

## 7.7 CONDUCTED BAND EDGE MEASUREMENT

## 7.7.1 Applicable Standard

According to FCC Part 15.247(d) and KDB 558074 DTS 01 Meas. Guidance v04

## 7.7.2 Conformance Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

## 7.7.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

#### 7.7.4 Test Setup

Please refer to Section 6.1 of this test report.

## 7.7.5 Test Procedure

The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04.

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously.

The EUT was operating in controlled its channel.

Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.

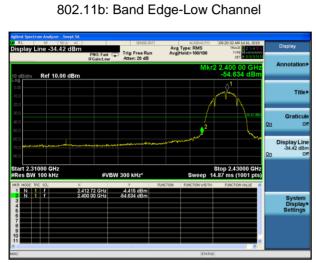
Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.

Repeat above procedures until all measured frequencies were complete.



# 7.7.6 Test Results

EUT:	DASH CAM	Model No.:	V1
Temperature:	<b>20</b> ℃	Relative Humidity:	48%
Test Mode:	802.11b/g/n20/n40	Test By:	Eileen Liu



# Test plot For

802.11g: Band Edge-Low Channel



## 802.11b: Band Edge-High Channel

# 802.11g: Band Edge-High Channel





# **Test plot For**

802.11n20: Band Edge-Low Channel

802.11n40: Band Edge-Low Channel

0: Fast Trig: Free Run

Ref 10.00 dBr

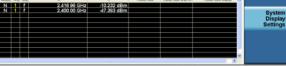
tart 2.31000 GHz Res BW 100 kHz Avg Type: RMS Avg[Hold>100/1

Display Line

Stop 2.45000 GHz



802.11n20: Band Edge-High Channel



802.11n40: Band Edge-High Channel







## 7.8 SPURIOUS RF CONDUCTED EMISSIONS

## 7.8.1 Conformance Limit

1. Below -30dB 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.

## 7.8.2 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

## 7.8.3 Test Setup

Please refer to Section 6.1 of this test report.

## 7.8.4 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 mwasure frequeny range from 9KHz to 26.5GHz.

## 7.8.5 Test Results

Remark: The measurement frequency range is from 9KHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandege measurement data.



Test Plot 802.



802.11b on channel 01

802.11b on channel 01

Avg Type: Pwr(RMS) Avg[Hold>100/100 Peak Sea PNO: Fast Trig: Free Run Atten: 20 dB TYPE Next Pea 384.05 M 65.433 di Ref 10.00 dBm Next Pk Righ Next Pk Lef Marker Delt Mkr→CF Mkr→RefLv More 1 of 2 Start 30.0 MHz #Res BW 100 kHz Stop 1.0000 G Sweep 120 ms (1001 p #VBW 300 kHz\*



802.11b on channel 01





**Test Plot** 802.11b on channel 06 802.11b on channel 06 Avg Type: Pwr(RMS Avg|Hold>100/100 Avg Type: Pwr(RMS) Avg[Hold>100/100 Trig: Free Run Trig: Free Run Auto Tun -46.413 d Ref 10.00 dBm Ref 10.00 dBm 1 man Center Fr start Fr 10.0 Display Lin -31.53 dB Stop Fr CF Ste 2 90 System Display Settings Freq Offse Span 20.00 MH Sweep 2.53 ms (1001 pts 2.43700 GH 10 kHz BW 100 kHz Stop 30.00 MF Sweep 3.73 ms (1001 pt #VBW 300 kHz\* #VBW 300 kHz\* 802.11b on channel 06 802.11b on channel 06 Aglent Spectromenous D RL 65 500 AC CORREC Marker 1 4.876000000000 GHz PNO: Fast C 7 Frig: Free Run PRO: Fast C 7 Atten: 20 dB Avg Type: Pwr(RMS) Avg[Hold>100/100 Peak Sea Avg Type: Log-Pwr PNO: Fast Trig: Free Run Atten: 20 dB TYPE NextPea NextPe 4.876 -66.46 ( 384.05 M 65.611 dE Ref 10.00 dBm Ref 10.00 dBm Next Pk Righ Next Pk Righ Next Pk Lei Next Pk Lef Marker Delt Marker Delt Mkr→CF Mkr→CF Mkr→RefLv Mkr→RefLv More 1 of 2 More 1 of 2

art 1.00 GHz Res BW 100 kHz

#VBW 300 kHz

Stop 1.0000 G Sweep 120 ms (1001 p

Start 30.0 MHz #Res BW 100 kHz

#VBW 300 kHz\*

Stop 26.50 GH Sweep 3.15 s (1001 pt



**Test Plot** 802.11b on channel 11 802.11b on channel 11 Avg Type: Pwr(RM Avg[Hold>100/100 Avg Type: Pwr(RMS) Avg[Hold>100/100 Trig: Free Run Trig: Free Run Auto Tun -46.427 Ref 10.00 dBm Ref 10.00 dBm Center Fr ¢ man start Fr 10.00 Display Lin Stop Fr CF Ste 2.999000 MH System Display Settings Freq Offse 2.46200 GH W 100 kHz Span 20.00 MH Sweep 2.53 ms (1001 pts 10 kHz BW 100 kHz Stop 30.00 Mi Sweep 3.73 ms (1001 p #VBW 300 kHz\* #VBW 300 kHz\* 802.11b on channel 11 802.11b on channel 11 Avg Type: Pwr(RMS) Avg|Hold>100/100 Peak Sea Avg Type: Log-Pwr PNO: Fast Trig: Free Run Atten: 20 dB PNO: Fast Trig: Free Run EGain: Jow Atten: 20 dB ct Trace Trace 1 Next Pea (r1 4.927 G -67.121 dl Ref 10.00 dBm Next Pk Righ Clear Writ Next Pk Lef Trace Averag Marker Delt Max Hold Mkr→CF Min Hole

rt 1.00 GHz s BW 100 kHz

#VBW 300 kHz

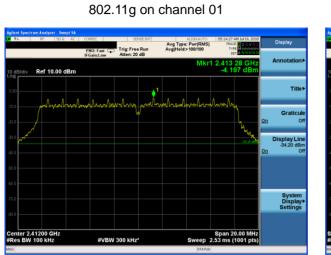
Ref 10.00 dBm Mkr→RefLv More 1 of 2 Start 515.0 MHz #Res BW 100 kHz Stop 970.0 M Sweep 56.2 ms (1001 pt #VBW 300 kHz\*

Viev

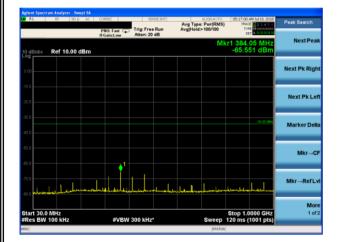
More 1 of 3

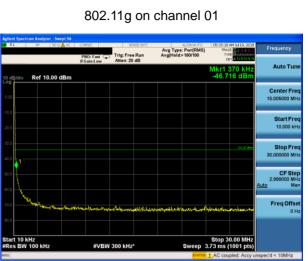
Stop 26.50 GH Sweep 3.15 s (1001 pts





802.11g on channel 01





802.11g on channel 01



Peak Sea

Next Pk Rig

Next Pk Lef

Marker Delt

Mkr→Cl

Mkr→RefLv

More 1 of 2



Ref 10.00 dBm

2.43700 GH

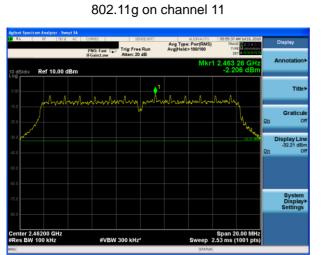
**Test Plot** 802.11g on channel 06 802.11g on channel 06 Avg Type: Pwr(RM Avg[Hold>100/100 Avg Type: Pwr(RMS) Avg[Hold>100/100 Trig: Free Run Trig: Free Run -46.870 c Ref 10.00 dBm -**•**1 System Display Settings Span 20.00 MH Sweep 2.53 ms (1001 pts 10 kHz BW 100 kHz Stop 30.00 N Sweep 3.73 ms (1001 p #VBW 300 kHz\* #VBW 300 kHz\* 802.11g on channel 06 802.11g on channel 06 Avg Type: Pwr(RMS) Avg|Hold>100/100 Peak Sea Avg Type: Log-Pwr PNO: Fast Trig: Free Run EGain: Jow Atten: 20 dB Next Pea l 4.876 C -68.01 d 384.05 M 65.776 dE Ref 10.00 dBm



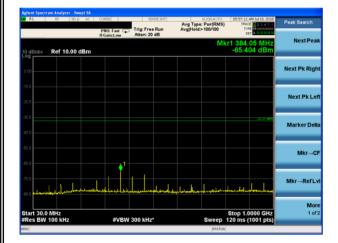


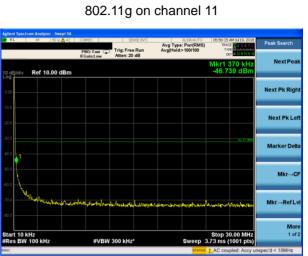
Version.1.3

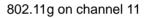




802.11g on channel 11









Avg Type: Pwr(RMS) Avg[Hold>100/100

-46.717 d

Stop 30.00 N Sweep 3.73 ms (1001 Peak Sea

Next Pk Righ

Next Pk Lef

Marker Delt

Mkr→CF

Mkr→RefLv

More 1 of 2

802.11n20 on channel 01

Trig: Free Run

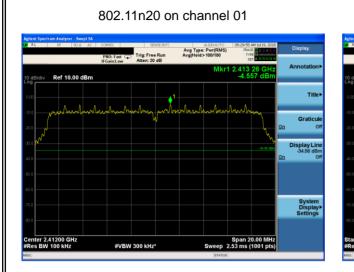
#VBW 300 kHz\*



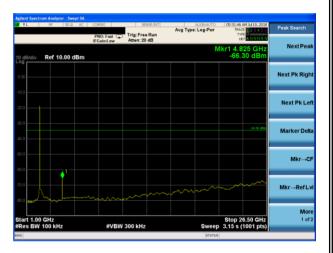
**Test Plot** 

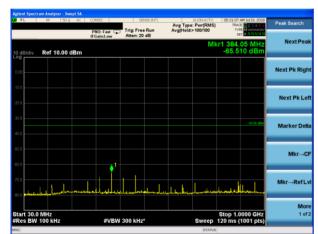
Ref 10.00 dBm

10 kHz BW 100 kHz



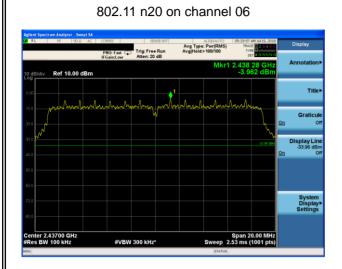
802.11 n20 on channel 01



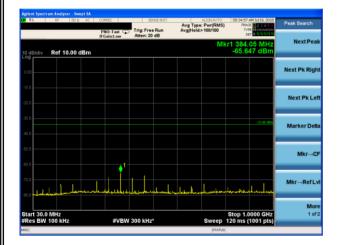


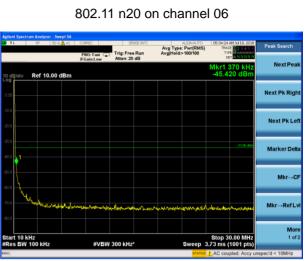
802.11 n20 on channel 01





802.11 n20 on channel 06





802.11 n20 on channel 06



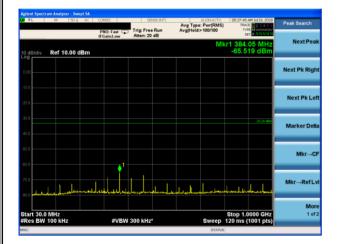




802.11 n20 on channel 11



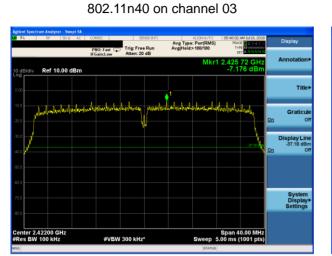
802.11 n20 on channel 11



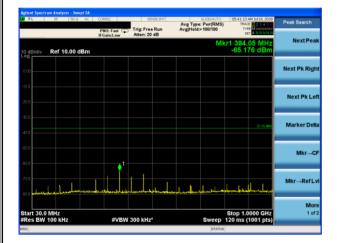
802.11 n20 on channel 11







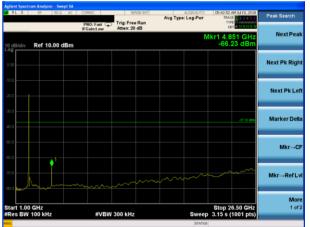
802.11n40 on channel 03



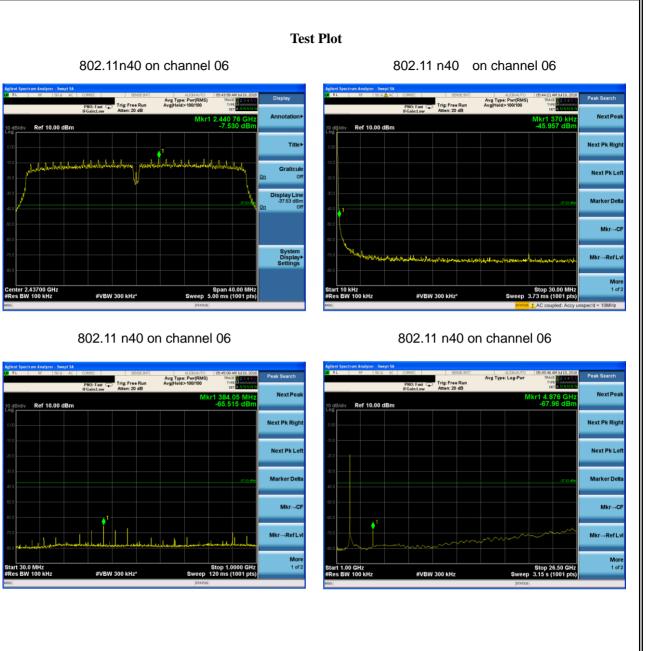
802.11n40 on channel 03



802.11n40 on channel 03



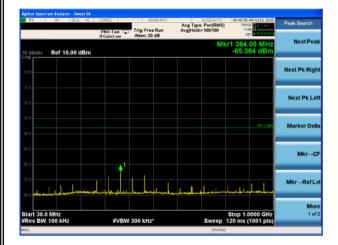








802.11 n40 on channel 9



BO2.11 n40 on channel 9

802.11 n40 on channel 9



## 7.9 ANTENNA APPLICATION

## 7.9.1 Antenna Requirement

15.203 requirement: For intentional device, according to 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.

## 7.9.2 Result

The EUT antenna is permanent attached FPCB Antenna (Gain:1 dBi). It comply with the standard requirement.