



CONFORMANCE TEST REPORT FOR FCC 47 CFR, Part 15 Subpart C

Report No.: 17-11-MAS-080

Client: Fames Technology Co., Ltd
Product: RFID MODULE
Model: 38704-LGC6-E00
FCC ID: 2AOP538704-LGC6-E00

Manufacturer/supplier: Fames Technology Co., Ltd

Date test item received: 2017/11/14
Date test campaign completed: 2017/12/21
Date of issue: 2018/01/15

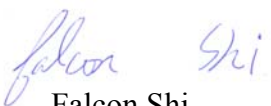
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Total number of pages of this test report: 26 pages

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(R.O.C.)
Manufacturer : Fames Technology Co., Ltd
Address : 4F., No.1, Ln. 15, Ziqiang St., Tucheng Dist., New Taipei City 236, Taiwan
(R.O.C.)
EUT : RFID MODULE
Trade name : KYMCO
Model No. : 38704-LGC6-E00
Power Source : DC 12V

Regulations applied : FCC 47 CFR, Part 15 Subpart C

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1. GENERAL INFORMATION

1.1 Product Description

- a) Type of EUT : RFID MODULE
- b) Model No. : 38704-LGC6-E00
- c) FCC ID : 2AOP538704-LGC6-E0
- d) Working Frequency : 13.56 MHz

1.2 Characteristics of Device

Device based on 13.56 MHz Contactless (RFID) Technology consists of RF transmitter and receiver for digital data exchanging, which are equipped on the motorcycles.

1.3 Test Methodology

All testing were performed according to the procedures in ANSI C63.10 (2013) and FCC CFR Part 15.

1.4 Test Facility

The semi-anechoic chamber and conducted measurement facility used to collect the radiated and conducted data are located inside the Building at No.8, Lane 29, Wenming Rd. Guishan Dist. Taoyuan City 33383, Taiwan, R.O.C.
This site has been accreditation as a FCC filing site.

1.5 Test Summary

Requirement	FCC Paragraph #	Test Pass
Radiated Emission	15.225, 15.209, 15.205	Pass
Operating Frequency Range	15.225,15.205	Pass
Conducted Emission	15.207	Not Applicable
The Frequency Tolerance Of The Carrier Signal	15.225	Pass

2. DEFINITION AND LIMITS

2.1 Definition

Intentional radiator:

A device that intentionally generates and emits radio frequency energy by radiation or induction.

2.2 Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42-16.423	399.9-410	4.5-5.15
0.495 - 0.505 **	16.69475 - 16.69525	608-614	5.35-5.46
2.1735 - 2.1905	16.80425 - 16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475 - 156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

** : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

2.3 Limitation

(1) Conducted Emission Limits :

According to §15.207, for an intentional radiator which is designed to be connected to the public utility (AC) power line, the conducted limit is the following:

Frequency MHz	Quasi Peak dB μ V	Average dB μ V
0.15 - 0.5	66-56*	56-46*
0.5 - 5.0	56	46
5.0 - 30.0	60	50

*Decreases with the logarithm of the frequency.

(2) Radiated Emission Limits :

According to §15.225 (a) , the field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

According to §15.225 (d), the field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

According to §15.209(a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

(3) The frequency tolerance of the carrier signal :

According to §15.225 (e), the frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency over a temperature variation of -20 degrees to $+ 50$ degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

2.4 Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device :

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

2.5 User Information

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

To comply with the FCC RF exposure compliance requirement, this device and its antenna must not be co-located or operating to conjunction with any other antenna or Driveway Monitor.

3. SYSTEM TEST CONFIGURATION

3.1 Justification

For the purposes of this test report ancillary equipment is defined as equipment which is used in conjunction with the EUT to provide operational and control features to the EUT during the test.

3.2 Devices for Tested System

Device	Manufacture	Model	Cable Description
* RFID MODULE	KYMCO	38704-LGC6-E00	----
DC Power Supply	GW	GPS-3030D	1.8m*1 Unshielded Power Line 2.0m*1 Unshielded Signal Line

Note: Remark: “*” means equipment under test.



4. RADIATED EMISSION MEASUREMENTS

4.1 Applicable Standard

According to §15.225 (a) , the field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

According to §15.225 (d), the field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

According to §15.209, radiated emission limits, general requirements.

4.2 Measurement Procedure

1. Setup the configuration per figure 1 and 2 for frequencies measured below and above 30 MHz respectively. Turn on EUT and make sure that it is in continuous operating function.
2. Change the orientation of EUT on test table over a range from 0 ° to 360 ° with a speed as slow as possible, and keep the azimuth that highest emission is indicated on the spectrum analyzer. Vary the antenna position again and record the highest value as a final reading. A RF test receiver is also used to confirm emissions measured.

Figure 1: Frequencies measured below 30MHz configuration

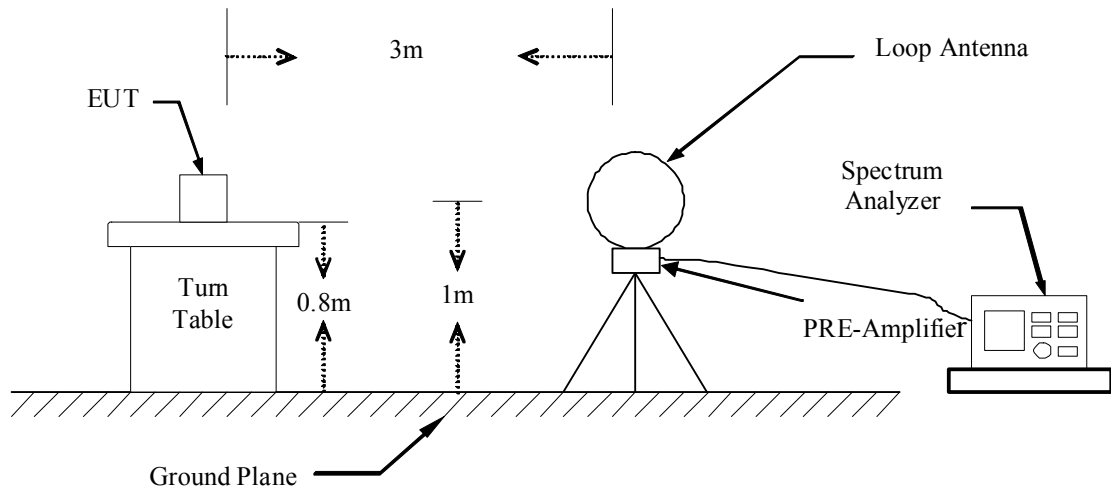
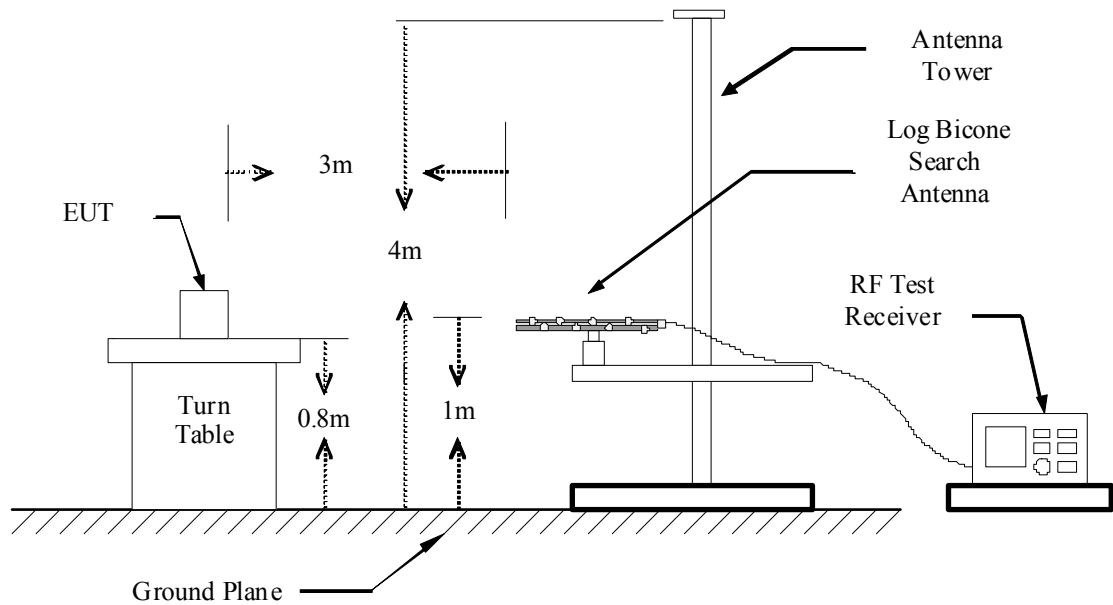


Figure 2: Frequencies measured 30 MHz to 1GHz configuration



4.3 Test Data

4.3.1 Fundamental and Harmonic of Transmitter

4.3.1.1 The loop antenna is facing the EUT.

Operated mode: Transmitting

Test Date : Dec. 11, 2017

Temperature : 21°C

Humidity : 63%

4.3.1.1.1 Fundamental

Frequency (MHz)	Reading (dBuV/m) Avg	Correct Factor (dB)	Result @3m (dBuV/m) Avg	Result @30m (uV/m) Avg	Limit @30m (uV/m) Avg	Margin (uV/m)
13.561	66.1	6.8	72.9	44.2	15848	-15803.8

4.3.1.1.2 Harmonic

Frequency (MHz)	Reading (dBuV/m) QP	Ant Pol (H/V)	Correct Factor (dB)	Result @3m (dBuV/m) QP	Limit @3m (dBuV/m) QP	Margin @3m (dB)
27.122	21.5	N/A	6.4	27.9	69.5	-41.6

Frequency (MHz)	Reading (dBuV/m) QP	Ant Pol (H/V)	Correct Factor (dB)	Result @3m (dBuV/m) QP	Limit @3m (dBuV/m) QP	Margin @3m (dB)
40.683	----	H	-8.3	----	40.0	----
40.683	----	V	-8.3	----	40.0	----
54.240	----	H	-10.0	----	40.0	----
54.240	----	V	-10.0	----	40.0	----
67.800	----	H	-12.7	----	40.0	----
67.800	----	V	-12.7	----	40.0	----
81.360	----	H	-13.8	----	40.0	----
81.360	----	V	-13.8	----	40.0	----
94.920	----	H	-10.1	----	43.5	----
94.920	----	V	-10.1	----	43.5	----
108.480	----	H	-6.1	----	43.5	----
108.480	----	V	-6.1	----	43.5	----
122.040	----	H	-5.1	----	43.5	----
122.040	----	V	-5.1	----	43.5	----
135.600	----	H	-5.1	----	43.5	----
135.600	----	V	-5.1	----	43.5	----

Note: 1. Remark “----” means that the emissions level is too low to be measured

2. Result = Reading + Correct Factor

3. In the case of insufficient space in the test site, the conversion formula for the limit (measuring distance of more than 3 meters) is as follows:

The limit conversion of 30m to 3m is given by formula:

$$frequency = 27.122 \text{ MHz}$$

$$limit(30m) = 30 \text{ (uV/m)}$$

$$limit(3m) = 20\log(limit(30m)) + 40\log(30m/3m)$$

$$= 20\log(30 \text{ (uV/m)}) + 40\log(30m/3m)$$

$$= 29.54 + 40$$

$$= 69.5 \text{ (dBuV/m)}$$

4. The estimated measurement uncertainty of the result measurement is:

$$\pm 4.2 \text{ dB } (9 \text{ kHz} \leq f < 30 \text{ MHz})$$

4.3.1.2 The loop antenna is at an angle of 90 degrees to the EUT.

Operated mode: Transmitting

Test Date: Dec. 11, 2017

Temperature: 21°C

Humidity : 63%

4.3.1.2.1 Fundamental

Frequency (MHz)	Reading (dBuV/m) Avg	Correct Factor (dB)	Result @3m (dBuV/m) Avg	Result @30m (uV/m) Avg	Limit @30m (uV/m) Avg	Margin (uV/m)
13.561	65.6	6.8	72.4	41.7	15848	-15806.3

4.3.1.2.2 Harmonic

Frequency (MHz)	Reading (dBuV/m) QP	Ant Pol (H/V)	Correct Factor (dB)	Result @3m (dBuV/m) QP	Limit @3m (dBuV/m) QP	Margin @3m (dB)
27.122	20.5	N/A	6.4	26.9	69.5	-42.6

Frequency (MHz)	Reading (dBuV/m) QP	Ant Pol (H/V)	Correct Factor (dB)	Result @3m (dBuV/m) QP	Limit值 @3m (dBuV/m) QP	Margin @3m (dB)
40.683	----	H	-8.3	----	40.0	----
40.683	----	V	-8.3	----	40.0	----
54.240	----	H	-10.0	----	40.0	----
54.240	----	V	-10.0	----	40.0	----
67.800	----	H	-12.7	----	40.0	----
67.800	----	V	-12.7	----	40.0	----
81.360	----	H	-13.8	----	40.0	----
81.360	----	V	-13.8	----	40.0	----
94.920	----	H	-10.1	----	43.5	----
94.920	----	V	-10.1	----	43.5	----
108.480	----	H	-6.1	----	43.5	----
108.480	----	V	-6.1	----	43.5	----
122.040	----	H	-5.1	----	43.5	----
122.040	----	V	-5.1	----	43.5	----
135.600	----	H	-5.1	----	43.5	----
135.600	----	V	-5.1	----	43.5	----

Note: 1. Remark “----” means that the emissions level is too low to be measured

2. Result = Reading + Correct Factor

3. In the case of insufficient space in the test site, the conversion formula for the limit (measuring distance of more than 3 meters) is as follows:

The limit conversion of 30m to 3m is given by formula:

$$\text{frequency} = 27.122 \text{ MHz}$$

$$\text{limit (30m)} = 30 \text{ (uV/m)}$$

$$\text{limit (3m)} = 20\log(\text{limit (30m)}) + 40\log(30\text{m}/3\text{m})$$

$$= 20\log(30 \text{ (uV/m)}) + 40\log(30\text{m}/3\text{m})$$

$$= 29.54 + 40$$

$$= 69.5 \text{ (dBuV/m)}$$

4. The estimated measurement uncertainty of the result measurement is:

$$\pm 4.2\text{dB} \text{ (9kHz} \leq f < 30\text{MHz)}$$

4.3.2 Other Emission

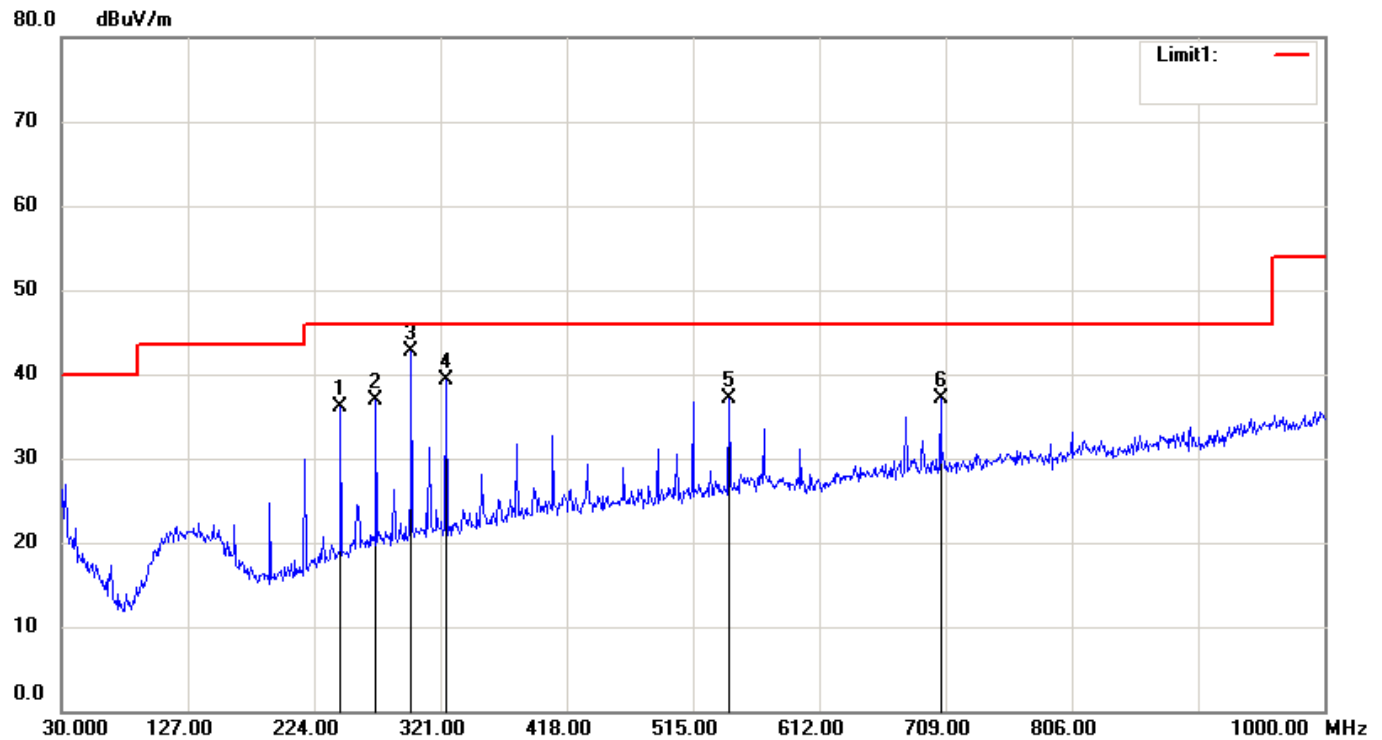
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Date: 2017/12/11

Temperature: 21 °C

Time: PM 08:07:06

Humidity: 63 %



Condition: FCC Part15 RE-Class B_30-1000MHz

Polarization: Horizontal

EUT:

Distance: 3m

Model:

Test Mode:

No.	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
	(MHz)	(dBuV/m)		Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)
1	244.3700	42.94	peak	-6.87	36.07	46.00	-9.93
2	271.5300	42.03	peak	-5.18	36.85	46.00	-9.15
3	298.6900	47.22	peak	-4.49	42.73	46.00	-3.27
4	325.8500	43.24	peak	-3.93	39.31	46.00	-6.69
5	543.1300	37.38	peak	-0.26	37.12	46.00	-8.88
6	705.1200	34.87	peak	2.30	37.17	46.00	-8.83

File: 17-11-MAS-
080_Debug

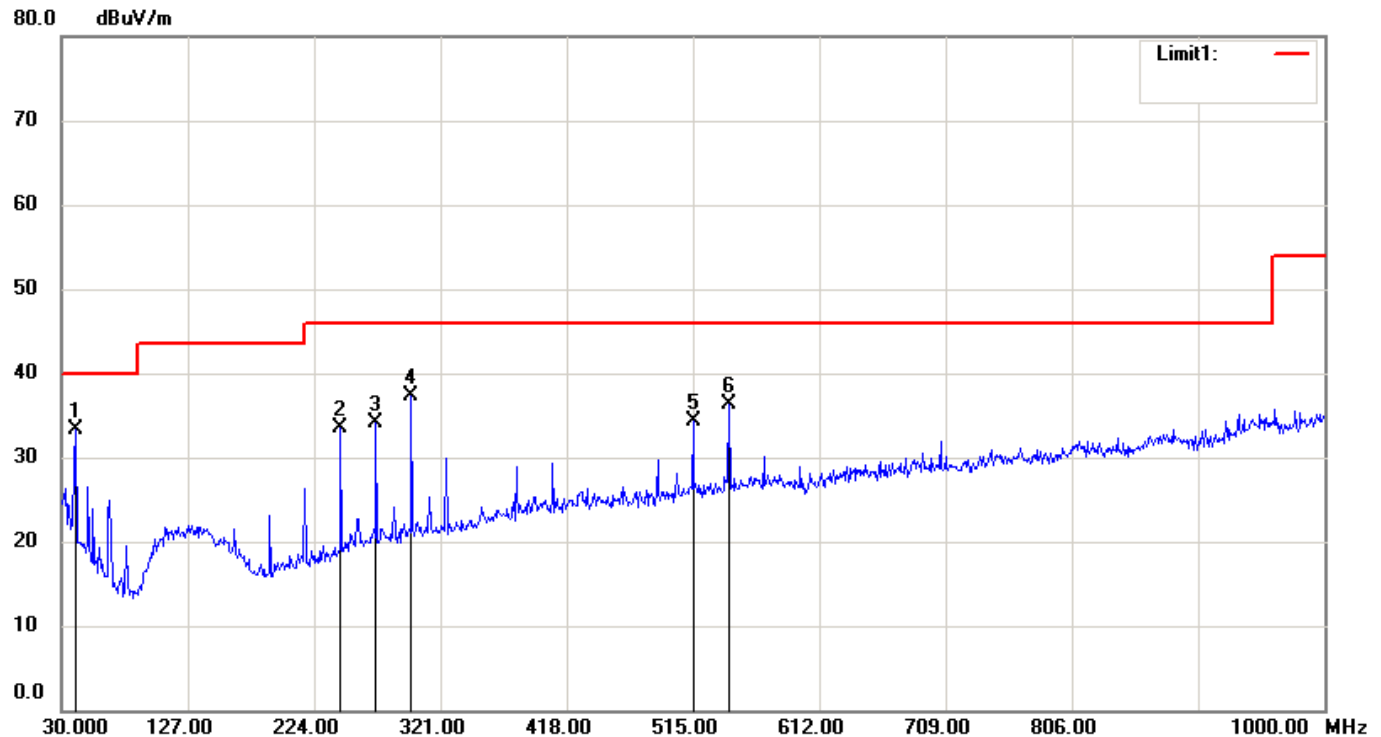
Data: #10

Date: 2017/12/11

Temperature: 21 °C

Time: PM 08:11:43

Humidity: 63 %



Condition: FCC Part15 RE-Class B_30-1000MHz

Polarization: Vertical

EUT:

Distance: 3m

Model:

Test Mode:

No.	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
	(MHz)	(dBuV/m)		Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)
1	40.6700	41.56	peak	-8.29	33.27	40.00	-6.73
2	244.3700	40.32	peak	-6.87	33.45	46.00	-12.55
3	271.5300	39.30	peak	-5.18	34.12	46.00	-11.88
4	298.6900	41.76	peak	-4.49	37.27	46.00	-8.73
5	515.0000	35.32	peak	-0.94	34.38	46.00	-11.62
6	542.1600	36.66	peak	-0.29	36.37	46.00	-9.63

Note: 1. Remark “---” means that the emissions level is too low to be measured.

2. If the peak result is under the quasi-peak limit, that is deemed to meet the quasi-peak limit.

3. The estimated measurement uncertainty of the result measurement is:

 $\pm 4.6\text{dB}$ ($30\text{MHz} \leq f < 300\text{MHz}$) $\pm 4.4\text{dB}$ ($300\text{MHz} \leq f < 1\text{GHz}$)

4.4 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$RESULT = READING + CORR. FACTOR$$

where CORR. FACTOR= Antenna FACTOR + Cable FACTOR - Amplifier Gain (if any)

4.5 Radiated Test Equipment

The following instrument are used for radiated emissions measurement:

Equipment	Manufacturer	Model No.
EMI Receiver	R&S	ESCI
BiLog Antenna	ETC	MCTD 2786B
Loop Antenna	EMCO	6512
PRE-Amplifier	Agilent	8449B
PRE-Amplifier	Agilent	8447D
Spectrum Analyzer	Rohde & Schwarz	FSU46

Note: The standards used to perform this calibration are traceable to NML/ROC, NIST/USA and NPL.

5. CONDUCTED EMISSION MEASUREMENT

This EUT is excused from investigation of conducted emission, for it is powered by battery only. According to §15.207 (d), measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.

6. MEASUREMENT OF OPERATING FREQUENCY RANGE

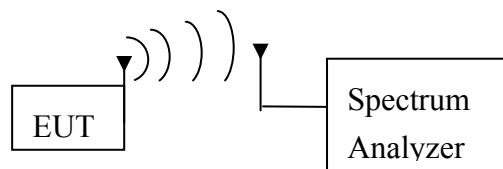
6.1 Applicable Standard

According to §15.205, Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42-16.423	399.9-410	4.5-5.25
0.495 - 0.505 **	16.69475 - 16.69525	608-614	5.35-5.46
2.1735 - 2.1905	16.80425 - 16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475 - 156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2655-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

** : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

6.2 Operating frequency range measurement configuration



6.3 Operating frequency range Test Equipment

Equipment	Manufacturer	Model No.
Spectrum Analyzer	Agilent	E4446A

6.4 Test Result

Operated mode : Transmitting

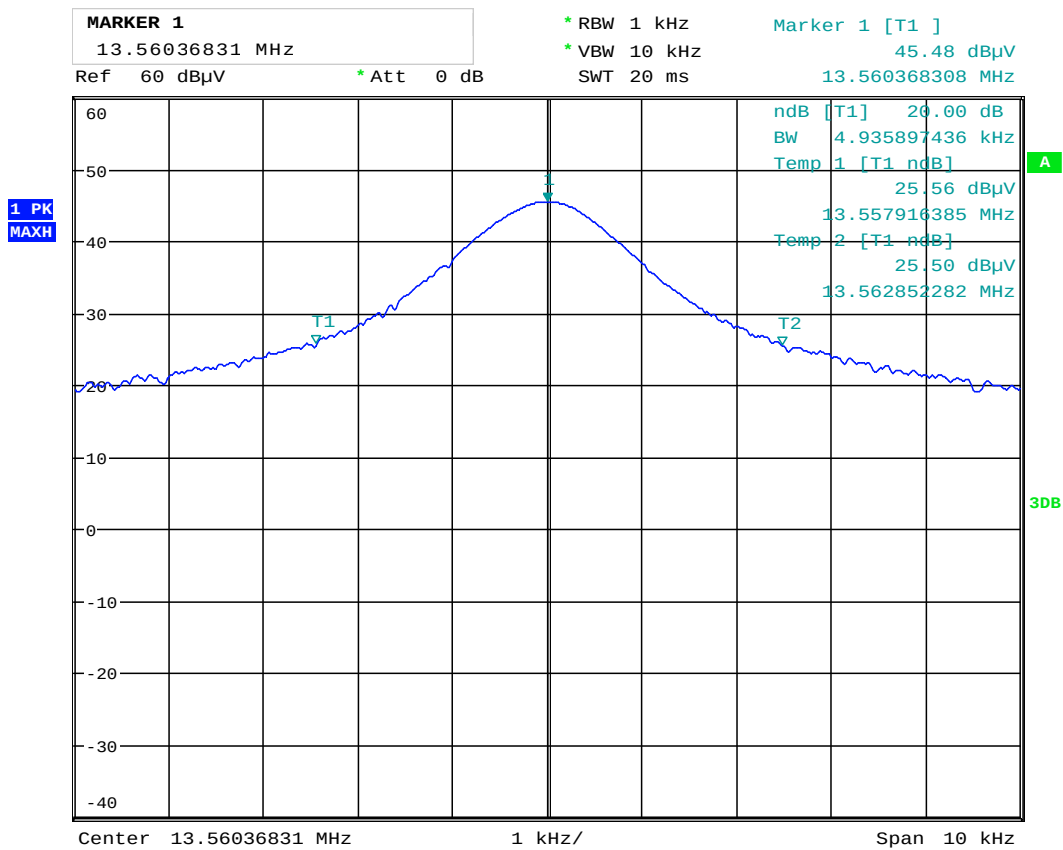
Test Date : Dec. 11, 2017

Temperature : 21°C

Humidity : 63%

The operating frequency range is not in the restricted bands and meets the requirements of §15.205.

Note: Please refer to page 21 for chart.



Date: 15.DEC.2017 06:57:01

7. THE FREQUENCY TOLERANCE OF THE CARRIER SIGNAL

7.1 Applicable Standard

According to §15.225(e), the frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency over a temperature variation of -20 degrees to $+50$ degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

7.2 Measurement Procedure

Frequency stability with respect to ambient temperature

- a) Supply the EUT with a nominal ac voltage or install a new or fully charged battery in the EUT. If possible, a dummy load shall be connected to the EUT because an antenna near the metallic walls of an environmental test chamber could affect the output frequency of the EUT. If the EUT is equipped with a permanently attached, adjustable-length antenna, then the EUT shall be placed in the center of the chamber with the antenna adjusted to the shortest length possible. Turn ON the EUT and tune it to one of the number of frequencies shown in 5.6.
- b) Couple the unlicensed wireless device output to the measuring instrument by connecting an antenna to the measuring instrument with a suitable length of coaxial cable and placing the measuring antenna near the EUT (e.g., 15 cm away), or by connecting a dummy load to the measuring instrument, through an attenuator if necessary.
- c) Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).
- d) Turn the EUT OFF and place it inside the environmental temperature chamber. For devices that have oscillator heaters, energize only the heater circuit.
- e) Set the temperature control on the chamber to the highest specified in the regulatory requirements for the type of device and allow the oscillator heater and the chamber temperature to stabilize.
- f) While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.
- g) Measure the frequency at each of frequencies specified in 5.6.
- h) Switch OFF the EUT but do not switch OFF the oscillator heater.
- i) Lower the chamber temperature by not more than 10°C , and allow the temperature inside the chamber to stabilize.
- j) Repeat step f) through step i) down to the lowest specified temperature.

Frequency stability when varying supply voltage

Unless otherwise specified, these tests shall be made at ambient room temperature (+15 °C to +25 °C). Antenna shall be connected to the antenna output terminals of the EUT if possible.

If the EUT is equipped with or uses an adjustable-length antenna, then it shall be fully extended.

- a) Supply the EUT with nominal voltage or install a new or fully charged battery in the EUT. Turn ON the EUT and couple its output to a frequency counter or other frequency-measuring instrument.
- b) Tune the EUT to one of the number of frequencies required in 5.6. Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).
- c) Measure the frequency at each of the frequencies specified in 5.6.
- d) Repeat the above procedure at 85% and 115% of the nominal supply voltage as described in 5.13.

7.3 Measuring Instruments

Equipment	Manufacturer	Model No.
Spectrum Analyzer	R&S	FSU46
Temperature Chamber	YEOW LONG	MHP-3-L

7.4 Measurement Data

Test Date: Dec. 11, 2017

Temperature : 21°C

Humidity: 63%

Frequency Stability Versus Environment Temperature (50°C ~ -20°C):

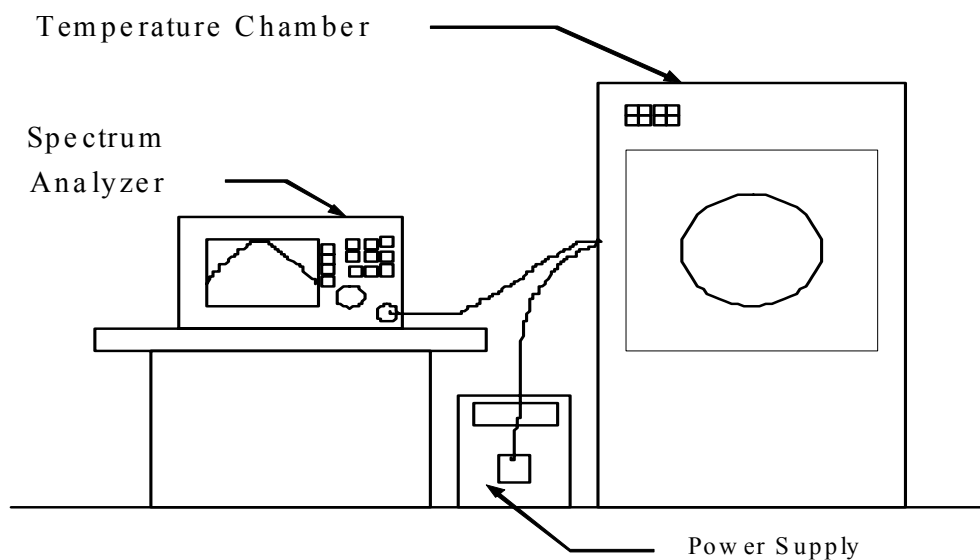
Reference Frequency : 13.5613 MHz					Limit : $\pm 0.01\%$			
Environment Temperature (°C)	Frequency Measure with Time Elapsed							
	0 Minutes		2 Minutes		5 Minutes		10 Minutes	
	MHz	%	MHz	%	MHz	%	MHz	%
50	13.5613	0.0000	13.5613	0.0000	13.5613	0.0000	13.5613	0.0000
40	13.5612	-0.0007	13.5612	-0.0007	13.5612	-0.0007	13.5612	-0.0007
30	13.5612	-0.0007	13.5612	-0.0007	13.5612	-0.0007	13.5612	-0.0007
20	13.5613	0.0000	13.5613	0.0000	13.5613	0.0000	13.5613	0.0000
10	13.5613	0.0000	13.5613	0.0000	13.5613	0.0000	13.5613	0.0000
0	13.5613	0.0000	13.5613	0.0000	13.5613	0.0000	13.5613	0.0000
-10	13.5613	0.0000	13.5613	0.0000	13.5613	0.0000	13.5613	0.0000
-20	13.5614	0.0007	13.5613	0.0000	13.5613	0.0000	13.5613	0.0000

Frequency Stability Versus Input Power ($\pm 15\%$):

Environment Temperature : 20 °C

Reference Frequency : 13.5603 MHz					Limit : $\pm 0.01\%$			
Power Supplied (Vac)	Frequency Measure with Time Elapsed							
	0 Minutes		2 Minutes		5 Minutes		10 Minutes	
	MHz	%	MHz	%	MHz	%	MHz	%
	6	13.5612	-0.0007	13.5613	0.0000	13.5612	-0.0007	13.5613
16	13.5613	0.0000	13.5613	0.0000	13.5613	0.0000	13.5613	0.0000

7.5 Configuration for measuring the frequency tolerance of the carrier signal



8. EQUIPMENTS LIST FOR TESTING

Equipment	Manufacturer	Model No.	S/N	Calibration Date	Next Cal. Due
EMI Receiver	R&S	ESCI	13054423-001	01/13/2017	01/12/2018
BiLog Antenna	ETC	MCTD 2786B	BLB17F04016	02/15/2017	02/14/2018
Loop Antenna	EMCO	6512	13054104-001	01/18/2017	01/17/2018
PRE-Amplifier	Agilent	8449B	13040709-001	01/10/2017	01/09/2018
PRE-Amplifier	Agilent	8447D	13040715-002	04/25/2017	04/24/2018
Spectrum Analyzer	R&S	FSU46	13040904-001	01/10/2017	01/09/2018
Spectrum Analyzer	Agilent	E4446A	13052013-001	01/24/2017	01/23/2018
Temperature Chamber	YEOW LONG	MHP-3-L	13490524-001	08/30/2017	08/29/2018