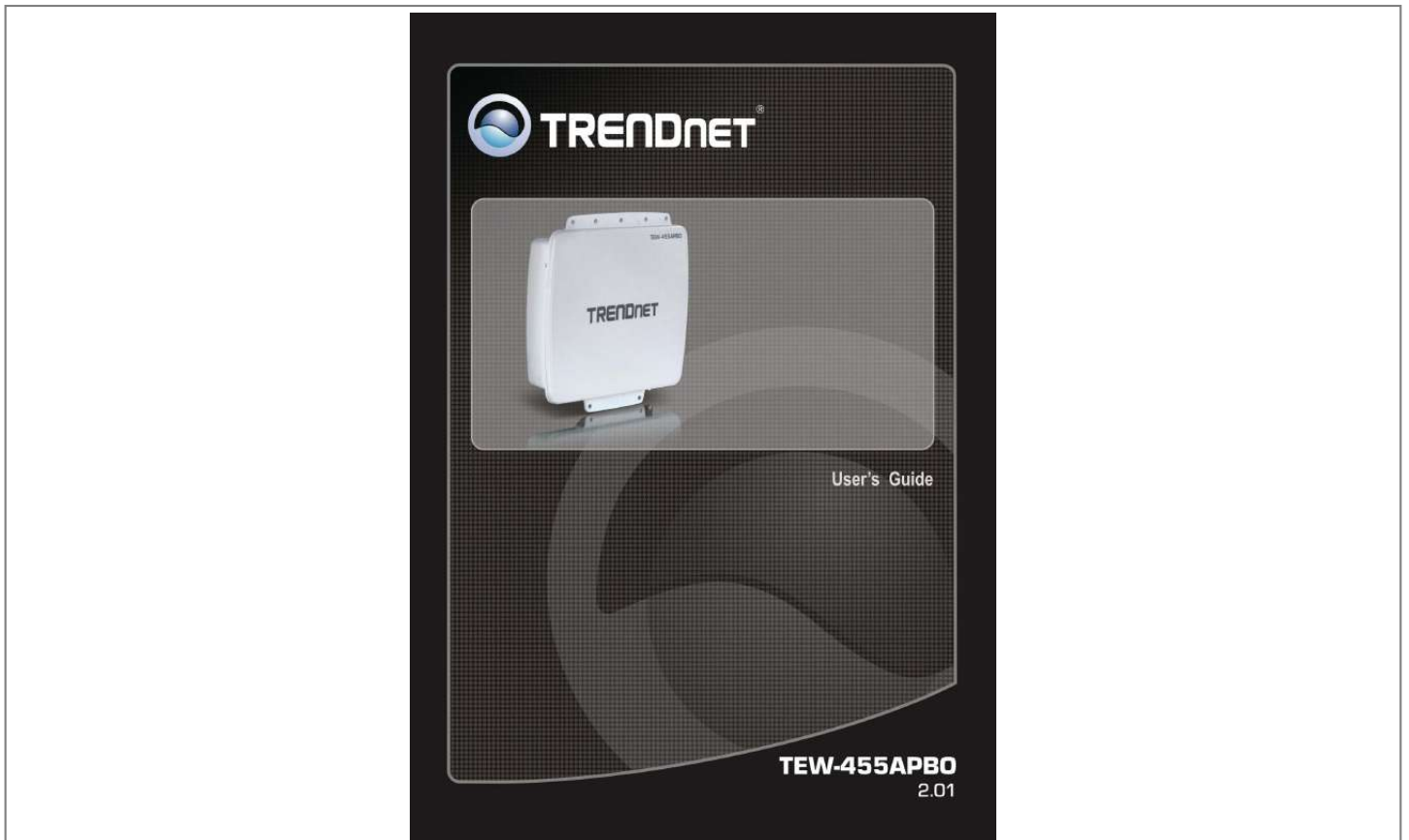




# Your PDF Guides

You can read the recommendations in the user guide, the technical guide or the installation guide for TRENDNET TEW-455APBO. You'll find the answers to all your questions on the TRENDNET TEW-455APBO in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

**User manual TRENDNET TEW-455APBO**  
**User guide TRENDNET TEW-455APBO**  
**Operating instructions TRENDNET TEW-455APBO**  
**Instructions for use TRENDNET TEW-455APBO**  
**Instruction manual TRENDNET TEW-455APBO**



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.....85 Appendix B. Network manager Privileges.

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applications are listed as follows with illustration: Wireless CPE for Multi Dwelling Unit/Multi Tenant Unit (MDU/MTU) complexes including apartments, dormitories, and office complexes. Outdoor Access Point for school campuses, enterprise campuses, or manufacture plants. Indoor infrastructure and provides the subscriber with an Ethernet connection for a local access. TEW455APBO supports three operational modes, the AP mode, the WDS mode and the CPE mode, respectively with builtin remote management features. 7 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 1.5 Specification Wireless Architecture Mode AP Mode Pure AP Mode · · It can be deployed as a tradition fixed wireless Access Point It allow wireless clients or Stations(STA) to access AP/WDS Mode · This enables the wireless interconnection of Access Point in an IEEE802.11 network .and accept wireless clients at the same time WDS Mode This enables the wireless interconnection of Access Point in an IEEE802.

11 network. It allows a wireless network to be expanded using multiple access point without the need for a wired backbone to link them. It can't allow wireless clients or Stations (STA) to associate. CPE Mode WiFi connection as WAN , in CPE mode , the device run as DHCP server to assign IP address to clients out of a private IP address pool behind a NAT Networking Support Static IP, Dynamic IP(DHCP Client) and PPPoE on WiFi WAN Connection Support PPTP/L2TP/IP Sec Pass Through PPPoE Reconnect Always On , On demand, Manual MAC Cloning DHCP Server 802.3 Bridging Masquerading (NAT) Proxy DNS Dynamic DNS NTP Client Virtual DMZ 8 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point Virtual Server (IP / Port Forwarding) Support MAC Filter (max 20 entries) Support IP Filter (max 20 entries) Bandwidth traffic Shaping Wireless Feature Transmission power control : 9 Levels (max 27dBm for FCC, 6dBm for CE) Channel selection : Manual or Auto No of associated clients per AP : 32 Setting for max no associated clients : Yes No. of ESSID (Virtual AP) : 8 No. of Max. WDS setting : 8 Preamble setting : Short/ Long Setting for 802.11b/g mix, 802.11b only or 802.11g only Setting for transmission speed Dynamic Wireless retransmission IEEE802.11f IAPP (Inter Access Point Protocol), hand over users to another AP IEEE 802.11i Preauth (PMKSA Cache ) IEEE 802.11h Transmission Power Control IEEE 802.11d Multi country roaming Authentication/ Encryption (Wireless Security) Layer 2 User Isolation Blocks client to client discovery within a specified VLAN WEP 64/ 128/ 152 Bits EAPTLS + Dynamic WEP EAPTTLS + Dynamic WEP PEAP/ MSPEAP + Dynamic WEP WPA (PSK +TKIP) WPA (802.1x certification + TKIP) 9 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 802.11i WPA2 (PSK + CCMP/ AES) 802.11i WPA2 (802.1x certification + CCMP/ AES) Setting for TKIP/ CCMP/ AES key's refreshing period Hidden ESSID support Setting for " Deny ANY " connection request MAC Address filtering (MAC ACL) No. of registered RADIUS servers : 2 VLAN assignment on BSSID Support VLAN tag over WDS Quality of Service DiffServ/ TOS IEEE802.

1p/ COS IEEE 802.1Q Tag VLAN priority control IEEE802.11e WMM System Administration Intuitive Web Management Interface Password Protected Access Firmware upgrade via Web Reset to Factory Defaults Profiles Configuration Backup and Restore Remote Link Test Full Statistics and Status Reporting SNMP Traps to a list of IP Address NTP Time Synchronization Even Log Support SNMP v1,v2c, v3 Support MIB II CLI access via Telnet and SSH 10 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point Administrative Access : HTTP/ HTTPS UPnP (Universal Plug and Play) 1.6 Wireless Performance Considerations There are a number of factors that can impact the range of wireless devices. 1. Adjust your wireless devices so that the signal is traveling in a straight path, rather than at an angle. The more material the signal has to pass through the more signal you will lose. 2. Keep the number of obstructions to a minimum. Each obstruction can reduce the range of a wireless device.



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Position the wireless devices in a manner that will minimize the amount of obstructions between them. 3. Building materials can have a large impact on your wireless signal. In an indoor environment, try to position the wireless devices so that the signal passes through less dense material such as dry wall. Dense materials like metal, solid wood, glass or even furniture may block or degrade the signal. 4. Antenna orientation can also have a large impact on your wireless signal. Use the wireless adapter's site survey tool to determine the best antenna orientation for your wireless devices. 5. Interference from devices that produce RF (radio frequency) noise can also impact your signal.

Position your wireless devices away from anything that generates RF noise, such as microwaves, radios and baby monitors. 6. Any device operating on the 2.4GHz frequency will cause interference. Devices such as 2.

4GHz cordless phones or other wireless remotes operating on the 2.4GHz frequency can potentially drop the wireless signal. Although the phone may not be in use, the base can still transmit wireless signal. Move the phone's base station as far away as possible from your wireless devices. If you are still experiencing low or no signal consider repositioning the wireless devices or installing additional access points.

The use of higher gain antennas may also provide the necessary coverage depending on the environment. 11 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point Chapter 2. Basic Installation 2.1 Hardware Installation 2.1.1 Package Contents TEW455APBO x 1 x 1 x 1 x 1 x 1 MultiLanguage Quick Installation Guide CDROM (User's Guide) Power Injector & Cord Mounting Kit It is highly recommended to use all the supplies in the package instead of substituting any components by other suppliers to guarantee best performance. 2.1.2 Panel Function Descriptions TEW455APBO 1. Reboot: Press and hold the Reset button for 2 seconds and release to restart system.

The LED except Power indicator will be off before restarting. Press and hold the Reset button for more than 10 seconds to reset the system to default configurations. 2. Power: 3. WLAN: 4. Ethernet 5. PoE: 6. EXT: Green LED ON indicates power on, and OFF indicates power off. Yellow LED FLASH indicates Wireless Transmit. Red LED ON indicates connection, OFF indicates no connection For connecting to PSE For connection of optional NType antenna (example: TRENDnet TEWAO19D) 12 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 2.

2 Web Management Interface Instructions TEW455APBO supports webbased configuration. Upon the completion of hardware installation, TEW 455APBO can be configured through a PC/NB by using its web browser such as Internet Explorer version 6.0 or higher. Default IP Address : 192.168.

10.100 Default Subnet Mask : 255.255.255.0 Default User Name and Password: The default user name and password for both root manager account and admin manager account are as follows: Mode Management Account User Name Password Step IP Segment Setup for Administrator's PC/NB Set the IP segment of the administrator's computer to be in the same range as TEW455APBO for accessing the system.

Do not duplicate the IP Address used here with IP Address of TEW455APBO or any other device within the network Example of Segment: The valid range is 1 ~ 254 and 192.168.10.100 shall be avoided because it is already assigned to TEW 455APBO and 192.168.10.10 is used in the example below. IP Address : 192.168.10.

10 IP Netmask : 255.255.255.0 CPE Mode AP Mode WDS Mode Admin Account Status Account Admin Account Admin Account root root admin admin root root root root 13 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point Launch Web Browser Launch a web browser to access the web management interface of system by entering the default IP Address, http://192.168.10.100, in the URL field, and then press Enter. System Login The network manager Login Page then appears. Enter "root" as User name and "root" as Password, and then click OK to login to the system; the root manager account is used as an example here. 14 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point Login Success System Overview page will appear after successful login.

15 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point Chapter 3. AP Mode Configuration When AP mode is chosen, the system can be configured as an Access Point. This section provides detailed explanation for users to configure in the AP mode with help of illustrations. In the AP mode, functions listed in the table below are also available from the Webbased GUI interface. Option System Operating Mode LAN Wireless General Settings Advanced Settings Virtual AP WDS Setup Administrator Management Profiles Settings Firmware Upgrade Network Utility Status System Overview Clients WDS Status Extra Info Event Log Functions Time Server SNMP UPNP Reboot Table 31: AP Mode Functions 3.

1 External Network Connection 3.1.1 Network Requirement Normally, TEW455APBO connects to a wired LAN and provides a wireless connection point to associate with wireless client as shown in Figure 31. Then, Wireless clients could access to LAN or Internet by associating themselves with TEW455APBO set in AP mode. Figure 31 Access Point on a Wired LAN Configuration 16 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 3.

1.2 Configure LAN IP Here are the instructions to setup the local IP Address and Netmask. Please click on System LAN and follow the below setting. Mode: Check either "Static IP" or "Dynamic IP" button as desired to set up the system IP of LAN port. Static IP: The administrator can manually setup the LAN IP address when static IP is preferred. IP Address: The IP address of the LAN port; default IP address is 192.168.10.100 IP Netmask: The Subnet mask of the LAN port; default Netmask is 255.255.

255.0 IP Gateway: The default gateway of the LAN port; default Gateway is 192.168.10.1 Dynamic IP: This configuration type is applicable when the TEW455APBO is connected to a network with presence of a DHCP server. All related IP information will be provided by the DHCP server automatically. Hostname : The Hostname of the LAN port 17 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point DNS: Check either "No Default DNS Server" or "Specify DNS Server IP" button as desired to set up the system DNS. Primary: The IP address of the primary DNS server. Secondary: The IP address of the secondary DNS server.



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*1d Spanning Tree* The spanning tree network protocol provides a loop free topology for a bridged LAN between LAN interface and 8 WDS interfaces from WDS0 to WDS7. The Spanning Tree Protocol, which is also referred to as STP, is defined in the IEEE Standard 802.1d. Click Save button to save your changes. Click Reboot button to activate your changes.

*18 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 3.2 Wireless LAN Network Creation* The network manager can configure related wireless settings, General Settings, Advanced Settings, Virtual AP (VAP) Setting, Security Settings, and Access Control Settings. *3.2.1 Wireless General Setup* The administrator can change the data transmission, channel and output power settings for the system.

Please click on Wireless > General Setup and follow the below setting. *MAC address:* The MAC address of the Wireless interface is displayed here. *Band Mode:* Select an appropriate wireless band; bands available are 801.11b, 802.11g and 802.11b+802.11g. *Transmit Rate Control:* Select the desired rate from the dropdown list; the options are auto or ranging from 1 to 54Mbps for the 802.11g and 802.11b/g modes, or 1 to 11Mbps for the 802.

*11b mode. Domain:* Select the desired domain from the dropdown list; the options are FCC and ETSI. *Channel:* The channel range will be changed by selecting different domain. The channels range from 1 to 11 for the FCC domain, or 1 to 13 for the ETSI domain. *19 User Manual TEW455APBO High Power*

*Wireless Outdoor PoE Access Point Tx Power:* You can adjust the output power of the system to get the appropriate coverage for your wireless network. Select the LEVEL 1 to LEVEL 9 that you need for your environment. If you are not sure from which setting to choose, then use the default LEVEL 9 setting. *Output Power Chart* Level 1 Level 2 Level 3 Level 4 Level 5 Level 6 Level 7 Level 8 Level 9 FCC Domain 3dBm 6dBm 9dBm 12dBm 15dBm 18dBm 21dBm 24dBm 27dBm ETSI Domain 1dBm 2dBm 3dBm 4dBm 5dBm 6dBm 6dBm 6dBm 6dBm \*The power value might be  $\pm 1$ dBm *Super G:* Click Enable button to activate super G and Disable to deactivate super G. Click Save button to save your changes. Click Reboot button to activate your changes.

The items in this page are for AP's RF general settings and will be applied to all VAPs. *20 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 3.2.2 Wireless Advanced Setup* To achieve optimal wireless performance, it is necessary to tweak advance setting per requirements properly, not necessary higher the better or lower. The administrator can change the RTS threshold and fragmentation threshold settings for the system.

Please click on Wireless > Advanced Setup and follow the below setting. *Slot Time :* Slot time is in the range of 1~1489 and set in unit of microsecond. The default value is 20 microsecond. Slot time is the amount of time a device waits after a collision before retransmitting a packet. Reducing the slot time decreases the overall backoff, which increases throughput.

*Backoff,* which is a multiple of the slot time, is the random length of time a station waits before sending a packet on the LAN. For a sender and receiver own right of the channel the shorter slot time help manage shorter wait time to retransmit from collision because of hidden wireless clients or other causes. When collision sources can be removed sooner and other senders attempting to send are listening the channel(CSMA/CA) the owner of the channel should continue ownership and finish their transmission and release the channel. Then, following ownership of the channel will be sooner for the new pair due to shorter slot time. However, when long duration of existing collision sources and shorter slot time exist the owners might experience subsequent collisions. When adjustment to longer slot time can't improve performance then RTS/CTS could supplement and help improve performance. *21 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point ACK Timeout:* ACK timeout is in the range of 1~372 and set in unit of microsecond. The default value is 48 microsecond. All data transmission in 802.11b/g request an "Acknowledgement" (ACK) send by receiving radio.

The transmitter will resend the original packet if correspondent ACK failed to arrive within specific time interval, also refer to as "ACK Timeout". ACK Timeout is adjustable due to the fact that distance between two radio links may vary in different deployment. ACK Timeout makes significant influence in performance of long distance radio link. If ACK Timeout is set too short, transmitter will start to "Resend" packet before ACK is received, and throughputs become low due to excessively high retransmission. ACK Timeout is best determined by distance between the radios, data rate of average environment. The Timeout value is calculated based on roundtrip time of packet with a little tolerance. So, if experiencing retransmissions or poor performance the ACK Timeout could be made longer to accommodate. *RTS/CTS Adjustment of RTS Threshold* can be done to turn on RTS. CTS Timeout will take effect only when RTS is turned on. Unlike wired Ethernet, radio transmission may begin with a RTS (Request to Send) frame, and receiver responds with a CTS (Clear to Send) frame. The RTS/CTS mechanism is called Channel Cleaning, all stations that received CTS will back off for certain period of time, multiple of the slot time.

Each CTS packet has a NAV (Network Allocation Vector) number n, the channel is reserved for sender and receiver for additional nmillisecond. The NAV guarantees the channel is free of interference in next n millisecond. The last packet of ACK will set NAV to zero, indicated that connection is done and free the channel to others. *CTS Timeout:* CTS Timeout is in the range of 1~744 and set in unit of microsecond. The default value is 48 microsecond. CTS Timeout will take effect only when RTS is turned on. Adjustment of RTS Threshold can be done to turn on RTS. When hidden wireless stations are present in the wireless network RTS can be considered to turn on to minimize collisions and increase performance. Ensure CTS timeout is long enough to avoid frequent retransmission of RTS. Slot Time and ACK/CTS Timeout settings are for long distance links.

It is important to tweak settings to achieve the optimal result based on requirement. The device's default settings should be sufficient for most applications. *22 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point RSSI Threshold:* RSSI Threshold is in the range of 128~127. The default value is 24. RSSI is defined as Received Signal Strength Indication, when the received signal strength from peer is below this threshold, the peer will be consider as disconnected.



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Set the threshold higher will make roaming happen earlier, set lower will allow weak signal peer to connect. In normal condition, the longer the distance, the lower the signal strength between peers. You could consider lowering RSSI to increase the wireless coverage. Increase the RSSI Threshold to have a more stable, but smaller coverage area. Beacon Interval: Beacon Interval is in the range of 1~5000 and set in unit of millisecond.

The default value is 100 msec. Access Point (AP) in IEEE 802.11 will send out a special approximated 50byte frame, called "Beacon". Beacon is broadcast to all the stations, provides the basic information of AP such as SSID, channel, encryption keys, signal strength, time stamp, support data rate. All the radio stations received beacon recognizes the existence of such AP, and may proceed next actions if the information from AP matches the requirement. Beacon is sent on a periodic basis, the time interval can be adjusted. By increasing the beacon interval, you can reduce the number of beacons and associated overhead, but that will likely delay the association and roaming process because stations scanning for available access points may miss the beacons. You can decrease the beacon interval, which increases the rate of beacons. This will make the association and roaming process very responsive; however, the network will incur additional overhead and throughput will go down. DTIM Interval: The DTIM interval is in the range of 1~15.

The default is 15. DTIM is defined as Delivery Traffic Indication Message. It is used to notify the wireless stations, which support power saving mode, when to wake up to receive multicast frame. DTIM is necessary and critical in wireless environment as a mechanism to fulfill powersaving synchronization. A DTIM interval is a count of the number of beacon frames that must occur before the access point sends the buffered multicast frames.

For instance, if DTIM Interval is set to 3, then the WiFi clients will expect to receive a multicast frame after receiving three Beacon frame. The higher DTIM interval will help power saving and possibly decrease wireless throughput in multicast applications. Fragment Threshold: The Fragment Threshold is in the range of 256~2346 byte. The default is 2346 byte. Each WiFi packet can be divided into smaller packets, marked with a sequential fragment number and reassemble in the receiving ends.

The purpose is to make a short frame, instead of long frame, transmitting by radio in a heavy noisy environment. Because of sending smaller frames, corruptions are much less likely. 23 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point to occur. The pros is obvious, the cons is the overhead for transmission. So, in a clean environment, higher fragment threshold can be an option to increase throughput. Fragmentation will be triggered by setting the Fragment Threshold, usually in Bytelength. Only when the frame size is over the Threshold, fragmentation will take place automatically. RTS Threshold: RTS Threshold is in the range of 1~2346 byte. The default is 2346 byte. The main purpose of enabling RTS by changing RTS threshold is to reduce possible collisions due to hidden wireless clients. RTS in AP will be enabled automatically if the packet size is larger than the Threshold value.

By default, RTS is disabled in a normal environment supports nonjumbo frames. Short Preamble: By default, it's "Enable". To Disable is to use Long 128bit Preamble Synchronization field. The preamble is used to signal "here is a train of data coming" to the receiver. The short preamble provides 72bit Synchronization field to improve WLAN transmission efficiency with less overhead. Tx Burst: By default, it's "Enable". To Disable is to deactivate Tx Burst. With TX burst enabled, AP will send many packets in a burst, without collision detection and RTS/CTS for each packet. TX Burst have better throughput but cause interference with other APs using the same channel. 802.

11g Protection Mode: By default, it's "Enable". To Disable is to deactivate 802.11g Protection Mode. Protection mode use RTS/CTS to prevent interference with other APs and 802.11b peers, and disabling it will save transmission time used by RTS/CTS.

RTS/CTS threshold is effective only when 802.11g protection mode is made enable. Click Save button to save your changes. Click Reboot button to activate your changes. The items in this page are for AP's RF advanced settings and will be applied to all VAPs.

24 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 3.2.3 Create Virtual AP (VAP) The TEW455APBO support broadcasting multiple SSIDs, allowing the creation of Virtual Access Points, partitioning a single physical access point into 8 logical access points, each of which can have a different set of security, VLAN tag(ID) and network settings. Figure 32 shows multiple SSIDs with different security type and VLAN settings. Figure 32 Multiple SSIDs with different Security Type and VLAN Tag 3.2.3.1 Virtual AP Overview The administrator can view all of the Virtual AP's settings via this page. Please click on Wireless > Virtual AP Setup and the Virtual AP Overview Page appears. 25 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point VAP: Indicate the system's available Virtual AP ESSID: Indicate the ESSID of the respective Virtual AP Status: Indicate the Status of the respective Virtual AP.

The VAP0 always On Security Type: Indicate an used security type of the respective Virtual AP MAC Filter: Indicate an used MAC filter of the respective Virtual AP MAC Filter Setup: Click Setup button to configure Virtual AP's MAC filter. VAP Edit: Click Edit button to configure Virtual AP's settings, including security type. 26 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 3.2.3.2 Virtual AP Setup For each Virtual AP, administrators can configure SSID, VLAN tag (ID), SSID broadcasting, Maximum number of client associations, security type settings. Click Edit button on the VAP Edit column, and then a Virtual AP setup page appears. ESSID: Extended Service Set ID, when clients are browsing for available wireless networks, this is the SSID that will appear in the list. ESSID will determine the service type available to AP clients associated with the specified VAP. Enable VAP: By default, it's "Disable" for VAP1 ~ VAP7.

The VAP0 always enabled. Select "Enable" to activate VAP or click "Disable" to deactivate this function Hidden SSID: By default, it's "Disable". Enable this option to stop the SSID broadcast in your network. When disabled, people could easily obtain the SSID information with the site survey software and get access to the network if security is not turned on.



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When enabled, network security is enhanced.

It's suggested to enable it after AP security settings are archived and setting of AP clients could make to associate to it. Client Isolation: By default, it's "Disable". Select "Enable", all clients will be isolated from each other, which means they can't reach each other. WMM: By default, it's "Disable". Select "Enable", then packets with WMM QoS will take higher priority.

WMM prioritizes traffic according to four Access Categories (AC) voice, video, best effort, and background. However, it does not provide guaranteed throughput. Packets with QoS header including 27 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point Diffserv/IP TOS and 802.1p will be mapped into 4 Access Categories of WMM, packets without QoS header will be assigned to Best Effort queue, see table below. 802.1p/IP TOS mapping to WMM: Queue AC\_BK AC\_BE AC\_VI Data Transmitted Clients to AP Background. Best Effort Video IP TOS 0x08 0x20 0x28 0xa0 0x30 0xe0 0x88 0xb8 802.1p Priority 1, 2 0, 3 4, 5 Priority Low Description High throughput. Bulk data that requires maximum throughput and is not timesensitive is sent to this queue (FTP data, for example). Medium throughput and delay.

Most traditional IP data is sent to Medium this queue Minimum delay. Timesensitive video data is automatically sent High to this queue High Timesensitive data like VoIP and streaming media are automatically sent to this queue AC\_VO Voice 6, 7 IAPP Support: By default, it's "Disable". Inter AccessPoint Protocol is designed to enforce unique association throughout an ESS(Extended Service Set) and to enforce secure exchange of station's security context between current access point (AP) and new AP during hand off period. IAPP supported only for WPAPSK/WPA2PSK, WPAEnterprise/WPA2Enterprise and 802.1X security type. Maximum Clients: The default value is 32. You can enter the number of wireless clients that can associate to a particular SSID. When the number of client is set to 5, only 5 clients at most are allowed to connect to this VAP. VLAN ID (Tag): By default, it's selected "Disable". This system supports tagged Virtual LAN (VLAN).

A valid number of 0 to 4094 can be entered after it's enabled. If your network utilize VLANs you could tie a VLAN ID to a specific SSID, and packets from/to wireless clients belonging to that SSID will be tagged with that VLAN ID. This enables security of wireless applications by applying VLAN ID. Security Type: Options are "Disabled", "WEP", and "AES" from the dropdown list. All devices need to have the same security setting to build WDS link.

Disable: Data are unencrypted during transmission when this option is selected. WEP: Wired Equivalent Privacy (WEP) is a data encryption mechanism based on a 64bit, 128bit or 152bit shared key. 28 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point Key Length: The available options are 64 bits, 128 bits or 152 bits. WEP auth Method: Enable the desired option among Open system and Shared. Key Index: key index is used to designate the WEP key during data transmission.

4 different WEP keys can be entered at the same time, but only one is chosen. WEP Key #: Enter HEX or ASCII format WEP key value; the system supports up to 4 sets of WEP keys. Key Length 64bit 128bit 152bit WPAPSK/WPA2PSK: WPA or WPA2 Algorithms enable the system to access the network by using the WPAPSK protected access. Hex 10 characters 26 characters 32 characters ASCII 5 characters 13 characters Cipher Suite: By default, it is TKIP. Select either AES or TKIP cipher suites Group Key Update Period: By default, it is 600 seconds. This time interval for rekeying GTK, broadcast/multicast encryption keys, in seconds. Entering the timelength is required. 29 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point Master Key Update Period: By default, it is 83400 seconds. This time interval for rekeying GMK, master key to generate GTKs, in seconds. Enter the timelength required.

Key Type: Select either ASCII or HEX format for the Preshared Key. Preshared Key: Enter the preshared key; the format shall go with the selected key type.

Preshared key can be entered with either a 256bit secret in 64 HEX digits format, or 8 to 63 ASCII characters. WPAEnterprise/WPA2Enterprise: The RADIUS authentication and encryption will apply if either one is selected. WPA General Settings: · · · Cipher Suite: By default, it is TKIP. Select either AES or TKIP cipher suites Group Key Update Period: By default, it's 600 seconds. This time interval for rekeying GTK, broadcast/multicast encryption keys, in seconds. Entering the timelength is required. · Master Key Update Period: By default, it's 83400 seconds. This time interval for rekeying GMK, master key to generate GTKs, in seconds.

Enter the timelength required. · EAP Reauth Period: By default, it's 3600 seconds; 0 second is to disable EAP Re authentication. Main and secondary Authentication RADIUS Server Settings : 30 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point · · · Authentication Server: Enter the IP address of the Authentication RADIUS server. Port: By default, it's 1812. The port number used to communicate with RADIUS server.

Shared secret: A secret key used between system and RADIUS server. Supports 1 to 64 characters. Accounting Server: Enable or Disable accounting features in RADIUS server. Main or Secondary Accounting RADIUS Server Settings : · · · Accounting Server: Enter the IP address of the Accounting RADIUS server. Port: By default, it's 1813.

The port number used to communicate with RADIUS server. Shared Secret: A secret key used between system and Accounting RADIUS server. Supports 1 to 64 characters. WEP 802.1X: When WEP 802.1x Authentication is enabled, please refer to the following Dynamic WEP and RADIUS settings to complete configuration. Dynamic WEP Settings : 31 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point · WEP Key length: The available options are 64 bits or 128 bits. The system will automatically generate WEP encryption keys. · · WEP Key Update Period: By default, it's 300 seconds; 0 not to rekey. EAP Reauth Period: By default, it's 3600 seconds; 0 second is to disable EAP Re authentication.

Main and Secondary Authentication RADIUS Server Settings : · · · Authentication Server: Enter the IP address of the Authentication RADIUS server. Port: By default, it's 1812. The port number used to communicate with RADIUS server.



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Shared secret: A secret key used between system and RADIUS server. Supports 1 to 64 characters. · Accounting Server: Enable or Disable accounting features in RADIUS server. 32 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point Main and secondary Accounting RADIUS Server Settings : · · · Accounting Server: Enter the IP address of the Accounting RADIUS server. Port: By default, it's 1813. The port number used to communicate with RADIUS server. Shared Secret: A secret key used between system and Accounting RADIUS server.

Supports 1 to 64 characters. Click Save button to save your changes. Click Reboot button to activate your changes 33 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 3.2.4 MAC Filter Setup Continued from the 3.

2.3.1 Virtual AP Overview section, Click Setup button on the MAC Filter Setup column, and then a Virtual AP MAC Filter setup page appears. The administrator can allow or reject clients to access each Virtual AP. MAC Filter Setup : By default, it's "Disable".

Options are Disabled, Only Deny List MAC or Only Allow List MAC. Click Save button to save your change. Two ways to set the MAC filter rules: Only Allow List MAC. The wireless clients in the ACL List will be allowed to access to Access Point; All others will be denied. Only Deny List MAC. The wireless clients in the ACL List will be denied to access to Access Point; All others will be allowed. MAC Address: Enter MAC address (e.g. aa:bb:cc:00:00:0a) and click "Add" button, then the MAC address should display in the ACL List. There are a maximum of 20 clients allowed in this MAC Filter List.

The MAC addresses of the wireless clients can be added and removed to the list using the Add and Delete buttons. Click Reboot button to activate your changes MAC Access Control is the weakest security approach. WPA or WPA2 security method is highly recommended. 34 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 3.3 Wireless Network Expansion The administrator could create WDS Links to expand wireless network. When WDS is enabled, access point functions as a wireless bridge and is able to communicate with other access points via WDS links. A WDS link is bidirectional and both sides must support WDS. Access points know each other by MAC Address. In other words, each access point needs to include MAC address of its peer. Ensure all access points are configured with the same channel and own same security type settings.

Figure 33 shows Point to Multiple Points with different VLAN settings Figure 33 Point to Multiple Points with different VLAN Tag Please click on Wireless -> WDS Setup and follow the below setting. 35 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point Note that VLAN ID in the WDS MAC List setting will only be tagged to egress packets on the wired Ethernet port. Ensure to match VLAN ID used on the network of the peer. WDS link won't carry tags at all. WMM: By default, it's "Disable".

Select "Enable", then packets with WMM QoS will take higher priority. WMM prioritizes traffic according to four Access Categories (AC) voice, video, best effort, and background. However, it does not provide guaranteed throughput. Packets with QoS header including Diffserv/IP TOS and 802.1p will be mapped into 4 Access Categories of WMM, packets without QoS header will be assigned to Best Effort queue, see table below.

802.1p/IP TOS mapping to WMM: Queue Data Transmitted Clients to AP IP 802.1p Priority Description TOS Priority High throughput. Bulk data that requires maximum 0x08 1, 2 Low throughput and is not timesensitive is sent to this 0x20 queue (FTP data, for example). Medium throughput and delay. Most traditional IP 0, 3 Medium data is sent to this queue Minimum delay. Timesensitive video data is 0x28 4, 5 High automatically sent to this queue 0xa0 0x30 0xe0 Timesensitive data like VoIP and streaming media are 6, 7 High 0x88 automatically sent to this queue 0xb8 AC\_BK Background. AC\_BE Best Effort AC\_VI Video AC\_VO Voice Security Type: Options are "Disabled", "WEP", and "AES" from the dropdown list. All devices need to have the same security setting to build WDS link. WEP Key: Enter HEX or ASCII WEP key at different length as shown below.

This system supports up to 4 sets of WEP keys. 36 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point Key Length: The available options are 64 bits, 128 bits or 152 bits. WEP auth Method: Enable the desired option among Open system and Shared. Key Index: key index is used to designate the WEP key during data transmission. 4 different WEP keys can be entered at the same time, but only one is chosen. WEP Key #: Enter HEX or ASCII format WEP key value; the system supports up to 4 sets of WEP keys. Key Length 64bit 128bit 152bit AES Key: Enter 32 HEX characters AES key. Hex 10 characters 26 characters 32 characters 5 characters 13 characters 16 characters ASCII WDS MAC List Enable: Click Enable to create WDS link. WDS Peer's MAC Address : Enter the MAC address of WDS peer. VLAN ID: By default, it's disabled with no VLAN ID.

When desired, this system supports tagged VLAN from 0 to 4094. Description: Description of WDS link. The WDS link needs to be set at same Channel and with same Security Type. Click Save button to save your changes. Click Reboot button to activate your changes 37 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 3.

4 System Management 3.4.1 Configure Management Administrator could specify geographical location of the system via instructions in this page. Administrator could also enter new Root and Admin passwords and allow multiple login methods. Please click Administrator > Management and follow the below settings.

System Information System Name : Enter a desired name or use the default one. Description : Provide description of the system. Location : Enter geographical location information of the system. It helps administrator to locate the system easier. 38 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point The system supports two management accounts, root and admin. The network manager is assigned with full administrative privileges, when logging in as root user, to manage the system in all aspects. While logging in as an admin user, only subset of privileges is granted such as basic maintenance. @@@@Network manager Privileges. @@@@ Admin Password : Log in as an admin user and is allowed to change its own password, @@@@ Enable HTTP : Check to select HTTP Service. HTTP Port : The default is 80 and the range is between 1 ~ 65535.



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Click "GenerateKey" button to generate RSA private key. The key is displayed in the field below. Click Save button to save your changes. The system's Overview page will appear. Local Time : Display the current system time. NTP Client : To synchronize the system time with NTP server. Enable : Check to select NTP client. Default NTP Server : Select the NTP Server from the dropdown list. Time Zone : Select a desired time zone from the dropdown list. Daylight saving time : Enable or disable Daylight saving.

UPnP : By default, it's "Disable". Select "Enable" or "Disable" of UPnP Service. Please refer to Appendix D. SNMP v2c Enable: Check to enable SNMP v2c. ro community : Set a community string to authorize read-only access. rw community : Set a community string to authorize read/write access. SNMP v3 Enable: Check to enable SNMP v3. SNMPv3 supports the highest level SNMP security. 43 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point SNMP ro user : Set a community string to authorize read-only access. SNMP ro password : Set a password to authorize read-only access. SNMP rw user : Set a community string to authorize read/write access. SNMP rw password : Set a password to authorize read/write access. SNMP Trap : Events such as cold start, interface up & down, and association & disassociation will report to an assigned server. Community : Set a community string required by the remote host computer that will receive trap messages or notices send by the system. IP : Enter the IP addresses of the remote hosts to receive trap messages. Click Save button to save changes and click Reboot button to activate. 44 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 3.4.5 Backup / Restore and Reset to Factory Backup current configuration, restore previously saved configuration or reset back to factory default configuration can be executed via this page. Please click on Utilities > Profile Setting and follow the below setting.

Save Settings To PC : Click Save button to save the current configuration to a local disk. Load Settings from PC : Click Browse button to locate a configuration file to restore, and then click Upload button to upload. Reset To Factory Default : Click Default button to reset back to the factory default settings and expect Successful loading message. Then, click Reboot button to activate. 45 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 3.4.6 Firmware Upgrade Firmware is the main software image that system needs to respond to requests and to manage real time operations. Firmware upgrades are sometimes required to include new features or bugs fix. It takes around 8 minutes to upgrade due to complexity of firmware. To upgrade system firmware, click Browse button to locate the new firmware, and then click Upgrade button to upgrade.

1. 2. 3. To prevent data loss during firmware upgrade, please back up current settings before proceeding. Do not interrupt during firmware upgrade including power on/off as this may damage system.

Never perform firmware upgrade over wireless connection or via remote access connection. 46 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 3.4.7 Network Utility The administrator can diagnose network connectivity via the PING utility. Please click on Utilities > Network Utility and follow the below setting.

Ping : This utility will help ping other devices on the network to verify connectivity. Ping utility, using ICMP packets, detects connectivity and latency between two network nodes. As result of that, packet loss and latency time are available in the Result field while running the PING test. Destination IP/Domain : Enter desired domain name, i.e. www.google.com, or IP address of the destination, and click ping button to proceed. The ping result will be shown in the Result field. Count : By default, it's 5 and the range is from 1 to 50.

It indicates number of connectivity test. 47 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 3.4.8 Reboot This function allows user to restart system with existing or most current settings when changes are made. Click Reboot button to proceed and take around three minutes to complete. A reminder will be available for remaining time to complete. If power cycle is necessary, please wait till completion of the reboot process. The System Overview page appears upon the completion of reboot. 48 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 3.5 System Status This section breaks down into subsections of System Overview, Associated Clients Status, WDS Link Status, Extra Information and Event Log. 3.5.1 System Overview Display detailed information of System, Network, LAN and Wireless in the System Overview page. System : Display information of the system. System Name : The name of the system.

Operating Mode : The mode currently in service. Location : Deployed geographical location. Description : A description of the system. Firmware Version : The current installed firmware version. Firmware Date : The build time of installed firmware. Device Time : The current time of the system. System Up Time : The time period that system has been in service since last reboot. Network Information : Display information of the Network. 49 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point Mode : Supports Static or Dynamic modes on the LAN interface. IP Address : The management IP of system. By default, it's 192.168.10.100. IP Netmask : The network mask.

By default, it's 255.255.255.0. IP Gateway : The gateway IP address and by default, it's 192.168.10.1. Primary DNS : The primary DNS server in service. Secondary DNS : The secondary DNS server in service. LAN Information : Display total received and transmitted statistics on the LAN interface. MAC Address : The MAC address of the LAN port. Receive bytes : The total received packets in bytes on the LAN port. Receive packets : The total received packets of the LAN port. Transmit bytes : The total transmitted packets in bytes of the LAN port.

Transmit packets : The total transmitted packets of the LAN port. Wireless Information : Display total received and transmitted statistics on available Virtual AP. MAC Address : The MAC address of the Wireless port. Different MAC address on each Virtual AP Receive bytes : The total received packets in bytes on the Wireless port. Receive packets : The total received packets on the Wireless port.

Transmit bytes : The total transmitted packets in bytes on the Wireless port. Transmit packets : The total transmitted packets on the Wireless port. 50 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 3.



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5.2 Associated Clients Status It displays ESSID, on/off Status, Security Type, total number of wireless clients associated with all Virtual AP. VAP Information : Highlights key VAP information. VAP : Available VAP from VAP0 to VAP7. ESSID : Display name of ESSID for each VAP. Status : On/Off Security Type : Display chosen security type; WEP, WPA/WPA2PSK, WPA/WPA2Enterprise. Clients : Display total number of wireless connections for each VAP.

VAP Clients : Display all associated clients on each Virtual AP. MAC : MAC address of associated clients. RSSI : RSSI of from associated clients.. Last Tx Time : Last inactive time period in seconds for a wireless connection. Disconnect : Click "Delete" button to manually disconnect a wireless client in a Virtual AP. 51 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 3.5.3 WDS Link Status On/Off Status, peers MAC Address, Received Signal Strength Indicator(RSSI) and Last TX Time for each WDS are available. WDS : Maximum supported WDS links.

Status : On/Off. MAC address : Display MAC address of WDS peer. RSSI : Indicate the RSSI of WDS links. Last TX time : Last inactive time period in seconds on WDS links. For WDS with "0" RSSI, please check the devices' WDS settings including the MAC address, wireless channel, security settings, and the TX power.

If the RSSI value is much lower than expected, please try adjusting the Slot Time, ACK/CTS Timeout and/or RTS Threshold in the wireless "Advanced Setup"

52 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 3.5.4 Extra Information Users could pull out information such as Route table, ARP table, MAC table, Bridge table or STP available in the dropdown list from system. The "Refresh" button is used to retrieve latest table information.

Route table information : Select "Route table information" on the dropdown list to display route table.

TEW455APBO could be used as a L2 or L3 device. It doesn't support dynamic routing protocols such as RIP or OSPF. Static routes to specific hosts, networks or default gateway are set up automatically according to the IP configuration of system's interfaces. When used as a L2 device, it could switch packets and, as L3 device, it's capable of being a gateway to route packets inward and outward. ARP table Information : Select "ARP Table Information" on the dropdown list to display ARP table. ARP associates each IP address to a unique hardware address (MAC) of a device. It is important to have a unique IP address as final destination to switch packets to. Bridge table information : Select "Bridge Table information" on the dropdown list to display bridge table.

Bridge table will show Bridge ID and STP's Status on the each Ethernet bridge and its attached interfaces, the Bridge Port should be attached to some interfaces (e.g.

eth0, ath0~ath7 and ath0.wds0~ath0.wds7). 53 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point Bridge MAC information : Select "Bridge MACs Information" on the dropdown list to display MAC table. This table displays local MAC addresses associated with wired or wireless interfaces, but also remember nonlocal MAC addresses learned from wired or wireless interfaces. Ageing timers will be reset when existing MAC addresses in table are learned again or added when new MAC addresses are seen from wired or wireless interfaces as well. When time runs out for a particular entry, it will be pruned from the table. In that situation, switching packet to that particular MAC address will be dropped. Bridge STP Information : Select "Bridge STP Information" on the drop-down list to display a list of bridge STP information. 54 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 3.

5.5 Event Log The Event log displays system events when system is up and running. Also, it becomes very useful as a troubleshooting tool when issues are experienced in system. Time: The date and time when the event occurred. Facility: It helps users to identify source of events such "System" or "User" Severity: Severity level that a specific event is associated such as "info", "error", "warning", etc.

Message: Description of the event. Click Refresh button to renew the log, or click Clear button to clear all the record. 55 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point Chapter 4. WDS Mode Configuration Please refer to illustrations of the section 1.3 for possible applications in the WDS mode.

This section provides detailed explanation for users to configure in the WDS mode with help of illustrations. In the WDS mode, functions listed in the table below are also available from the Webbased GUI interface. Option System Operating Mode LAN Functions Time Server SNMP UPnP Wireless General Settings Advanced Settings WDS Setup Administrator Management Profiles Settings Firmware Upgrade Network Utility Status System Overview WDS Status Extra Info Event Log Reboot Table 41: WDS Mode Functions 4.1 External Network Connection 4.1.1 Network Requirement You could expand your Ethernet network via WDS link. In this mode, the TEW455APBO connects directly to a wired LAN, and wirelessly bridges to a remote access point via a WDS link as shown in Figure 41. In the mode, it can't associate with any wireless clients. Figure 41 Point to Point Configuration 56 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 4.1.

2 WDS Setup The administrator could create WDS Links to expand wireless network. When WDS is enabled, access point functions as a wireless bridge and is able to communicate with other access points via WDS links. A WDS link is bidirectional and both side must support WDS. Access points know each other by MAC Address. In other words, each access point needs to include MAC address of its peer. Ensure all access points are configured with the same channel and own same security type settings. Figure 42 shows Point to Multiple Points with different VLAN settings Figure 42 Point to Multiple Points with different VLAN Tag Please click on Wireless > WDS Setup and follow the below setting. 57 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point Note that VLAN ID in the WDS MAC List setting will only be tagged to egress packets on the wired Ethernet port. Ensure to match VLAN ID used on the network of the peer. WDS link won't carry tags at all.

WDS MAC List Enable : Click Enable to create WDS link. WDS Peer's MAC Address : Enter the MAC address of WDS peer. VLAN ID : By default, it's disabled with no VLAN ID. When desired, this system supports tagged VLAN from 0 to 4094.



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Description : Description of WDS link.

The WDS link needs to be set at same Channel and Security Type. For WMM and Security settings, please refer to section 3.3. For other system management, please refer to section 3.4.

Click Save button to save your changes. Click Reboot button to activate your changes 58 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 4.2 System Status This section breaks down into subsections of System Overview, WDS Link Status, Extra Information and Event Log. 4.2.1 System Overview Detailed information on System, Network, LAN Information and Wireless Information can be reviewed via this page. System : Display the information of the system. System Name : The name of the system. Operating Mode : The mode currently in service. Location : The reminding note on the geographical location of the system.

Description : The reminding note of the system. Firmware Version : The current firmware version installed. Firmware Date : The build time of the firmware installed. Device Time : The current time of the system. System Up Time : The time period that system has been in service since last reboot. Network Information : Display the information of the Network. 59 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point Mode : Supports Static or Dynamic modes on the LAN interface. IP Address : The management IP of system. By default, it's 192.168.

10.100. IP Netmask : The network mask. By default, it's 255.255.

255.0. IP Gateway : The gateway IP address and by default, it's 192.168.10.

1. Primary DNS : The primary DNS server in service. Secondary DNS : The secondary DNS server in service. LAN Information : Display total received and transmitted statistics on the LAN interface. MAC Address : The MAC address of the LAN port. Receive bytes : The total received packets in bytes on the LAN port. Receive packets : The total received packets of the LAN port. Transmit bytes : The total transmitted packets in bytes of the LAN port. Transmit packets : The total transmitted packets of the LAN port. 60 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 4.

2.2 WDS Link Status The administrator can obtain detailed Information such as MAC Address, Signal Strength of all WDS link via this page. WDS : Maximum supported WDS links. Status : On/Off. MAC address : Display MAC address of WDS peer. RSSI : Indicate the RSSI of WDS links. Last TX time : Last inactive time period in seconds on WDS links. If display "0" RSSI, you need to check WDS configuration. Things to verify are MAC Address, Channel and Security type. Also, adjust antenna angle and Tx Power.

If display unexpected RSSI, In a long distance application, you might need to adjust Slot time, ACK/CTS timeout, and/or RTS threshold. 61 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point Chapter 5. CPE Mode Configuration When CPE mode is chosen, the system can be configured as a Customer Premises Equipment (CPE). This section provides detailed explanation for users to configure in the CPE mode with help of illustrations. In the CPE mode, functions listed in the table below are also available from the Webbased GUI interface.

OPTION System Operating Mode WAN LAN Functions DDNS Setup Time Server SNMP UPNP Wireless General Setup Wireless Profile Site Survey Advance DMZ IP Filter Setup MAC Filter Setup Virtual Server Utilities Management Profiles Settings Firmware Upgrade Network Utility Reboot Status System Overview DHCP Clients Extra Info Event Log Table 51: CPE Mode Functions 5.1 External Network Connection 5.1.1 Network Requirement It can be used as an Outdoor Customer Premises Equipment (CPE) to receive wireless signal over last mile application, helping WISPs deliver wireless broadband Internet service to residents and business customers. In the CPE mode, TEW455APBO is a gateway enabled with NAT and DHCP Server functions.

The wired clients connected to TEW455APBO are in different subnet from those connected to Main Base Station, and, in CPE mode, it does not accept wireless association from wireless clients. Figure 51 CPE mode configuration 62 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point 5.1.2 Configure WAN Setup There are three connection types for the WAN port : Static IP, Dynamic IP and PPPoE, Please click on System > WAN and follow the below setting. In CPE mode, the WAN Port is the Wireless interface. Mode : By default, it's "Dynamic IP". Check "Static IP", "Dynamic IP" or "PPPoE" to set up system WAN IP. Dynamic IP : Please consult with WISP for correct wireless settings to associate with WISP AP before a dynamic IP, along with related IP settings including DNS can be available from DHCP server. If IP Address is not assigned, please double check with your wireless settings and ensure successful association. Also, you may go to "WAN Information" in the Overview page to click Release button to release IP address and click Renew button to renew IP address again.

63 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point Hostname : The Hostname of the WAN port Static IP : Users can manually setup the WAN IP address with a static IP provided by WISP. IP Address : The IP address of the WAN port. By default, the IP address is 192.168.1.254 IP Netmask : The Subnet mask of the WAN port. By default, the Netmask is 255.255.255.0 IP Gateway : The default gateway of the WAN port.

By default, the Gateway is 192.168.1.1 PPPoE : To create wireless PPPoE WAN connection to a PPPoE server in network. User Name : Enter User Name for PPPoE connection Password : Enter Password for PPPoE connection Reconnect Mode : Always on A connection to Internet is always maintained.

On Demand A connection to Internet is made as needed. When the "Reconnect Mode" is set to "On Demand", if the "System Time" NTP Client is enabled, the device's Reconnect Mode would become "Always On" Manual Click the "Connect" button on "WAN Information" in the Overview page to connect to the Internet. Idle Time : Time to last before disconnecting PPPoE session when it is idle. Enter preferred Idle Time in minutes. MTU : By default, it's 1492 bytes. MTU stands for Maximum Transmission Unit. Consult with WISP for a correct MTU setting. 64 User Manual TEW455APBO High Power Wireless Outdoor PoE Access Point DNS : Check "No Default DNS Server" or "Specify DNS Server IP" radial button as desired to set up system DNS. Primary : The IP address of the primary DNS server. Secondary : The IP address of the secondary DNS server. MAC Clone : The MAC address is a 12digit HEX code uniquely assigned to hardware as identification.



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