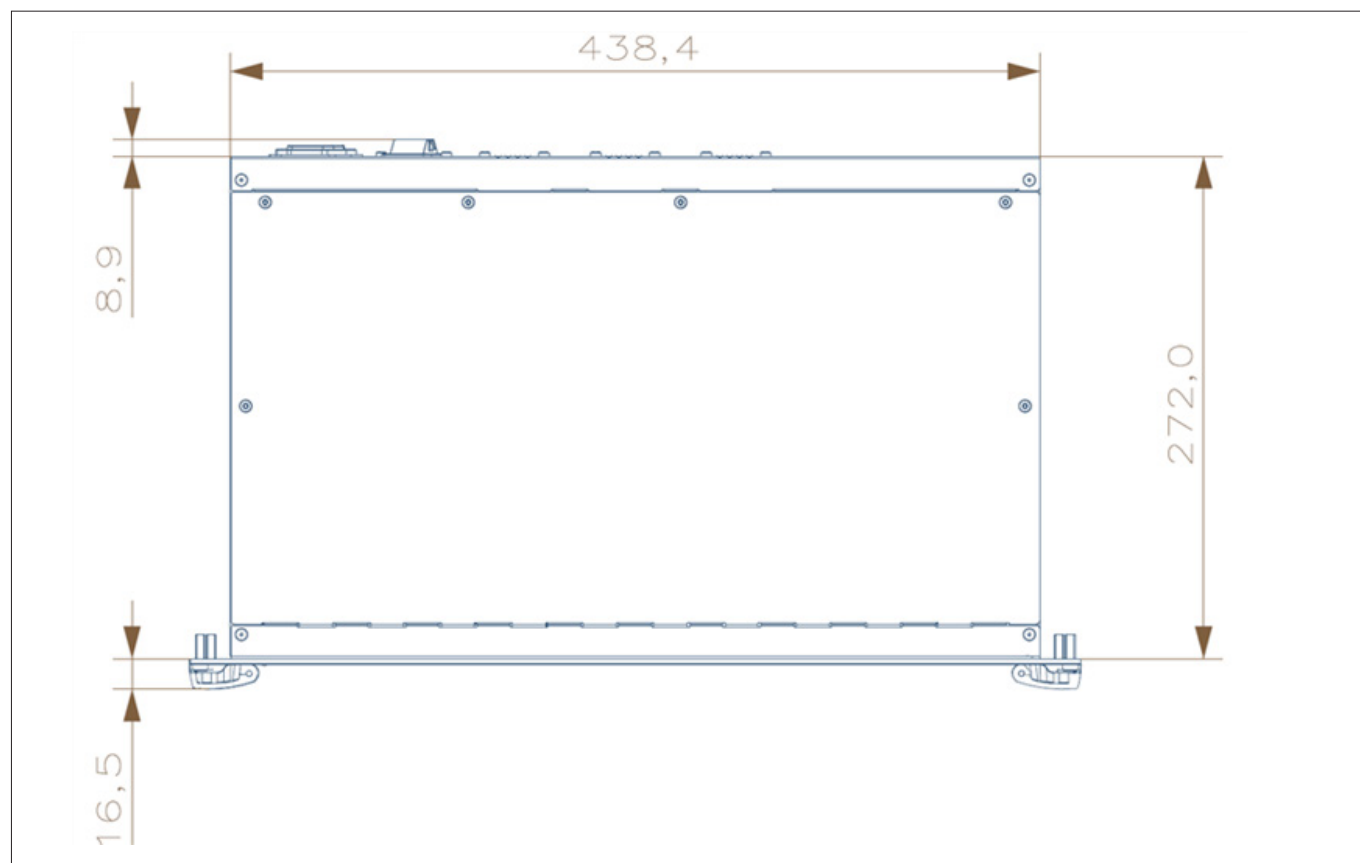


Figure 4: Phontech P-7200, 24 PoE Ethernet GBit Switch - top view

2.3 ELECTRICAL CONNECTIONS

Phontech P-7200, 24 PoE Ethernet GBit Switch has 24 RJ-45 connectors, 2 slots for pluggable SFP modules and a USB connector in the front. The back panel contains 2 power input connectors, one for the primary and another for the secondary power sources. Depending on the Phontech P-7200, 24 PoE Ethernet GBit Switch version, the power input can be AC/DC or AC/AC.

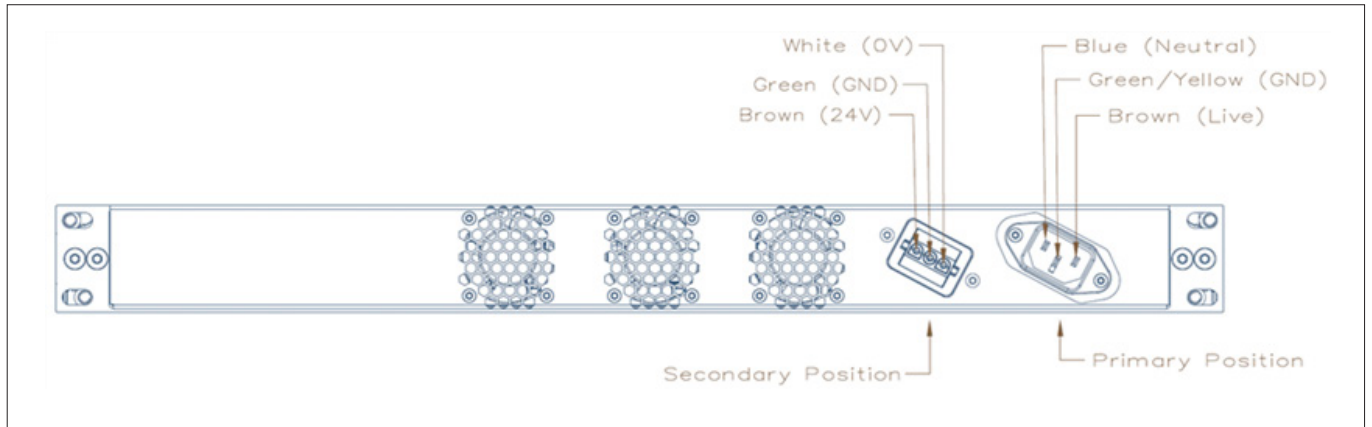


Figure 5: Phontech P-7200, 24 PoE Ethernet GBit Switch - rear view AC/DC version

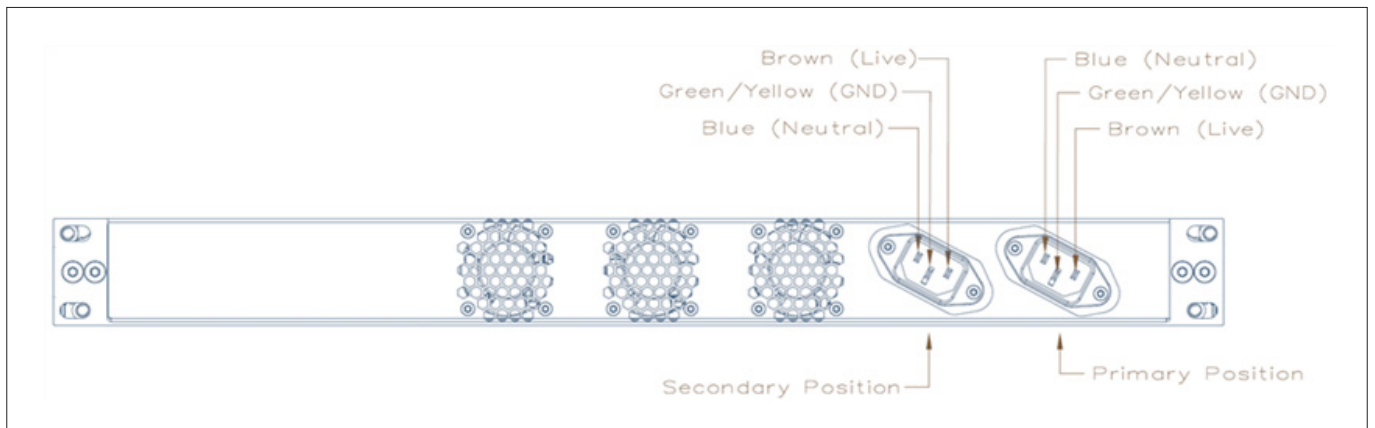


Figure 6: Phontech P-7200, 24 PoE Ethernet GBit Switch - rear view AC/AC version

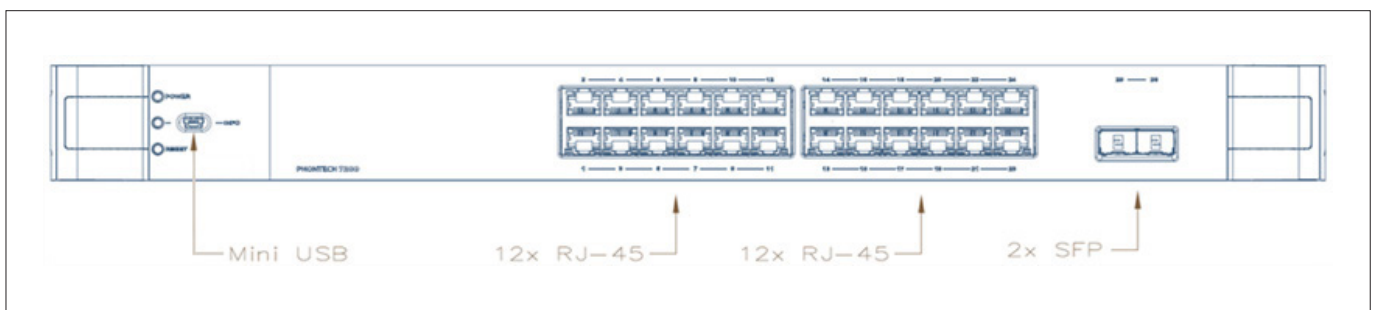


Figure 7: Phontech P-7200, 24 PoE Ethernet GBit Switch - front view - mini USB connector

3 TECHNICAL SPECIFICATIONS

3.1 PRODUCT SPECIFICATION

Supply voltage:	Universal AC input (90-250VAC) DC input, 24V Nominal (20-36V)
Maximum power consumption:	225 W
System power:	30 W
PoE power budget:	150 W
Dimensions (W/H/D):	440 mm/44 mm/290 mm (The width is 483mm including front mounting brackets)
Weight:	3.9 kg
Temperature operating:	-15 to +55 °C
Temperature storage:	-40 to +70 °C
Humidity:	93% @ +40 °C
Ingress protection:	IP 22 (rack mounting)
Compass safe distance	>1.7 m
Interfaces:	24 RJ45 Gigabit ports, 2 Gigabit SFP ports, serial service port

4 INSTALLATION

An installation should be properly outlined in detail prior to commencement, consider the following:

- Cables should be listed within a cable plan, including the number of pairs etc.
- Location of each unit in the communication system should be identified, ensuring maximum performance and user availability.
- Power supply connections must also be taken into consideration.

NOTE: Zenitel strongly recommends the use of junction boxes for the external cable distribution.

4.1 GLANDS

All cables enter the WP units by means of cable glands.

NOTE:

If cable glands are not included, the individual completing the installation must adapt the glands to the actual size of the outer cable diameter in order to obtain the specified ingress protection.

4.2 PUNCH BLOCK TERMINALS

NOTE: When terminating cables in the punch block terminals, ensure you use the correct tool.

4.3 FERRULING

The conducts should be ferruled prior to termination when using cage terminals.

4.4 MARKING

- Mark all cables with a cable number.
- Mark all conductors with a termination number.

NOTE: Generally, Zenitel uses pluggable screw terminals, these are durable and both easy to install and service.

4.5 FASTENING

All cables and conductors should be clamped to the structure with cable ties.

4.6 PRESERVATION

Prior to, during and after the installation is complete the equipment surfaces are to be protected against acid holding fluids, pollution, moisture and impacts.

IMPORTANT:

Failure to perform preservation protection of the equipment can result in equipment damages and will void your Zenitel warranty.

4.7 SCREEN CONNECTION

For maximum performance after installation, it is necessary to terminate the cables and ground the screens.

4.8 CABLE REQUIREMENTS FOR POWER LINES

IMPORTANT: Ensure that the cable used is approved in accordance with Zenitel specification.

Power cable should be individually twisted pair and the minimum conductor size must be 1 mm².

CAUTION: To prevent disturbance and noise caused by interference, do not combine different systems in the same cable.

4.9 CABLE REQUIREMENTS FOR ETHERNET

IMPORTANT: Ensure that the Ethernet cable to be used has a specification category of minimum shielded Cat 6.h

The maximum length of each segment must be less than 100 m.

NOTE: Zenitel recommends using the TIA/EIA-568-B.1-2001 termination scheme.

4.10 USING 802.3AF-2003 POE FOR VOIP TELEPHONES

Power over Ethernet (PoE) allows supporting units to replace the usual wall wart power supplies that are commonly used for most electrical products. Phontech P-7200, 24 PoE Ethernet GBit Switch is a PoE capable switch, the end point must support the PoE.

IMPORTANT: The length of the cabling between the two must not exceed 100 meters as per 802.3af-2003.

NOTE: If the cable lengths need to be greater than 100 meters then it is recommended you do the following:

- Distribute one or more of these switches closer to the end point.
- Use a PoE capable repeater or a PoE injector close to the end point.

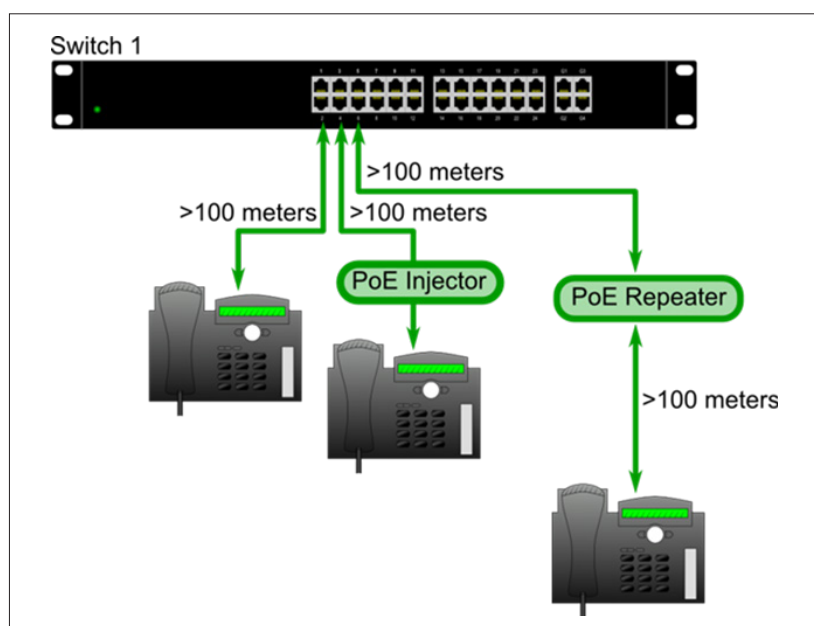


Figure 8: Phontech P-7200, 24 PoE Ethernet GBit Switch - powering VoIP phones

5 CONFIGURATION

5.1 COMMAND LINE INTERFACE (CLI)

The configuration and functionality of the service port otherwise known as, the command line interface (CLI) on the Phontech P-7200, 24 PoE Ethernet GBit Switch is described in detail below.

5.1.1 CLI REQUIREMENTS

The Phontech P-7200, 24 PoE Ethernet GBit Switch command line interface (CLI) is accessible on the serial console and requires the following:

- Windows XP SP3, Windows Vista SP1, Windows 7 (or a newer version)
- Terminal program
- USB cable with mini B plug
- Serial port driver installed

NOTE:

Drivers for Windows, MAC OS and Linux are available at the FTDI chip website (www.ftdichip.com - under Drivers, VCP Drivers)

When starting from a Windows Vista version, the drivers are automatically installed.

NOTE: Zenitel recommends one of the following terminal programs: Tera Term or PuTTY

5.1.2 STARTING THE COMMAND LINE INTERFACE

Prior to getting started ensure the following:

- The device is turned on and has a functioning connection.
- A mini B USB plug is connected to the service port in the front panel.
- The computer is running a terminal program on Windows.
- The serial ports are set to 115200 bps, no parity, 8 data bits, 1 stop bit and no flow control.

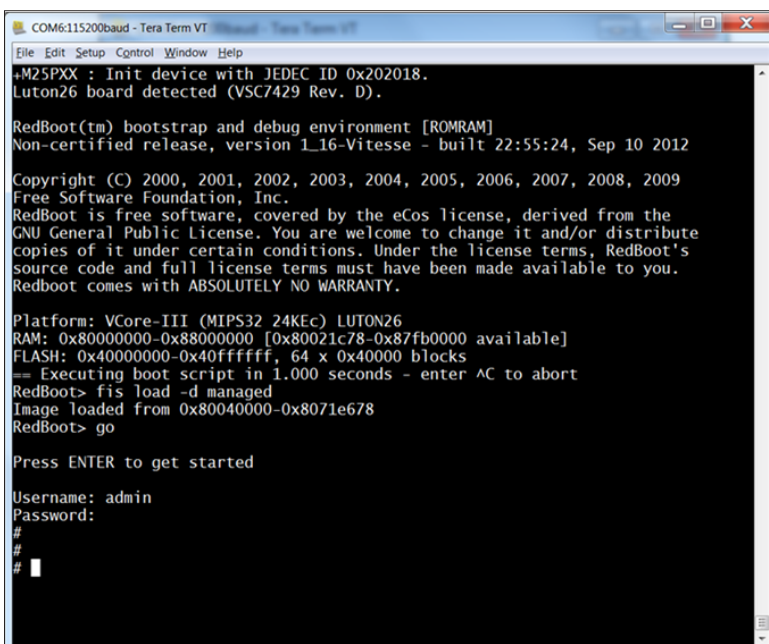


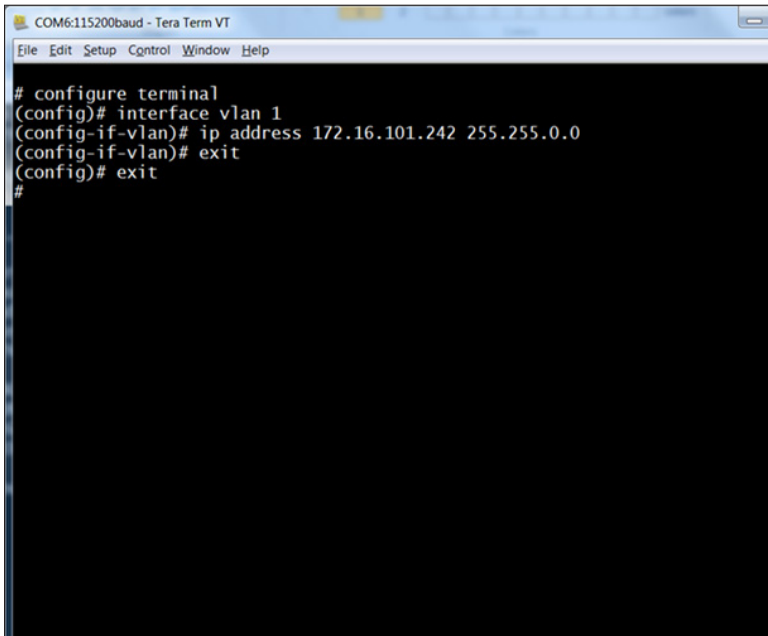
Figure 9:
Starting the command line interface - log in screen

To start the command line interface do the following:

1. Power up the LAN switch.
2. Enter the default user name (admin) and password (unless you have reset this). By default a password is not required.
3. Click Enter when ready.

5.1.3 SETTING UP THE IP ADDRESS

To configure the static IP, do the following:

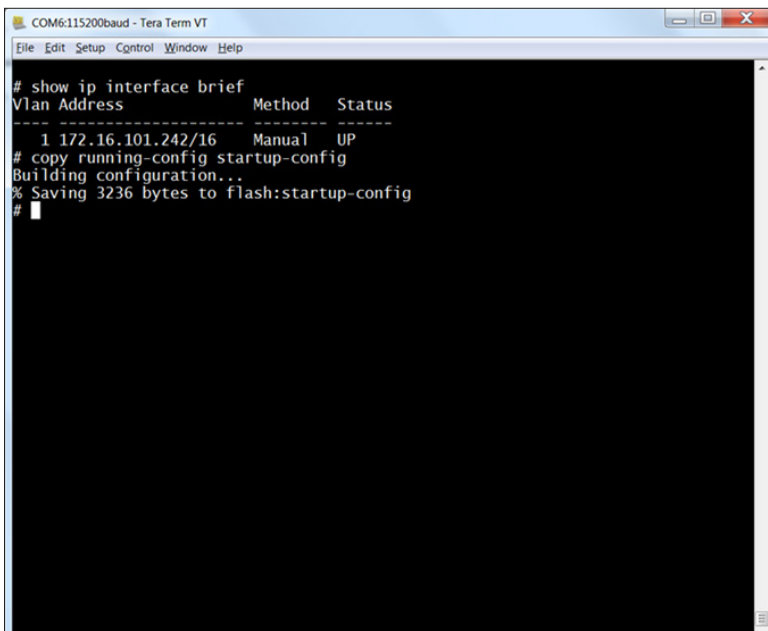


```
COM6:115200baud - Tera Term VT
File Edit Setup Control Window Help
# configure terminal
(config)# interface vlan 1
(config-if-vlan)# ip address 172.16.101.242 255.255.0.0
(config-if-vlan)# exit
(config)# exit
#
```

Figure 10:
Configuring the static IP

Once configuration is complete, do the following:

1. Verify the static IP address is set up correctly.
2. Save to flash.



```
COM6:115200baud - Tera Term VT
File Edit Setup Control Window Help
# show ip interface brief
Vlan Address Method Status
-----
1 172.16.101.242/16 Manual UP
# copy running-config startup-config
Building configuration...
% Saving 3236 bytes to flash:startup-config
#
```

Figure 11:
Verifying the static IP

To configure the dynamic IP, do the following:

1. Go into the configuration mode.
2. Input and execute the configuration commands.
3. Exit the configuration mode.

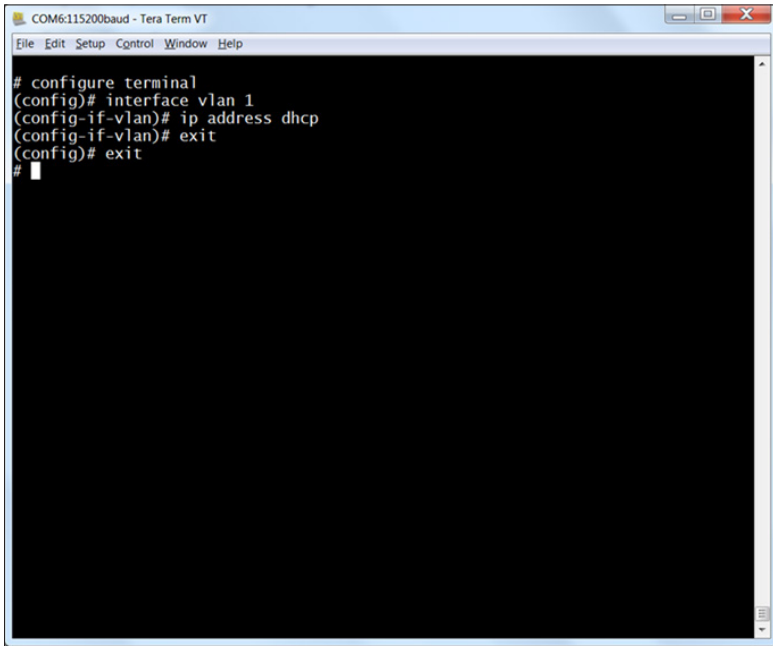


Figure 12:
Configuring the dynamic IP

Once configuration is complete, do the following:

1. Verify the dynamic IP address is set up correctly.
2. Save to flash.

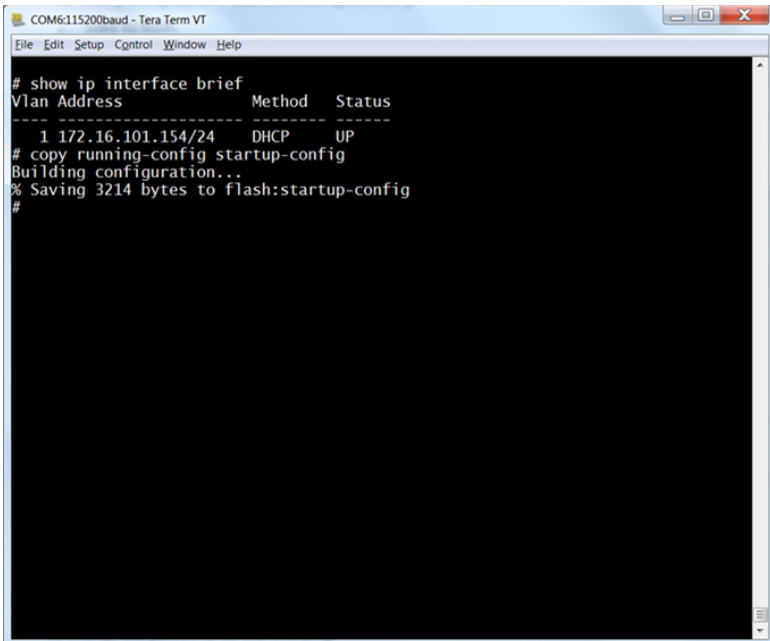
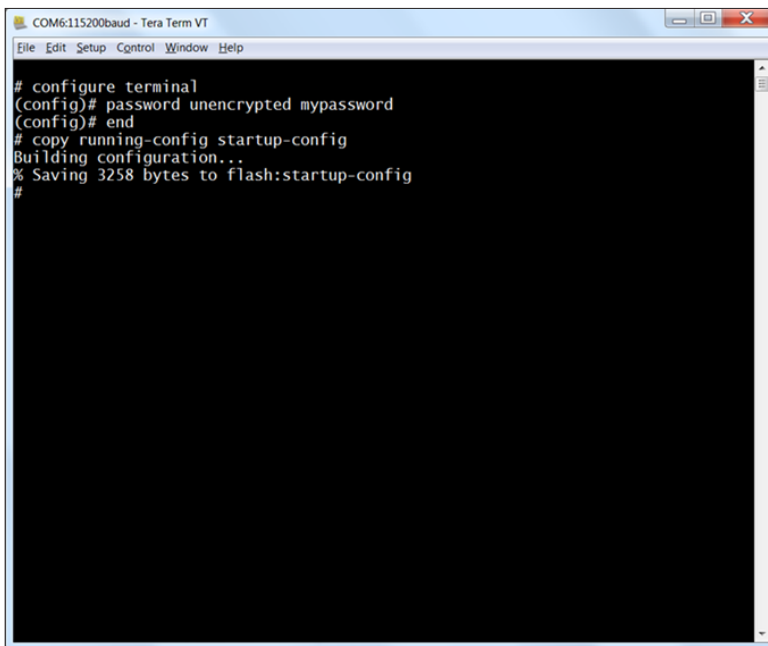


Figure 13:
Verifying the dynamic IP

5.1.4 CHANGING THE PASSWORD

To change the password, do the following:

1. Enter the command lines.
2. Save to a non-volatile flash memory.



```
COM6:115200baud - Tera Term VT
File Edit Setup Control Window Help
# configure terminal
(config)# password unencrypted mypassword
(config)# end
# copy running-config startup-config
Building configuration...
% Saving 3258 bytes to flash:startup-config
#
```

Figure 14:
Changing the password

5.1.5 COMMAND LINE HELP

The command line interface has a built in help menu. Use a question mark (?) to call up the help menu.

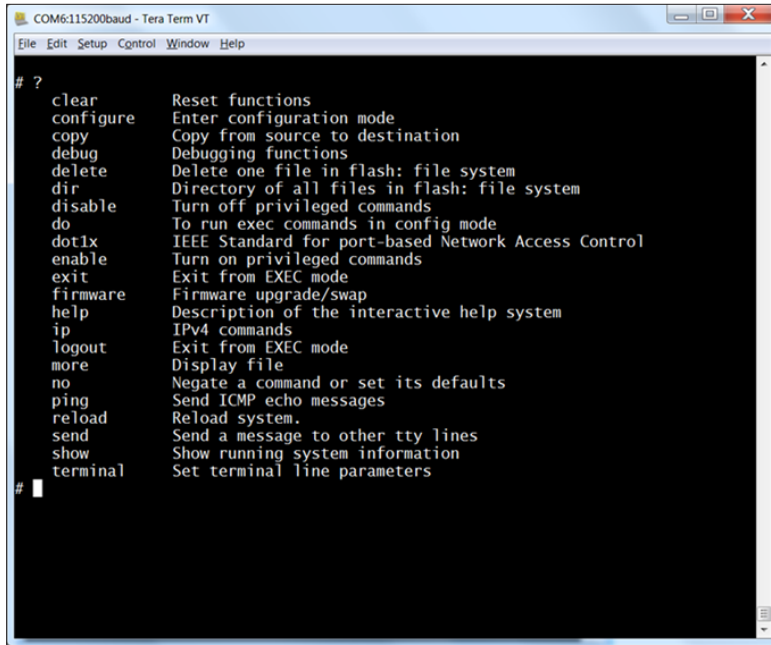


Figure 15:
List of help menu commands

For a description of the help system, type the word help at the # prompt.

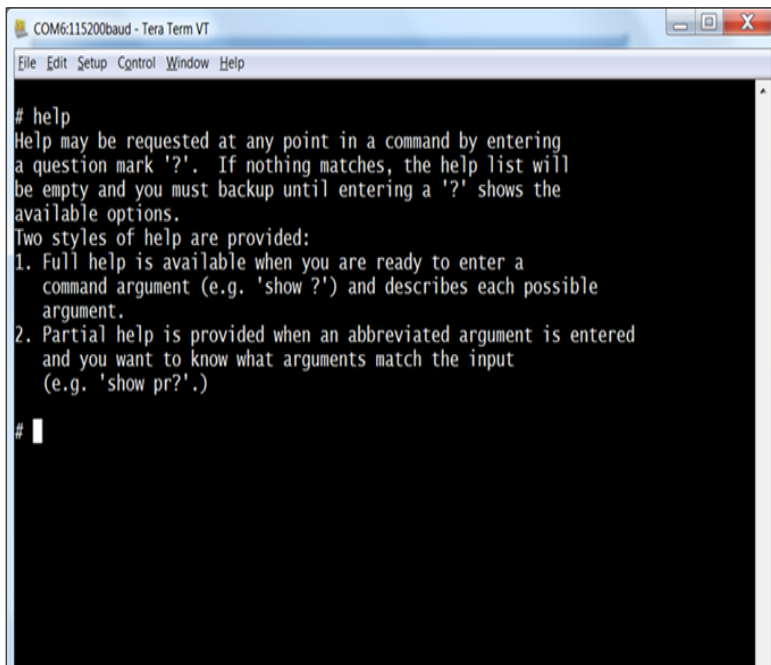
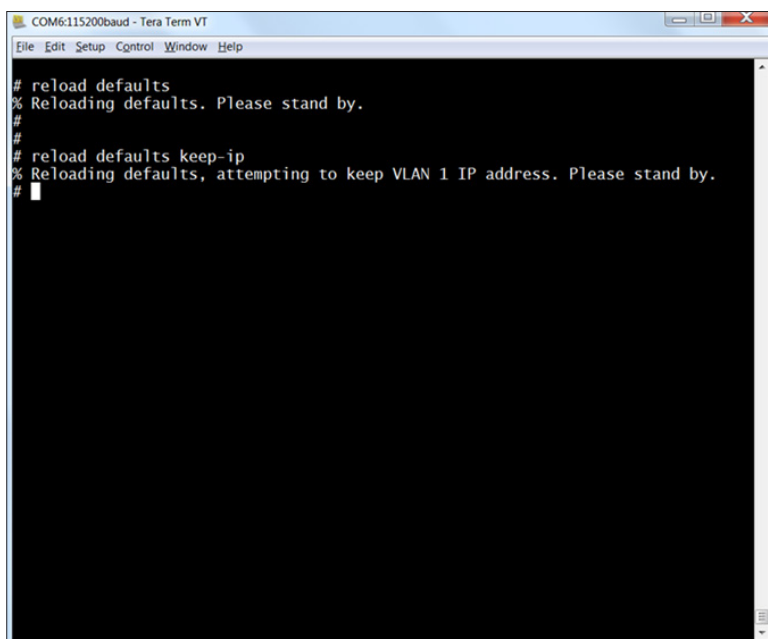


Figure 16:
Description of the help system

5.1.6 RELOADING THE DEFAULTS

There are two options to revert the Phontech P-7200, 24 PoE Ethernet GBit Switch back to the default setup, do one of the following:

1. Enter the command line option, reload defaults
NOTE: This removes all configuration.
2. Enter the command line option , reload defaults keep-ip.
NOTE: This will keep the most relevant part of the VLAN 1 IP set up in order to maintain management connectivity.



```
COM6:115200baud - Tera Term VT
File Edit Setup Control Window Help
# reload defaults
% Reloading defaults. Please stand by.
#
# reload defaults keep-ip
% Reloading defaults, attempting to keep VLAN 1 IP address. Please stand by.
#
```

Figure 17:
Reloading the defaults

5.2 WEB INTERFACE

5.2.1 WEB INTERFACE REQUIREMENTS

The Phontech P-7200, 24 PoE Ethernet GBit Switch web configuration interface requires the following:

- Windows XP SP3, Windows Vista SP1, Windows 7 (or a newer version)
- Web browser
- Wired network connection

5.2.2 STARTING THE WEB INTERFACE

The web interface can be reached through any web browser. First, you must locate the address of the Phontech P-7200, 24 PoE Ethernet GBit Switch that is currently configured. The default IP address is: 172.30.0.1/16. The IP address is found in the command line interface.

Enter the IP address into your web browser to access the web interface. You will be required to login with a user name and password. The default user name is admin and the password field should be left blank.

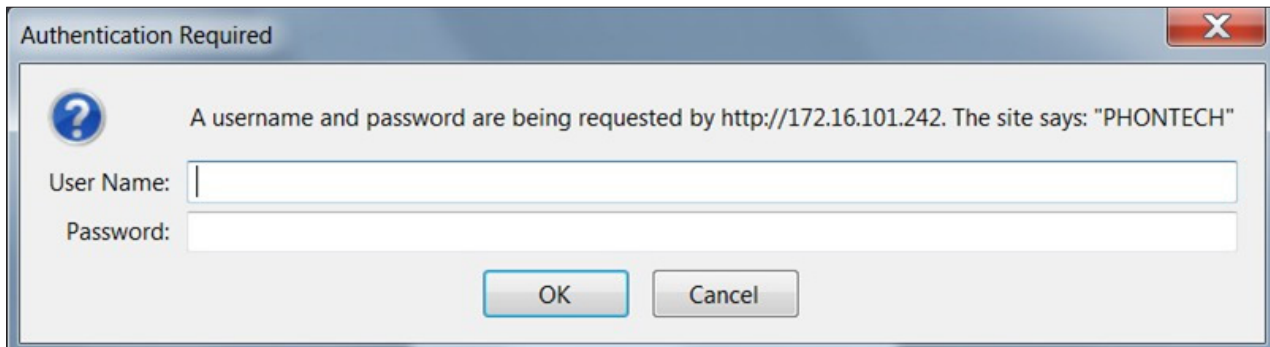


Figure 18: Authentication prompt

If the correct user name and password are entered, you will be directed to the web interface welcome screen.

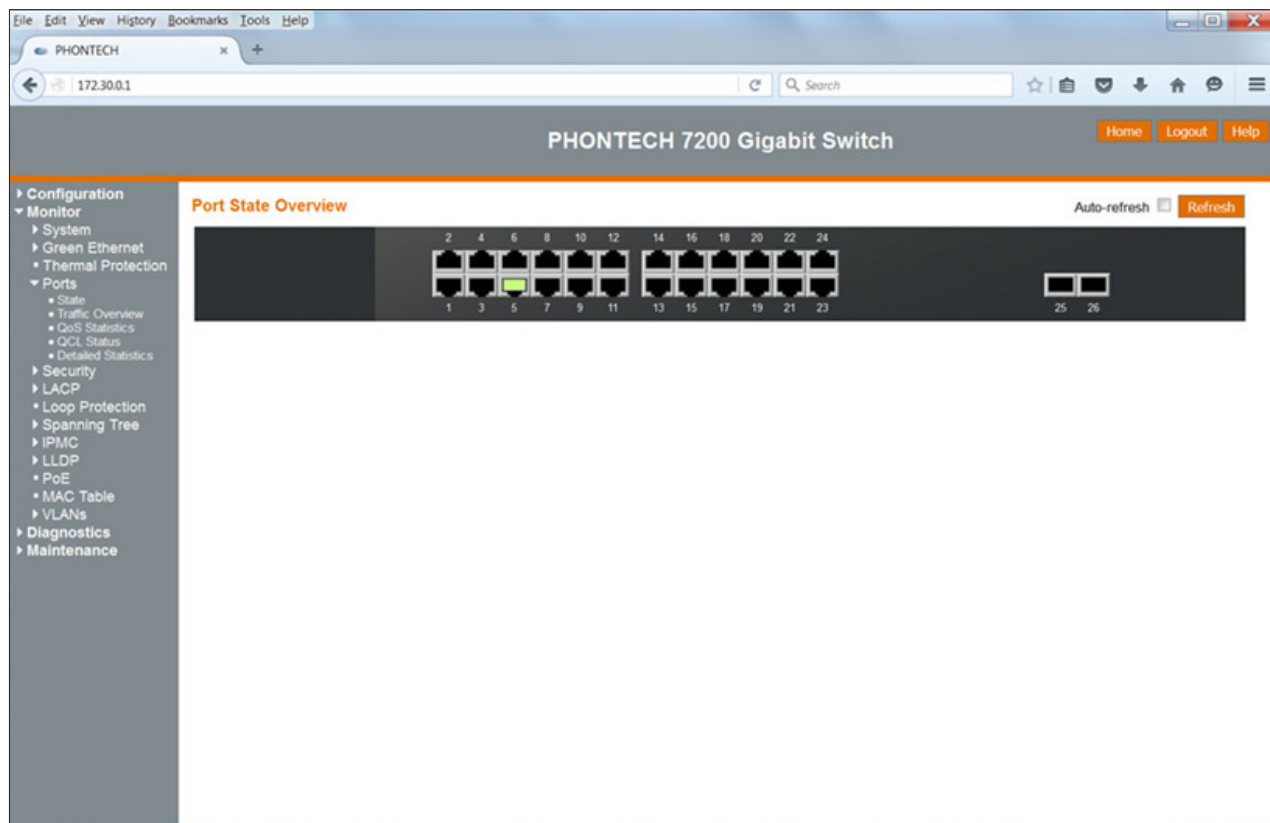


Figure 19: Welcome screen

9.2.3 CHANGING THE IP ADDRESS

The IP address is changed in the IP interfaces table.

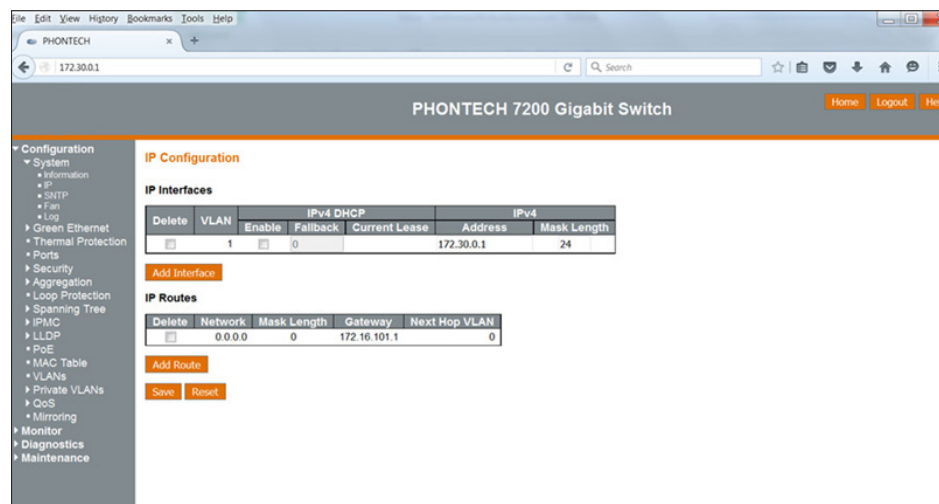


Figure 20: IP Interfaces table in the IP Configuration screen

IMPORTANT: After making any changes, it is necessary to save them.

NOTE: When you click the SAVE button, it only saves configuration data in RAM, therefore, after a reset any configuration data will be lost.

To save your configuration in a non-volatile flash memory, do the following:

1. From the menu bar, select Maintenance.
2. From the drop down list, select Configuration.
3. From the drop down list, select Save startup-config.
4. Click the Save Configuration button.

IMPORTANT: These steps must be completed after every configuration change.

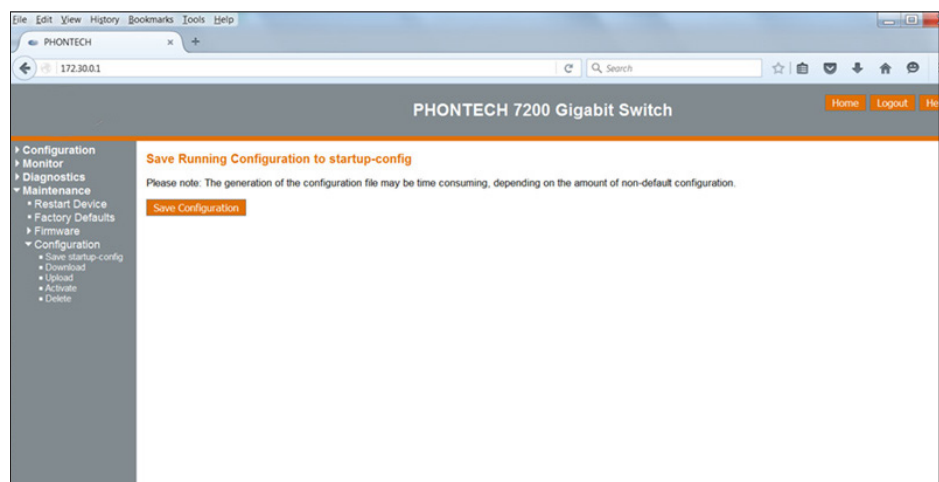


Figure 21: Saving from the menu bar

9.2.4 CHANGING THE SYSTEM PASSWORD

A system password is required to access a web page or to log in from CLI. To change the system password, do the following:

1. From the menu bar, select Configuration.
2. From the drop down list, select Security.
3. From the drop down list, select Switch.
4. From the drop down list, select Password.
5. Enter the old password (leave field blank if no prior password), then enter a new password twice.
6. Click the Save button.
7. Save your configuration in a non-volatile flash memory

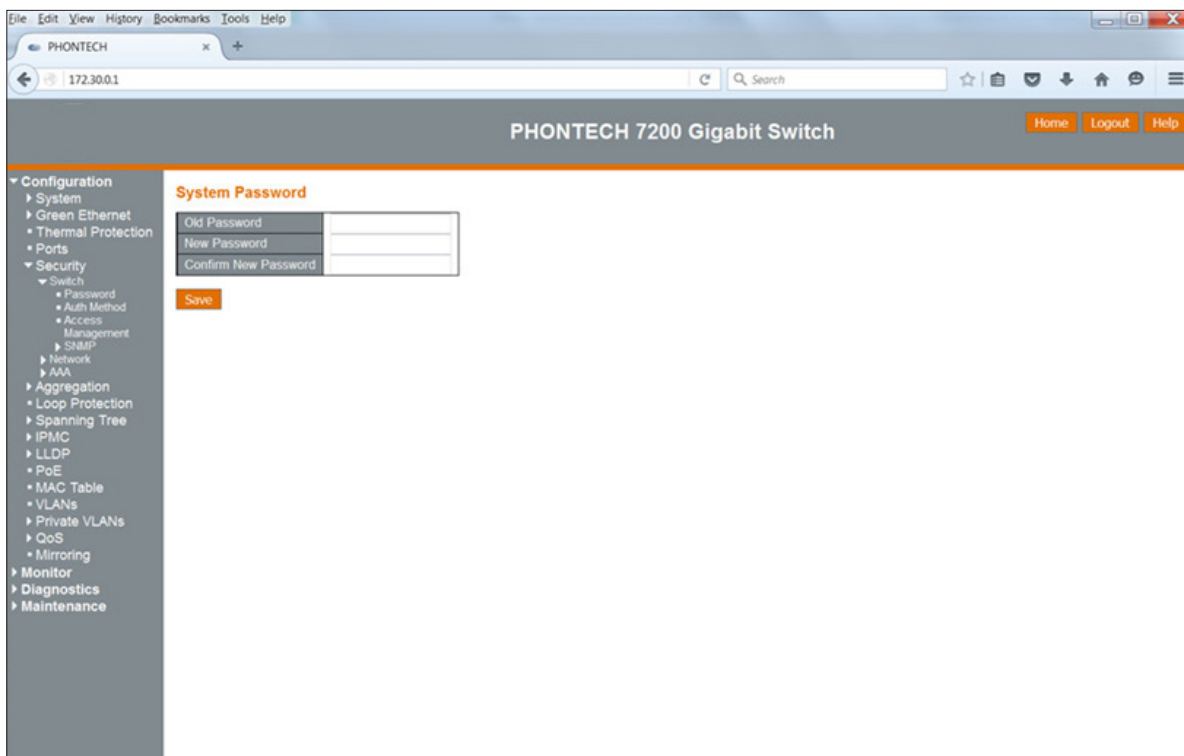


Figure 22: System password configuration page

9.2.5 HELP SYSTEM

The web configuration includes a help system. To use the help system, do the following:

1. Click the Help button.

The information contained in the selected web page is explained within the corresponding help page.

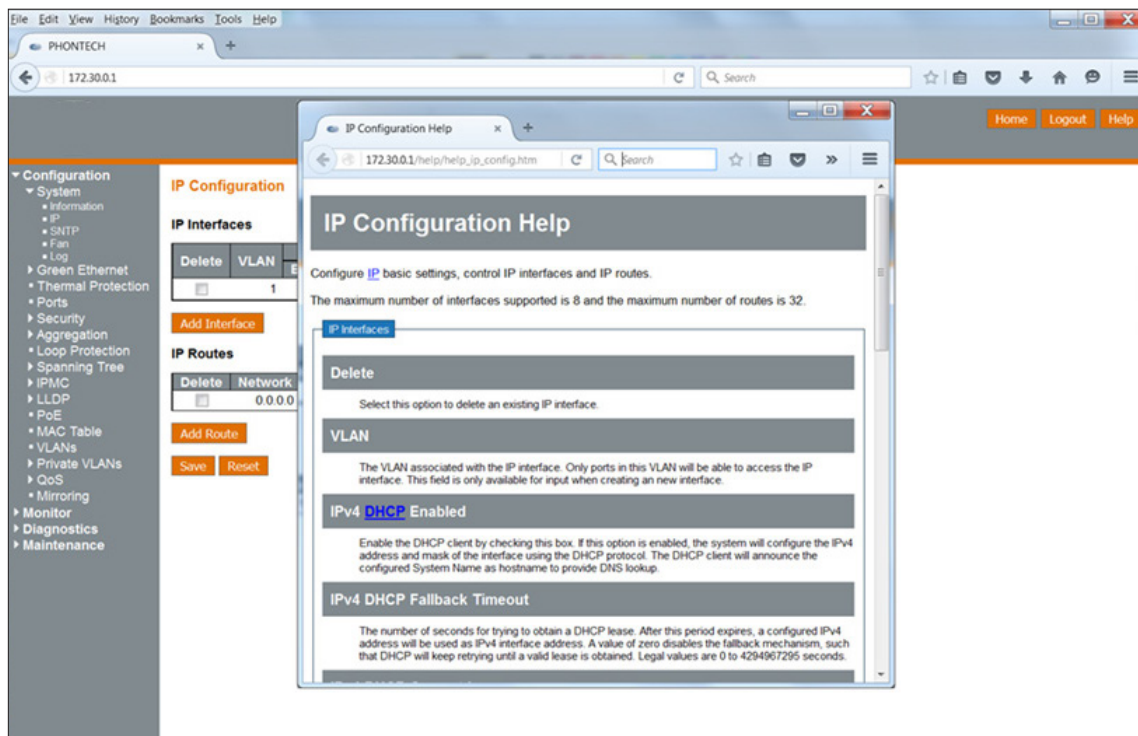


Figure 23: Example: IP configuration help page

9.2.6 SYSTEM INFORMATION

The system information page includes the following information:

- Power supply voltages
- Latest firmware version
- MAC address
- System up time data
- PHY and board temperature

To check the system information, do the following:

1. From the menu bar, select Monitor.
2. From the drop down list, select System.
3. From the drop down list, select Information.

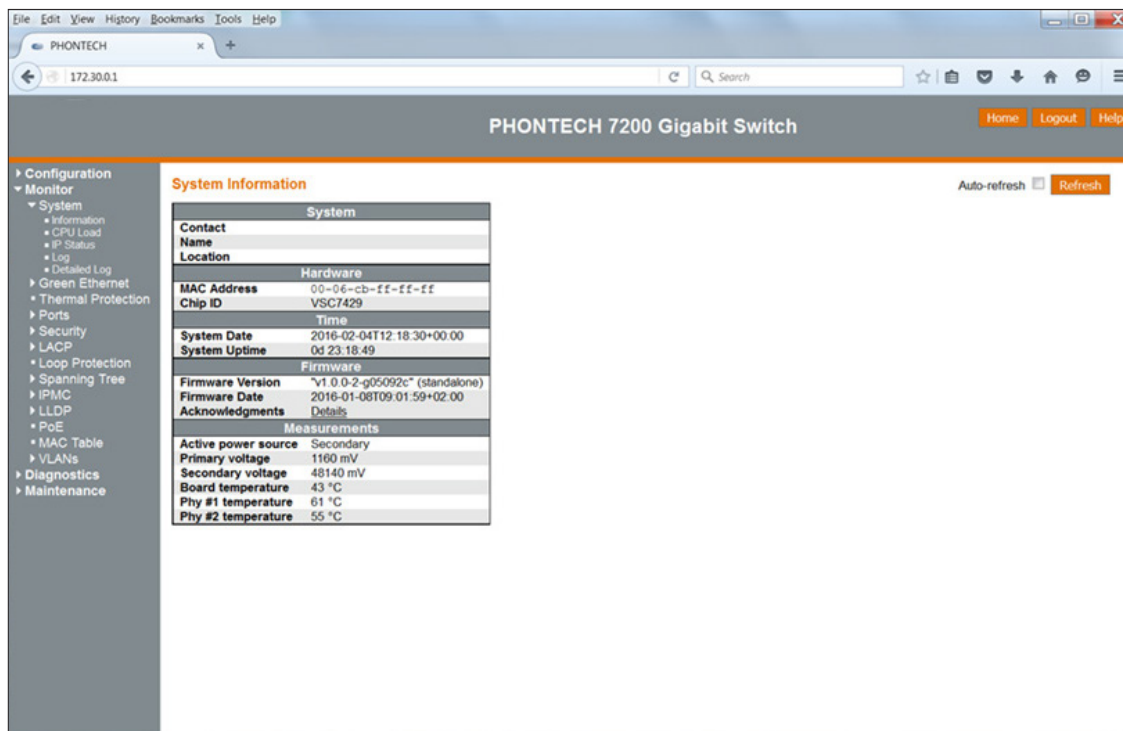


Figure 24: System information page

9.2.7 FIRMWARE UPDATE

To perform a firmware update, do the following:

1. From the menu bar, select Maintenance.
2. From the drop down list, select Firmware.
3. From the drop down list, select Upload.
4. Click Browse.
5. Search for the PHONTECH.dat firmware file.
6. Click the Upload button.

NOTE: Do not restart or power off the device at this time or the switch may fail to function after.

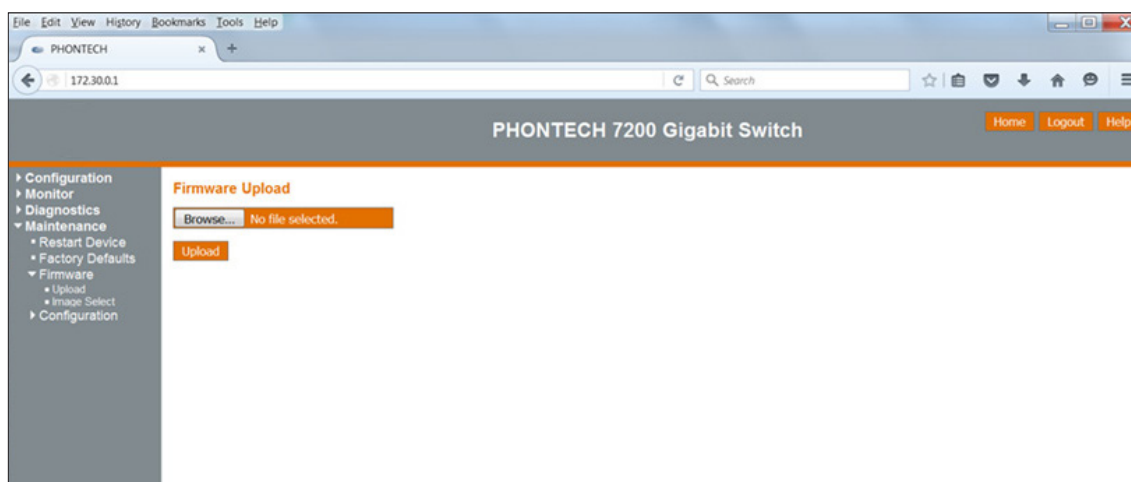


Figure 25: Firmware software upload page

NOTE:

- When the software upload is in process a notification will appear stating an update is in progress.
- It takes approximately 3 mins for the update. Once complete the Phontech P-7200, 24 PoE Ethernet GBit Switch restarts.

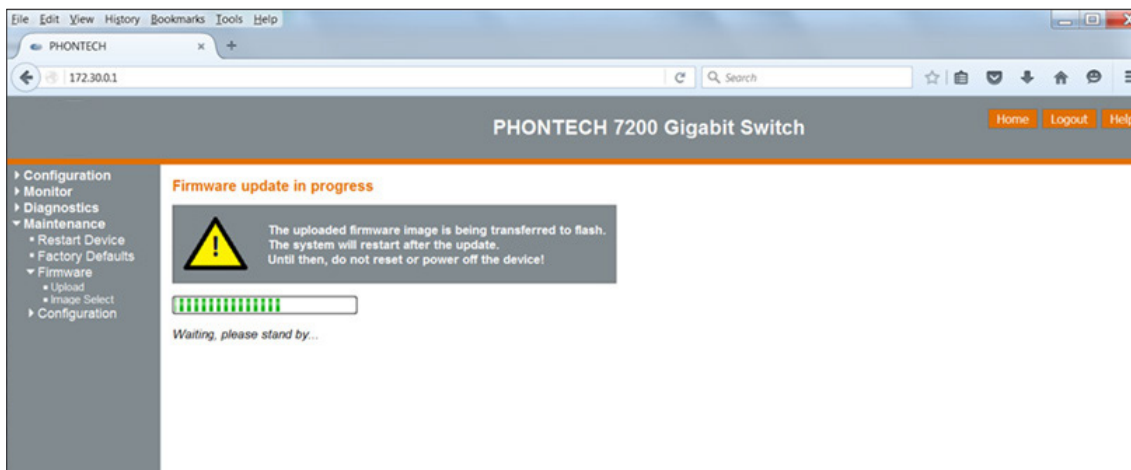


Figure 26: Firmware update status page

9.2.8 SYSTEM LOG

Phontech P-7200, 24 PoE Ethernet GBit Switch has a logging feature. Critical and non-critical events are logged in the RAM memory. In addition, critical system failure events are saved to flash memory for future investigation.

To check the system log history, do the following:

1. From the menu bar, select Monitor.
2. From the drop down list, select System.
3. From the drop down list, select Log.

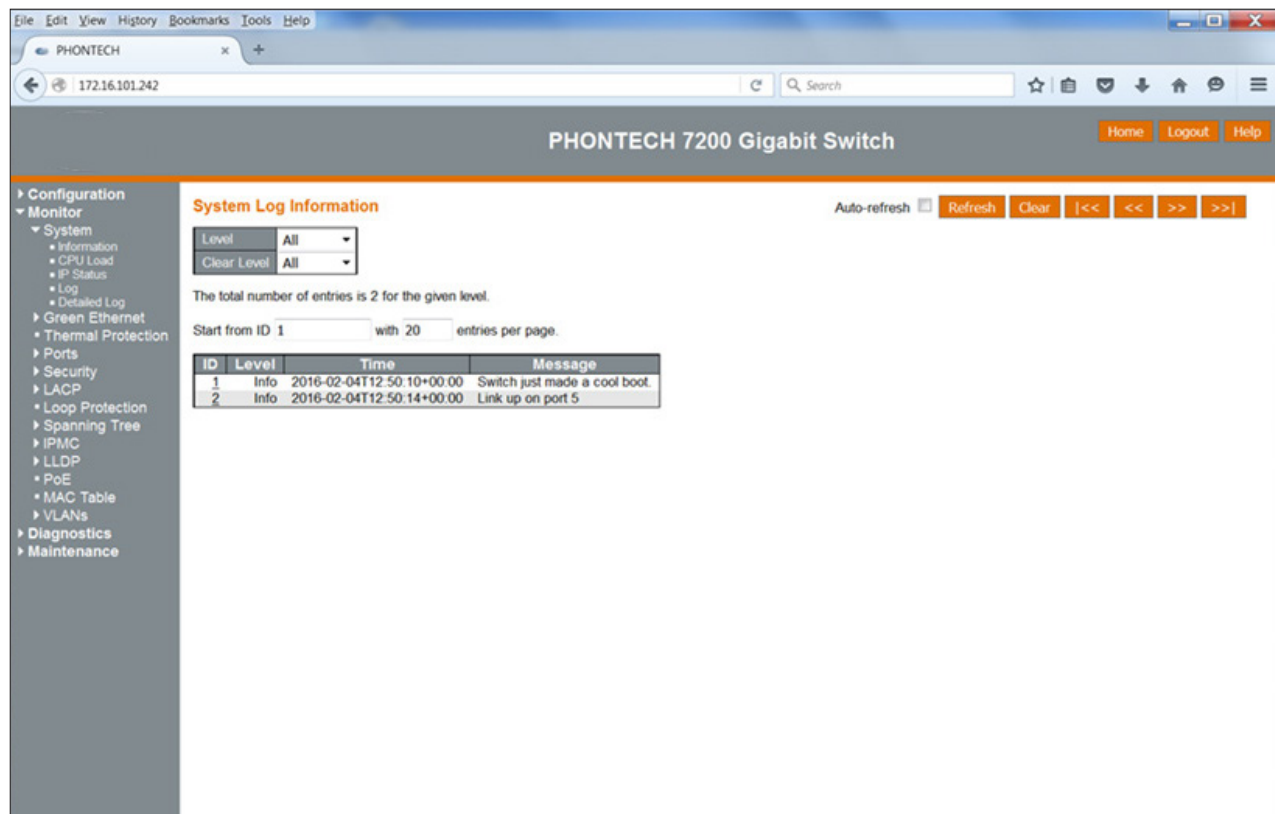


Figure 27: System log information

9.2.9 REVERTING TO DEFAULTS

You can revert the configuration of the Phontech P-7200, 24 PoE Ethernet GBit Switch to the original defaults.

NOTE: When you revert, only the IP configuration is retained.

To revert the configuration to the original defaults, do the following:

1. From the menu bar, select Maintenance.
2. From the drop down list, select Factory Defaults.
3. Click the Yes button.

NOTE: A restart is not necessary, the new configuration is available immediately.

10 OPERATION INSTRUCTIONS

10.1 FRONT PANEL

10.1.1 ETHERNET PORTS

Phontech P-7200, 24 PoE Ethernet GBit Switch has 10/100/1000BASE-T Ethernet ports with PoE capability.

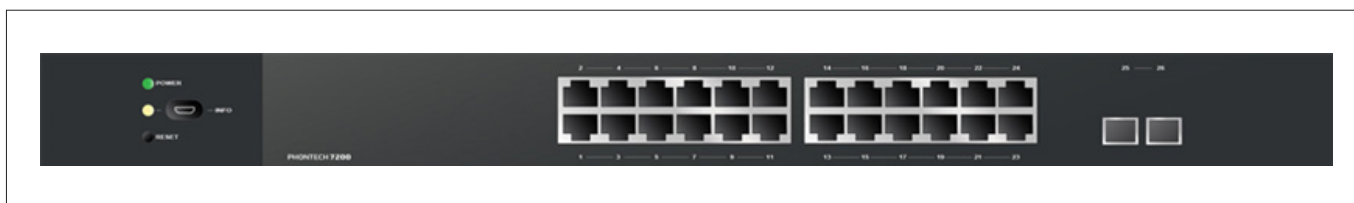


Figure 28: Phontech P-7200, 24 PoE Ethernet GBit Switch Front panel

10.1.2 SFP SLOTS

There are 2X1G SFP slots available. These slots are for SFP transceivers which are used to connect the fiber optic cable to the Phontech P-7200, 24 PoE Ethernet GBit Switch. The Phontech P-7200, 24 PoE Ethernet GBit Switch does not come with transceivers.

NOTE: You must use a SFP transceiver which complies with the Multi-source agreement (MSA).

10.1.3 SERVICE PORT

The front panel has a serial service port. Use a USB mini B plug to connect to service port.

10.1.4 LED INDICATORS

There are two dual color LED indicators located on the left side of the Phontech P-7200, 24 PoE Ethernet GBit Switch, each providing different information. In order (from top to bottom) they represent the following:

1. Power status LED
2. System status LED

The power status LED appears either green or red, depending on the power supply status of the unit. If the primary power supply is in use the LED appears green. If the primary power supply is down and the back up power is in use the LED appears red.

The system status LED indicates the following Phontech P-7200, 24 PoE Ethernet GBit Switch states:

- A constant green light indicates normal operation.
- A blinking green light indicates firmware flashing activity.
- A blinking red light indicates an error (e.g. hardware initialization, program flow abnormalities). In this case, check the system log.

10.1.5 RESET BUTTON

Use the reset button when rebooting the Phontech P-7200, 24 PoE Ethernet GBit Switch or swaping currently running firmware with a previous version.

To reset the Phontech P-7200, 24 PoE Ethernet GBit Switch, do the following:

1. Press and hold the reset button for approximately 1 second.
2. Release the reset button.

To perform a firmware swap procedure, do the following:

1. Press and hold the reset button for approximately 8 seconds.
2. Release the reset button.

NOTE: When the status LED lights up on the front panel, the firmware swap is complete.

10.1.6 RESTORING THE DEFAULT SETTINGS

To restore the factory default, do the following:

1. Make a physical loopback between port 1 and port 2 within the first minute from switch reboot.

NOTE:

- In the first minute after boot, the loopback packets will be transmitted at port 1.
- If a loopback packet is received at port 2 the switch will restore itself to the default.
- The previously set IP address will be reset to the default (172.30.0.1/16).

Maintenance

Potential maintenance of the Phontech P-7200, 24 PoE Ethernet GBit Switch may include switching fuses:

The fuses on the AC power supply are soldered to the printed circuit board.

IMPORTANT: Only an authorized person according to Zenitel, can perform this task.

Only an authorized person according to Zenitel, can perform this task.

Below is an overview of all test and maintenance activities.

DATE	M/T*	SIGNATURE	INSPECTION

*M=Maintenance, T=Test.

Service and Warranty

Zenitel warrants that the product sold by Zenitel substantially confirm with said products written specifications for a period of up to 24 (twenty-four) months after invoice date.

Notice of claims shall be made to Zenitel within 30 (thirty) calendar days after receipt of the product. The claim must be registered either online at www.zenitel.com/customer-service/claims or on RMA form provided by Zenitel through claims@zenitel.com.

- (a) Delivered batteries are generally not covered by Zenitel warranty terms.
- (b) Buyer also has an option to extend the 24 (twenty-four) (24) months warranty time at a separate charge. The details for this are found in the valid pricelist, and has to be settled before delivery of the products.
- (c) The product must have been properly stored, installed and used to claim under the warranty.
- (d) Within the warranty period, the Buyer shall give prompt written notice, if any part of the product is proven defective in material or workmanship, online either at www.zenitel.com/customer-service/claims or on RMA form provided by Zenitel through claims@zenitel.com.
- (e) Zenitel shall not be liable to Buyer or third party claims relevant to accidental or improper use, wrong installation performed by uncertified technicians, from damage to the product, or from other circumstances beyond Zenitel's control.
- (f) The product shall be returned to Zenitel, subject to prior written consent from Zenitel, in the form of a RMA reference number (Return Merchandise Authorization). The product shall be returned immediately, and no later than 60 days after RMA reference number has been received. Returned products in lack of such reference, will not be accepted by Zenitel and returned to Buyer at Buyer's cost.
- (g) The cost of the return shipment is to be covered by the Buyer. Zenitel will cover the cost of shipment for replacement parts.
- (h) Zenitel decides whether a defective part shall be replaced, returned to factory for repair or being repaired onboard the vessel or on site.
- (i) If repair/change of parts is to be done onboard the vessel or on site, Zenitel shall approve by certification the company/technician doing the labor on their behalf.
After the repair is done onboard the vessel or on site, Zenitel will, based on the repair report, decide if the mentioned repair is a warranty matter or not. If it is a warranty matter, Zenitel will cover labor time up to 4 hours, and spare parts to correct the fault. Service technician's preparation, traveling time and traveling expenses, if any, are for the account of the Buyer.
- (j) If Zenitel has to deliver new parts to solve a warranty matter before the claimed product is received for inspection and acceptance, Zenitel will invoice the new part with standard order terms at shipment, and then issue a credit note when the defective part has been received by Zenitel and approved as warranty by quality department.
- (k) Repair or replacement of parts in a configuration done by Zenitel during the warranty period, has no effect on the expiration of the warranty for a complete project delivery, and does not give rise to a renewal or extension of the warranty period for the configuration.

Utilization

This equipment is not to be disposed in normal waste, but be handled in accordance with applicable waste disposal regulations in the country where the equipment is used

Spare Parts

Keep the original packaging. If the Phontech P-7200, 24 PoE Ethernet GBit Switch needs to be shipped for servicing, it is required to be shipped within the same packaging as when the product was first received.

PART NUMBER	PART NAME
4000019474	Phontech P-7200, 24 PoE Ethernet GBit Switch AC/DC power supply
4000019526	Phontech P-7200, 24 PoE Ethernet GBit Switch Fan assembly
4000019565	Phontech P-7200, 24 PoE Ethernet GBit Switch DC power cable
4000088092	Phontech P-7200, 24 PoE Ethernet GBit Switch DC/DC power supply

IMPORTANT:

- Ensure that all spare parts being fitted to the Phontech P-7200, 24 PoE Ethernet GBit Switch are original spare parts manufactured or approved by Zenitel.
- Any use of counterfeit spare parts will deviate from the product type approval certificates.

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