BR200 PSE Support Test Case

Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| Version | Date | Author | Description |
| 0.1 | 12/8/2011 | Tiezhu Zhu | Initial Version |
| 0.2 | 07/23/2012 | Tiezhu Zhu | PSE max power change from 40w to 44w |
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Glossary and Abbreviations

# Introduction

BR200 platform integrate a BROADCOM PSE control in system, So BR200 can support external 2 POE devices.

# Test Objectives

As power source control

1. user can query how many power be provide for each port after system boot up. These include the port’s voltage/current/temperature/power.
2. enable/disable this port based capability. This information can be saved to configuration file.
3. 802.3at mode support. Default only support 802.3af mode. In 802.3af power mode,provid 12.95w power. If outside device is class 4 device, system need work at 8.2.3at high power mode. This information can saved to eeprom image update through the UART interface. The original binary init image is from DNI, this image can be updated.

# Test Acceptance Criterion from Development

* Approved – MRD

The link to MRD

* Approved – Functional Specifications

The link to function spec：

<http://saturn.aerohive.com/view.php?fDocumentId=3498>

* Approved – Unit Test Plans

The link to unit test report of dev

# Product Pass Criterion

Meet all objects in marketing requirement or function spec which may include key function objectives, capacity objectives, performance objectives and so on.

# Test Bed/Topo Design

<List topo and topo ID>

# Test Point

## BR200 PSE CLI check

### CLI check: “show interface ethx pse” (eth0-eth4, negative test)

### CLI Check: “[no] interface <ethx> pse shutdown”

### CLI Check: “[no] interface <ethx> pse 802.3at”

### CLI Check:” save pse-image [<location> | <url>]”

### CLI Check:” interface <ethx> pse reset”

### CLI Check:” [no] pse max-power-source [numbers]”

### CLI Check:” [no] interface <ethx> pse priority [numbers]”

### CLI Check:” pse reset”

??? temperature protection mechanism???

## Key Scenarios Test

### User connect two 802.3af AP to BR200 for test

### User connect two 802.3at AP to BR200 for test

### User connect one 802.3at AP and one 802.3af AP for test

### User connect PD device for VOIP/Camera/BlueTooth AP/POE charge/POS machine/DataCollection terminal

## Function Test

### Basic logic and function check for PSE

#### Under default configuration with 802.3af PD connected, check if PSE work

#### Disable/enable PSE in BR200, check if 802.3af PD/802.3at PD/non-poe device work?

#### PSE with 802.3at enable/disable/shutdown, check if 802.3af PD/802.3at PD/Non-POE Device work?

#### Check if PSE image upgrade work under TFTP/SCP/HTTP server?

#### After set configuration with PSE 802.3at enable/disable, check if PSE work after reboot.

#### Check if 802.3af/at can be separately set to each port and work?

### 802.3at/802.3af algorithm for one port

#### 802.3at/802.3af: Simulate 5 level power PD by Keithley Power Supply, check if PSE can negotiate and provide corresponding power to PD

#### 802.3at/802.3af: Simulate low level power which is under PD threshold, check if PSE can provide the corresponding power

#### 802.3at/802.3af:Simulate high power which is over 30W, check how PSE work?

#### Simulate non-typical PD Resistor and Capacitance, check if PSE can provide power?

PD: R: 19K—26.5Kohm; C: <=150nf

#### Simulate short circuit PD, check if PSE will provide power?

#### Connect real PD AP170/VOIP/Camera/Bluetooth, check if PSE provide the correct power to each PD

#### Compatibility Test: Check if PSE can support PD which does not obey 802.3af

#### Check if PSE support PD which only support idle line power

### Different POE port priority test

#### Auto Mode: 802.3af/802.3at: When PSE eth1(high power PD)/eth2(normal PD) total power exceed PSE capability, check if PSE will shut down eth2 power to support eth1 PD

#### Auto Mode: 802.3af/802.3at: When PSE eth1(normal power PD)/eth2 (High power PD) total power exceed PSE capability, check if PSE will shutdown eth1 power to support eth2 PD

#### Auto Mode: 802.3af/802.3at: When PSE eth1(High power PD)/eth2(High power PD) BR200 wifi1 (run heavy traffic), check how does BR200 allocate power

#### Manual mode (eth1<eth2): eth1: 0/1/2/3 eth2:3/2/1/0: When PSE eth1(high power PD)/eth2(normal PD) total power exceed PSE capability, check if PSE will shut down eth2 power to support eth1 PD

#### Manual mode (eth1>eth2): eth1: 3/2/1/0 eth2:0/1/2/3: When PSE eth1(high power PD)/eth2(normal PD) total power exceed PSE capability, check if PSE will shut down eth2 power to support eth1 PD

#### Manual mode (eth1=eth2): eth1: 0/1/2/3 eth2:0/1/2/3: When PSE eth1(high power PD)/eth2(normal PD) total power exceed PSE capability, check if PSE will shut down eth2 power to support eth1 PD

????Under load Saturation mode, insert low priority PD.

### POE equipment detection procedure

#### Connect one PD and check if PSE detection procedure obey the 802.3af standard

#### Disconnect PD and check if PSE shutdown port power and return to detection mode

#### 802.3af/802.3at: When connected high power PD exceed standard threshold, check if PSE do the procedure: power—shutdown—detection ---power……. And check the punish time.

#### During RTP & Power management stage, check if PSE will communicated with PD at times

### PSE LLDP support

#### Check if PSE will negotiate with PD by LLDP

#### When PD power overload, check if PSE negotiate with PD

### PSE max power change from 40W to 44W

#### Check if BR200 can output 44w power under different power divider

#### Check if PSE can output 34.2W on each port? Check if PD can get at least 25.5w power?

#### When PSE output 44w power, check if BR200 can work normal under high throughput with mcs0

#### For different max power 802.3at PD, check if it also can negotiate with PSE

#### For eth1/eth2 priority issue, check if priority function work under max power 44w

## Stress Test

### Under BR200 wifi/eth3/eth4 run heavy traffic, check if PSE can support enough power to PD

## Performance test

### 802.3af/802.3at: check if eth1/eth2 get good performance under low/middle/high power PD

# Test Case

## BR200 PSE CLI check

### CLI check: “show interface ethx pse” (eth0-eth4, negative test)

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_CLICheck\_01 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use | AP1----BR200----AP4  | |  AP2 AP3 | | |
| Description | CLI check: “show interface ethx pse” (eth0-eth4, negative test) | | |
| Pre-condition | Connect four AP to BR200 eth1~eth4 | | |
| Test procedure | 1. Exec CLI “show interface eth1 pse” to check result 1 2. Exec CLI “show interface eth2 pse” to check result 2 3. Exec CLI “show interface eth3 pse” to check result 3 4. Exec CLI “show interface eth4 pse” to check result 4 5. Exec CLI “show interface eth5 pse” to check result 5 6. Exec CLI “show interface eth0 pse” to check result 0 | | |
| Expect result | 1. Result 1: pass 2. Result 2: pass 3. Result 3: fail 4. Result 4: fail 5. Result 5: fail 6. Result 0: fail | | |
| Test Result | Bug 16205 | | |

### CLI Check: “[no] interface <ethx> pse shutdown”

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_CLICheck\_02 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use | AP1----BR200----AP4  | |  AP2 AP3 | | |
| Description | CLI Check: “[no] interface <ethx> pse shutdown” | | |
| Pre-condition | Connect four AP to BR200 eth1~eth4 | | |
| Test procedure | 1. Exec CLI “interface eth1 pse shutdown” to check result 1 2. Exec CLI “interface eth2 pse shutdown” to check result 2 3. Exec CLI “interface eth3 pse shutdown” to check result 3 4. Exec CLI “interface eth4 pse shutdown” to check result 4 5. Exec CLI “interface eth0 pse shutdown” to check result 5 6. Exec CLI “no interface eth5 pse shutdown” to check result 0 7. Exec CLI “no interface eth1 pse shutdown” to check result 7 8. Exec CLI “no interface eth2 pse shutdown” to check result 8 9. Exec CLI “no interface eth3 pse shutdown” to check result 9 10. Exec CLI “no interface eth4 pse shutdown” to check result 10 11. Exec CLI “no interface eth0 pse shutdown” to check result 11 12. Exec CLI “no interface eth5 pse shutdown” to check result 12 | | |
| Expect result | 1. Result 1: pass 2. Result 2: pass 3. Result 3: fail 4. Result 4: fail 5. Result 5: fail 6. Result 0: fail 7. Result 7: pass 8. Result 8: pass 9. Result 9: fail 10. Result 10: fail 11. Result 11: fail 12. Result 12: fail | | |
| Test Result | PASS | | |

### CLI Check: “[no] interface <ethx> pse 802.3at”

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_CLICheck\_03 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use | AP1----BR200----AP4  | |  AP2 AP3 | | |
| Description | CLI Check: “CLI Check: “[no] interface <ethx> pse 802.3at” | | |
| Pre-condition | Connect four AP to BR200 eth1~eth4 | | |
| Test procedure | 1. Exec CLI “interface eth1 pse 802.3at” to check result 1 2. Exec CLI “interface eth2 pse 802.3at” to check result 2 3. Exec CLI “interface eth3 pse 802.3at” to check result 3 4. Exec CLI “interface eth4 pse 802.3at” to check result 4 5. Exec CLI “interface eth0 pse 802.3at” to check result 5 6. Exec CLI “no interface eth5 pse 802.3at” to check result 0 7. Exec CLI “no interface eth1 pse 802.3at” to check result 7 8. Exec CLI “no interface eth2 pse 802.3at” to check result 8 9. Exec CLI “no interface eth3 pse 802.3at” to check result 9 10. Exec CLI “no interface eth4 pse 802.3at” to check result 10 11. Exec CLI “no interface eth0 pse 802.3at” to check result 11 12. Exec CLI “no interface eth5 pse 802.3at” to check result 12 | | |
| Expect result | 1. Result 1: pass 2. Result 2: pass 3. Result 3: fail 4. Result 4: fail 5. Result 5: fail 6. Result 0: fail 7. Result 7: pass 8. Result 8: pass 9. Result 9: fail 10. Result 10: fail 11. Result 11: fail 12. Result 12: fail | | |
| Test Result | PASS | | |

### CLI Check:” save pse-image [<location> | <url>]”

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_CLICheck\_04 | | |
| Priority | Accept | Automation Flag | NA |
| Topology to use | SW----BR200 | | |
| Description | CLI Check:” save pse-image [<location> | <url>]” | | |
| Pre-condition | Setup TFTP/SCP/Http/https server for image download | | |
| Test procedure | 1. Exec CLI” save pse image tftp://location:path/filename” to check the result 1 2. Exec CLI” save pse image scp://username@location:path/filename” to check the result 2 3. Exec CLI” save pse image scp://username@location:port:path/filename” to check the result 3 4. After pse image upgrade and AP reboot, the original configuration should not be corrupted. Result4: | | |
| Expect result | 1. Result 1: pass 2. Result 2: pass 3. Result 3: pass 4. Result 4: pass | | |
| Test Result | PASS | | |

### CLI Check:” interface <ethx> pse reset”

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_CLICheck\_05 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | AP1----BR200-----AP2 | | |
| Description | CLI Check:” interface <ethx> pse reset” | | |
| Pre-condition | Connect AP1/AP2 to BR200 eth1/et2. The default pse mode 802.3af | | |
| Test procedure | 1. Connect AP1/AP2 to BR200 eth1/eth2 port 2. Check if AP1/AP2 been powered on. Result2   “show interface eth1 pse”  “show interface eth2 pse”   1. Reset eth1/eth2 pse, check if pse functionality and statistic have been reset.Result3   “interface eth1 pse reset”  “interface eth2 pse reset”  “show interface eth1 pse”  “show interface eth2 pse”   1. Set AP1/Ap2 to 802.3at mode   “interface eth1 pse 802.3at”  “interface eth2 pse 802.3at”   1. Check if AP1/AP2 been powered on. Result5   “show interface eth1 pse”  “show interface eth2 pse”   1. Reset eth1/eth2 pse, check if pse functionality and statistic have been reset.Result6   “interface eth1 pse reset”  “interface eth2 pse reset”  “show interface eth1 pse”  “show interface eth2 pse”   1. Check if eth3/eth4/eth0/eth5 port will be reset. Result7   “Interface eth0 pse reset”  “Interface eth3 pse reset”  “Interface eth4 pse reset”  “Interface eth5 pse reset” | | |
| Expect result | 1. Result2:eth1/eth2 PD been enabled 2. Result3: eth1/eth2 functionality and statistic have been reset 3. Result5: eth1/eth2 PD been enabled 4. Result6: eth1/eth2 functionality and statistic have been reset 5. Result7:eth0/eth3/eth4/eth5 not support. | | |
| Test Result | Bug16211 | | |

### CLI Check:” [no] pse max-power-source [numbers]”

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_CLICheck\_06 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | Itech Load----BR200 | | |
| Description | CLI Check:” [no] pse max-power-source [numbers]” | | |
| Pre-condition |  | | |
| Test procedure | 1. Exec CLI” pse max-power-source 0”, check result1 2. Exec CLI” pse max-power-source 35”, check result2 3. Exec CLI” pse max-power-source 36”, check result2 4. Exec CLI “no pse max-power-source”, tunning Itech load to 43w/44w/ 45w,check result3 | | |
| Expect result | 1. Result1: Can set 0w 2. Result1: Can set 35w 3. Result1: Can’t set 4. Result1: default should be 33w   ??? 50V/720ma=36W, resistor: 12.5hom, PD: 29.5W; PD load: 25W. | | |
| Test Result | PASS  By Electronic load IT8510: BR200 only can constantly provide 30.5W power regardless 33w/35w setting. | | |

### CLI Check:” [no] interface <ethx> pse priority [numbers]”

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_CLICheck\_07 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | Itech Load----BR200 | | |
| Description | CLI Check:” [no] interface <ethx> pse priority [numbers]” | | |
| Pre-condition |  | | |
| Test procedure | 1. Exec CLI:”interface eth1 pse priority 0”, check result1 2. Exec CLI:”interface eth1 pse priority 1”, check result2 3. Exec CLI:”interface eth1 pse priority 2”, check result3 4. Exec CLI:”interface eth1 pse priority 3”, check result4 5. Exec CLI:”interface eth1 pse priority 4”, check result5 6. Exec CLI:”no interface eth1 pse priority 0”, check result6 7. Exec CLI:”no interface eth1 pse priority 1”, check result7 8. Exec CLI:”no interface eth1 pse priority 2”, check result8 9. Exec CLI:”no interface eth1 pse priority 3”, check result9 10. Exec CLI:”no interface eth1 pse priority 4”, check result10 11. Exec CLI:”interface eth2 pse priority 0”, check result11 12. Exec CLI:”interface eth2 pse priority 1”, check result12 13. Exec CLI:”interface eth2 pse priority 2”, check result13 14. Exec CLI:”interface eth2 pse priority 3”, check result14 15. Exec CLI:”interface eth2 pse priority 4”, check result15 16. Exec CLI:”no interface eth2 pse priority 0”, check result16 17. Exec CLI:”no interface eth2 pse priority 1”, check result17 18. Exec CLI:”no interface eth2 pse priority 2”, check result18 19. Exec CLI:”no interface eth2 pse priority 3”, check result19 20. Exec CLI:”no interface eth2 pse priority 4”, check result20 21. Exec CLI:”interface eth3 pse priority 0”, check result21 | | |
| Expect result |  | | |
| Test Result | PASS | | |

### CLI Check:” pse reset”

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_CLICheck\_08 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | AP1----BR200-----AP2 | | |
| Description | CLI Check:” pse reset” | | |
| Pre-condition | Connect AP1/AP2 to BR200 eth1/et2. The default pse mode 802.3af | | |
| Test procedure | 1. Connect AP1/AP2 to BR200 eth1/eth2 port 2. Check if AP1/AP2 been powered on. Result2   “show interface eth1 pse”  “show interface eth2 pse”   1. Reset eth1/eth2 pse, check if pse functionality and statistic have been reset.Result3   “ pse reset”  “show interface eth1 pse”  “show interface eth2 pse” | | |
| Expect result | 1. Result2:eth1/eth2 PD been enabled 2. Result3: eth1/eth2 functionality and statistic have been reset | | |
| Test Result | PASS | | |

## Key Scenarios

### User connect two 802.3af AP to BR200 for test

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_KeyScenarios\_01 | | |
| Priority | Accept | Automation Flag | NA |
| Topology to use | AP1----BR200------AP2  | |  Client1 Client2 | | |
| Description | User connect two 802.3af AP to BR200 for test | | |
| Pre-condition | Radio profile ng phymode 11ng  Radio profile na phymode 11na  Ssid test01  Ssid test02  security-object sss  security-object sss security protocol-suite wpa2-aes-psk ascii-key aerohive  ssid test01 security-object sss  In wifi0 radio profile ng  In wifi0 ssid test01  In wifi1 radio profile 11na  In wifi1 ssid test01  In wifi0 radio power 20  In wifi1 radio power 20 | | |
| Test procedure | 1. Connect AP1 and AP2 to BR200 eth1/eth2 port 2. “show interface eth1 pse””show interface eth2 pse” to check the result2. 3. Separately connect client1/client2 to AP1/AP2 wifi0 band 4. “show interface eth1 pse””show interface eth2 pse” to check the result4. 5. Run 4 downlink traffic by iperf from AP1 to client1 (Ap2 to client2) 6. “show interface eth1 pse””show interface eth2 pse” to check the result6. 7. Separately connect client1/client2 to AP1/AP2 wifi1 band 8. “show interface eth1 pse””show interface eth2 pse” to check the result8. 9. Run 4 downlink traffic by iperf from AP1 to client1 (Ap2 to client2) 10. “show interface eth1 pse””show interface eth2 pse” to check the result10. | | |
| Expect result | 1. Result2: pass 2. Result4: pass 3. Result6: pass 4. Result8: pass 5. Result10: pass | | |
| Test Result | PASS | | |

### User connect two 802.3at AP to BR200 for test

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_KeyScenarios\_02 | | |
| Priority | Accept | Automation Flag | NA |
| Topology to use | AP1----BR200------AP2  | |  Client1 Client2 | | |
| Description | User connect two 802.3at AP to BR200 for test | | |
| Pre-condition | Radio profile ng phymode 11ng  Radio profile na phymode 11na  Ssid test01  Ssid test02  security-object sss  security-object sss security protocol-suite wpa2-aes-psk ascii-key aerohive  ssid test01 security-object sss  In wifi0 radio profile ng  In wifi0 ssid test01  In wifi1 radio profile 11na  In wifi1 ssid test01  In wifi0 radio power 20  In wifi1 radio power 20 | | |
| Test procedure | 1. Connect AP1 and AP2 to BR200 eth1/eth2 port 2. “show interface eth1 pse””show interface eth2 pse” to check the result2. 3. Separately connect client1/client2 to AP1/AP2 wifi0 band 4. “show interface eth1 pse””show interface eth2 pse” to check the result4. 5. Run 4 downlink traffic by iperf from AP1 to client1 (Ap2 to client2) 6. “show interface eth1 pse””show interface eth2 pse” to check the result6. 7. Separately connect client1/client2 to AP1/AP2 wifi1 band 8. “show interface eth1 pse””show interface eth2 pse” to check the result8. 9. Run 4 downlink traffic by iperf from AP1 to client1 (Ap2 to client2) 10. “show interface eth1 pse””show interface eth2 pse” to check the result10. | | |
| Expect result | 1. Result2: pass 2. Result4: pass 3. Result6: Only eth1 802.3at AP can work 4. Result8: pass 5. Result10: Only eth1 802.3at AP can work | | |
| Test Result | PASS | | |

### User connect one 802.3at AP and one 802.3af AP for test

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_KeyScenarios\_03 | | |
| Priority | Accept | Automation Flag | NA |
| Topology to use | AP1----BR200------AP2  | |  Client1 Client2 | | |
| Description | User connect one 802.3at AP and one 802.3af AP to BR200 for test | | |
| Pre-condition | Radio profile ng phymode 11ng  Radio profile na phymode 11na  Ssid test01  Ssid test02  security-object sss  security-object sss security protocol-suite wpa2-aes-psk ascii-key aerohive  ssid test01 security-object sss  In wifi0 radio profile ng  In wifi0 ssid test01  In wifi1 radio profile 11na  In wifi1 ssid test01  In wifi0 radio power 20  In wifi1 radio power 20 | | |
| Test procedure | 1. Connect 802.3at AP1 and 802.3af AP2 to BR200 eth1/eth2 port 2. “show interface eth1 pse””show interface eth2 pse” to check the result2. 3. Separately connect client1/client2 to AP1/AP2 wifi0 band 4. “show interface eth1 pse””show interface eth2 pse” to check the result4. 5. Run 4 downlink traffic by iperf from AP1 to client1 (Ap2 to client2) 6. “show interface eth1 pse””show interface eth2 pse” to check the result6. 7. Separately connect client1/client2 to AP1/AP2 wifi1 band 8. “show interface eth1 pse””show interface eth2 pse” to check the result8. 9. Run 4 downlink traffic by iperf from AP1 to client1 (Ap2 to client2) 10. “show interface eth1 pse””show interface eth2 pse” to check the result10. 11. Connect 802.3af AP2 and 802.3at AP1 to BR200 eth1/eth2 port 12. “show interface eth1 pse””show interface eth2 pse” to check the result12. 13. Separately connect client1/client2 to AP1/AP2 wifi0 band 14. “show interface eth1 pse””show interface eth2 pse” to check the result14. 15. Run 4 downlink traffic by iperf from AP1 to client1 (Ap2 to client2) 16. “show interface eth1 pse””show interface eth2 pse” to check the result16. 17. Separately connect client1/client2 to AP1/AP2 wifi1 band 18. “show interface eth1 pse””show interface eth2 pse” to check the result18. 19. Run 4 downlink traffic by iperf from AP1 to client1 (Ap2 to client2) 20. “show interface eth1 pse””show interface eth2 pse” to check the result20. | | |
| Expect result | 1. Result2: pass 2. Result4: pass 3. Result6: Only eth1 802.3at AP can work 4. Result8: pass 5. Result10: Only eth1 802.3at AP can work 6. Result12: pass 7. Result14: pass 8. Result16: Only eth1 802.3af AP can work 9. Result18: pass 10. Result20: Only eth1 802.3af AP can work | | |
| Test Result | PASS | | |

### User connect PD device for VOIP/Camera/BlueTooth AP/POE charge/POS machine/DataCollection terminal

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_KeyScenarios\_04 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | AP1----BR200------PD  |  Client | | |
| Description | User connect PD device for VOIP/Camera/BlueTooth AP/POE charge/POS machine/DataCollection terminal | | |
| Pre-condition | Connect AP1 to BR200 eth2 port and connect PD to BR200 eth1 port.  Connect client to AP1  Radio profile ng phymode 11ng  Radio profile na phymode 11na  Ssid test01  Ssid test02  security-object sss  security-object sss security protocol-suite wpa2-aes-psk ascii-key aerohive  ssid test01 security-object sss  In wifi0 radio profile ng  In wifi0 ssid test01  In wifi1 radio profile 11na  In wifi1 ssid test01  In wifi0 radio power 20  In wifi1 radio power 20 | | |
| Test procedure | 1. Connect VOIP to BR200 eth1 port 2. “show interface eth1 pse””show interface eth2 pse” to check the result2. 3. Connect Camera to BR200 eth1 port 4. “show interface eth1 pse””show interface eth2 pse” to check the result4. 5. Connect Bluetooth AP to BR200 eth1 port 6. “show interface eth1 pse””show interface eth2 pse” to check the result6. 7. Connect POE charge to BR200 eth1 port 8. “show interface eth1 pse””show interface eth2 pse” to check the result8. 9. Connect POS machine to BR200 eth1 port 10. “show interface eth1 pse””show interface eth2 pse” to check the result10. 11. Connect Data Collection PD to BR200 eth1 port 12. “show interface eth1 pse””show interface eth2 pse” to check the result12. | | |
| Expect result | 1. Result2: pass 2. Result4: pass 3. Result6: pass 4. Result8: pass 5. Result10: pass 6. Result12: pass | | |
| Test Result | VOIP Passed | | |

## Function Test Case <maybe has many sub-sections, up to you>

<Do not forget negative/boundary case>

### Basic logic and function check for PS

#### Under default configuration with 802.3af PD connected, check if PSE work

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_BasicLogic\_01 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | AP1----BR200----AP4  | |  AP2 AP3 | | |
| Description | Under default configuration with 802.3af PD connected, check if PSE work | | |
| Pre-condition | Connect four AP to BR200 eth1~eth4 | | |
| Test procedure | 1. Reset configuration in BR100 2. “show in eth1 pse””show in eth2 pse” to check if PD can be enabled 3. Check the temperature/voltage/current/power status | | |
| Expect result | PASS | | |

#### Disable/enable PSE in BR200, check if 802.3af PD/802.3at PD/non-poe device work?

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_BasicLogic\_02 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | AP1----BR200----AP4  | |  AP2 AP3 | | |
| Description | Disable/enable PSE in BR200, check if 802.3af PD/802.3at PD/non-poe device work? | | |
| Pre-condition | Connect four AP to BR200 eth1~eth4 | | |
| Test procedure | 1. Connect 802.3af AP1/AP2 to BR200 without power supply 2. “in eth1 pse shutdown””in eth2 pse shutdown” “show in eth1 pse””show interface eth2 pse” to check if AP1/AP2 will be shutdown,result2 3. “no in eth1 pse shutdown””no in eth2 pse shutdown” “show in eth1 pse””show interface eth2 pse” to check if AP1/Ap2 will be shutdown,result3 4. Connect non-poe device to BR200.(AP with power supply) 5. “in eth1 pse shutdown””in eth2 pse shutdown” “show in eth1 pse””show interface eth2 pse” to check if AP1/AP2 will be shutdown,result5 6. “no in eth1 pse shutdown””no in eth2 pse shutdown” “show in eth1 pse””show interface eth2 pse” to check if AP1/Ap2 will be shutdown,result6 7. Connect 802.3at AP1/AP2 to BR200 without power supply 8. “in eth1 pse shutdown””in eth2 pse shutdown” “show in eth1 pse””show interface eth2 pse” to check if AP1/AP2 will be shutdown,result8 9. “no in eth1 pse shutdown””no in eth2 pse shutdown” “show in eth1 pse””show interface eth2 pse” to check if AP1/Ap2 will be shutdown,result9 | | |
| Expect result | 1. Result2: AP1/AP2 will be shutdown 2. Result3: AP1/AP2 will not be shutdown 3. Result 5: AP1/AP2 will not be shutdown 4. Result6: AP1/AP2 will not be affected 5. Result8: AP1/AP2 will be shutdown 6. Result9: AP1/AP2 will not be shutdown | | |
| Test result | PASS | | |

#### PSE with 802.3at enable/disable/shutdown, check if 802.3af PD/802.3at PD/Non-POE Device work?

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_BasicLogic\_03 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | AP1----BR200----AP4  | |  AP2 AP3 | | |
| Description | PSE with 802.3at enable/disable/shutdown, check if 802.3af PD/802.3at PD/Non-POE Device work? | | |
| Pre-condition | Connect four AP to BR200 eth1~eth4 | | |
| Test procedure | 1. Enable 802.3at PSE.   “interface eth1 pse 802.3at”  “interface eth2 pse 802.3at”   1. Connect 802.3af AP1/AP2 to BR200 without power supply, 2. “in eth1 pse shutdown””in eth2 pse shutdown” “show in eth1 pse””show interface eth2 pse” to check if AP1/AP2 will be shutdown,result2 3. “no in eth1 pse shutdown””no in eth2 pse shutdown” “show in eth1 pse””show interface eth2 pse” to check if AP1/Ap2 will be shutdown,result3 4. Connect non-poe device to BR200.(AP with power supply) 5. “in eth1 pse shutdown””in eth2 pse shutdown” “show in eth1 pse””show interface eth2 pse” to check if AP1/AP2 will be shutdown,result5 6. “no in eth1 pse shutdown””no in eth2 pse shutdown” “show in eth1 pse””show interface eth2 pse” to check if AP1/Ap2 will be shutdown,result6 7. Connect 802.3at AP1/AP2 to BR200 without power supply 8. “in eth1 pse shutdown””in eth2 pse shutdown” “show in eth1 pse””show interface eth2 pse” to check if AP1/AP2 will be shutdown,result8 9. “no in eth1 pse shutdown””no in eth2 pse shutdown” “show in eth1 pse””show interface eth2 pse” to check if AP1/Ap2 will be shutdown,result10 | | |
| Expect result | 1. Result2: AP1/AP2 will be shutdown 2. Result3: AP1/AP2 will not be shutdown 3. Result 5: AP1/AP2 will not be shutdown 4. Result6: AP1/AP2 will not be affected 5. Result8: AP1/AP2 will be shutdown 6. Result10: AP1/AP2 will not be shutdown | | |
| Test result | PASS | | |

#### After set configuration with PSE 802.3at enable/disable, check if PSE work after reboot.

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_BasicLogic\_04 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | AP1----BR200----AP4  | |  AP2 AP3 | | |
| Description | After set configuration with PSE 802.3at enable/disable, check if PSE work after reboot | | |
| Pre-condition | Connect four AP to BR200 eth1~eth4 | | |
| Test procedure | 1. Reset configuration in BR100. 2. After BR200 reboot, enable 802.3at in eth1/eth2   “interface eth1 pse 802.3at”  “interface eth2 pse 802.3at”   1. “show in eth1 pse””show in eth2 pse” to check if PD can be enabled. Result4. 2. After save configuration, reboot AP to check if PD still can be enabled. Result5.   “Save configuration”  “show in eth1 pse”  “show in eth2 pse”   1. Disable BR200 802.3at PSE.   “no interface eth1 pse 802.3at”  “no interface eth2 pse 802.3at”   1. “show in eth1 pse””show in eth2 pse” to check if PD can be enabled.Result7 2. After save configuration, reboot AP to check if PD still can be enabled.Result8   “Save configuration”  “show in eth1 pse”  “show in eth2 pse” | | |
| Expect result | 1. Result4: PD will be enabled 2. Result5:PD will be enabled 3. Result7: PD will be enabled 4. Result8:PD will be enabled | | |
| Test result | PASS | | |

#### Check if 802.3af/at can be separately set to each port and work?

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_BasicLogic\_05 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | AP1----BR200----AP4  | |  AP2 AP3 | | |
| Description | Check if 802.3af/at can be separately set to each port and work? | | |
| Pre-condition | Connect four AP to BR200 eth1~eth4 | | |
| Test procedure | 1. Enable 802.3at in eth1 and 802.3af in eth2. Check if PD can be enabled. Result1   “in eth1 pse 802.3at”  “in eth2 pse 802.3af”  “show in eth1 pse”  “show in eth1 pse”   1. Enable 802.3at in eth1 and 802.3af in eth2. Check if PD can be enabled.Result2   “in eth1 pse 802.3at”  “in eth2 pse 802.3af”  “show in eth1 pse”  “show in eth1 pse” | | |
| Expect result | 1. Result1: PD be enabled 2. Result2: PD be enabled | | |
| Test result | PASS | | |

### 802.3at/802.3af algorithm for one port

#### 802.3at/802.3af: Simulate 5 level power PD by Itech Load, check if PSE can negotiate and provide corresponding power to PD

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Algorithm\_01 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | BR200--------Itech Load | | |
| Description | Simulate 5 level power PD by Itech load, check if PSE can negotiate and provide corresponding power to PD | | |
| Pre-condition | Connect Itech load to BR200 for simulator | | |
| Test procedure | 1. Connect Itech load to BR200, set 802.3at to eth1   “interface eth1 pse 802.3at”   1. Simulate Class0 and class3 power 13W in Itech load, check PSE state. Result2   “show interface eth1 pse”   1. Simulate Class1 power 3.84w in Itech load, check PSE state. Result3   “show interface eth1 pse”   1. Simulate Class2 and class3 power 6.49W in Itech load, check PSE state. Result4   “show interface eth1 pse”   1. Simulate Class4 power 25.5W in Itech load, check PSE state. Result5   “show interface eth1 pse”   1. Simulate Class0 and class3 power 14.4W in Itech load, check PSE state. Result6   “show interface eth1 pse”   1. Simulate Class1 power 5w in Itech load, check PSE state. Result7   “show interface eth1 pse”   1. Simulate Class2 and class3 power 8.36W in Itech load, check PSE state. Result8   “show interface eth1 pse”   1. Simulate Class4 power 1.11\*25.5W in Itech load, check PSE state. Result9   “show interface eth1 pse”   1. imulate Class0 and class3 power 1.5\*13W in Itech load, check PSE state. Result10   “show interface eth1 pse”   1. Simulate Class1 power1.5\*3.84w in Itech load, check PSE state. Result11   “show interface eth1 pse”   1. Simulate Class2 and class3 power 1.5\*6.49W in Itech load, check PSE state. Result12   “show interface eth1 pse”   1. Simulate Class4 power 1.5\*25.5W in Itech load, check PSE state. Result13   “show interface eth1 pse”   1. Connect Itech load to BR200, set 802.3af to eth1   “interface eth1 pse 802.3af”   1. Simulate Class0 and class3 power 13W in Itech load, check PSE state. Result15   “show interface eth1 pse”   1. Simulate Class1 power 3.84w in Itech load, check PSE state. Result16   “show interface eth1 pse”   1. Simulate Class2 and class3 power 6.49W in Itech load, check PSE state. Result17   “show interface eth1 pse”   1. Simulate Class4 power 25.5W in Itech load, check PSE state. Result18   “show interface eth1 pse”   1. Simulate Class0 and class3 power 14.4W in Itech load, check PSE state. Result19   “show interface eth1 pse”   1. Simulate Class1 power 5w in Itech load, check PSE state. Result20   “show interface eth1 pse”   1. Simulate Class2 and class3 power 8.36W in Itech load, check PSE state. Result21   “show interface eth1 pse”   1. Simulate Class4 power 1.11\*25.5W in Itech load, check PSE state. Result22   “show interface eth1 pse”   1. Simulate Class0 and class3 power 1.5\*13W in Itech load, check PSE state. Result23   “show interface eth1 pse”   1. Simulate Class1 power1.5\*3.84w in Itech load, check PSE state. Result24   “show interface eth1 pse”   1. Simulate Class2 and class3 power 1.5\*6.49W in Itech load, check PSE state. Result25   “show interface eth1 pse”   1. Simulate Class4 power 1.5\*25.5W in Itech load, check PSE state. Result26   “show interface eth1 pse” | | |
| Expect result | 1. Result2: Show correct power and enable PD 2. Result3: Show correct power and enable PD 3. Result4: Show correct power and enable PD 4. Result5: Show correct power and enable PD 5. Result6: Show correct power and enable PD 6. Result7: Show correct power and enable PD 7. Result8: Show correct power and enable PD 8. Result9: Show correct power and enable PD 9. Result10: Show correct power and enable PD 10. Result11:Show correct power and enable PD 11. Result12: Show correct power and enable PD 12. Result13: Show correct power and can not enable PD 13. Result15: Show correct power and enable PD 14. Result16: Show correct power and enable PD 15. Result17: Show correct power and enable PD 16. Result18: Show correct power and enable PD 17. Result19: Show correct power and enable PD 18. Result20: Show correct power and enable PD 19. Result21: Show correct power and enable PD 20. Result22: Show correct power and enable PD 21. Result23: Show correct power and enable PD 22. Result24:Show correct power and enable PD 23. Result25: Show correct power and enable PD 24. Result26: Show correct power and can not enable PD | | |
| Test result | PASS | | |

#### 802.3at/802.3af: Simulate low level power which is under PD threshold, check if PSE can provide the corresponding power

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Algorithm\_02 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | BR200--------Itech Load | | |
| Description | Simulate low level power which is under PD threshold, check if PSE can provide the corresponding power | | |
| Pre-condition | Connect Itech load to BR200 for simulator | | |
| Test procedure | 1. Connect Itech load to BR200, set 802.3at to eth1   “interface eth1 pse 802.3at”   1. Simulate Class0 and class3 power 10W in Itech load, check PSE state. Result2   “show interface eth1 pse”   1. Simulate Class1 power 1w in Itech load, check PSE state. Result3   “show interface eth1 pse”   1. Simulate Class2 and class3 power 4.5W in Itech load, check PSE state. Result4   “show interface eth1 pse”   1. Simulate Class4 power 19W in Itech load, check PSE state. Result5   “show interface eth1 pse”   1. Connect Itech load to BR200, set 802.3af to eth1   “interface eth1 pse 802.3aF”   1. Simulate Class0 and class3 power 10W in Itech load, check PSE state. Result7   “show interface eth1 pse”   1. Simulate Class1 power 1w in Itech load, check PSE state. Result8   “show interface eth1 pse”   1. Simulate Class2 and class3 power 4.5W in Itech load, check PSE state. Result9   “show interface eth1 pse” | | |
| Expect result | 1. Result2: Show correct power and enable PD 2. Result3: Show correct power and enable PD 3. Result4: Show correct power and enable PD 4. Result5: Show correct power and enable PD 5. Result2: Show correct power and enable PD 6. Result3: Show correct power and enable PD 7. Result4: Show correct power and enable PD | | |
| Test result | PASS | | |

#### 802.3at/802.3af: Simulate high power which is over 30W, check how PSE work?

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Algorithm\_03 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | BR200--------Itech Load | | |
| Description | Simulate high power which is over 30W, check how PSE work? | | |
| Pre-condition | Connect Itech load to BR200 for simulator | | |
| Test procedure | 1. Connect Itech load to BR200, set 802.3at to eth1   “interface eth1 pse 802.3at”   1. Simulate Class4 power 30W in Itech load, check PSE state. Result2   “show interface eth1 pse”   1. Simulate Class4 power 35w in Itech load, check PSE state. Result3   “show interface eth1 pse”   1. Simulate Class4 power 50W in Itech load, check PSE state. Result4   “show interface eth1 pse”   1. Connect Itech load to BR200, set 802.3af to eth1   “interface eth1 pse 802.3af”   1. Simulate Class4 power 15.4w in Itech load, check PSE state. Result6   “show interface eth1 pse”   1. Simulate Class4 power 15.8w in Itech load, check PSE state. Result7   “show interface eth1 pse”   1. Simulate Class4 power 18w in Itech load, check PSE state. Result8   “show interface eth1 pse” | | |
| Expect result | 1. Result2: Show correct power and can enable PD 2. Result3: Show correct power and can not enable PD 3. Result4: Show correct power and can not enable PD 4. Result6: Show correct power and can enable PD 5. Result7: Show correct power and can enable PD 6. Result8: Show correct power and can not enable PD | | |
| Test result | PASS | | |

#### Simulate non-typical PD Resistor and Capacitance, check if PSE can provide power?

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Algorithm\_04 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | BR200--------Itech Load | | |
| Description | Simulate non-typical PD Resistor and Capacitance, check if PSE can provide power？  PD: R: 19K—26.5Kohm; C: <=150nf | | |
| Pre-condition | Connect Itech load to BR200 for simulator | | |
| Test procedure | 1. Connect Itech load to BR200, set 802.3at to eth1   “interface eth1 pse 802.3at”   1. Simulate Resistor 18Kohm in Itech load, check PSE state. Result2   “show interface eth1 pse”   1. Simulate Resistor 30Kohm in Itech load, check PSE state. Result3   “show interface eth1 pse”   1. Simulate Resistor 14Kohm in Itech load, check PSE state. Result4   “show interface eth1 pse”   1. Simulate Resistor 34Kohm in Itech load, check PSE state. Result5   “show interface eth1 pse” | | |
| Expect result | 1. Result2: No power output 2. Result3: No power output 3. Result4: No power output 4. Result5: No power output | | |
| Test result | fail | | |

#### Simulate short circuit PD, check if PSE will provide power?

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Algorithm\_05 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | BR200--------Itech Load | | |
| Description | Simulate short circuit PD, check if PSE will provide power? | | |
| Pre-condition | Connect Itech load to BR200 for simulator | | |
| Test procedure | 1. Connect Itech load to BR200, set 802.3at to eth1   “interface eth1 pse 802.3at”   1. Simulate 25.5w in Itech load, check PSE state. Result2   “show interface eth1 pse”   1. Short circuit PD, check PSE state. Result3   “show interface eth1 pse” | | |
| Expect result | 1. Result2: Enable PD 2. Result3: No power output | | |
| Test result | PASS | | |

#### Connect real PD AP170/VOIP/Camera/Bluetooth, check if PSE provide the correct power to each PD?

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Algorithm\_06 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | BR200-------AP170/VOIIP/Camera/Bluetooth | | |
| Description | Connect real PD AP170/VOIP/Camera/Bluetooth, check if PSE provide the correct power to each PD? | | |
| Pre-condition | Connect Itech load to BR200 for simulator | | |
| Test procedure | 1. Connect PD to BR200, set 802.3at to eth1   “interface eth1 pse 802.3at”   1. Connect PD VOIP to PSE, check PSE state. Result2   “show interface eth1 pse”   1. Connect PD Camera to PSE, check PSE state. Result3   “show interface eth1 pse”   1. Connect PD Bluetooth to PSE, check PSE state. Result4   “show interface eth1 pse” | | |
| Expect result | 1. Result2: Provide correct power 2. Result3: Provide correct power 3. Result4: Provide correct powe | | |
| Test result | VOIP passed | | |

#### Compatibility Test: Check if PSE can support PD which does not obey 802.3af

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Algorithm\_07 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | BR200-------Itech load | | |
| Description | Compatibility Test: Check if PSE can support PD which does not obey 802.3af | | |
| Pre-condition | Connect Itech load to BR200 for simulator | | |
| Test procedure | 1. Connect PD to BR200, set 802.3at to eth1 | | |
| Expect result |  | | |

#### Check if PSE support PD which only support idle line power

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Algorithm\_08 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | BR200------PD | | |
| Description | Check if PSE support PD which only support idle line power | | |
| Pre-condition | Connect PD to eth1 | | |
| Test procedure | 1. Set PSE eth1 with 802.3at   “Interface eth1 pse 802.3at”   1. Connect one PD which only support idle line supply power to BR200 eth1,check pse power. Result2 2. Connect one PD which only support data line supply power to BR200 eth1, check pse power. Result3. | | |
| Expect result | 1. Result2: Maybe not support 2. Result3: Support | | |
| Test result |  | | |

### Different POE port priority test

#### Auto mode: 802.3af/802.3at: When PSE eth1(high power PD)/eth2(normal PD) total power exceed PSE capability, check if PSE will shut down eth2 power to support eth1 PD

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Priority\_01 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | Itech Load-------BR200-------AP340  |  Client | | |
| Description | Auto mode: 802.3af/802.3at: When PSE eth1(high power PD)/eth2(normal PD) total power exceed PSE capability, check if PSE will shut down eth2 power to support eth1 PD | | |
| Pre-condition | Connect Itech load to eth1, AP to eth2  Apply BR200 default priority mode:auto | | |
| Test procedure | 1. Connect Itech load to eth1 and AP to eth2 2. Set BR200 eth1/eth2 to 802.3af mode by default 3. Set Itech load power to 15.4W and run traffic in AP side. 4. Check if eth2 will shutdown and support eth1 PD. Result4   “show interface eth1 pse”  “show interface eth2 pse”   1. Set pse max source power to 25w; set Itech load power to 10W. Result5   “PSE max-source-power 25”   1. Tunning Itech load power to 15W,check if eth2 will shutdown and support eth1 PD. Result6   “show interface eth1 pse”  “show interface eth2 pse”   1. Set BR200 eth1/eth2 to 802.3at mode   “interface eth1 pse 802.3at”   1. Set Itech load power to 10W and run traffic in AP170 side. 2. Check if eth2 will shutdown and support eth1 PD.Result9   “show interface eth1 pse”  “show interface eth2 pse”   1. Tunning Itech load power to 20W or above,check if eth2 will shutdown and support eth1 PD. Result10   “show interface eth1 pse”  “show interface eth2 pse” | | |
| Expect result | 1. Result4:Eth2 PD can be powered on 2. Result5:Eth2 PD can be powered on 3. Result6:Eth2 PD will be shutdown 4. Result5:Eth2 PD can be powered on 5. Result6:Eth2 PD will be shutdown | | |
| Test result | PASS | | |

#### Auto Mode:802.3af/802.3at: When PSE eth1(normal power PD)/eth2 (High power PD) total power exceed PSE capability, check if PSE will shutdown eth1 power to support eth2 PD

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Priority\_02 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | AP340-------BR200-------Itech Load  |  Client | | |
| Description | Auto mode: 02.3af/802.3at: When PSE eth1(normal power PD)/eth2 (High power PD) total power exceed PSE capability, check if PSE will shutdown eth1 power to support eth2 PD | | |
| Pre-condition | Connect Itech load to eth2, AP to eth1  Apply BR200 default priority mode:auto | | |
| Test procedure | 1. Connect Itech load to eth2 and AP to eth2 2. Set BR200 eth1/eth2 to 802.3af mode by default 3. Set Itech load power to 15.4W and run traffic in AP side. 4. Check if eth1 will shutdown and support eth2 PD. Result4   “show interface eth1 pse”  “show interface eth2 pse”   1. Set pse max source power to 25w; set Itech load power to 10W. Result5   “PSE max-source-power 25”   1. Tunning Itech load power to 15W,check if eth1 will shutdown and support eth2 PD. Result6   “show interface eth1 pse”  “show interface eth2 pse”   1. Set BR200 eth1/eth2 to 802.3at mode   “interface eth1 pse 802.3at”   1. Set Itech load power to 10W and run traffic in AP170 side. 2. Check if eth1 will shutdown and support eth2 PD.Result9   “show interface eth1 pse”  “show interface eth2 pse”   1. Tunning Itech load power to 20W or above,check if eth1 will shutdown and support eth2 PD. Result10   “show interface eth1 pse”  “show interface eth2 pse” | | |
| Expect result | 1. Result4:Eth1 will not be shutdown. Eth2 PD can be powered on 2. Result5: Eth1 will not be shutdown.Eth2 PD can be powered on 3. Result6: Eth1 will not be shutdown.Eth2 PD will be shutdown 4. Result9: Eth1 will not be shutdown.Eth2 PD can be powered on 5. Result10: Eth1 will not be shutdown.Eth2 PD will be shutdown | | |
| Test result | PASS | | |

#### Auto mode: 802.3af/802.3at: When PSE eth1(High power PD)/eth2(High power PD) BR200 wifi1 (run heavy traffic), check how does BR200 allocate power

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Priority\_03 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | AP340-------BR200-------Itech Load  | |  Client1 Client2 | | |
| Description | 802.3af/802.3at: When PSE eth1(High power PD)/eth2(High power PD) BR200 wifi1 (run heavy traffic), check how does BR200 allocate power | | |
| Pre-condition | Connect Itech load to eth1, AP to eth2  Apply BR200 default priority mode:auto | | |
| Test procedure | 1. Connect Itech load to eth1 and AP to eth2 2. Set BR200 eth1/eth2 to 802.3af mode by default 3. Set Itech load power to 15.4W and run traffic in AP side wifi1 band. Run traffic in BR200 wifi0 5G band 4. Check if eth1/eth2/wifi0 all can get enough power.(wifi0 throughput can reach 80M) Result4   “show interface eth1 pse”  “show interface eth2 pse”   1. Set pse max source power to 35w; set Itech load power to 20W. Check if BR200 wifi0 can get enough power.Result5   “PSE max-source-power 35”  “show interface eth1 pse”  “show interface eth2 pse”   1. Tunning Itech load power to get total power 35W,check if wifi1 get enough power with high throughput. Result6   “show interface eth1 pse”  “show interface eth2 pse”   1. Set BR200 eth1/eth2 to 802.3at mode   “interface eth1 pse 802.3at”   1. Set pse max source power to 35w; set Itech load power to 20W. Check if BR200 wifi0 can get enough power.Result8   “PSE max-source-power 35”  “show interface eth1 pse”  “show interface eth2 pse”   1. Tunning Itech load power to get total power 35W,check if wifi1 get enough power with high throughput. Result9   “show interface eth1 pse”  “show interface eth2 pse” | | |
| Expect result | 1. Result4:Eth1/eth2 PD be powered and wifi0 get enough power 2. Result5: Eth1/eth2 PD be powered and wifi0 get enough power 3. Result6: Eth1/eth2 PD be powered and wifi0 get enough power 4. Result8: Eth1/eth2 PD be powered and wifi0 get enough power 5. Result9: Eth1/eth2 PD be powered and wifi0 get enough power | | |
| Test result | PASS | | |

#### Manual mode (eth1<eth2): eth1: 0/1/2/3 eth2:3/2/1/0: When PSE eth1(high power PD)/eth2(normal PD) total power exceed PSE capability, check if PSE will shut down eth2 power to support eth1 PD

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Priority\_04 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | Itech Load-------BR200-------AP340 | | |
| Description | Manual mode (eth1<eth2): eth1: 0/1/2/3 eth2:3/2/1/0: When PSE eth1(high power PD)/eth2(normal PD) total power exceed PSE capability, check if PSE will shut down eth2 power to support eth1 PD | | |
| Pre-condition | Connect Itech load to eth1, AP to eth2  Apply BR200 default priority mode:manual | | |
| Test procedure | 1. Connect Itech load to eth1 and AP to eth2 2. Set BR200 eth1/eth2 to 802.3at mode   “interface eth1 pse 802.3at”  “interface eth2 pse 802.3at”   1. Set BR200 eth1/eth2 priority:   “interface eth1 pse priority 0/1/2”  “interface eth2 pse priority 1/2/3”   1. Set pse max source power to 35w; set Itech load power to 20W.Check if all PD get correct power. Result4   “PSE max-source-power 35”  “show interface eth1 pse”  “show interface eth2 pse”   1. Tunning Itech load power to get total power 35W,check if eth2 will shutdown to provide power to eth1. Result5   “show interface eth1 pse”  “show interface eth2 pse” | | |
| Expect result | 1. Result4:Itech load and AP all get correct power 2. Result5:Eth2 will not shutdown to provide power to eth1 | | |
| Test result | PASS | | |

#### Manual mode (eth1>eth2): eth1: 3/2/1/0 eth2:0/1/2/3: When PSE eth1(high power PD)/eth2(normal PD) total power exceed PSE capability, check if PSE will shut down eth2 power to support eth1 PD

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Priority\_05 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | AP340 -------BR200-------Itech Load | | |
| Description | Manual mode (eth1>eth2): eth1: 3/2/1/0 eth2:0/1/2/3: When PSE eth1(high power PD)/eth2(normal PD) total power exceed PSE capability, check if PSE will shut down eth2 power to support eth1 PD | | |
| Pre-condition | Connect Itech load to eth2, AP to eth1  Apply BR200 default priority mode:manual | | |
| Test procedure | 1. Connect Itech load to eth2 and AP to eth1 2. Set BR200 eth1/eth2 to 802.3at mode   “interface eth1 pse 802.3at”   1. Set BR200 eth1/eth2 priority:   “interface eth1 pse priority 3/2/1”  “interface eth1 pse priority 2/1/0”   1. Set pse max source power to 35w; set Itech load power to 20W.Check if all PD get correct power. Result4   “PSE max-source-power 35”  “show interface eth1 pse”  “show interface eth2 pse”   1. Tunning Itech load power to get total power 35W,check if eth1 will shutdown to provide power to eth2. Result5   “show interface eth1 pse”  “show interface eth2 pse” | | |
| Expect result | 1. Result4:Itech load and AP all get correct power 2. Result5:Eth1 will not shutdown to provide power to eth2 | | |
| Test result | PASS | | |

#### Manual mode (eth1=eth2): eth1: 0/1/2/3 eth2:0/1/2/3: When PSE eth1(high power PD)/eth2(normal PD) total power exceed PSE capability, check if PSE will shut down eth2 power to support eth1 PD

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Priority\_06 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | AP340 -------BR200-------Itech Load | | |
| Description | Manual mode (eth1=eth2): eth1: 0/1/2/3 eth2:0/1/2/3: When PSE eth1(high power PD)/eth2(normal PD) total power exceed PSE capability, check if PSE will shut down eth2 power to support eth1 PD | | |
| Pre-condition | Connect Itech load to eth2, AP to eth1  Apply BR200 default priority mode:manual | | |
| Test procedure | 1. Connect Itech load to eth2 and AP to eth1 2. Set BR200 eth1/eth2 to 802.3at mode   “interface eth1 pse 802.3at”   1. Set BR200 eth1/eth2 priority:   “interface eth1 pse priority 0/1/2/3”  “interface eth1 pse priority 0/1/2/3”   1. Set pse max source power to 35w; set Itech load power to 20W.Check if all PD get correct power. Result4   “PSE max-source-power 35”  “show interface eth1 pse”  “show interface eth2 pse”   1. Tunning Itech load power to get total power 35W,check if eth1 will shutdown to provide power to eth2. Result5   “show interface eth1 pse”  “show interface eth2 pse”   1. Connect Itech load to eth1 and AP to eth2 2. Set pse max source power to 35w; set Itech load power to 20W.Check if all PD get correct power. Result7   “PSE max-source-power 35”  “show interface eth1 pse”  “show interface eth2 pse”   1. Tunning Itech load power to get total power 35W,check if eth2 will shutdown to provide power to eth1. Result8   “show interface eth1 pse”  “show interface eth2 pse | | |
| Expect result | 1. Result4:Itech load and AP all get correct power 2. Result5:?? 3. Result7: Itech load and AP all get correct power 4. Result8:?? | | |
| Test result | PASS | | |

### POE equipment detection procedure

#### Connect one PD and check if PSE detection procedure obey the 802.3af standard

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Detection\_01 | | |
| Priority | Low | Automation Flag | NA |
| Topology to use | BR200-------Itech Load | | |
| Description | Connect one PD and check if PSE detection procedure obey the 802.3af standard | | |
| Pre-condition | Connect Itech load to eth1 | | |
| Test procedure | 1. Set BR200 eth1 to 802.3at   “interface eth1 pse 802.3at”   1. Tunning Itech load resistance to 19Kohm to 26.5kohm, check if PSE can identify it as PD. Result2   “show interface eth1 pse”   1. Tunning Itech load current from 5ma to 51ma, check if PSE can classification power to PD. Result3 | | |
| Expect result | 1. Result2: Eth1 can provide power 2. Rseult3: PSE can provide corresponding power to PD base on power classification | | |
| Test result | LIMITED PASS  No clear classification seen, NO TEST FOR RESULT2 | | |

#### Disconnect PD and check if PSE shutdown port power and return to detection mode

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Detection\_02 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | BR200-------Itech Load | | |
| Description | Disconnect PD and check if PSE shutdown port power and return to detection mode | | |
| Pre-condition | Connect Itech load to eth1 | | |
| Test procedure | 1. Set BR200 eth1 to 802.3at   “interface eth1 pse 802.3at”   1. Tunning Itech load voltage to 30v, check if PSE can provide power. Result2   “show interface eth1 pse”   1. Disconnect Itech load, check if pse still provide power or return to detection mode. Result3   “Show interface eth1 pse” | | |
| Expect result | 1. Result2: Eth1 will not provide power 2. Rseult3: Eth1 will not provide power and return to detection state | | |
| Test result | PASS | | |

#### 802.3af/802.3at: When connected high power PD exceed standard threshold, check if PSE do the procedure: power—shutdown—detection ---power……. And check the punish time

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Detection\_03 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | BR200-------Itech Load | | |
| Description | 802.3af/802.3at: When connected high power PD exceed standard threshold, check if PSE do the procedure: power—shutdown—detection ---power……. And check the punish time | | |
| Pre-condition | Connect Itech load to eth1 | | |
| Test procedure | 1. Set BR200 eth1 to 802.3af   “interface eth1 pse 802.3af”   1. Tunning Itech load power to 1.1\*15.4w, check if PSE power on/shutdown/detection/power on. Result2   “show interface eth1 pse”   1. Set BR200 eth1 to 802.3at   “interface eth1 pse 802.3at”   1. Tunning Itech load power to 1.1\*25.5w, check if PSE power on/shutdown/detection/power on. Result4   “show interface eth1 pse” | | |
| Expect result | 1. Result2: PSE power on/shutdown/detection/power on 2. Rseult4: PSE power on/shutdown/detection/power on | | |
| Test result | PASS | | |

#### During RTP & Power management stage, check if PSE will communicated with PD at times

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Detection\_04 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | BR200-------Itech Load | | |
| Description | During RTP & Power management stage, check if PSE will communicated with PD at times | | |
| Pre-condition | Connect Itech load to eth1 | | |
| Test procedure | 1. Set BR200 eth1 to 802.3at   “interface eth1 pse 802.3at”   1. Tunning Itech load power to 13, check if PSE will communicated with PD at times. Result2   “show interface eth1 pse” | | |
| Expect result | 1. Result2: PSE will communicate wth PD at times | | |
| Test result |  | | |

### PSE LLDP support

#### Check if PSE will negotiate with PD by LLDP

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_LLDPSupport\_01 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | BR200-------AP | | |
| Description | Check if PSE will negotiate with PD by LLDP | | |
| Pre-condition | Connect Itech load to eth1 | | |
| Test procedure | 1. Set BR200 eth1 to 802.3at   “interface eth1 pse 802.3at”   1. Connect AP to eth1 and capture eth1 packets to check if PSE lldp support. Result1 | | |
| Expect result | 1. Result1: Now not support | | |
| Test result |  | | |

#### When PD power overload, check if PSE negotiate with PD

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_LLDPSupport\_02 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | BR200-------Itech Load | | |
| Description | When PD power overload, check if PSE negotiate with PD | | |
| Pre-condition | Connect Itech load to eth1 | | |
| Test procedure | 1. Set BR200 eth1 to 802.3af   “interface eth1 pse 802.3af”   1. Connect Itech load to eth1. Tunning Itech load power from 10w to 18w and capture eth1 packets to check if PSE lldp support. Result1 | | |
| Expect result | 1. Result1: Now not support | | |
| Test result |  | | |

### PSE max power change from 40W to 44W

#### Check if BR200 can output 44w power under different power divider

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_MaxPower\_01 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | Itech Load 1----BR200-------Itech Load 2 | | |
| Description | Check if BR200 can output 44w power under different power divider | | |
| Pre-condition | Connect Itech load to eth1/eth2 | | |
| Test procedure | 1. Set BR200 eth1/eth2 to 802.3at   “Interface eth1/eth2 pse 802.3at”   1. Connect Itech load to eth1/eth2.Set Itech load1 power to 20w. Tunning Itech2 load power from 20w to 24W. 2. Check if BR200 can output 44w power:   “Show pse”   1. Set Itech load 1 power to 10w and tunning itech2 load power from 30w to 34w. 2. Check if BR200 can output 44w power   “show pse”   1. Set Itech load 1 to 20w and tunning itech load2 power from 30w to 50w. 2. Check if BR200 will terminate power output after power request exceed max power. | | |
| Expect result | Step 3: can output 44w  Step 5: can output 44w  Step 7: PSE should stop unlimited power request | | |
| Test result |  | | |

#### Check if PSE can output 34.2W on each port? Check if PD can get at least 25.5w power?

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_MaxPower\_02 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | AP121----BR200-------Itech Load 2 | | |
| Description | Check if PSE can output 34.2W on each port? Check if PD can get at least 25.5w power? | | |
| Pre-condition | Connect Itech load and AP121 to eth1/eth2 | | |
| Test procedure | 1. Set BR200 eth1/eth2 to 802.3at   “Interface eth1/eth2 pse 802.3at”   1. Connect Itech load to eth2 and AP121 to eth1. After AP enter run state and check if its power below 10w. Tunning Itech2 load power from 30w to 34W. 2. Check if BR200 eth2 can output 44w power:   “Show pse”   1. Set BR200 eth2 802.3af and eth1 to 802.3at mode   “Interface eth1 pse 802.3at”  “Interface eth2 pse 802.3af”   1. Connect Itech load to eth1 and AP121 to eth2. After AP enter run state and check if its power below 10w. Tunning Itech2 load power from 30w to 34W. 2. Check if BR200 eth2 can output 44w power: 3. “Show pse” | | |
| Expect result | Step 3: can output 34w  Step 7: can output 34w | | |
| Test result |  | | |

#### When PSE output 44w power, check if BR200 can work normal under high throughput with mcs0

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_MaxPower\_03 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use | USB-----station  |  Itech Load1----BR200-------Itech Load 2  | | |  Client1 Client2 Client3 | | |
| Description | When PSE output 44w power, check if BR200 can work normal under high throughput with mcs0 | | |
| Pre-condition | Connect Itech load to eth1/eth2; connect Client1 to wifi0 5G band and client 2 to lan port, connect USB modem in usb port | | |
| Test procedure | 1. Connect eth1/eth2 with Itech load1 and load2 2. Set Itech load1 to 22w and itech load to 22w 3. Connect client1 to wifi0 5G band and client2 to lan port eth3, client3 to lan port 4 eth4 4. Connect USB modem to BR200 usb port and run client3 to station 5. Run performance from client1 to client2, check if BR200 can work well 6. Set wifi0 continuously transmit mode with mcs0, check if BR200 can work well | | |
| Expect result | Step5: BR200 can work well and can provide 44w power  Step6: same as step5 | | |
| Test result |  | | |

#### For different high power 802.3at PD, check if it also can negotiate with PSE

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_MaxPower\_04 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use | PD1---BR200----PD2(high power) | | |
| Description | For different high power 802.3at PD, check if it also can negotiate with PSE | | |
| Pre-condition | Connect high power 802.3at PD to eth1/eth2 | | |
| Test procedure | 1. Set eth1/eth2 with 802.3at mode   “interface eth1/eth2 pse mode 802.3at”   1. Connect high power PD to eth1 port 2. Check if 802.3at PD can negotiate with BR200   “show pse”   1. Connect high power PD to eth2 port 2. Check if 802.3at PD can negotiate with BR200   “show pse” | | |
| Expect result | Step 3: Can negotiate.  Step 5: Can negotiate | | |
| Test result |  | | |

#### For eth1/eth2 priority issue, check if priority function work under max power 44w

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_MaxPower\_05 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use | Itech load1-----BR200------Itech load2 | | |
| Description | For eth1/eth2 priority issue, check if priority function work under max power 44w | | |
| Pre-condition | Connect Itech load to eth1/eth2; | | |
| Test procedure | 1. Set eth1/eth2 with 802.3at mode   “interface eth1/eth2 mode 802.3at”   1. Set eth1 itech load1 power to 20w and tunning itech load2 power. 2. Check if itech load2 will be terminated   “show pse”   1. Set eth1 pse priority to 1 and eth2 pse priority to 0   “interface eth1 pse priority 1”  “interface eth2 pse priority 2”   1. Set eth1 itech load1 power to 20w and tunning itech load2 power 2. Check if itech load1 will be terminated   “show pse” | | |
| Expect result | Step3: itech load2 will be terminated  Step6: itech load 1 will be terminated | | |
| Test result |  | | |

## Stress Test Case

### Under BR200 wifi/eth3/eth4 run heavy traffic, check if PSE can support enough power to PD

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Stress\_01 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | Client1  |  Itech load-----BR200-----AP170----client2  | |  AP1 AP2  | |  Client3 Client4 | | |
| Description | Under BR200 wifi/eth3/eth4 run heavy traffic, check if PSE can support enough power to PD | | |
| Pre-condition | Connect Itech load to eth1; AP170 to eth2, others as above topology | | |
| Test procedure | 1. Connect Itech load/AP/client as above Topology. 2. Set eth1/eth2 802.3at mode   “interface eth1 pse 802.3at”  “interface eth2 pse 802.3at”   1. Set PSE max source power to 35w   “pse max-power-source 35”   1. Set Itech load power to 10w, check if eth1/eth2 be powered on. Result4   “show interface eth1 pse”  “show interface eth2 pse”   1. Connect client1 in BR200 wifi0 5G band with max power 20. 2. Run 4 stream from client1 to client2 3. Run 4 stream from client3 to client4 4. Tunning Itech load power from 10w to total power 35W(eth1/eth2 total power). Check if BR200 wifi0 5G band performance and eth1/eth2 power.Result8   “show interface eth1 pse”  “show interface eth2 pse” | | |
| Expect result | Result4:eth1/eth2 both can be powered on with correct power  Result8:eth1/eth2/eth3/eth4/wifi0 all can work normally | | |
| Test result |  | | |

## Duration Test Case

## Performance Test Case

### 802.3af/802.3at: check if eth1/eth2 get good performance under low/middle/high power PD

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | PSE\_Fuction\_Performance\_01 | | |
| Priority | High | Automation Flag | NA |
| Topology to use | BR200-------AP120/AP320/AP330/AP170  | |  Client2 Client1 | | |
| Description | 802.3af/802.3at: check if eth1/eth2 get good performance under low/middle/high power PD | | |
| Pre-condition | Connect to eth1 | | |
| Test procedure | 1. Set BR200 eth1 to 802.3af. Connect client2 to BR200 eth3   “interface eth1 pse 802.3af”   1. Connect AP120 to BR200 eth1, client1 connect to AP120 wifi1 band 2. Run High Throughput from client2 to client1, check the downlink throughput. Result3 3. Connect AP320 to BR200 eth1, client1 connect to AP320 wifi1 band 4. Run High Throughput from client2 to client1, check the downlink throughput. Result5 5. Connect AP330 to BR200 eth1, client1 connect to AP330 wifi1 band 6. Run High Throughput from client2 to client1, check the downlink throughput. Result7 7. Connect AP170 to BR200 eth1, client1 connect to AP170 wifi1 band 8. Run High Throughput from client2 to client1, check the downlink throughput. Result9 9. Set BR200 eth1 to 802.3at. Connect client2 to BR200 eth3   “interface eth1 pse 802.3at”   1. Connect AP120 to BR200 eth1, client1 connect to AP120 wifi1 band 2. Run High Throughput from client2 to client1, check the downlink throughput. Result12 3. Connect AP320 to BR200 eth1, client1 connect to AP320 wifi1 band 4. Run High Throughput from client2 to client1, check the downlink throughput. Result14 5. Connect AP330 to BR200 eth1, client1 connect to AP330 wifi1 band 6. Run High Throughput from client2 to client1, check the downlink throughput. Result16 7. Connect AP170 to BR200 eth1, client1 connect to AP170 wifi1 band 8. Run High Throughput from client2 to client1, check the downlink throughput. Result18 | | |
| Expect result | 1. Result3: 2. Result5: 3. Result7: 4. Result9: 5. Result12: 6. Result14: 7. Result16: 8. Result18: | | |
| Test result |  | | |

## Capacity Test Case

## Compatibility Test Case

## CLI Management (Automation Status: Yes/No)

<firstly, list all cli that this feature has one by one>

<CLI test case>

## GUI Management-HiveManager

<List HM test case or test log>

## GUI Management-HiveUI

<List HiveUI test case or test log>