

**RTL907X/6XA V2/V3/VA**

**Switch Tool Release Note**

**VA 2.1.6.16.0**

**V2/V3 2.1.5.25.0**

(CONFIDENTIAL: Development Partners Only)

Rev 1.16

2021/03/31

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**USING THIS DOCUMENT**

This document is intended for the software engineer’s reference and provides detailed programming information.

Though every effort has been made to ensure that this document is current and accurate, more information may have become available subsequent to the production of this guide.

**REVISION HISTORY**

| Revision | Release Date | Summary |
| --- | --- | --- |
| 1.0 | 2020-09-30 | Release Switch Tool version 2.1.6.0.0 |
| 1.1 | 2020-10-08 | Release Switch Tool version 2.1.6.1.0 |
| 1.2 | 2020-10-16 | Release Switch Tool version VA 2.1.6.2.0 and V2/V3 2.1.5.18.0 |
| 1.3 | 2020-10-23 | Release Switch Tool version VA 2.1.6.3.0 |
| 1.4 | 2020-11-06 | Release Switch Tool version VA 2.1.6.4.0 and V2/V3 2.1.5.22.0 |
| 1.5 | 2020-11-13 | Release Switch Tool version VA 2.1.6.5.0 |
| 1.6 | 2020-11-20 | Release Switch Tool version VA 2.1.6.6.0 and V2/V3 2.1.5.23.0 |
| 1.7 | 2020-12-02 | Release Switch Tool version VA 2.1.6.7.0 |
| 1.8 | 2020-12-14 | Release Switch Tool version VA 2.1.6.8.0 and V2/V3 2.1.5.24.0 |
| 1.9 | 2020-12-18 | Release Switch Tool version VA 2.1.6.9.0 |
| 1.10 | 2020-12-31 | Release Switch Tool version VA 2.1.6.10.0 |
| 1.11 | 2021-01-15 | Release Switch Tool version VA 2.1.6.11.0 and V2/V3 2.1.5.25.0 |
| 1.12 | 2021-01-29 | Release Switch Tool version VA 2.1.6.12.0 |
| 1.13 | 2021-02-04 | Release Switch Tool version VA 2.1.6.13.0 |
| 1.14 | 2021-03-08 | Release Switch Tool version VA 2.1.6.14.1 |
| 1.15 | 2021-03-19 | Release Switch Tool version VA 2.1.6.15.0 |
| 1.16 | 2021-03-31 | Release Switch Tool version VA 2.1.6.16.0 |

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# Switch Tool Information

|  |  |
| --- | --- |
| Tool Version | VA 2.1.6.16.0 |
| Release Date | 2021-03-31 |
| File Name | RTKAutoSwitchTool\_v2.1.6.16.0.zip |

|  |  |
| --- | --- |
| Tool Version | V2/V3 2.1.5.25.0 |
| Release Date | 2021-01-15 |
| File Name | RTKAutoSwitchTool\_v2.1.5.25.0.zip |

# Hardware Supported by this Version

* RTL9075AAD-V2-CG
* RTL9072AAD-V2-CG
* RTL9068AAD-V2-CG
* RTL9075AAD-V3-CG
* RTL9072AAD-V3-CG
* RTL9068AAD-V3-CG
* RTL9068AAD-VA-CG
* RTL9072AAD-VA-CG
* RTL9075AAD-VA-CG
* RTL9054AN-VA-CG

# Feature List

* Import/Export JSON Settings
* Generate/Flashing binary file
* Key Generation/Secure Image
* Global Settings: VLAN
* Global Settings: L2
* Global Settings: ACL
* Global Settings: QoS
* Global Settings: Mirror
* Global Settings: Misc
* Global Settings: OTP
* Global Settings: PHY Master
* Global Settings: Sleep and Wakeup
* Global Settings: PTP
* Global Settings: Register
* Global Settings: Routing
* Global Settings: Flow Control
* Global Settings:FRER
* Global Settings:PSFP
* Global Settings:IGMP
* Port Settings: Properties
* Port Settings: VLAN
* Port Settings: QoS
* Port Settings: Port Isolation
* Port Settings: Storm Control
* Port Settings: Traffic Scheduler (Qbv) - Not supported on V2/V3
* MIB Counter
* Stacking - Not supported completely

# Changelog

## Version VA 2.1.6.16.0

* + 1. New Features/Functionality Added
* Support Qci (FRER and PSFP page) in runtime mode and make image mode.
* Dumping ACL Partial Entry partially, ACL Aggregated Index Information, PIE Entry Template Key "Customized" can be defined by user.
* Automatic OTP programing solution: add flash erase function in program page.
* Support IGMP function enable/disable, aging time adjusting, and l2 default drop enable/disable.
* Adding Calibration Folder for user to store calibration flash pattern(32 bytes) in Update Image page. Users can also define calibration file name and decide if include certain file as flash pattern in fw\_config.bin in Make Image File page.
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* N/A
  + 1. Issues Resolved
* Long boot time for PCI-E OTPv4 (Incorrect initialization due to compatibility issues).

# Previous Changelog Of Version VA

## Modification in version v2.1.6.15.0

* + 1. New Features/Functionality Added
* N/A
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* Modify the parameters of RTL9068ABD-VA P1 pure 100BASE-T1 PSD.
* [PTP] Change targetPortIdentity.clock to 0xFFFFFFFFFFFFFFFF (Firmware v4.7.1)
* [PTP] Change targetPortIdentity.portNumber to 0xFFFF (Firmware v4.7.1)
  + 1. Issues Resolved
* Fix PTP Misc Issues.
  + Send Pdelay\_req from Master port
  + Assign ISS priority for packets in switch fabric
  + asCapable mask default
  + Port Number remapping
  + No Sync recovery if no Sync/follow-up received from slave port
  + Overwrite my ClockID into sync/follow-up
  + The logInterval of follow-up is always zero. (Firmware v4.7.1)
  + If two master ports has different interval, the smaller one will not get sync/followup. (Firmware v4.7.1)
  + **Note:** Please don't change the following settings:
    - Delay threshold unit
    - One-Step TX
    - PTP packet formatted: Customize Destination Address
    - PTP packet formatted: MACADDRESS
    - PTP packet formatted: Customize EtherType, VLAN support
* Fix RGMII RX delay mode settings failed for 10M/100Mbps on all RGMII interfaces.
* Resolve the register access failed with Ethernet from v2.1.6.14.0. Before v2.1.6.14.0, the behavior is all right.
* [Routing] Prevent HW hash index never found because ALE and CPU query it at the same time. (Firmware v4.7.1)
* [Single Loop] Fix the control port of single loop restarts to communicate delay 6 minutes when resuming the topology. (Firmware v4.7.1)

## Modification in version v2.1.6.14.1

* + 1. New Features/Functionality Added
* N/A
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* N/A
  + 1. Issues Resolved
* [PTP] Sync and Pdelay\_req interval less than 1/16 second (125ms), there is one long interval after saving PTP related information into flash. (Firmware v4.7.0)
* [PTP] PTP messages with other traffic load, RTL906x\_7x get incorrect egress time. (Firmware v4.7.0)
* [PTP] The cumulativeScaledRateOffset is zero sometimes even bridge and gm are the same frequency drift. (Firmware v4.7.0)
* [PTP] Does not trigger event error log after received incorrect pdelay\_resp. (Firmware v4.7.0)
* [PTP] Sync frame does not padding zero content. (Firmware v4.7.0)
* [Routing] Prevent non-NDP Layer4 header with 0x87, 0x88 at first byte to hit the ACL rules. (Firmware v4.7.0)
* Port 8 cannot get internet access through Ethernet of RTL9068 with OTPv3 configurations. (DLL)

## Modification in version v2.1.6.14.0

* + 1. New Features/Functionality Added
* Support RTL9054AN
* Support Flow Control
* [Routing] Support Dynamic configuration (Firmware v4.6.1)
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* N/A
  + 1. Issues Resolved
* Modify parameters of pure 100 PHY
* Add mac force link down when the correspond port is selected N/A
* Change the page in Ethernet access mode
* [Routing] Correct OIL interface index info (Firmware v4.6.1)
* [Interface] Fix PCIE port 11 link issue (Firmware v4.6.1)
* [Routing] TCP Routing Break when use specific SPORT (Firmware v4.6.1)

## Modification in version v2.1.6.13.0

* + 1. New Features/Functionality Added
* Compatible between different OTP versions
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* N/A
  + 1. Issues Resolved
* OTP programming using flashing in some limit states. (OTP Programmer V 4.1.1)

## Modification in version v2.1.6.12.0

* + 1. New Features/Functionality Added
* Generating Secure Image Binary File with Stacking Configure Setting
* FEPHY Analog Parameter Default Value Modification
* Disable PCIe quick boot in Image Configuration
* Setup time in not PTP way
* Support routing configuration in flashless mode
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified (Firmware v4.6.0)
* [System] Support routing config for Ethernet flashless
* [OTP] Remove OTP deep sleep mode
* [PTP] Check resident time is over correction Field valid bits incorrect
* [RSTP] Enhance Single Loop mechanism
* [PTP] change PPS delay from 72ns~78ns to 52ns~64ns
  + 1. Issues Resolved
* OTP Parallel Programming via Ethernet Mode
* Mirroring & RSPAN Configuration Setting
* Connection Failed while set Register 0xFFFF01 as value 0x0

## Modification in version v2.1.6.11.0

* + 1. New Features/Functionality Added
* Reduce routing boot time and routing improvement
* OTP programming using flashing (OTP-Programmer v4.1.0)
* Support RA & Unsolicited RA on RTL906X/7X
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified (Patch Firmware V4.5.0)
* [routing] Imporve Routing Configuration Performance to Reduce bootup time
* [otp] Change to deep sleep mode when OTP is idle
* [system] Remove ACL table related patch code
* [other] Fix Coverity/MISRA-C warning
  + 1. Issues Resolved
* Choose the speed of XMII
* Port isolation settings
* Use Mirror and RSPAN separately
* Multi-device OTP programming
* Image generation when version changing
* P6/P7 link failed in flashless mode on RTL9068
* Routing flow in flashless mode
* Routing functions failed with JSON files import/export (Switch Tool VA 2.1.6.11.1)

## Modification in version v2.1.6.10.0

* + 1. New Features/Functionality Added
* Correct flags of NA
* Choose the speed of XMII
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* Ethernet Flashing/Calibration/Erase Block
  + 1. Issues Resolved
* Sleep/Wakeup import/export JSON files failed
* Port isolation settings
* Link failed on SGMII with RTL9075 and RTL9010

## Modification in version v2.1.6.9.0

* + 1. New Features/Functionality Added
* Image fool-proofing design
* RGMII delay mapping help table
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* N/A
  + 1. Issues Resolved
* Routing

## Modification in version v2.1.6.8.0

* + 1. New Features/Functionality Added
* Image integrity-checking (Automatic flash Hash calculate)
* ACL configuration in image mode
* Image fool-proofing design in Switch Tool
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* Storm control
* Add types in image Register Page
* Use Mirror and RSPAN separately
  + 1. Issues Resolved
* RTL9068 PCIe parameter settings
* Ethernet Flashing

## Modification in version v2.1.6.7.0

* + 1. New Features/Functionality Added
* Make Image Register Page add PHY Type (MAC/PHY)
* ACL combination
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* Qbv image mode
* Sleep/WakeUp
  + 1. Issues Resolved
* Unicast Host Routing Not Working (Patch Firmware V4.4.5)
* P8 SGMII force mode
* I2C/SPI/MDIO Connection Check
* I2C ID/MDX ID
* RTL9068 freezes when booting

## Modification in version v2.1.6.6.0

* + 1. New Features/Functionality Added
* Storm Control
* Routing config 4 byte
* VLAN (Ethernet Mode)
* Ethernet Flashing/Calibration/Erase Block
  + 1. Features/Functionality Removed
* 1000M test mode 7
  + 1. Features/Functionality Modified
* PTP
* Sleep/Wakeup
  + 1. Issues Resolved
* P10/P11 SGMII force mode

## Modification in version v2.1.6.5.0

* + 1. New Features/Functionality Added
* N/A
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* N/A
  + 1. Issues Resolved
* Settings of RTL9068/9072 Port interface configurations

## Modification in version v2.1.6.4.0

* + 1. New Features/Functionality Added
* Basic OTP
* Port Enable/Disable
* MIB
* ACL Reserve Entry
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* Routing
* Mirror
  + 1. Issues Resolved
* N/A

## Modification in version v2.1.6.3.0

* + 1. New Features/Functionality Added
* N/A
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* N/A
  + 1. Issues Resolved
* SPI R/W failed

## Modification in version v2.1.6.2.0

* + 1. New Features/Functionality Added
* Ethernet Disable
* OTP Stacking and PCIE
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* N/A
  + 1. Issues Resolved
* Wrong default value of the SPID and TPID

## Modification in version v2.1.6.1.0

* + 1. New Features/Functionality Added
* Qav/Qbv
* Secure Boot
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* N/A
  + 1. Issues Resolved
* N/A

## Modification in version v2.1.6.0.0

* + 1. New Features/Functionality Added
* Import/Export JSON configuration file
* Generate/Flashing binary file
* OTP (Not supported Ethernet mode)
* Port configuration
* Sleep and wakeup: Partially supported
* VLAN
* ACL
* Mirror
* L2 table
* Routing
* PTP
* QoS
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* N/A
  + 1. Issues Resolved
* N/A

# Previous Changelog Of Version V2/V3

## Modification in version v2.1.5.25.0

* + 1. New Features/Functionality Added
* N/A
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* N/A
  + 1. Issues Resolved
* P6/P7 link failed in flashless mode on RTL9068
* PTP link failed in flashless mode on RTL9068
* Correct flags of NA (Patch Firmware V3.9.1)

## Modification in version v2.1.5.24.0

* + 1. New Features/Functionality Added
* Image fool-proofing design in Switch Tool
* Add types in image Register Page
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* N/A
  + 1. Issues Resolved
* MIB counter error messages
* ACL Reserve Entry

## Modification in version v2.1.5.23.0

* + 1. New Features/Functionality Added
* N/A
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* PTP
  + 1. Issues Resolved
* N/A

## Modification in version v2.1.5.22.0

* + 1. New Features/Functionality Added
* N/A
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* MIB
* Routing
* Mirror
* ACL Reserve Entry
  + 1. Issues Resolved
* N/A

## Modification in version v2.1.5.21.0

* + 1. New Features/Functionality Added
* N/A
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* N/A
  + 1. Issues Resolved
* Based on v2.1.5.19.0 to fix PTP issues, transfer from v2.1.5.19.0.rc1 to v2.1.5.21.0.
* Issues related with PTP

## Modification in version v2.1.5.20.0

* + 1. New Features/Functionality Added
* MIB
* ACL Reserve Entry
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* Routing
* Mirror
  + 1. Issues Resolved
* N/A

## Modification in version v2.1.5.19.0

* + 1. New Features/Functionality Added
* N/A
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* N/A
  + 1. Issues Resolved
* SGMII/HISGMII Interface Getting Issue

## Modification in version v2.1.5.18.0

* + 1. New Features/Functionality Added
* N/A
  + 1. Features/Functionality Removed
* N/A
  + 1. Features/Functionality Modified
* N/A
  + 1. Issues Resolved
* IPv4 Dynamic Routing is unreachable.

# Known Problems and Limitations

1. We have not adjusted the parameters for AFE performance and interoperability optimization on VA.
2. The maximum number of routes support is 1300 because of the tool implementation.
3. Some issues about the auto-negotiation mode of HISGMII need to be solved when there are OTP parameters on the chip.
4. The register types which are named as "25uA", "OPFSM", "FE" and "FWCFG" in Register page are reserved for use in testing and have no functionality.
5. The unit of PTP intervals is "seconds", not "milliseconds" presently. Please note it when importing JSON files.
6. Send Pdelay\_req from master port as default.

It can be turn off by SDK: ptp\_sendPdelayFromMasterPort\_set(0u) .

1. All PTP packets are assigned priority = 6 as 802.1AS-2011 defined. This priority does not carry out to switch (only in switch fabric).
2. If PTP runs within VLAN enabled, please add internal CPU port (p15) into VLAN1 (For both tag and untag members mask, bit15 = 1).
3. In make image mode, add warning message when configuration on tool exceeds the image file size.
4. Interface Tests pass partially for RTL9054 .
5. Flow Control in development, please keep the default settings.

# Test Report

## GUI/Functional test (VA)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Chip Version** | **Configuration Mode** | **Module Name** | **Test Group** | **Regression Test Result** |
| RTL9068VA | Runtime(I2C) | General Page | Update Image | v |
| RTL9072VA |  |  | I2C ID/MDX ID |  |
| RTL9075VA |  | Switch Page | Import Setting | v |
| RTL9054VA |  |  | Export Setting | v |
|  |  |  | Key Generation |  |
|  |  |  | Secure Image |  |
|  |  |  | Register |  |
|  |  |  | Global VLAN |  |
|  |  |  | Global L2 |  |
|  |  |  | Global ACL |  |
|  |  |  | Global QoS |  |
|  |  |  | Mirror |  |
|  |  |  | Misc |  |
|  |  |  | OTP |  |
|  |  |  | PHY Master |  |
|  |  |  | Sleep/Wake |  |
|  |  |  | Flow Control | v |
|  |  |  | FRER | v |
|  |  |  | PSFP | v |
|  |  |  | IGMP | v |
|  |  |  | Port VLAN |  |
|  |  |  | Port QoS |  |
|  |  |  | Port Isolation |  |
|  |  |  | Port Storm Control |  |
|  |  |  | Port Traffic Scheduler |  |
|  |  | Debug Page | MIB Counter |  |
|  |  |  | Reg Batch Access |  |
|  | Runtime(Ethernet) | General Page | MAC Address |  |
|  |  |  | Packet Waiting Time |  |
|  |  | Switch Page | Import Setting | v |
|  |  |  | Export Setting | v |
|  |  |  | Key Generation |  |
|  |  |  | Secure Image |  |
|  |  |  | Register | v |
|  |  |  | Global VLAN |  |
|  |  |  | L2 |  |
|  |  |  | ACL |  |
|  |  |  | Global QoS |  |
|  |  |  | Mirror |  |
|  |  |  | Misc |  |
|  |  |  | OTP |  |
|  |  |  | PHY Master |  |
|  |  |  | Sleep/Wake |  |
|  |  |  | Flow Control | v |
|  |  |  | FRER | v |
|  |  |  | PSFP | v |
|  |  |  | IGMP | v |
|  |  |  | Port VLAN |  |
|  |  |  | Port QoS |  |
|  |  |  | Port Isolation |  |
|  |  |  | Storm Control |  |
|  |  |  | Traffic Scheduler |  |
|  |  | Debug Page | MIB Counter |  |
|  |  |  | Reg Batch Access |  |
|  | Make Image Mode | Switch Page | Import Setting | v |
|  |  |  | Export Setting | v |
|  |  |  | Key Generation |  |
|  |  |  | Secure Image |  |
|  |  |  | Register |  |
|  |  |  | Global VLAN |  |
|  |  |  | L2 |  |
|  |  |  | ACL |  |
|  |  |  | Global QoS |  |
|  |  |  | Mirror |  |
|  |  |  | PTP | Conditional Pass |
|  |  |  | Routing |  |
|  |  |  | OTP |  |
|  |  |  | Sleep/Wake |  |
|  |  |  | Flow Control | v |
|  |  |  | FRER | Conditional Pass |
|  |  |  | PSFP | Conditional Pass |
|  |  |  | IGMP | v |
|  |  |  | Port Properties-Traffic | v |
|  |  |  | Port Properties-RGMII | v |
|  |  |  | Port Properties-SERDES | v |
|  |  |  | Port Properties-PCIE | v |
|  |  |  | Port VLAN |  |
|  |  |  | Port QoS |  |
|  |  |  | Port Isolation |  |
|  |  |  | Storm Control |  |
|  |  |  | Traffic Scheduler |  |

## Json compatible test (VA)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **feature** | **2.1.6.16.0** | **2.1.6.15.0** | **2.1.6.14.1** | **2.1.6.13.0** | **2.1.6.12.0** | **2.1.6.11.0** |
| Global VLAN | v | v | v | v | v | v |
| Global L2 | v | v | v | v | v | v |
| Global ACL | v | v | v | v | v | v |
| Global QoS | v | v | v | v | v | v |
| Mirror | v | v | v | v | v | v |
| PTP | v | v | v | v | v | v |
| Routing | v | v | v | v | v | v |
| Misc | v | v | v | v | v | v |
| OTP | v | v | v | v | v | v |
| PHY Master | v | v | v | v | v | v |
| Sleep/Wake | v | v | v | v | v | v |
| Flow Control | v | v | v | v | v | v |
| FRER | v | v | v | v | v | v |
| PSFP | v | v | v | v | v | v |
| IGMP | v | v | v | v | v | v |
| Port Properties | v | v | v | v | v | v |
| Port VLAN | v | v | v | v | v | v |
| Port QoS | v | v | v | v | v | v |
| Port Isolation | v | v | v | v | v | v |
| Port Storm Control | v | v | v | v | v | v |
| Port Traffic Scheduler | v | v | v | v | v | v |

## GUI/Functional test (V2/V3)

* We will continue to complete the related tests.

# About the Release

1. We use the following software to develop Switch tool v2.1.6.16.0.
   1. SDK V4.6.1
   2. Patch Firmware V4.7.2
   3. OTP Programmer V 4.1.1
2. We use the following software to develop Switch tool v2.1.5.25.0.
   1. SDK V2.9.0
   2. Patch Firmware V3.6.3/V3.9.1

# Comparisons between V3 and VA

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Chip Version** | **Configuration Mode** | **Tab Page** | **Configuration** | **Test Group** | **VA 2.1.6.15.0** | **V3 2.1.5.25.0** |
| RTL9075VA | Runtime (I2C) | General Page | USB IO Init |  | o | o |
| RTL9072VA | Runtime (SPI) |  | Check Connection |  | o | o |
| RTL9068VA | Runtime (MDC/MDIO) |  | Update Image |  | o | o |
| RTL9075AV3 |  |  | Validation |  | o | o |
| RTL9072AV3 |  |  | I2C ID |  | o | o |
| RTL9068AV3 |  |  | MDX ID |  | o | o |
| RTL9054VA |  |  | Combine/Program |  | o |  |
|  |  | Switch Page | Import Setting |  | o | o |
|  |  |  | Export Setting |  | o | o |
|  |  |  | Key Generation |  | o | o |
|  |  |  | Secure Image |  | o | o |
|  |  |  | Register (R/W/Clear) |  | o | o |
|  |  |  | Stacking Enable |  | o | o |
|  |  |  | Stacking Unit ID |  | o | o |
|  |  |  | Global Settings | VLAN | o | o |
|  |  |  |  | L2 | o | o |
|  |  |  |  | ACL | o | o |
|  |  |  |  | QoS | o | o |
|  |  |  |  | Mirror | o | o |
|  |  |  |  | Misc | o | o |
|  |  |  |  | OTP | o | o |
|  |  |  |  | PHY Master | o | o |
|  |  |  |  | Sleep and Wakeup | o | o |
|  |  |  |  | Flow Control | o |  |
|  |  |  |  | FRER | o |  |
|  |  |  |  | PSFP | o |  |
|  |  |  |  | IGMP | o |  |
|  |  |  | Port Settings | Properties | o | o |
|  |  |  |  | VLAN | o | o |
|  |  |  |  | QoS | o | o |
|  |  |  |  | Port Isolation | o |  |
|  |  |  |  | Storm Control | o |  |
|  |  |  |  | Traffic Scheduler | o |  |
|  |  | Debug Page | Packet Tester | Packet Counter | o | o |
|  |  |  |  | Packet Generator |  |  |
|  |  |  | Reg Batch Access | Ethernet Reg Batch Access |  |  |
|  |  |  |  | MDC/MDIO Testing Options |  |  |
|  |  |  | Switch Reg Batch Access | Ethernet Reg Batch Access |  |  |
|  |  |  |  | MDC/MDIO Testing Options |  |  |
|  |  | Stacking Page | Dynamic Setup | Stacking Enable | o | o |
|  |  |  |  | Group ID | o | o |
|  |  |  | Manual Setup | Add Switch | o | o |
|  |  |  |  | Delete Switch | o | o |
|  |  |  |  | Save to Bin | o | o |
|  | Runtime (Ethernet) | General Page | Check Connection |  | o | o |
|  |  |  | Update Image |  | o | o |
|  |  |  | PC MAC Address |  | o | o |
|  |  |  | Switch MAC Address |  | o | o |
|  |  |  | Unicast |  | o | o |
|  |  |  | Packet Waiting Time |  | o | o |
|  |  | Switch Page | Import Setting |  | o | o |
|  |  |  | Export Setting |  | o | o |
|  |  |  | Key Generation |  | o | o |
|  |  |  | Secure Image |  | o | o |
|  |  |  | Register (R/W/Clear) |  | o | o |
|  |  |  | Stacking Enable |  | o | o |
|  |  |  | Stacking Unit ID |  | o | o |
|  |  |  | Global Settings | VLAN | o |  |
|  |  |  |  | L2 | o | o |
|  |  |  |  | ACL | o | o |
|  |  |  |  | QoS | o | o |
|  |  |  |  | Mirror | o | o |
|  |  |  |  | Misc | o | o |
|  |  |  |  | OTP | o | o |
|  |  |  |  | PHY Master | o | o |
|  |  |  |  | Sleep and Wakeup | o | o |
|  |  |  |  | Flow Control | o |  |
|  |  |  |  | FRER | o |  |
|  |  |  |  | PSFP | o |  |
|  |  |  |  | IGMP | o |  |
|  |  |  | Port Settings | Properties | o | o |
|  |  |  |  | VLAN | o | o |
|  |  |  |  | QoS | o | o |
|  |  |  |  | Port Isolation | o |  |
|  |  |  |  | Storm Control | o |  |
|  |  |  |  | Traffic Scheduler | o |  |
|  |  | Debug Page | Packet Tester | Packet Counter | o | o |
|  |  |  |  | Packet Generator |  |  |
|  |  |  | Reg Batch Access | Ethernet Reg Batch Access |  |  |
|  |  |  |  | MDC/MDIO Testing Options |  |  |
|  |  |  | Switch Reg Batch Access | Ethernet Reg Batch Access |  |  |
|  |  |  |  | MDC/MDIO Testing Options |  |  |
|  |  | Stacking Page | Dynamic Setup | Stacking Enable | o | o |
|  |  |  |  | Group ID | o | o |
|  |  |  | Manual Setup | Add Switch | o | o |
|  |  |  |  | Delete Switch | o | o |
|  |  |  |  | Save to Bin | o | o |
|  | Make Image Mode | Switch Page | Import Setting |  | o | o |
|  |  |  | Export Setting |  | o | o |
|  |  |  | Key Generation |  | o | o |
|  |  |  | Secure Image |  | o | o |
|  |  |  | Make Image File |  | o | o |
|  |  |  | Global Settings | VLAN | o | o |
|  |  |  |  | L2 | o | o |
|  |  |  |  | ACL | o | o |
|  |  |  |  | QoS | o | o |
|  |  |  |  | Mirror | o | o |
|  |  |  |  | PTP | o | o |
|  |  |  |  | Register | o | o |
|  |  |  |  | Routing | o | o |
|  |  |  |  | OTP | o | o |
|  |  |  |  | Sleep and Wakeup | o | o |
|  |  |  |  | Flow Control | o |  |
|  |  |  |  | FRER | o |  |
|  |  |  |  | PSFP | o |  |
|  |  |  |  | IGMP | o |  |
|  |  |  | Port Settings | Properties | o | o |
|  |  |  |  | VLAN | o | o |
|  |  |  |  | QoS | o | o |
|  |  |  |  | Port Isolation | o |  |
|  |  |  |  | Storm Control | o |  |
|  |  |  |  | Traffic Scheduler | o |  |
|  |  | Debug Page | Packet Tester | Packet Counter |  |  |
|  |  |  |  | Packet Generator |  |  |
|  |  |  | Reg Batch Access | Ethernet Reg Batch Access |  |  |
|  |  |  |  | MDC/MDIO Testing Options |  |  |
|  |  |  | Switch Reg Batch Access | Ethernet Reg Batch Access |  |  |
|  |  |  |  | MDC/MDIO Testing Options |  |  |
|  |  | Stacking Page | Dynamic Setup | Stacking Enable | o | o |
|  |  |  |  | Group ID | o | o |
|  |  |  | Manual Setup | Add Switch | o | o |
|  |  |  |  | Delete Switch | o | o |
|  |  |  |  | Save to Bin | o | o |