TEST REPORT

Report Number:	**103177090LEX-005**
Project Number:	**G103177090**
Report Issue Date:	**12/27/2017**
Product Name:	**Wireless Pillbox**
Standards:	**FCC Title 47 CFR Part 27** **RSS-130 Issue 1** **RSS-139 Issue 3** **(Radiated Emissions Only)**

Tested by:
Intertek Testing Services NA, Inc.
731 Enterprise Drive
Lexington, KY 40510

Client:
TowerView Health, Inc.
STE 2500, 2001 Market Street
Philadelphia, PA 19103

Report prepared by

Brian Daffin, Engineer

Report reviewed by

Bryan Taylor, Team Leader

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1 Introduction and Conclusion

The tests indicated in section 2 were performed on the product constructed as described in section 3. The remaining test sections are the verbatim text from the actual data sheets used during the investigation. These test sections include the test name, the specified test method, a list of the actual test equipment used, documentation photos, results and raw data. No additions, deviations, or exclusions have been made from the standard(s) unless specifically noted.

Based on the results of our investigation, we have concluded the product tested complied with the requirements of the standard(s) indicated. The results obtained in this test report pertain only to the item(s) tested.

The INTERTEK-Lexington is located at 731 Enterprise Drive, Lexington Kentucky, 40510. The radiated emission test site is a 10-meter semi-anechoic chamber. The chamber meets the characteristics of CISPR 16-1 and ANSI C63.4. For measurements, a remotely controlled flush-mount metal-top turntable is used to rotate the EUT a full 360 degrees. A remote controlled non-conductive antenna mast is used to scan the antenna height from one to four meters. The test site is listed with the FCC under registration number 485103. The test site is listed with Industry Canada under site number IC 2042M-1.

2 Test Summary

Page	Test full name	FCC Reference	IC Reference	Result
11	Radiated Spurious Emissions (Transmitter)	§27.53	RSS-130 (4.6) RSS-139 (6.6)	Pass

3 Description of Equipment Under Test

Equipment Under Test	
Manufacturer	TowerView Health, Inc.
Model Number	Wireless Pillbox
Receive Date	11/12/2017
Test Start Date	11/12/2017
Test End Date	11/12/2017
Device Received Condition	Good
Test Sample Type	Production
Antenna Type (15.203)	Internal
Operating Voltage	12 VDC

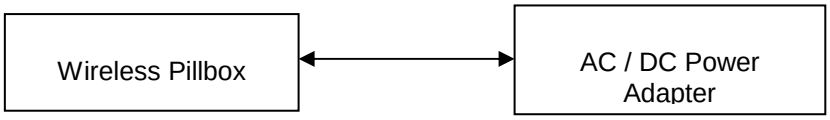
Description of Equipment Under Test
The sample under test was a wireless pill box which reminds the user when it is time to take their medications. It is configured to transmit on LTE bands 4 and 13.

Operating modes of the EUT:

No.	Descriptions of EUT Exercising
1	Transmitting on low, mid, and high channels on LTE band 4 or 13. A base station simulator was used to configure and control the transmitter.

4 System setup including cable interconnection details, support equipment and simplified block diagram

4.1 EUT Block Diagram:



Block Diagram for Radiated Tests

4.2 Cables:

Cables					
Description	Length	Shielding	Ferrites	Connection	
				From	To
Power Cable	2m	No	No	DC Power Adapter	EUT

5 Radiated Spurious Emissions (Transmitter)

5.1 Test Limits

§ 27.53
The emission limits for FCC part 27.53 for LTE Bands 4 and 13 are shown below:

(c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(h) *AWS emission limits*—(1) *General protection levels.* Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}$ (P) dB.

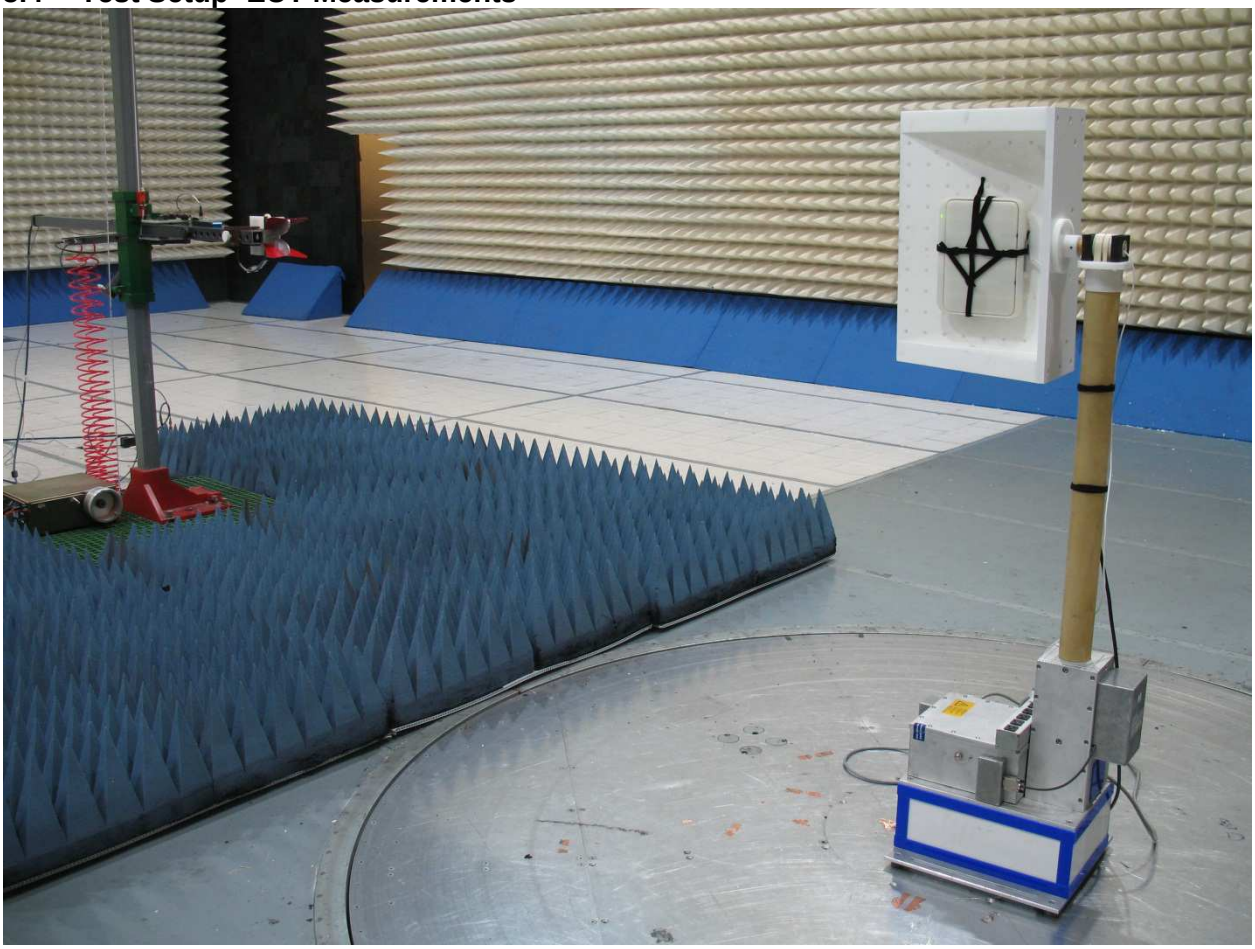
5.2 Test Procedure

The radiated spurious emissions were measured using the substitution procedure described in ANSI C63.26: 2015 section 5.5.3.

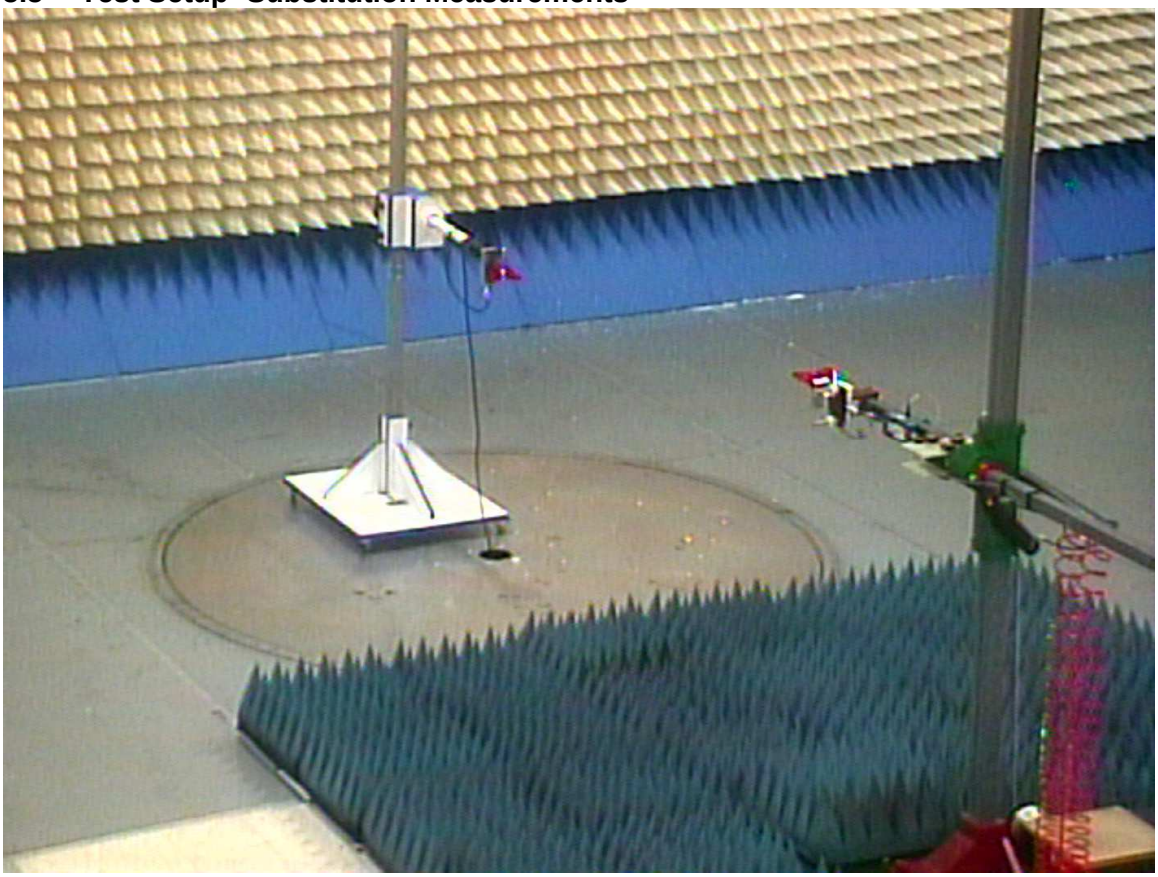
5.3 Test Equipment Used:

Description	Serial Number	Manufacturer	Model	Cal. Date	Cal. Due
EMI Test Receiver	1302.6005.40	Rohde&Schwarz	ESU40	9/25/2017	9/25/2018
Preamplifier	122005	Rohde&Schwarz	TS-PR18	11/17/2016	11/17/2017
Horn Antenna (18 – 40GHz)	00117798	ETS	3116c	6/5/2017	6/5/2018
Horn Antenna	00154521	ETS	3117	11/14/2016	11/14/2017
Bilog Antenna	00051864	ETS	3142C	4/6/2017	4/6/2018
System Controller	121701-1	Sunol Sciences	SC99V	Time of Use	Time of Use
High Pass Filter	1	Wainwright	WHKX12-2533.85-2710-18000-40SS	Time of Use	Time of Use
EMC Software	Version 9.15.02	Rohde&Schwarz	EMC32	Time of Use	Time of Use
Base Station Simulator	3917	Rohde & Schwarz	CMW5090	9/22/2017	9/22/2018

5.4 Test Setup- EUT Measurements



5.5 Test Setup- Substitution Measurements



5.6 Results:

All spurious emissions were attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB, required by FCC Part 27. The spurious emissions listed in the following tables are the worst case emissions.

Band 13 Results

Radiated Spurious Emissions Measurement								
Test Engineer:	Bryan Taylor		**Start Date:**	11/12/2017		**End Date:**	11/12/2017	
Temperature:	23.3C		**Humidity:**	46.50%		**Pressure:**	989.9	
RBW:	1MHz		**VBW:**	3MHz				
Notes:	Results represent the worst case from 3 orthogonal axis positions.							
			A	**B**	**C**	**D**	**E**	**F**
Band/Channel	**Spurious Frequency (MHz)**	**Polarity**	**Device Reading (dBm)**	**Signal Generator Level (dBm)**	**Cable Loss (dB)**	**Tx Antenna Gain (dBd)**	**Limit (dBm)**	**Radiated Spurious Emission Level (dBm)**
Band 13 Low Ch (777MHz)	1554	H	-67.51	-55.73	5.40	5.42	-13	-55.71
	1554	V	-68.48	-55.24	5.40	5.42	-13	-55.22
	2331	H	-77.04	-56.38	6.78	5.86	-13	-57.31
	2331	V	-75.41	-54.37	6.78	5.86	-13	-55.30
	3108	H	-75.89	-54.81	7.89	6.99	-13	-55.72
	3108	V	-76.61	-54.03	7.89	6.99	-13	-54.94
	3885	H	-76.34	-50.55	8.82	8.55	-13	-50.82
	3885	V	-76.81	-50.96	8.82	8.55	-13	-51.23
	4662	H	-77.18	-52.54	9.67	9.48	-13	-52.73
	4662	V	-77.17	-51.6	9.67	9.48	-13	-51.79
Band 13 Mid Ch (782MHz)	1564	H	-64.97	-53.19	5.57	5.42	-13	-53.34
	1564	V	-66.32	-53.08	5.57	5.42	-13	-53.23
	2346	H	-71.72	-51.06	6.78	5.86	-13	-51.99
	2346	V	-65.28	-44.24	6.78	5.86	-13	-45.17
	3128	H	-76.81	-55.73	7.89	6.99	-13	-56.64
	3128	V	-77.25	-54.67	7.89	6.99	-13	-55.58
	3910	H	-77.66	-51.87	8.82	8.29	-13	-52.40
	3910	V	-78.08	-52.23	8.82	8.29	-13	-52.76
	4692	H	-78.23	-53.59	9.67	9.48	-13	-53.78
	4692	V	-78.17	-52.6	9.67	9.48	-13	-52.79
Band 13 High Ch (787MHz)	1574	H	-72.47	-60.69	5.57	5.42	-13	-60.84
	1574	V	-76.14	-62.9	5.57	5.42	-13	-63.05
	2361	H	-78.05	-57.39	6.78	5.97	-13	-58.21
	2361	V	-78.65	-57.61	6.78	5.97	-13	-58.43
	3148	H	-79.14	-58.06	7.89	6.99	-13	-58.97
	3148	V	-80.38	-57.8	7.89	6.99	-13	-58.71
	3935	H	-78.69	-52.9	8.82	8.29	-13	-53.43
	3935	V	-77.46	-51.61	8.82	8.29	-13	-52.14
	4722	H	-78.62	-53.98	9.67	9.54	-13	-54.11
	4722	V	-79.44	-53.87	9.67	9.54	-13	-54.00
								F=B-C+D

Band 4 Results

Radiated Spurious Emissions Measurement								
Test Engineer:	Bryan Taylor		**Start Date:**	11/12/2017		**End Date:**	11/12/2017	
Temperature:	23.3C		**Humidity:**	46.50%		**Pressure:**	989.9	
RBW:	1MHz		**VBW:**	3MHz				
Notes:	Results represent the worst case from 3 orthogonal axis positions.							
			A	**B**	**C**	**D**	**E**	**F**
Band/Channel	**Spurious Frequency (MHz)**	**Polarity**	**Device Reading (dBm)**	**Signal Generator Level (dBm)**	**Cable Loss (dB)**	**Tx Antenna Gain (dBd)**	**Limit (dBm)**	**Radiated Spurious Emission Level (dBm)**
Band 4 Low Ch (1710MHz)	3420	H	-72.83	-47.98	8.56	8.05	-13	-48.50
	3420	V	-73.73	-52.87	8.56	8.05	-13	-53.39
	5130	H	-62.36	-37.26	10.20	10.30	-13	-37.16
	5130	V	-65.65	-39.72	10.20	10.30	-13	-39.62
	6840	H	-79.41	-48.15	11.53	11.39	-13	-48.29
	6840	V	-75.71	-47.17	11.53	11.39	-13	-47.31
	8550	H	-88.86	-53.79	11.51	12.95	-13	-52.35
	8550	V	-88.32	-54.8	11.51	12.95	-13	-53.36
	10260	H	-88.75	-49.97	15.65	13.17	-13	-52.45
	10260	V	-88.29	-50.68	15.65	13.17	-13	-53.16
Band 4 Mid Ch (1732.5MHz)	3465	H	-69.59	-47.61	8.56	8.06	-13	-48.11
	3465	V	-71.48	-48.07	8.56	8.06	-13	-48.57
	5197.5	H	-58.63	-33.43	10.20	10.33	-13	-33.30
	5197.5	V	-61.51	-35.92	10.20	10.33	-13	-35.79
	6930	H	-85.26	-53.28	11.53	11.41	-13	-53.40
	6930	V	-81.48	-51.85	11.53	11.41	-13	-51.97
	8662.5	H	-87.51	-53.76	11.76	13.02	-13	-52.50
	8662.5	V	-87.67	-53.51	11.76	13.02	-13	-52.25
	10395	H	-88.29	-48.8	15.65	13.28	-13	-51.17
	10395	V	-88.48	-48.77	15.65	13.28	-13	-51.14
Band 4 High Ch (1755MHz)	3510	H	-69.59	-46.03	8.56	8.17	-13	-46.42
	3510	V	-73.71	-49.49	8.56	8.17	-13	-49.88
	5265	H	-56.95	-32.05	10.20	10.28	-13	-31.97
	5265	V	-57.12	-30.63	10.20	10.28	-13	-30.55
	7020	H	-76.54	-44.98	11.53	11.51	-13	-45.01
	7020	V	-75.76	-46.19	11.53	11.51	-13	-46.22
	8775	H	-87.62	-53.48	11.76	12.96	-13	-52.28
	8775	V	-88.02	-52.67	11.76	12.96	-13	-51.47
	10530	H	-87.68	-48.54	17.21	13.37	-13	-52.38
	10530	V	-87.95	-48.06	17.21	13.37	-13	-51.90
								F=B-C+D

6 Revision History

Revision Level	Date	Report Number	Notes
0	12/27/2017	103177090LEX-005	Original Issue