

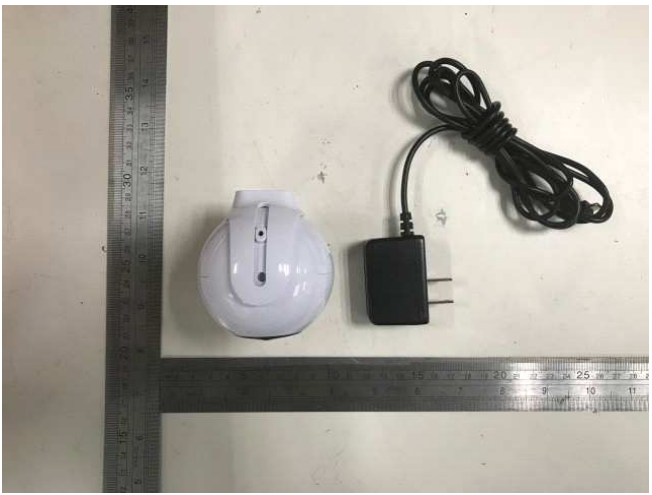
Prüfbericht-Nr.: Test Report No.:	50280140 001	Auftrags-Nr.: Order No.:	158113850	Seite 1 von 22 Page 1 of 22	
Kunden-Referenz-Nr.: Client Reference No.:	N/A	Auftragsdatum: Order date:	23.07.2018		
Auftraggeber: Client:	Binatone Electronics International Ltd. Floor 23A, 9 Des Voeux Road West, Sheung Wan, Hong Kong, China				
Prüfgegenstand: Test item:	Wi-Fi® Home Video Camera				
Bezeichnung / Typ-Nr.: Identification / Type No.:	FOCUS89 (refer to page 4 for additional models)				
Auftrags-Inhalt: Order content:	US FCC Certification; ISED Canada Certification				
Prüfgrundlage: Test specification:	FCC Part 15 Subpart C RSS-247 Issue 2 ANSI C63.10-2013				
Wareneingangsdatum: Date of receipt:	23.07.2019				
Prüfmuster-Nr.: Test sample No.:	A000970581-002				
Prüfzeitraum: Testing period:	23.07.2019 - 03.08.2019				
Ort der Prüfung: Place of testing:	TÜV Rheinland Hong Kong Ltd.				
Prüflaboratorium: Testing laboratory:	TÜV Rheinland Hong Kong Ltd.				
Prüfergebnis*: Test result*:	Pass				
geprüft von / tested by:		kontrolliert von / reviewed by:			
					
08.08.2019	Benny Lau / Senior Project Manager	08.08.2019	Sharon Li / Unit Senior Manager		
Datum Date	Name / Stellung Name / Position	Unterschrift Signature	Datum Date	Name / Stellung Name / Position	Unterschrift Signature
Sonstiges / Other: FCC ID: VLJ-FOCUS89 IC: 4522A-FOCUS89					
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged			
* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	3 = befriedigend F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	4 = ausreichend N/A = nicht anwendbar	5 = mangelhaft N/T = nicht getestet
Legend:	1 = very good P(ass) = passed a.m. test specification(s)	2 = good F(ail) = failed a.m. test specification(s)	3 = satisfactory F(ail) = failed a.m. test specification(s)	4 = sufficient N/A = not applicable	5 = poor N/T = not tested
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>					

Table of Content

	Page
Cover Page	1
Table of Content	2
Product information.....	4
Manufacturers declarations	4
Product function and intended use.....	4
Submitted documents.....	4
Independent Operation Modes	5
Related Submittal(s) Grants	5
Remark	5
Test Set-up and Operation Mode.....	6
Principle of Configuration Selection	6
Test Operation and Test Software.....	6
Special Accessories and Auxiliary Equipment	6
Countermeasures to achieve EMC Compliance	6
Test Methodology	7
Radiated Emission	7
Field Strength Calculation.....	7
Test Setup Diagram	8
Test Facility	10
Test Laboratory Information	10
List of Test and Measurement Instruments.....	11
Measurement Uncertainty	12
Results FCC Part 15 – Subpart C / RSS-247 Issue 2.....	13
FCC 15.203 – Antenna Requirement 1	N/A..... 13
FCC 15.204 – Antenna Requirement 2	Pass..... 13
RSS-Gen 6.3 – External Control.....	Pass..... 13
RSS-Gen 8.3 – Antenna Requirement	Pass..... 13
FCC 15.207/ RSS-Gen 8.8 – Conducted Emission on AC Mains	Pass..... 14
FCC 15.247 (a)(2) / RSS-247 5.2 – 6dB Bandwidth Measurement.....	Pass..... 15
FCC 15.247(b)(3) / RSS-247 5.4 – Maximum Conducted (average) Output Power.....	Pass..... 16
FCC 15.247(e) / RSS-247 5.2 – Power Spectral Density	Pass..... 17

FCC 15.247(d) / RSS-247 5.5 – Spurious Conducted Emissions	Pass.....	18
FCC 15.205/ RSS-Gen 8.9 – Radiated Emissions in Restricted Frequency Bands	Pass.....	19
Appendix 1 – Test protocols		52 pages
Appendix 2 – Test setup		2 pages
Appendix 3 – EUT External Photos		3 pages
Appendix 4 – EUT Internal Photos		6 pages
Appendix 5 – RF exposure information.....		3 pages

Product information

Manufacturers declarations

	WIFI Transceiver
Operating frequency range	2412 - 2462 MHz
Type of modulation	802.11b: DSSS (DBPSK/DQPSK/CCK) 802.11g: OFDM (BPSK/QPSK/16-QAM) 802.11n: OFDM (BPSK/QPSK/16QAM/64QAM)
Number of channels	11
Bandwidth	20MHz and 40MHz
Channel separation	5 MHz
Type of antenna	Integral Antenna
Antenna gain	2.5 dBi
Professional installation	Yes
Power level	fix
Type of equipment	stand alone radio device
Connection to public utility power line	Yes
Nominal voltage	100-240VAC
Independent Operation Modes	Transmitting

Product function and intended use

The equipment under test (EUT) is a Home Video Camera with 2.4GHz Wi-Fi connectivity. It is powered by 100-240VAC.

The manufacturer declares that the models as listed below are all identical in electrical, PCB layout, components used except the color of the enclosure and the model number only. Due to the manufacturer declaration of equivalence, the model FOCUS89 is selected by the applicant as a representative for testing and construction photo taking.

FCC ID: VLJ-FOCUS89/ IC: 4522A-FOCUS89

Models	Product description
FOCUS89 (Tested Model) FOCUS89-2, FOCUS89-3, FOCUS89-4, FOCUS89-W, FOCUS89-W2, FOCUS89-W3, FOCUS89-W4, FOCUS89-SATURN, FOCUS89-SATURN-2, FOCUS89-SATURN-3, FOCUS89-SATURN-4, FOCUS89-SATURN-W, FOCUS89-SATURN-W2, FOCUS89-SATURN-W3, FOCUS89-SATURN-W4, FOCUS89-SPY, FOCUS89-SPY-2, FOCUS89-SPY-3, FOCUS89-SPY-4, FOCUS89-SPY-W, FOCUS89-SPY-W2, FOCUS89-SPY-W3, FOCUS89-SPY-W4, FOCUS89-RADIUS, FOCUS89-RADIUS-2, FOCUS89-RADIUS-3, FOCUS89-RADIUS-4, FOCUS89-RADIUS-W, FOCUS89-RADIUS-W2, FOCUS89-RADIUS-W3, FOCUS89-RADIUS-W4	Wi-Fi® Home Video Camera

Submitted documents

Circuit Diagram
 Block Diagram
 Technical Description
 User manual
 Label

Independent Operation Modes

The basic operation modes are:

- Transmitting mode.

For further information refer to User Manual

Related Submittal(s) Grants

This is a single application for certification of the WIFI transmitter.

Others digital function is authorized under SDOC procedure. Please refer to test report 50280136 001 issued by TÜV Rheinland Hong Kong Ltd.

Remark

The test results in this test report are only relevant to the tested sample and does not involve any assessment in the production.

Test Set-up and Operation Mode

Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

Test Operation and Test Software

Test operation should refer to test methodology.

- During test, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power was selected according to the instruction given by the manufacturer (i.e. 802.11b: "30"; 802.11g: "40"; 802.11n: "40") . The setting of the RF output power expected by the customer shall be fixed on the firmware of the final end product.

Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

- AC-DC adaptor Model: HS06-0501000US Input: 100-240 VAC 50/60 Hz 200mA Output: 5.0VDC 1000mA) (Provided by the applicant)

Countermeasures to achieve EMC Compliance

- None

Test Methodology

Radiated Emission

The radiated emission measurements of the transmitter part were performed according to the procedures in ANSI C63.10-2013.

For measurement below 1GHz - the equipment under test (EUT) was placed at the middle of the 80 cm height turntable. For measurement above 1GHz - the EUT was placed at the middle of the 1.5 m height turntable and RF absorbing material was placed on ground plane between turntable and measuring antenna. During the testing, the EUT was operated standalone and arranged for maximum emissions. The EUT was tested in three orthogonal planes.

The investigation is performed with the EUT rotated 360°, the antenna height scanned between 1m and 4m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained.

All radiated tests were performed at an antenna to EUT with 3 meters distance, unless stated otherwise in particular parts of this test report.

Field Strength Calculation

The field strength at 3 m was established by adding the meter reading of the spectrum analyzer to the factors associated with antenna correction factor, cable loss, preamplifiers and filter attenuation.

The equation is expressed as follow:

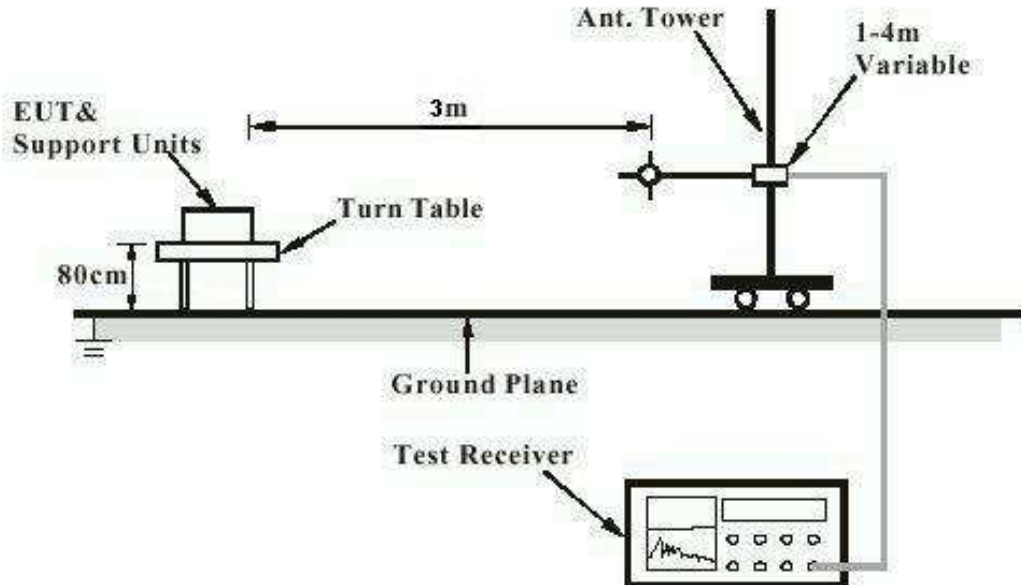
$$FS = R + AF + CF + FA - PA$$

Where FS = Field Strength in dBuV/m at 3 meters.
R = Reading of Spectrum Analyzer in dBuV.
AF = Antenna Factor in dB.
CF = Cable Attenuation Factor in dB.
FA = Filter Attenuation Factor in dB.
PA = Preamplifier Factor in dB.

FA and PA are only be used for the measuring frequency above 1 GHz.

Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test



Note: Measurements above 1 GHz are done with a table height of 1.5m. In addition, there is RF absorbing material on the floor of the test site for above 1GHz measurement.

Diagram of Measurement Equipment Configuration for Mains Conduction Measurement (if applicable)

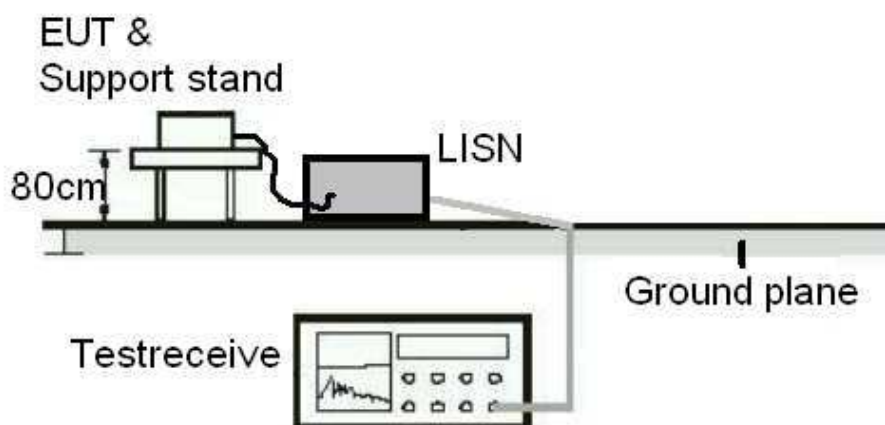
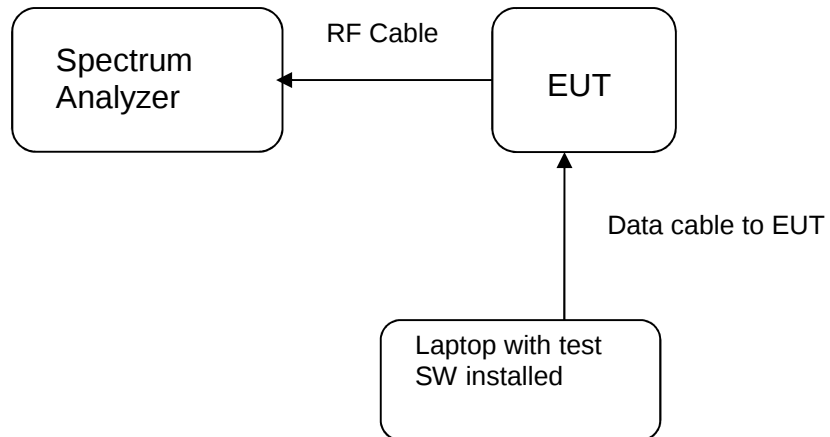


Diagram of Equipment Configuration for Antenna-port Conducted Measurement (if applicable)

Test Facility

Test Laboratory Information

TÜV Rheinland Hong Kong Ltd.

Address: 3-4, 11/F., Fou Wah Industrial Building, 10-16 Pun Shan Street, Tsuen Wan, N.T., Hong Kong

Tel.: +852 2192 1000

Fax: +852 2192 1001

Email service-gc@tuv.com

Web: www.tuv.com

The test facility is recognized or accredited by the following organizations:

FCC

Type	: Accredited Test Firm
Designation Number	: HK0013
Test Firm Registration Number	: 371735
Scope	: Intentional Radiators

ISED

The 10m Semi-anechoic chamber used by TÜV Rheinland Hong Kong Ltd at Hong Kong Productivity Council has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

Test Site Registration Number : 4780A-1

List of Test and Measurement Instruments

Radiated Emission

Equipment	Manufacturer	Type	Cal. Date	Due Date
Semi-anechoic Chamber	Frankonia	Nil	23 Apr 2019	23 Apr 2020
Test Receiver	R & S	ESU26	11 Jun 2019	11 Jun 2020
Bi-conical Antenna	R & S	HK116	21 Mar 2018	21 Mar 2020
Log Periodic Antenna	R & S	HL223	22 Mar 2018	22 Mar 2020
Cable with I-Joint Conector	Huber+Suhner	CNM-NMCMILX800-473	04 Oct 2018	04 Oct 2020
Active Loop Antenna	EMCO	6502	25 Oct 2018	25 Oct 2019
Double-Ridged Waveguide Horn	EMCO	3116	05 Oct 2018	05 Oct 2019
Double-Ridged Waveguide Horn	EMCO	3117	30 Aug 2018	30 Aug 2020
Cable with I-Joint Conector	Huber+Suhner	CNM-NMCMILX800-473	04 Oct 2018	04 Oct 2020
Microwave Preamplifier	COM-POWER Corporation	PAM-118A	25 Jun 2019	25 Jun 2020
Preamplifier 18GHz to 40GHz with cable (EMC656)	A.H. Systems, Inc.	PAM-1840VH	30 Jan 2019	30 Jan 2020
High Pass Filter (cutoff freq. =1000MHz)	Trilithic	23042	30 Oct 2017	30 Oct 2019
High Frequency Cable	Pasternack	PE3VNA4001-3M	29 Jan 2019	29 Jan 2020
Horn Antenna	EMCO	3115	28 Mar 2018	28 Mar 2020

AC Mains Conducted Emission

Equipment	Manufacturer	Type	Cal. Date	Due Date
Test Receiver	R & S	ESU26	11 Jun 2019	11 Jun 2020
LISN	R&S	ENV216	31 Jul 2018	31 Jul 2019

Radio Test

Equipment	Manufacturer	Type	Cal. Date	Due Date
Spectrum Analyzer	R & S	FSP30	26 Jun 2019	26 Jun 2020

Measurement Uncertainty

The estimated combined standard uncertainty for power-line conducted emissions measurements is $\pm 2.42\text{dB}$.

The estimated combined standard uncertainty for radiated emissions measurements is $\pm 4.81\text{dB}$ (9kHz to 30MHz) and $\pm 4.62\text{dB}$ (30MHz to 200MHz) and $\pm 5.67\text{dB}$ (200MHz to 1000MHz) and is $\pm 5.07\text{dB}$ (1GHz to 8.2GHz) and $\pm 4.58\text{dB}$ (8.2GHz to 12.4GHz) and $\pm 4.78\text{dB}$ (12.4GHz to 18GHz)

The estimated combined standard uncertainty for antenna conducted emission is $\pm 2.1\text{dB}$

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of $k=2$, which for the level of confidence is approximately 95%.

Results FCC Part 15 – Subpart C / RSS-247 Issue 2

FCC 15.203 – Antenna Requirement 1		N/A
FCC Requirement:	No antenna other than that furnished by the responsible party shall be used with the device	
Results:	This requirement does not apply to intentional radiators that must be professionally installed.	
Verdict:	Pass	

FCC 15.204 – Antenna Requirement 2		Pass
FCC Requirement:	An intentional radiator may be operated only with the antenna with which it is authorized. If an antenna is marketed with the intentional radiator, it shall be of a type which is authorized with the intentional radiator.	
Results:	The EUT must be professionally installed. Only the tested antenna will be used with the EUT.	
Verdict:	N/A	

RSS-Gen 6.3 – External Control		Pass
IC Requirement:	The device shall not have any external controls accessible to the user that enable it to be adjusted, selected or programmed to operate in violation of the limits prescribed in the applicable RSS.	
Results:	The device does not have any transmitter external controls accessible to the user that can be adjusted and operated in violation of the limits of this standard.	
Verdict:	Pass	

RSS-Gen 8.3 – Antenna Requirement		Pass
IC Requirement:	When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on measurement or on data from the antenna manufacturer.	
Results:	a) Antenna type: Integral Chip antenna b) Manufacturer: N/A c) model no: N/A d) Gain with reference to an isotropic radiator: 2.5 dBi	
Verdict:	Pass	

FCC 15.207/ RSS-Gen 8.8 – Conducted Emission on AC Mains						Pass
Test Specification : ANSI C63.10-2013 Test date : 23.07.2019 Mode of operation : WIFI ON Supply voltage : 120Vac 60Hz Temperature : 23°C Humidity : 50%						
Requirement: 15.207(a)/ RSS-Gen 8.8						
Results: For test Results plots refer to Appendix 1						
Live measurement						
Frequency range (MHz)	Frequency (MHz)	Quasi-peak dBμV	Average dBμV	Limit QP (dBμV)	Limit AV (dBμV)	Verdict
0,15 – 0,5	0.150	38.5	21.3	66 - 56	56 - 46	Pass
> 0,5 - 5	0.555	34.2	30.4	56	46	Pass
> 5 - 30	No peak found	---	---	60	50	Pass
Neutral measurement						
Frequency range (MHz)	Frequency (MHz)	Quasi-peak dBμV	Average dBμV	Limit QP (dBμV)	Limit AV (dBμV)	Verdict
0,15 – 0,5	0.150	37.6	21.0	66 - 56	56 - 46	Pass
> 0,5 - 5	0.552	35.0	24.7	56	46	Pass
> 5 - 30	No peak found	---	---	60	50	Pass
Remark: Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and data rate.						

FCC 15.247 (a)(2) / RSS-247 5.2 – 6dB Bandwidth Measurement			Pass
FCC/ IC Requirement: Systems using digital modulation techniques may operate in the 902 – 928 MHz, 2400 – 2483.5 MHz, and 5725 – 5850 MHz bands. The minimum 6dB bandwidth shall be at least 500kHz.			
Test Specification : ANSI C63.10 – 2013 Test date : 23.07.2018 Mode of operation : Tx mode Port of testing : Temporary antenna port Supply voltage : 120VAC 60Hz Temperature : 23°C Humidity : 50%			
Results: For test protocols please refer to Appendix 1			
802.11b			
Channel frequency (MHz)	6dB bandwidth (kHz)	Limit (kHz)	Verdict
2412	9080	500	Pass
2437	9120	500	Pass
2462	9120	500	Pass
802.11g			
Channel frequency (MHz)	6dB bandwidth (kHz)	Limit (kHz)	Verdict
2412	16480	500	Pass
2437	16640	500	Pass
2462	16640	500	Pass
802.11n-HT20			
Channel frequency (MHz)	6dB bandwidth (kHz)	Limit (kHz)	Verdict
2412	17840	500	Pass
2437	17760	500	Pass
2462	17800	500	Pass
802.11n-HT40			
Channel frequency (MHz)	6dB bandwidth (kHz)	Limit (kHz)	Verdict
2422	36500	500	Pass
2437	36600	500	Pass
2452	36700	500	Pass
Remark: Nil			

FCC 15.247(b)(3) / RSS-247 5.4 – Maximum Conducted (average) Output Power				Pass
FCC/ IC Requirement: For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850MHz bands: 1 Watt (30dBm)				
Test Specification : ANSI C63.10 – 2013 Test date : 23.07.2019 Mode of operation : Tx mode Port of testing : Temporary antenna port Supply voltage : 120VAC 60Hz Temperature : 23°C Humidity : 50%				
Results: For test protocols please refer to Appendix 1				
802.11b				
Frequency (MHz)	Cable loss (dB)	Measured Output Power (dBm)	Limit (W/dBm)	Verdict
2412	0.8	9.20	30.0	Pass
2437	0.8	10.12	30.0	Pass
2462	0.8	10.77	30.0	Pass
802.11g				
Frequency (MHz)	Cable loss (dB)	Measured Output Power (dBm)	Limit (dBm)	Verdict
2412	0.8	8.83	30.0	Pass
2437	0.8	9.79	30.0	Pass
2462	0.8	10.67	30.0	Pass
802.11n-HT20				
Frequency (MHz)	Cable loss (dB)	Measured Output Power (dBm)	Limit (dBm)	Verdict
2412	0.8	8.32	30.0	Pass
2437	0.8	9.61	30.0	Pass
2462	0.8	10.46	30.0	Pass
802.11n-HT40				
Frequency (MHz)	Cable loss (dB)	Measured Output Power (dBm)	Limit (dBm)	Verdict
2422	0.8	8.96	30.0	Pass
2437	0.8	9.88	30.0	Pass
2452	0.8	10.30	30.0	Pass
Remark: 1) Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and data rate.				

FCC 15.247(e) / RSS-247 5.2 – Power Spectral Density				Pass
FCC/ IC Requirement: For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.				
Test Specification : ANSI C63.10 – 2013 Test date : 23.07.2019 Mode of operation : Tx mode Port of testing : Temporary antenna port Supply voltage : 120VAC 60Hz Temperature : 23°C Humidity : 50%				
Results: For test protocols please refer to Appendix 1.				
802.11b				
Operating frequency (MHz)	Cable loss (dB)	Power density (dBm)	Limit (dBm)	Verdict
2412	0.8	6.54	8.0	Pass
2437	0.8	7.92	8.0	Pass
2462	0.8	5.50 ²⁾	8.0	Pass
802.11g				
Operating frequency (MHz)	Cable loss (dB)	Power density (dBm)	Limit (dBm)	Verdict
2412	0.8	-6.20	8.0	Pass
2437	0.8	-4.50	8.0	Pass
2462	0.8	-3.80	8.0	Pass
802.11n-HT20				
Operating frequency (MHz)	Cable loss (dB)	Power density (dBm)	Limit (dBm)	Verdict
2412	0.8	-6.55	8.0	Pass
2437	0.8	-4.83	8.0	Pass
2462	0.8	-3.50	8.0	Pass
802.11n-HT40				
Operating frequency (MHz)	Cable loss (dB)	Power density (dBm)	Limit (dBm)	Verdict
2422	0.8	-7.56	8.0	Pass
2437	0.8	-7.32	8.0	Pass
2452	0.8	-6.94	8.0	Pass
Remark: 1) Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and data rate. 2) RBW=30kHz				

FCC 15.247(d) / RSS-247 5.5 – Spurious Conducted Emissions					Pass
Test Specification : ANSI C63.10 – 2013 Test date : 23.07.2019 Mode of operation : Tx mode Port of testing : Temporary antenna port Supply voltage : 120VAC 60Hz Temperature : 23°C Humidity : 50%					
FCC/ IC Requirement: 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. 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.					
Results: Only the worst cases is shown below. For test protocols refer to Appendix 1					
802.11b					
Operating frequency (MHz)	Spurious frequency (MHz)	Spurious Level (dBm)	Reference value (dBm)	Delta (dB)	Verdict
2412	2397.5	-36.17	5.74	41.91	Pass
2437	4860.0	-33.48	7.12	40.60	Pass
2462	4920.0	-31.49	7.88	39.37	Pass
802.11g					
Operating frequency (MHz)	Spurious frequency (MHz)	Spurious Level (dBm)	Reference value (dBm)	Delta (dB)	Verdict
2412	2400.0	-44.61	-7.0	37.61	Pass
2437	7940.0	-42.64	-5.3	37.34	Pass
2462	2484.1	-48.44	-4.6	43.84	Pass
802.11n-HT20					
Operating frequency (MHz)	Spurious frequency (MHz)	Spurious Level (dBm)	Reference value (dBm)	Delta (dB)	Verdict
2412	2400.0	-42.71	-7.35	35.36	Pass
2437	9260.0	-43.15	-5.63	37.52	Pass
2462	2483.6	-47.72	-4.30	43.42	Pass
802.11n-HT40					
Operating frequency (MHz)	Spurious frequency (MHz)	Spurious Level (dBm)	Reference value (dBm)	Delta (dB)	Verdict
2422	2400.0	-42.54	-8.36	34.18	Pass
2437	7420.0	-42.86	-8.12	34.74	Pass
2452	2483.5	-47.11	-7.74	39.37	Pass
Remark: 1) Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and data rate.					

FCC 15.205/ RSS-Gen 8.9 – Radiated Emissions in Restricted Frequency Bands			Pass
Test Specification : ANSI C63.10 – 2013 Test Date : 23.07.2019 Mode of operation : Tx mode Port of testing : Enclosure Frequency range : 9kHz – 25GHz Supply voltage : 120VAC 60Hz Temperature : 23°C Humidity : 50%			
FCC/ IC Requirement: In any 100kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission general limits.			
Results: All three transmit frequency modes comply with the field strength within the restricted bands. There is no spurious found below 30MHz.			
Mode: 802.11b@2412MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2390.000	37.5	74.0 / PK	
2390.000	23.3	54.0 / AV	
4824.030	49.4	74.0 / PK	
4824.030	45.3	54.0 / AV	
Mode: 802.11b@2412MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2390.000	36.9	74.0 / PK	
2390.000	23.3	54.0 / AV	
4824.030	48.8	74.0 / PK	
4824.030	44.8	54.0 / AV	
Mode: 802.11b@2437MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4874.000	51.5	74.0 / PK	
4874.000	48.5	54.0 / AV	
Mode: 802.11b@2437MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4874.000	50.7	74.0 / PK	
4874.000	47.1	54.0 / AV	
Mode: 802.11b@2462MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2483.500	37.3	74.0 / PK	
2483.500	23.8	54.0 / AV	
4923.999	51.2	74.0 / PK	
4923.999	47.9	54.0 / AV	
Mode: 802.11b@2462MHz		Horizontal Polarization	
Freq	Level	Limit/ Detector	

MHz	dBuV/m	dBuV/m
2483.500	37.1	74.0 / PK
2483.500	23.4	54.0 / AV
4924.000	50.3	74.0 / PK
4924.000	47.1	54.0 / AV
Mode: 802.11g@2412MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2390.000	38.0	74.0 / PK
2390.000	23.9	54.0 / AV
4824.000	53.1	74.0 / PK
4824.000	41.8	54.0 / AV
Mode: 802.11g@2412MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2390.000	37.5	74.0 / PK
2390.000	23.4	54.0 / AV
4824.000	54.9	74.0 / PK
4824.000	43.9	54.0 / AV
Mode: 802.11g@2437MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4874.000	55.2	74.0 / PK
4874.000	43.8	54.0 / AV
Mode: 802.11g@2437MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4874.000	58.0	74.0 / PK
4874.000	44.6	54.0 / AV
Mode: 802.11g@2462MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2483.500	49.5	74.0 / PK
2483.500	29.5	54.0 / AV
4924.000	56.5	74.0 / PK
4924.000	45.6	54.0 / AV
Mode: 802.11g@2462MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2483.500	46.9	74.0 / PK
2483.500	27.7	54.0 / AV
4924.000	55.7	74.0 / PK
4924.000	44.9	54.0 / AV
Mode: 802.11n-HT20@2412MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2390.000	43.5	74.0 / PK
2390.000	25.7	54.0 / AV
4824.000	53.5	74.0 / PK
4824.000	41.4	54.0 / AV

Mode: 802.11n-HT20@2412MHz			Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2390.000	41.8	74.0 / PK	2390.000	25.0	54.0 / AV
4824.000	53.5	74.0 / PK	4824.000	40.8	54.0 / AV
Mode: 802.11n-HT20@2437MHz			Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4874.000	54.6	74.0 / PK	4874.000	42.1	54.0 / AV
Mode: 802.11n-HT20@2437MHz			Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4874.000	54.8	74.0 / PK	4874.000	42.2	54.0 / AV
Mode: 802.11n-HT20@2462MHz			Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2483.500	51.7	74.0 / PK	2483.500	33.8	54.0 / AV
4924.000	55.9	74.0 / PK	4924.000	43.5	54.0 / AV
Mode: 802.11n-HT20@2462MHz			Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2483.500	51.3	74.0 / PK	2483.500	32.9	54.0 / AV
4924.000	54.8	74.0 / PK	4924.000	42.4	54.0 / AV
Mode: 802.11n-HT40@2422MHz			Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2390.000	41.5	74.0 / PK	2390.000	26.5	54.0 / AV
4844.000	49.3	74.0 / PK	4844.00	37.4	54.0 / AV
Mode: 802.11n-HT40@2422MHz			Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2390.000	41.9	74.0 / PK	2390.000	27.3	54.0 / AV
4844.000	48.6	74.0 / PK	4844.000	36.4	54.0 / AV
Mode: 802.11n-HT40@2437MHz			Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4897.495	50.1	74.0 / PK			

4897.495	38.0	54.0 / AV
Mode: 802.11n-HT40@2437MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4874.000	47.3	74.0 / PK
4874.000	35.5	54.0 / AV
Mode: 802.11n-HT40@2452MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2483.500	46.1	74.0 / PK
2483.500	29.5	54.0 / AV
4904.000	49.8	74.0 / PK
4904.000	37.6	54.0 / AV
Mode: 802.11n-HT40@2452MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2483.500	47.1	74.0 / PK
2483.500	29.6	54.0 / AV
4904.000	47.5	74.0 / PK
4904.000	35.3	54.0 / AV
Remark: 1) Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and data rate.		