BBIC4 DFS test procedure

➢ *ETSI test*

- DFS feature default will be enabled while Region set at EU
- To enter the DFS test mode, execute following commands:
  - echo "set test1 0x2" > /sys/devices/qdrv/control
  - set_11ac_mcs 0x04
  - bfoff

```
quantenna # echo "set test1 0x2" > /sys/devices/qdrv/control
quantenna # set_11ac_mcs 0x04
quantenna # bfoff
quantenna #
```

- Run iperf traffic
  - 48mbps for 80MHZ bandwidth
  - 23 mbps for 40MHZ bandwidth

Example:

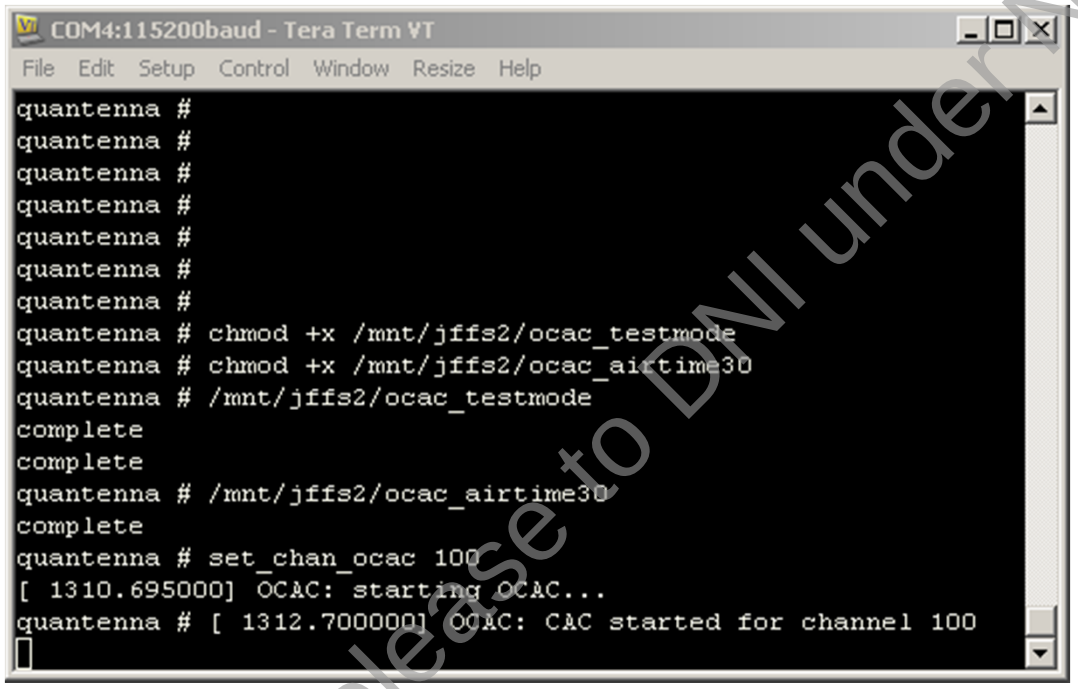
[AP] `iperf -c [STA-Computer-IP-address] -u -i 1 -b 23.4M -t 10000`
[STA] `iperf -s -u -i 1`

EU Off channel CAC test

- **Please prepare two scripts /mnt/jffs2/ocac_testmode and /mnt/jff2/ocac_airtime30 before certification**
  - Create /mnt/jffs2/ocac_testmode
    - echo "set test1 0x2" > /sys/devices/qdrv/control
    - call_qcsapi set_ocac_report_only wifi0 1
    - call_qcsapi set_ocac_thrshld wifi0 fat 1
  - Chmod +x /mnt/jffs2/ocac_testmode

  - Create /mnt/jffs2/ocac_airtime30
    - set_11ac_mcs 0x04
    - bfoff
    - call_qcsapi set_ocac_thrshld wifi0 fat 1
    - qpm level 0
  - Chomod +x /mnt/jffs2/ocac_airtime30

- **Switch to test mode**
  - /mnt/jffs2/ocac_testmode
  - /mnt/jffs2/ocac_airtime30
  - run iperf traffic 48mbps for 80MHZ and 23mbps for 40MHZ (see an example in previous slide)
- **Command to switch channel**
  - set_chan_ocac (new channel)



FCC test

- DFS feature default will be enabled while Region set at US
- Enter test mode
  - echo "set test1 0x2" > /sys/devices/qdrv/control
- Run FCC video

Station DFS

- Station (client) device is able to detect radar

- On a station device, issue following command to turn on the feature.
  - call_qcsapi set_option wifi0 sta_dfs 1
- Check if radar module has been successfully mounted:
  - cat proc/radar
- Other commands are the same as what are for AP

Appendix 1 Things to be done before going to a test

- Identify software and hardware versions;
- Do pre-test
- Know
  - How to telnet (get id and password) or apply serial port console
    - Show message in telnet session: tail –f /var/log/messages
  - How to set region
  - How to get AP and STA associated;
    - How to configure IP address
    - How to check if they are associated
  - How to switch channels and how to check current channel number;
  - How to set bandwidth and how to check current bandwidth;

Appendix 2 Things to be taken to the lab

- DUTs – AP and STA;
  - Power supplies
- A pair of spare DUTs;
- QTN RDKs: AP and STA;
  - Power supplies
- 2 Serial port to USB converters;
- 2 USB cables: sometimes a long cable would be very helpful;
- 2 ethernet cables: sometimes a long cable would be handy.
- 2 laptops with following software installed:
  - IE 7.0 or later;
  - telnet and ping;
  - Teraterm for serial port;
  - Iperf;
  - Video player and the FCC video file;
  - MS remote desktop.

Appendix 3 Debug in the lab

- Radar cannot be detected
  - Is the center frequency of radar signal aligned with the channel we set on the boards?
  - Stop the traffic and see if it can be detected.
  - Received power of radar signal: at the antenna port, is it -64dBm?
    - Ask to increase/decrease tx power of radar signal see if it can be received.
  - Is the radar waveform correct?
    - Ask to capture the radar waveform and send it to diagnose.
- Unexpected spikes during CAC or non-occupancy
  - Is the chamber closed well?
  - Does the spike really come from our DUTs?