Aerohive Networks Inc.

Adaptive CCA test case

Revision History

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| --- | --- | --- | --- |
| Version | Date | Author | Description |
| 0.9 | 12/16/2008 | LiangfuZhang | Initial version |
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Glossary and Abbreviations

# Introduction

## the CCA threshold of 11abg AP is -62dBm (sensitivity-82dBm +20dB)

## 11n CCA threshold defined in standard is -80dBm, almost same as sensitivity, may cause interference.

## CCA value can affect adjacent channel interference and channel reuse.

## Beacon stuck trigger adaptive CCA

## The current driver set 11na CCA threshold at -80dBm and 11ng CCA threshold at -67dBm.

## CCA threshold will increase by 2dB when beacon stuck number exceed 25 until it reach max threshold

## CCA threshold will decrease by 1dB when no beacon stuck for one minute until it reaches default value or new beacon stuck happens.

## if CCA value is high, it will introduce interference too.

# Test point or strategy

## CLI check: interface wifi0 radio adaptive-cca enable

**pass-yypan**

## CLI Check: no interface wifi0 radio adaptive-cca enable

**pass-yypan**

## CLI check: interface wifi0 radio adaptive-cca default-cca xxx

**pass-yypan**

## CLI check: no interface wifi0 radio adaptive-cca default-cca xxx

**pass-yypan**

## CLI check: interface wifi0 radio adaptive-cca max-cca xxx

**pass-yypan**

## CLI check: no interface wifi0 radio adaptive-cca max-cca xxx

**pass-yypan**

## CLI check: interface wifi1 radio adaptive-cca enable

**pass-yypan**

## CLI Check: no interface wifi1 radio adaptive-cca enable

**pass-yypan**

## CLI check: interface wifi1 radio adaptive-cca default-cca xxx

**pass-yypan**

## CLI check: no interface wifi1 radio adaptive-cca default-cca xxx

**pass-yypan**

## CLI check: interface wifi1 radio adaptive-cca max-cca xxx

**pass-yypan**

## CLI check: no interface wifi1 radio adaptive-cca max-cca xxx

**pass-yypan**

## Check adaptive cca default status.

## Check wifi0 CCA status by command: *show interface wifi0*.

**pass-yypan**

## check Debug information

**pass-yypan**

## Check wifi1 CCA status by command: *show interface wifi1*

**pass-yypan**

## Check wifi0 default CCA value when adaptive CCA is disabled

* Check the CCA value displayed is right
* Check with signal generator if the actual CCA is right

## Check wifi1 default CCA value when adaptive CCA is disabled

* Check the CCA value displayed is right
* Check with signal generator if the actual CCA is right

## Check wifi0 default cca value when adaptive cca is enabled

* Check the CCA displayed is right
* Check with signal generator

## Check wifi1 default cca value when adaptive cca is enabled

* Check the CCA displayed is right
* Check with signal generator

## Check wifi0 default max cca

**pass-yypan**

## Check wifi1 default max cca

## If the wifi0 beacon stuck number exceed 25 CCA threshold should increase by 2 dB until CCA reach max value, and client is stable.

## If the wifi1 beacon stuck number exceed 25 CCA threshold should increase by 2 dB until CCA reach max value, and client is stable.

Wifi1 adjacent isolation: 56dB

## if the wifi0 current CCA is lower than the default CCA value, CCA threshold should increase by one dB after one minute (no beacon stuck) until it reach default value, and client is stable.

## if the wifi1 current CCA is lower than the default CCA value, CCA threshold should increase by one dB after one minute (no beacon stuck) until it reach default value, and client is stable.

## if the wifi0 current CCA is higher than the default CCA value, CCA threshold should decrease by one dB after one minute (no beacon stuck) until new beacon stuck happens.

**pass-yypan**

## if the wifi1 current CCA is higher than the default CCA value, CCA threshold should decrease by one dB after one minute (no beacon stuck) until new beacon stuck happens.

**pass-yypan**

## Check wifi0 the beacon stuck status with four 11n boxes in adjacent channel when adaptive CCA disabled.

## Check wifi1 the beacon stuck status with four 11n boxes in adjacent channel when adaptive CCA disabled

## Check wifi0 the beacon stuck status with four 11n boxes in adjacent channel when adaptive CCA enabled.

## Check wifi1 the beacon stuck status with four 11n boxes in adjacent channel when adaptive CCA enabled

## hiveap340: Check the 2.4GHz channel reuse with two 11n boxes in same channel.

Topology: client1-----11n AP1 xx meters distance 11n ap2------client2

## hiveap320: Check the 2.4GHz channel reuse with two 11n boxes in same channel.

Topology: client1-----11n AP1 xx meters distance 11n ap2------client2

## hiveap340: Check the 5GHz channel reuse with two 11n boxes.

Topology: client1-----11n AP1 xx meters distance 11n ap2------client2

## hiveap320: Check the 5GHz channel reuse with two 11n boxes.

Topology: client1-----11n AP1 xx meters distance 11n ap2------client2

## hiveap340: Check 5GHz backhaul channel reuse with two 11n boxes

Topology: Portal---MP 25meters away MP----Portal

## hiveap320: Check 5GHz backhaul channel reuse with two 11n boxes

Topology: Portal---MP 25meters away MP----Portal

## Check the 2.4GHz total throughput with six 11n boxes

Topology: client1----AP1 15 meters away AP2------client2

| |

15 meters away 15 meters away

| |

client1----AP3 15 meters away AP4------client2

Check: beacon stuck/CRC error

## 1-5-9-13 channel mode

## Check the 5GHz total throughput with six 11n boxes

Topology: client1----AP1 15 meters away AP2------client2

| |

15 meters away 15 meters away

| |

client1----AP3 15 meters away AP4------client2

## Stress test: keep changing default CCA value

## Stress test: keep changing the default cca value

## Sensitivity vs CCA value

## Generate some transmit traffic and check wifi0 interface utilization

## Generate some receive traffic and check wifi0 interface utilization

## Generate some transmit traffic and check wifi1 interface utilization

## Generate some receive traffic and check wifi1 interface utilization

## Check wifi0 cca when there is adjacent signal noise

## Check wifi1 cca when there is adjacent signal noise

## Check wifi0 cca when there is noise higher than sensitivity (need instrument).

## Check wifi1 cca when there is noise higher than sensitivity (need instruments).

## bind 8 ssids to wifi0 and check cca status

## bind 8 ssids to wifi1 and check cca status

## box shouldn’t chang cca when box is in clear environment.

**pass-yypan**

## filed test case: 1- 5-9-13/1-6-11 total throughput

# Topology

<List all topology used in your case if you have>

# Hardware and software needed

## Six hiveap340 boxes and six hiveap320 boxes

## Agilent N4010A (option 103, 108) or R&S SMU200A (option B10/B13/K48/K54/K62) or Agilent E4438C

## RF cable/connector/Power splitter

## Screen room

## Four laptops

## Field test

# TestCase

## CLI check: interface wifi0 radio adaptive-cca enable

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Cli\_1 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | Check CLI: interface wifi0 radio adaptive-cca enable | | |
| Pre-condition | -create ssid and bind it to wifi0 | | |
| Test procedure | 1. Normal check 2. Help check | | |
| Expect result | 1.show running config,CLi have been configured.  2.when type “?” there should have help message. | | |

## CLI check: no interface wifi0 radio adaptive-cca enable

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Cli\_2 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | Check CLI: no interface wifi0 radio adaptive-cca enable | | |
| Pre-condition | -create ssid and bind it to wifi0 | | |
| Test procedure | 1.Normal check  2.Help check | | |
| Expect result | 1.show running config,CLi have been configured.  2.when type “?” there should have help message. | | |

## CLI check: interface wifi0 radio adaptive-cca default-cca xx

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Cli\_3 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | Check CLI: interface wifi0 radio adaptive-cca default-cca xx | | |
| Pre-condition | -create ssid and bind it to wifi0 | | |
| Test procedure | 1. Normal check 2. Invalid value check 3. Help check | | |
| Expect result | 1.show running config,CLi have been configured.  2.default-cca value in valid range.  3.when type “?” there should have help message. | | |

## CLI check: no interface wifi0 radio adaptive-cca default-cca

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Cli\_4 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | Check CLI: no interface wifi0 radio adaptive-cca default-cca | | |
| Pre-condition | -create ssid and bind it to wifi0 | | |
| Test procedure | 1. Normal check 2. Help check | | |
| Expect result | 1.show running config,CLi have been configured.  2.when type “?” there should have help message. | | |

## CLI check: interface wifi0 radio adaptive-cca max-cca xx

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Cli\_5 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | Check CLI: interface wifi0 radio adaptive-cca max-cca xx | | |
| Pre-condition | -create ssid and bind it to wifi0 | | |
| Test procedure | 1. Normal check 2. Invalid value check 3. Help check | | |
| Expect result | 1.show running config,CLi have been configured.  2.max-cca value in valid range.  3.when type “?” there should have help message. | | |

## CLI check: no interface wifi0 radio adaptive-cca max-cca

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Cli\_6 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | Check CLI: no interface wifi0 radio adaptive-cca max-cca | | |
| Pre-condition | -create ssid and bind it to wifi0 | | |
| Test procedure | 1. Normal check 2. Help check | | |
| Expect result | 1.show running config,CLi have been configured.  2.when type “?” there should have help message. | | |

## CLI check: interface wifi1 radio adaptive-cca enable

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Cli\_7 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | Check CLI: interface wifi1 radio adaptive-cca enable | | |
| Pre-condition |  | | |
| Test procedure | 1. Normal check 2. Help check | | |
| Expect result | 1.show running config,CLi have been configured.  2.when type “?” there should have help message. | | |

## CLI check: no interface wifi1 radio adaptive-cca enable

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Cli\_8 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | Check CLI: no interface wifi1 radio adaptive-cca enable | | |
| Pre-condition |  | | |
| Test procedure | 1. Normal check 2. Help check | | |
| Expect result | 1.show running config,CLi have been configured.  2.when type “?” there should have help message. | | |

## CLI check: interface wifi1 radio adaptive-cca default-cca xx

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Cli\_9 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | Check CLI: interface wifi1 radio adaptive-cca default-cca xx | | |
| Pre-condition |  | | |
| Test procedure | 1. Normal check 2. Invalid value check 3. Help check | | |
| Expect result | 1.show running config,CLi have been configured.  2.default-cca value in valid range.  3.when type “?” there should have help message. | | |

## CLI check: no interface wifi1 radio adaptive-cca default-cca

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Cli\_10 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | Check CLI: no interface wifi1 radio adaptive-cca default-cca | | |
| Pre-condition |  | | |
| Test procedure | 1. Normal check 2. Help check | | |
| Expect result | 1.show running config,CLi have been configured.  2.when type “?” there should have help message. | | |

## CLI check: interface wifi1 radio adaptive-cca max-cca xx

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Cli\_11 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | Check CLI: interface wifi1 radio adaptive-cca max-cca xx | | |
| Pre-condition |  | | |
| Test procedure | 1. Normal check 2. Invalid value check 3. Help check | | |
| Expect result | 1.show running config,CLi have been configured.  2.max-cca value in valid range.  3.when type “?” there should have help message. | | |

## CLI check: no interface wifi1 radio adaptive-cca max-cca

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Cli\_12 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | Check CLI: no interface wifi1 radio adaptive-cca max-cca | | |
| Pre-condition |  | | |
| Test procedure | 1. Normal check 2. Help check | | |
| Expect result | 1.show running config,CLi have been configured.  2.when type “?” there should have help message. | | |

## Check wifi0 adaptive cca default statistics

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_1 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | Check wifi0 adaptive cca default statistics. | | |
| Pre-condition |  | | |
| Test procedure | 1. Reset configuration and reset box 2. Create ssid and bind to wifi0 3. Check interface wifi0 statistics 4. Check interface wifi1 statistics | | |
| Expect result |  | | |

## Check wifi1 adaptive cca default statistics

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_2 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | Check wifi1 adaptive cca default statistics | | |
| Pre-condition |  | | |
| Test procedure | 1. Reset configuration and reset box 2. Create ssid and bind to wifi1 3. Check interface wifi0 statistics 4. Check interface wifi1 statistics | | |
| Expect result |  | | |

## Check wifi0 default cca value when adaptive cca is disabled

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_3 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | Signal generator-------11n box 2.4GHz port | | |
| Description | Check wifi0 default cca value when adaptive cca is disabled | | |
| Pre-condition | Signal Generator can generate noise  -terminate all antenna port with 50 ohm except the port in use | | |
| Test procedure | 1. Reset configuration 2. Create ssid and bind to wifi0 3. Disable wifi0 adaptive cca: no int wifi0 radio adaptive-cca enable 4. Generate -62dBm noise with SG, check if there is beacon stuck, change the noise level to find the actual cca value | | |
| Expect result | Wifi0 default cca : -62dbm. | | |

## Check wifi1 default cca value when adaptive cca is disabled

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_4 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | Signal generator-------11n box 2.4GHz port | | |
| Description | Check wifi1 default cca value when adaptive cca is disabled | | |
| Pre-condition | Signal Generator can generate noise  -terminate all antenna port with 50 ohm except the port in use | | |
| Test procedure | 1. Reset configuration 2. Create ssid and bind to wifi1 3. Disable wifi0 adaptive cca: no int wifi0 radio adaptive-cca enable 4. Generate -67dBm noise with SG in wifi0 current channel, check if there is beacon stuck, change the noise level to find the actual cca value | | |
| Expect result | Wifi1 default cca : -62dbm. | | |

## Check wifi0 default cca value when adaptive cca is enabled

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_5 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | Signal generator-------11n box 2.4GHz port | | |
| Description | Check wifi0 default cca value when adaptive cca is enabled | | |
| Pre-condition | Signal Generator can generate noise  -terminate all antenna port with 50 ohm except the port in use | | |
| Test procedure | 1. Reset configuration 2. Create ssid and bind to wifi0 3. Enable wifi0 adaptive cca: int wifi0 radio adaptive-cca enable 4. Generate -64dBm noise with SG, check if wifi0 cca change, increase the noise level until wifi0 cca changed. | | |
| Expect result | Wifi0 default cca : -62dbm | | |

## Check wifi1 default cca value when adaptive cca is enabled

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_6 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | Signal generator-------11n box 5GHz port | | |
| Description | Check wifi1 default cca value when adaptive cca is enabled | | |
| Pre-condition | Signal Generator can generate noise  -terminate all antenna port with 50 ohm except the port in use | | |
| Test procedure | 1. Reset configuration 2. Set wifi1 mode to access mode 3. Create ssid and bind to wifi1 4. Enable wifi1 adaptive cca: int wifi1 radio adaptive-cca enable 5. Generate -64dBm noise with SG, check if wifi1 cca cahnge, change the noise level to find the actual cca value | | |
| Expect result | Wifi1 default cca : -62dbm | | |

## Check wifi0 default max cca

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_7 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | Check wifi0 default max cca | | |
| Pre-condition |  | | |
| Test procedure | 1. Reset configuration 2. Create ssid and bind to wifi0 3. Check wifi0 default max cca by cli: show interface wifi0 4. Set max cca to a certain value: interface wifi0 radio adaptive-cca max-cca xx 5. No interface wifi0 radio adaptive-cca max-cca 6. Check default max cca: show interface wifi0 | | |
| Expect result | Wifi0 default max-cca : -40dbm | | |

## Check wifi1 default max cca

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_8 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | Check wifi1 default max cca | | |
| Pre-condition |  | | |
| Test procedure | 1. Reset configuration 2. Set wifi1 mode to access 3. Create ssid and bind to wifi1 4. Check wifi0 default max cca by cli: show interface wifi1 5. Set max cca to a certain value: interface wifi1 radio adaptive-cca max-cca xx 6. No interface wifi1 radio adaptive-cca max-cca 7. Check default max cca: show interface wifi1 | | |
| Expect result | Wifi0 default max-cca : -40dbm | | |

## wifi0 current cca should increase 2 dB when beacon stuck number exceed 25 until current cca reach max cca value.

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_9 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | Signal Generator (or interference AP------step attenuator)------AP to be tested. | | |
| Description | wifi0 current cca should increase 2 dB when beacon stuck number exceed 25 until current cca reach max cca value. | | |
| Pre-condition |  | | |
| Test procedure | 1. Reset configuration 2. Create ssid and bind to wifi0 3. Set signal generator or interference ap(in adjacent channel) power to trigger cca increase 4. Check current cca by cli: show interface wifi0 5. Repeat step 3 and 4 until current cca reach max cca | | |
| Expect result | wifi0 current cca should increase 2 dB when beacon stuck number exceed 25 until current cca reach max cca value. | | |

## wifi1 current cca should increase 2 dB when beacon stuck number exceed 25 until current cca reach max cca value.

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_10 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | Signal Generator (or interference AP------step attenuator)------AP to be tested. | | |
| Description | wifi1 current cca should increase 2 dB when beacon stuck number exceed 25 until current cca reach max cca value. | | |
| Pre-condition |  | | |
| Test procedure | 1. Reset configuration 2. Set wifi1 mode to access 3. Create ssid and bind to wifi1 4. Set signal generator or interference ap(in adjacent channel) power to trigger cca increase 5. Check current cca by cli: show interface wifi1 6. Repeat step 3 and 4 until current cca reach max cca | | |
| Expect result | Wifi1 current cca should increase 2 dB when beacon stuck number exceed 25 until current cca reach max cca value. | | |

## wifi0 current cca should decrease 1 dB every one minute until current cca reach default cca when there is no beacon stuck ( after case 22).

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_11 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | Signal Generator (or interference AP------step attenuator)------AP to be tested. | | |
| Description | wifi0 current cca should decrease 1 dB every one minute until current cca reach default cca when there is no beacon stuck | | |
| Pre-condition |  | | |
| Test procedure | 1. after case 22 2. power off SG or interference ap 3. Check current cca by cli: show interface wifi0, current cca should decrease 1dB after there is no beacon stuck in one minute 4. Repeat step 3 until current cca reach default cca | | |
| Expect result | wifi0 current cca should decrease 1 dB every one minute until current cca reach default cca when there is no beacon stuck. | | |

## wifi1 current cca should decrease 1 dB every one minute until current cca reach default cca when there is no beacon stuck ( after case 23).

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_12 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | Signal Generator (or interference AP------step attenuator)------AP to be tested. | | |
| Description | wifi1 current cca should decrease 1 dB every one minute until current cca reach default cca when there is no beacon stuck | | |
| Pre-condition |  | | |
| Test procedure | 1. after case 23 2. power off SG or interference ap 3. Check current cca by cli: show interface wifi1, current cca should decrease 1dB after there is no beacon stuck in one minute 4. Repeat step 3 until current cca reach default cca | | |
| Expect result | Wifi1 current cca should decrease 1 dB every one minute until current cca reach default cca when there is no beacon stuck. | | |

## check wifi0 beacon stuck status in our lab when adaptive cca is disabled.

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_13 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use |  | | |
| Description | check wifi0 beacon stuck status in our lab when adaptive cca is disabled. | | |
| Pre-condition |  | | |
| Test procedure | 1. create ssid and bind to wifi0 2. disable wifi0 adaptive cca by cli: no interface wifi0 radio adaptive-cca enable 3. save configure 4. put the box in our lab for 24 hours 5. check wifi0 beacon stuck status by: show log buffer | in beacon , record wifi0 beacon stuck number | | |
| Expect result |  | | |

## check wifi1 beacon stuck status in our lab when adaptive cca is disabled.

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_14 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use |  | | |
| Description | check wifi1 beacon stuck status in our lab when adaptive cca is disabled. | | |
| Pre-condition |  | | |
| Test procedure | 1. disable wifi1 adaptive cca by cli: no interface wifi1 radio adaptive-cca enable 2. save configure 3. put the box in our lab for 24 hours 4. check wifi1 beacon stuck status by: show log buffer | in beacon , record wifi1 beacon stuck number | | |
| Expect result |  | | |

## check wifi0 beacon stuck status in our lab when adaptive cca is enabled.

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_15 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use |  | | |
| Description | check wifi0 beacon stuck status in our lab when adaptive cca is enabled. | | |
| Pre-condition |  | | |
| Test procedure | 1. create ssid and bind to wifi0 2. enable wifi0 adaptive cca by cli: interface wifi0 radio adaptive-cca enable 3. save configure 4. put the box in our lab for 24 hours 5. check wifi0 beacon stuck status by: show log buffer | in beacon , record wifi0 beacon stuck number | | |
| Expect result |  | | |

## check wifi1 beacon stuck status in our lab when adaptive cca is enabled.

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_16 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use |  | | |
| Description | check wifi1 beacon stuck status in our lab when adaptive cca is enabled. | | |
| Pre-condition |  | | |
| Test procedure | 1. enable wifi1 adaptive cca by cli: interface wifi1 radio adaptive-cca enable 2. save configure 3. put the box in our lab for 24 hours 4. check wifi1 beacon stuck status by: show log buffer | in beacon , record wifi1 beacon stuck number | | |
| Expect result |  | | |

## hiveap340:check 2.4GHz channel reuse status with two 11n boxes in same channel

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_17 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | Laptop1---ap1=====switch=====ap2---------laptop2  |  Chariot server | | |
| Description | hiveap340:check 2.4GHz channel reuse status with two 11n boxes in same channel. | | |
| Pre-condition |  | | |
| Test procedure | 1. create ssid and bind to wifi0 2. enable wifi0 adaptive cca by cli: interface wifi0 radio adaptive-cca enable 3. set all aps and laptops tx power to minimum power level 4. tbd | | |
| Expect result |  | | |

## hiveap320:check 2.4GHz channel reuse status with two 11n boxes in same channel

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_18 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | Laptop1---ap1=====switch=====ap2---------laptop2  |  Chariot server | | |
| Description | hiveap320:check 2.4GHz channel reuse status with two 11n boxes in same channel. | | |
| Pre-condition |  | | |
| Test procedure | 1.create ssid and bind to wifi0  2.enable wifi0 adaptive cca by cli: interface wifi0 radio adaptive-cca enable  3.set all aps and laptops tx power to minimum power level  4.tbd | | |
| Expect result |  | | |

## hiveap340:check 5GHz channel reuse status with two 11n boxes in same channel

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_19 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | Laptop1---ap1=====switch=====ap2---------laptop2  |  Chariot server | | |
| Description | hiveap340:check 5GHz channel reuse status with two 11n boxes in same channel | | |
| Pre-condition |  | | |
| Test procedure | 1.create ssid and bind to wifi1  2.enable wifi1 adaptive cca by cli: interface wifi1 radio adaptive-cca enable  3.set all aps and laptops tx power to minimum power level  4.tbd | | |
| Expect result |  | | |

## hiveap320:check 5GHz channel reuse status with two 11n boxes in same channel

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_20 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | Laptop1---ap1=====switch=====ap2---------laptop2  |  Chariot server | | |
| Description | hiveap320:check 5GHz channel reuse status with two 11n boxes in same channel. | | |
| Pre-condition |  | | |
| Test procedure | 1.create ssid and bind to wifi1  2.enable wifi1 adaptive cca by cli: interface wifi1 radio adaptive-cca enable  3.set all aps and laptops tx power to minimum power level  4.tbd | | |
| Expect result |  | | |

## check 2.4GHz total throughput with 4(or 6) 11n aps when adaptive cca is disable

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_21 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | Client1---AP1 15 meters AP2-----client2  | |  15meters 15 meters  | |  Client4---AP4 15meters AP3----client3 | | |
| Description | check 2.4GHz total throughput with 4(or 6) 11n aps when adaptive cca is disable. | | |
| Pre-condition |  | | |
| Test procedure | 1. create ssid and bind to wifi0 2. disable wifi0 adaptive cca by cli: no interface wifi0 radio adaptive-cca enable 3. set AP1 channel to 1, AP2 channel to 9, AP3 channel to 5, AP4 channel to 13 4. run downlink throughput between four clients and chariot server 5. record the total throughput of four clients | | |
| Expect result |  | | |

## check 2.4GHz total throughput with 4(or 6) 11n aps when adaptive cca is enable

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_22 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | Client1---AP1 15 meters AP2-----client2  | |  15meters 15 meters  | |  Client4---AP4 15meters AP3----client3 | | |
| Description | check 2.4GHz total throughput with 4(or 6) 11n aps when adaptive cca is enable | | |
| Pre-condition |  | | |
| Test procedure | 1. create ssid and bind to wifi0 2. enable wifi0 adaptive cca by cli: interface wifi0 radio adaptive-cca enable 3. set AP1 channel to 1, AP2 channel to 9, AP3 channel to 5, AP4 channel to 13 4. run downlink throughput between four clients and chariot server 5. check AP cca status by cli: show interface wifi0 6. record the total throughput of four clients | | |
| Expect result |  | | |

## check 5GHz total throughput with 4 11n aps when adaptive cca is enable

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_23 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | Client1---AP1 15 meters AP2-----client2  | |  15meters 15 meters  | |  Client4---AP4 15meters AP3----client3 | | |
| Description | check 5GHz total throughput with 4 11n aps when adaptive cca is enable | | |
| Pre-condition |  | | |
| Test procedure | 1. set wifi1 mode to access 2. create ssid and bind to wifi1 3. enable wifi1 adaptive cca by cli: interface wifi1 radio adaptive-cca enable 4. set AP1 channel to 36, AP2 channel to 44, AP3 channel to 40, AP4 channel to 48 5. run downlink throughput between four clients and chariot server 6. check AP cca status by cli: show interface wifi1 7. record the total throughput of four clients | | |
| Expect result |  | | |

## check 5GHz total throughput with 4 11n aps when adaptive cca is disable

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_24 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | Client1---AP1 15 meters AP2-----client2  | |  15meters 15 meters  | |  Client4---AP4 15meters AP3----client3 | | |
| Description | check 5GHz total throughput with 4 11n aps when adaptive cca is disable | | |
| Pre-condition |  | | |
| Test procedure | 1. set wifi1 mode to access 2. create ssid and bind to wifi1 3. disable wifi1 adaptive cca by cli: no interface wifi1 radio adaptive-cca enable 4. set AP1 channel to 36, AP2 channel to 44, AP3 channel to 40, AP4 channel to 48 5. run downlink throughput between four clients and chariot server 6. record the total throughput of four clients | | |
| Expect result |  | | |

## stress test: change default cca value frequently

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_25 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | stress test: change default cca value frequently | | |
| Pre-condition |  | | |
| Test procedure | 1. set wifi1 mode to access 2. create ssid and bind to wifi1 3. create ssid and bind to wifi0 4. build a scripts to keep changing wifi0/wifi1 default cca value, enable/disable cca | | |
| Expect result |  | | |

## check if cca feature will effect sensitivity

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_26 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | Signal generator-----------AP | | |
| Description | check if cca feature will effect sensitivity | | |
| Pre-condition |  | | |
| Test procedure |  | | |
| Expect result |  | | |

## Generate transmit traffic and check wifi0 tx utilization

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_27 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | client---AP=========switch====chariot server | | |
| Description | Generate transmit traffic and check wifi0 tx utilization | | |
| Pre-condition | All the test is in screen room | | |
| Test procedure | 1. create ssid and bind to wifi0 2. enable wifi0 cca: interface wifi0 radio adaptive-cca enable 3. run downlink traffic by chariot server 4. check tx utilization by cli: show interface wifi0 | | |
| Expect result |  | | |

## Generate transmit traffic and check wifi1 tx utilization

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_28 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | client---AP=========switch====chariot server | | |
| Description | Generate transmit traffic and check wifi1 tx utilization | | |
| Pre-condition | All the test is in screen room | | |
| Test procedure | 1. Set wifi1 mode to access 2. create ssid and bind to wifi1 3. enable wifi1 cca: interface wifi1 radio adaptive-cca enable 4. run downlink traffic by chariot server 5. check tx utilization by cli: show interface wifi1 | | |
| Expect result |  | | |

## Generate receive traffic and check wifi1 rx utilization

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_29 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | client---AP=========switch====chariot server | | |
| Description | Generate receive traffic and check wifi1 rx utilization | | |
| Pre-condition | All the test is in screen room | | |
| Test procedure | 1. Set wifi1 mode to access 2. create ssid and bind to wifi1 3. enable wifi1 cca: interface wifi1 radio adaptive-cca enable 4. run uplink traffic by chariot server 5. check tx utilization by cli: show interface wifi1 | | |
| Expect result |  | | |

## Generate receive traffic and check wifi0 rx utilization

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_30 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | client---AP=========switch====chariot server | | |
| Description | Generate receive traffic and check wifi0 rx utilization | | |
| Pre-condition | All the test is in screen room | | |
| Test procedure | 1. create ssid and bind to wifi0 2. enable wifi0 cca: interface wifi0 radio adaptive-cca enable 3. run uplink traffic by chariot server 4. check tx utilization by cli: show interface wifi0 | | |
| Expect result |  | | |

## Check wifi0 cca status when there is adjacent channel signal interfference

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_31 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | Check wifi0 cca status when there is adjacent channel signal interfference | | |
| Pre-condition | The test is in our Hangzhou lab, put the box near to other boxes | | |
| Test procedure | 1. create ssid and bind to wifi0 2. enable wifi0 cca: interface wifi0 radio adaptive-cca enable 3. check tx utilization by cli: show interface wifi0 | | |
| Expect result |  | | |

## Check wifi1 cca status when there is adjacent channel signal interference

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_32 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | Check wifi1 cca status when there is adjacent channel signal interference | | |
| Pre-condition | The test is in our Hangzhou lab, put the box near to other boxes | | |
| Test procedure | 1. Set wifi1 mode to access 2. create ssid and bind to wifi1 3. enable wifi1 cca: interface wifi1 radio adaptive-cca enable 4. check tx utilization by cli: show interface wifi1 | | |
| Expect result |  | | |

## Check wifi0 cca status when there is burst noise higher than current cca

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_33 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | Signal generator--------11n box | | |
| Description | Check wifi0 cca status when there is burst noise higher than current cca. | | |
| Pre-condition | The test is in our Hangzhou lab, put the box near to other boxes | | |
| Test procedure | This case need signal generator | | |
| Expect result |  | | |

## Check wifi1 cca status when there is burst noise higher than current cca

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_34 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use | Signal generator--------11n box | | |
| Description | Check wifi1 cca status when there is burst noise higher than current cca | | |
| Pre-condition | The test is in our Hangzhou lab, put the box near to other boxes | | |
| Test procedure | This case need signal generator | | |
| Expect result |  | | |

## bind 8 ssids to wifi0 and check cca status

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_35 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | bind 8 ssids to wifi0 and check cca status | | |
| Pre-condition |  | | |
| Test procedure |  | | |
| Expect result |  | | |

## bind 8 ssids to wifi1 and check cca status

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_36 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | bind 8 ssids to wifi1 and check cca status | | |
| Pre-condition |  | | |
| Test procedure |  | | |
| Expect result |  | | |

## box shouldn’t change cca when box is in clear environment.

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_37 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use |  | | |
| Description | box shouldn’t change cca when box is in clear environment. | | |
| Pre-condition |  | | |
| Test procedure | 1.put box in sceen room for 1 hours.  2.check if box adapte cca. | | |
| Expect result | box shouldn’t change cca when box is in clear environment. | | |

## field test case: 1-5-9-13/1-6-11 total throughput.

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | AdaptCCA\_Function\_38 | | |
| Priority | Middle | Automation Flag | No |
| Topology to use |  | | |
| Description | field test case: 1-5-9-13/1-6-11 total throughput. | | |
| Pre-condition |  | | |
| Test procedure |  | | |
| Expect result |  | | |

# CLI (Automation Status: Yes/No)

<Just list all cli that this feature has one by one>

# Customer Issue or Typical Bug