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TEST REPORT

Report No.: 17071174HKG-001

Empath Interactive, Inc.

Application For Certification
(Original Grant)

FCC ID: 2AMIJR1L3PRK3R

Transceiver – Bluetooth portion

PREPARED AND CHECKED BY:	APPROVED BY:
Signed On File Lok Chi Hang, Wil Engineer	Digitally signed by Kenneth Wong Location: Intertek Testing Services Hong Kong Ltd. Wong Kwok Yeung, Kenneth Senior Lead Engineer Date: July 31, 2017

TEST REPORT

GENERAL INFORMATION

Grantee:	Empath Interactive, Inc.
Grantee Address:	1730 S Amphlett Blvd. Suite 210 San Mateo California United States 94402
Contact Person:	Patrick Chiang
Tel:	650-753-2670
Fax:	650-753-2671
e-mail:	N/A
Manufacturer:	Kin Yat
Manufacturer Address:	Luo Tian Village Songgang Town Bao An District Shenzhen China
Brand Name:	ELFKINS Communication Robot
Model:	ELFKINS01A
Type of EUT:	Transceiver
Description of EUT:	Robotic Toy
Serial Number:	N/A
FCC ID:	2AMIJR1L3PRK3R
Date of Sample Submitted:	July 18, 2017
Date of Test:	July 18, 2017 to July 26, 2017
Report No.:	17071174HKG-001
Report Date:	July 31, 2017
Environmental Conditions:	Temperature: +10 to 40°C Humidity: 10 to 90%

TEST REPORT

SUMMARY OF TEST RESULT

TEST SPECIFICATION	REFERENCE	RESULTS
Transmitter Power Line Conducted Emissions	15.207	Pass
Radiated Emission Radiated Emission on the Bandedge	15.249	Pass
Radiated Emission in Restricted Bands	15.205	Pass

The equipment under test is found to be complying with the following standards:
FCC Part 15, October 1, 2015 Edition

Note:
1. The EUT uses a permanently attached antenna which, in accordance to section 15.203, is considered sufficient to comply with the pervisions of this section.
2. Pursuant to FCC part 15 Section 15.215(c), the 20 dB bandwidth of the emission was contained within the frequency band designated (mentioned as above) which the EUT operated. The effects, if any, from frequency sweeping, frequency hopping, other modulation techniques and frequency stability over excepted variations in temperature and supply voltage were considered.

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TEST REPORT

1.0 GENERAL DESCRIPTION

1.1 Product Description

The Equipment Under Test (EUT) is a 2.4GHz Bluetooth 4.0 and 2.4GHz Wifi transceiver Toy (Elfkin).
For Bluetooth 4.0 of EUT, the EUT occupies a frequency range from 2402MHz to 2480MHz (40 channels with channel spacing of 2MHz).
For Wifi, the EUT operates in a frequency range from 2412MHz to 2462MHz at 802.11b,g,n HT20 (11 channels with 5MHz spacing).
The EUT pairs with Smart Device through Bluetooth by Application. EUT can be controlled to speck and move by the command listed.
The EUT pairs with smart device application through Wifi to record sound and send to smart device through Wifi, smart device can also record sound and send to EUT through Wifi. After receiving the sound data, the sound recorded by smart device can be played by EUT. The EUT is powered by 3.8VDC rechargeable battery. The Battery of EUT can be charged by charging bed by adaptor (Model: S050-100-US; Input: 100-240V~50/60Hz 0.2A; Output: 5V 1A).

Antenna Type: Internal, Integral

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

1.2 Related Submittal(s) Grants

This is a single application for certification of a transceiver.

The receiver for this transceiver is exempted from the Part 15 technical rules per 15.101(b).

1.3 Test Methodology

Both AC mains line-conducted and Radiated emission measurements was performed according to the procedures in ANSI C63.10 (2013). All radiated measurements were performed in an 3m Chamber. Preliminary scans were performed in the 3m Chamber only to determine worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the **"Justification Section"** of this Application.

1.4 Test Facility

The 3m Chamber and conducted measurement facility used to collect the radiated data is located at Workshop No. 3, G/F., World-Wide Industrial Centre, 43-47 Shan Mei Street, Fo Tan, Sha Tin, N.T., Hong Kong. This test facility and site measurement data have been placed on file with the FCC.

TEST REPORT

2.0 SYSTEM TEST CONFIGURATION

2.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in ANSI C63.10 (2013).

The device was powered by new 1 x 3.8V rechargeable battery.

For maximizing emissions, the EUT was rotated through 360°, the antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. This step by step procedure for maximizing emissions led to the data reported in Exhibit 3.0.

The unit was operated standalone and placed in the center of the turntable.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was mounted to a plastic stand if necessary and placed on the wooden turntable, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes.

2.2 EUT Exercising Software

There was no special software to exercise the device. Once the unit is powered up, it transmits the RF signal continuously.

2.3 Special Accessories

There are no special accessories necessary for compliance of this product.

2.4 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

2.5 Support Equipment List and Description

N/A.

TEST REPORT

3.0 EMISSION RESULTS

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included.

3.1 Field Strength Calculation

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

FS = RA + AF + CF - AG - AV

where FS = Field Strength in dBµV/m
RA = Receiver Amplitude (including preamplifier) in dBµV
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB
AG = Amplifier Gain in dB
AV = Average Factor in dB

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows:

FS = RR + LF

where FS = Field Strength in dBµV/m
RR = RA - AG - AV in dBµV
LF = CF + AF in dB

Assume a receiver reading of 52.0 dBµV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB are added. The amplifier gain of 29 dB and average factor of 5 dB are subtracted, giving a field strength of 27 dBµV/m. This value in dBµV/m was converted to its corresponding level in µV/m.

RA = 52.0 dBµV/m
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
AV = 5.0 dB
FS = RR + LF
FS = 18 + 9 = 27 dBµV/m

RR = 18.0 dBµV
LF = 9.0 dB

Level in µV/m = Common Antilogarithm [(27 dBµV/m)/20] = 22.4 µV/m

TEST REPORT

3.2 Radiated Emission Configuration Photograph

The worst case in radiated emission was found at 14640 MHz

For electronic filing, the worst case radiated emission configuration photographs are saved with filename: radiated photos.pdf.

3.3 Radiated Emission Data

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgment: Passed by 21.3 dB

3.4 Conducted Emission Configuration Photograph

The worst case in line-conducted emission was found at 150 KHz

For electronic filing, the worst case line-conducted configuration photographs are saved with filename: conducted photo.pdf.

3.5 Conducted Emission Data

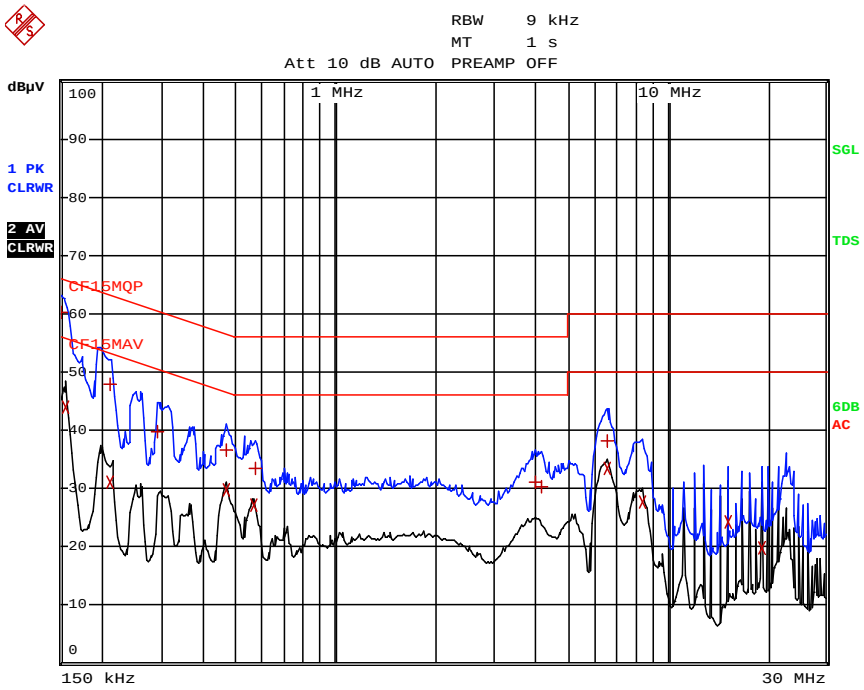
For electronic filing, the graph and data table of conducted emission is saved with filename: conducted.pdf.

Judgment: Pass by 5.73 dB

TEST REPORT

CONDUCTED EMISSION

Model: ELFKINS01A
Date of Test: July 26, 2017
Worst-Case Operating Mode: Charging and Play Mode



EDIT PEAK LIST (Final Measurement Results)

Trace1: CF15MQP
Trace2: CF15MAV
Trace3: ---

TRACE		FREQUENCY	LEVEL dBµV		DELTA LIMIT dB
1	Quasi Peak	150 kHz	60.26	N	-5.73
2	CISPR Average	154.5 kHz	43.98	N	-11.76
1	Quasi Peak	213 kHz	47.83	L1	-15.25
2	CISPR Average	213 kHz	31.11	L1	-21.96
1	Quasi Peak	294 kHz	39.77	L1	-20.64
1	Quasi Peak	465 kHz	36.53	L1	-20.06
2	CISPR Average	465 kHz	29.87	L1	-16.72
2	CISPR Average	568.5 kHz	27.16	L1	-18.83
1	Quasi Peak	573 kHz	33.47	L1	-22.52
1	Quasi Peak	4.02 MHz	31.03	L1	-24.96
1	Quasi Peak	4.164 MHz	30.40	L1	-25.59
2	CISPR Average	6.5805 MHz	33.41	L1	-16.58
1	Quasi Peak	6.621 MHz	38.27	L1	-21.72
2	CISPR Average	8.448 MHz	27.56	L1	-22.43
2	CISPR Average	15.198 MHz	24.38	L1	-25.61
2	CISPR Average	19.1985 MHz	19.91	L1	-30.08

Note: Measurement Uncertainty is ±4.2dB at a level of confidence of 95%.

TEST REPORT

RADIATED EMISSIONS

Model: ELFKINS01A
Date of Test: July 26, 2017
Worst-Case Operating Mode: Transmitting

Table 1
Pursuant to FCC Part 15 Section 15.249 Requirement

Lowest Channel

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Average Factor (dB)	Calculated at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
H	2402.000	84.4	33	29.4	80.8	49.9	30.9	94.0	-63.1
H	***4804.000***	***42.5***	***33***	***34.9***	***44.4***	***49.9***	***-5.5***	***54.0***	***-59.5***
H	7206.000	40.8	33	37.9	45.7	49.9	-4.2	54.0	-58.2
H	9608.000	40.6	33	40.4	48.0	49.9	-1.9	54.0	-55.9
V	***12010.000***	***44.0***	***33***	***40.5***	***51.5***	***49.9***	***1.6***	***54.0***	***-52.4***
V	14412.000	45.6	33	40.0	52.6	49.9	2.7	54.0	-51.3

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
H	2402.000	84.4	33	29.4	80.8	114.0	-33.2
H	***4804.000***	***42.5***	***33***	***34.9***	***44.4***	***74.0***	***-29.6***
H	7206.000	40.8	33	37.9	45.7	74.0	-28.3
H	9608.000	40.6	33	40.4	48.0	74.0	-26.0
V	***12010.000***	***44.0***	***33***	***40.5***	***51.5***	***74.0***	***-22.5***
V	14412.000	45.6	33	40.0	52.6	74.0	-21.4

NOTES:
1. Peak Detector Data unless otherwise stated.
2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative sign in the column shows value below limit.
4. Horn antenna is used for the emission over 1000MHz.
5. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205 .
6. Measurement Uncertainty is ±5.3dB at a level of confidence of 95%.

TEST REPORT

Model: ELFKINS01A
Date of Test: July 26, 2017
Worst-Case Operating Mode: Transmitting

Table 2
Pursuant to FCC Part 15 Section 15.249 Requirement

Middle Channel

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Average Factor (dB)	Calculated at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
H	2440.000	84.9	33	29.4	81.3	49.9	31.4	94.0	-62.6
H	***4880.000***	***42.2***	***33***	***34.9***	***44.1***	***49.9***	***-5.8***	***54.0***	***-59.8***
H	***7320.000***	***40.5***	***33***	***37.9***	***45.4***	***49.9***	***-4.5***	***54.0***	***-58.5***
H	9760.000	40.9	33	40.4	48.3	49.9	-1.6	54.0	-55.6
V	***12200.000***	***44.3***	***33***	***40.5***	***51.8***	***49.9***	***1.9***	***54.0***	***-52.1***
V	14640.000	47.3	33	38.4	52.7	49.9	2.8	54.0	-51.2

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
H	2440.000	84.9	33	29.4	81.3	114.0	-32.7
H	***4880.000***	***42.2***	***33***	***34.9***	***44.1***	***74.0***	***-29.9***
H	***7320.000***	***40.5***	***33***	***37.9***	***45.4***	***74.0***	***-28.6***
H	9760.000	40.9	33	40.4	48.3	74.0	-25.7
V	***12200.000***	***44.3***	***33***	***40.5***	***51.8***	***74.0***	***-22.2***
V	14640.000	47.3	33	38.4	52.7	74.0	-21.3

NOTES:
1. Peak Detector Data unless otherwise stated.
2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative sign in the column shows value below limit.
4. Horn antenna is used for the emission over 1000MHz.
5. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205.
6. Measurement Uncertainty is ±5.3dB at a level of confidence of 95%.

TEST REPORT

Model: ELFKINS01A
Date of Test: July 26, 2017
Worst-Case Operating Mode: Transmitting

Table 3
Pursuant to FCC Part 15 Section 15.249 Requirement

Highest Channel

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Average Factor (dB)	Calculated at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
H	2480.000	85.7	33	29.4	82.1	49.9	32.2	94.0	-61.8
H	***4960.000***	***42.4***	***33***	***34.9***	***44.3***	***49.9***	***-5.6***	***54.0***	***-59.6***
H	***7440.000***	***40.6***	***33***	***37.9***	***45.5***	***49.9***	***-4.4***	***54.0***	***-58.4***
H	9920.000	40.8	33	40.4	48.2	49.9	-1.7	54.0	-55.7
V	***12400.000***	***44.1***	***33***	***40.5***	***51.6***	***49.9***	***1.7***	***54.0***	***-52.3***
V	14880.000	47.0	33	38.4	52.4	49.9	2.5	54.0	-51.5

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
H	2480.000	85.7	33	29.4	82.1	114.0	-31.9
H	***4960.000***	***42.4***	***33***	***34.9***	***44.3***	***74.0***	***-29.7***
H	***7440.000***	***40.6***	***33***	***37.9***	***45.5***	***74.0***	***-28.5***
H	9920.000	40.8	33	40.4	48.2	74.0	-25.8
V	***12400.000***	***44.1***	***33***	***40.5***	***51.6***	***74.0***	***-22.4***
V	14880.000	47.0	33	38.4	52.4	74.0	-21.6

NOTES:
1. Peak Detector Data unless otherwise stated.
2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative sign in the column shows value below limit.
4. Horn antenna is used for the emission over 1000MHz.
5. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205.
6. Measurement Uncertainty is ±5.3dB at a level of confidence of 95%.

TEST REPORT

Model: ELFKINS01A
Date of Test: July 26, 2017
Worst-Case Operating Mode: Charging and Play Mode

Table 4
Pursuant to FCC Part 15 Section 15.209 Requirement

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
V	***112.935***	***24.7***	***16***	***14.0***	***22.7***	***43.5***	***-20.8***
V	160.586	29.3	16	16.0	29.3	43.5	-14.2
V	206.661	31.4	16	17.0	32.4	43.5	-11.1
V	***252.372***	***35.6***	***16***	***20.0***	***39.6***	***46.0***	***-6.4***
H	344.401	34.5	16	24.0	42.5	46.0	-3.5
H	389.991	29.4	16	25.0	38.4	46.0	-7.6
V	436.066	30.0	16	26.0	40.0	46.0	-6.0
H	482.020	32.1	16	26.0	42.1	46.0	-3.9
H	574.048	26.4	16	28.0	38.4	46.0	-7.6
H	758.106	23.8	16	30.0	37.8	46.0	-8.2

NOTES:
1. Peak Detector Data unless otherwise stated.
2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative sign in the column shows value below limit.
4. Horn antenna is used for the emission over 1000MHz.
5. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205.
6. Measurement Uncertainty is ±5.3dB at a level of confidence of 95%.

TEST REPORT

4.0 EQUIPMENT PHOTOGRAPHS

For electronic filing, the photographs are saved with filename: external photos.pdf and internal photos.pdf.

5.0 PRODUCT LABELLING

For electronics filing, the FCC ID label artwork and the label location are saved with filename: label.pdf.

6.0 TECHNICAL SPECIFICATIONS

For electronic filing, the block diagram and schematic of the tested EUT are saved with filename: block.pdf and circuit.pdf respectively.

7.0 INSTRUCTION MANUAL

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

TEST REPORT

8.0 MISCELLANEOUS INFORMATION

The miscellaneous information includes details of the test procedure and measured bandwidth / calculation of factor such as pulse desensitization and averaging factor (calculation and timing diagram).

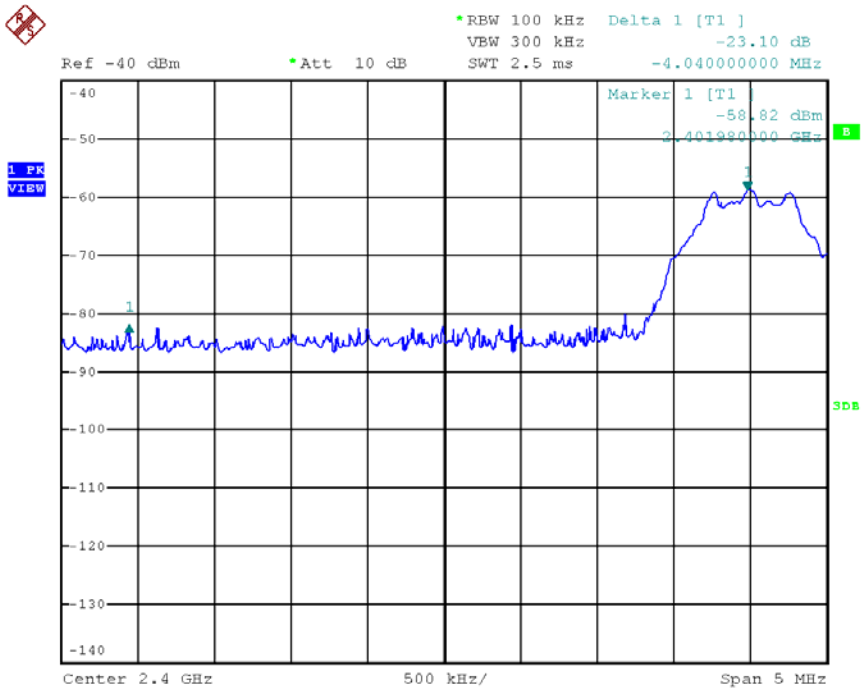
8.1 Radiated Emission on the Bandedge

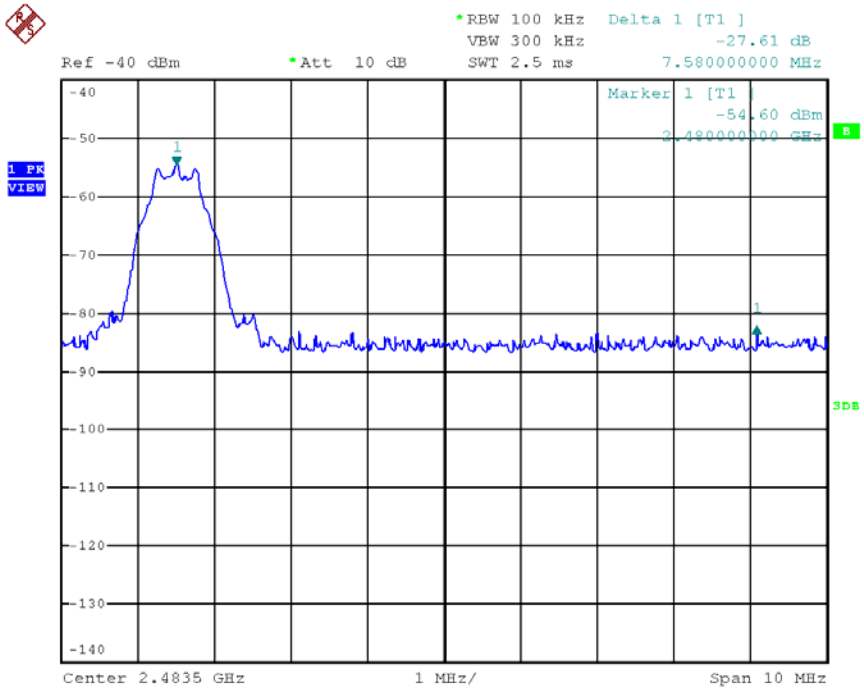
From the following plots, they show that the fundamental emissions are confined in the specified band (2400MHz to 2483.5MHz). In case of the fundamental emissions are within two standard bandwidths from the bandedge, the delta measurement technique is used for determining bandedge compliance. Standard bandwidth is the bandwidth specified by ANSI C63.10 (2013) for frequency being measured.

Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50dB below the level of the fundamental or to the general radiated emissions limits in Section 15.209 , whichever is the lesser attenuation, which meet the requirement of part 15.249(d).

TEST REPORT

Peak Measurement





TEST REPORT

Peak Measurement

Bandedge compliance is determined by applying marker-delta method, i.e. (Bandedge Plot).

Lower bandedge

Peak Resultant field strength = Fundamental emissions (peak value) – delta from the plot

= 80.8 dBµV/m – 23.1dB
= 57.7 dBµV/m

Average Resultant field strength = Fundamental emissions (average value) – delta from the plot

= 30.9 dBµV/m –23.1dB
= 7.8 dBµV/m

Upper bandedge

Peak Resultant field strength = Fundamental emissions (peak value) – delta from the plot

=82.1dBµV/m – 27.6dB
=54.5dBµV/m

Average Resultant field strength = Fundamental emissions (average value) – delta from the plot

=32.2dBµV/m – 27.6 dB
=4.6dBµV/m

The resultant field strength meets the general radiated emission limit in Section 15.209, which does not exceed 74 dBµV/m (Peak Limit) and 54 dBµV/m (Average Limit).

TEST REPORT

8.2 Discussion of Pulse Desensitization

Pulse desensitivity is not applicable for this device. The effective period (Teff) is approximately 0.08ms for a digital "1" bit which illustrated on technical specification, with a resolution bandwidth (3dB) of 1MHz, so the pulse desensitivity factor is 0dB.

8.3 Calculation of Average Factor

The duty cycle is simply the on-time divided by the period:

The duration of one cycle = 100 ms

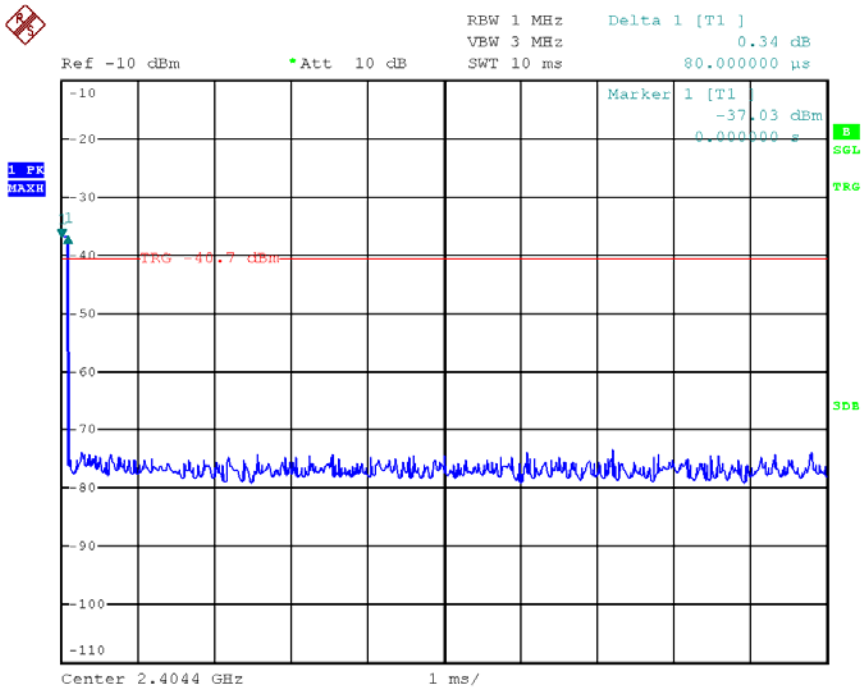
Effective period of the cycle = 0.08*4 = 0.32 ms

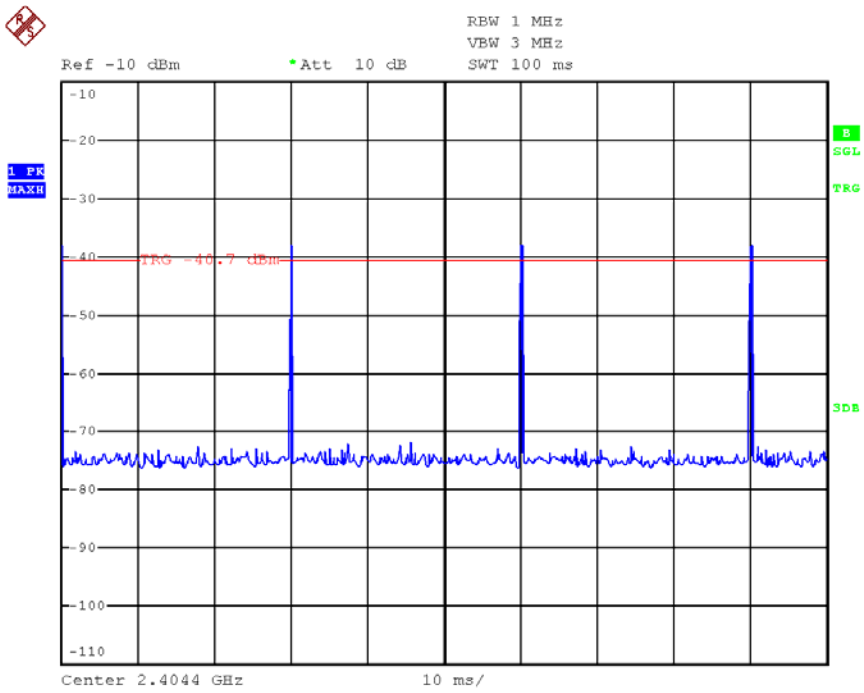
DC = 0.32/100 = 0.0032

Therefore, the averaging factor is found by 20log 0.0032 = -49.9dB.

TEST REPORT

Average Factor





TEST REPORT

8.4 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Testing Services Hong Kong Ltd. in the measurements of transmitter operating under the Part 15, Subpart C rules.

The transmitting equipment under test (EUT) is placed on a wooden turntable which is four feet in diameter and approximately 0.8m in height above the ground plane for emission measurement at or below 1GHz and 1.5m in height above the ground plane for emission measurement above 1GHz. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The EUT is adjusted through all three orthogonal axis to obtain maximum emission levels. The antenna height and polarization are also varied during the testing to search for maximum signal levels. The height of the antenna is varied from one to four meters.

Detector function for radiated emissions is in peak mode. Average readings, when required, are taken by measuring the duty cycle of the equipment under test and subtracting the corresponding amount in dB from the measured peak readings. A detailed description for the calculation of the average factor can be found in Exhibit 8.3.

The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower. For line conducted emissions, the range scanned is 150 kHz to 30 MHz.

TEST REPORT

8.4 Emissions Test Procedures (cont'd)

The EUT is warmed up for 15 minutes prior to the test.

AC power to the unit is varied from 85% to 115% nominal and variation in the fundamental emission field strength is recorded. If battery powered, a new, fully charged battery is used.

Conducted measurements were made as described in ANSI C63.10 (2013).

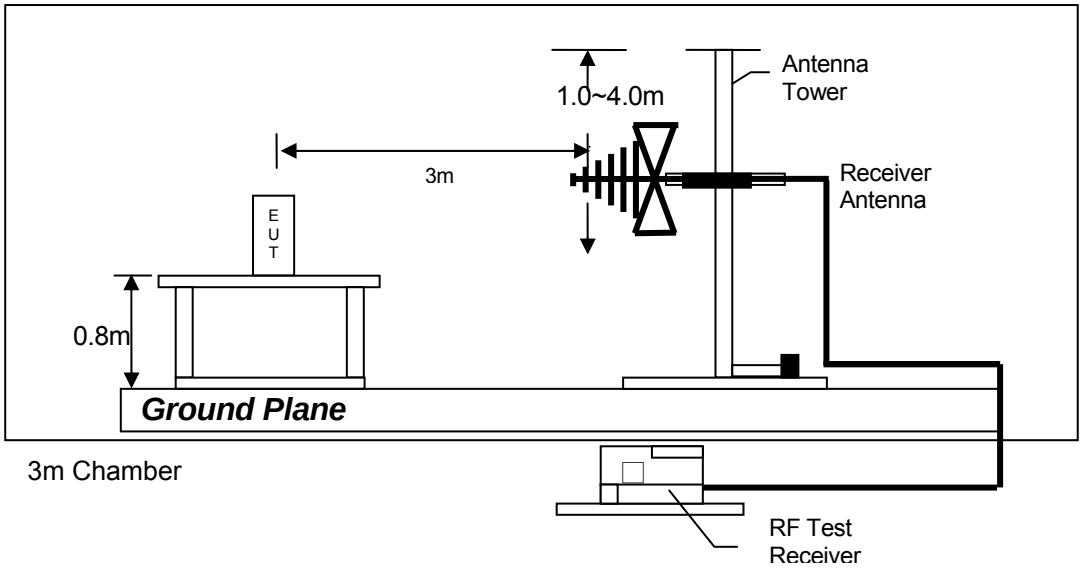
The IF bandwidth used for measurement of radiated signal strength was 100 kHz or greater when frequency is below 1000 MHz. Where pulsed transmissions of short enough pulse duration warrant, a greater bandwidth is selected according to the recommendations of Hewlett Packard Application Note 150-2. A discussion of whether pulse desensitivity is applicable to this unit is included in this report (See Exhibit 8.1). Above 1000 MHz, a resolution bandwidth of 3 MHz is used.

Transmitter measurements are normally conducted at a measurement distance of three meters. However, to assure low enough noise floor in the forbidden bands and above 1 GHz, signals are acquired at a distance of one meter or less. All measurements are extrapolated to three meters using inverse scaling, unless otherwise reported. Measurements taken at a closer distance are so marked.

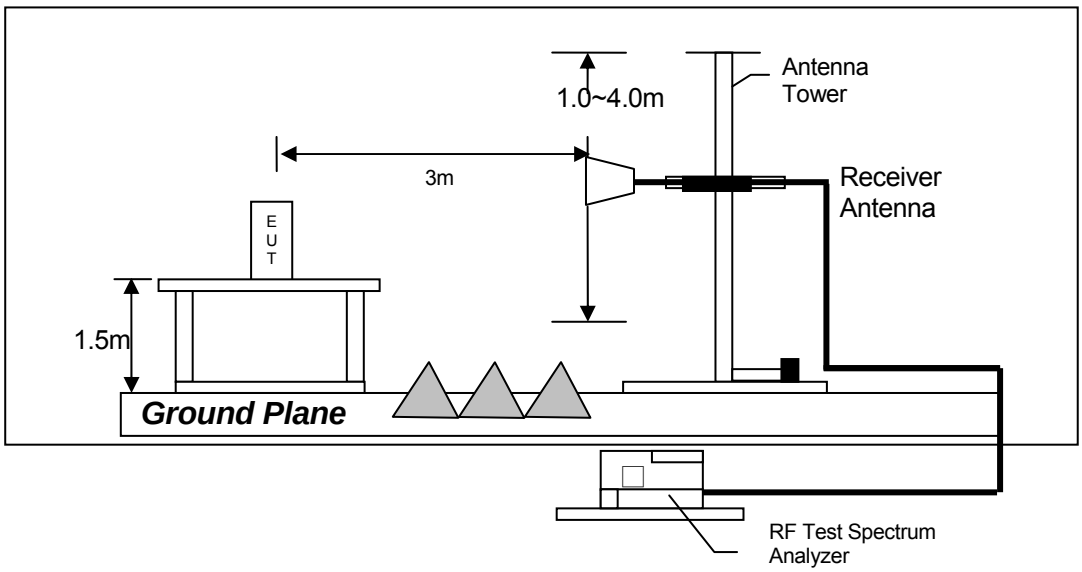
TEST REPORT

8.4.1 Radiated Emission Test Setup

The figure below shows the test setup, which is utilized to make these measurements.



Test setup of radiated emissions up to 1GHz



Test setup of radiated emissions above 1GHz

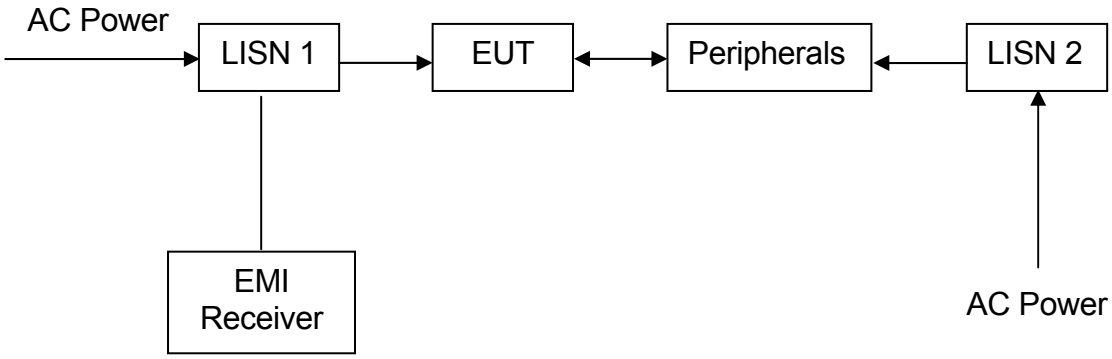
TEST REPORT

8.4.2 Conducted Emission Test Procedures

For tabletop equipment, the EUT along with its peripherals were placed on a 1.0m(W)×1.5m(L) and 0.8m in height wooden table. For floor-standing equipment, the EUT and all cables were insulated, if required, from the ground plane by up to 12 mm of insulating material. The EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane. The EUT was connected to power mains through a line impedance stabilization network (LISN), which provided 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room. The excess power cable between the EUT and the LISN was bundled.

All connecting cables of EUT and peripherals were moved to find the maximum emission.

8.4.3 Conducted Emission Test Setup



TEST REPORT

9.0 CONFIDENTIALITY REQUEST

For electronic filing, a preliminary copy of the confidentiality request is saved with filename: request.pdf.

10.0 EQUIPMENT LIST

1) Radiated Emissions Test

EQUIPMENT	EMI TEST RECEIVER	DOUBLE RIDGED GUIDE ANTENNA	LOG PERIODIC ANTENNA
Registration No.	EW-3156	EW-0194	EW-0447
Manufacturer	R&S	EMCO	EMCO
Model No.	ESR26	3115	3146
Calibration Date	Dec. 06, 2016	Aug. 10, 2016	May 18, 2016
Calibration Due Date	Dec. 06, 2017	Feb. 10, 2018	Nov. 18, 2017

EQUIPMENT	BICONICAL ANTENNA	BICONILOG ANTENNA
Registration No.	EW-0571	EW-3061
Manufacturer	EMCO	EMCO
Model No.	3104C	3142E
Calibration Date	May 18, 2016	Sep. 09, 2016
Calibration Due Date	Nov. 18, 2017	Sep. 09, 2017

2) Conducted Emissions Test

EQUIPMENT	EMI TEST RECEIVER	LISN	PULSE LIMITER
Registration No.	EW-2251	EW-2874	EW-3248
Manufacturer	R&S	R&S	R&S
Model No.	ESCI	ENV-216	ESH3-Z2
Calibration Date	Mar. 03, 2017	Mar. 16, 2017	Oct. 12, 2016
Calibration Due Date	Mar. 03, 2018	Mar. 16, 2018	Oct. 12, 2017

3) Bandedge and Average Factor Measurement

EQUIPMENT	SPECTRUM ANALYZER
Registration No.	EW-2329
Manufacturer	R&S
Model No.	FSP3
Calibration Date	Aug. 26, 2016
Calibration Due Date	Aug. 26, 2017

END OF TEST REPORT