WI-PMS310GF-Alien-I
8GE + 2 SFP
Layer 2 Managed PoE Industrial Switch

Quick Start Guide
V2101

Table of Contents

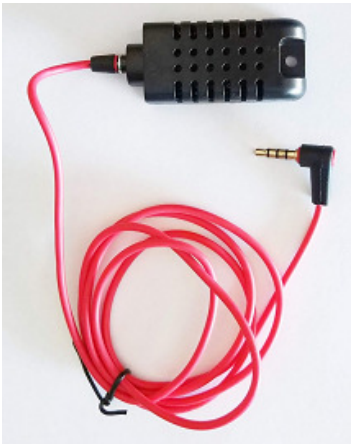
1. Introduction

The WI-PMS310GF-Alien-I is a Managed, Layer 2 (L2), POE (24 & 48V) IP Switch, with Gigabit Ethernet (GbE), Small Form-factor Pluggable (SFP), and serial Console interfaces.

This document supplements the `Wi-TeK Managed Industrial PoE Switch User Manual`, available for download from:
`http://www.wireless-tek.com/Uploads/download/1583371174.pdf`

2. Package Contents

WI-PMS310GF-Alien-I



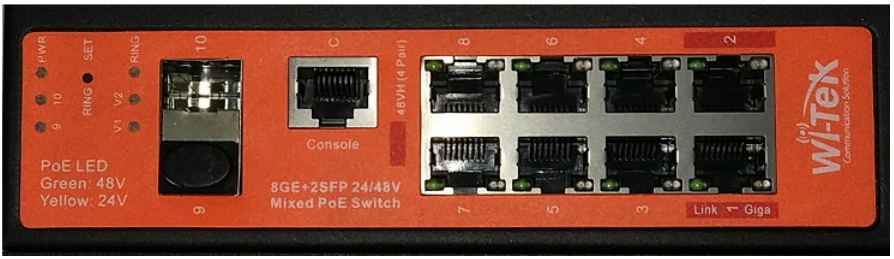
Temp/Humidity Sensor

3. System Requirements

Web Browser: e.g. Mozilla Firefox, Google Chrome, Safari, Microsoft Edge, or Microsoft Internet Explorer.

Power supply. (Not included)

4. LEDs



4.1 System LEDs

LED	State	Status
PWR	Blinking (1 second)	Normal Operation
	Flashing (Fast)	Initializing
Ring	On	Fast Ring Status (EAPS: Ethernet Automatic Protection Switching)
V1	On	DC (37 to 57 V) Power applied to V1 input
V2	On	DC (37 to 57 V) power applied to V2 input, or DC (12 to 57 V) power applied to

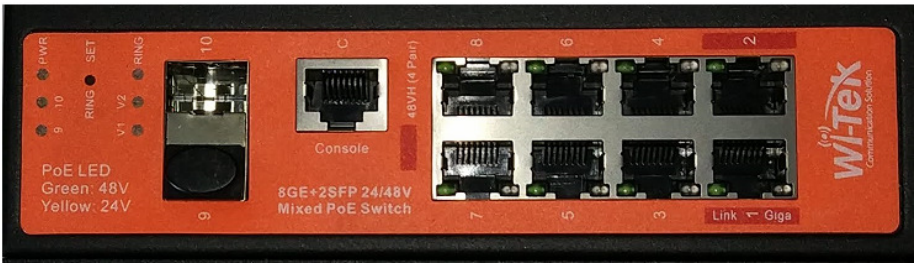
4.2 RJ45 LEDs

LED	State	Status
'Giga'	Off	No network link
	Green	Link Established Flashing Indicates Activity
'Link'	Green	48V PoE applied
	Yellow	24V PoE applied

4.3 SFP LEDs

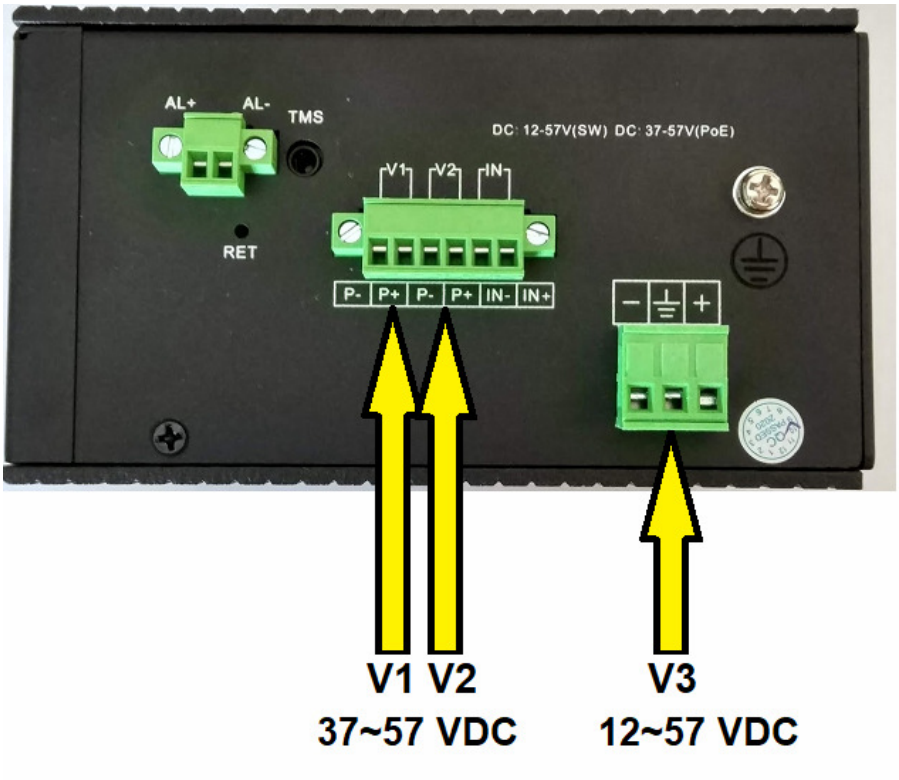
LED	State	Status
9 10	Off	No link
	Green	Link established at 1000 Mbps (1 Gbps) Flashing Indicates Activity

5. Front Panel



Port	Description
Note	Active PoE means that PoE voltage is applied only if a device is connected.
RJ45 1-2	LAN: 100/1000 bps Ethernet connection POE: Out. 4-Pair, Pins 1,2,4,5(+) 3,6,7,8 (-) Software selectable: • Off • 48 V Active 802.3at+ 30 W max • 48 V Active 803.3bt 60 W max • Auto Active, Auto selection Off/48V PoE
RJ45 3-8	LAN: 100/1000 bps Ethernet connection POE: Out. 2-Pair, Pins 4,5(+) 7,8 (-) Software selectable: • Off • 24 V Active • 48 V Active 802.3af 15 W max • 48 V Active 803.3at 30 W max • Auto Active, Auto selection Off/24/48V PoE
SFP 9-10	Hot-swappable Small Form-factor Pluggable (SFP) ports supporting 1 Gbps connections.
Console	This port is compatible with Cisco part number 72-3383-01 (Console Cable). The serial settings are: Baud rate: 38400 Data bits: 8 Stop bits: 1 Parity: None Flow control: None

6. Top Panel



6.1 DC Inputs

LED	Input	Comment
V1 and V2	Nominal 48 V DC (37 ~ 57 VDC) 8A max	One or both can be active, allowing redundant power supplies.
V3	12 to 57 VDC 10A max.	An alternative to V2. Wide voltage range suitable for unregulated solar panel input.

6.2 Alarm Connections

Alarm state is set based on both

- the IN+/IN- physical connection, and
- a number of software selectable internal triggers. See the Industrial Switch Monitoring page.

Label	Connection
IN+/IN-	Monitoring of this input has these software selectable options: • Close: No monitoring or action • Low Level: Alarm is triggered if voltage below 5V, or IN+/IN- are shorted together. • High Level: Alarm is triggered if voltage above 5V (max. 57V)
AL+/AL-	This is a relay connection. Options are: • Close: Always Closed • Normally Closed: Open if Alarmed • Normally Open: Closed if Alarmed • Impulse: Repeated: Closed 1 sec, Open 1 sec

6.3 Other

Label	Connection
TMS	Temperature & Humidity sensor. Use the supplied sensor. Use is optional, but can be used as Alarm inputs.
RET	To reset the Switch to factory defaults: The Switch should be running after bootup is complete and the PWR LED blinking. Press and hold the **Reset** button until the PWR LED starts flashing rapidly. Release the **Reset** button.

7. Mounting Options

Use the built-in DIN rail, or Wall-mount options.

DIN Mount WALL Mount

8. Configuration

This section covers some tasks that are not fully covered in the User Manual (see section Introduction, page13).

8.1 Accessing the Configuration Interface

There are two configuration options:

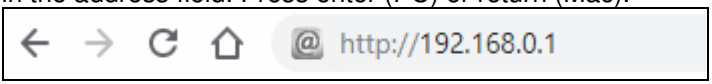
1. Graphical User Interface (GUI), using an Ethernet connection.
2. Command Line Interface (CLI), using a console cable.

8.1.1. Graphical User Interface

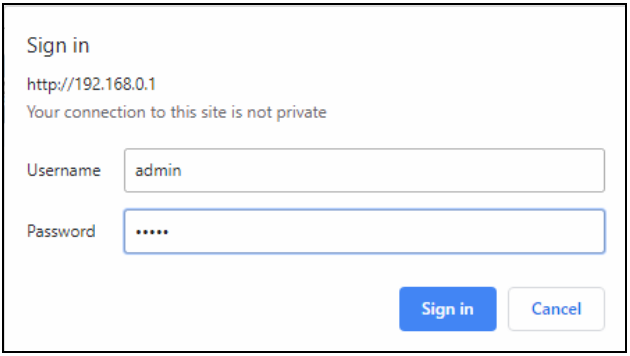
For full details, download this document:
http://www.wireless-tek.com/Uploads/download/1583371174.pdf

When in Factory Reset state, the Switch is set to use the default IP address of **192.168.0.1**.

1. Make sure that your host system is connected via Ethernet to the Switch.
2. Configure the Ethernet adapter on your host system with a static IP address in the 192.168.0.x subnet.
   e.g. 192.168.0.10
3. Launch your web browser and type **`http://192.168.0.1`** in the address field. Press enter (PC) or return (Mac).



4. Enter the login credentials.
   The default credentials are:
   Username: admin
   Password: admin



8.1.2. Command Line Interface

For full details, download these documents:

- https://ubwh.com.au/documents/WI-TEK_CLI.pdf
- https://ubwh.com.au/documents/WI-TEK_CLI_POE.pdf
  (additional CLI commands for POE switches)

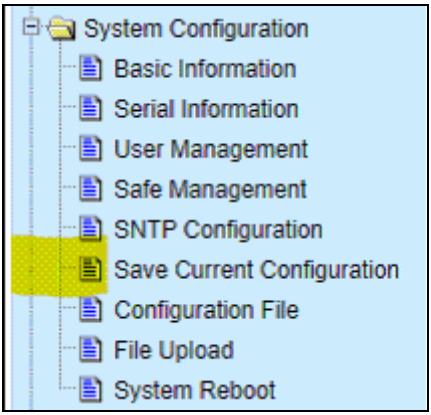
See an example session below, with many lines deleted for clarity.

```
Username:admin
Password:admin
Switch>?
Exec commands:
  show      Show running system information

Switch>show ?
  ip                Internet Protocol (IP)

Switch>show ip ?
  interface  IP interface status and configuration

Switch>show ip interface brief
Interface     IP-Address     Status         Protocol
ge1/1         unassigned     up             down
```

8.2 Saving Current Configuration

Configuration changes are not permanent, unless saved.

To preserve a configuration change to be used on the next boot-up, save the current configuration using the ***System Configuration*** / ***Save Current Configuration*** menu option.

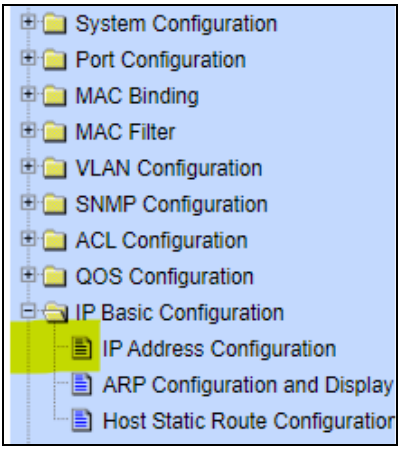


8.3 DHCP IP Address

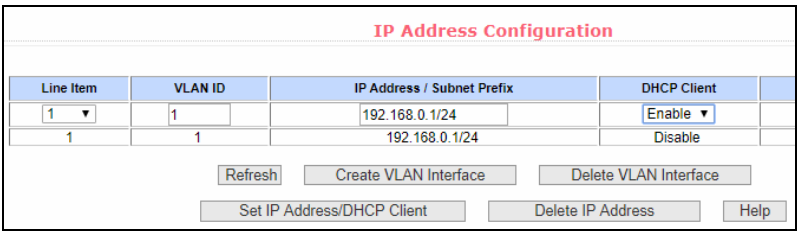
These instructions are to configure the device to obtain its network configuration (IP address, subnet mask, gateway address) from a DHCP server on the same LAN.

After this has been done, consult the DHCP server's list of leases to learn the IP address of the device.

1. Select the ***IP Basic Configuration / IP Address Configuration*** menu selection.



2. Set Line Item to **1**
   Set DHCP Client to **Enable**
   Click **Set IP Address/DHCP Client**

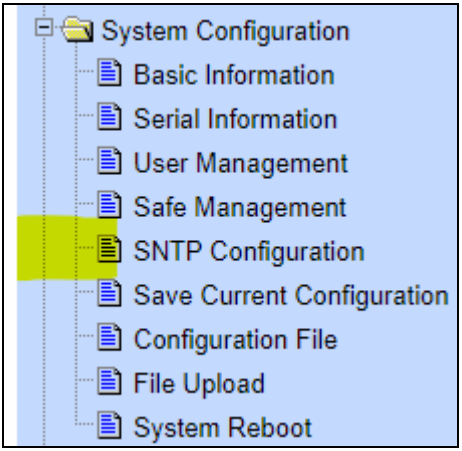


3. The Switch will now query the LAN DHCP server and move to a new IP address. Consult the DHCP server's list of leases to learn the new IP address of the Switch.

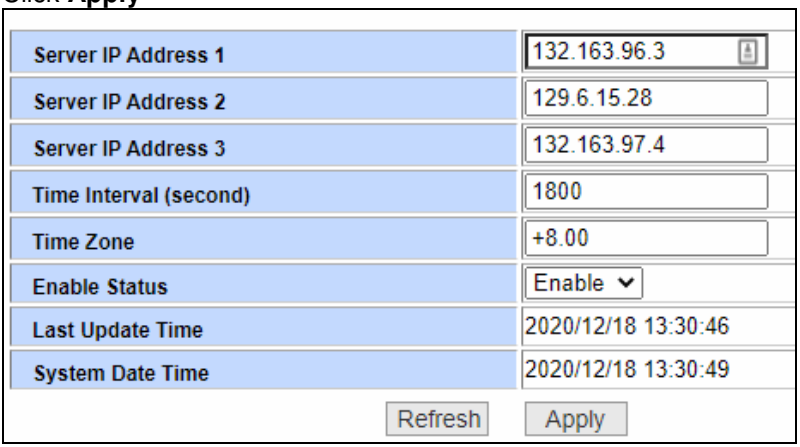
8.4 Network Time Client Setup

By default the Simple Network Time Protocol (SNTP) client is disabled. To enable:

1. Select the ***System Configuration*** / ***SNMP Configuration*** menu selection.



2. Set ***Enable Status*** to ***Enable***,
   Set the ***Time Zone***
   Enter one or more of the Server IP addresses shown below.
   Click **Apply**

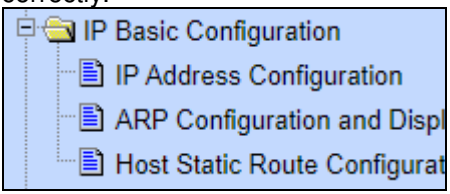


3. Select the ***System Configuration*** / ***Basic Information*** menu option

You should see the correct time.

System Date Time	2020/12/18 13:31:25

If the time is incorrect, that indicates the Switch is unable to connect to the Internet. Start by checking the IP Basic Configuration settings to check the IP address, subnet mask, and default gateway are set correctly.



8.5 AAA

Authentication, Authorization and Accounting (AAA) features in the switch can be used as follows:

- **TACACS+:** External authentication for switch **management logins**.
- **802.1x:** External authentication for **user network access**.

8.5.1. TACACS+

The default behaviour is that switch management interface logins are authenticated against the internal switch database, as configured in ***System Configuration / User Management.***

Alternatively, these logins can be authenticated against an external TACACS+ server.

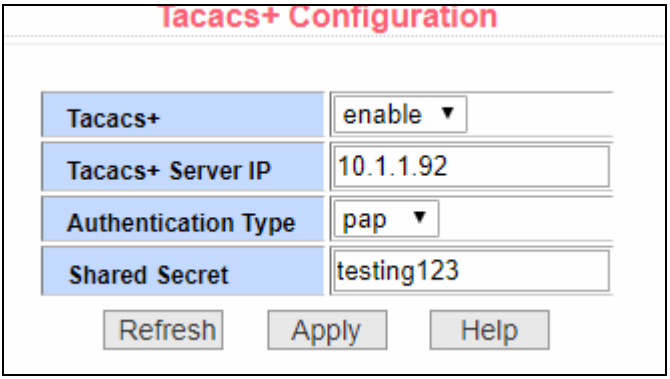
> **WARNING:**
> When you enable & apply TACACS+ authentication, management login to the switch will ONLY use TACACS+. Only save the configuration after confirming you can still login.

1. Setup a TACACS+ server accessible by the switch. Shown below is a simple TACACS+ configuration file that will authenticate switch management logins with Username/Password credentials of admin/admin.

```
# Created by Henry-Nicolas Tourneur(henry.nicolas@tourneur.be)
# See man(5) tac_plus.conf for more details

# Define where to log accounting data, this is the default.
accounting file = /var/log/tac_plus.acct

# This is the key that clients have to use to access Tacacs+
key = testing123

# We also can define local users and specify a file where data
is stored.
# That file may be filled using tac_pwd

group = admins {
```

```
   cmd = enable { permit .* }
   cmd = show   { permit .* }
   cmd = ping   { permit .* }
}

user = admin {
     member  = admins
     pap     = des tColoimj9QXZc
     chap    = cleartext admin
     enable  = des tColoimj9QXZc
}
```

2. Select the ***AAA Configuration*** / ***Tacacs+ Configuration*** menu option and setup similar to as below and click **Apply**.



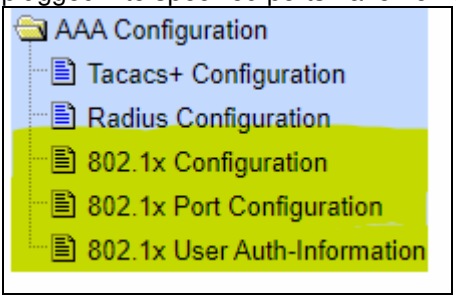
3. In a new browser window, go to the URL of your switch and confirm you can still login.

   If OK: Then select the ***System Configuration*** / ***Save Current Configuration*** menu option and click ***Save***.

   Otherwise: Resolve the TACACS+ problem.

8.5.2. 802.1x (EAP)

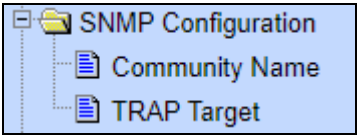
The default switch behaviour can be changed such that devices (e.g. PCs) plugged into specified ports have no network connectivity until authorized.



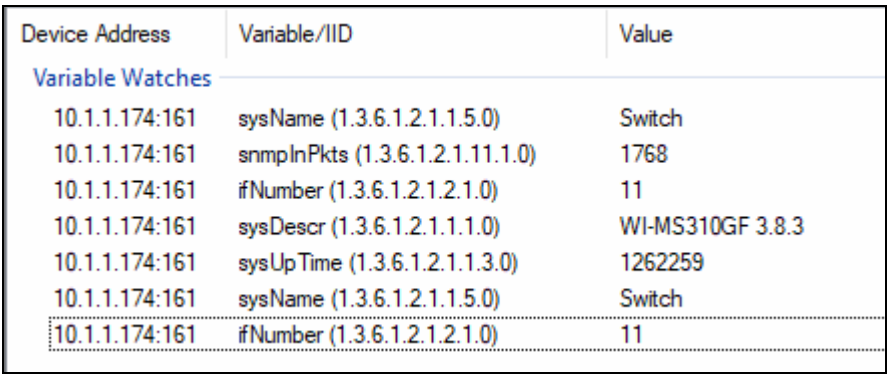
8.6 SNMP and MIBs

The Switch supports the Simple Network Management Protocol (SNMP). The Management Information Base (MIB) definition files are available from:
`https://ubwh.com.au/documents/WiTek-MIBs.zip`

In addition, the Switch can send alerts to a TRAP server.



Shown below are some example screen captures from a Windows program called ***PowerSNMP Free Manager*** available from
`https://www.dart.com/pages/powersnmp-free-manager`



Device Address	Variable/IID	Value
Variable Watches		
10.1.1.174:161	sysName (1.3.6.1.2.1.1.5.0)	Switch
10.1.1.174:161	snmpInPkts (1.3.6.1.2.1.11.1.0)	1768
10.1.1.174:161	ifNumber (1.3.6.1.2.1.2.1.0)	11
10.1.1.174:161	sysDescr (1.3.6.1.2.1.1.1.0)	WI-MS310GF 3.8.3
10.1.1.174:161	sysUpTime (1.3.6.1.2.1.1.3.0)	1262259
10.1.1.174:161	sysName (1.3.6.1.2.1.1.5.0)	Switch
10.1.1.174:161	ifNumber (1.3.6.1.2.1.2.1.0)	11

Figure 1 - Basic SNMP queries

ifTable

ifIndex	ifDescr	ifType	ifMtu	ifSpeed	ifPhysA...	ifAdmin...	ifOperSt...	ifLastCh...	ifInOctets	ifInUcas...
2	vlan1	136	1500	0		1	1	0	0	0
2001	ge1/1	117	1500	100000...		1	1	0	787727...	7744726
2002	ge1/2	117	1500	100000...		1	2	0	0	0
2003	ge1/3	117	1500	100000...		1	2	0	0	0
2004	ge1/4	117	1500	100000...		1	2	0	0	0
2005	ge1/5	62	1500	0		1	2	0	940965...	1256667
2006	ge1/6	117	1500	100000...		1	2	0	0	0
2007	ge1/7	117	1500	100000...		1	2	0	0	0
2008	ge1/8	117	1500	100000...		1	2	0	0	0
2009	ge1/9	117	1500	100000...		1	2	0	0	0
2010	ge1/10	62	1500	0		1	2	0	25827774	297

Figure 2 Interface Table Query

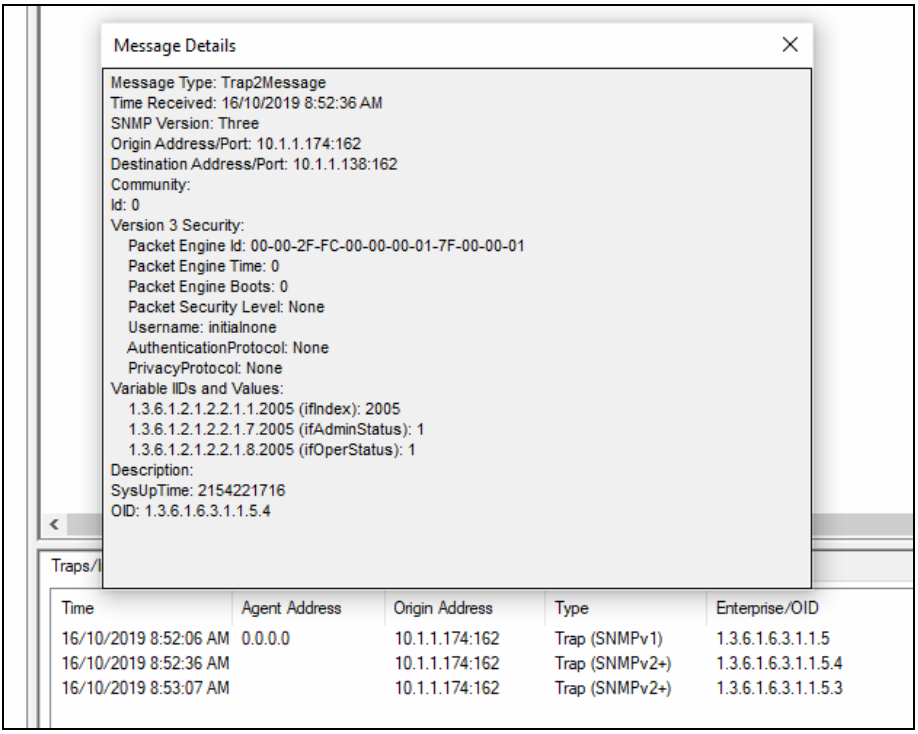


Figure 3 Example Received TRAP messages

8.7 Fast Ring Setup

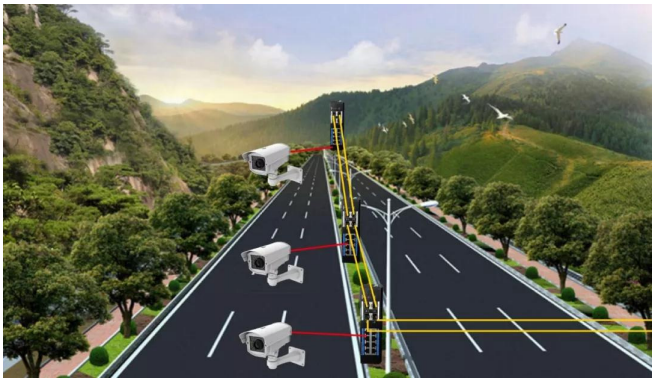


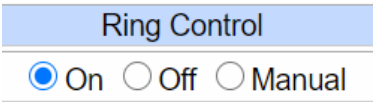
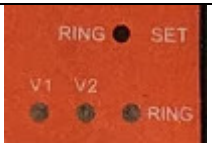
Figure 4 - Fast Ring Example

This product supports *Fast Ring* technology, for applications where these requirements apply:

- High availability (uptime) is critical
- Healing (ring recovery) time less than 50 millisec.
- Between 3 & 30 switches (inclusive)
- Easy setup

To use *Fast Ring*:

- Use Firmware version WI-PMS310GF-Alien-I 5.1.1 (or newer).
- Use SFP ports (only) to link switches.
- Fibre, Cat5e/Cat6, or both can be used between switches.
- Enable *Fast Ring* mode using either of these methods:

GUI	
Front Panel	 Press: 10 seconds → Ring Control = ON Press: 20 seconds → Ring Control = OFF

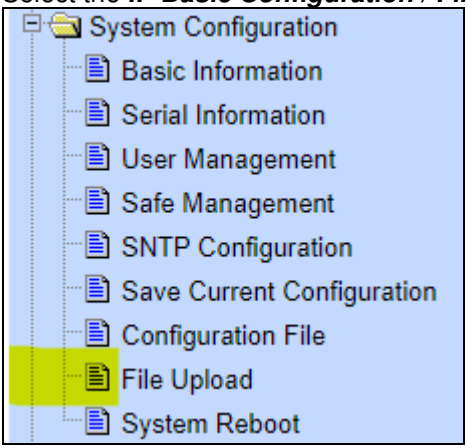
9. Firmware Update

Firmware updates are available from:
`http://www.wireless-tek.com/Support/download`

If there is no firmware there for your product, that means there have been no firmware updates.

9.1 Update using GUI

1. Select the ***IP Basic Configuration*** / ***File Upload*** menu selection.



2. Click **Choose file** and select the *xx.img* file downloaded in section 8.7.
3. Click **Upload**.
4. Wait until you see:
   File uploaded successfully, please reset switch.
5. Select the ***IP Basic Configuration*** / ***System Reboot*** menu selection
6. Click **Reboot**

9.2 Update using TFTP

See https://ubwh.com.au/documents/WI-TEK_CLI.pdf