HiveManager Spectrum Analyzer Test Case

Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| Version | Date | Author | Description |
| 0.1 | 03/21/2012 | Guoqing Zhu | Initial Version |
| 0.2 | 03/22/2012 | Guoqing Zhu | Modified after review |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Table of Contents

Glossary and Abbreviations

# Introduction



# Test Objectives

As spectrum analyzer, user can get the information as below：

1. Spectrum Scan Data Representation and usage.
2. Display Channel Utilization.
3. Identify Reference Types.

# Test Acceptance Criterion from Development

* Approved – Functional Specifications (as Introduction)

# Product Pass Criterion

NA

# Test Bed/Topo Design

<List topo and topo ID>

# Test Point

## GUI Test

### Wifi 0, Check enter continuous scan channel list

### Wifi 0, Check enter discrete scan channel list

### Wifi 1, Check enter continuous scan channel list

### Wifi 1, Check enter discrete scan channel list

### Check enter letters, Special characters to the scan channel list

### Check enter Data Reporting interval

### Check function buttons

### Check "Max Hold" function

### Real Time FFT report, check other sub-options function

### FFT Duty Cycle report, check other sub-options function

### Check running time on standalone HM

### Check running time on HMOL vhm

### Check only AP 110,120,330,350,121,141 list on the spectral analysis page

### Check 2D chart work on IE, Firefox and Opera

### Check if different VHM users can read/modify other’s AP

## Key Scenarios Test

### Real Reference: codeless phone, Enable to identify

### Real Reference: bluetooth, Enable to identify

### Real Reference: microwave oven, Enable to identify

### Real References: codeless phone, bluetooth, microwave oven, Enable to identify

## Function Test

### Basic Function test

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:access, country code:840, channel width:20M

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:access, country code:840, channel width:40M Different POE port priority test

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:backhaul, country code:840, channel width:20M, DFS: open PSE LLDP support

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:backhaul, country code:840, channel width:40M When PD power overload, check if PSE negotiate with PD

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:access+backhaul, country code:840, channel width:20M

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:access+backhaul, country code:840, channel width:40M

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11b/g, radio mode:access, country code:840, channel width:20M

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:access, country code:826, channel width:20M

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:access, country code:840, channel width:20M

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:access, country code:840, channel width:40M, DFS: open

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:backhaul, country code:840, channel width:20M

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:backhaul, country code:840, channel width:40M

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:access+backhaul, country code:840, channel width:20M

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:access+backhaul, country code:840, channel width:40M

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11a, radio mode:access, country code:840, channel width:40M

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:access+backhaul, country code:826, channel width:20M, DFS: open

### Negative Test

#### Enable spectral analysis on HM, and then disconnect AP from HM

#### Select more than one AP and enable spectral analysis, one of those APs is disconnect from HM

#### Enable spectral analysis of one AP on HM, and then other user login HM and select the AP to start spectral analysis

#### Enable spectral analysis of one AP on HM, and then other user login HM and remove the AP

#### Enable spectral analysis of one AP on HM, and then other user login HM and upload confirmation to the AP

#### Enable spectral analysis of one AP on HM, and then other user login HM and rollback/update HiveOS software

#### Enable spectral analysis of one AP on HM, and then other user login HM and update HM software

#### Check audit configuration

#### Check page time out when enable spectral analysis start

#### Check close the page when spectral analysis start

#### Check start spectral analysis of AP 320,340 on map

#### Check start spectral analysis of AP 320,AP340 on active client page

#### Check AP reboot when running spectrum

#### Check select simulate AP and start spectrum

# Test Case

## GUI Test

### Wifi 0, Check enter continuous scan channel list

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_GUI\_001 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Wifi 0, Check enter continuous scan channel list | | |
| Pre-condition |  | | |
| Test procedure | 1. Enter continuous channel 1-13 to wifi0 scan channel list 2. Enter continuous channel 0-13 to wifi0 scan channel list 3. Enter continuous channel 1-14 to wifi0 scan channel list | | |
| Expect result | 1) Scan channel list is valid  2) Error info is correct  3) Error info is correct | | |
| Test Result | PASS  *"2.4 GHz Channels must be between 1 and 13"* | | |

### Wifi 0, Check enter discrete scan channel list

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_GUI\_002 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Wifi 0, Check enter discrete scan channel list | | |
| Pre-condition |  | | |
| Test procedure | 1. Enter discrete channel 1-5, 8, 9,11, to wifi0 scan channel list 2. Enter channel 0 to wifi0 scan channel list 3. Enter discrete channel 14 to wifi0 scan channel list | | |
| Expect result | 1) Scan channel list is valid  2) Error info is correct  3) Error info is correct | | |
| Test Result | PASS  *"2.4 GHz Channels must be between 1 and 13"* | | |

### Wifi 1, Check enter continuous scan channel list

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_GUI\_003 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Wifi 1, Check enter continuous scan channel list | | |
| Pre-condition |  | | |
| Test procedure | 1) Enter continuous channel 36-165 to wifi1 scan channel list  2) Enter continuous channel 35-165 to wifi1 scan channel list  3) Enter continuous channel 36-166 to wifi1 scan channel list | | |
| Expect result | 1) Scan channel list is valid  2) Error info is correct  3) Error info is correct | | |
| Test Result | PASS  *"5.0 GHz Channels must be between 36 and 165"* | | |

### Wifi 1, Check enter discrete scan channel list

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_GUI\_004 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Wifi 1, Check enter discrete scan channel list | | |
| Pre-condition |  | | |
| Test procedure | 1) Enter discrete channel 36,40,44,48,149,153,157,161,165 to wifi1 scan channel list  2) Enter discrete channel 35 to wifi1 scan channel list  3) Enter discrete channel 166 to wifi1 scan channel list | | |
| Expect result | 1) Scan channel list is valid  2) Error info is correct  3) Error info is correct | | |
| Test Result | PASS  *"5.0 GHz Channels must be between 36 and 165"* | | |

### Check enter letters, Special characters to the scan channel list

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_GUI\_005 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Check enter letters, Special characters to the scan channel list | | |
| Pre-condition |  | | |
| Test procedure | 1) Enter a-b,$%^%$^$%=sdf to scan channel list | | |
| Expect result | 1) "special characters" could not be entered | | |
| Test Result | PASS | | |

### Check enter Data Reporting interval

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_GUI\_006 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Check enter Data Reporting interval | | |
| Pre-condition |  | | |
| Test procedure | 1) Enter 1 to Data Reporting interval to HM  2) Enter 30 to Data Reporting interval to HM  3) Enter 0 to Data Reporting interval to HM  4) Enter 31 to Data Reporting interval to HM | | |
| Expect result | 1) Scan channel list is valid  2) Scan channel list is valid  3) Error info is correct  4) Error info is correct | | |
| Test Result | PASS  *"Data Collection Interval must be between 1 and 30"* | | |

### Check function buttons

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_GUI\_007 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Check function buttons | | |
| Pre-condition |  | | |
| Test procedure | 1) check "return" button function  2) check "stop" button function  3) check "Maximize"--"Restore down" buttons Function  4) check Real Time FFT buttons: "Pause"--"Resume", "Zoom in"--"Zoom out", "Close"  5) check FFT Duty Cycle buttons: "Pause"--"Resume", "Zoom in"--"Zoom out", "Close"  6) check Swept Spectrogram buttons: "Pause"--"Resume", "Zoom in"--"Zoom out", "Close"  7) check Swept Spectrogram – FFT Duty Cycle buttons: "Pause"--"Resume", "Zoom in"--"Zoom out", "Close" | | |
| Expect result | Function of all buttons is correct | | |
| Test Result | PASS | | |

### Check "Max Hold" function

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_GUI\_008 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Check "Max Hold" function | | |
| Pre-condition | 1) start spectral analysis | | |
| Test procedure | 1) "Zoom in" Real Time FFT report  2) select "Max hold" option, check weather exists a grid line above the red real-time report line  3) remove the selection of "Max hold"  4) "Zoom in" FFT Duty Cycle report  5) select "Max hold" option, check weather exists a grid line above the red real-time report line  6) remove the selection of "Max hold" | | |
| Expect result | 2) exist  3) only real-time report stayed in the page , color is red  4) exist  5) only FFT Duty Cycle report stayed in the page , color is red | | |
| Test Result | PASS | | |

### Real Time FFT report, check other sub-options function

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_GUI\_009 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Real Time FFT report, check other sub-options function | | |
| Pre-condition | 1) start spectral analysis  2) "Zoom in" Real Time FFT report | | |
| Test procedure | 1) check "Center" button function  2) check "Reference Level" button function  3) check "Channels" button function  4) check "Span" button function  5)check "Vertical Scale" button function | | |
| Expect result | Function of all buttons is correct | | |
| Test Result | PASS | | |

### FFT Duty Cycle report, check other sub-options function

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_GUI\_010 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | FFT Duty Cycle report, check other sub-options function | | |
| Pre-condition | 1) start spectral analysis  2) "Zoom in" FFT Duty Cycle report | | |
| Test procedure | 1) check "Center" button function  2) check "Maximum" button function  3) check "Channels" button function  4) check "Span" button function  5)check "Minimum" button function | | |
| Expect result | Function of all buttons is correct | | |
| Test Result | PASS | | |

### Check running time on standalone HM

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_GUI\_011 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Check running time on standalone HM | | |
| Pre-condition |  | | |
| Test procedure | 1) User login standalone HM and start spectrum | | |
| Expect result | default running time is 5 min,max:10 hours | | |
| Test Result | PASS | | |

### Check running time on HMOL vhm

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_GUI\_012 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Check running time on HMOL vhm | | |
| Pre-condition |  | | |
| Test procedure | 1) HMOL VHM User login and start spectrum | | |
| Expect result | default running time is 5 min,max:1 hour | | |
| Test Result | PASS | | |

### Check only AP 110,120,330,350,121,141 list on the spectral analysis page

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_GUI\_013 | | |
| Priority | High | Automation Flag | NA |
| Topology to use |  | | |
| Description | Check only AP 110,120,330,350 list on the spectral analysis page | | |
| Pre-condition | Managed AP on HM:AP 110,AP120,AP320,AP330,AP340,AP350,AP121,AP141 | | |
| Test procedure | 1) Open spectral analysis page on HM | | |
| Expect result | 1) only AP 110,120,330,350,121,141 list on the page | | |
| Test Result | PASS  *"Operation failed. The selected HiveAP320 does not support this feature."*  *"Operation failed. The selected HiveAP340 does not support this feature."* | | |

### Check 2D chart work on IE, Firefox and Opera

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_GUI\_014 | | |
| Priority | High | Automation Flag | NA |
| Topology to use |  | | |
| Description | Check 2D chart work on IE, Firefox and Opera | | |
| Pre-condition |  | | |
| Test procedure | 1) Open spectral analysis page with IE, Firefox and Opera  2) Select a AP and enable spectral analysis, check the 2D chart | | |
| Expect result | 1) The chart displays well  2) Horizontal axle represent the frequencies, the vertical axel represent signal amplitudes | | |
| Test Result | PASS | | |

### Check if different VHM users can read/modify other’s AP

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_GUI\_015 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Check if different VHM users can read/modify other’s AP | | |
| Pre-condition |  | | |
| Test procedure | 1) check VHM User Admin page, “Monitor-->Devices-->HiveAPs”  2) check VHM User AAA page, “Monitor-->Devices-->HiveAPs” | | |
| Expect result | 1) VHM User Admin lists all AP, but can’t do any modification to other user’s AP  2) VHM User AAA can’t list AP belongs to other user | | |
| Test Result | Bug16923 | | |

## Key Scenarios

### Real Reference: codeless phone, Enable to identify

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_KeyScenarios\_001 | | |
| Priority | Accept | Automation Flag | No |
| Topology to use |  | | |
| Description | Real Reference: codeless phone, Enable to identify | | |
| Pre-condition |  | | |
| Test procedure | 1. Phymode:11b/g, radio mode:access, country code:840  2. select the AP, channel width:20M and enable spectral analysis, Interface: 2.4G, Run time: 1hour, check reference type  3. change Phymode:11ng, check reference type  4. change radio mode: backhaul, check reference type  5. change country code: 826, check reference type | | |
| Expect result | 1. "reference type" is correct  2. "Discovered" time will be updated | | |
| Test Result | Bug13890 | | |

### Real Reference: bluetooth, Enable to identify

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_KeyScenarios\_002 | | |
| Priority | Accept | Automation Flag | No |
| Topology to use |  | | |
| Description | Real Reference: bluetooth, Enable to identify | | |
| Pre-condition |  | | |
| Test procedure | 1. Phymode:11b/g, radio mode:access, country code:840  2. select the AP, channel width:40M and enable spectral analysis, Interface: 2.4G, Run time: 1hour, check reference type  3. change radio mode: access+backhaul, check reference type  4. change Phymode:11ng, check reference type  5. change country code: 826, check reference type | | |
| Expect result | 1. "reference type" is correct  2. "Discovered" time will be updated | | |
| Test Result | Bug13890 | | |

### Real Reference: microwave oven, Enable to identify

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_KeyScenarios\_003 | | |
| Priority | Accept | Automation Flag | No |
| Topology to use |  | | |
| Description | Real Reference: microwave oven, Enable to identify | | |
| Pre-condition |  | | |
| Test procedure | 1. Phymode:11ng, radio mode:access, country code:840  2. select the AP, channel width:40M and enable spectral analysis, Interface: 2.4G, Run time: 1hour, check reference type  3. change country code: 826, check reference type  4. change radio mode: backhaul, check reference type  5. change Phymode:11b/g, check reference type | | |
| Expect result | 1. "reference type" is correct  2. "Discovered" time will be updated | | |
| Test Result | Bug13890 | | |

### Real References: codeless phone,bluetooth,microwave oven, Enable to identify

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_KeyScenarios\_004 | | |
| Priority | High | Automation Flag | No |
| Topology to use |  | | |
| Description | Real References: codeless phone,bluetooth,microwave oven, Enable to identify | | |
| Pre-condition |  | | |
| Test procedure | 1. Phymode:11b/g, radio mode:access, country code:840  2. select the AP, channel width:20M and enable spectral analysis, Interface: 2.4G, Run time: 1hour, check reference type  3. add reference: codeless phone, check reference type  4. add reference: bluetooth, check reference type  5. add reference: microwave oven, check reference type  6. change: Phymode:ng, radio mode:backhaul, country code:826, check reference type  7. remove reference: bluetooth, check reference type  8. remove reference: codeless phone, check reference type  9. remove reference: microwave oven, check reference type | | |
| Expect result | 1. "reference type" is correct  2. "Discovered" time will be updated | | |
| Test Result | Bug13890 | | |

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

<Do not forget negative/boundary case>

### Basic function test

#### Check enable spectral analysis of HiveAP\*\*\* on HM, Phymode:11ng, radio mode:access, country code:840, channel width:20M

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Function\_001 | | |
| Priority | Accept | Automation Flag | Yes |
| Topology to use |  | | |
| Description | Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:access, country code:840, channel width:20M | | |
| Pre-condition | 1.Upload configuration HiveAP \*\*\* on HM, Phymode:11ng, radio mode:access, country code:840, channel width:20M  2. Enable debug console on AP  *"debug co"* | | |
| Test procedure | 1. select the AP, and enable spectral analysis, Channel list: 1-11, report interval 5 seconds | | |
| Expect result | 1. CLI on ap:  *Radio profile ng*  *radio profile ng phymode 11ng*  *interface wifi0 radio profile ng*  *interface wifi0 mode access*  *boot-param region fcc*  *boot-param country-code 840*  *radio profile ng channel-width 20*  *exec interface wifi0 spectral-scan report-interval 5*  *exec interface wifi0 spectral-scan channel 1-11*  *exec interface wifi0 spectral-scan start*  2. Every 5 seconds, AP send capwap message which contains FFT dump(64 points) and interface data to Hivemanager  3. The spectral records on HM database is equal to the data send from AP  4. The spectral analysis report is correct | | |
| Test result | Bug 16859  Bug 16896  # check if setting is correct  AH-3c8580#show boot-param  AH-3c8580#show interface wifi0  AH-505e00#sh running-config  *\_debug dcd spectral*  *debug co* | | |
| For automation  (take the first case as an example) | 1. Reset config AP  CLI: *“reset config”*  2. Set interface wifi0 to: mode-access, phymode-11ng, channel-width-20  CLI: “*interface wifi0 mode access”*  “*radio profile ng phymode 11ng”*  *“radio profile ng channel-width 20”*  *“interface wifi0 phymode ng”*  *“save config”*  3. Turn up interface wifi0  CLI: “*ssid test*”  “*interface wifi0 ssid test*”  “*save config*”  4. Set spectral-scan interval to 5s  CLI: “*exec interface wifi0 spectral-scan report-interval 5*”  “*save config*”  5. Set spectral-scan list to: 1-11  CLI: “*exec interface wifi0 spectral-scan channel 1*”  “*exec interface wifi0 spectral-scan channel 2*”  “*exec interface wifi0 spectral-scan channel 3*”  “*exec interface wifi0 spectral-scan channel 4*”  …  “*exec interface wifi0 spectral-scan channel 10*”  “*exec interface wifi0 spectral-scan channel 11*”  “*save config*”  6. Turn on debug switch  CLI: “*\_debug dcd spectral*”  “*debug console*”  7. Start spectral-scan  CLI: “*exec interface wifi0 spectral-scan start*”  8. Run 5minutes, check the debug log  i> check report interval: 5s  ii> check report channel: contain channel 1-11  CLI：“*show logging buffered | in channel*”  iii> check channel width: 20  AH-81b700#2012-08-10 09:17:55 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2412, channel number: 1 40Mhz width: 0  2012-08-10 09:17:55 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:17:55 debug ah\_dcd: [dcd\_spectral]: [spectral] -91 -88 -93 -89 -91 -89 -95 -100  2012-08-10 09:17:55 debug ah\_dcd: [dcd\_spectral]: [spectral] -93 -90 -95 -100 -96 -97 -100 -93  2012-08-10 09:17:55 debug ah\_dcd: [dcd\_spectral]: [spectral] -92 -98 -93 -100 -96 -88 -100 -100  2012-08-10 09:17:55 debug ah\_dcd: [dcd\_spectral]: [spectral] -98 -100 -92 -93 -92 -91 -100 -88  2012-08-10 09:17:55 debug ah\_dcd: [dcd\_spectral]: [spectral] -90 -99 -88 -95 -97 -94 -92 -96  2012-08-10 09:17:55 debug ah\_dcd: [dcd\_spectral]: [spectral] -98 -97 -90 -99 -92 -100 -95 -95  2012-08-10 09:17:55 debug ah\_dcd: [dcd\_spectral]: [spectral] -93 -93 -94 -100 -96 -100 -100 -99  2012-08-10 09:17:55 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 3  2012-08-10 09:17:55 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:17:55 debug last message repeated 6 times  2012-08-10 09:17:55 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:17:55 debug ah\_dcd: [dcd\_spectral]: [spectral] total channel cnt:1  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2412, channel number: 1 40Mhz width: 0  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -91 -100 -92 -94 -89 -94 -94 -100  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -91 -95 -92 -91 -99 -96 -95 -87  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -94 -100 -86 -87 -93 -94 -100 -90  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -87 -94 -93 -89 -91 -93 -92 -90  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -88 -90 -92 -100 -96 -85 -92  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -92 -93 -95 -100 -100 -95 -87 -93  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -92 -93 -85 -95 -98 -89 -91 -89  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 14  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:18:00 debug last message repeated 6 times  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2417, channel number: 2 40Mhz width: 0  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -83 -89 -87 -77 -86 -90 -75 -95  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -76 -100 -94 -76 -90 -96 -76  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -99 -88 -76 -96 -86 -75 -85 -82  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -77 -83 -82 -79 -84 -95 -89 -90  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -84 -87 -93 -86 -89 -95 -100 -96  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -95 -91 -100 -100 -99 -98 -97 -97  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -99 -100 -100 -100 -94 -96 -100 -100  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 3  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:18:00 debug last message repeated 6 times  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2422, channel number: 3 40Mhz width: 0  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -97 -96 -98 -95 -100 -100  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -92 -93 -100 -100 -100 -97 -100 -97  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -100 -100 -100 -100 -100 -100  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -96 -100 -100 -100 -99 -98 -100  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -94 -92 -100 -100 -99 -96 -100 -95  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -100 -93 -93 -95 -93 -100  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -91 -92 -96 -92 -97 -92 -83 -96  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 3  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:18:00 debug last message repeated 6 times  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2427, channel number: 4 40Mhz width: 0  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -100 -100 -99 -98 -100 -100  2012-08-10 09:18:00 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -102012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2412, channel number: 1 40Mhz width: 0  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -97 -100 -94 -87 -87 -97 -89  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -87 -88 -84 -87 -91 -86 -84 -97  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -82 -83 -89 -83 -79 -82 -83 -79  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -83 -84 -80 -86 -85 -84 -78 -91  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -79 -78 -82 -80 -80 -81 -88 -82  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -81 -97 -82 -86 -95 -86 -84 -90  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -92 -89 -87 -92 -99 -93 -94 -98  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 28  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:18:05 debug last message repeated 6 times  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2427, channel number: 4 40Mhz width: 0  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -91 -96 -97 -96 -90 -88 -92 -96  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -99 -95 -100 -91 -89 -92 -93 -90  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -95 -90 -92 -89 -100 -96 -92 -88  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -96 -88 -100 -88 -90 -92 -91 -93  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -92 -100 -95 -90 -100 -89 -100  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -94 -91 -91 -93 -96 -90 -85 -91  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -88 -90 -93 -96 -95 -94 -100 -98  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 4  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:18:05 debug last message repeated 6 times  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2432, channel number: 5 40Mhz width: 0  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -98 -91 -96 -96 -97 -94 -98 -93  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -92 -91 -89 -100 -100 -100 -95 -96  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -100 -99 -96 -95 -97 -97  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -97 -95 -96 -89 -93 -100 -98 -91  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -96 -100 -100 -100 -93 -100 -99 -93  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -97 -97 -94 -98 -96 -97  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -94 -96 -100 -92 -96 -98 -96 -100  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 3  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:18:05 debug last message repeated 6 times  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2447, channel number: 8 40Mhz width: 0  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -81 -80 -82 -75 -83 -87 -75 -80  2012-08-10 09:18:05 debug ah\_dcd: [dcd\_spectral]: [spectral] -82 -79 -77 -78 -81 -80 -82 -78  2012-08-10 09:18:2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2412, channel number: 1 40Mhz width: 0  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -95 -92 -88 -97 -96 -100 -90 -91  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -87 -91 -84 -88 -88 -85 -80 -87  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -86 -81 -82 -86 -79 -85 -83 -77  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -81 -85 -80 -84 -85 -86 -80 -84  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -80 -77 -81 -81 -77 -83 -80 -80  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -84 -83 -81 -88 -86 -91 -83 -90  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -91 -92 -97 -100 -100 -94 -96 -95  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 26  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:18:10 debug last message repeated 6 times  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2422, channel number: 3 40Mhz width: 0  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -98 -100 -100 -99 -100 -96 -95 -100  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -93 -93 -100 -95 -100 -100 -100 -98  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -94 -100 -99 -96 -96 -95 -95 -98  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -93 -100 -97 -95 -97 -100 -100 -100  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -98 -96 -99 -98 -97 -100  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -99 -90 -100 -98 -100 -95 -96 -89  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -93 -95 -81 -91 -84 -77 -88 -91  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 5  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:18:10 debug last message repeated 6 times  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2427, channel number: 4 40Mhz width: 0  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -90 -95 -84 -94 -89 -96 -94 -90  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -95 -95 -100 -97 -100 -100 -100  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -99 -97 -100 -100 -100 -100 -100 -95  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -99 -100 -100 -97 -99 -100 -100 -99  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -94 -98 -96 -100 -95 -100 -100 -97  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -100 -89 -100 -100 -100 -100  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -94 -100 -96 -90 -99 -100 -96 -100  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 6  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:18:10 debug last message repeated 6 times  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2432, channel number: 5 40Mhz width: 0  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -100 -100 -100 -100 -100 -100  2012-08-10 09:18:10 debug ah\_dcd: [dcd\_spectral]: [spectral] -1002012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2412, channel number: 1 40Mhz width: 0  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -86 -91 -98 -90 -93 -92 -89 -90  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -94 -88 -90 -89 -87 -100 -90 -88  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -88 -88 -90 -93 -97 -83 -87 -88  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -86 -88 -90 -91 -94 -99 -94 -98  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -89 -85 -87 -100 -87 -100 -100 -92  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -90 -95 -89 -97 -90 -89 -90 -89  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -89 -90 -100 -100 -89 -90 -89 -100  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 27  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:18:15 debug last message repeated 6 times  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2422, channel number: 3 40Mhz width: 0  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -98 -94 -97 -97 -96 -91 -88 -100  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -92 -96 -100 -94 -92 -96 -97 -97  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -99 -95 -95 -100 -96 -100 -100  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -99 -100 -96 -94 -95 -96 -97 -100  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -97 -99 -100 -100 -95 -95 -91 -100  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -96 -93 -94 -96 -98 -92 -100 -100  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -91 -100 -95 -100 -91 -96 -95  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 6  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:18:15 debug last message repeated 6 times  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2432, channel number: 5 40Mhz width: 0  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -100 -100 -100 -100 -95 -100  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -94 -93 -100 -100 -98 -100 -98 -100  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -98 -98 -91 -92 -87 -86 -86 -79  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -78 -82 -81 -78 -75 -73 -72 -79  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -72 -73 -78 -69 -76 -79 -68 -97  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -89 -73 -79 -81 -73 -83 -94 -71  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] -83 -80 -72 -82 -75 -76 -80 -74  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 5  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:18:15 debug last message repeated 2 times  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 1 1 0  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] 1 1 0 1 0 0 1 0  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 1 0 0 1 0 0 1  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 1 0 0 0 0 1  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:18:15 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2437, channel number2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2412, channel number: 1 40Mhz width: 0  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -98 -100 -96 -100 -97 -93 -100  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -88 -99 -100 -86 -96 -88 -83  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -95 -93 -83 -98 -98 -81 -87 -83  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -83 -90 -85 -84 -84 -84 -84 -87  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -82 -84 -86 -78 -90 -100 -81 -89  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -89 -82 -91 -92 -90 -99 -94 -90  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -95 -95 -100 -98 -100 -95 -100 -99  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 27  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:18:20 debug last message repeated 6 times  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2427, channel number: 4 40Mhz width: 0  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -99 -100 -98 -100 -100 -100  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -100 -100 -95 -100 -100 -100  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -96 -100 -96 -100 -100 -95  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -99 -100 -100 -100 -100 -100  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -100 -100 -100 -100 -93 -99  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -100 -98 -92 -100 -100 -92  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -90 -100 -97 -87 -92 -93  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 7  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:18:20 debug last message repeated 6 times  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2432, channel number: 5 40Mhz width: 0  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -93 -100 -92 -100 -100 -100 -90  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -97 -88 -92 -97 -96 -90 -96 -88  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -92 -88 -85 -85 -80 -84 -80  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -75 -81 -75 -75 -72 -69 -72 -73  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -69 -68 -73 -73 -71 -76 -71 -71  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -71 -74 -77 -82 -75 -73 -74 -74  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] -74 -72 -78 -73 -71 -75 -75 -75  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 6  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:18:20 debug last message repeated 2 times  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 1 2 2 1  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] 2 2 1 2 1 0 2 1  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] 1 2 0 0 1 1 1 2  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] 1 1 1 1 1 0 0 1  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:18:20 debug ah\_dcd: [dcd\_spectral]: [spectral] ch2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2412, channel number: 1 40Mhz width: 0  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -97 -100 -96 -92 -91 -100 -98  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -84 -87 -84 -87 -96 -86 -82 -87  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -79 -89 -91 -79 -84 -87 -84 -81  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -84 -80 -83 -84 -83 -83 -82 -84  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -82 -78 -81 -83 -80 -80 -89 -88  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -78 -83 -79 -85 -100 -86 -83 -92  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -86 -100 -95 -100 -95 -96 -100 -100  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 27  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:18:25 debug last message repeated 6 times  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2417, channel number: 2 40Mhz width: 0  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -95 -87 -94 -81 -83 -83 -79 -81  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -88 -82 -81 -87 -94 -89 -80 -84  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -86 -91 -79 -89 -83 -82 -95 -81  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -81 -89 -82 -93 -87 -84 -83 -82  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -83 -79 -86 -81 -88 -87 -81 -92  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -87 -80 -91 -91 -80 -87 -85 -87  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -88 -84 -81 -92 -75 -89 -82 -94  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 4  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:18:25 debug last message repeated 6 times  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2422, channel number: 3 40Mhz width: 0  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -100 -100 -100 -100 -100 -99  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -95 -100 -100 -97 -100 -96  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -99 -100 -100 -100 -100 -100 -99  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -100 -100 -100 -99 -96 -100  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -97 -100 -98 -100 -100 -98 -95 -98  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -100 -100 -100 -100 -100 -95  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -94 -100 -99 -93 -98 -96  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 7  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:18:25 debug last message repeated 6 times  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2427, channel number: 4 40Mhz width: 0  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -85 -88 -94 -90 -88 -94 -90 -100  2012-08-10 09:18:25 debug ah\_dcd: [dcd\_spectral]: [spectral] -94 -96 -97 -92012-08-10 09:18:30 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2412, channel number: 1 40Mhz width: 0  2012-08-10 09:18:30 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:30 debug ah\_dcd: [dcd\_spectral]: [spectral] -85 -91 -84 -85 -90 -85 -90 -86  2012-08-10 09:18:30 debug ah\_dcd: [dcd\_spectral]: [spectral] -87 -98 -90 -85 -88 -91 -98 -84  2012-08-10 09:18:30 debug ah\_dcd: [dcd\_spectral]: [spectral] -91 -97 -100 -95 -100 -100 -100 -82  2012-08-10 09:18:30 debug ah\_dcd: [dcd\_spectral]: [spectral] -81 -89 -85 -89 -89 -89 -93 -90  2012-08-10 09:18:30 debug ah\_dcd: [dcd\_spectral]: [spectral] -87 -85 -87 -92 -87 -87 -90 -87  2012-08-10 09:18:30 debug ah\_dcd: [dcd\_spectral]: [spectral] -87 -100 -100 -90 -87 -92 -92 -85  2012-08-10 09:18:30 debug ah\_dcd: [dcd\_spectral]: [spectral] -85 -83 -95 -100 -94 -91 -91 -91  2012-08-10 09:18:30 debug ah\_dcd: [dcd\_spectral]: [spectral] duty cycle count: 27  2012-08-10 09:18:30 debug ah\_dcd: [dcd\_spectral]: [spectral] 0 0 0 0 0 0 0 0  2012-08-10 09:18:30 debug last message repeated 6 times  2012-08-10 09:18:30 debug ah\_dcd: [dcd\_spectral]: [spectral] interference count: 0  2012-08-10 09:18:30 debug ah\_dcd: [dcd\_spectral]: [spectral] channel freq: 2417, channel number: 2 40Mhz width: 0  2012-08-10 09:18:30 debug ah\_dcd: [dcd\_spectral]: [spectral] sample power count: 56  2012-08-10 09:18:30 debug ah\_dcd: [dcd\_spectral]: [spectral] -95 -95 -100 -95 -100 -99 -96 -96  2012-08-10 09:18:30 debug ah\_dcd: [dcd\_spectral]: [spectral] -98 -99 -99 -95 -95 -100 -93 -100  2012-08-10 09:18:30 debug ah\_dcd: [dcd\_spectral]: [spectral] -92 -96 -98 -100 -97 -98 -95 -100  2012-08-10 09:18:30 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 -100 -99 -97 -98 -99 -100 -96  2012-08-10 09:18:30 debug ah\_dcd: [dcd\_spectral]: [spectral] -100 - | | |

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:access, country code:840, channel width:40M

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Function\_002 | | |
| Priority | High | Automation Flag | Yes |
| Topology to use |  | | |
| Description | Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:access, country code:840, channel width:40M | | |
| Pre-condition | 1.Upload configuration HiveAP \*\*\* on HM, Phymode:11ng, radio mode:access, country code:840, channel width:40M  2. Enable debug console on AP | | |
| Test procedure | 1. select the AP, and enable spectral analysis, Channel list: 1,3,5,7,9,11, report interval 1 second | | |
| Expect result | 1. CLI on ap:  *interface wifi0 radio channel 6*  *radio profile ng channel-width 40-above*  *exec interface wifi0 spectral-scan start*  *exec interface wifi0 spectral-scan report-interval 1*  *exec interface wifi0 spectral-scan channel 1*  *exec interface wifi0 spectral-scan channel 3*  *exec interface wifi0 spectral-scan channel 5*  *exec interface wifi0 spectral-scan channel 7*  *exec interface wifi0 spectral-scan channel 9*  *exec interface wifi0 spectral-scan channel 11*  2. Every 1 second, AP send capwap message which contains FFT dump(128 points) and interface data to Hivemanager  3. The spectral records on HM database is equal to the data send from AP  4. The spectral analysis report is correct | | |
| Test result | Bug 17151  *\_debug dcd spectral*  *debug co*  PS for automation:  For channel-width check: only channel 6 is 40M, others are 20M. | | |

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:backhaul, country code:840, channel width:20M, DFS: open

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Function\_003 | | |
| Priority | High | Automation Flag | Yes |
| Topology to use |  | | |
| Description | Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:backhaul, country code:840, channel width:20M | | |
| Pre-condition | 1.Upload configuration HiveAP \*\*\* on HM, Phymode:11ng, radio mode:backhaul, country code:840, channel width:20M  2. Enable debug console on AP | | |
| Test procedure | 1. select the AP, and enable spectral analysis, Channel list: 1-11, report interval 1 second | | |
| Expect result | 1. CLI on ap:  *interface wifi0 mode backhaul*  *exec interface wifi0 spectral-scan start*  *exec interface wifi0 spectral-scan report-interval 1*  *exec interface wifi0 spectral-scan channel 1-11*  2. Every 1 second, AP send capwap message which contains FFT dump(64 points) and interface data to Hivemanager  3. The spectral records on HM database is equal to the data send from AP  4. The spectral analysis report is correct | | |
| Test result | Bug16903  *\_debug dcd spectral*  *debug co* | | |

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:backhaul, country code:840, channel width:40M

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Function\_004 | | |
| Priority | High | Automation Flag | Yes |
| Topology to use |  | | |
| Description | Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:backhaul, country code:840, channel width:40M | | |
| Pre-condition | 1.Upload configuration HiveAP \*\*\* on HM, Phymode:11ng, radio mode:backhaul, country code:840, channel width:40M  2. Enable debug console on AP | | |
| Test procedure | 1. select the AP, and enable spectral analysis, Channel list: 1-5,10,11, report interval 5 seconds | | |
| Expect result | 1. CLI on ap:  *interface wifi0 radio channel 5*  *radio profile ng channel-width 40-above*  *exec interface wifi0 spectral-scan start*  *exec interface wifi0 spectral-scan report-interval 5*  *exec interface wifi0 spectral-scan channel 1-5*  *exec interface wifi0 spectral-scan channel 10,11*  2. Every 5 seconds, AP send capwap message which contains FFT dump(128 points) and interface data to Hivemanager  3. The spectral records on HM database is equal to the data send from AP  4. The spectral analysis report is correct | | |
| Test result | PASS  *\_debug dcd spectral*  *debug co* | | |

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:access+backhaul, country code:840, channel width:20M

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Function\_005 | | |
| Priority | High | Automation Flag | Yes |
| Topology to use |  | | |
| Description | Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:access+backhaul, country code:840, channel width:20M | | |
| Pre-condition | 1.Upload configuration HiveAP \*\*\* on HM, Phymode:11ng, radio mode:access+backhaul, country code:840, channel width:20M  2. Enable debug console on AP | | |
| Test procedure | 1. select the AP, and enable spectral analysis, Channel list: 1-11, report interval 5 seconds | | |
| Expect result | 1. CLI on ap:  *interface wifi0 mode dual*  *exec interface wifi0 spectral-scan start*  *exec interface wifi0 spectral-scan report-interval 5*  *exec interface wifi0 spectral-scan channel 1-11*  2. Every 5 seconds, AP send capwap message which contains FFT dump(64 points) and interface data to Hivemanager  3. The spectral records on HM database is equal to the data send from AP  4. The spectral analysis report is correct | | |
| Test result | PASS  *\_debug dcd spectral*  *debug co* | | |

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:access+backhaul, country code:840, channel width:40M

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Function\_006 | | |
| Priority | High | Automation Flag | Yes |
| Topology to use |  | | |
| Description | Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:access+backhaul, country code:840, channel width:40M | | |
| Pre-condition | 1.Upload configuration HiveAP \*\*\* on HM, Phymode:11ng, radio mode:access+backhaul, country code:840, channel width:40M  2. Enable debug console on AP | | |
| Test procedure | 1. select the AP, and enable spectral analysis, Channel list: 1,3,5,7,9,11, report interval 1 second | | |
| Expect result | 1. CLI on ap:  *interface wifi0 radio channel 5*  *radio profile ng channel-width 40-above*  *exec interface wifi0 spectral-scan start*  *exec interface wifi0 spectral-scan report-interval 1*  *exec interface wifi0 spectral-scan channel 1,3,5,7,9,11*  2. Every 1 second, AP send capwap message which contains FFT dump(128 points) and interface data to Hivemanager  3. The spectral records on HM database is equal to the data send from AP  4. The spectral analysis report is correct | | |
| Test result | PASS  *\_debug dcd spectral*  *debug co* | | |

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11b/g, radio mode:access, country code:840, channel width:20M

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Function\_007 | | |
| Priority | High | Automation Flag | Yes |
| Topology to use |  | | |
| Description | Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11b/g, radio mode:access, country code:840, channel width:20M | | |
| Pre-condition | 1.Upload configuration HiveAP \*\*\* on HM, Phymode:11b/g, radio mode:access, country code:840, channel width:20M  2. Enable debug console on AP | | |
| Test procedure | 1. select the AP, and enable spectral analysis, Channel list: 1-11, report interval 1 second | | |
| Expect result | 1. CLI on ap:  *radio profile ng phymode 11b/g*  *exec interface wifi0 spectral-scan start*  *exec interface wifi0 spectral-scan report-interval 1*  *exec interface wifi0 spectral-scan channel 1-11*  2. Every 1 second, AP send capwap message which contains FFT dump(64 points) and interface data to Hivemanager  3. The spectral records on HM database is equal to the data send from AP  4. The spectral analysis report is correct | | |
| Test result | PASS  *\_debug dcd spectral*  *debug co* | | |

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:access, country code:826, channel width:20M

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Function\_008 | | |
| Priority | Accept | Automation Flag | Yes |
| Topology to use |  | | |
| Description | Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11ng, radio mode:access, country code:826, channel width:20M | | |
| Pre-condition | 1.Upload configuration HiveAP \*\*\* on HM, Phymode:11ng, radio mode:access, country code:826, channel width:20M  2. Enable debug console on AP | | |
| Test procedure | 1. select the AP, and enable spectral analysis, Channel list: 9,11,13, report interval 30 seconds | | |
| Expect result | 1. CLI on ap:  *boot-param region world*  *boot-param country-code 826* //after country code change, reboot AP  *exec interface wifi0 spectral-scan start*  *exec interface wifi0 spectral-scan report-interval 30*  *exec interface wifi0 spectral-scan channel 9, 11,13*  2. Every 30 seconds, AP send capwap message which contains FFT dump(64 points) and interface data to Hivemanager  3. The spectral records on HM database is equal to the data send from AP  4. The spectral analysis report is correct | | |
| Test result | PASS  *\_debug dcd spectral*  *debug co* | | |

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:access, country code:840, channel width:20M, DFS: open

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Function\_009 | | |
| Priority | Accept | Automation Flag | Yes |
| Topology to use |  | | |
| Description | Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:access, country code:840, channel width:20M | | |
| Pre-condition | 1.Upload configuration HiveAP \*\*\* on HM, Phymode:11na, radio mode:access, country code:840, channel width:20M  2. Enable debug console on AP | | |
| Test procedure | 1. select the AP, and enable spectral analysis, Channel list: 36-165, report interval 5 seconds | | |
| Expect result | 1. CLI on ap:  *Radio profile na*  *radio profile na phymode 11na*  *interface wifi0 mode access*  *boot-param region fcc*  *boot-param country-code 840*  *radio profile ng channel-width 20*  *exec interface wifi0 spectral-scan start*  *exec interface wifi0 spectral-scan report-interval 5*  *exec interface wifi0 spectral-scan channel 36-165*  2. Every 5 seconds, AP send capwap message which contains FFT dump(64 points) and interface data to Hivemanager  3. The spectral records on HM database is equal to the data send from AP  4. The spectral analysis report is correct | | |
| Test result | PASS  *\_debug dcd spectral*  *debug co* | | |

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:access, country code:840, channel width:40M, DFS:open

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Function\_010 | | |
| Priority | High | Automation Flag | Yes |
| Topology to use |  | | |
| Description | Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:access, country code:840, channel width:40M, DFS:open | | |
| Pre-condition | 1.Upload configuration HiveAP \*\*\* on HM, Phymode:11na, radio mode:access, country code:840, channel width:40M  2. Enable debug console on AP  3. Open dfs : radio profile na dfs  *“radio profile na dfs”* | | |
| Test procedure | 1. select the AP, and enable spectral analysis, Channel list: 36,40,48, report interval 1 second | | |
| Expect result | 1. CLI on ap:  *radio profile ng channel-width 40-above*  *exec interface wifi0 spectral-scan start*  *exec interface wifi0 spectral-scan report-interval 1*  *exec interface wifi0 spectral-scan channel 36,40,48*  2. Every 1 second, AP send capwap message which contains FFT dump(128 points) and interface data to Hivemanager  3. The spectral records on HM database is equal to the data send from AP  4. The spectral analysis report is correct | | |
| Test result | PASS  *\_debug dcd spectral*  *debug co* | | |

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:backhaul, country code:840, channel width:20M

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Function\_011 | | |
| Priority | High | Automation Flag | Yes |
| Topology to use |  | | |
| Description | Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:backhaul, country code:840, channel width:20M | | |
| Pre-condition | 1.Upload configuration HiveAP \*\*\* on HM, Phymode:11na, radio mode:backhaul, country code:840, channel width:20M  2. Enable debug console on AP | | |
| Test procedure | 1. select the AP, and enable spectral analysis, Channel list: 36-165, report interval 5 seconds | | |
| Expect result | 1. CLI on ap:  *interface wifi0 mode backhaul*  *exec interface wifi0 spectral-scan start*  *exec interface wifi0 spectral-scan report-interval 5*  *exec interface wifi0 spectral-scan channel 36-165*  2. Every 5 seconds, AP send capwap message which contains FFT dump(64 points) and interface data to Hivemanager  3. The spectral records on HM database is equal to the data send from AP  4. The spectral analysis report is correct | | |
| Test result | PASS  *\_debug dcd spectral*  *debug co* | | |

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:backhaul, country code:840, channel width:40M, DFS: on

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Function\_012 | | |
| Priority | High | Automation Flag | Yes |
| Topology to use |  | | |
| Description | Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:backhaul, country code:840, channel width:40M | | |
| Pre-condition | 1.Upload configuration HiveAP \*\*\* on HM, Phymode:11na, radio mode:backhaul, country code:840, channel width:40M  2. Enable debug console on AP | | |
| Test procedure | 1. select the AP, and enable spectral analysis, Channel list: 36,40,48, report interval 1 second | | |
| Expect result | 1. CLI on ap:  *interface wifi0 mode backhaul*  *interface wifi1 radio channel 36*  *radio profile ng channel-width 40-above*  *exec interface wifi0 spectral-scan start*  *exec interface wifi0 spectral-scan report-interval 1*  *exec interface wifi0 spectral-scan channel 36*  *exec interface wifi0 spectral-scan channel 40*  *exec interface wifi0 spectral-scan channel 48*  2. Every 1 second, AP send capwap message which contains FFT dump(128 points) and interface data to Hivemanager  3. The spectral records on HM database is equal to the data send from AP  4. The spectral analysis report is correct | | |
| Test result | PASS  *\_debug dcd spectral*  *debug co* | | |

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:access+backhaul, country code:840, channel width:20M

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Function\_013 | | |
| Priority | High | Automation Flag | Yes |
| Topology to use |  | | |
| Description | Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:access+backhaul, country code:840, channel width:20M | | |
| Pre-condition | 1.Upload configuration HiveAP \*\*\* on HM, Phymode:11na, radio mode:access+backhaul, country code:840, channel width:20M  2. Enable debug console on AP | | |
| Test procedure | 1. select the AP, and enable spectral analysis, Channel list: 36-165, report interval 5 seconds | | |
| Expect result | 1. CLI on ap:  *interface wifi0 mode dual*  *exec interface wifi0 spectral-scan start*  *exec interface wifi0 spectral-scan report-interval 5*  *exec interface wifi0 spectral-scan channel 36-165*  2. Every 5 seconds, AP send capwap message which contains FFT dump(64 points) and interface data to Hivemanager  3. The spectral records on HM database is equal to the data send from AP  4. The spectral analysis report is correct | | |
| Test result | PASS  *\_debug dcd spectral*  *debug co* | | |

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:access+backhaul, country code:840, channel width:40M

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Function\_014 | | |
| Priority | High | Automation Flag | Yes |
| Topology to use |  | | |
| Description | Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:access+backhaul, country code:840, channel width:40M | | |
| Pre-condition | 1.Upload configuration HiveAP \*\*\* on HM, Phymode:11na, radio mode:access+backhaul, country code:840, channel width:40M  2. Enable debug console on AP | | |
| Test procedure | 1. select the AP, and enable spectral analysis, Channel list: 36,40,48, report interval 1 second | | |
| Expect result | 1. CLI on ap:  *interface wifi1 radio channel 36*  *radio profile ng channel-width 40-above*  *exec interface wifi0 spectral-scan start*  *exec interface wifi0 spectral-scan report-interval 10*  *exec interface wifi0 spectral-scan channel 36*  *exec interface wifi0 spectral-scan channel 40*  *exec interface wifi0 spectral-scan channel 48*  2. Every 10 seconds, AP send capwap message which contains FFT dump(128 points) and interface data to Hivemanager  3. The spectral records on HM database is equal to the data send from AP  4. The spectral analysis report is correct | | |
| Test result | PASS  *\_debug dcd spectral*  *debug co* | | |

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11a, radio mode:access, country code:840, channel width:40M, DFS: on

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Function\_015 | | |
| Priority | High | Automation Flag | Yes |
| Topology to use |  | | |
| Description | Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11a, radio mode:access, country code:840, channel width:40M | | |
| Pre-condition | 1.Upload configuration HiveAP \*\*\* on HM, Phymode:11a, radio mode:access, country code:840, channel width:40M  2. Enable debug console on AP | | |
| Test procedure | 1. select the AP, and enable spectral analysis, Channel list: 36,40,48, report interval 1 second | | |
| Expect result | 1. CLI on ap:  *interface wifi1 radio channel 48*  *radio profile ng channel-width 40-below*  *exec interface wifi1 spectral-scan start*  *exec interface wifi1 spectral-scan report-interval 1*  *exec interface wifi1 spectral-scan channel 36*  *exec interface wifi1 spectral-scan channel 40*  *exec interface wifi1 spectral-scan channel 48*  2. Every 1 second, AP send capwap message which contains FFT dump(128 points) and interface data to Hivemanager  3. The spectral records on HM database is equal to the data send from AP  4. The spectral analysis report is correct | | |
| Test result | PASS  *\_debug dcd spectral*  *debug co* | | |

#### Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:access+backhaul, country code:826, channel width:20M, DFS:open

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Function\_016 | | |
| Priority | Accept | Automation Flag | Yes |
| Topology to use |  | | |
| Description | Check enable spectral analysis of HiveAP \*\*\* on HM, Phymode:11na, radio mode:access+backhaul, country code:826, channel width:20M, DFS: open | | |
| Pre-condition | 1.Upload configuration HiveAP \*\*\* on HM, Phymode:11na, radio mode:access+backhaul, country code:826, channel width:20M  2. Enable debug console on AP  3. Open dfs : radio profile na dfs  *“radio profile na dfs”* | | |
| Test procedure | 1. select the AP, and enable spectral analysis, Channel list: 36-165, report interval 5 seconds | | |
| Expect result | 1. CLI on ap:  exec interface wifi0 spectral-scan start  exec interface wifi0 spectral-scan report-interval 5  exec interface wifi0 spectral-scan channel 36-165  2. Every 5 seconds, AP send capwap message which contains FFT dump(128 points) and interface data to Hivemanager  3. The spectral records on HM database is equal to the data send from AP  4. The spectral analysis report is correct | | |
| Test result | Bug 17158  *\_debug dcd spectral*  *debug co* | | |

### Negative test

#### Enable spectral analysis on HM, and then disconnect AP from HM

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Negative\_001 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Enable spectral analysis on HM, and then disconnect AP from HM | | |
| Pre-condition |  | | |
| Test procedure | 1. Select a AP and start spectral analysis  2. Disconnect AP from HM  3. Connect again | | |
| Expect result | 2. Spectrum analysis report graph will be hold.  3. spectral analysis works again. | | |
| Test result | PASS | | |

#### Select more than one AP and enable spectral analysis, one of those APs is disconnect from HM

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Negative\_002 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Select more than one AP and enable spectral analysis, one of those APs is disconnect from HM | | |
| Pre-condition |  | | |
| Test procedure | 1. Select more than one AP (one of them is disconnect from HM),and start spectral analysis | | |
| Expect result | 1. Error info is correct | | |
| Test result | PASS  *“Please select one item”* | | |

#### Enable spectral analysis of one AP on HM, and then other user login HM and select the AP to start spectral analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Negative\_003 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Enable spectral analysis of one AP on HM, and then other user login HM and select the AP to start spectral analysis | | |
| Pre-condition |  | | |
| Test procedure | 1. Enable spectral analysis of one AP on HM  2. other user login HM and select the AP to start spectral analysis | | |
| Expect result | 1. Spectrum analysis works normal, and information will be updated. | | |
| Test result | PASS  *Another PC login, operate the same AP. Information will be updated at both PC.* | | |

#### Enable spectral analysis of one AP on HM, and then other user login HM and remove the AP

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Negative\_004 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Enable spectral analysis of one AP on HM, and then other user login HM and remove the AP | | |
| Pre-condition |  | | |
| Test procedure | 1. Enable spectral analysis of one AP on HM  2. other user login HM and remove the AP | | |
| Expect result | 1. Error info is correct | | |
| Test result | PASS | | |

#### Enable spectral analysis of one AP on HM, and then other user login HM and upload confirmation to the AP

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Negative\_005 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Enable spectral analysis of one AP on HM, and then other user login HM and upload confirmation to the AP | | |
| Pre-condition |  | | |
| Test procedure | 1. Enable spectral analysis of one AP on HM  2. other user login HM and upload confirmation to the AP | | |
| Expect result | 1. Error info is correct | | |
| Test result | PASS | | |

#### Enable spectral analysis of one AP on HM, and then other user login HM and rollback/update HiveOS software

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Negative\_006 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Enable spectral analysis of one AP on HM, and then other user login HM and rollback/update HiveOS software | | |
| Pre-condition |  | | |
| Test procedure | 1. Enable spectral analysis of one AP on HM  2. other user login HM and rollback/update HiveOS software | | |
| Expect result | 1. Error info is correct | | |
| Test result | PASS | | |

#### Enable spectral analysis of one AP on HM, and then other user login HM and update HM software

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Negative\_007 | | |
| Priority | Low | Automation Flag | NA |
| Topology to use |  | | |
| Description | Enable spectral analysis of one AP on HM, and then other user login HM and update HM software | | |
| Pre-condition |  | | |
| Test procedure | 1. Enable spectral analysis of one AP on HM  2. other user login HM and update HM software | | |
| Expect result | 1. Error info is correct | | |
| Test result | PASS | | |

#### Check audit configuration

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Negative\_008 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Check audit configuration | | |
| Pre-condition |  | | |
| Test procedure | 1. Select a AP and enable spectral analysis on HM  2. Check audit configuration of the AP | | |
| Expect result | 1. Spectral analysis CLI should not in the audit list | | |
| Test result | PASS | | |

#### Check page time out when enable spectral analysis start

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Negative\_009 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | check page time out when enable spectral analysis start | | |
| Pre-condition | set timeout interval of HM | | |
| Test procedure | 1. Select a AP and enable spectral analysis  2. Wait for the spectral analysis page to timeout  3. Log in HM for the twice time, check the spectral analysis page | | |
| Expect result | 1. The AP which is being spectral analysis should be marked, and we can go to the spectral analysis page. | | |
| Test result | PASS | | |

#### Check close the page when spectral analysis start

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Negative\_010 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Check close the page when spectral analysis start | | |
| Pre-condition |  | | |
| Test procedure | 1. Select a AP and enable spectral analysis  2. Close the analysis page  3. Open spectral analysis page | | |
| Expect result | 1. The AP which is being spectral analysis should be marked, and we can go to the spectral analysis page. | | |
| Test result | PASS | | |

#### Check start spectral analysis of AP 320,340 on map

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Negative\_011 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Check start spectral analysis of AP 320,340 on map | | |
| Pre-condition |  | | |
| Test procedure | 1. Open topology ,select AP 320, AP 340 and start spectral analysis | | |
| Expect result | 1. Error info is correct | | |
| Test result | PASS  *“Operation failed. The selected HiveAP320 does not support this feature.”*  *“Operation failed. The selected HiveAP340 does not support this feature.”* | | |

#### Check start spectral analysis of AP 320,AP340 on active client page

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Negative\_012 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Check start spectral analysis of AP 320,AP340 on active client page | | |
| Pre-condition |  | | |
| Test procedure | 1. start spectrum on active client page , which connect to AP 320 or AP340 | | |
| Expect result | 1. Error info is correct | | |
| Test result | PASS | | |

#### Check AP reboot when running spectrum

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Negative\_013 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Check AP reboot when running spectrum | | |
| Pre-condition |  | | |
| Test procedure | 1. Select a ap110 and start spectrum analysis  2. Reboot ap | | |
| Expect result | 1. after ap reconnected to HM, HM send the start spectrum configuration to AP again | | |
| Test result | PASS | | |

#### Check select simulate AP and start spectrum

|  |  |  |  |
| --- | --- | --- | --- |
| Case ID | HM\_SpectrumAnalyzer\_Negative\_014 | | |
| Priority | Middle | Automation Flag | NA |
| Topology to use |  | | |
| Description | Check select simulate AP and start spectrum | | |
| Pre-condition |  | | |
| Test procedure | 1. select simulate AP and start spectrum | | |
| Expect result | 1. Error info is correct | | |
| Test result | PASS  *“Spectrum analysis cannot be started on a simulated HiveAP.”* | | |

## Stress Test Case

## Duration Test Case

## Performance Test Case

## 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>