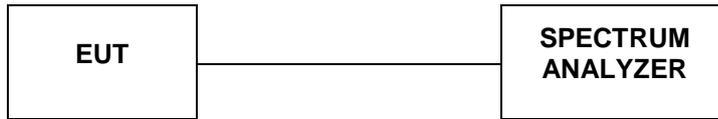


## 4.7. Spurious RF Conducted Emission

### TEST CONFIGURATION



### TEST PROCEDURE

The Spurious RF conducted emissions compliance of RF radiated emission should be measured by following the guidance in ANSI C63.10-2013 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW=100kHz and VBW= 300kHz to measure the peak field strength, and measure frequency range from 9kHz to 25GHz.

### LIMIT

1. Below -20dB of the highest emission level in operating band.
2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

### TEST RESULTS

Remark: The measurement frequency range is from 9kHz to the 10<sup>th</sup> harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and band edge measurement data.

Test Mode:

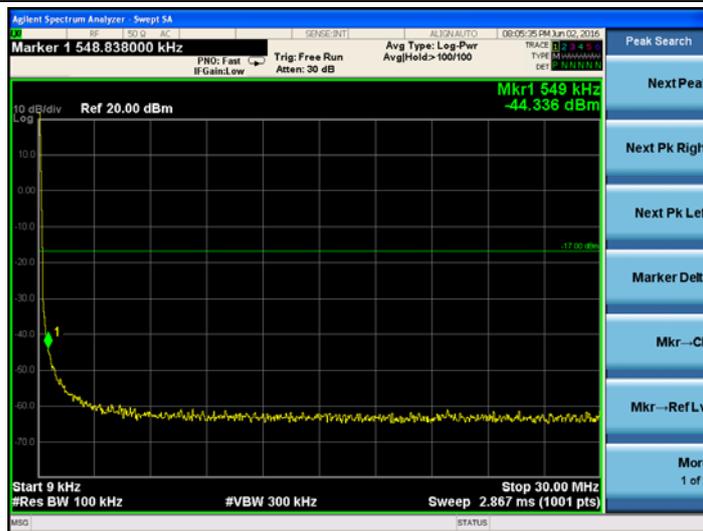
802.11b

Test channel :

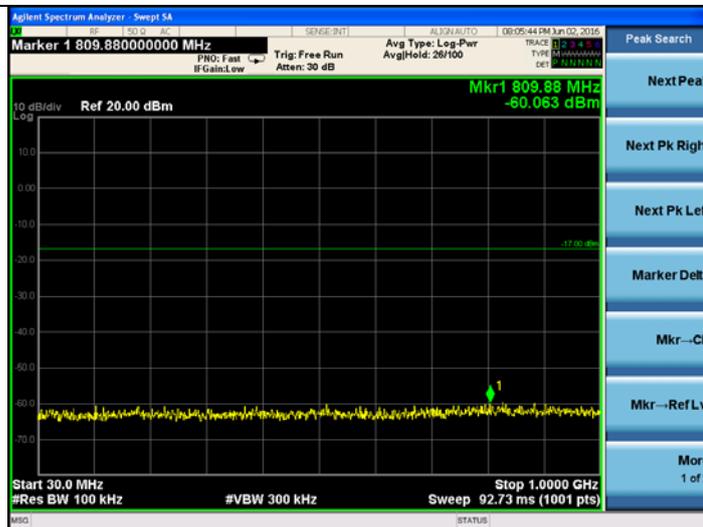
01



Channel 01



9KHz~30MHz



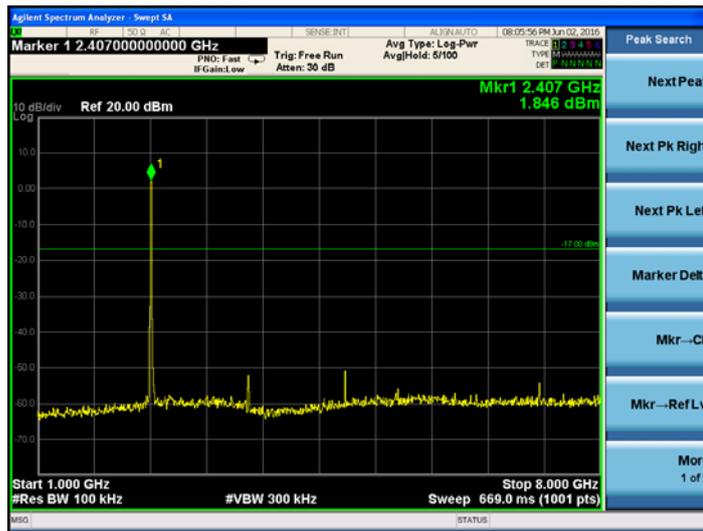
30M Hz~1GHz

Test Mode:

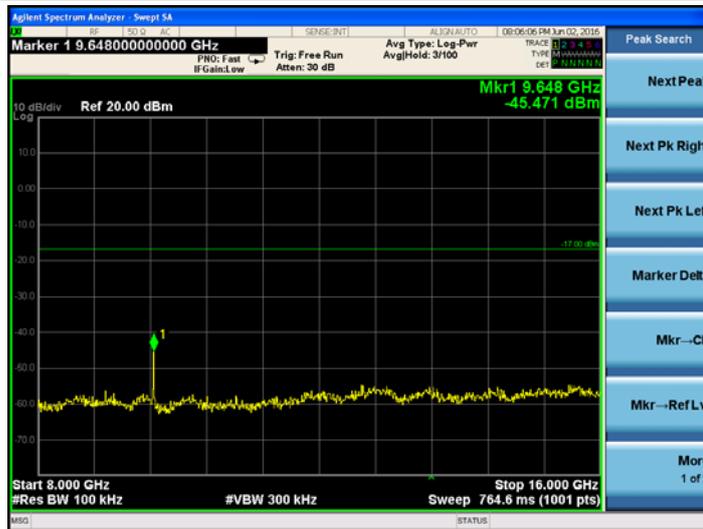
802.11b

Test channel :

01



1 GHz~8GHz



8GHz~16GHz

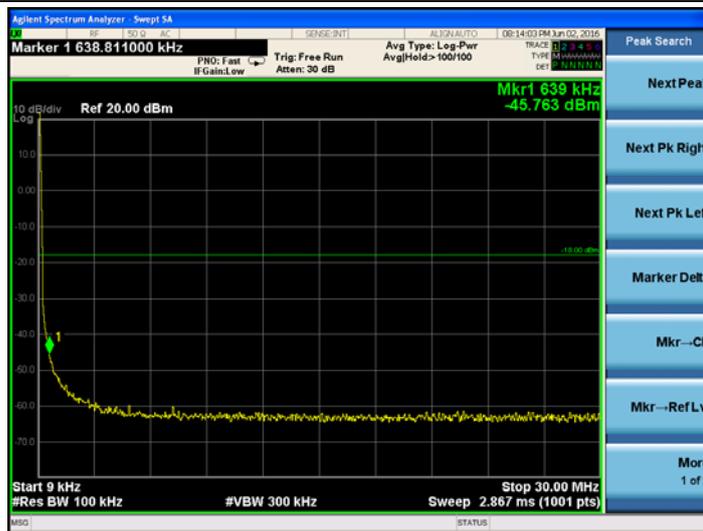


16GHz~25GHz

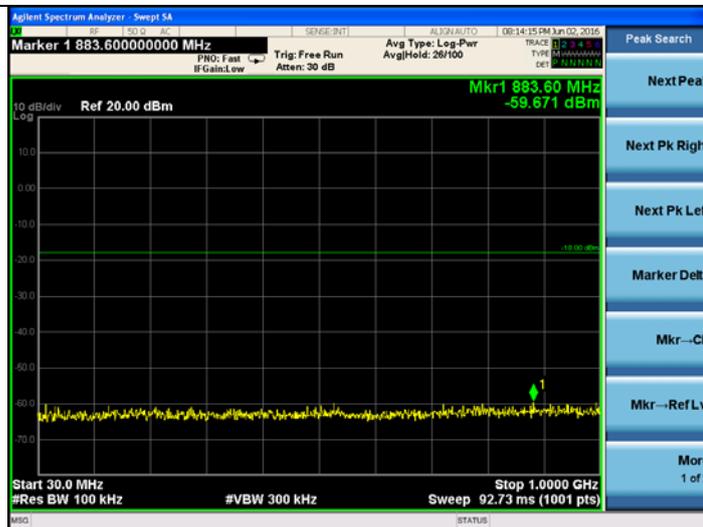
Test Mode:	802.11b	Test channel :	06
------------	---------	----------------	----



Channel 06



9KHz~30MHz



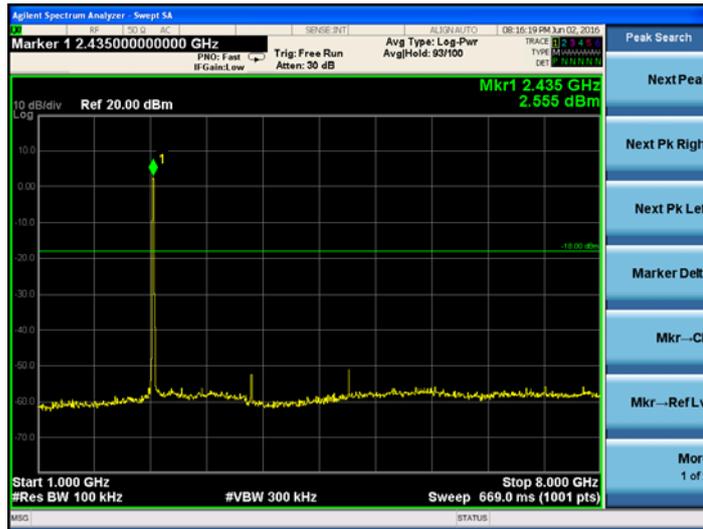
30M Hz~1GHz

Test Mode:

802.11b

Test channel :

06



1G Hz~8GHz



8GHz~16GHz



16GHz~25GHz

Test Mode:

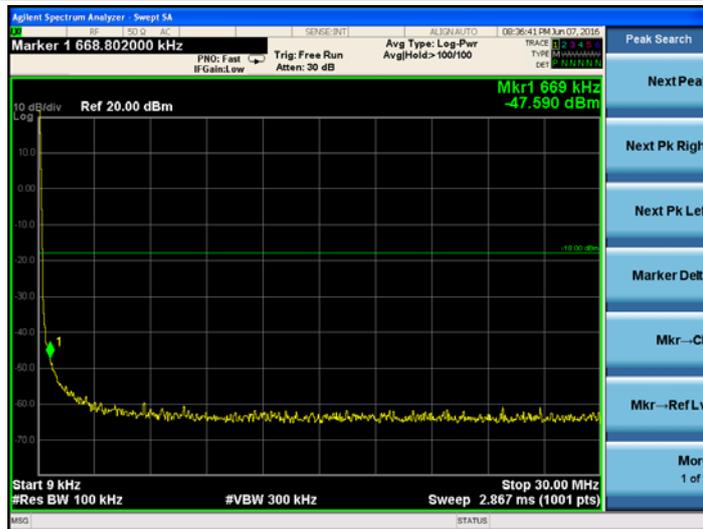
802.11b

Test channel :

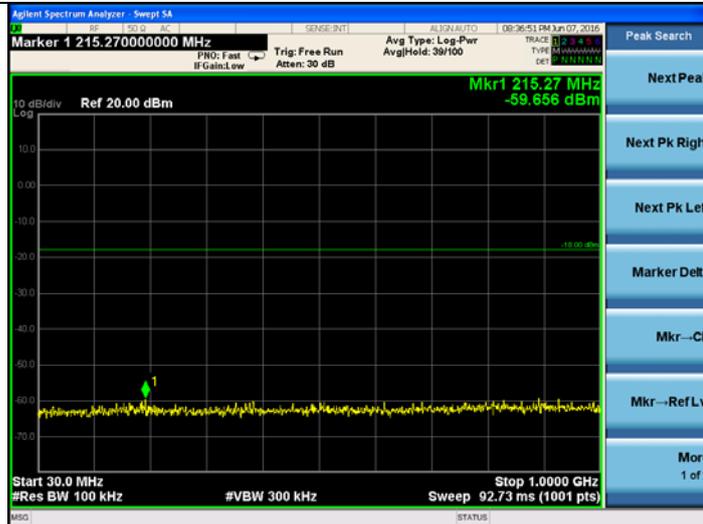
11



Channel 11



9KHz~30MHz



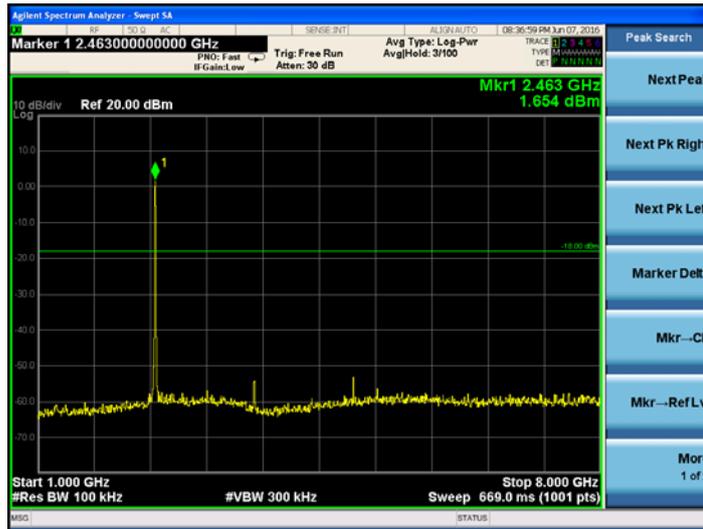
30M Hz~1GHz

Test Mode:

802.11b

Test channel :

11



1G Hz~8GHz



8GHz~16GHz

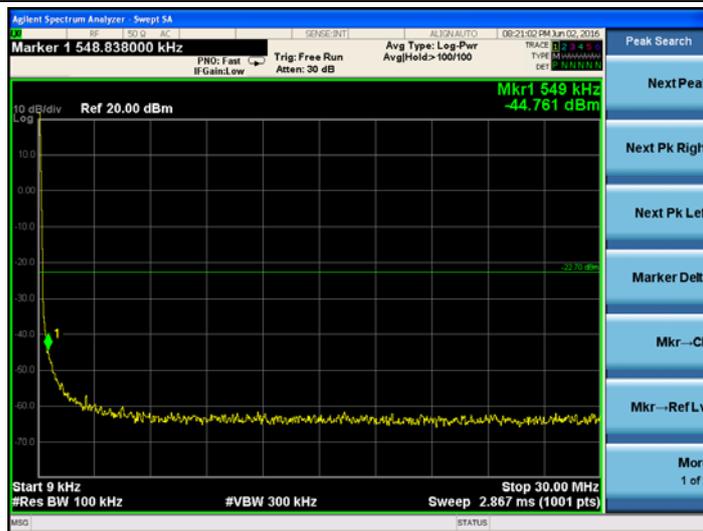


16GHz~25GHz

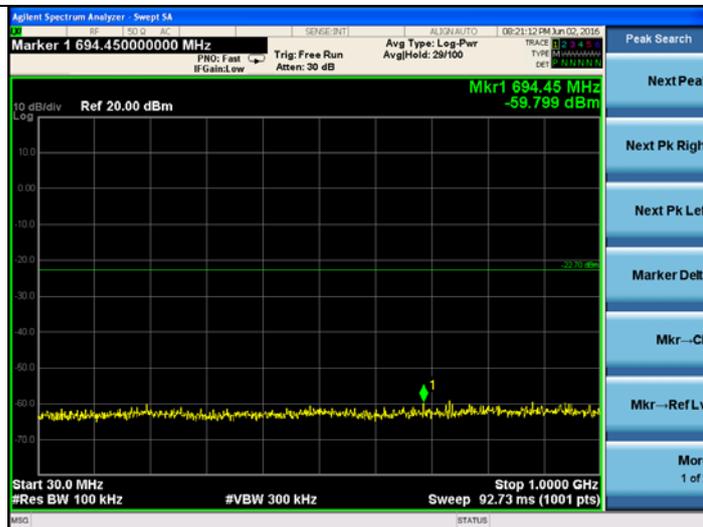
Test Mode:	802.11g	Test channel :	01
------------	---------	----------------	----



Channel 01



9KHz~30MHz



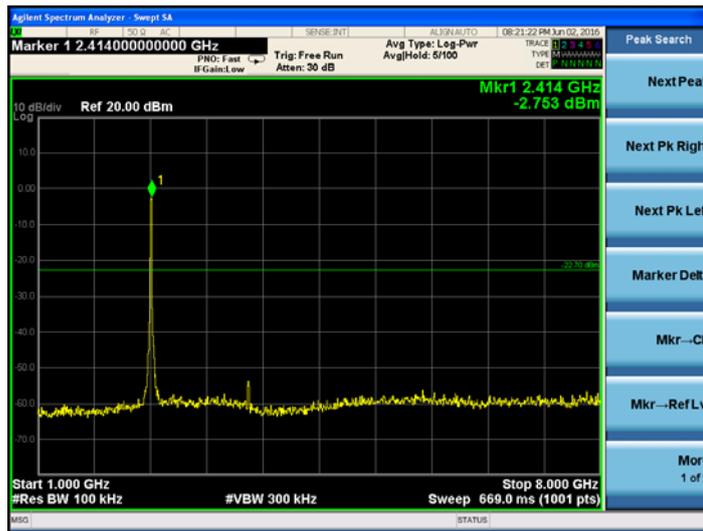
30M Hz~1GHz

Test Mode:

802.11g

Test channel :

01



1G Hz~8GHz



8GHz~16GHz



16GHz~25GHz

Test Mode:

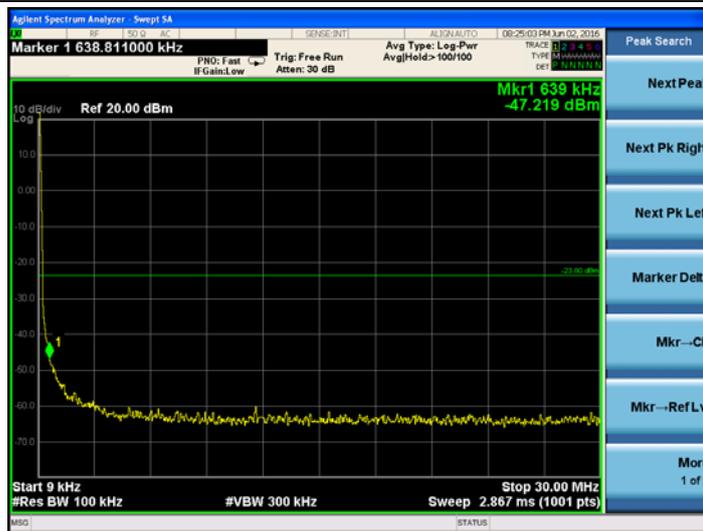
802.11g

Test channel :

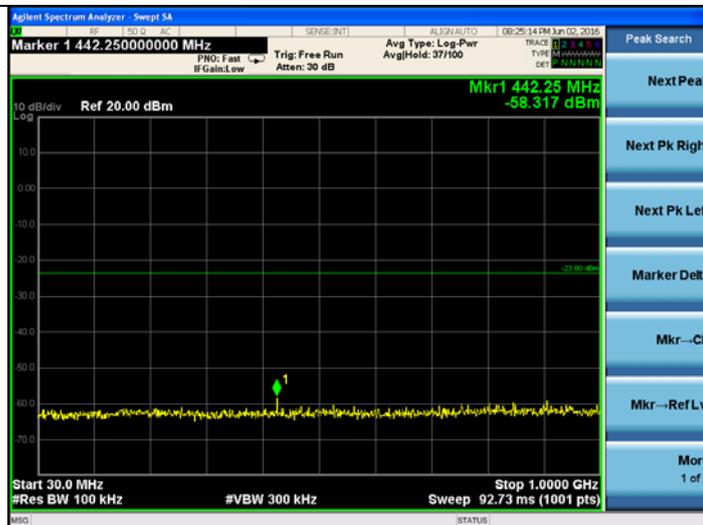
06



Channel 06



9KHz~30MHz



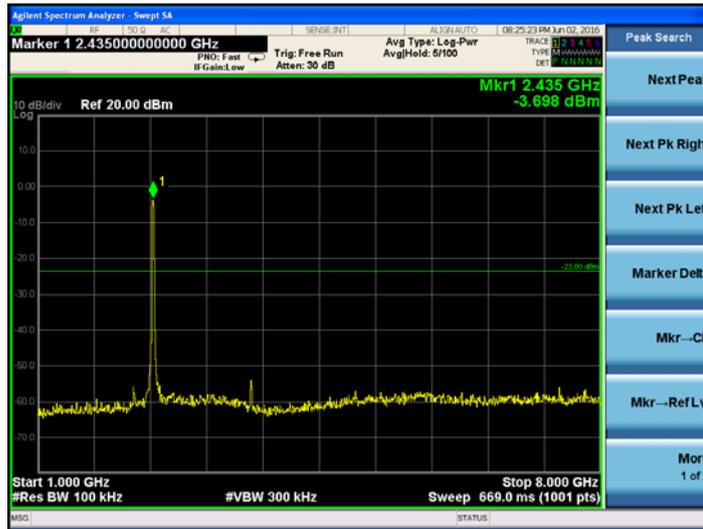
30M Hz~1GHz

Test Mode:

802.11g

Test channel :

06



1G Hz~8GHz



8GHz~16GHz

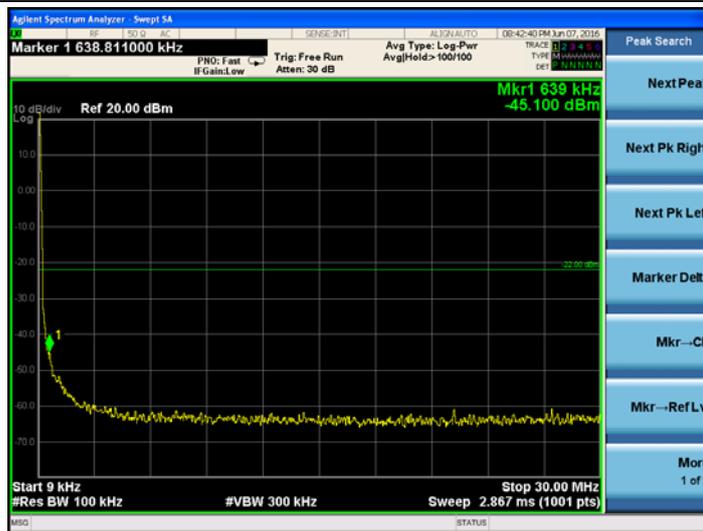


16GHz~25GHz

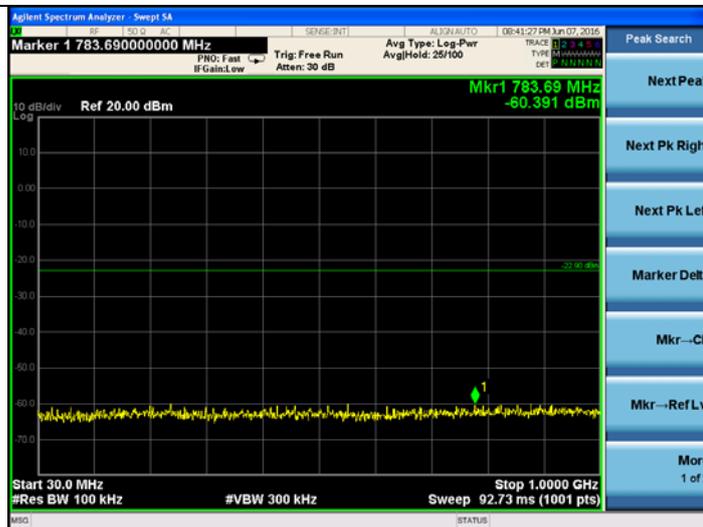
Test Mode:	802.11g	Test channel :	11
------------	---------	----------------	----



Channel 11



9KHz~30MHz



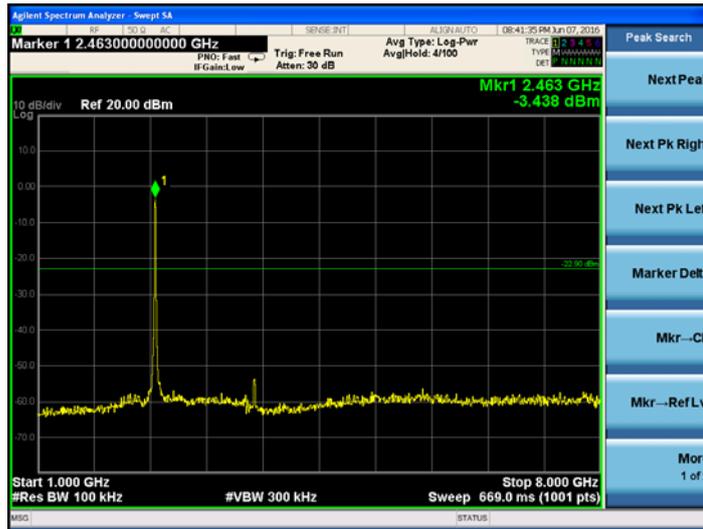
30M Hz~1GHz

Test Mode:

802.11g

Test channel :

11



1G Hz~8GHz



8GHz~16GHz

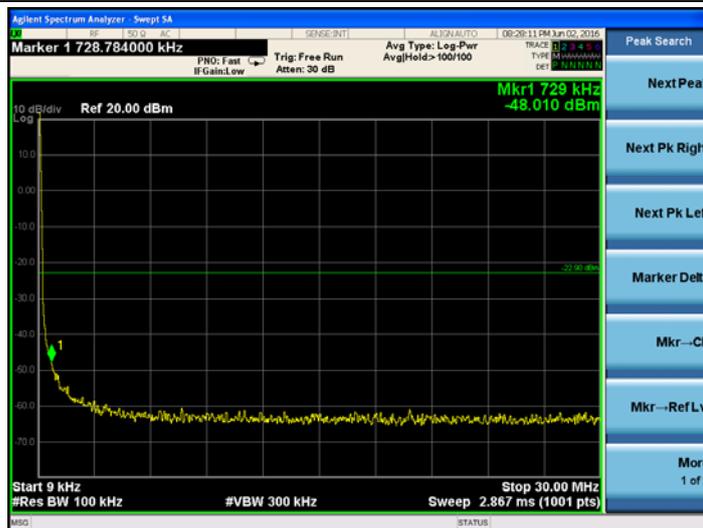


16GHz~25GHz

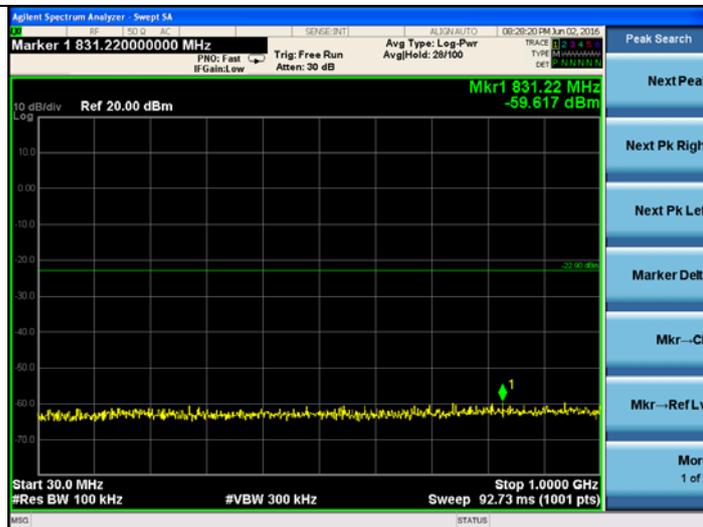
Test Mode:	802.11n HT20	Test channel :	01
------------	--------------	----------------	----



Channel 01



9KHz~30MHz



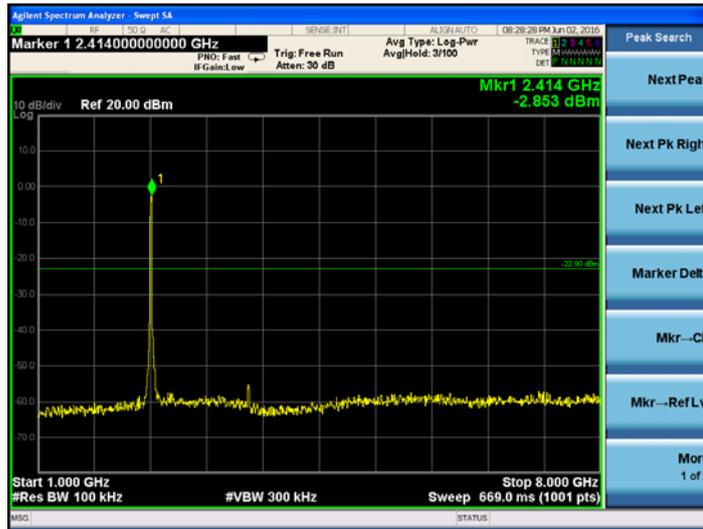
30M Hz~1GHz

Test Mode:

802.11n HT20

Test channel :

01



1G Hz~8GHz



8GHz~16GHz



16GHz~25GHz

Test Mode:

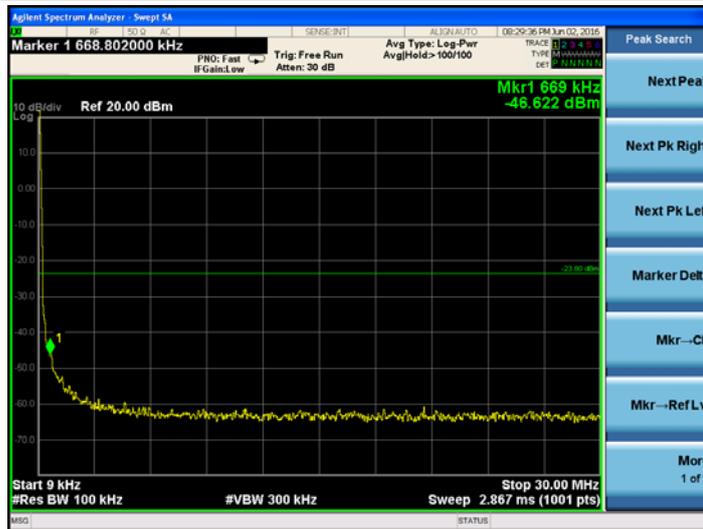
802.11n HT20

Test channel :

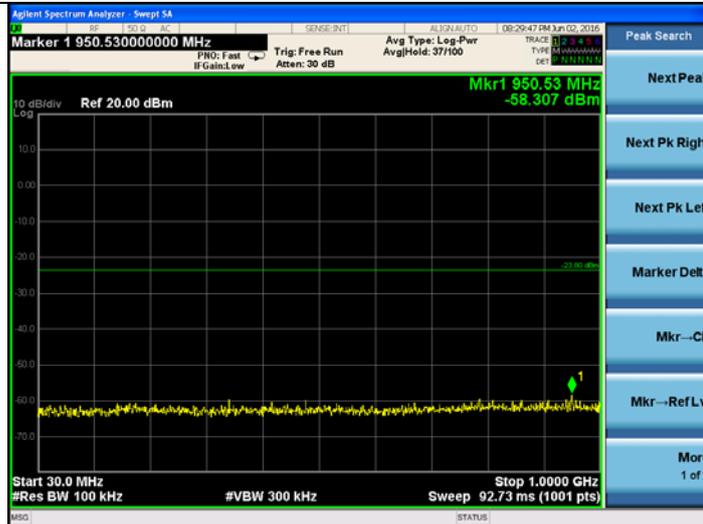
06



Channel 06



9KHz~30MHz



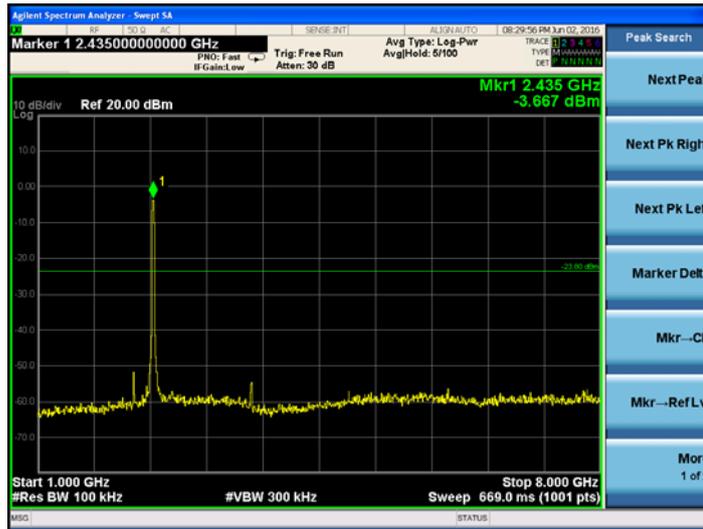
30M Hz~1GHz

Test Mode:

802.11n HT20

Test channel :

06



1G Hz~8GHz



8GHz~16GHz

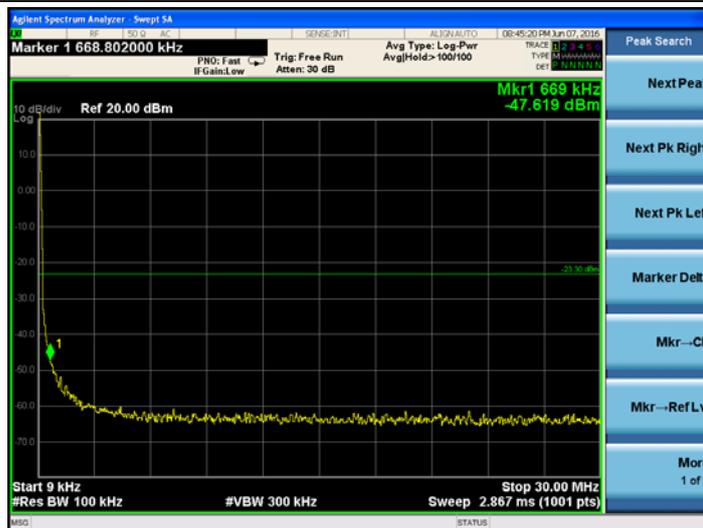


16GHz~25GHz

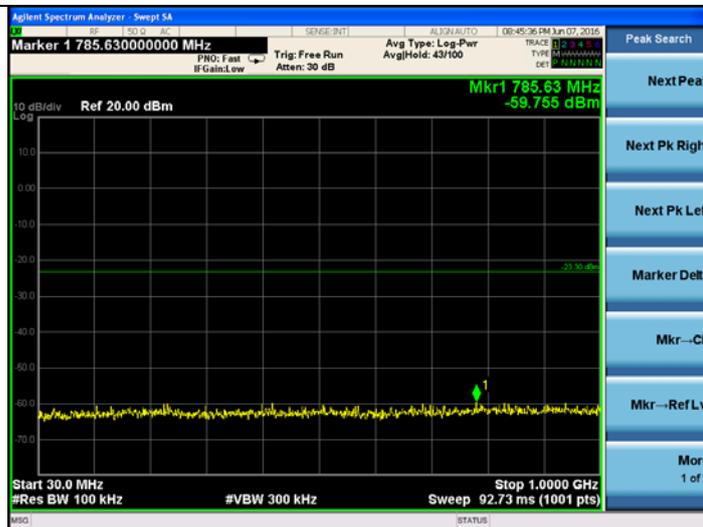
Test Mode:	802.11n HT20	Test channel :	11
------------	--------------	----------------	----



Channel 11



9KHz~30MHz



30M Hz~1GHz

Test Mode:

802.11n HT20

Test channel :

11



1G Hz~8GHz



8GHz~16GHz



16GHz~25GHz

## 4.8. Antenna Requirement

### Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (c), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### Refer to statement below for compliance.

The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

### Measurement

The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the module. For normal WLAN devices, the DSSS mode is used.

### Measurement parameters

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	1MHz
Video bandwidth:	3MHz
Trace-Mode:	Max hold

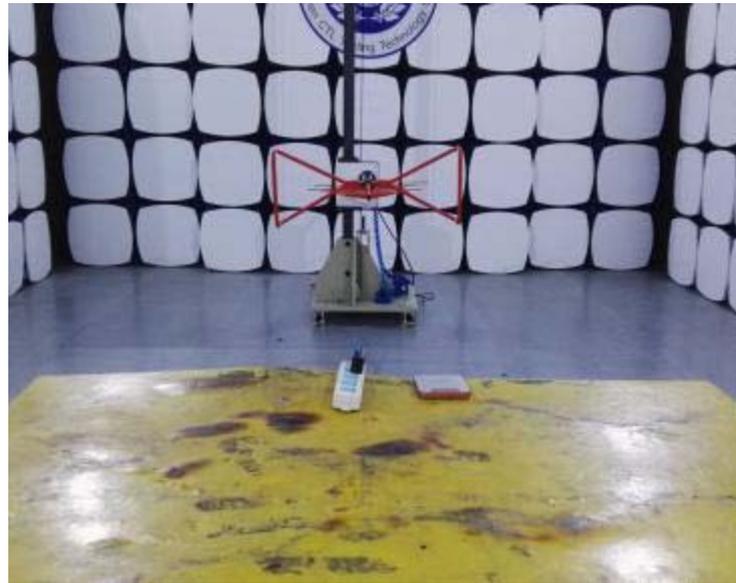
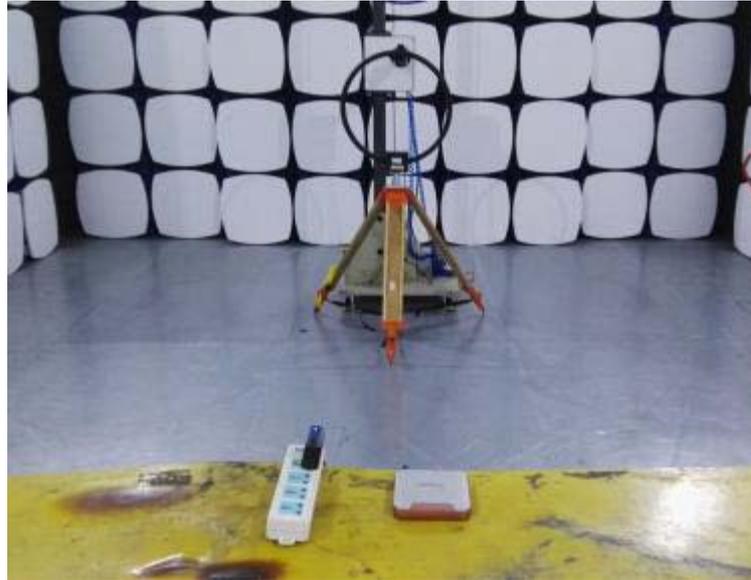
### Limits

Antenna Gain	6 dBi
--------------	-------

### Results

$T_{nom}$	$V_{nom}$	Lowest Channel 2412 MHz	Middle Channel 2437 MHz	Highest Channel 2472 MHz
Conducted power [dBm] Measured with DSSS modulation		12.74	12.90	12.71
Radiated power [dBm] Measured with DSSS modulation		13.41	13.66	13.63
Gain [dBi] Calculated		0.67	0.76	0.92
Measurement uncertainty		$\pm 0.6$ dB (cond.) / $\pm 4.32$ dB (rad.)		

## 5. Test Setup Photos of the EUT





## **6. External and Internal Photos of the EUT**

Reference to the test report No. GTSR16050040-BLE.

.....**End of Report**.....