

Produkte
Products

Prüfbericht - Nr.: 14045649 001		Seite 1 von 21 Page 1 of 21	
<i>Test Report No.:</i>			
Auftraggeber: <i>Client:</i>		Megabyte Limited Unit 507, Building 12W, No. 12 Science Park West Avenue Hong Kong Science Park, Shatin, N.T., Hong Kong	
Gegenstand der Prüfung: <i>Test Item:</i>		UHF Portable RFID Reader	
Bezeichnung: <i>Identification:</i>	T8-01-MB T8-01-39, T8-01-PH	Serien-Nr.: <i>Serial No.:</i>	Engineering sample
Wareneingangs-Nr.: <i>Receipt No.:</i>	A000386196-002	Eingangsdatum: <i>Date of Receipt:</i>	30.06.2016
Prüfört: <i>Testing Location:</i>	TÜV Rheinland Hong Kong Ltd. 3-4, 11/F., Fou Wah Industrial Building, 10-16 Pun Shan Street, Tsuen Wan, N.T., Hong Kong Hong Kong Productivity Council HKPC Building, 78 Tat Chee Avenue, Kowloon, Hong Kong		
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of test item at delivery:</i>		Test samples are not damaged and suitable for testing.	
Prüfgrundlage: <i>Test Specification:</i>	FCC Part 15 Subpart C ANSI C63.10-2013		
Prüfergebnis: <i>Test Results:</i>	Das vorstehend beschriebene Gerät wurde geprüft und entspricht oben genannter Prüfgrundlage. The above mentioned product was tested and passed .		
Prüflaboratorium: <i>Testing Laboratory:</i>	TÜV Rheinland Hong Kong Ltd. 3-4, 11/F., Fou Wah Industrial Building, 10-16 Pun Shan Street, Tsuen Wan, Hong Kong		
geprüft/ tested by:		kontrolliert/ reviewed by:	
23.12.2016	Benny Lau Senior Project Manager	23.12.2016	Sharon Li Department Manager
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>
Sonstiges: <i>Other Aspects</i>		FCC ID: XEK-MTRAYT8 This device is a composite device. This report contains the test result of the 2.4GHz WIFI transceiver portion.	
Abkürzungen:	P(ass) = entspricht Prüfgrundlage F(ail) = entspricht nicht Prüfgrundlage N/A = nicht anwendbar N/T = nicht getestet	Abbreviations:	P(ass) = passed F(ail) = failed N/A = not applicable N/T = not tested
<p>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.</p> <p><i>This test report 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 safety mark on this or similar products.</i></p>			

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Product information

Manufacturers declarations

	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
Channel separation	5 MHz
Type of antenna	Integral PCB Antenna
Antenna gain (dBi)	1.3 dBi
Power level	fix
Type of equipment	stand alone radio device
Connection to public utility power line	Yes
Nominal voltage	100-240VAC/ 3.7VDC
Independent Operation Modes	Transmitting

Product function and intended use

The equipment under test (EUT) is a mobile RFID reader. It is a compact NFC and UHF RFID reader with Bluetooth and WIFI connectivity.

The manufacturer declared that the model: T8-01-39 and T8-01-PH are identical to the model T8-01-MB except the logo plate.

FCC ID: XEK-MTRAYT8

Models	Product description
T8-01-MB T8-01-39, T8-01-PH	UHF Portable RFID Reader

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 device is a composite device. This is a single application for certification of the 2.4GHz WIFI transceiver.

The RFID transmitter portion is authorized under the certification procedure (refer to test report 14045645 001 issued by TÜV Rheinland HK Ltd on 23.12.2016).

The NFC portion is authorized under the certification procedure (refer to test report 14045648 001 issued by TÜV Rheinland HK Ltd on 23.12.2016).

The Bluetooth portion is authorized under the certification procedure (refer to test report 14045646 001 and 14045647 001 and 14047147 001 issued by TÜV Rheinland HK Ltd on 23.12.2016).

The 5GHz WIFI portion is authorized under the certification procedure (refer to test report 14047148 001 and 14047149 001 issued by TÜV Rheinland HK Ltd on 23.12.2016).

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 applicant was used to control the operating channel as well as the maximum output power level. The maximum RF output power and the operating frequencies was selected according to the instruction given by the manufacturer. The setting of the maximum RF output power and the operating frequency range 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: EA1024AR-050 Input: 100-240 VAC 50/60 Hz; Output: 5.0VDC 2A)
(Provided by the applicant)

Countermeasures to achieve EMC Compliance

- Nil

Test Methodology

Radiated Emission

The radiated emission measurements of the transmitter part were performed according to the procedures in ANSI C63.10-2013. The radiated emission measurements of the data transfer part were performed according to the procedures in ANSI C63.4-2014.

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:

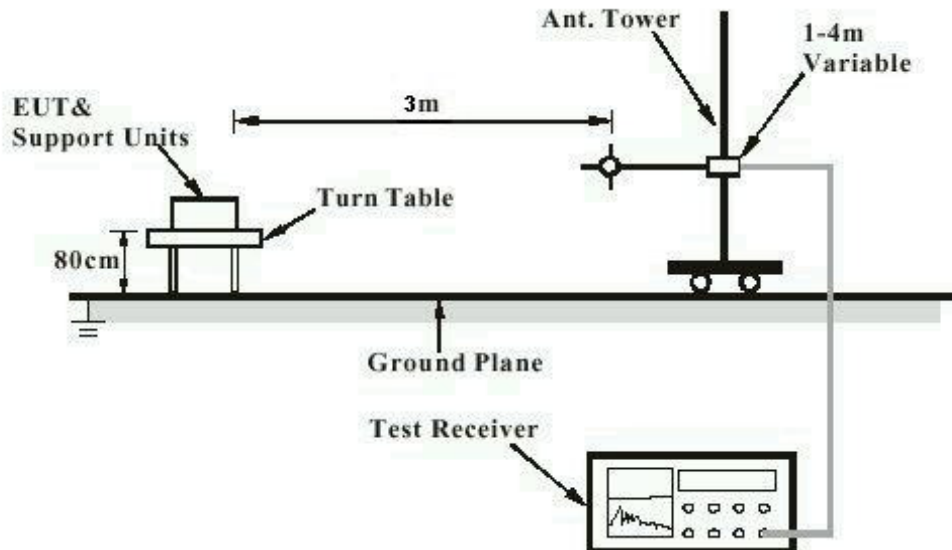
$$FS = R + AF + CF + FA - PA$$

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)

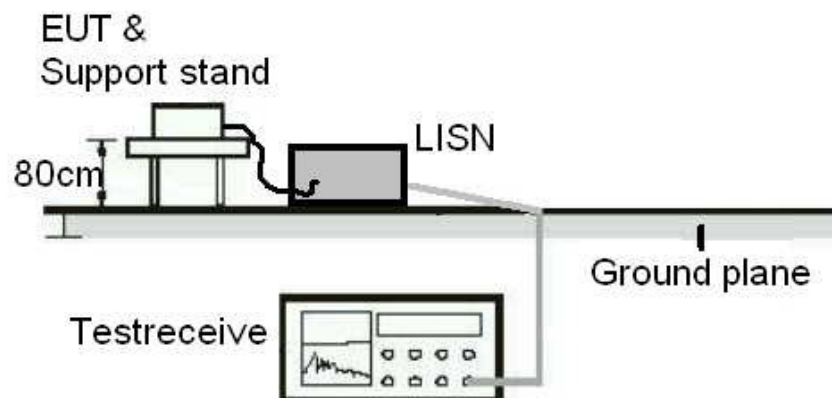
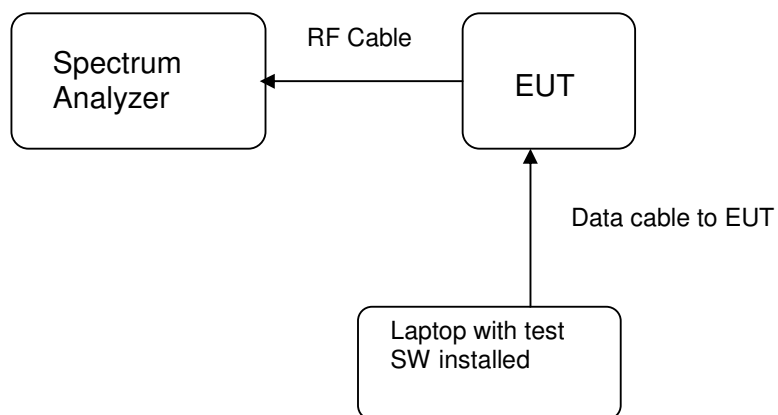


Diagram of Equipment Configuration for Antenna-port Conducted Measurement (if applicable)



List of Test and Measurement Instruments

Hong Kong Productivity Council (Registration number: 90656)

Radiated Emission

Equipment	Manufacturer	Type	Cal. Date	Due Date
Semi-anechoic Chamber	Frankonia	Nil	25-Apr-16	25-Apr-17
New Fully Anchoic Chamber	TDK	N/A	19-Apr-16	19-Apr-17
Cable	Hubersuhner	SUCOFLEX 104	31-Mar-16	31-Mar-18
Test Receiver	R & S	ESU26	7-Dec-15	7-Dec-16
Bi-conical Antenna	R & S	HK116	1-Sep-15	1-Sep-17
Log Periodic Antenna	R & S	HL223	1-Sep-15	1-Sep-17
Coaxial cable	Harbour	LL335	10-Jun-16	10-Jun-18
Microwave amplifier 0.5-26.5GHz, 25dB gain	HP	83017A	18-Jul-16	18-Jul-18
High Pass Filter (cutoff freq. =1000MHz)	Trilithic	23042	28-Oct-15	28-Oct-17
Horn Antenna	EMCO	3115	26-Aug-15	26-Aug-17
Active Loop Antenna	EMCO	6502	27-Oct-16	27-Oct-17

AC Mains Conducted Emission

Equipment	Manufacturer	Type	Cal. Date	Due Date
Test Receiver	R & S	ESU40	26-Jul-16	26-Jul-17
RF Voltage Probe	Schwarzbeck	TK9416	11-Feb-16	11-Feb-17
LISN	R&S	ESH3-Z5	15-Jun-16	15-Jun-17
Double Shield Cable	Radiall	RG142	14-Sep-15	14-Sep-17
Pulse Limiter	R&S	ESH3-Z2	3-Jun-16	3-Jun-18

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Radio Test

Equipment	Manufacturer	Type	Cal. Date	Due Date
Spectrum Analyzer	R & S	FSP30	12-Jan-15	12-Jan-2017

Measurement Uncertainty

The estimated combined standard uncertainty for power-line conducted emissions measurements is $\pm 3.43\text{dB}$.

The estimated combined standard uncertainty for radiated emissions measurements is $\pm 5.10\text{dB}$ (30MHz to 200MHz) and $\pm 5.08\text{dB}$ (200MHz to 1000MHz) and is $\pm 5.10\text{dB}$ (30MHz to 200MHz) and $\pm 5.08\text{dB}$ (above 1GHz).

The estimated combined standard uncertainty for antenna conducted emission is $\pm 1.56\text{dB}$

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

FCC 15.203 – Antenna Requirement 1		Pass
FCC Requirement: No antenna other than that furnished by the responsible party shall be used with the device		
Results:	a) Antenna type: Integral PCB antenna b) Manufacturer and model no: QCOM c) Peak Gain: 1.3 dBi	
Verdict:	Pass	

FCC 15.204 – Antenna Requirement 2		N/A
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:	Only one integral antenna can be used.	
Verdict:	N/A	

FCC 15.207 – Conducted Emission on AC Mains						Pass
Test Specification : ANSI C63.10 – 2013 Mode of operation : TX mode Port of testing : AC Mains input port of power supply Supply voltage : 120Vac 60Hz Temperature : 23°C Humidity : 50%						
Requirement: 15.207(a)						
Results: Pass						
802.11b - Live measurement						
Frequency range (MHz)	Frequency (MHz)	Quasi-peak dBµV	Average dBµV	Limit QP (dBµV)	Limit AV (dBµV)	Verdict
0,15 – 0,5	0.170	50.6	35.4	66 - 56	56 - 46	Pass
> 0,5 - 5	No peak found	---	---	56	46	Pass
> 5 - 30	13.559	50.1	46.1	60	50	Pass
802.11b - 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	53.5	34.9	66 - 56	56 - 46	Pass
> 0,5 - 5	No peak found	---	---	56	46	Pass
> 5 - 30	No peak found	---	---	60	50	Pass

802.11g - Live measurement						
Frequency range (MHz)	Frequency (MHz)	Quasi-peak dBµV	Average dBµV	Limit QP (dBµV)	Limit AV (dBµV)	Verdict
0,15 – 0,5	0.166	51.0	35.8	66 - 56	56 - 46	Pass
> 0,5 - 5	No peak found	---	---	56	46	Pass
> 5 - 30	No peak found	---	---	60	50	Pass
802.11g - Neutral measurement						
Frequency range (MHz)	Frequency (MHz)	Quasi-peak dBµV	Average dBµV	Limit QP (dBµV)	Limit AV (dBµV)	Verdict
0,15 – 0,5	0.168	50.7	35.4	66 - 56	56 - 46	Pass
> 0,5 - 5	No peak found	---	---	56	46	Pass
> 5 - 30	No peak found	---	---	60	50	Pass
802.11n20 - Live measurement						
Frequency range (MHz)	Frequency (MHz)	Quasi-peak dBµV	Average dBµV	Limit QP (dBµV)	Limit AV (dBµV)	Verdict
0,15 – 0,5	0.166	51.0	35.7	66 - 56	56 - 46	Pass
> 0,5 – 5	No peak found	---	---	56	46	Pass
> 5 – 30	No peak found	---	---	60	50	Pass
802.11n20 - Neutral measurement						
Frequency range (MHz)	Frequency (MHz)	Quasi-peak dBµV	Average dBµV	Limit QP (dBµV)	Limit AV (dBµV)	Verdict
0,15 – 0,5	0.166	51.0	35.6	66 - 56	56 - 46	Pass
> 0,5 - 5	No peak found	---	---	56	46	Pass
> 5 - 30	No peak found	---	---	60	50	Pass
802.11n40 - Live measurement						
Frequency range (MHz)	Frequency (MHz)	Quasi-peak dBµV	Average dBµV	Limit QP (dBµV)	Limit AV (dBµV)	Verdict
0,15 – 0,5	0.165	50.1	34.6	66 - 56	56 - 46	Pass
> 0,5 – 5	No peak found	---	---	56	46	Pass
> 5 – 30	No peak found	---	---	60	50	Pass
802.11n40 - Neutral measurement						
Frequency range (MHz)	Frequency (MHz)	Quasi-peak dBµV	Average dBµV	Limit QP (dBµV)	Limit AV (dBµV)	Verdict
0,15 – 0,5	0.170	49.7	34.6	66 - 56	56 - 46	Pass
> 0,5 - 5	No peak found	---	---	56	46	Pass
> 5 - 30	No peak found	---	---	60	50	Pass

Results:	<p>Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and data rate. The worst cases is found in 1Mbps, 6Mbps, 6.5Mbps and 13.5Mbps respectively.</p> <p>The radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150kHz to 30MHz does not exceed the limits. For test Results plots refer to Appendix 1.</p>
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FCC 15.247 (a)(2) – 6dB Bandwidth Measurement			Pass
FCC 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 Port of testing : Temporary antenna port Mode of operation : TX mode Supply voltage : 120VAC Temperature : 23°C Humidity : 50%			
Results: For test protocols please refer to Appendix 1			
802.11b			
Channel frequency (MHz)	6 dB left (MHz)	6 dB right (MHz)	6dB bandwidth (MHz)
2412	2407.920	2416.080	8.16
2437	2432.920	2441.080	8.16
2462	2457.920	2466.080	8.16
802.11g			
Channel frequency (MHz)	6 dB left (MHz)	6 dB right (MHz)	6dB bandwidth (MHz)
2412	2404.400	2419.650	15.25
2437	2429.400	2444.650	15.25
2462	2454.400	2469.650	15.25
802.11n20			
Channel frequency (MHz)	6 dB left (MHz)	6 dB right (MHz)	6dB bandwidth (kHz)
2412	2404.400	2419.650	15.25
2437	2429.400	2444.650	15.25
2462	2454.400	2469.650	15.25
802.11n40			
Channel frequency (MHz)	6 dB left (MHz)	6 dB right (MHz)	6dB bandwidth (kHz)
2422	2404.400	2439.700	35.30
2437	2419.300	2454.700	35.40
2452	2444.300	2469.700	35.40

FCC 15.247(b)(3) – Maximum Conducted (Average) Output Power				Pass							
FCC 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 Port of testing : Temporary antenna port Mode of operation : TX mode Supply voltage : 120VAC Temperature : 23°C Humidity : 50%											
Results: Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and data rate. The worst cases is found in 1Mbps, 6Mbps, 6.5Mbps and 13.5Mbps respectively. For test protocols please refer to Appendix 1											
802.11b											
Frequency (MHz)		Measured Output Power (dBm)		Limit (dBm)		Verdict					
2412		14.17		30.0		Pass					
2437		14.56		30.0		Pass					
2462		14.98		30.0		Pass					
802.11g											
Frequency (MHz)		Measured Output Power (dBm)		10 log (1/D) ¹		Output Power (dBm)		Limit (dBm)		Verdict	
2412		12.43		0.20		12.63		30.0		Pass	
2437		12.88		0.20		13.08		30.0		Pass	
2462		13.06		0.20		13.26		30.0		Pass	
802.11n20											
Frequency (MHz)		Measured Output Power (dBm)		10 log (1/D) ²		Output Power (dBm)		Limit (dBm)		Verdict	
2412		10.61		0.16		10.77		30.0		Pass	
2437		11.13		0.16		11.29		30.0		Pass	
2462		11.40		0.16		11.56		30.0		Pass	
802.11n40											
Frequency (MHz)		Measured Output Power (dBm)		10 log (1/D) ³		Output Power (dBm)		Limit (dBm)		Verdict	
2422		10.23		0.53		10.76		30.0		Pass	
2437		10.45		0.53		10.98		30.0		Pass	
2452		10.70		0.53		11.23		30.0		Pass	

Remark: 1) The EUT transmits continuously with a constant duty cycle (D) of 95.5%.

2) The EUT transmits continuously with a constant duty cycle (D) of 96.3%.

3) The EUT transmits continuously with a constant duty cycle (D) of 88.6%.

FCC 15.247(e) – Power Spectral Density			Pass		
FCC 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 Port of testing : Temporary antenna port Mode of operation : TX mode Supply voltage : 120VAC Temperature : 23°C Humidity : 50%					
Results:		Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and data rate. The worst cases is found in 1Mbps, 6Mbps, 6.5Mbps and 13.5Mbps respectively. For test protocols please refer to Appendix 1			
802.11b					
Frequency (MHz)	Measured Power Density (dBm)	Limit (dBm)	Verdict		
2412	-2.02	8.0	Pass		
2437	-1.52	8.0	Pass		
2462	-1.35	8.0	Pass		
802.11g					
Frequency (MHz)	Measured Power Density (dBm)	10 log (1/D) ¹	Power Density (dBm)	Limit (dBm)	Verdict
2412	-6.00	0.20	-5.80	8.0	Pass
2437	-5.97	0.20	-5.77	8.0	Pass
2462	-5.60	0.20	-5.40	8.0	Pass
802.11n20					
Frequency (MHz)	Measured Power Density (dBm)	10 log (1/D) ²	Power Density (dBm)	Limit (dBm)	Verdict
2412	-7.86	0.16	-7.70	8.0	Pass
2437	-6.95	0.16	-6.79	8.0	Pass
2462	-6.45	0.16	-6.29	8.0	Pass
802.11n40					
Frequency (MHz)	Measured Power Density (dBm)	10 log (1/D) ³	Power Density (dBm)	Limit (dBm)	Verdict
2422	-10.79	0.53	-10.26	8.0	Pass
2437	-10.81	0.53	-10.28	8.0	Pass
2452	-10.27	0.53	-9.74	8.0	Pass

Remark: 1) The EUT transmits continuously with a constant duty cycle (D) of 95.5%.

2) The EUT transmits continuously with a constant duty cycle (D) of 96.3%.

3) The EUT transmits continuously with a constant duty cycle (D) of 88.6%.

FCC 15.247(d) – Spurious Conducted Emissions						Pass
Test Specification : ANSI C63.10 – 2013 Mode of operation : TX mode Port of testing : Temporary antenna port Supply voltage : 120VAC Temperature : 23 °C Humidity : 50 %						
FCC 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: Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and data rate. The worst cases is found in 1Mbps, 6Mbps, 6.5Mbps and 13.5Mbps respectively. 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	24592.000	-29.06	7.63	36.69	Pass	
2437	24592.000	-29.87	8.03	37.90	Pass	
2462	24208.000	-30.44	8.28	38.72	Pass	
802.11g						
Operating frequency (MHz)	Spurious frequency (MHz)	Spurious Level (dBm)	Reference value (dBm)	Delta (dB)	Verdict	
2412	24640.000	-30.70	3.64	34.34	Pass	
2437	23080.000	-30.64	4.01	34.65	Pass	
2462	24592.000	-30.27	4.33	34.60	Pass	
802.11n20						
Operating frequency (MHz)	Spurious frequency (MHz)	Spurious Level (dBm)	Reference value (dBm)	Delta (dB)	Verdict	
2412	24568.000	-29.93	2.61	32.54	Pass	
2437	23128.000	-30.46	3.04	33.50	Pass	
2462	23128.000	-30.39	3.37	33.76	Pass	
802.11n40						
Operating frequency (MHz)	Spurious frequency (MHz)	Spurious Level (dBm)	Reference value (dBm)	Delta (dB)	Verdict	
2412	24592.000	-30.49	0.38	30.87	Pass	
2437	24568.000	-30.50	0.45	30.95	Pass	
2462	23056.000	-30.49	0.67	31.16	Pass	

FCC 15.205 – Radiated Emissions in Restricted Frequency Bands			Pass
Test Specification : ANSI C63.10 – 2013 Mode of operation : TX mode Port of testing : Enclosure Supply voltage : 120VAC Temperature : 23°C Humidity : 50%			
FCC 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, as defined in section 15.205(a), must also comply with the radiated emission limits specified in section 15.205(c).			
Results: Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and data rate. The worst cases is found in 1Mbps, 6Mbps, 6.5Mbps and 13.5Mbps respectively. Simultaneous transmission was investigated and no new emissions were found. 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 TX		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
49.573	32.0	40.0 / QP	
4826.276	51.62	74.0 / PK	
4824.128	38.31	54.0 / AV	
2387.436	49.45	74.0 / PK	
2389.744	34.20	54.0 / AV	
Mode: 802.11b 2412MHz TX		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4824.186	50.96	74.0 / PK	
4824.186	38.32	54.0 / AV	
2381.923	47.88	74.0 / PK	
2386.667	34.53	54.0 / AV	
Mode: 802.11b 2437 MHz TX		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
49.860	33.10	40.0 / QP	
No peak found	---	74.0 / PK	
No peak found	---	54.0 / AV	
Mode: 802.11b 2437 MHz TX		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
No peak found	---	74.0 / PK	
No peak found	---	54.0 / AV	

Mode: 802.11b 2462MHz TX			Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
49.834	34.80	40.0 / QP	49.834	34.80	40.0 / QP
2484.188	49.98	74.0 / PK	2484.188	49.98	74.0 / PK
2487.651	33.96	54.0 / AV	2487.651	33.96	54.0 / AV
Mode: 802.11b 2462 MHz TX			Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2488.048	49.92	74.0 / PK	2488.048	49.92	74.0 / PK
2487.651	37.48	54.0 / AV	2487.651	37.48	54.0 / AV
No peak found	---	74.0 / PK	No peak found	---	74.0 / PK
No peak found	---	54.0 / AV	No peak found	---	54.0 / AV
Mode: 802.11g 2412MHz TX			Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
49.607	31.50	40.0 / QP	49.607	31.50	40.0 / QP
2389.744	62.16	74.0 / PK	2389.744	62.16	74.0 / PK
2390.000	37.17	54.0 / AV	2390.000	37.17	54.0 / AV
Mode: 802.11g 2412MHz TX			Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2390.000	64.53	74.0 / PK	2390.000	64.53	74.0 / PK
2390.000	38.62	54.0 / AV	2390.000	38.62	54.0 / AV
No peak found	---	74.0 / PK	No peak found	---	74.0 / PK
No peak found	---	54.0 / AV	No peak found	---	54.0 / AV
Mode: 802.11g 2437 MHz TX			Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
49.681	32.0	40.0 / QP	49.681	32.0	40.0 / QP
No peak found	---	74.0 / PK	No peak found	---	74.0 / PK
No peak found	---	54.0 / AV	No peak found	---	54.0 / AV
Mode: 802.11g 2437 MHz TX			Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
No peak found	---	74.0 / PK	No peak found	---	74.0 / PK
No peak found	---	54.0 / AV	No peak found	---	54.0 / AV
Mode: 802.11g 2462MHz TX			Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
49.775	33.10	40.0 / QP	49.775	33.10	40.0 / QP
2483.685	62.75	74.0 / PK	2483.685	62.75	74.0 / PK
2483.500	39.64	54.0 / AV	2483.500	39.64	54.0 / AV

Mode: 802.11g 2462 MHz TX			Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2483.632	64.96	74.0 / PK	2483.632	64.96	74.0 / PK
2483.500	37.94	54.0 / AV	2483.500	37.94	54.0 / AV
No peak found	---	74.0 / PK	No peak found	---	74.0 / PK
No peak found	---	54.0 / AV	No peak found	---	54.0 / AV
Mode: 802.11n20 2412MHz TX			Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
48.000	31.5	40.0 / QP	48.000	31.5	40.0 / QP
4822.718	58.88	74.0 / PK	4822.718	58.88	74.0 / PK
4823.840	42.26	54.0 / AV	4823.840	42.26	54.0 / AV
2388.974	65.98	74.0 / PK	2388.974	65.98	74.0 / PK
2390.000	43.70	54.0 / AV	2390.000	43.70	54.0 / AV
Mode: 802.11n20 2412MHz TX			Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4824.000	54.38	74.0 / PK	4824.000	54.38	74.0 / PK
4824.000	39.03	54.0 / AV	4824.000	39.03	54.0 / AV
2387.949	67.62	74.0 / PK	2387.949	67.62	74.0 / PK
2390.000	46.22	54.0 / AV	2390.000	46.22	54.0 / AV
Mode: 802.11n20 2437 MHz TX			Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
49.719	31.3	40.0 / QP	49.719	31.3	40.0 / QP
4879.929	53.26	74.0 / PK	4879.929	53.26	74.0 / PK
4873.840	39.01	54.0 / AV	4873.840	39.01	54.0 / AV
Mode: 802.11n20 2437 MHz TX			Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
No peak found	---	74.0 / PK	No peak found	---	74.0 / PK
No peak found	---	54.0 / AV	No peak found	---	54.0 / AV
Mode: 802.11n20 2462MHz TX			Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
49.740	32.30	40.0 / QP	49.740	32.30	40.0 / QP
2484.743	63.40	74.0 / PK	2484.743	63.40	74.0 / PK
2483.500	37.62	54.0 / AV	2483.500	37.62	54.0 / AV
Mode: 802.11n20 2462 MHz TX			Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2485.007	62.57	74.0 / PK	2485.007	62.57	74.0 / PK
2483.500	37.32	54.0 / AV	2483.500	37.32	54.0 / AV
No peak found	---	74.0 / PK	No peak found	---	74.0 / PK
No peak found	---	54.0 / AV	No peak found	---	54.0 / AV

Mode: 802.11n40 2412MHz TX			Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
48.000	31.40	40.0 / QP			
2389.615	61.33	74.0 / PK			
2390.000	41.20	54.0 / AV			
Mode: 802.11n40 2412MHz TX			Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2383.333	66.76	74.0 / PK			
2390.000	44.88	54.0 / AV			
No peak found	---	74.0 / PK			
No peak found	---	54.0 / AV			
Mode: 802.11n40 2437 MHz TX			Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
49.790	31.40	40.0 / QP			
No peak found	---	74.0 / PK			
No peak found	---	54.0 / AV			
Mode: 802.11n40 2437 MHz TX			Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
No peak found	---	74.0 / PK			
No peak found	---	54.0 / AV			
Mode: 802.11n40 2462MHz TX			Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
47.999	31.1	40.0 / QP			
2484.425	64.20	74.0 / PK			
2483.500	41.92	54.0 / AV			
Mode: 802.11n40 2462 MHz TX			Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2483.738	63.84	74.0 / PK			
2484.267	41.33	54.0 / AV			
No peak found	---	74.0 / PK			
No peak found	---	54.0 / AV			