ADDENDUM TO MEDTRONIC MINIMED TEST REPORT FC09-002

FOR THE

MY SENTRY OUTPOST, MMT-9102

FCC PART 15 SUBPART C SECTIONS 15.207, 15.209, 15.247, 15.249 & RSS-210 ISSUE 7

TESTING

DATE OF ISSUE: MARCH 24, 2009

PREPARED FOR:

Medtronic MiniMed
18000 Devonshire Street
Northridge, CA 91325-1219

PREPARED BY:

Mary Ellen Clayton
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

W.O. No.: 88416

Date of test: December 8-15, 2008

Report No.: FC09-002A

TABLE OF CONTENTS

ADMINISTRATIVE INFORMATION

DATE OF TEST: December 8-15, 2008   **DATE OF RECEIPT:** December 8, 2008

REPRESENTATIVE: Bob Vitti

MANUFACTURER: **TEST LOCATION:**
Medtronic MiniMed   CKC Laboratories, Inc.
18000 Devonshire Street   5046 Sierra Pines Drive
Northridge, CA 91325-1219   Mariposa, CA 95338

TEST METHOD: ANSI C63.4 (2003), RSS-210 Issue 7 and RSS GEN Issue 2

PURPOSE OF TEST:
Original Report: To perform the testing of the My Sentry Monitor, MMT-9102 with the requirements for FCC Part 15 Subpart C Sections 15.207, 15.209, 15.247, 15.249 & RSS-210 devices.
Addendum A: To correct typos and reformat the data on pages 17 and 25 to avoid confusion with no new testing.

APPROVALS

QUALITY ASSURANCE: **TEST PERSONNEL:**

Steve Behm, Director of Engineering Services   Mike Wilkinson, Senior EMC Engineer/Lab
                                                Manager

SITE FILE REGISTRATION NUMBERS

Location	Japan	Canada	FCC
Mariposa D	R-1827, C-1960 & T-276	3082A-2	784962

SUMMARY OF RESULTS

Test	Specification	Results
Conducted Emissions	FCC Part 15 Subpart C Section 15.207	Pass
RF Output Power	FCC Part 15 Subpart C Sections 15.247(b)(3) & 15.249(a)	Pass
OATS Radiated Spurious Emissions	FCC Part 15 Subpart C Section 15.247(d) & 15.249(d)/15.209	Pass
Band Edge	FCC Part 15 Subpart C Section 15.247	Pass
Peak Power Spectral Density	FCC Part 15 Subpart C Section 15.247(e)	Pass
Block Edge	FCC Part 15 Subpart C Section 15.249	Pass
Occupied Bandwidth	RSS-210 Issue 7 and RSS GEN Issue 2	Pass

CONDITIONS DURING TESTING

No modifications to the EUT were necessary during testing.

FCC 15.31(e) Voltage Variations

FCC 15.31e was satisfied by measurement of the radiated signal level of the fundamental frequency component of the emission was performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage and no change was observed.

FCC 15.31(m) Number Of Channels

This device was tested on three channels.

FCC 15.33(a) Frequency Ranges Tested

15.207 Conducted Emissions: 150 kHz – 30 MHz
15.209/15.247 Radiated Emissions: 9 kHz – 10 GHz

FCC 15.203 Antenna Requirements

The antenna is an integral part of the EUT and is non-removable; therefore the EUT complies with Section 15.203 of the FCC rules.

EUT Operating Frequency

The EUT was operating at Zigbee 2400-2483.5 MHz Band and 916.5 MHz.

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The customer declares the EUT tested by CKC Laboratories was representative of a production unit.

EQUIPMENT UNDER TEST

My Sentry Outpost
Manuf: Medtronic MiniMed
Model: MMT-9102
Serial: R00011BS

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

Remote Comlink
Manuf: Medtronic MiniMed
Model: MMT-7304NA
Serial: AB1907

Remote Computer
Manuf: Premio
Model: Premio Tower
Serial: CKC asset 1820

REPORT OF EMISSIONS MEASUREMENTS

TESTING PARAMETERS

TEMPERATURE AND HUMIDITY DURING TESTING
The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.

The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS
The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dBμV/m, the spectrum analyzer reading in dBμV was corrected by using the following formula. This reading was then compared to the applicable specification limit.

	SAMPLE CALCULATIONS	
	Meter reading	(dBμV)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dBμV/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. The following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used. When conducted emissions testing was performed, a 10 dB external attenuator was used with internal offset correction in the analyzer.

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the highest readings, this is indicated as a "QP" or an "Ave" on the appropriate rows of the data sheets. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the spectrum analyzer/receiver readings were recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the measuring device called "peak hold," the measuring device had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the quasi-peak detector.

Average

For certain frequencies, average measurements may be made using the spectrum analyzer/receiver. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan time is reduced.

FCC 15.207 AC CONDUCTED EMISSIONS

Test Setup Photos

Test Data Sheets

Test Location: CKC Laboratories, Inc. •5046 Sierra Pines Dr. • Mariposa, CA 95338 • 209 966-5240

Customer:	**Medtronic MiniMed**
Specification:	**FCC 15.207 - AVE**
Work Order #:	**88416**
Test Type:	**Conducted Emissions**
Equipment:	**My Sentry Outpost**
Manufacturer:	Medtronic MiniMed
Model:	MMT-9102
S/N:	R00011BS

Date: 12/15/2008
Time: 1:57:00 PM
Sequence#: 10
Tested By: Mike Wilkinson
120V 60Hz

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
150kHz HP Filter TTE	G7754	01/22/2008	01/22/2010	02608
Site D Conducted Cable	N/A	03/06/2008	03/06/2010	CAB-SITE INT LISN 100k-30M
LISN, 8028-50-TS-24-BNC	8379276, 280	05/07/2007	05/07/2009	1248 & 1249

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
My Sentry Outpost*	Medtronic MiniMed	MMT-9102	R00011BS

Support Devices:

Function	Manufacturer	Model #	S/N
Remote Computer	Premio	Premio Tower	CKC asset 1820
Remote Comlink	Medtronic MiniMed	MMT-7304NA	AB1907

Test Conditions / Notes:

Standard used was FCC 15.207. EUT is set to transmit on Zigbee 2400-2483.5 MHz Band and 916.5 MHz. Frequency range investigated was: 150 kHz to 30 MHz. The temperature was 22°C and the humidity was 48%. RBW = 9 kHz 150 kHz-30 MHz.
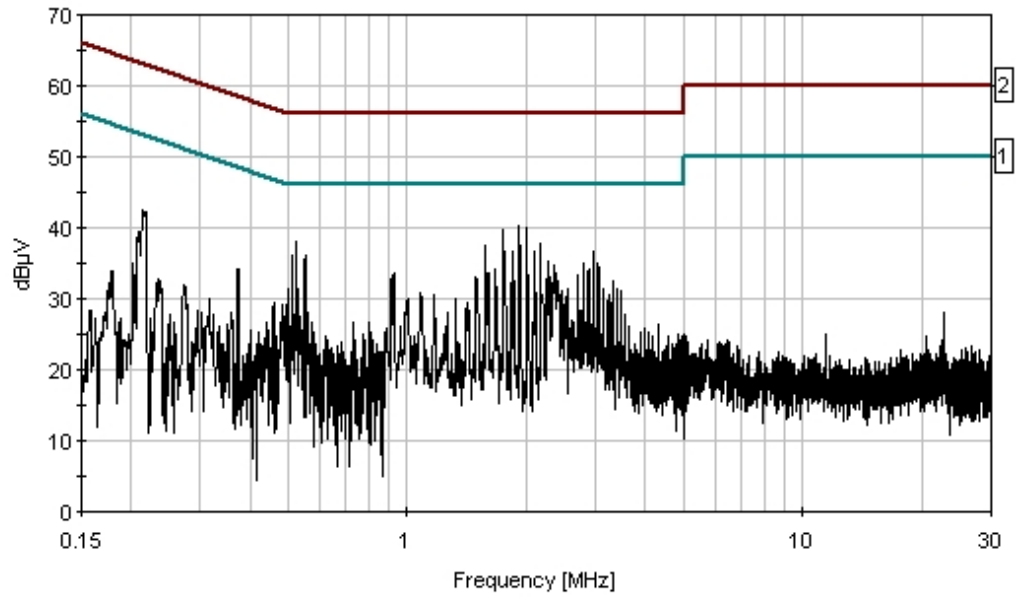
Transducer Legend:

T1=CAB-SITED INT LISN 100k-30M	T2=Filter 150kHz HP AN02608
T3=LISN -280 - BK-AN1248	

Measurement Data: Reading listed by margin.   Test Lead: Black

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	1.923M	28.4	+11.4	+0.2	+0.2		+0.0	40.2	46.0	-5.8	Black
2	2.008M	28.3	+11.4	+0.2	+0.2		+0.0	40.1	46.0	-5.9	Black
3	1.753M	27.7	+11.5	+0.2	+0.2		+0.0	39.6	46.0	-6.4	Black
4	524.511k	25.6	+11.9	+0.3	+0.2		+0.0	38.0	46.0	-8.0	Black
5	2.179M	26.0	+11.4	+0.2	+0.2		+0.0	37.8	46.0	-8.2	Black

6	1.583M	25.7	+11.5	+0.2	+0.2	+0.0	37.6	46.0	-8.4	Black
7	1.843M	24.9	+11.5	+0.2	+0.2	+0.0	36.8	46.0	-9.2	Black
8	2.089M	24.8	+11.4	+0.2	+0.2	+0.0	36.6	46.0	-9.4	Black
9	2.957M	25.0	+11.2	+0.1	+0.3	+0.0	36.6	46.0	-9.4	Black
10	551.418k	23.9	+11.8	+0.3	+0.2	+0.0	36.2	46.0	-9.8	Black
11	512.149k	23.7	+11.9	+0.3	+0.2	+0.0	36.1	46.0	-9.9	Black
12	213.994k	30.1	+11.8	+0.3	+0.2	+0.0	42.4	53.0	-10.6	Black
13	2.281M	23.5	+11.3	+0.2	+0.2	+0.0	35.2	46.0	-10.8	Black
14	3.042M	23.5	+11.2	+0.1	+0.3	+0.0	35.1	46.0	-10.9	Black
15	2.791M	23.3	+11.2	+0.1	+0.3	+0.0	34.9	46.0	-11.1	Black
16	2.340M	23.1	+11.3	+0.2	+0.2	+0.0	34.8	46.0	-11.2	Black
17	2.876M	22.7	+11.2	+0.1	+0.3	+0.0	34.3	46.0	-11.7	Black
18	1.672M	22.2	+11.5	+0.2	+0.2	+0.0	34.1	46.0	-11.9	Black
19	923.985k	21.5	+11.8	+0.2	+0.2	+0.0	33.7	46.0	-12.3	Black
20	1.604M	21.7	+11.5	+0.2	+0.2	+0.0	33.6	46.0	-12.4	Black
21	2.702M	21.6	+11.2	+0.1	+0.3	+0.0	33.2	46.0	-12.8	Black
22	1.494M	21.0	+11.6	+0.2	+0.2	+0.0	33.0	46.0	-13.0	Black
23	2.293M	21.3	+11.3	+0.2	+0.2	+0.0	33.0	46.0	-13.0	Black
24	906.974k	20.5	+11.8	+0.2	+0.2	+0.0	32.7	46.0	-13.3	Black
25	2.259M	21.0	+11.3	+0.2	+0.2	+0.0	32.7	46.0	-13.3	Black
26	1.864M	20.6	+11.5	+0.2	+0.2	+0.0	32.5	46.0	-13.5	Black
27	3.301M	20.9	+11.1	+0.1	+0.3	+0.0	32.4	46.0	-13.6	Black
28	373.980k	21.9	+12.0	+0.2	+0.2	+0.0	34.3	48.4	-14.1	Black
29	3.310M	20.4	+11.1	+0.1	+0.3	+0.0	31.9	46.0	-14.1	Black
30	1.685M	19.7	+11.5	+0.2	+0.2	+0.0	31.6	46.0	-14.4	Black

CKC Laboratories, Inc. Date: 12/15/2008 Time: 1:57:00 PM Medtronic MiniMed WO#: 884416
FCC 15.207 - AVE Test Lead: Black 120V 60Hz Sequence#: 10 Ext ATTN: (EXTATTN)

Sweep Data   1 - FCC 15.207 - AVE   2 - FCC 15.207 - QP

Test Location: CKC Laboratories, Inc. •5046 Sierra Pines Dr. • Mariposa, CA 95338 • 209 966-5240

Customer: **Medtronic MiniMed**
Specification: **FCC 15.207 - AVE**
Work Order #: **88416**   Date: 12/15/2008
Test Type: **Conducted Emissions**   Time: 13:56:20
Equipment: **My Sentry Outpost**   Sequence#: 9
Manufacturer: Medtronic MiniMed   Tested By: Mike Wilkinson
Model: MMT-9102   120V 60Hz
S/N: R00011BS

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
150kHz HP Filter TTE	G7754	01/22/2008	01/22/2010	02608
Site D Conducted Cable	N/A	03/06/2008	03/06/2010	CAB-SITE INT LISN 100k-30M
LISN, 8028-50-TS-24-BNC	8379276, 280	05/07/2007	05/07/2009	1248 & 1249

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
My Sentry Outpost*	Medtronic MiniMed	MMT-9102	R00011BS

Support Devices:

Function	Manufacturer	Model #	S/N
Remote Computer	Premio	Premio Tower	CKC asset 1820
Remote Comlink	Medtronic MiniMed	MMT-7304NA	AB1907

Test Conditions / Notes:

Standard used was FCC 15.207. EUT is set to transmit on Zigbee 2400-2483.5 MHz Band and 916.5 MHz. Frequency range investigated was: 150 kHz to 30 MHz. The temperature was 22°C and the humidity was 48%. RBW = 9 kHz 150 kHz-30 MHz.

Transducer Legend:

|	
T1=CAB-SITED INT LISN 100k-30M	T2=Filter 150kHz HP AN02608
T3=LISN -276 - WT-AN01248	

Measurement Data: Reading listed by margin.   Test Lead: White

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	1.932M	30.1	+11.4	+0.2	+0.2		+0.0	41.9	46.0	-4.1	White
2	2.183M	29.4	+11.4	+0.2	+0.2		+0.0	41.2	46.0	-4.8	White
3	171.816k	36.9	+11.7	+0.8	+0.1		+0.0	49.5	54.9	-5.4	White
4	1.753M	28.2	+11.5	+0.2	+0.2		+0.0	40.1	46.0	-5.9	White
5	2.264M	28.3	+11.3	+0.2	+0.2		+0.0	40.0	46.0	-6.0	White
6	2.302M	28.2	+11.3	+0.2	+0.2		+0.0	39.9	46.0	-6.1	White

7	1.843M	27.8	+11.5	+0.2	+0.2	+0.0	39.7	46.0	-6.3	White
8	164.544k	35.3	+11.7	+1.5	+0.1	+0.0	48.6	55.2	-6.6	White
9	2.404M	27.7	+11.3	+0.2	+0.2	+0.0	39.4	46.0	-6.6	White
10	2.098M	27.3	+11.4	+0.2	+0.2	+0.0	39.1	46.0	-6.9	White
11	2.353M	27.2	+11.3	+0.2	+0.2	+0.0	38.9	46.0	-7.1	White
12	505.604k	26.4	+11.9	+0.3	+0.2	+0.0	38.8	46.0	-7.2	White
13	2.425M	27.0	+11.3	+0.2	+0.2	+0.0	38.7	46.0	-7.3	White
14	2.489M	24.1	+11.3	+0.1	+0.3	+0.0	35.8	46.0	-10.2	White
15	1.587M	23.8	+11.5	+0.2	+0.2	+0.0	35.7	46.0	-10.3	White
16	1.672M	23.7	+11.5	+0.2	+0.2	+0.0	35.6	46.0	-10.4	White
17	335.438k	26.6	+11.9	+0.1	+0.0	+0.0	38.6	49.3	-10.7	White
18	1.166M	22.9	+11.7	+0.2	+0.2	+0.0	35.0	46.0	-11.0	White
19	1.439M	23.0	+11.6	+0.2	+0.2	+0.0	35.0	46.0	-11.0	White
20	1.613M	23.1	+11.5	+0.2	+0.2	+0.0	35.0	46.0	-11.0	White
21	1.502M	22.2	+11.6	+0.2	+0.2	+0.0	34.2	46.0	-11.8	White
22	3.016M	22.4	+11.2	+0.1	+0.3	+0.0	34.0	46.0	-12.0	White
23	2.936M	22.2	+11.2	+0.1	+0.3	+0.0	33.8	46.0	-12.2	White
24	923.985k	21.1	+11.8	+0.2	+0.2	+0.0	33.3	46.0	-12.7	White
25	2.897M	21.0	+11.2	+0.1	+0.3	+0.0	32.6	46.0	-13.4	White
26	347.800k	23.2	+12.0	+0.2	+0.1	+0.0	35.5	49.0	-13.5	White
27	2.208M	20.4	+11.4	+0.2	+0.2	+0.0	32.2	46.0	-13.8	White
28	2.838M	20.6	+11.2	+0.1	+0.3	+0.0	32.2	46.0	-13.8	White
29	517.966k	12.3	+11.9	+0.3	+0.2	+0.0	24.7	46.0	-21.3	White
Ave ^	517.966k	31.6	+11.9	+0.3	+0.2	+0.0	44.0	46.0	-2.0	White

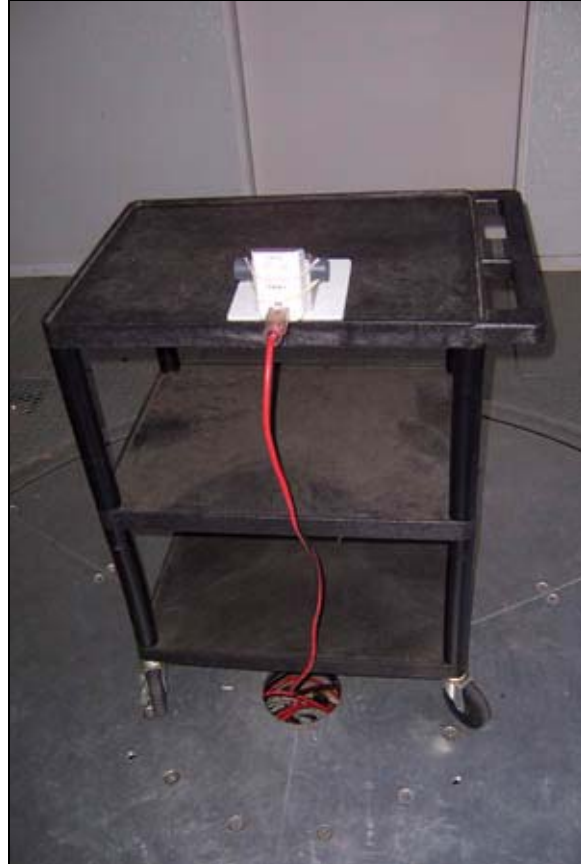|										
31 Ave	2.013M	9.4	+11.4	+0.2	+0.2	+0.0	21.2	46.0	-24.8	White
^	2.013M	32.9	+11.4	+0.2	+0.2	+0.0	44.7	46.0	-1.3	White

CKC Laboratories, Inc. Date: 12/15/2008 Time: 13:56:20 Medtronic MiniMed WO#: 884416
FCC 15.207 - AVE Test Lead: White 120V 60Hz Sequence#: 9 Ext ATTN: (EXTATTN)
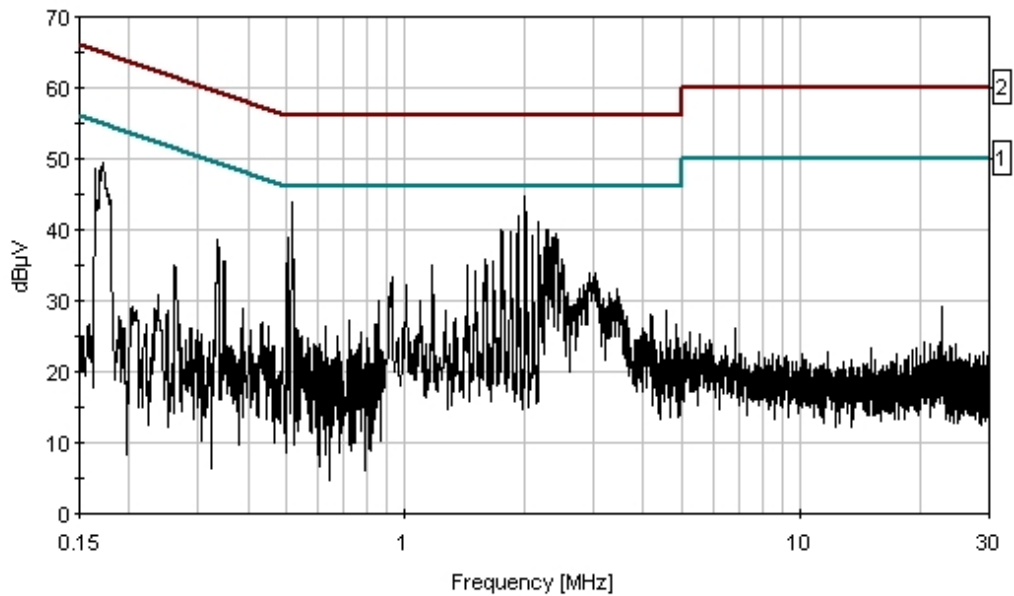
FCC 15.247(b)(3) RF POWER OUTPUT

Test Setup Photos

Test Data Sheets

Test Location: CKC Laboratories, Inc. •5046 Sierra Pines Dr. • Mariposa, CA 95338 • 209 966-5240

Customer: **Medtronic MiniMed**
Specification: **15.247(b)(3)**
Work Order #: **88416**   Date: 12/12/2008
Test Type: **Maximized Emissions**   Time: 16:34:16
Equipment: **My Sentry Outpost**   Sequence#: 4
Manufacturer: Medtronic MiniMed   Tested By: Mike Wilkinson
Model: MMT-9102
S/N: R00011BS

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
EMCO 3115 Horn Antenna	9307-4085	03/17/2007	03/17/2009	00656
HP 8449B Preamp	3008A00301	12/13/2006	12/13/2008	2010
3M SITE CABLE 20GHZ	NA	03/06/2008	03/06/2010	SITED3M1
Cable 2' 40 GHz Astrolab	NA	01/15/2008	01/15/2010	AN03008
Cable 3' 40 GHz Astrolab	NA	01/15/2008	01/15/2010	AN03012
Cable 12' 40 GHz Astrolab	NA	07/03/2008	07/03/2010	AN05769
Power Stat, Variac	126	07/20/2007	07/20/2009	02037
Cable, HF	1067016	04/23/2007	04/23/2009	P04290
Digital Multimeter	75	04/18/2008	04/18/2010	00483

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
My Sentry Outpost*	Medtronic MiniMed	MMT-9102	R00011BS

Support Devices:

Function	Manufacturer	Model #	S/N
Remote Computer	Premio	Premio Tower	CKC asset 1820
Remote Comlink	Medtronic MiniMed	MMT-7304NA	AB1907

Test Conditions / Notes:

Standard used was FCC 15.247. EUT is set to transmit continuously on Zigbee 2400-2483.5 MHz Band Low, Mid and High channels as indicated in the data sheet. Low Channel = 2405 MHz, Mid Channel = 2440 MHz, High Channel = 2475 MHz. Frequency range investigated was: Carrier. The temperature was 22°C and the humidity was 48%. RBW = 10 MHz. VBW = 3 x RBW. FCC 15.31e was satisfied by measurement of the radiated signal level of the fundamental frequency component of the emission was performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage and no change was observed.

Power Output

Frequency (MHz)	Field Strength (dBuV/m @3m)	Power dBm)	Limit (dBm)	Comments
2405	110.7	13.376	30	Pass
2440	108.2	10.876	30	Pass
2475	107.5	10.176	30	Pass

Antenna gain used for calculation is 2.1 dBi.

Power formula used in accordance with KDB 558074

FCC 15.247(d) OATS RADIATED SPURIOUS EMISSIONS

Test Setup Photos

Test Data Sheets

Test Location: CKC Laboratories, Inc. •5046 Sierra Pines Dr. • Mariposa, CA 95338 • 209 966-5240

Customer: **Medtronic MiniMed**
Specification: **FCC 15.247 (d) / 15.209 / 15.205**
Work Order #:   **884416**   Date: 12/12/2008
Test Type: **Maximized Emissions**   Time: 16:44:05
Equipment: **My Sentry Outpost**   Sequence#: 6
Manufacturer: Medtronic MiniMed   Tested By: Mike Wilkinson
Model: MMT9102
S/N: R00011BS

*Test Equipment***:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Chase CBL6111C Bilog	2456	12/30/2006	12/30/2008	01991
EMCO 3115 Horn Antenna	9307-4085	03/17/2007	03/17/2009	00656
HP 8447D Preamp	2727A05444	06/20/2008	06/20/2010	00062
Cable, HF	1067016	04/23/2007	04/23/2009	P04290
HP 8449B Preamp	3008A00301	12/13/2006	12/13/2008	2010
3M SITE CABLE 20GHZ	NA	03/06/2008	03/06/2010	SITED3M1
Cable 2' 40 GHz Astrolab	NA	01/15/2008	01/15/2010	AN03008
Cable 12' 40 GHz Astrolab	NA	07/03/2008	07/03/2010	AN05769
Cable 3' 40 GHz Astrolab	NA	01/15/2008	01/15/2010	AN03012
EMCO Loop Antenna	1074	05/01/2007	05/01/2009	00226
3.6 GHz HP Filter	None	05/15/2007	05/15/2009	01440

Equipment Under Test (* = **EUT**):

Function	Manufacturer	Model #	S/N
My Sentry Outpost*	Medtronic MiniMed	MMT-9102	R00011BS

Support Devices:

Function	Manufacturer	Model #	S/N
Remote Computer	Premio	Premio Tower	CKC asset 1820
Remote Comlink	Medtronic MiniMed	MMT-7304NA	AB1907

Test Conditions / Notes:

Standard used was FCC 15.247,15.209 and 15.205. EUT is set to transmit continuously on Zigbee 2400-2483.5 MHz Band Low, Mid and High channels as indicated in the data sheet. Low Channel = 2405 MHz, Mid Channel = 2440 MHz, High Channel = 2475 MHz. Frequency range investigated was: 9 kHz to 10 GHz. The temperature was 22°C and the humidity was 48%. RBW = 200 Hz 9 kHz-150kHz. RBW = 9 kHz 150 kHz-30 MHz RBW = 120 kHz 30-1000 MHz RBW = 1MHz 1000-10000 MHz VBW = 3 x RBW. Averaged measurements above 1.0 GHz include a 21.94 dB pulse modulation correction factor. See appendix for formula rationale.
Packet Width = 4ms
      Total retries = (2) * (1) = 2
      Duty Cycle = (2) * (4ms) / (100ms) = 0.08*100% = 8 % duty cycle

Transducer Legend:

T1=Amp HF - AN02010	T2=ANT AN00656 900MHz-18.5GHz
T3=CAB-SITED3M1 9k - 20G	T4=CAB-AN05769-40GHZ-12FT
T5=CAB-AN03008-40GHZ-2FT	T6=CAB-AN03012-40GHZ-3FT
T7=FIL-AN01440-051407-3.5GHZ HP	T8=21.9dB dB15.35 Duty Cycle Correction

Measurement Data: Reading listed by margin.   Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	T1 / T5 dB	T2 / T6 dB	T3 / T7 dB	T4 / T8 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	4950.880M Ave	49.0	-34.0 / +0.6	+32.7 / +0.8	+7.3 / +0.6	+3.1 / -21.9	+0.0	38.2	54.0 / High Channel	-15.8	Horiz
^	4950.880M	56.5	-34.0 / +0.6	+32.7 / +0.8	+7.3 / +0.6	+3.1 / -21.9	+0.0	45.7	54.0 / High Channel	-8.3	Horiz
3	4879.040M Ave	48.4	-34.1 / +0.6	+32.6 / +0.8	+7.4 / +0.5	+3.0 / -21.9	+0.0	37.3	54.0 / Mid Channel	-16.7	Horiz
^	4879.040M	57.4	-34.1 / +0.6	+32.6 / +0.8	+7.4 / +0.5	+3.0 / -21.9	+0.0	46.3	54.0 / Mid Channel	-7.7	Horiz
5	4950.880M Ave	43.5	-34.0 / +0.6	+32.7 / +0.8	+7.3 / +0.6	+3.1 / -21.9	+0.0	32.7	54.0 / High Channel	-21.3	Vert
^	4950.880M	51.6	-34.0 / +0.6	+32.7 / +0.8	+7.3 / +0.6	+3.1 / -21.9	+0.0	40.8	54.0 / High Channel	-13.2	Vert
7	4812.320M Ave	42.8	-33.9 / +0.6	+32.5 / +0.8	+7.4 / +0.5	+3.0 / -21.9	+0.0	31.8	54.0 / Low Channel	-22.2	Horiz
^	4812.320M	57.4	-33.9 / +0.6	+32.5 / +0.8	+7.4 / +0.5	+3.0 / -21.9	+0.0	46.4	54.0 / Low Channel	-7.6	Horiz
9	4810.780M Ave	42.3	-33.9 / +0.6	+32.5 / +0.8	+7.4 / +0.5	+3.0 / -21.9	+0.0	31.3	54.0 / Low Channel	-22.7	Vert
^	4810.780M	50.9	-33.9 / +0.6	+32.5 / +0.8	+7.4 / +0.5	+3.0 / -21.9	+0.0	39.9	54.0 / Low Channel	-14.1	Vert
11	4879.040M Ave	41.8	-34.1 / +0.6	+32.6 / +0.8	+7.4 / +0.5	+3.0 / -21.9	+0.0	30.7	54.0 / Mid Channel	-23.3	Vert
^	4879.040M	53.4	-34.1 / +0.6	+32.6 / +0.8	+7.4 / +0.5	+3.0 / -21.9	+0.0	42.3	54.0 / Mid Channel	-11.7	Vert

FCC PART 15.247 BAND EDGE

Test Equipment

| Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Cable, HF	1067016	04/23/2007	04/23/2009	P04290
Amp HF - S/N 301	3008A00301	11/13/2008	11/13/2010	02010
Antenna, Horn	4085	03/19/2007	03/19/2009	00656
Site D Rad Emiss-10m	N/A	03/06/2008	03/06/2010	CAB-SITED10M-9k-1G
3M SITE CABLE 20GHZ	NA	03/06/2008	03/06/2010	SITED3M1
Cable 2' 40 GHz Astrolab	NA	01/15/2008	01/15/2010	AN03008
Cable 12' 40 GHz Astrolab	NA	07/03/2008	07/03/2010	AN05769
Cable 3' 40 GHz Astrolab	NA	01/15/2008	01/15/2010	AN03012

Test Conditions
EUT is set to transmit continuously on Zigbee 2400-2483.5 MHz Band.
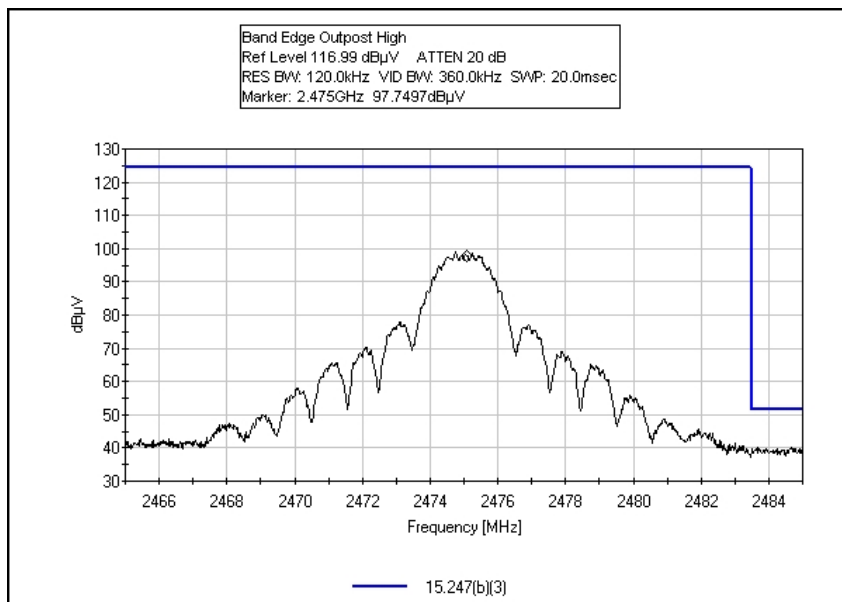
Test Setup Photos

Test Plots

FCC 15.247 BAND EDGE LOW CHANNEL
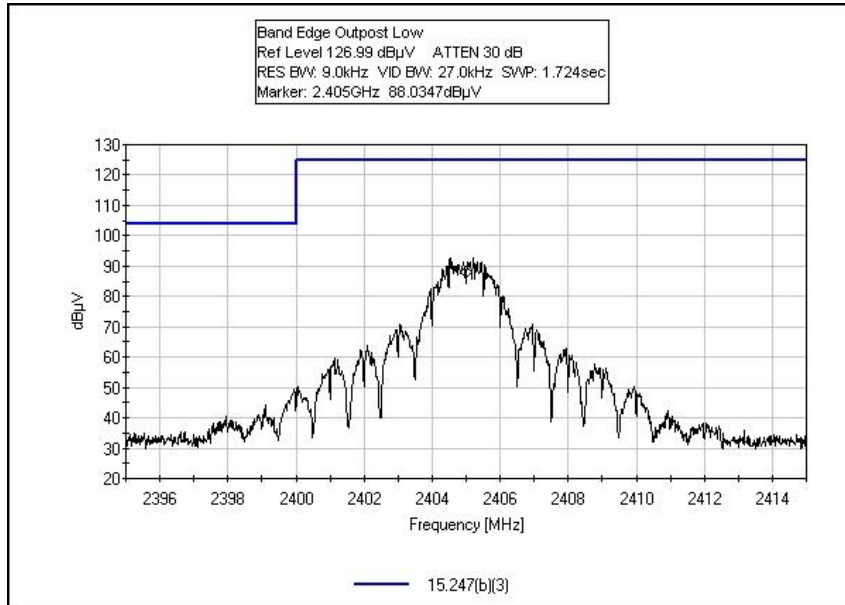
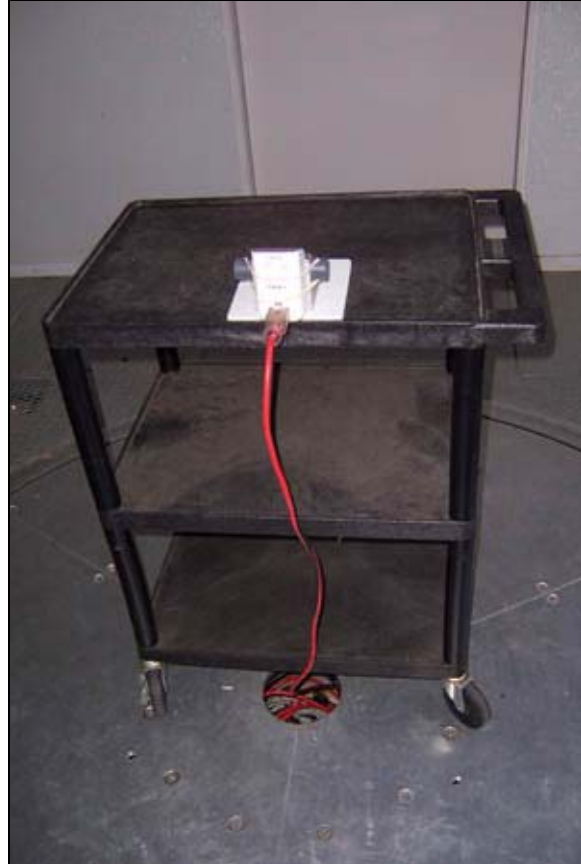Note: Marker Delta Method used and includes the offset.

FCC 15.247 BAND EDGE HIGH CHANNEL

Note: Marker Delta Method used and includes the offset.

FCC PART 15.247(e) PEAK POWER SPECTRAL DENSITY

Test Setup Photos

Test Data Sheets

Test Location: CKC Laboratories, Inc. •5046 Sierra Pines Dr. • Mariposa, CA 95338 • 209 966-5240

Customer: **Medtronic MiniMed**
Specification: **15.247(e)**
Work Order #:   **88416**   Date: 12/15/2008
Test Type: **Maximized Emissions**   Time: 11:24:56
Equipment: **My Sentry Outpost**   Sequence#: 5
Manufacturer: Medtronic MiniMed   Tested By: Mike Wilkinson
Model: MMT-9102
S/N: R00011BS

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
EMCO 3115 Horn Antenna	9307-4085	03/17/2007	03/17/2009	00656
HP 8449B Preamp	3008A00301	11/13/2008	11/13/2010	2010
3M SITE CABLE 20GHZ	NA	03/06/2008	03/06/2010	SITED3M1
Cable 2' 40 GHz Astrolab	NA	01/15/2008	01/15/2010	AN03008
Cable 12' 40 GHz Astrolab	NA	07/03/2008	07/03/2010	AN05769
Cable 3' 40 GHz Astrolab	NA	01/15/2008	01/15/2010	AN03012
Cable, HF	1067016	04/23/2007	04/23/2009	P04290

Equipment Under Test (* = **EUT**):

Function	Manufacturer	Model #	S/N
My Sentry Outpost*	Medtronic MiniMed	MMT-9102	R00011BS

Support Devices:

Function	Manufacturer	Model #	S/N
Remote Computer	Premio	Premio Tower	CKC asset 1820
Remote Comlink	Medtronic MiniMed	MMT-7304NA	AB1907

Test Conditions / Notes:

Standard used was FCC 15.247(e). EUT is set to transmit continuously on Zigbee 2400-2483.5 MHz Band Low, Mid and High channels as indicated in the data sheet. Low Channel = 2405 MHz, Mid Channel = 2440 MHz, High Channel = 2475 MHz. Frequency range investigated was: Carrier. The temperature was 22°C and the humidity was 48%. RBW = 3 kHz VBW = 3 x RBW.
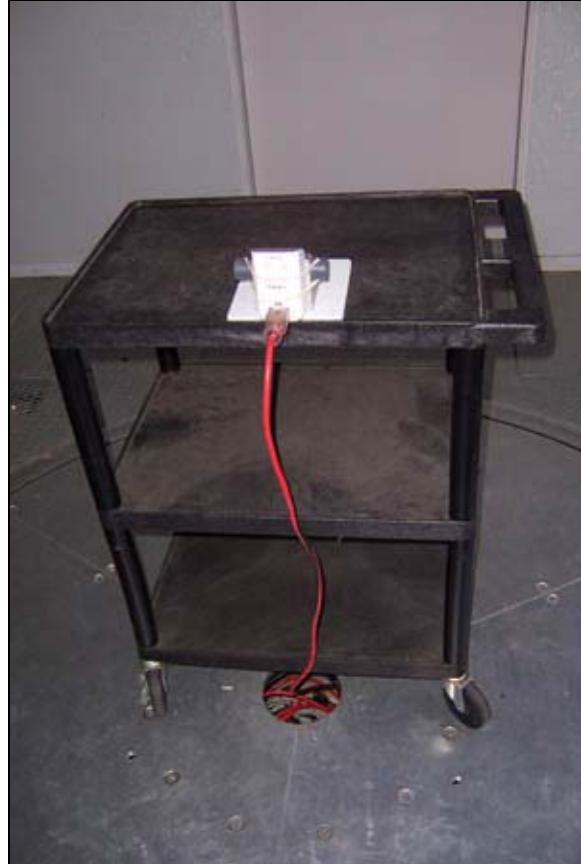
Power spectral density.

Frequency (MHz)	Field Strength (dBuV/m @3m)	Power dBm)	Limit (dBm)	Comments
2405	91.0	-6.324	8	Pass
2440	87.8	-9.524	8	Pass
2475	87.3	-10.024	8	Pass

Antenna gain used for calculation is 2.1 dBi.
Power formula used in accordance with KDB 558074

FCC 15.249(a) RF POWER OUTPUT

Test Setup Photos

Test Data Sheets

Test Location: CKC Laboratories, Inc. •5046 Sierra Pines Dr. • Mariposa, CA 95338 • 209 966-5240

Customer:	**Medtronic MiniMed**
Specification:	**FCC 15.249 (a)**
Work Order #:	**88416**
Test Type:	**Maximized Emissions**
Equipment:	**My Sentry Outpost**
Manufacturer:	Medtronic MiniMed
Model:	MMT-9102
S/N:	R00011BS

Date: 12/12/2008
Time: 11:37:49
Sequence#: 2
Tested By: Mike Wilkinson

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Chase CBL6111C Bilog	2456	12/30/2006	12/30/2008	01991
HP 8447D Preamp	2727A05444	06/20/2008	06/20/2010	00062
Cable, HF	1067016	04/23/2007	04/23/2009	P04290
Site D Rad Emiss-10m	N/A	03/06/2008	03/06/2010	CAB-SITED10M-9k-1G
3M SITE CABLE 20GHZ	NA	03/06/2008	03/06/2010	SITED3M1
Cable 2' 40 GHz Astrolab	NA	01/15/2008	01/15/2010	AN03008
Cable 12' 40 GHz Astrolab	NA	07/03/2008	07/03/2010	AN05769
Cable 3' 40 GHz Astrolab	NA	01/15/2008	01/15/2010	AN03012

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
My Sentry Outpost*	Medtronic MiniMed	MMT-9102	R00011BS

Support Devices:

Function	Manufacturer	Model #	S/N
Remote Computer	Premio	Premio Tower	CKC asset 1820
Remote Comlink	Medtronic MiniMed	MMT-7304NA	AB1907

Test Conditions / Notes:

Standard used was FCC 15.249. EUT is set to transmit continuously on 916.56 MHz. Frequency range investigated was: Carrier. The temperature was 22°C and the humidity was 48%. RBW = 120 kHz VBW = 3 x RBW.

Transducer Legend:

|	
T1=AMP-AN00062-062008	T2=ANT AN01991 25-1000MHz
T3=CAB-SITED3M1 9k - 20G	T4=CAB-AN03008-40GHZ-2FT
T5=CAB-AN03012-40GHZ-3FT	T6=Cable WL Gore 10' 40 GHz AN P004290

Measurement Data: Reading listed by margin.   Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	916.552M	87.9	-29.6 +0.4	+23.0 +1.6	+2.7	+0.3	+0.0	86.3	93.9	-7.6	Vert
2	916.552M	82.0	-29.6 +0.4	+23.0 +1.6	+2.7	+0.3	+0.0	80.4	93.9	-13.5	Horiz

FCC 15.249(d)/15.209 OATS RADIATED SPURIOUS EMISSIONS
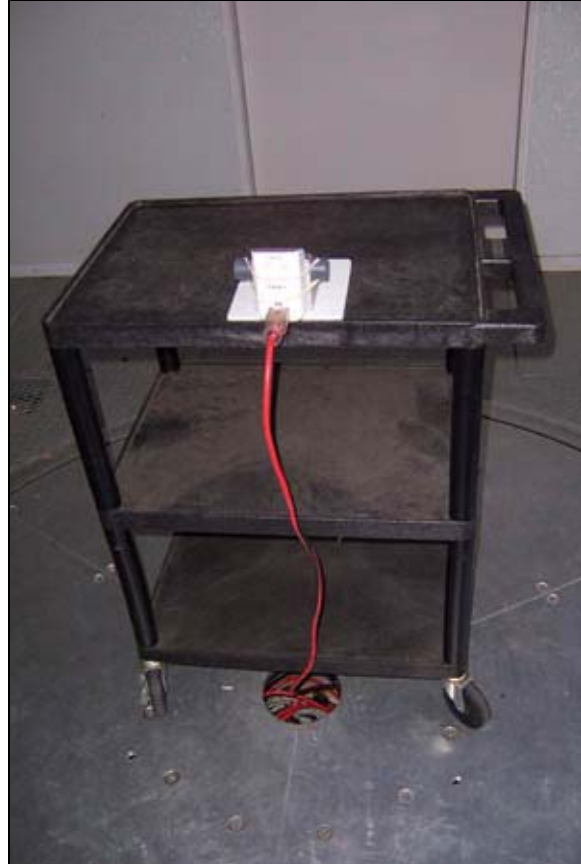
Test Setup Photos

Test Data Sheets

Test Location: CKC Laboratories, Inc. •5046 Sierra Pines Dr. • Mariposa, CA 95338 • 209 966-5240

Customer:	**Medtronic MiniMed**
Specification:	**FCC 15.249(d) / 15.209**
Work Order #:	**884416**
Test Type:	**Maximized Emissions**
Equipment:	**My Sentry Outpost**
Manufacturer:	Medtronic MiniMed
Model:	MMT9102
S/N:	R00011BS

Date: 12/12/2008
Time: 13:01:38
Sequence#: 3
Tested By: Mike Wilkinson

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Chase CBL6111C Bilog	2456	12/30/2006	12/30/2008	01991
EMCO 3115 Horn Antenna	9307-4085	03/17/2007	03/17/2009	00656
HP 8447D Preamp	2727A05444	06/20/2008	06/20/2010	00062
Cable, HF	1067016	04/23/2007	04/23/2009	P04290
HP 8449B Preamp	3008A00301	12/13/2006	12/13/2008	2010
Site D Rad Emiss-10m	N/A	03/06/2008	03/06/2010	CAB-SITED10M-9k-1G
3M SITE CABLE 20GHZ	NA	03/06/2008	03/06/2010	SITED3M1
Cable 2' 40 GHz Astrolab	NA	01/15/2008	01/15/2010	AN03008
Cable 12' 40 GHz Astrolab	NA	07/03/2008	07/03/2010	AN05769
Cable 3' 40 GHz Astrolab	NA	01/15/2008	01/15/2010	AN03012
EMCO Loop Antenna	1074	05/01/2007	05/01/2009	00226
1.5 GHz HP Filter	3643A00027	05/15/2007	05/15/2009	02116

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
My Sentry Outpost*	Medtronic MiniMed	MMT9102	R00011BS

Support Devices:

Function	Manufacturer	Model #	S/N
Remote Computer	Premio	Premio Tower	CKC asset 1820
Remote Comlink	Medtronic MiniMed	MMT-7304NA	AB1907

Test Conditions / Notes:

Standard used was FCC 15.249. EUT is set to transmit continuously on 915.56 MHz. Frequency range investigated was: 9 kHz to 10 GHz. The temperature was 22°C and the humidity was 48%. RBW = 200 Hz 9 kHz-150kHz. RBW = 9 kHz 150 kHz-30 MHz RBW = 120 kHz 30-1000 MHz RBW = 1MHz 1000-10000 MHz VBW = 3 x RBW.

Transducer Legend:

T1=AMP-AN00062-062008	T2=Amp HF - AN02010
T3=ANT AN01991 25-1000MHz	T4=ANT AN00656 900MHz-18.5GHz
T5=CAB-SITED3M1 9k - 20G	T6=CAB-AN03008-40GHZ-2FT
T7=CAB-AN03012-40GHZ-3FT	T8=1.5GHz HPF 02116
T9=Cable WL Gore 10' 40 GHz AN P004290	

Measurement Data: Reading listed by margin.   Test Distance: 3 Meters

#	Freq	Rdng	T1 T5 T9	T2 T6	T3 T7	T4 T8	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	2749.679M	41.9	+0.0 +5.2 +2.9	-34.7 +0.5	+0.0 +0.6	+30.0 +0.5	+0.0	46.9	54.0	-7.1	Horiz
2	1833.179M	45.8	+0.0 +3.6 +2.3	-35.0 +0.4	+0.0 +0.5	+26.8 +0.7	+0.0	45.1	54.0	-8.9	Vert
3	4582.679M	33.0	+0.0 +7.5 +3.7	-33.9 +0.5	+0.0 +0.8	+32.2 +0.7	+0.0	44.5	54.0	-9.5	Horiz
4	1833.084M	43.2	+0.0 +3.6 +2.3	-35.0 +0.4	+0.0 +0.5	+26.8 +0.7	+0.0	42.5	54.0	-11.5	Horiz
5	3666.209M Ave	31.9	+0.0 +6.5 +3.3	-34.4 +0.5	+0.0 +0.7	+32.5 +0.5	+0.0	41.5	54.0	-12.5	Vert
^	3666.209M	47.5	+0.0 +6.5 +3.3	-34.4 +0.5	+0.0 +0.7	+32.5 +0.5	+0.0	57.1	54.0	+3.1	Vert
7	4582.759M Ave	29.3	+0.0 +7.5 +3.7	-33.9 +0.5	+0.0 +0.8	+32.2 +0.7	+0.0	40.8	54.0	-13.2	Vert
^	4582.759M	37.6	+0.0 +7.5 +3.7	-33.9 +0.5	+0.0 +0.8	+32.2 +0.7	+0.0	49.1	54.0	-4.9	Vert
9	3666.179M Ave	30.9	+0.0 +6.5 +3.3	-34.4 +0.5	+0.0 +0.7	+32.5 +0.5	+0.0	40.5	54.0	-13.5	Horiz
^	3666.179M	43.1	+0.0 +6.5 +3.3	-34.4 +0.5	+0.0 +0.7	+32.5 +0.5	+0.0	52.7	54.0	-1.3	Horiz
11	2749.671M Ave	33.4	+0.0 +5.2 +2.9	-34.7 +0.5	+0.0 +0.6	+30.0 +0.5	+0.0	38.4	54.0	-15.6	Vert
^	2749.679M	48.7	+0.0 +5.2 +2.9	-34.7 +0.5	+0.0 +0.6	+30.0 +0.5	+0.0	53.7	54.0	-0.3	Vert
13	480.000M	32.2	-30.5 +1.9 +1.2	+0.0 +0.2	+17.8 +0.3	+0.0 +0.0	+0.0	23.1	46.0	-22.9	Vert

FCC PART 15.249 BLOCK EDGE

Test Equipment

| Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Chase CBL6111C Bilog	2456	12/30/2006	12/30/2008	01991
HP 8447D Preamp	2727A05444	06/20/2008	06/20/2010	00062
Cable, HF	1067016	04/23/2007	04/23/2009	P04290
Site D Rad Emiss-10m	N/A	03/06/2008	03/06/2010	CAB-SITED10M-9k-1G
3M SITE CABLE 20GHZ	NA	03/06/2008	03/06/2010	SITED3M1
Cable 2' 40 GHz Astrolab	NA	01/15/2008	01/15/2010	AN03008
Cable 12' 40 GHz Astrolab	NA	07/03/2008	07/03/2010	AN05769
Cable 3' 40 GHz Astrolab	NA	01/15/2008	01/15/2010	AN03012

Test Conditions

EUT is set to transmit continuously on 916.56 MHz.

Test Setup Photos

Test Plots

FCC 15.249 BLOCK EDGE

My Sentry Outpost 902 to 928 MHz Block Edge
Ref Level 96.99 dBμV   ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 20.0msec
Marker: 916.56MHz 87.6887dBμV

FCC 15.249 (a)
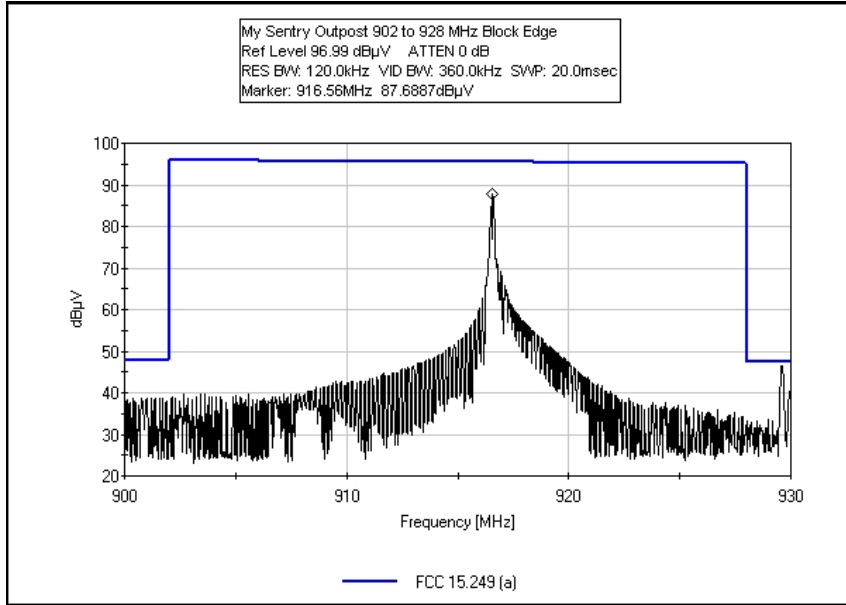
RSS-210 OCCUPIED BANDWIDTH

Test Equipment

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Chase CBL6111C Bilog	2456	12/30/2006	12/30/2008	01991
HP 8447D Preamp	2727A05444	06/20/2008	06/20/2010	00062
Cable, HF	1067016	04/23/2007	04/23/2009	P04290
Amp HF - S/N 301	3008A00301	11/13/2008	11/13/2010	02010
Antenna, Horn	4085	03/19/2007	03/19/2009	00656
Site D Rad Emiss-10m	N/A	03/06/2008	03/06/2010	CAB-SITED10M-9k-1G
3M SITE CABLE 20GHZ	NA	03/06/2008	03/06/2010	SITED3M1
Cable 2' 40 GHz Astrolab	NA	01/15/2008	01/15/2010	AN03008
Cable 12' 40 GHz Astrolab	NA	07/03/2008	07/03/2010	AN05769
Cable 3' 40 GHz Astrolab	NA	01/15/2008	01/15/2010	AN03012

Test Conditions

EUT is set to transmit continuously on Zigbee 2400-2483.5 MHz Band and on 916.56 MHz.
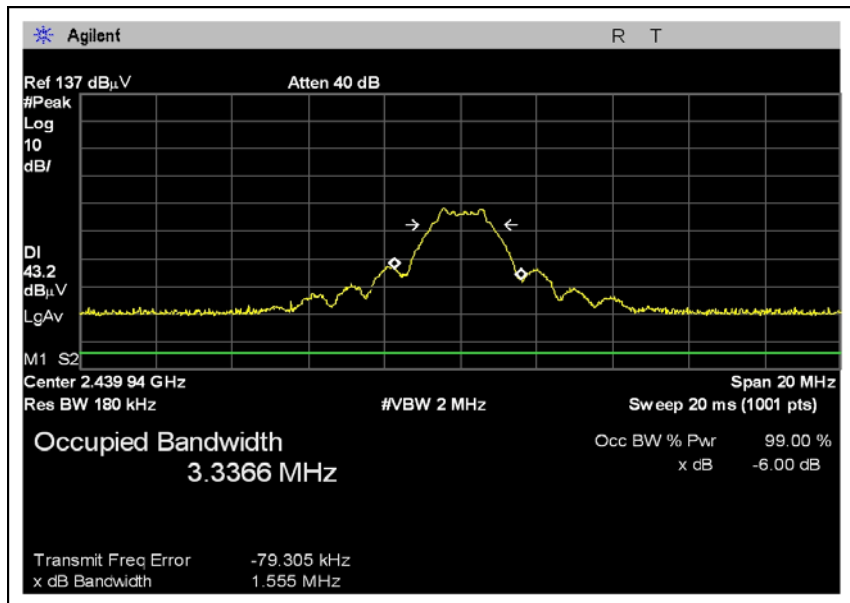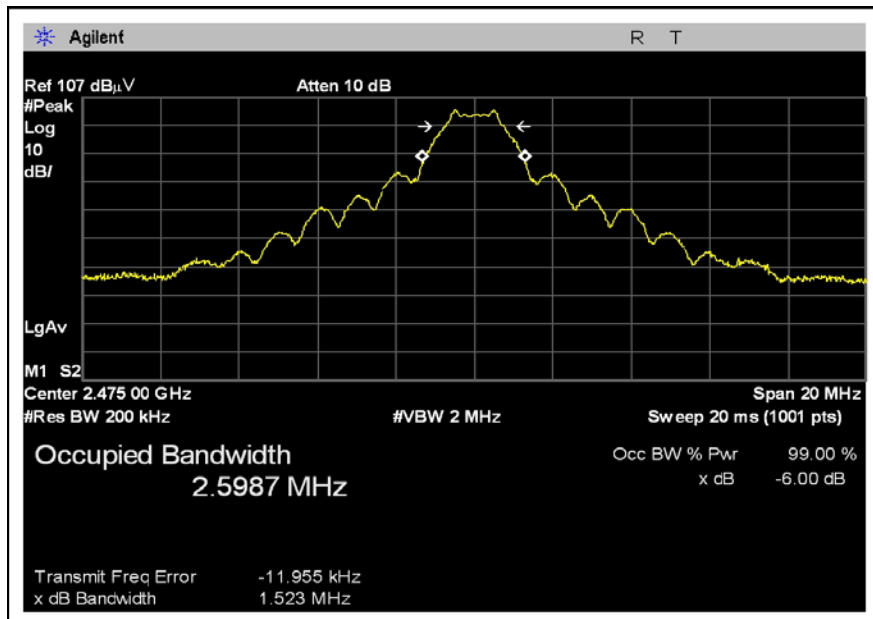
Test Setup Photos

Test Plots

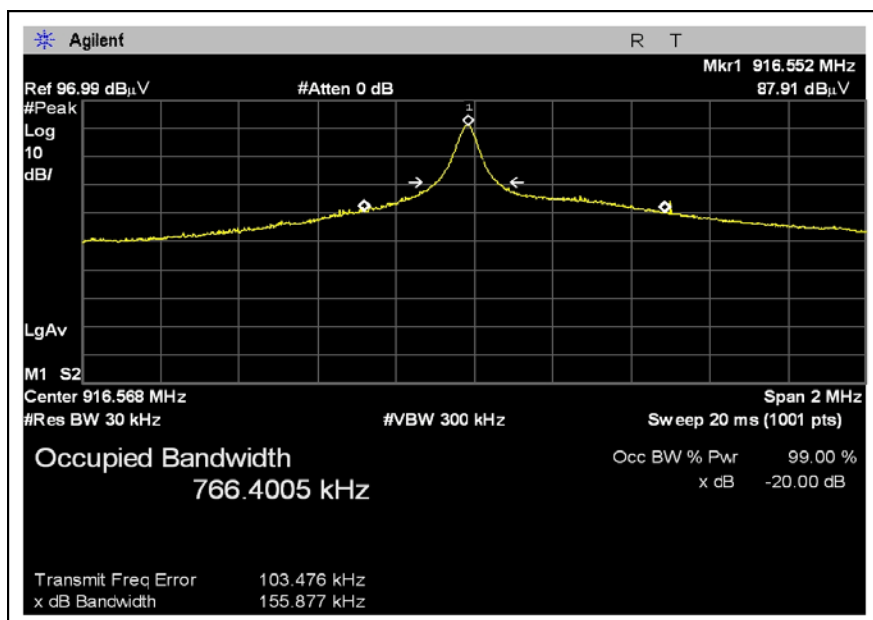**RSS-210 OCCUPIED BANDWIDTH LOW CHANNEL**
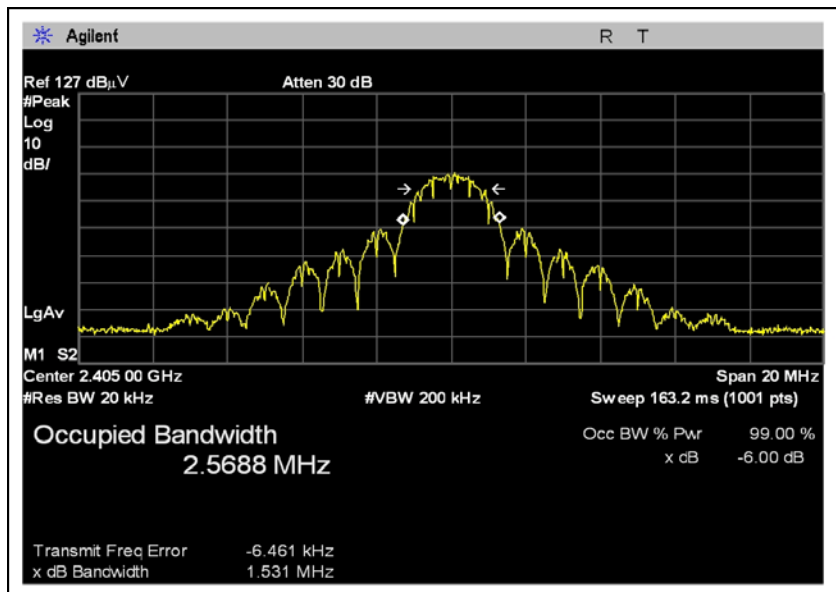
RSS-210 OCCUPIED BANDWIDTH MID CHANNEL

RSS-210 OCCUPIED BANDWIDTH HIGH CHANNEL

RSS-210 OCCUPIED BANDWIDTH 916.568 MHz

APPENDIX A: CUSTOMER INFORMATION

To CKC,

I've attached a document describing the Zigbee settings used in each of our devices. This document also describes how those settings affect the duty cycle calculation.

Using the settings and calculation from that document, the worst-case duty cycle calculations are as follows:

Packet width (ms) was measured as 3.73ms by CKC (see attached waveform), which matched the readings taken by Medtronic. To account for measurement error and ensure a worst-case approach, I will use a packet width of 4.0 ms in my calculations.

MySentry Monitor (Using the equation from ES9821 section 6.1, settings from 5.1) :

        Packet Width = 4ms
        Total retries = 4
        Duty Cycle = (4) * (4ms) / (100ms) = 0.16 *100% = 16 % duty cycle

        Correction factor = 20 log (16/100) = -15.92 dB.

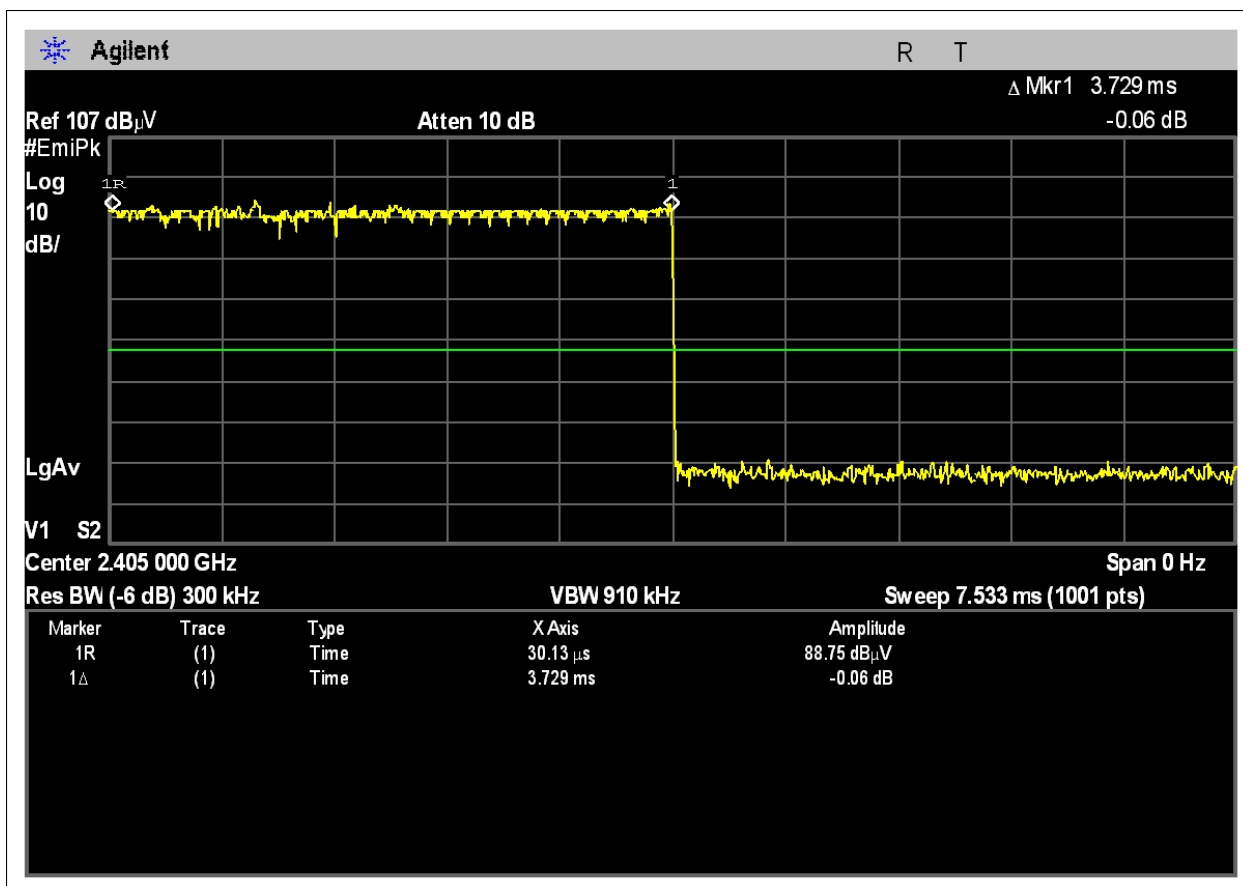MySentry Repeater (Using the equation from ES9821 section 6.2, settings from 5.2) :

        Packet Width = 4ms
        Total retries = (2) * (1) = 2

        Duty Cycle = (2) * (4ms) / (100ms) = 0.08*100% = 8 % duty cycle

        Correction factor = 20 log (8/100) = -21.94 dB.

Mike Ivey (Medtronic MiniMed)

Medtronic
MINIMED

Doc Type: Z20	Doc Prefix: ES	Doc Number: 9821	Color:

Category: **ENGINEERING SPECIFICATION**

Doc Description: **SPEC, MYSENTRY ZB2430 EEPROM SETTINGS**

Ver	ECO	Description of Change	Project	Incorp By	Rel By	Valid Date
A	5-26320	Production	MySentry	MI		12.13.08

Software Quality Assurance: _Dhanesh_   Date: 12.10.08

Engineering Manager: _(signature)_   Date: 12/10/08

Prepared by: Mike Ivey   Date: 12/10/08

Medtronic MINIMED	Save Date	Type	Document	Sheet	Ver.
	Dec. 10, 08	Z20	ES9821	1 of 3	A

Complete per SOP105-03   D9195658-028 03/06

1.0 PURPOSE:

This document specifies settings for the Aerocomm ZB2430 Zigbee module used in MySentry Monitor (MMT-9101) and MySentry Outpost (MMT-9102). The settings are loaded into the EEProm of the Zigbee Module. The calculations section specifies how these settings impact the worst case duty cycle during a 100ms window. This calculation is needed to provide a correction factor during FCC testing.

2.0 SCOPE:

This document contains settings for both the MySentry Monitor (MMT-9101) and MySentry Outpost (MMT-9102). These settings are used in the software to satisfy requirements outlined in Software Requirements Specifications **ES9700** and **ES9699**.

3.0 DEFINITIONS:

Zigbee Module	Aerocomm ZB2430
EEProm	Non-volatile memory which stores persistent device settings

4.0 REFERENCE DOCUMENTS:

ES9699	MySentry Monitor Software Requirements Specification
ES9700	MySentry Outpost Software Requirements Specification

5.0 SPECIFICATIONS:

5.1 MySentry Monitor

* Values are module defaults unless indicated by a *.

Description	EEProm Address	Value
Channel Mask	0x30	0x03FFF800
End Device Poll Rate	0x34	0x03E8
Channel Number	0x40	0x0B
Baud Rate	0x42	0x06
Baud_M	0x43	0xFF
Baud_E	0x44	0xFF
Control 0	0x45	0x38
MAC Retries	0x4B	0x03
Transmit Attempts	0x4C	0x02
Broadcast Attempts	0x4D	0x04
Stale Limit	0x4F	0x32
Control 1	0x56	0x08*
Interface Timeout	0x58	0x04
RF Packet Size	0x5A	0x0054
CTS On	0x5C	0x01C0
CTS Off	0x5E	0x01B0
Power Control	0x63	0x00
Destination ID	0x76	0xFFFF*
PAN ID	0x78	Varies by unit SN*
API Control	0xC1	0xF8

	Save Date	Type	Document	Sheet	Ver.
Medtronic MINIMED	Dec. 10, 08	Z20	ES9821	2 of 3	A

5.2 MySentry Outpost

* Values are module defaults unless indicated by a *.

Description	EEProm Address	Value
Channel Mask	0x30	0x03FFF800
End Device Poll Rate	0x34	0x03E8
Channel Number	0x40	0x0B
Baud Rate	0x42	0x06
Baud_M	0x43	0xFF
Baud_E	0x44	0xFF
Control 0	0x45	0x30*
MAC Retries	0x4B	0x01*
Transmit Attempts	0x4C	0x02
Broadcast Attempts	0x4D	0x02*
Stale Limit	0x4F	0x32
Control 1	0x56	0x08*
Interface Timeout	0x58	0x02*
RF Packet Size	0x5A	0x0054
CTS On	0x5C	0x01C0
CTS Off	0x5E	0x01B0
Power Control	0x63	0x00
Destination ID	0x76	0x0000
PAN ID	0x78	Assigned by monitor*
API Control	0xC1	0xF8*

6.0 CALCULATIONS:

6.1 MySentry Monitor

The coordinator operates only in broadcast mode. Using the data above, the worst case duty cycle for a 100ms period of Zigbee transmission can be calculated.

Total retries = <Broadcast Attempts>

Duty Cycle = <Total retries> * <Packet width (ms)> / 100 ms

6.2 MySentry Outpost

The repeater operates only in normal operation. Using the data above, the worst case duty cycle for a 100ms period of Zigbee transmission can be calculated.

Total retries = <MAX Retries> * <Transmit Attempts>

Duty Cycle = <Total retries> * <Packet width (ms)> / 100 ms

Medtronic MINIMED	Save Date Dec. 10, 08	Type Z20	Document ES9821	Sheet 3 of 3	Ver. A