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No. : HM170375

Applicant Conair Corporation

1 Cummings Point Road, Stamford, CT 06902, United States.

Manufacturer: N/A

Description of Sample(s): Product: Blue Tooth Scale

Brand Name: Weight Watchers Scales by Conair

Model No.: WW910F FCC ID: DJT-WW910F

Date Sample(s) Received: 2016-08-02

Date Tested: 2016-08-08

Investigation Requested: Perform ElectroMagnetic Interference measurement in accordance

with FCC 47CFR [Codes of Federal Regulations] Part 15: 2015 and

ANSI C63.10-2013 for FCC Certification.

Conclusion(s): The submitted product <u>COMPLIED</u> with the requirements of

Federal Communications Commission [FCC] Rules and Regulations Part 15. The tests were performed in accordance with the standards described above and on Section 2.2 in this Test

Report.

Remark(s): For additional model(s) details, see page 3.

Dr. LEE Kam Chuen

Authorized Signatory
ElectroMagnetic Compatibility Department
For and on behalf of

The Hong Kong Standards and Testing Centre Ltd.



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1.0 General Details

1.1 Test Laboratory

The Hong Kong Standards and Testing Centre Ltd. EMC Laboratory

10 Dai Wang Street, Taipo Industrial Estate

New Territories, Hong Kong

1.2 Equipment Under Test [EUT] Description of Sample(s)

Product: Blue Tooth Scale

Manufacturer: N/A

Brand Name: Weight Watchers Scales by Conair

Model Number: WW910F Additional Model Number: WW912F

Input Voltage: 4.5Vd.c. ("AAA" Size Battery x 3)

1.2.1 Description of EUT Operation

The Equipment Under Test (EUT) is a Blue Tooth Scale of Conair Corporation. The EUT type of modulation is GFSK, the channel frequency range 2402-2480MHz.

1.3 Date of Order

2016-08-02

1.4 Submitted Sample(s):

1 Sample

1.5 Test Duration

2016-08-08

1.6 Country of Origin

China



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1.7 RF Module Details

Module Model Number: CSM3510 Module FCC ID: N/A

Module Transmission Type: Bluetooth V4.0 Modulation: FHSS (GFSK)

Data Rates: N/A

Frequency Range: 2400-2483.5MHz Carrier Frequencies: 2402MHz – 2480MHz

Module Specification (specification provided by manufacturer)

1.8 Antenna Details

Antenna Type: PCB antenna Antenna Length: 34.43mm Antenna Gain: -1.5dBi

For Conditions of Issuance of this test report, please refer to "Conditions of Issuance of Test Reports" section or Website.



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<u>2.0</u> Technical Details

2.1 Investigations Requested

Perform Electromagnetic Interference measurements in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2015 Regulations and ANSI C63.10-2013 for FCC Certification.

2.2 Test Standards and Results Summary Tables

EMISSION Results Summary									
Test Condition Test Requirement Test Method Class / Test Result						t			
			Severity	Pass	Fail	N/A			
Output Power of Fundamental Emissions	FCC 47CFR 15.247(b)(3)	ANSI C63.10-2013	N/A						
Radiated Emissions	FCC 47CFR 15.209	ANSI C63.10-2013	N/A	\boxtimes					
Power Spectral Density	FCC 47CFR 15.247(e)	ANSI C63.10-2013	N/A	\boxtimes					
6dB Bandwidth	FCC 47CFR 15.247(a)(2)	ANSI C63.10-2013	N/A	\boxtimes					
Band Edge Emissions	FCC 47CFR 15.247(d)	ANSI C63.10-2013	N/A	\boxtimes					
RF Exposure	FCC 47CFR 15.247(i)	N/A	N/A	\boxtimes					

Note: N/A – Not Applicable



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3.0 Test Results

3.1 Emission

3.1.1 Maximum Peak Output Power

Test Requirement: FCC 47CFR 15.247(b)(3)

Test Method: N/A

Test Date: 2016-08-08 Mode of Operation: On mode

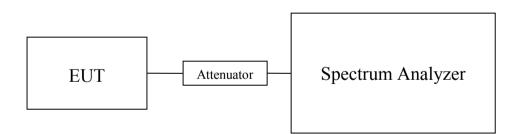
Test Method:

The RF output of the EUT was connected to the spectrum analyzer. All the attenuation or cable loss will be added to the measured maximum output power. The results are recorded in dBm.

Spectrum Analyzer Setting:

RBW = 3 MHz, VBW= 3MHz, Sweep = Auto, Span = 10MHz Detector = Peak, Trace = Max. hold

Test Setup:





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Limits for Peak Output Power of Fundamental & Harmonics Emissions [FCC 47CFR 15.247]:

The maximum peak output power shall not exceeded the following limits:

For frequency hopping systems employing at least 75 hopping channels: 1 Watt For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 Watts For Digital Transmission systems in 2400-2483.5 MHz Band: 1 Watt (30dBm)

Results of on mode (GFSK) (Fundamental Power): Pass Maximum conducted output power

Transmitter Frequency (MHz)	Maximum conducted output power (Watt)
2402	0.000051

Transmitter Frequency (MHz)	Maximum conducted output power (Watt)
2440	0.000039

Transmitter Frequency (MHz)	Maximum conducted output power (Watt)
2480	0.000043

Calculated measurement uncertainty : 30MHz to 1GHz 1.7dB

1GHz to 18GHz 1.7dB



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3.1.2 Radiated Emissions

Test Requirement: FCC 47CFR 15.209 Test Method: ANSI C63.10-2013

Test Date: 2016-08-08 Mode of Operation: On mode

Test Method:

The sample was placed 0.8m above the ground plane of semi-anechoic Chamber*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

*: Semi-anechoic chamber located on the STC (Dongguan) Company Ltd. 68 Fumin Nan Road, Dalang, Dongguan, Guangdong, PRC with a metal ground plane filed with the FCC pursuant to section 2.948 of the FCC rules, with Registration Number: 629686.



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Spectrum Analyzer Setting:

9KHz – 30MHz (Pk & Av) RBW: 10kHz

VBW: 30kHz Sweep: Auto

Span: Fully capture the emissions being measured

Trace: Max. hold

30MHz – 1GHz (QP) RBW: 120kHz

VBW: 120kHz Sweep: Auto

Span: Fully capture the emissions being measured

Trace: Max. hold

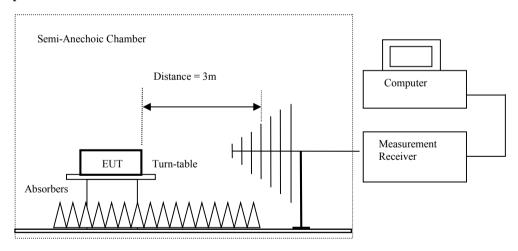
Above 1GHz (Pk & Av) RBW: 3MHz

VBW: 3MHz Sweep: Auto

Span: Fully capture the emissions being measured

Trace: Max. hold

Test Setup:



Ground Plane

- Absorbers placed on top of the ground plane are for measurements above 1000MHz only.
- Measurements between 30MHz to 1000MHz made with Bi-log antennas, above 1000MHz horn antennas are used.



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Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range	Quasi-Peak Limits
[MHz]	[µV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of on mode (2402.0 MHz) (GFSK mode) (9kHz - 30MHz): Pass

Field Strength of Spurious Emissions								
	Peak Value							
Frequency	Frequency Measured Correction Field Field Limit E-Field							
	Level	Factor	Strength	Strength		Polarity		
MHz	dBuV	dB/m	dBuV/m	uV/m	uV/m			
Emissions detected are more than 20 dB below the FCC Limits								

Result of on mode (2402.0 MHz) (GFSK mode) (9kHz - 30MHz): Pass

Field Strength of Spurious Emissions							
Average Value							
Frequency	Frequency Measured Correction Field Field Limit E-Field						
	Level	Factor	Strength	Strength		Polarity	
MHz dBuV dB/m dBuV/m uV/m uV/m							
Emissions detected are more than 20 dB below the FCC Limits							

Result of on mode (2402.0 MHz) (GFSK mode) (30MHz - 1GHz): Pass

Field Strength of Spurious Emissions							
Quasi-Peak Value							
Frequency	Frequency Measured Correction Field Field Limit E-Field						
	Level	Factor	Strength	Strength		Polarity	
MHz	dBuV	dB/m	dBuV/m	uV/m	uV/m		
Emissions detected are more than 20 dB below the FCC Limits							



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Result of on mode (2402.0 MHz) (GFSK mode) (1GHz - 26GHz): Pass

Result of oil fillot	Result of oil mode (2402.0 MHz) (GFSK mode) (1GHz – 20GHz): Pass							
Field Strength of Spurious Emissions								
			Peak Value					
Frequency	Measured	Correction	Field	Limit	Margin	E-Field		
	Level @3m	Factor	Strength	@3m		Polarity		
MHz	dΒμV	dB/m	$dB\mu V/m$	$dB\mu V/m$	$dB\mu V/m$			
2402.0	56.2	27.5	83.7			Horizontal		
4803.9	31.7	31.7	63.4	74.0	10.6	Horizontal		
7206.1	22.8	38.6	61.4	74.0	12.6	Horizontal		

Result of on mode (2402.0 MHz) (GFSK mode) (1GHz - 26GHz): Pass

ixesuit of oil file	Result of the mode (2402.0 Willz) (GFSK mode) (1GHz – 20GHz). Fass							
Field Strength of Spurious Emissions								
		A	verage Valu	e				
Frequency	Measured	Correction	Field	Limit	Margin	E-Field		
	Level @3m	Factor	Strength	@3m		Polarity		
MHz	dΒμV	dB/m	$dB\mu V/m$	$dB\mu V/m$	$dB\mu V/m$			
2402.0	37.1	27.5	64.6			Horizontal		
4803.9	12.0	31.7	43.7	54.0	10.3	Horizontal		
7206.1	2.0	38.6	40.6	54.0	13.4	Horizontal		

Result of on mode (2440.0 MHz) (GFSK mode) (9kHz - 30MHz): Pass

Field Strength of Spurious Emissions							
Peak Value							
Frequency	Measured	Correction	Field	Field	Limit	E-Field	
	Level	Factor	Strength	Strength		Polarity	
MHz dBuV dB/m dBuV/m uV/m uV/m							
Emissions detected are more than 20 dB below the FCC Limits							

Result of on mode (2440.0 MHz) (GFSK mode) (9kHz - 30MHz): Pass

	Field Strength of Spurious Emissions					
		A	verage Valu	e		
Frequency	Measured	Correction	Field	Field	Limit	E-Field
	Level	Factor	Strength	Strength		Polarity
MHz	MHz dBuV dB/m dBuV/m uV/m uV/m					
	Emissions detected are more than 20 dB below the FCC Limits					

Result of on mode (2440.0 MHz) (GFSK mode) (30MHz – 1GHz): Pass

11004110 01 011 1110	tesuit of on mode (211000 MIII2) (GI SIT mode) (COMIII2 I GII2). I uss					
Field Strength of Spurious Emissions						
Quasi-Peak Value						
Frequency	Frequency Measured Correction Field Field Limit E-Field					
	Level	Factor	Strength	Strength		Polarity
MHz dBuV dB/m dBuV/m uV/m uV/m						
Emissions detected are more than 20 dB below the FCC Limits						



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Result of on mode (2440.0 MHz) (GFSK mode) (1GHz - 26GHz): Pass

Result of old fillot	Result of the mode (2440.0 MHz) (GFSK mode) (1GHz – 20GHz): Pass					
	Field Strength of Spurious Emissions					
			Peak Value			
Frequency	Measured	Correction	Field	Limit	Margin	E-Field
	Level @3m	Factor	Strength	@3m		Polarity
MHz	dΒμV	dB/m	$dB\mu V/m$	$dB\mu V/m$	$dB\mu V/m$	
2440.0	54.6	27.5	82.1			Horizontal
4879.9	31.0	31.7	62.7	74.0	11.3	Horizontal
7319.7	20.7	38.6	59.3	74.0	14.7	Horizontal

Result of on mode (2440.0 MHz) (GFSK mode) (1GHz - 26GHz): Pass

Ľ	Xesuit of on mode (2440.0 MHz) (GFSK mode) (1GHz – 20GHz): Pass						
ſ	Field Strength of Spurious Emissions						
			A	verage Valu	e		
	Frequency	Measured	Correction	Field	Limit	Margin	E-Field
		Level @3m	Factor	Strength	@3m		Polarity
	MHz	dΒμV	dB/m	$dB\mu V/m$	$dB\mu V/m$	$dB\mu V/m$	
	2440.0	36.4	27.5	63.9			Horizontal
	4879.9	9.9	31.7	41.6	54.0	12.4	Horizontal
	7319.7	1.2	38.6	39.8	54.0	14.2	Horizontal

Result of on mode (2480.0 MHz) (GFSK mode) (9kHz - 30MHz): Pass

Field Strength of Spurious Emissions						
Peak Value						
Frequency Measured Correction Field Field Limit E-Field						
	Level	Factor	Strength	Strength		Polarity
MHz dBuV dB/m dBuV/m uV/m uV/m						
Emissions detected are more than 20 dB below the FCC Limits						

Result of on mode (2480.0 MHz) (GFSK mode) (9kHz - 30MHz): Pass

Field Strength of Spurious Emissions						
	Average Value					
Frequency	Measured	Correction	Field	Field	Limit	E-Field
	Level	Factor	Strength	Strength		Polarity
MHz	MHz dBuV dB/m dBuV/m uV/m uV/m					
	Emissions detected are more than 20 dB below the FCC Limits					

Result of on mode (2480.0 MHz) (GFSK mode) (30MHz – 1GHz): Pass

Trestite of on mic	tesuit of on mode (2 10000 11112) (G1 S11 mode) (C011112 1 G112): 1 uss					
	Field Strength of Spurious Emissions					
	Quasi-Peak Value					
Frequency	Frequency Measured Correction Field Field Limit E-Field					
	Level	Factor	Strength	Strength		Polarity
MHz dBuV dB/m dBuV/m uV/m uV/m						
Emissions detected are more than 20 dB below the FCC Limits						



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Result of on mode (2480.0 MHz) (GFSK mode) (1GHz - 26GHz): Pass

Result of oil illo	16 (2 100:0 1/11)	<i>,</i> (/ (
	Field Strength of Spurious Emissions					
			Peak Value			
Frequency	Measured	Correction	Field	Limit	Margin	E-Field
	Level @3m	Factor	Strength	@3m		Polarity
MHz	dΒμV	dB/m	$dB\mu V/m$	$dB\mu V/m$	dBμV/m	
2480.0	55.3	27.5	82.8			Horizontal
4960.1	29.8	31.8	61.6	74.0	12.4	Horizontal
7440.2	21.1	38.6	59.7	74.0	14.3	Horizontal

Result of on mode (2480.0 MHz) (GFSK mode) (1GHz - 26GHz): Pass

IXCSUIT OF OH THE	tesuit of oil mode (2400.0 MILE) (GFSK mode) (10112 – 200112). I ass					
	Field Strength of Spurious Emissions					
		A	verage Valu	e		
Frequency	Measured	Correction	Field	Limit	Margin	E-Field
	Level @3m	Factor	Strength	@3m		Polarity
MHz	dΒμV	dB/m	$dB\mu V/m$	$dB\mu V/m$	$dB\mu V/m$	
2480.0	36.2	27.5	63.7			Horizontal
4960.1	10.1	31.8	41.9	54.0	12.1	Horizontal
7440.2	2.0	38.6	40.6	54.0	13.4	Horizontal

Remarks:

Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty: (9kHz – 30MHz): 2.4dB

(30MHz - 1GHz): 4.6dB (1GHz - 26GHz): 4.4dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.

^{*} Denotes restricted band of operation.



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Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range	Quasi-Peak Limits
[MHz]	$[\mu V/m]$
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of on mode (30MHz – 1GHz): Pass

Result of on mo	Result of on mode (30MHz – IGHz): Pass					
	Radiated Emissions					
		Qu	iasi-Peak Val	lue		
Frequency	Measured	Correction	Field	Limit	Margin	E-Field
	Level @3m	Factor	Strength	@3m		Polarity
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dBuV/m	
36.9	0.3	12.1	12.4	40.0	27.6	Vertical
49.3	0.4	7.2	7.6	40.0	32.4	Vertical
101.2	0.1	8.3	8.4	43.5	35.1	Horizontal
210.7	0.7	11.2	11.9	43.5	31.6	Horizontal
362.9	0.3	16.1	16.4	46.0	29.6	Horizontal
447.6	0.6	17.8	18.4	46.0	27.6	Horizontal

Remarks:

Calculated measurement uncertainty (30MHz - 1GHz): 4.6dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.



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3.1.3 Power Spectral Density

Test Requirement: FCC 47CFR 15.247(e)
Test Method: ANSI C63.10:2013

Test Date: 2016-08-08 Mode of Operation: On mode

Test Method:

The RF output of the EUT was connected to the spectrum analyzer. Set the fundamental frequency as the center frequency of the spectral analyzer. Use RBW=3kHz , VBW= 10 KHz , Set the span to 1.5 times the DTS channel bandwidth. Detector = peak, Sweep time = auto couple , Trace mode = max hold. Measure the Power Spectral Density (PSD) and record the results in dBm.

Test Setup:

As Test Setup of clause 3.1.1 in this test report.

Test Limit:

The maximum power spectral density (PSD) shall not exceeded 8dBm in any 3kHz band.

Result of on mode: Pass

Maximum power spectral density

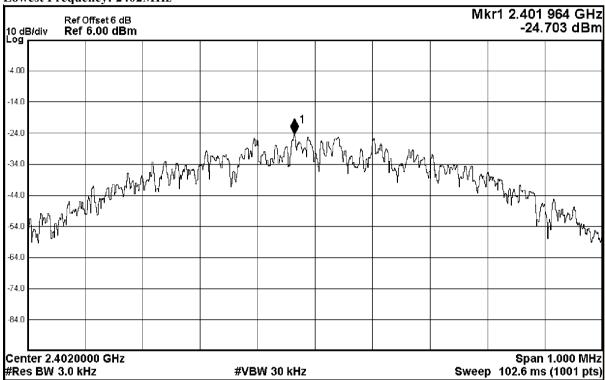
Transmitter Frequency (MHz)	Maximum Power spectral density level / 3kHz band (dBm)	Maximum Power spectral density / 3kHz band limit
2402	-24.7	8dBm
2440	-23.9	8dBm
2480	-23.9	8dBm



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Lowest Frequency: 2402MHz

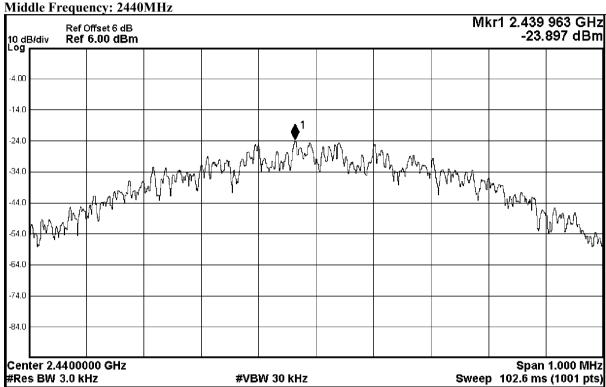


PSD = -24.7 dBm/3kHz



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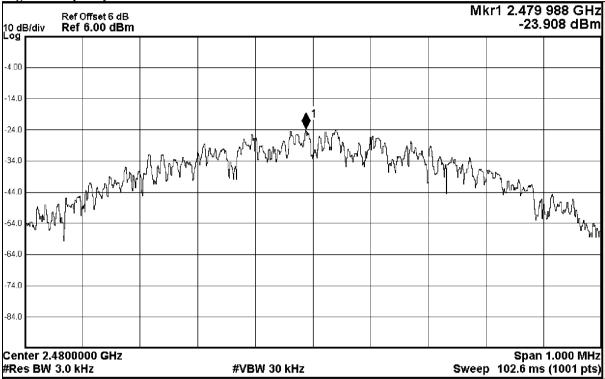
PSD = -23.9 dBm/3kHz



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Highest Frequency: 2480MHz



PSD = -23.9 dBm/3kHz



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3.1.4 6dB Bandwidth Measurement

Test Requirement: FCC 47CFR 15.247(a)(2)
Test Method: ANSI C63.10-2013

Test Date: 2016-08-08 Mode of Operation: On mode

Remark:

The result has been done on all the possible configurations for searching the worst cases.

Test Method:

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

Test Setup:

As Test Setup of clause 3.1.1 in this test report.

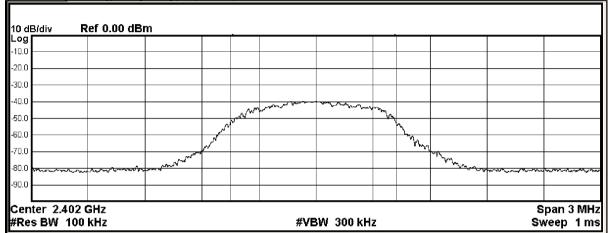


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Fundamental Frequency	20dB Bandwidth	FCC Limits
[MHz]	[kHz]	[MHz]
2402	728.1	Within 2400-2483.5

(Lowest Operating Frequency) - (GFSK)



Occupied Bandwidth Total Power -33.5 dBm

870.10 kHz

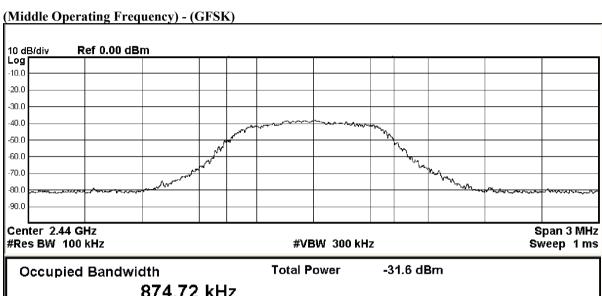
Transmit Freq Error -13.086 kHz OBW Power 99.00 % x dB Bandwidth 728.1 kHz x dB -6.00 dB



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Fundamental Frequency	20dB Bandwidth	FCC Limits
[MHz]	[kHz]	[MHz]
2440	743.2	Within 2400-2483.5



Occupied Bandwidt	ո 74.72 kHz	Total Power	-31.6 asm	
Transmit Freq Error	-14.421 kHz	OBW Power	99.00 %	
x dB Bandwidth	743.2 kHz	x dB	-6.00 d B	

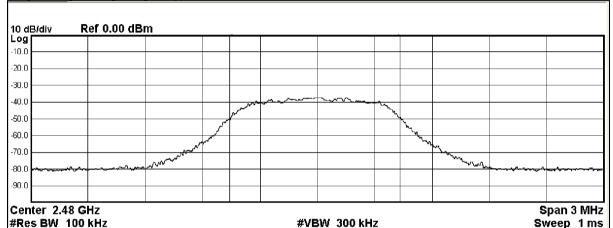


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Fundamental Frequency	20dB Bandwidth	FCC Limits
[MHz]	[kHz]	[MHz]
2480	754.8	Within 2400-2483.5

(Highest Operating Frequency) - (GFSK)



Occupied Bandwidth Total Power -30.5 dBm

888.44 kHz

 Transmit Freq Error
 -12.050 kHz
 OBW Power
 99.00 %

 x dB Bandwidth
 754.8 kHz
 x dB
 -6.00 dB



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3.1.5 Band Edges Measurement

Test Requirement: FCC 47CFR 15.247 Test Method: ANSI C63.10:2013

Test Date: 2016-08-08 Mode of Operation: On mode

Test Method:

The band edge is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. The RBW art set to 100kHz and VBW are set to 300kHz for this measurement.

Test Setup:

As Test Setup of clause 3.1.2 in this test report.



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Band-edge Compliance of RF Conducted Emissions Measurement:

Limit

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. Attenuation below the general limits specified in Section 15.209(a) is not required.

Frequency Range [MHz]	Radiated Emission Attenuated below the Fundamental [dB]
2400 – Lowest Fundamental (2402)	36.4

36.4dB level reduction at lower band edge ΔMkr1 -4.62 MHz -36.451 dB Ref 0.00 dBm 10 dB/div Log -10.0 -20 N -30.0 40.0 -50.0 -60.0 1/2 -70.0 and representation was to be found to be a few and the second -80.0 -90 O Start 2.30000 GHz Stop 2.41000 GHz #Res BW 100 kHz **#VBW 300 kHz** Sweep 10.53 ms (1001 pts) FUNCTION WIDTH FUNCTION VALUE MKR MODE TRC SCL -36.451 dB -36.302 dBm -4.62 MHz (Δ) 2.401 97 GHz f (Δ)



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Band-edge Compliance of RF Conducted Emissions Measurement:

Frequency Range [MHz]	Radiated Emission Attenuated below the Fundamental [dB]
[IVIIIZ]	[ԱՄ]
2483.5 - Highest Fundamental (2480)	41.9

41.9dB level reduction at upper band edge ∆Mkr1 3.60 MHz -41.918 dB 10 dB/div Log Ref 0.00 dBm -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 **→**1Δ2 -70.0 -80.0 -90.0 Start 2.47000 GHz Stop 2.50000 GHz #Res BW 100 kHz **#VBW 300 kHz** Sweep 2.933 ms (1001 pts) FUNCTION FUNCTION WIDTH FUNCTION VALUE MKR MODE TRC SCL -41.918 dB -38.258 dBm 3.60 MHz (∆) 2.479 87 GHz 1 Δ2



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Band-edge Compliance of RF Radiated Emissions Measurement:

Limit :

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. Attenuation below the general limits specified in Section 15.209(a) is not required. 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 15.209(a) (see Section 5.205(c)).

Result of on mode Band Edge measurement (GFSK mode) (1GHz - 18GHz): Pass

Result of the mode Band Edge measurement (GFSK mode) (1GHz – 16GHz); Fass							
Field Strength of Spurious Emissions							
	Peak Value						
Frequency	Measured	Correction	Field	Limit	Margin	E-Field	
	Level @3m	Factor	Strength	@3m		Polarity	
MHz	dΒμV	dB/m	dBμV/m	dBμV/m	dBμV/m		
2399.1	9.8	27.5	37.3	74.0	36.7	Horizontal	
2488.6	8.8	27.5	36.3	74.0	37.7	Horizontal	

Result of on mode Band Edge measurement (GFSK mode) (1GHz - 18GHz): Pass

result of on inc	result of on mode band bage measurement (of 512 mode) (10112 100112). I ass						
Field Strength of Spurious Emissions							
Average Value							
Frequency	Measured	Correction	Field	Limit	Margin	E-Field	
	Level @3m	Factor	Strength	@3m		Polarity	
MHz	dΒμV	dB/m	$dB\mu V/m$	$dB\mu V/m$	$dB\mu V/m$		
2399.1	2.3	27.5	29.8	54.0	24.2	Horizontal	
2488.6	2.9	27.5	30.4	54.0	23.6	Horizontal	

Remarks:

Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty: (9kHz - 30MHz): 2.4dB

(30MHz - 1GHz): 4.6dB

(1GHz - 26GHz): 4.4dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.

^{*} Denotes restricted band of operation.



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3.1.6 RF Exposure

Test Requirement: FCC 47CFR 15.247(i)

Test Date: 2016-08-08 Mode of Operation: On mode

Test Method:

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines.

Test Results:

The EUT complied with the requirement(s) of this section. EUT meets the requirements of these sections as proven through MPE calculation The MPE calculation for EUT @ 20 cm Based on the highest P = 0.051 mW

```
Pd = PG/ 4pi*R<sup>2</sup> = (0.051 \times 0.708) / 12.566* (20)^2
= (0.036) / 12.566 \times 400 = 0.036 / 5026.4
= 0.000007184 \text{mW/cm}^2
```

where:

- *Pd = power density in mW/cm2
- * G = Antenna numeric gain (0.708); Log G = g/10 (g = -1.5dBi).
- * P = Conducted RF power to antenna (0.051 mW).
- * R = Minimum allowable distance.(20 cm)
- *The power density Pd = 0.000007184mW/cm² is less than 1 mW/cm² (listed MPE limit)
- *The SAR evaluation is not needed (this is a desk top device, R> 20 cm)
- * The EUT(antenna) must be 0.2 meters away from the General Population.



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Appendix A

List of Measurement Equipment

Radiated Emission

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EM299	DOUBLE-RIDGED WAVEGUIDE HORN ANTENNA	ETS-LINDGREN	3115	00114120	2016/04/27	2018/04/27
EM215	MULTIDEVICE CONTROLLER	EMCO	2090	00024676	N/A	N/A
EM216	MINI MAST SYSTEM	EMCO	2075	00026842	N/A	N/A
EM217	ELECTRIC POWERED TURNTABLE	EMCO	2088	00029144	N/A	N/A
EM218	ANECHOIC CHAMBER	ETS-LINDGREN	FACT-3		2016/04/24	2017/04/24
EM354	BICONILOG ANTENNA	ETS-LINDGREN	3143B	00142073	2016/02/29	2018/02/29
EM229	EMI TEST RECEIVER	R&S	ESIB40	100248	2016/06/01	2017/06/01
EM353	LOOP ANTENNA	ETS_LINDGREN	6502	00206533	2016/03/16	2018/03/16
EM299	DOUBLE-RIDGED WAVEGUIDE HORN ANTENNA	ETS-LINDGREN	3115	00114120	2016/04/27	2018/04/27
EM302	PRECISION OMNIDIRECTIONAL DIPOLE (1 – 6GHZ)	SEIBERSDORF LABORATORIES	POD 16	161806/L	2016/05/11	2018/05/11
EM303	PRECISION OMNIDIRECTIONAL DIPOLE (6 – 18GHZ)	SEIBERSDORF LABORATORIES	POD 618	6181908/L	2016/05/11	2018/05/11
EM300	PYRAMIDAL STANDARD GAIN HORN ANTENNA	ETS-LINDGREN	3160-09	00130130	2016/05/13	2018/05/13
EM301	PYRAMIDAL STANDARD GAIN HORN ANTENNA	ETS-LINDGREN	3160-10	00130988	2016/05/13	2018/05/13

Remarks:-

CM Corrective Maintenance

N/A Not Applicable or Not Available

TBD To Be Determined



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Appendix C

Photographs of EUT







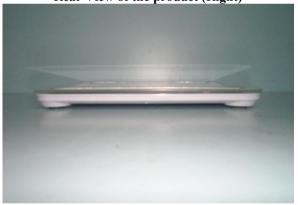
Top View of the product



Back View of the product



Rear View of the product (Right)





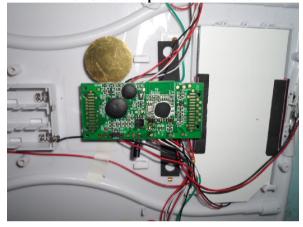


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Photographs of EUT

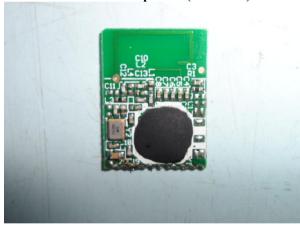
Inner Circuit Top View - All PCBs



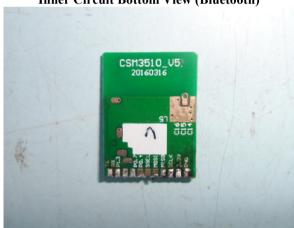
Inner Circuit Bottom View - - All PCBs



Inner Circuit Top View (Bluetooth)



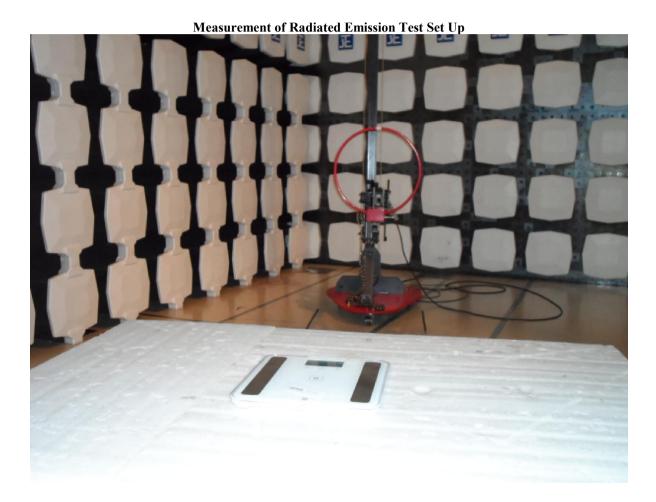
Inner Circuit Bottom View (Bluetooth)





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***** End of Test Report *****



Conditions of Issuance of Test Reports

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- 4. The Report refers only to the sample tested and does not apply to the bulk, unless the sampling has been carried out by the Company and is stated as such in the Report.
- 5. In the event of the improper use the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
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- 8. Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
- 9. Subject to the variable length of retention time for test data and report stored hereinto as to otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of this test report for a period of three years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after the retention period. Under no circumstances shall we be liable for damages of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.
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