

2/F., Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong SAR, China.

Telephone: (852) 2173 8888 Facsimile: (852) 2785 5487

www.intertek.com

# **TEST REPORT**

Report No.: 20070182HKG-001

MUNCHKIN INC.

Application For Certification (Original Grant)

FCC ID: 2AXCG-MKCA0788 IC: 26423-MKCA0788

Transceiver

Prepared and Checked by: Approved by:

Signed On File Chan Hin Man, Oscar Assistant Engineer

Wong Kwok Yeung, Kenneth Senior Lead Engineer Date: August 17, 2020

Intertek's standard Terms and Conditions can be obtained at our website http://www.intertek.com/terms/.

The test report only allows to be revised within the retention period unless further standard or the requirement was noticed.

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.



# **GENERAL INFORMATION**

Grantee: MUNCHKIN INC. 7835 Gloria Ave,

Van Nuys, CA 91406,

United States of America.

Contact Person: Mr. Vartan Chldrian

 Tel:
 818.464.7365

 Fax:
 818.893.6343

e-mail: vartan.chldrian@munchkin.com

Manufacturer: MUNCHKIN INC.
7835 Gloria Ave,
Van Nuys, CA 91406,

United States of America.

Brand Name: MUNCHKIN INC.

Model / HVIN: MKCA0788
PMN: Baby Swing
Type of EUT: Transceiver
Description of EUT: Baby Swing

Serial Number: N/A

FCC ID / IC: 2AXCG-MKCA0788 / 26423-MKCA0788

**Date of Sample Submitted:** July 06, 2020

**Date of Test:** July 06, 2020 to August 03, 2020

 Report No.:
 20070182HKG-001

 Report Date:
 August 17, 2020

**Environmental Conditions:** Temperature: +10 to 40°C

Humidity: 10 to 90%

**Conclusion:** Test was conducted by client submitted sample. The submitted

sample as received complied with the 47 CFR Part 15 / RSS-210

Issue 10 Certification.



# **SUMMARY OF TEST RESULT**

Test Specification	Reference	Results
Transmitter Power Line Conducted Emissions	15.207 /	Pass
	RSS-Gen 8.8	
Radiated Emission	15.249, 15.209 /	Pass
Radiated Emission on the Bandedge	RSS-210 B.10, RSS-210 4.4	
Radiated Emission in Restricted Bands	15.205 /	Pass
	RSS-210 4.1	

The equipment under test is found to be complying with the following standards: FCC Part 15, October 1, 2019 Edition RSS-210 Issue 10, December 2019 RSS-Gen Issue 5 Amendment 1, March 2019

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.



# **TABLE OF CONTENTS**

1.0	GENE	ERAL DESCRIPTION	5
	1.1	Product Description	5
	1.2	Related Submittal(s) Grants	
	1.3	Test Methodology	5
	1.4	Test Facility	5
2.0	SYST	EM TEST CONFIGURATION	6
	2.1	Justification	6
	2.2	EUT Exercising Software	<del>6</del>
	2.3	Special Accessories	6
	2.4	Measurement Uncertainty	6
	2.5	Support Equipment List and Description	6
3.0	EMIS	SION RESULTS	7
	3.1	Field Strength Calculation	7
	3.2	Radiated Emission Configuration Photograph	8
	3.3	Radiated Emission Data	
	3.4	Conducted Emission Configuration Photograph	8
	3.5	Conducted Emission Data	
4.0	EQUI	PMENT PHOTOGRAPHS	14
5.0	PROI	DUCT LABELLING	14
6.0	TECH	NICAL SPECIFICATIONS	14
7.0	INST	RUCTION MANUAL	14
8.0	MISC	ELLANEOUS INFORMATION	15
	8.1	Radiated Emission on the Bandedge	15
	8.2	Discussion of Pulse Desensitization	18
	8.3	Calculation of Average Factor	18
	8.4	Emissions Test Procedures	19
	8.5	Occupied Bandwidth	<b>2</b> 3
9.0	CONI	FIDENTIALITY REQUEST	24
10.0	FOLII	PMFNT LIST	24



# 1.0 GENERAL DESCRIPTION

# 1.1 Product Description

The Equipment Under Test (EUT) is the Baby Swinger which include speaker for audio playing and motor for Swinging. The EUT is a "Bluetooth 5" device which operates at frequency range between 2402MHz and 2480MHz. The EUT support 79 channels within the frequency range. The EUT is powered by adaptor Model: KA0601A-05010000USU (Input: 100-240VAC 0.2A 50/60Hz Output: 5VDC 1000mA). This "Bluetooth 5" device that without support BLE.

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.

# 1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were 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 SAR, China. This test facility and site measurement data have been placed on file with the FCC and IC No. 2042H.



# 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 100-240VAC 50/60Hz 0.2A.

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 rear of unit shall be flushed with the rear of the table.

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

The EUT exercise program (if any) used during radiated testing was designed to exercise the various system components in a manner similar to a typical use.

The EUT is powered by adaptor KA0601A-05010000USU during radiated testing.

#### 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

1. 1 x USB cable of 1m long (Provided by Applicant)



# 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  $FS = Field Strength in dB\mu V/m$ 

RA = Receiver Amplitude (including preamplifier) in  $dB\mu V$ 

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  $FS = Field Strength in dB\mu V/m$ 

RR = RA - AG - AV in  $dB\mu V$ 

LF = CF + AF in dB

Assume a receiver reading of 52.0 dB $\mu$ V 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 dB $\mu$ V/m. This value in dB $\mu$ V/m was converted to its corresponding level in  $\mu$ V/m.

 $RA = 52.0 dB\mu V/m$ 

 $AF = 7.4 \ dB \qquad \qquad RR = 18.0 \ dB \mu V$   $CF = 1.6 \ dB \qquad \qquad LF = 9.0 \ dB$ 

AG = 29.0 dB AV = 5.0 dB FS = RR + LF

 $FS = 18 + 9 = 27 \, dB\mu V/m$ 

Level in  $\mu V/m = Common Antilogarithm [(27 dB<math>\mu V/m)/20] = 22.4 \mu V/m$ 



# 3.2 Radiated Emission Configuration Photograph

The worst case in radiated emission was found at 2480 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 3.3 dB

# 3.4 Conducted Emission Configuration Photograph

The worst case in line-conducted emission was found at 0.3885 MHz

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 17.52 dB

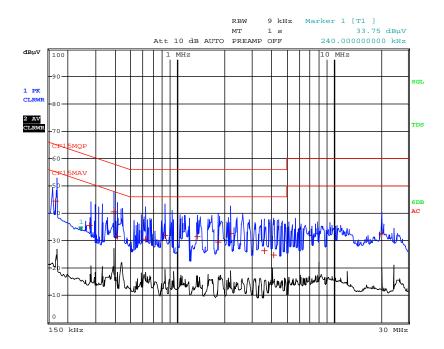


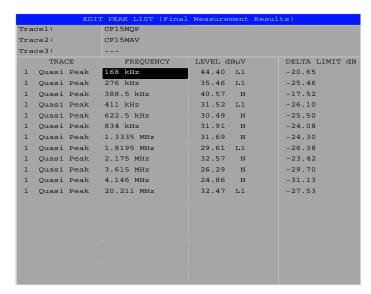
# **CONDUCTED EMISSION**

Model: MKCA0788

Date of Test: August 03, 2020

Worst-Case Operating Mode: Powered by Adaptor + Bluetooth Audio Playing





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



# **RADIATED EMISSIONS**

Model: MKCA0788

Date of Test: August 03, 2020

Worst-Case Operating Mode: Transmitting

# Table 1 Pursuant to FCC Part 15 Section 15.249 / RSS-210 B10.0 Requirement

#### **Lowest Channel**

					Netat		
			Pre-Amp	Antenna	3m -	Average Limit	
Polari-	Frequency	Reading	Gain	Factor	Average	at 3m	Margin
zation	(MHz)	(dBµV)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)
Н	2402.000	91.6	33	29.4	88.0	94.0	-6.0
V	4804.000	41.2	33	34.9	43.1	54.0	-10.9
Н	7206.000	36.5	33	37.9	41.4	54.0	-12.6
V	9600.000	27.3	33	40.4	34.7	54.0	-19.3
Н	12010.000	27.1	33	40.5	34.6	54.0	-19.4
Н	14412.000	30.2	33	40.0	37.2	54.0	-16.8

			Pre-Amp	Antenna	Net at	Peak Limit	
Polari-	Frequency	Reading	Gain	Factor	3m - Peak	at 3m	Margin
zation	(MHz)	(dBµV)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)
Н	2402.000	103.5	33	29.4	99.9	114.0	-14.1
V	4804.000	53.7	33	34.9	55.6	74.0	-18.4
Н	7206.000	48.3	33	37.9	53.2	74.0	-20.8
V	9600.000	38.8	33	40.4	46.2	74.0	-27.8
Н	12010.000	40.2	33	40.5	47.7	74.0	-26.3
Н	14412.000	43.9	33	40.0	50.9	74.0	-23.1

- 2. All measurements were made at 3 meters.
- 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 / RSS-210 4.1.
- 6. Measurement Uncertainty is ±5.3dB at a level of confidence of 95%.



Model: MKCA0788

Date of Test: August 03, 2020

Worst-Case Operating Mode: Transmitting

# Table 2 Pursuant to FCC Part 15 Section 15.249 / RSS-210 B10.0 Requirement

# Middle Channel

					Netat		
			Pre-Amp	Antenna	3m -	Average Limit	
Polari-	Frequency	Reading	Gain	Factor	Average	at 3m	Margin
zation	(MHz)	(dBµV)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)
Н	2440.000	93.0	33	29.4	89.4	94.0	-4.6
V	4882.000	32.9	33	34.9	34.8	54.0	-19.3
Н	7322.000	38.3	33	37.9	43.2	54.0	-10.8
Н	9756.000	26.5	33	40.4	33.9	54.0	-20.1
Н	12210.000	26.8	33	40.5	34.3	54.0	-19.7
Н	14652.000	31.1	33	38.4	36.5	54.0	-17.5

			Pre-Amp	Antenna	Net at	Peak Limit	
Polari-	Frequency	Reading	Gain	Factor	3m - Peak	at 3m	Margin
zation	(MHz)	(dBµV)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)
Н	2440.000	104.9	33	29.4	101.3	114.0	-12.7
V	4882.000	46.1	33	34.9	48.0	74.0	-26.0
Н	7322.000	52.4	33	37.9	57.3	74.0	-16.8
Н	9756.000	39.7	33	40.4	47.1	74.0	-26.9
Н	12210.000	40.4	33	40.5	47.9	74.0	-26.1
Н	14652.000	44.6	33	38.4	50.0	74.0	-24.0

- 2. All measurements were made at 3 meters.
- 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 / RSS-210 4.1.
- 6. Measurement Uncertainty is ±5.3dB at a level of confidence of 95%.



Model: MKCA0788

Date of Test: August 03, 2020

Worst-Case Operating Mode: Transmitting

Table 3

Pursuant to FCC Part 15 Section 15.249 / RSS-210 B10.0 Requirement

# **Highest Channel**

					Netat		
			Pre-Amp	Antenna	3m -	Average Limit	
Polari-	Frequency	Reading	Gain	Factor	Average	at 3m	Margin
zation	(MHz)	(dBµV)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)
Н	2480.000	94.3	33	29.4	90.7	94.0	-3.3
V	4960.000	32.7	33	34.9	34.6	54.0	-19.4
Н	7439.000	39.5	33	37.9	44.4	54.0	-9.7
V	9912.000	27.9	33	40.4	35.3	54.0	-18.7
Н	12400.000	27.4	33	40.5	34.9	54.0	-19.1
Н	14880.000	30.9	33	38.4	36.3	54.0	-17.7

			Pre-Amp	Antenna	Net at	Peak Limit	
Polari-	Frequency	Reading	Gain	Factor	3m - Peak	at 3m	Margin
zation	(MHz)	(dBµV)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)
Н	2480.000	106.2	33	29.4	102.6	114.0	-11.4
V	4960.000	47.3	33	34.9	49.2	74.0	-24.8
Н	7439.000	53.4	33	37.9	58.3	74.0	-15.7
V	9912.000	40.8	33	40.4	48.2	74.0	-25.8
Н	12400.000	40.6	33	40.5	48.1	74.0	-25.9
Н	14880.000	45.2	33	38.4	50.6	74.0	-23.4

- 2. All measurements were made at 3 meters.
- 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 / RSS-210 4.1.
- 6. Measurement Uncertainty is ±5.3dB at a level of confidence of 95%.



Model: MKCA0788

Date of Test: August 03, 2020

Worst-Case Operating Mode: BT + Play + Swing

Table 4

Pursuant to FCC Part 15 Section 15.109 / RSS-210 A1.1 Requirement

			Pre-	Antenna	Net	Limit	
	Frequency	Reading	amp	Factor	at 3m	at 3m	Margin
Polarization	(MHz)	(dBµV)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)
V	40.478	29.6	16	10.0	23.6	40.0	-16.4
V	88.819	35.3	16	9.0	28.3	43.5	-15.2
Н	142.853	25.7	16	14.0	23.7	43.5	-19.8
Н	166.497	21.4	16	17.0	22.4	43.5	-21.1
V	181.975	20.5	16	20.0	24.5	43.5	-19.0
Н	288.006	16.2	16	22.0	22.2	46.0	-23.8

- 2. All measurements were made at 3 meters.
- 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 / RSS-210 4.1.
- 6. Measurement Uncertainty is ±5.3dB at a level of confidence of 95%.



# 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 and Canada.



# 8.0 MISCELLANEOUS INFORMATION

The miscellaneous information includes details of the test procedure and measured bandwidth.

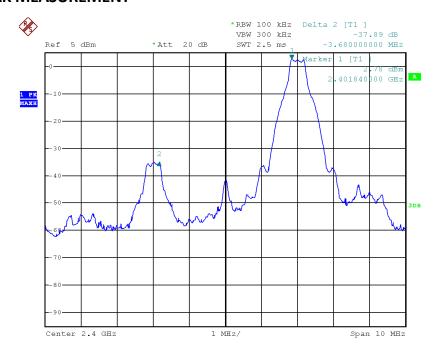
# 8.1 Radiated Emission on the Bandedge

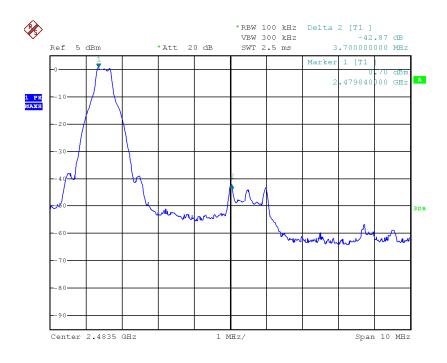
From the following plots, they show that the fundamental emissions are confined in the specified band (2400MHz to 2483.5MHz). In case of the fundamental emissions are within two standard bandwidths from the bandedge, the delta measurement technique is used for determining bandedge compliance. Standard 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 / RSS-210 4.4, whichever is the lesser attenuation, which meet the requirement of part 15.249(d) / RSS-210 B.10.



# **PEAK MEASUREMENT**







# **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

=99.9  $dB\mu V/m - 37.9 dB$ =62.0  $dB\mu V/m$ 

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

=88.0  $dB\mu V/m - 37.9 dB$ =50.1  $dB\mu V/m$ 

Upper bandedge

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

=102.6 dB $\mu$ V/m – 42.9 dB =59.7 dB $\mu$ V/m

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

=90.7  $dB\mu V/m - 42.9 dB$ =47.8  $dB\mu V/m$ 

The resultant field strength meets the general radiated emission limit in Section 15.209 / RSS-210 4.4, which does not exceed 74 dB $\mu$ V/m (Peak Limit) and 54 dB $\mu$ V/m (Average Limit).



8.2 Discussion of Pulse Desensitization

Pulse desensitivity is not applicable for this device. Since the transmitter transmits the RF signal continuously.

8.3 Calculation of Average Factor

Not applicable.



# 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.



#### 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).

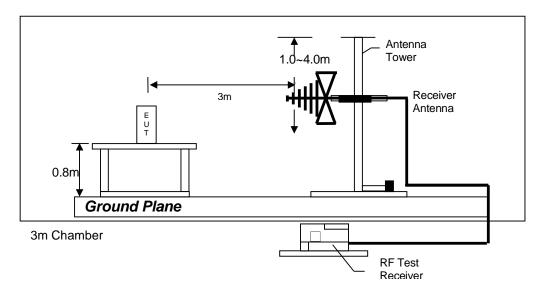
The IF bandwidth used for measurement of radiated signal strength was 100 kHz or greater when frequency is below 1000 MHz. Where pulsed transmissions of short enough pulse duration warrant, a greater bandwidth is selected according to the recommendations of Hewlett Packard Application Note 150-2. A discussion 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.

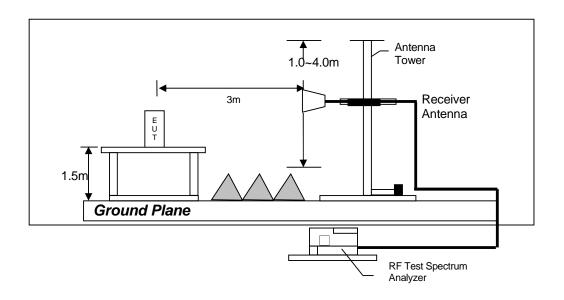


# 8.4.1 Radiated Emission Test Setup

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

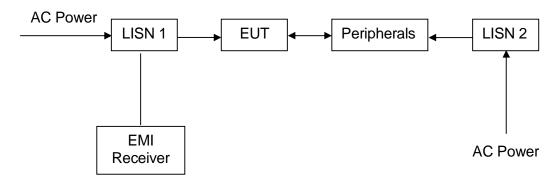


#### 8.4.2 Conducted Emission Test Procedures

For tabletop equipment, the EUT along with its peripherals were placed on a  $1.0m(W)\times1.5m(L)$  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





# 8.5 Occupied Bandwidth

# Occupied Bandwidth Results:

Bluetooth (MHz)	Occupied Bandwidth (kHz)
Low Channel: 2402	828
Middle Channel: 2440	834
High Channel: 2480	828

# The worst case is shown as below





# 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	Spectrum Analyzer	Biconical Antenna
Registration No.	EW-3156	EW-2253	EW-0571
Manufacturer	R&S	ROHDESCHWARZ	EMCO
Model No.	ESR26	FSP40	3104C
Calibration Date	August 01, 2020	November 18, 2019	July 23, 2019
Calibration Due Date	November 01, 2020	November 18, 2020	July 23, 2021

Equipment	Log Periodic Antenna	Double Ridged Guide Antenna	14m Double Shield RF Cable (20MHz - 6GHz)
Registration No.	EW-0447	EW-1015	EW-2528
Manufacturer	EMCO	EMCO	RADIALL
Model No.	3146	3115	Nm-RG142-
Calibration Date	September 25, 2019	May 16, 2019	September 30, 2019
Calibration Due Date	March 25, 2021	November 16, 2020	September 30, 2020

Equipment	Active Loop H-field (9kHz to 30MHz)	RF Preamplifier (9kHz to 6000MHz)	Solid State Low Noise Preamplifier Assembly (1 - 18)GHz
Registration No.	EW-3326	EW-3006	EW-431
Manufacturer	EMCO	SCHWARZBECK	BONN ELEKTRO
Model No.	6502	BBV9744	BLMA 0118-5G
Calibration Date	March 21, 2019	November 25, 2019	October 30, 2019
Calibration Due Date	September 21, 2020	November 25, 2020	October 30, 2020

Equipment	RF Cable 14m (1GHz to 26.5GHz)	Pyramidal Horn Antenna
Registration No.	EW-3151	EW-0905
Manufacturer	GREATBILLION	EMCO
Model No.	SMA m/SHF5MPU	3160-09
	/SMA m ra14m,26G	
Calibration Date	March 04, 2020	July 23, 2019
Calibration Due Date	March 04, 2021	January 23, 2021



# 2) Conducted Emissions Test

Equipment	RF Cable 80cm (RG142) (9kHz to 30MHz)	Artificial Mains Network	EMI Test Receiver
Registration No.	EW-2451	EW-3360	EW-3156
Manufacturer	RADIALL	ROHDESCHWARZ	R&S
Model No.	bnc m st / 142 / bnc m	ENV-216	ESR26
	st 80cm		
Calibration Date	December 08, 2019	August 29, 2019	August 01, 2020
Calibration Due Date	December 08, 2020	August 29, 2020	November 01, 2020

# 3) Bandedge Measurement

Equipment	EMI Test Receiver		
Registration No.	EW-2500		
Manufacturer	ROHDESCHWARZ		
Model No.	ESCI		
Calibration Date	Jan 9,2020		
Calibration Due Date	Jan 9,2021		

**END OF TEST REPORT**