EMISSIONS TEST REPORT

FULL COMPLIANCE

Report Number: 102363077BOX-003b
Project Number: G102363077

Report Issue Date: 08/22/2016

Model(s) Tested: Contour Next (Plus) ONE Wireless Blood Glucose Meter
Model(s) Not Tested but declared equivalent by the client: Contour Next ONE

Standards: CFR47 FCC Part 15 Subpart C (15.247): 02/2016,
RSS-247 Issue 1: 05/2015,

Tested by:
Intertek Testing Services NA, Inc.
70 Codman Hill Road
Boxborough, MA 01719
USA

Client:
Ascensia Diabetes Care
Quality Assurance
430 South Beiger Street
Mishawaka, Indiana 46544
U.S.A.

Report prepared by

Naga Suryadevara/EMC Engineer

Report reviewed by

Kouma Sinn / EMC Staff Engineer

Table of Contents

1 Introduction and Conclusion

The tests indicated in section 2.0 were performed on the product constructed as described in section 4.0. 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 **complies** with the requirements of the standard(s) indicated. The results obtained in this test report pertain only to the item(s) tested. Intertek does not make any claims of compliance for samples or variants which were not tested.

2 Test Summary

Section	Test full name	Result
3	Client Information	--
4	Description of Equipment Under Test and Variant Models	--
5	System Setup and Method	--
6	Transmitter radiated emissions (CFR47 FCC Part 15 Subpart C(2016), Section 15.247 (d) RSS247 Issue1: 05/2015)	Pass
7	6 dB Bandwidth and Occupied Bandwidth (CFR47 FCC Part 15 Subpart C (2016), Section 15.247 (a)(2) RSS-247 Issue1: 05/2015)	Pass
8	Maximum Peak Output Power and Human RF exposure (CFR47 FCC Part 15 Subpart C (2016), Section 15.247 (b)(3) RSS-247 Issue1: 05/2015 RSS-102 Issue 5: 03/2015)	Pass
9	Maximum Power Spectral Density (CFR47 FCC Part 15 Subpart C (2016), Section 15.247 (e) RSS-247 Issue1: 05/2015)	Pass
10	Band Edge Compliance (CFR47 FCC Part 15 Subpart C (2016), Section 15.247 (d) RSS-247 Issue1: 05/2015)	Pass
11	Revision History	--

3 Client Information

This EUT was tested at the request of:

Client: Ascensia Diabetes Care
Quality Assurance
430 South Beiger Street
Mishawaka, Indiana 46544
U.S.A

Contact: Kevin Chang
Telephone: U.S.: (574) 256-3420
Fax: U.S.: (574) 257-3065
Email: kevin.chang@ascensia.com

4 Description of Equipment Under Test and Variant Models

Manufacturer: Ascensia Diabetes Care Holdings AG
Peter Marian Strasse 90
4052 Basel
Switzerland

Equipment Under Test			
Description	Manufacturer	Model Number	Serial Number
Contour Next (Plus) ONE Wireless Blood Glucose Meter	Ascensia Diabetes Care	Contour plus ONE	P310490

Receive Date:	01/19/2016
Received Condition:	Good
Type:	Production

Description of Equipment Under Test (provided by client)
Contour Next (Plus) ONE Wireless Blood Glucose Meter

Equipment Under Test Power Configuration			
Rated Voltage	Rated Current	Rated Frequency	Number of Phases
3VDC x2 (CR2032)	10 mA	NA	NA

Operating modes of the EUT:

No.	Descriptions of EUT Exercising
1	Transmit mode
2	Receive mode

Software used by the EUT:

No.	Descriptions of EUT Exercising
1	RF Test Mode in the EUT

Radio/Receiver Characteristics	
Frequency Band(s)	2402-2480 MHz
Modulation Type(s)	DTS
Maximum Output Power	-4.58 dBm
Test Channels	Channel - 0, 19, 39
Occupied Bandwidth	1.164 MHz
Frequency Hopper: Number of Hopping Channels	NA
Frequency Hopper: Channel Dwell Time	NA
Frequency Hopper: Max interval between two instances of use of the same channel	NA
MIMO Information (# of Transmit and Receive antenna ports)	NA
Equipment Type	Standalone
ETSI LBT/Adaptivity	NA
ETSI Adaptivity Type	NA
ETSI Temperature Category (I, II, III)	NA
ETSI Receiver Category (1, 2, 3)	NA
Antenna Type and Gain	Integral

Variant Models:

The following variant models were not tested as part of this evaluation, but have been identified by the manufacturer as being electrically identical models, depopulated models, or with reasonable similarity to the model(s) tested. Intertek does not make any claims of compliance for samples or variants which were not tested.

Contour Next ONE

5 System Setup and Method

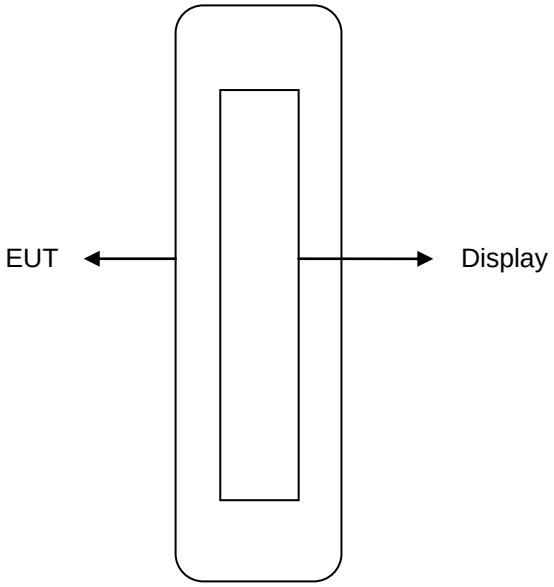
Cables					
ID	Description	Length (m)	Shielding	Ferrites	Termination
1	None				

Support Equipment			
Description	Manufacturer	Model Number	Serial Number
None			

5.1 Method:

Configuration as required by CFR47 FCC Part 15 Subpart C (15.247): 02/2016, RSS-247 Issue 1: 05/2015.

5.2 EUT Block Diagram:



6 Transmitter Radiated Spurious Emissions

6.1 Method

Tests are performed in accordance with FCC Part 15 Subpart C (15.247), ANSI C63.10, KDB558074, and RSS-247.

TEST SITE: 10m ALSE

The 10m ALSE is 13m (Length) x 21m (Depth) x 10m (Height) with the effective size in terms of space from the tips of the absorber is 12m (Length) x 20m (Depth) x 8.5m (Height). This chamber achieves broadband performance using a unique arrangement of hybrid and ferrite tile absorber. This chamber has a built in 3m diameter turntable (Embedded type). The metal structure of the table makes electrical connection around the entire circumference of the turntable to the ground plane with a metal brush type connection. The turntable is located on one end of the chamber and the antennas are mounted 3 and 10 meters away at the other end of the chamber on the adjustable an Antenna Mast. The antenna mast is a non-conductive bore sighted type with remote control of antenna height and polarization. The Antenna Mast and the turntable can be remotely controlled through the controller located in the adjacent Control room. A Styrofoam table 80 cm high is used for table-top equipment.

Measurement Uncertainty

Measurement	Frequency Range	Expanded Uncertainty (k=2)	Ucispr
Radiated Emissions, 10m	30-1000 MHz	4.6 dB	6.3 dB
Radiated Emissions, 3m	30-1000 MHz	5.3 dB	6.3 dB
Radiated Emissions, 3m	1-6 GHz	4.5 dB	5.2 dB
Radiated Emissions, 3m	6-15 GHz	5.2 dB	5.5 dB
Radiated Emissions, 3m	15-18 GHz	5.0 dB	5.5 dB
Radiated Emissions, 3m	18-40 GHz	5.0 dB	5.5 dB

As shown in the table above our radiated emissions U_{lab} is less than the corresponding U_{CISPR} reference value in CISPR 16-4-2 Table 1, hence the compliance of the product is only based on the measured value, and no measurement uncertainty correction is required, based on CISPR 22 and CISPR 11 (for 2006 and later revisions) Clause 11.

Sample Calculation

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

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

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.

Assume a receiver reading of 52.0 dBμV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

RA = 52.0 dBμV
AF = 7.4 dB/m
CF = 1.6 dB
AG = 29.0 dB
FS = 32 dBμV/m

To convert from dBμV to μV or mV the following was used:

$UF = 10^{(NF / 20)}$ where UF = Net Reading in μV
NF = Net Reading in dBμV

Example:

FS = RA + AF + CF – AG = 52.0 + 7.4 + 1.6 – 29.0 = 32.0
$UF = 10^{(32\ dB\mu V / 20)}$ = 39.8 μV/m

Alternately, when C5 Software is used, the “Level” includes all losses and gains and is compared directly in the “Margin” column to the “Limit”. “AF” is the Antenna Factor; “PA+CL” are Preamp and Cable Loss. These are already accounted for in the “Level” column.

6.2 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV004'	Weather Station	Davis Instruments	7400	PE80529A61A	10/23/2015	10/23/2017
145128'	EMI Receiver (20 Hz - 40 Ghz)	Rohde & Schwarz	ESIB 40	839283/001	03/14/2015	03/14/2016
145-416'	Cables 145-400 145-402 145-404 145-408	Huber + Suhner	3m Track B cables	multiple	10/08/2015	10/08/2016
145013'	Preamplifier (150 KHz to 1.3 GHz)	Hewlett Packard	8447D	2944A07027	10/12/2015	10/12/2016
145106'	Bilog Antenna (30MHz - 5GHz)	Sunol Sciences	JB5	A111003	11/10/2015	11/10/2016
145-410'	Cables 145-400 145-403 145-405 145-406 145-407	Huber + Suhner	10m Track A Cables	multiple	09/01/2015	09/01/2016
ETS002'	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	04/10/2015	04/10/2016
EMC04'	ANTENNA, RIDGED GUIDE, 18-40 GHZ	EMCO	3116	2090	04/07/2015	04/07/2016
REA004'	3GHz High Pass Filter	Reactel, Inc	7HSX-3G/18G-S11	06-1	01/25/2016	01/25/2017
PRE8'	PREAMPLFIER 1- 40 GHz	MITEQ	NSP4000-NF	507145	08/28/2015	08/28/2016
CBLHF2012 -2M-2'	2m 9kHz-40GHz Coaxial Cable - SET2	Huber & Suhner	SF102	252675002	02/05/2015	02/05/2016
CBLHF2012 -5M-2'	5m 9kHz-40GHz Coaxial Cable - SET2	Huber & Suhner	SF102	252676002	02/05/2015	02/05/2016
145014'	Preamplifier (1 GHz to 26.5 GHz)	Hewlett Packard	8449B	3008A00232	05/13/2015	05/13/2016

Software Utilized:

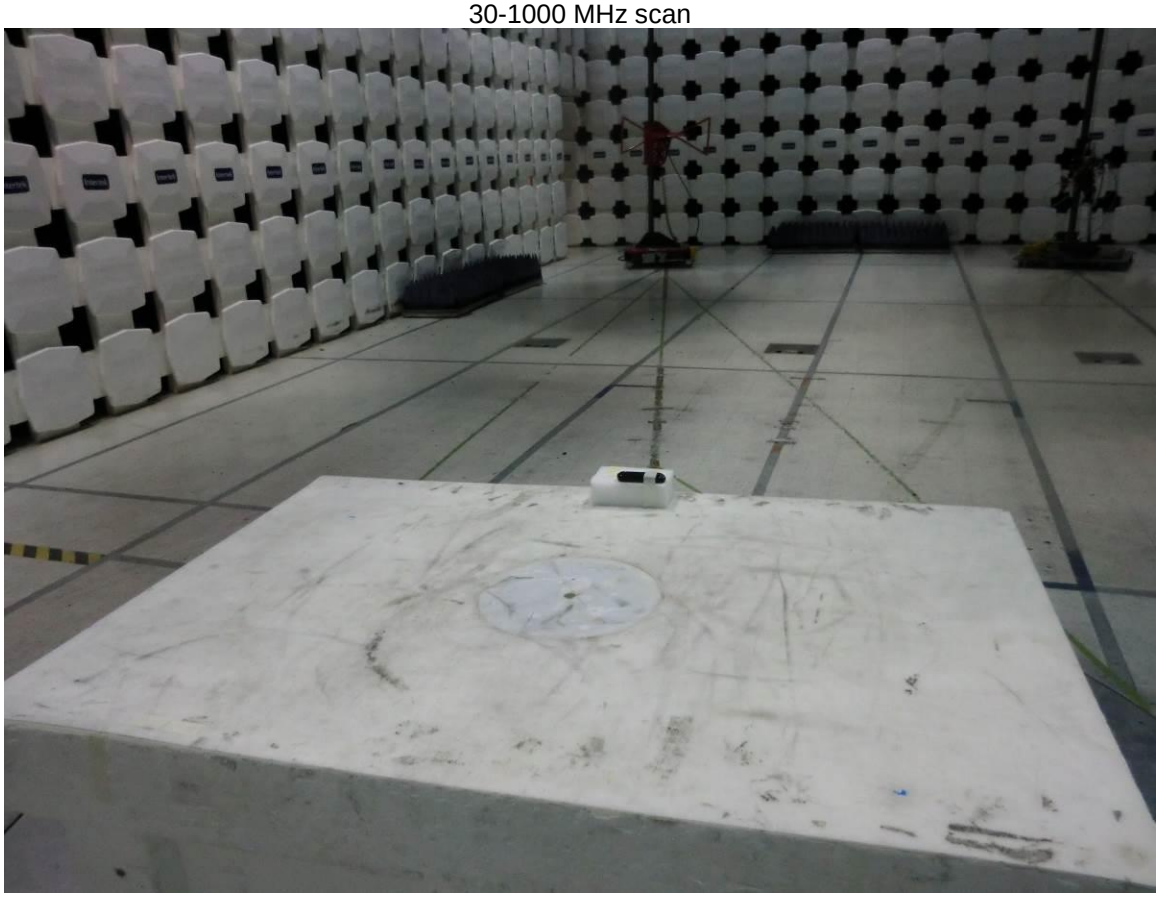
Name	Manufacturer	Version
C5 Emissions	Teseq	5.26.46.46
EMI Boxborough.xls	Intertek	08/27/2010

6.3 Results:

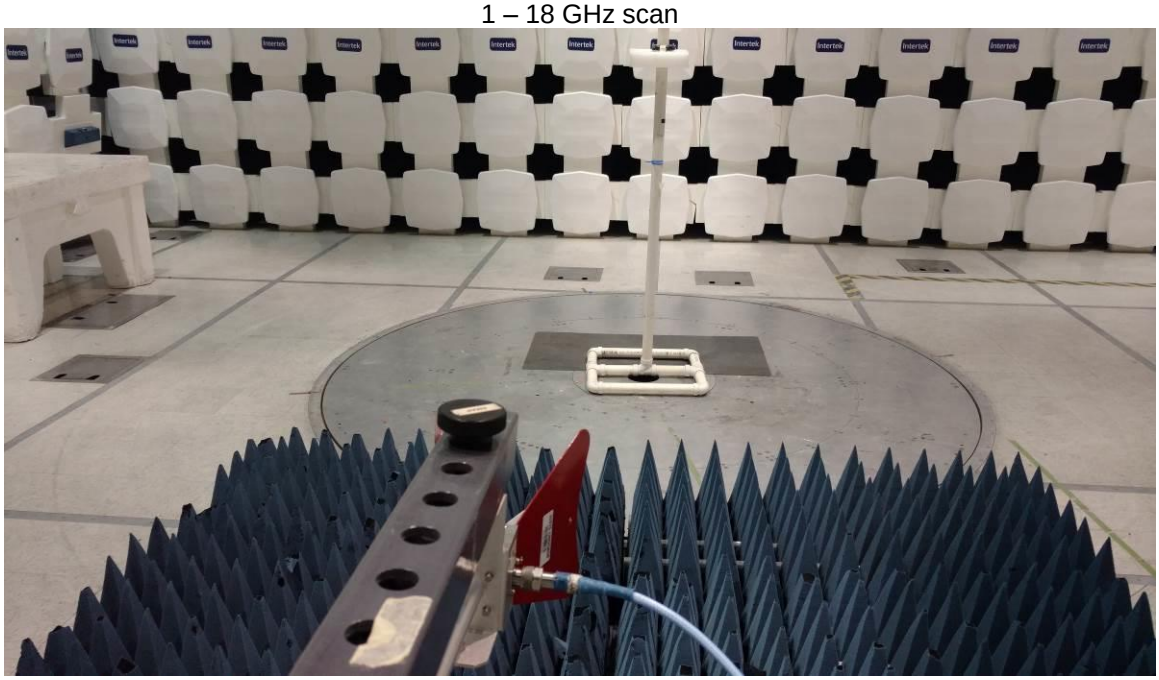
The sample tested was found to Comply.

6.4 Setup Photographs:

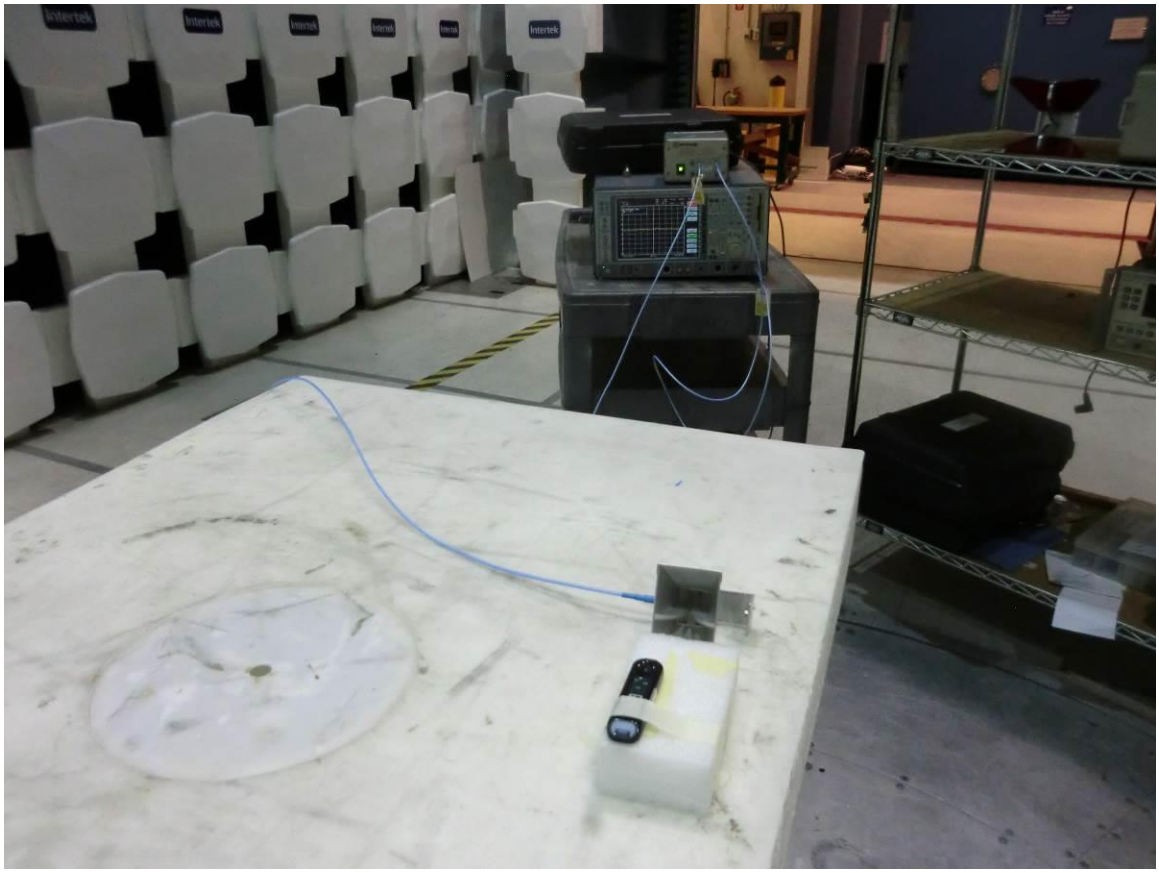
30-1000 MHz scan



1 – 18 GHz scan



18 – 25 GHz Hand Scan



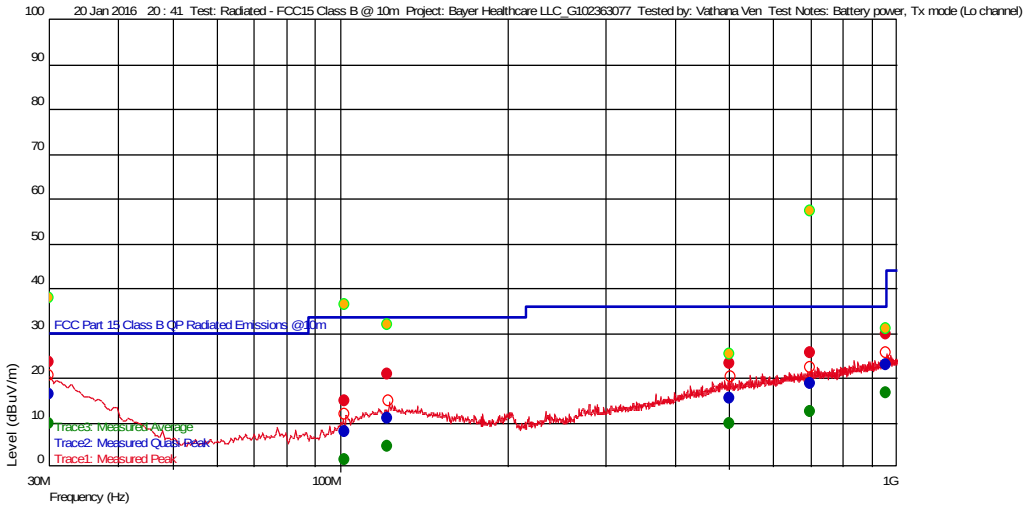
6.5 Plots/Data:

30 MHz – 1 GHz, Low Channel

Test Information

Test Details	User Entry
Test:	Radiated - FCC15 Class B @ 10m
Project:	Bayer Healthcare LLC_G102363077
Test Notes:	Battery power, Tx mode (Lo channel)
Temperature:	20 deg C
Humidity:	11%, 1005 Mb
Tested by:	Vathana Ven
Test Started:	20 Jan 2016 20 : 41

Prescan Emission Graph



- Measured Peak Value
- Measured Quasi Peak Value
- Measured Average Value
- Maximum Value of Mast and Turntable
- Swept Peak Data
- Swept Quasi Peak Data
- Swept Average Data

Emissions Test Data

Trace2: Measured Quasi Peak

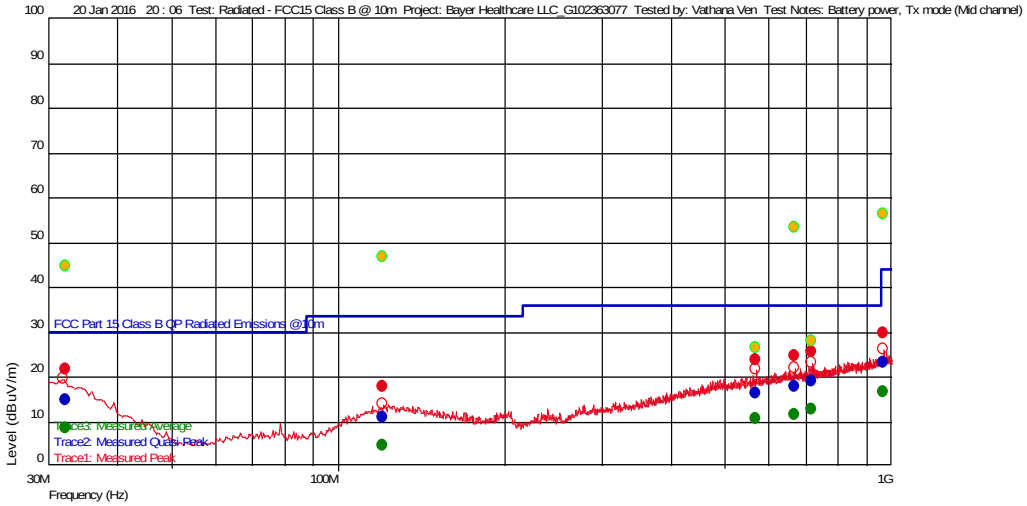
Frequency (Hz)	Level (dBuV/m)	AF	PA+CL	Limit (dBuV/m)	Margin (dBuV/m)	Hor (--), Ver (|)	Azimuth (deg)(Deg)	Mast Height(m)	RBW(Hz)
102.079559479 M	7.96	11.116	-26.385	33.520	-25.56	--	360	4.00	120 k
121.647695052 M	10.87	14.100	-26.248	33.520	-22.65	|	254	3.87	120 k
502.855711076 M	15.46	17.800	-24.277	36.020	-20.56	|	91	1.60	120 k
701.020641774 M	18.66	20.120	-23.851	36.020	-17.36	--	280	1.66	120 k
30.025651303 M	16.13	21.482	-28.059	30.000	-13.87	--	296	2.44	120 k
957.331663445 M	22.91	22.953	-22.539	36.020	-13.11	|	18	3.27	120 k

30 MHz – 1 GHz, Mid Channel

Test Information

Test Details	User Entry	Additional Information
Test:	Radiated - FCC15 Class B @ 10m	
Project:	Bayer Healthcare LLC_G102363077	
Test Notes:	Battery power, Tx mode (Mid channel)	
Temperature:	20 deg C	
Humidity:	11%, 1005 mB	
Tested by:	Vathana Ven	
Test Started:	20 Jan 2016 20 : 06	

Prescan Emission Graph



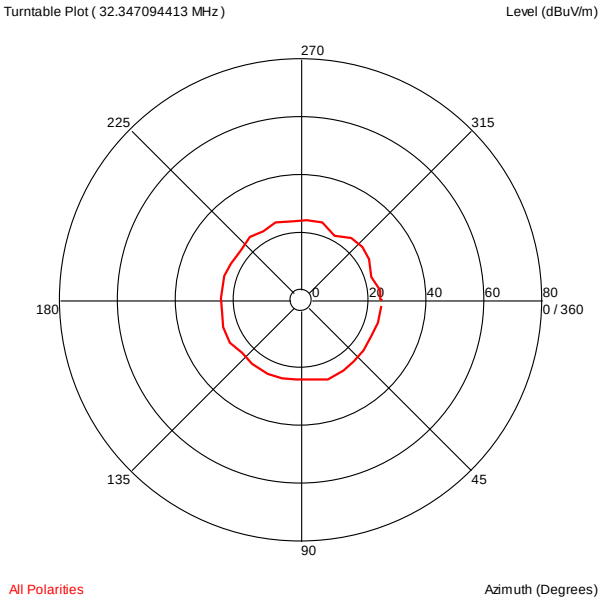
- Measured Peak Value
- Measured Quasi Peak Value
- Measured Average Value
- Maximum Value of Mast and Turntable
- Swept Peak Data
- Swept Quasi Peak Data
- Swept Average Data

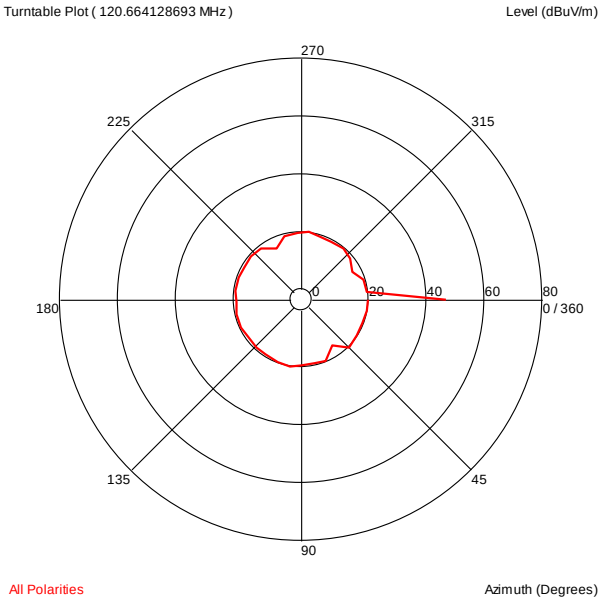
Emissions Test Data

Trace2: Measured Quasi Peak

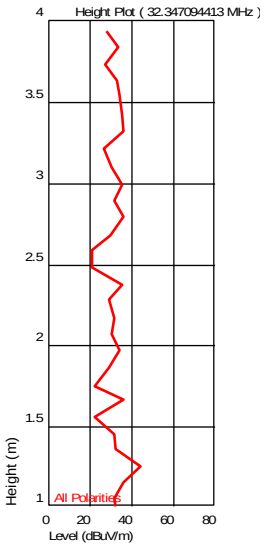
Frequency (Hz)	Level (dBuV/m)	AF	PA+CL	Limit (dBuV/m)	Margin (dBuV/m)	Hor (--), Ver (|)	Azimuth (deg)(Deg)	Mast Height(m)	RBW(Hz)	Comment
120.664128693 M	11.04	14.066	-26.255	33.520	-22.48	--	360	3.51	120 k	
968.337876048 M	23.12	22.866	-22.455	43.980	-20.86	|	0	1.35	120 k	
568.685370914 M	16.38	18.747	-24.065	36.020	-19.64	|	63	3.40	120 k	
667.971943507 M	17.86	19.700	-23.888	36.020	-18.16	|	29	1.56	120 k	
719.626051671 M	18.93	20.593	-23.824	36.020	-17.09	|	33	1.21	120 k	
32.347094413 M	14.73	19.922	-28.012	30.000	-15.27	|	138	1.36	120 k	

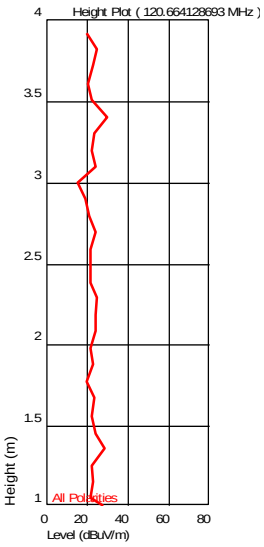
Azimuth Plots

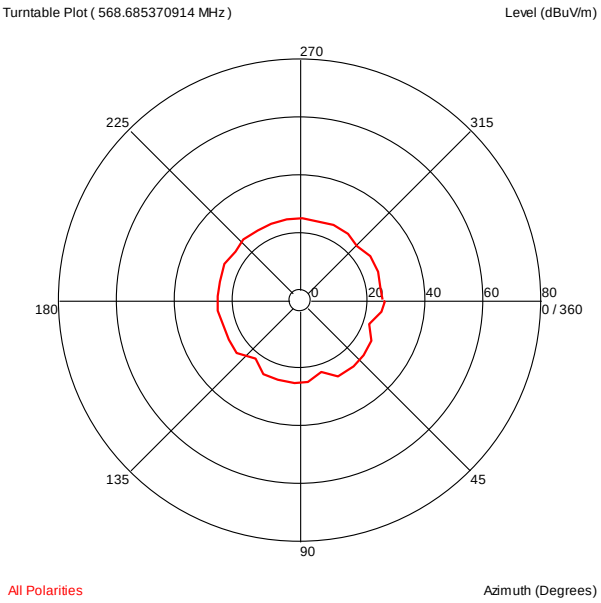


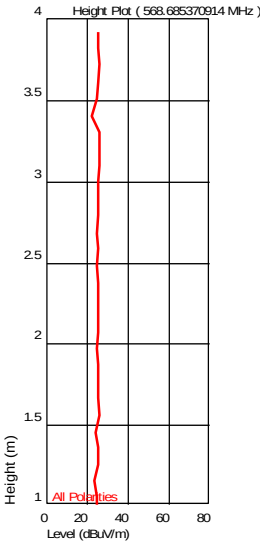


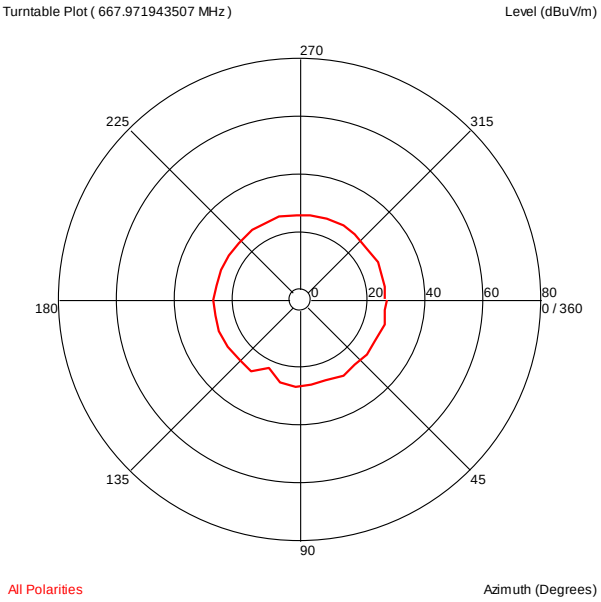
Turntable Plots

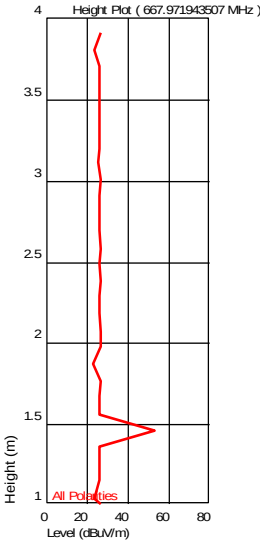


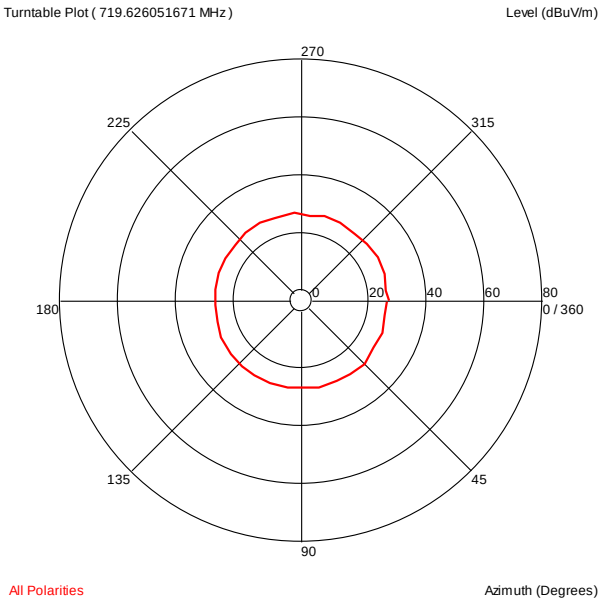


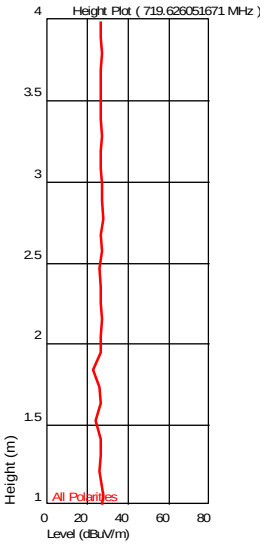

Turntable Plot (568.685370914 MHz)
Level (dBuV/m)
270
225
315
180
0
20
40
60
80
0 / 360
135
45
90
All Polarities
Azimuth (Degrees)

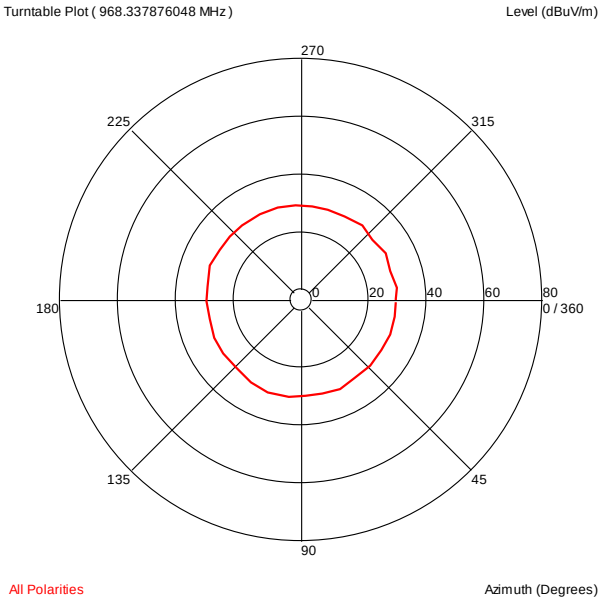

Height Plot (568.685370914 MHz)
4
3.5
3
2.5
2
1.5
1
Height (m)
All Polarities
0
20
40
60
80
Level (dBuV/m)

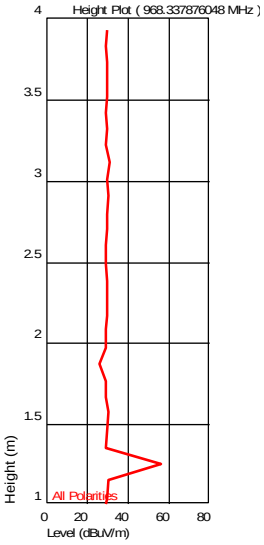

Turntable Plot (667.971943507 MHz)
Level (dBuV/m)
270
225
315
180
0
20
40
60
80
0 / 360
135
45
90
All Polarities
Azimuth (Degrees)


Height Plot (667.971943507 MHz)
4
3.5
3
2.5
2
1.5
1
Height (m)
All Polarities
0
20
40
60
80
Level (dBuV/m)


Turntable Plot (719.626051671 MHz)
Level (dBuV/m)
270
225
315
180
0
20
40
60
80
0 / 360
135
45
90
All Polarities
Azimuth (Degrees)


Height Plot (719.626051671 MHz)
4
3.5
3
2.5
2
1.5
1
Height (m)
All Polarities
0
20
40
60
80
Level (dBuV/m)


Turntable Plot (968.337876048 MHz)
Level (dBuV/m)
270
225
315
180
0
20
40
60
80
0 / 360
135
45
90
All Polarities
Azimuth (Degrees)

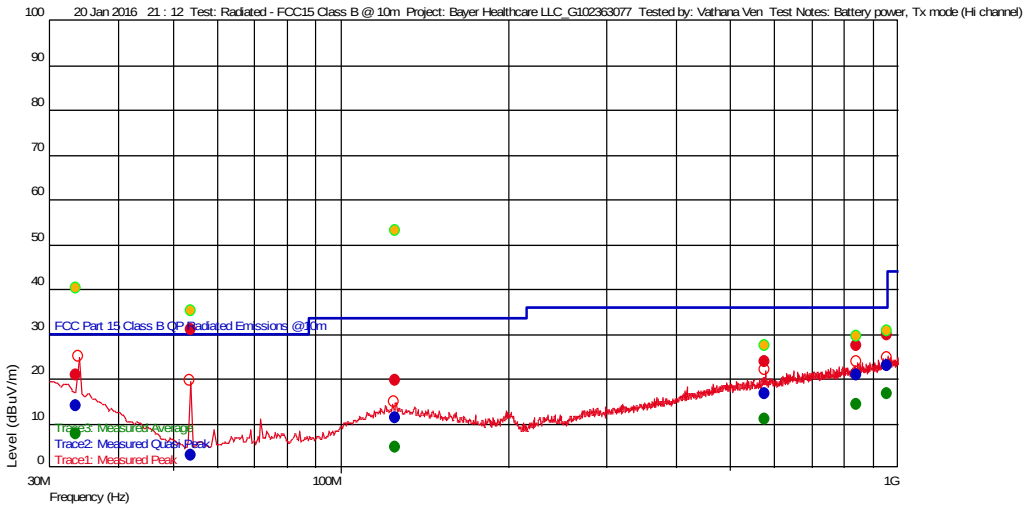

Height Plot (968.337876048 MHz)
4
3.5
3
2.5
2
1.5
1
Height (m)
All Polarities
0
20
40
60
80
Level (dBuV/m)

30 MHz – 1 GHz, High Channel

Test Information

Test Details	User Entry	Additional Information
Test:	Radiated - FCC15 Class B @ 10m	
Project:	Bayer Healthcare LLC_G102363077	
Test Notes:	Battery power, Tx mode (Hi channel)	
Temperature:	20 deg C	
Humidity:	11%, 1005 mB	
Tested by:	Vathana Ven	
Test Started:	20 Jan 2016 21 : 12	

Prescan Emission Graph



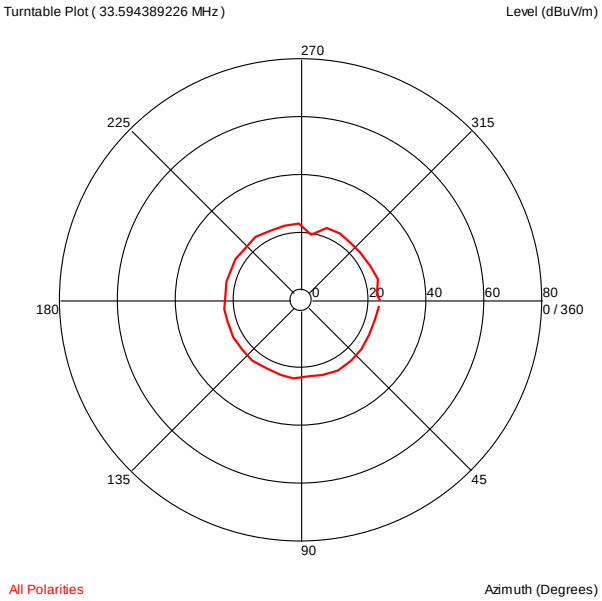
- Measured Peak Value
- Measured Quasi Peak Value
- Measured Average Value
- Maximum Value of Mast and Turntable
- Swept Peak Data
- Swept Quasi Peak Data
- Swept Average Data

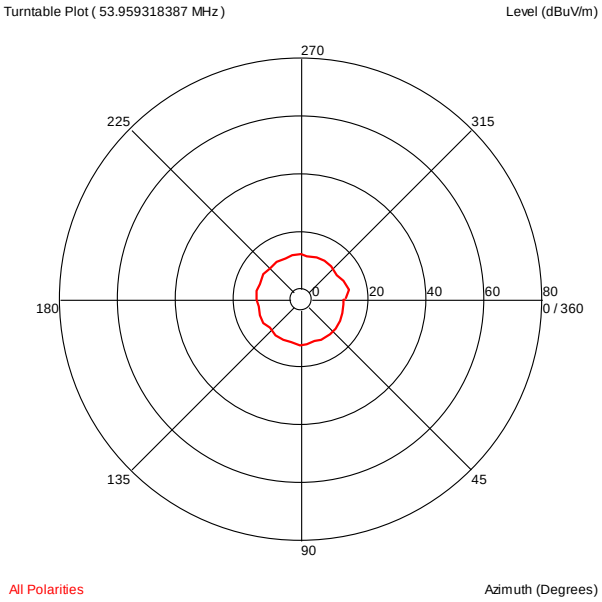
Emissions Test Data

Trace2: Measured Quasi Peak

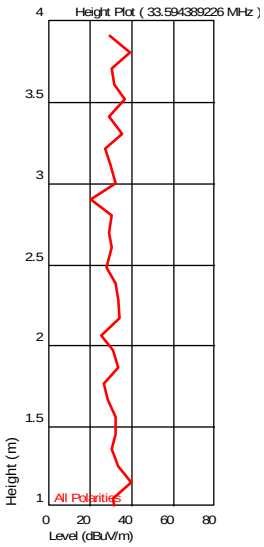
Frequency (Hz)	Level (dBuV/m)	AF	PA+CL	Limit (dBuV/m)	Margin (dBuV/m)	Hor (--), Ver (|)	Azimuth (deg)(Deg)	Mast Height(m)	RBW(Hz)	Comment
53.959318387 M	2.98	7.204	-27.551	30.000	-27.02	|	357	3.53	120 k	
125.478957914 M	11.10	14.200	-26.222	33.520	-22.42	--	276	1.66	120 k	
576.882164511 M	16.70	18.800	-24.038	36.020	-19.32	|	247	3.75	120 k	
33.594389226 M	13.81	18.984	-27.986	30.000	-16.19	|	333	1.25	120 k	
845.817635427 M	20.80	21.900	-23.374	36.020	-15.22	--	170	3.96	120 k	
958.330060351 M	22.90	22.933	-22.531	36.020	-13.12	|	266	4.00	120 k	

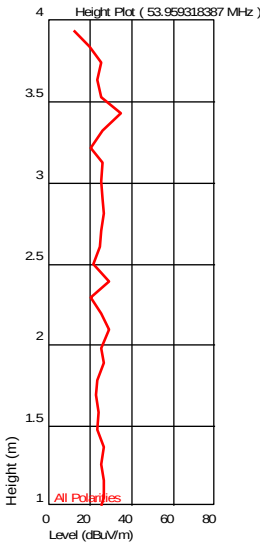
Azimuth Plots

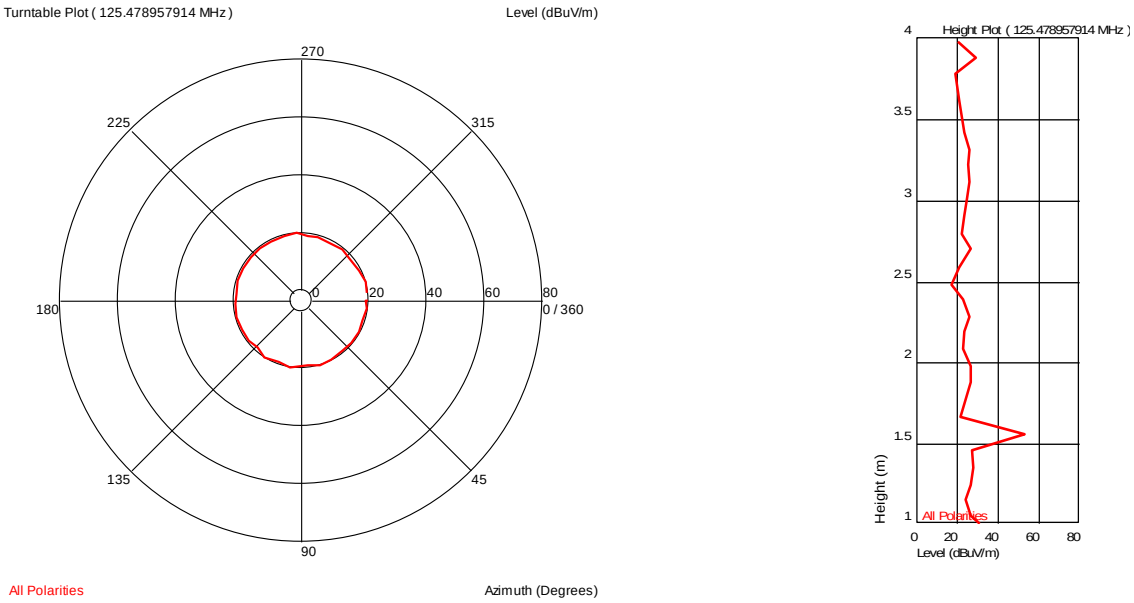


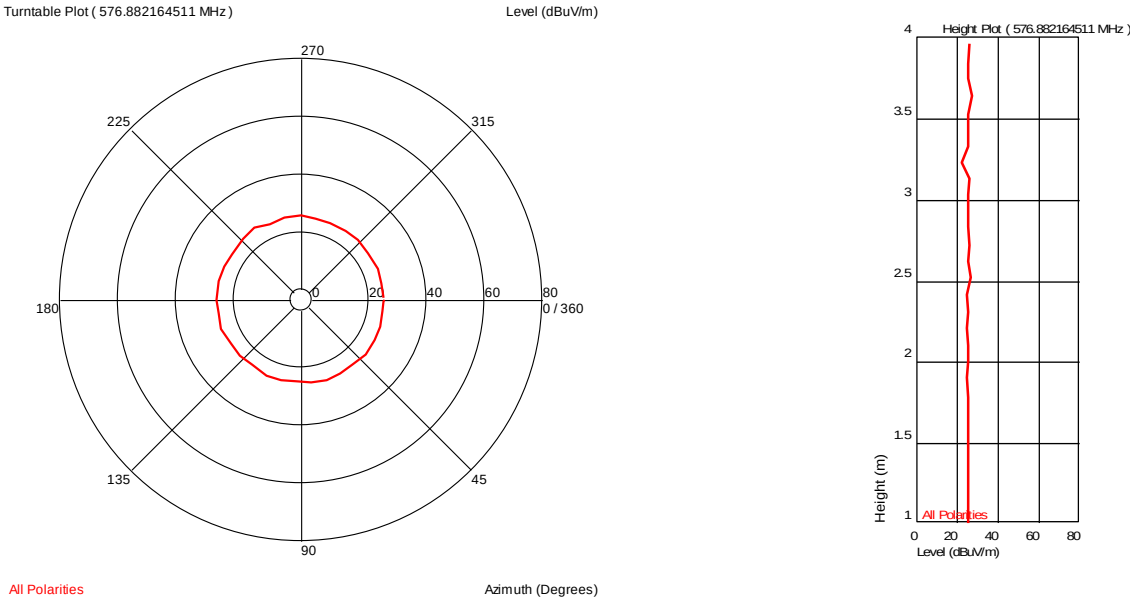


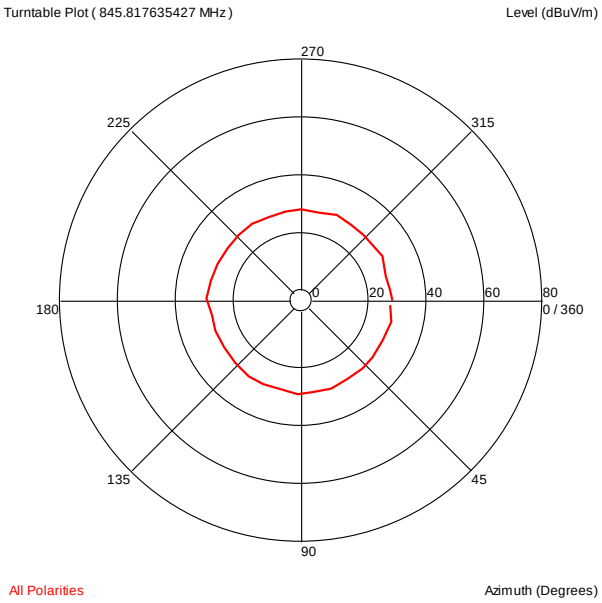
Turntable Plots

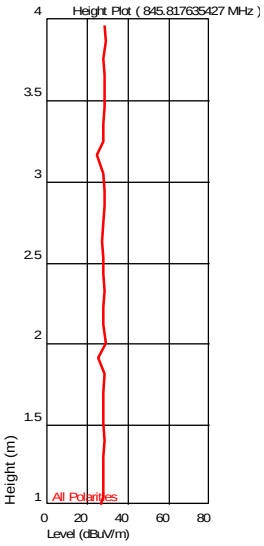


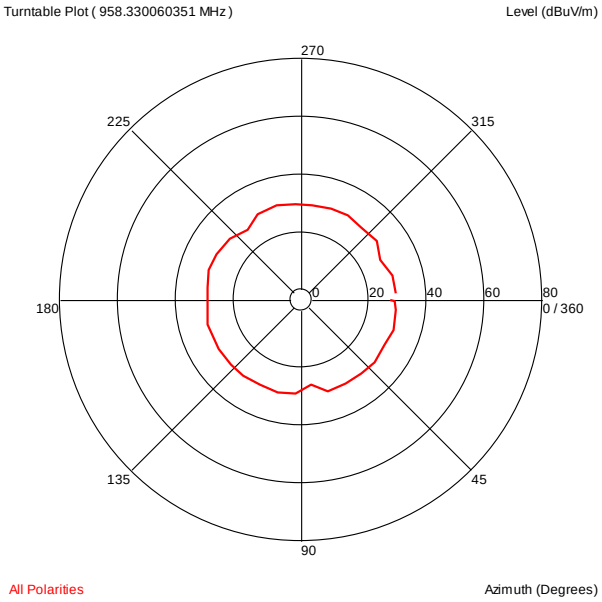


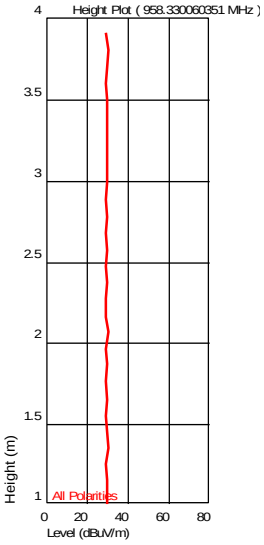

Turntable Plot (125.478957914 MHz)
Level (dBuV/m)
270
225
315
180
0
20
40
60
80
0 / 360
135
45
90
All Polarities
Azimuth (Degrees)
Height Plot (125.478957914 MHz)
4
3.5
3
2.5
2
1.5
1
Height (m)
All Polarities
0
20
40
60
80
Level (dBuV/m)


Turntable Plot (576.882164511 MHz)
Level (dBuV/m)
270
225
315
180
0
20
40
60
80
0 / 360
135
45
90
All Polarities
Azimuth (Degrees)
Height Plot (576.882164511 MHz)
4
3.5
3
2.5
2
1.5
1
Height (m)
All Polarities
0
20
40
60
80
Level (dBuV/m)


Turntable Plot (845.817635427 MHz)
Level (dBuV/m)
270
225
315
180
0
20
40
60
80
0 / 360
135
45
90
All Polarities
Azimuth (Degrees)


Height Plot (845.817635427 MHz)
4
3.5
3
2.5
2
1.5
1
Height (m)
All Polarities
0
20
40
60
80
Level (dBuV/m)


Turntable Plot (958.330060351 MHz)
Level (dBuV/m)
270
225
315
180
0
20
40
60
80
0 / 360
135
45
90
All Polarities
Azimuth (Degrees)


Height Plot (958.330060351 MHz)
4
3.5
3
2.5
2
1.5
1
Height (m)
All Polarities
0
20
40
60
80
Level (dBuV/m)

Scan 1 – 25 GHz

Radiated Emissions

Company: Ascensia Diabetes Care
Model #: Contour Next(Plus) One
Serial #: P310490
Engineers: Naga Suryadevara Location: 10M
Project #: G102363077 Date(s): 02/01/16
Standard: FCC 15.247/ RSS-247
Receiver: R&S ESI (145-128) 03-14-2016 Limit Distance (m): 3
PreAmp: 145014 05-13-16.txt Test Distance (m): 3
PreAmp Used? (Y or N): Y Voltage/Frequency: 2(3V) batteries Frequency Range: 1-25GHz

Antenna & Cables: HF Bands: N, LF, HF, SHF
Antenna: ETS002 04-10-16.txt ETS002 04-10-16.txt EMC04
Cable(s): 145-416 1-18 GHz 10-08-16.txt PRE8 CBLHF2012-2M-2 CBLHF2012-5M-2
Barometer: DAV004 Filter: REA002
Temp/Humidity/Pressure: 20 C 25% 1006mbars

Net = Reading (dBuV/m) + Antenna Factor (dB1/m) + Cable Loss (dB) - Preamp Factor (dB) - Distance Factor (dB)
Peak: PK Quasi-Peak: QP Average: AVG RMS: RMS; NF = Noise Floor, RB = Restricted Band; Bandwidth denoted as RBW/VBW

Detector Type	Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	Net dB(uV/m)	Limit dB(uV/m)	Margin dB	Bandwidth	FCC	IC	Harmonic?
Note: Spurious Emissions Reference. Fundamental frequencies (modulated) at 3 meters with no pre-amp														
PK	V	2402.000	53.94	31.98	3.67	0.00	0.00	89.59	-	-	100/300 kHz			No Pre-Amp
PK	H	2440.000	53.82	32.08	3.73	0.00	0.00	89.63	-	-	100/300 kHz			No Pre-Amp
PK	V	2480.000	53.36	32.19	3.78	0.00	0.00	89.33	-	-	100/300 kHz			No Pre-Amp
Tx CH 0, F = 2402 MHz, Spurious emissions														
PK	V	4804.000	34.95	34.02	5.98	31.62	0.00	43.33	74.00	-30.67	1/3 MHz	RB	Noise Floor	
AVG	V	4804.000	26.23	34.02	5.98	31.62	0.00	34.61	54.00	-19.39	1/3 MHz	RB	Noise Floor	
PK	V	7206.000	34.70	35.64	7.03	31.08	0.00	46.29	69.59	-23.30	100/300 kHz		Noise Floor	
PK	V	9608.000	31.67	36.70	7.66	28.49	0.00	47.54	69.59	-22.05	100/300 kHz		Noise Floor	
PK	V	12010.000	32.22	38.78	8.78	24.91	0.00	54.87	74.00	-19.13	1/3 MHz	RB	Noise Floor	
AVG	V	12010.000	19.85	38.78	8.78	24.91	0.00	42.50	54.00	-11.50	1/3 MHz	RB	Noise Floor	
PK	V	14412.000	33.13	39.15	9.30	26.23	0.00	55.35	69.59	-14.24	100/300 kHz		Noise Floor	
PK	V	16814.000	31.44	41.22	9.71	26.75	0.00	55.62	69.59	-13.97	100/300 kHz		Noise Floor	
Tx CH 19, F = 2440 MHz, Spurious emissions														
PK	V	4880.000	37.63	33.98	6.07	31.60	0.00	46.08	74.00	-27.92	1/3 MHz	RB	Noise Floor	
AVG	V	4880.000	23.90	33.98	6.07	31.60	0.00	32.35	54.00	-21.65	1/3 MHz	RB	Noise Floor	
PK	V	7320.000	36.43	35.64	6.97	31.05	0.00	47.98	74.00	-26.02	1/3 MHz	RB	Noise Floor	
AVG	V	7320.000	20.96	35.64	6.97	31.05	0.00	32.51	54.00	-21.49	1/3 MHz	RB	Noise Floor	
PK	V	9760.000	27.51	36.85	7.60	28.26	0.00	43.70	69.63	-25.93	100/300 kHz		Noise Floor	
PK	V	12200.000	36.62	38.92	8.90	25.01	0.00	59.43	74.00	-14.57	1/3 MHz	RB	Noise Floor	
AVG	V	12200.000	19.80	38.92	8.90	25.01	0.00	42.61	54.00	-11.39	1/3 MHz	RB	Noise Floor	
PK	V	14640.000	25.12	39.39	9.29	26.35	0.00	47.45	69.63	-22.18	100/300 kHz		Noise Floor	
PK	V	17080.000	27.78	41.20	9.71	26.64	0.00	52.05	69.63	-17.58	100/300 kHz		Noise Floor	
Tx CH 39, F = 2480 MHz, Spurious emissions														
PK	V	4960.000	37.10	34.07	6.16	31.58	0.00	45.74	74.00	-28.26	1/3 MHz	RB	Noise Floor	
AVG	V	4960.000	20.32	34.07	6.16	31.58	0.00	28.96	54.00	-25.04	1/3 MHz	RB	Noise Floor	
PK	V	7440.000	35.32	35.67	6.90	31.03	0.00	46.86	74.00	-27.14	1/3 MHz	RB	Noise Floor	
AVG	V	7440.000	19.60	35.67	6.90	31.03	0.00	31.14	54.00	-22.86	1/3 MHz	RB	Noise Floor	
PK	V	9920.000	26.04	36.98	7.53	28.02	0.00	42.54	69.33	-26.79	100/300 kHz		Noise Floor	
PK	V	12400.000	36.04	39.00	9.03	25.12	0.00	58.95	74.00	-15.05	1/3 MHz	RB	Noise Floor	
AVG	V	12400.000	18.89	39.00	9.03	25.12	0.00	41.80	54.00	-12.20	1/3 MHz	RB	Noise Floor	
PK	V	14880.000	24.56	39.48	9.29	26.48	0.00	46.85	69.33	-22.48	100/300 kHz		Noise Floor	
PK	V	17360.000	23.39	41.42	9.78	26.52	0.00	48.07	69.33	-21.26	100/300 kHz		Noise Floor	

Hand scans were performed from 18-25GHz at a distance of <1m, no emissions were detected above the measuring equipment noise floor.

Test Personnel: Naga Suryadevara NS
Supervising/Reviewing Engineer: (Where Applicable) Vathana Ven VSV
Product Standard: FCC 15.247 and RSS-247
Input Voltage: Internal battery
Pretest Verification w/ Ambient Signals or BB Source: **Yes**

Test Date: 01/20/2016 & 02/01/2016
Limit Applied: Below specified limit
Ambient Temperature: 20, 20 ºC
Relative Humidity: 11, 25 %
Atmospheric Pressure: 1005, 1006 mbars

Deviations, Additions, or Exclusions: None

7 6 dB and Occupied Bandwidth

7.1 Method

Tests are performed in accordance with FCC Part 15 Subpart C (15.247), ANSI C63.10, KDB558074, and RSS-247.

TEST SITE: 10m ALSE

The 10m ALSE is 13m (Length) x 21m (Depth) x 10m (Height) with the effective size in terms of space from the tips of the absorber is 12m (Length) x 20m (Depth) x 8.5m (Height). This chamber achieves broadband performance using a unique arrangement of hybrid and ferrite tile absorber. This chamber has a built in 3m diameter turntable (Embedded type). The metal structure of the table makes electrical connection around the entire circumference of the turntable to the ground plane with a metal brush type connection. The turntable is located on one end of the chamber and the antennas are mounted 3 and 10 meters away at the other end of the chamber on the adjustable an Antenna Mast. The antenna mast is a non-conductive bore sighted type with remote control of antenna height and polarization. The Antenna Mast and the turntable can be remotely controlled through the controller located in the adjacent Control room. A Styrofoam table 80 cm high is used for table-top equipment.

Measurement Uncertainty

Measurement	Frequency Range	Expanded Uncertainty (k=2)	Ucispr
Radiated Emissions, 10m	30-1000 MHz	4.6 dB	6.3 dB
Radiated Emissions, 3m	30-1000 MHz	5.3 dB	6.3 dB
Radiated Emissions, 3m	1-6 GHz	4.5 dB	5.2 dB
Radiated Emissions, 3m	6-15 GHz	5.2 dB	5.5 dB
Radiated Emissions, 3m	15-18 GHz	5.0 dB	5.5 dB
Radiated Emissions, 3m	18-40 GHz	5.0 dB	5.5 dB

7.2 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV004'	Weather Station	Davis Instruments	7400	PE80529A61A	10/23/2015	10/23/2017
145128'	EMI Receiver (20 Hz - 40 Ghz)	Rohde & Schwarz	ESIB 40	839283/001	03/14/2015	03/14/2016
145-416'	Cables 145-400 145-402 145-404 145-408	Huber + Suhner	3m Track B cables	multiple	10/08/2015	10/08/2016
ETS002'	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	04/10/2015	04/10/2016

Software Utilized:

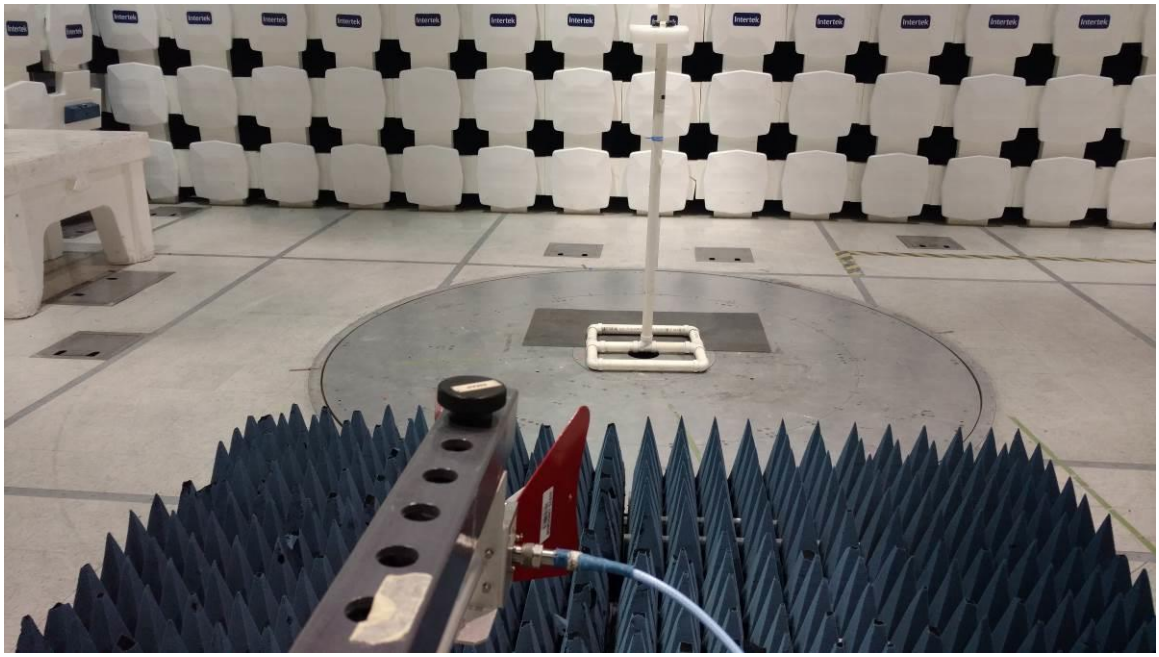
Name	Manufacturer	Version
None		

7.3 Results:

The sample tested was found to Comply.

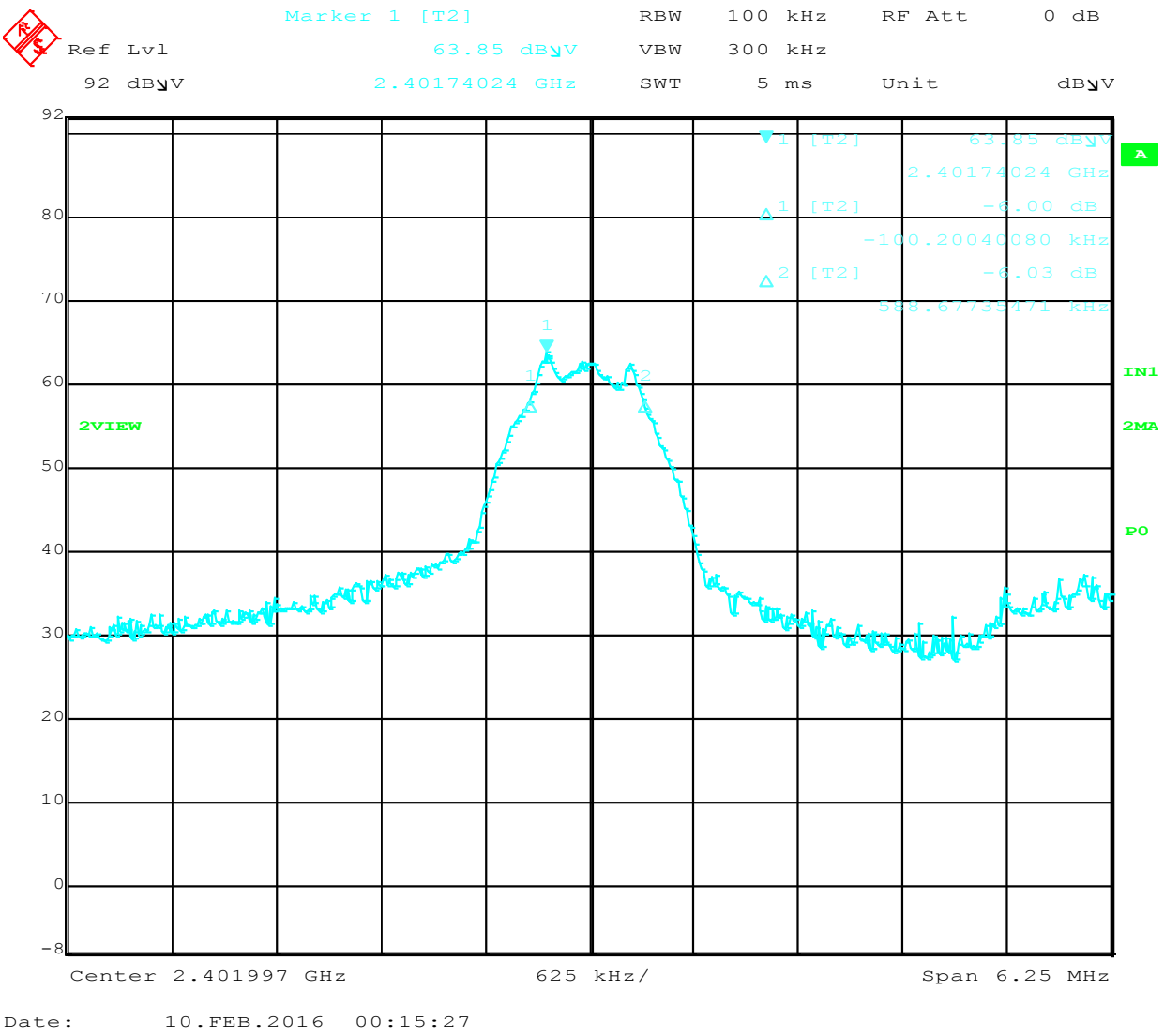
The sample tested was found to Comply. The 99% power bandwidth, or 6 dB bandwidth, must not be less than 500 kHz.

7.4 Setup Photograph:

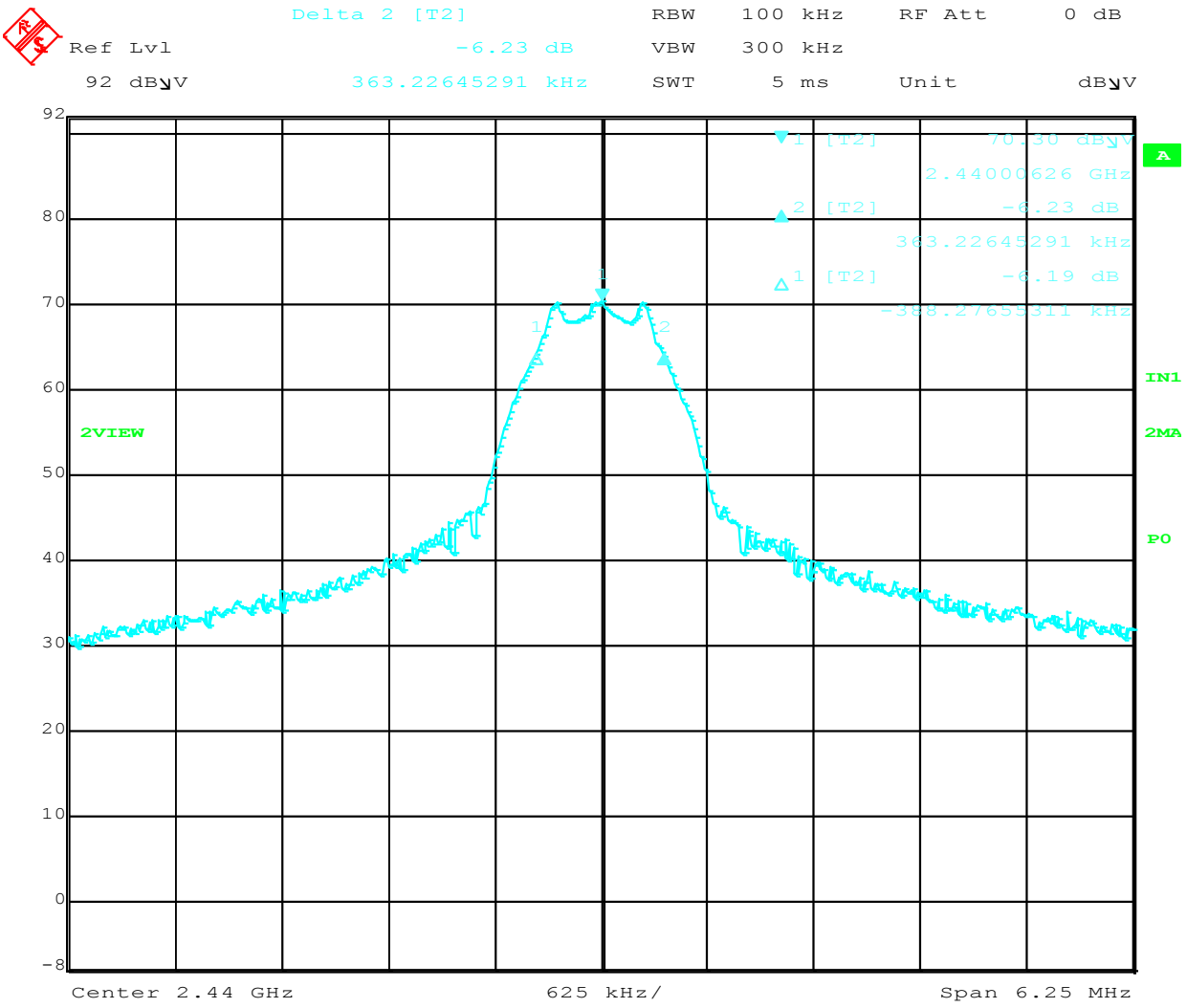


7.5 Plots/Data:

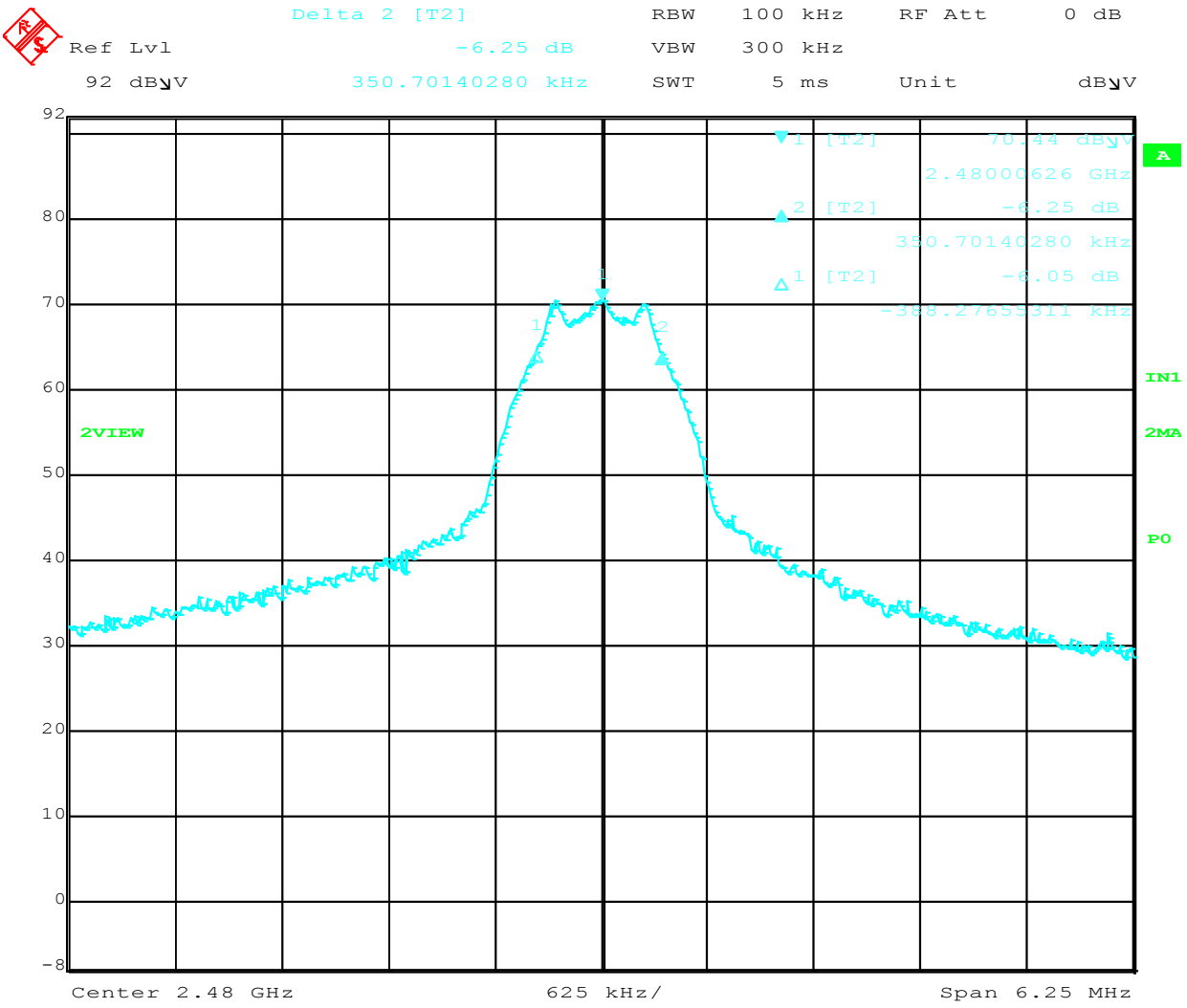
Low Channel 2402 MHz, 6 dB bandwidth – 688.87 kHz



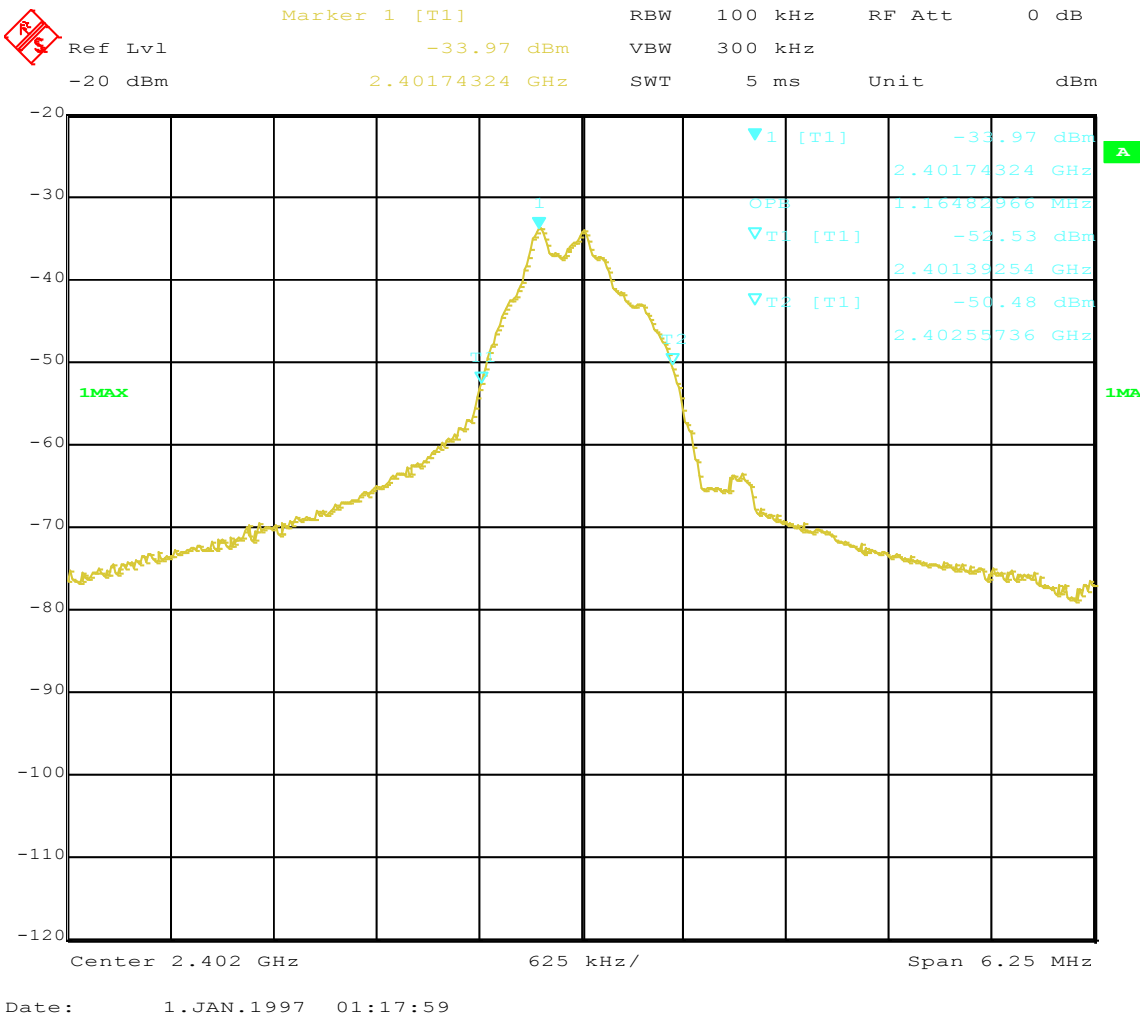
Mid Channel 2440 MHz, 6 dB bandwidth – 751.49 kHz



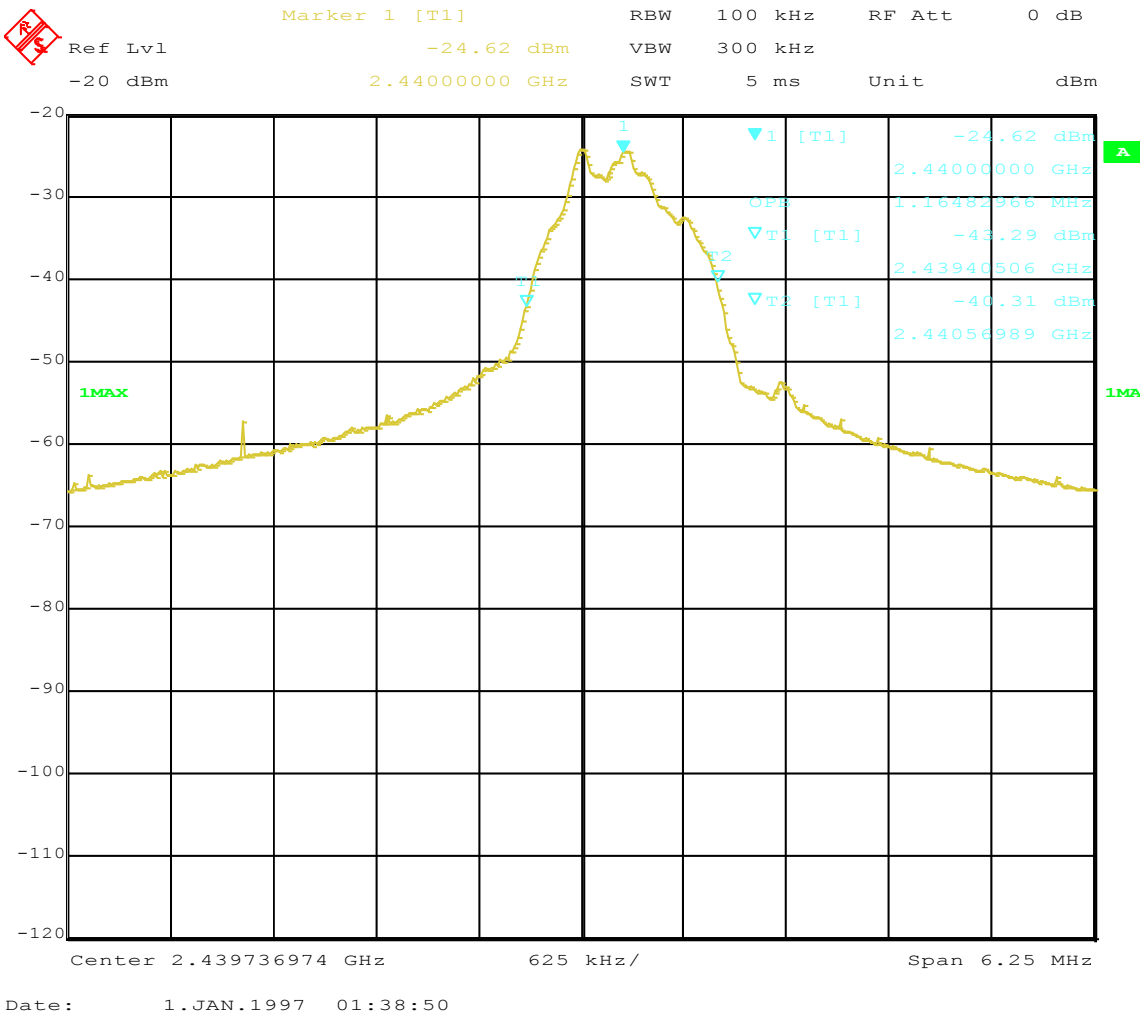
Hi Channel 2480 MHz, 6 dB bandwidth – 738.97 kHz



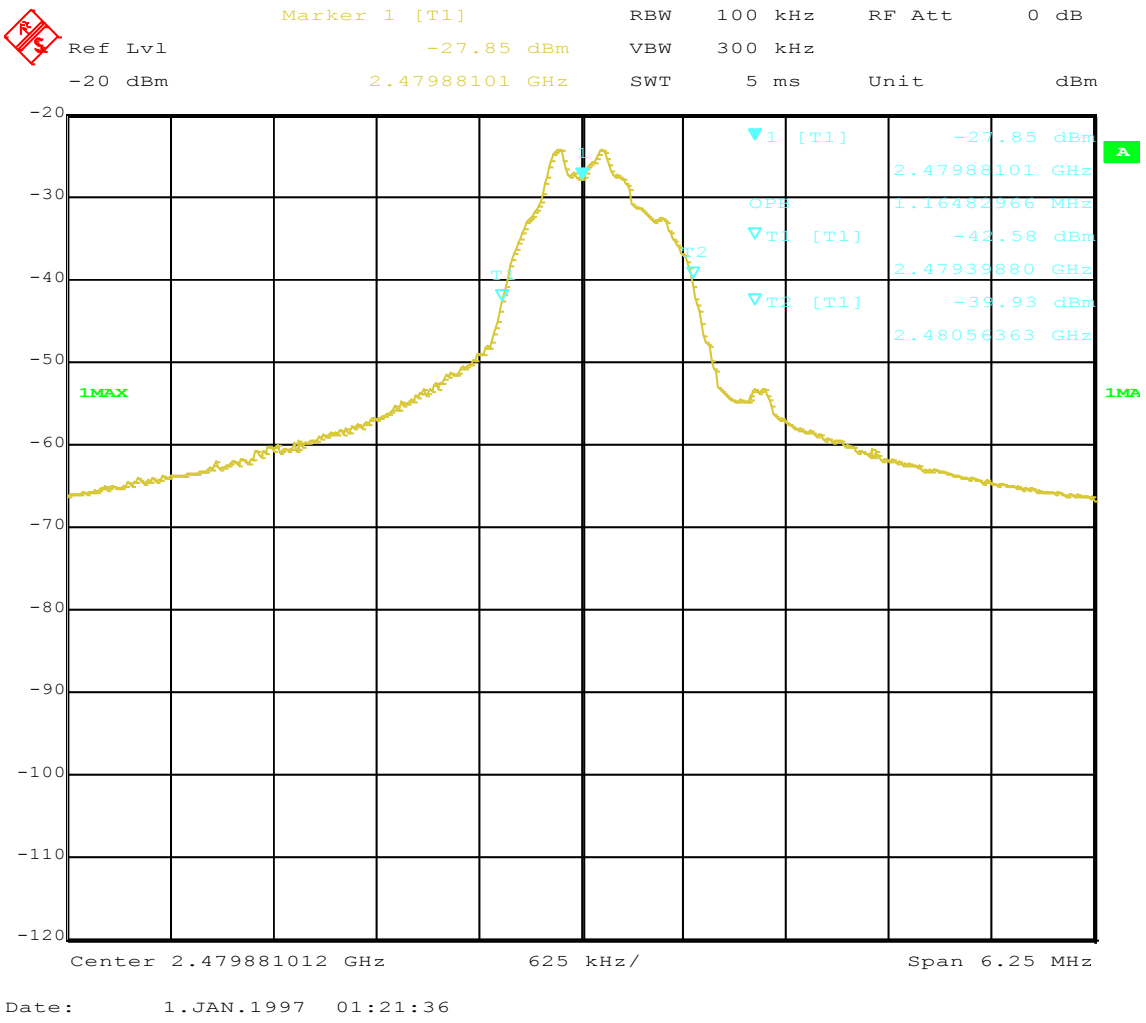
Occupied Bandwidth, Low Channel – 1.164 MHz



Occupied Bandwidth, Mid Channel – 1.164 MHz



Occupied Bandwidth, High Channel – 1.164 MHz



Test Personnel:	Naga Suryadevara NS	Test Date:	02/04/2016
Supervising/Reviewing Engineer: (Where Applicable)	Vathana Ven VSV		
Product Standard:	FCC Part 15 Subpart C and RSS-247	Limit Applied:	Below specified limit
Input Voltage:	Internal battery	Ambient Temperature:	20 ºC
Pretest Verification:	**Yes**	Relative Humidity:	18 %
		Atmospheric Pressure:	1003 mbars

Deviations, Additions, or Exclusions: None

8 Maximum Peak Output Power and Human RF exposure

8.1 Method

Tests are performed in accordance with FCC Part 15 Subpart C (15.247), ANSI C63.10, KDB558074, and RSS-247.

The 10m ALSE is 13m (Length) x 21m (Depth) x 10m (Height) with the effective size in terms of space from the tips of the absorber is 12m (Length) x 20m (Depth) x 8.5m (Height). This chamber achieves broadband performance using a unique arrangement of hybrid and ferrite tile absorber. This chamber has a built in 3m diameter turntable (Embedded type). The metal structure of the table makes electrical connection around the entire circumference of the turntable to the ground plane with a metal brush type connection. The turntable is located on one end of the chamber and the antennas are mounted 3 and 10 meters away at the other end of the chamber on the adjustable an Antenna Mast. The antenna mast is a non-conductive bore sighted type with remote control of antenna height and polarization. The Antenna Mast and the turntable can be remotely controlled through the controller located in the adjacent Control room. A Styrofoam table 80 cm high is used for table-top equipment.

Measurement Uncertainty

Measurement	Frequency Range	Expanded Uncertainty (k=2)	Ucispr
Radiated Emissions, 10m	30-1000 MHz	4.6 dB	6.3 dB
Radiated Emissions, 3m	30-1000 MHz	5.3 dB	6.3 dB
Radiated Emissions, 3m	1-6 GHz	4.5 dB	5.2 dB
Radiated Emissions, 3m	6-15 GHz	5.2 dB	5.5 dB
Radiated Emissions, 3m	15-18 GHz	5.0 dB	5.5 dB
Radiated Emissions, 3m	18-40 GHz	5.0 dB	5.5 dB

As shown in the table above our radiated emissions U_{lab} is less than the corresponding U_{CISPR} reference value in CISPR 16-4-2 Table 1, hence the compliance of the product is only based on the measured value, and no measurement uncertainty correction is required, based on CISPR 22 and CISPR 11 (for 2006 and later revisions) Clause 11.

Sample Calculation

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

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

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.

Assume a receiver reading of 52.0 dBμV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

RA = 52.0 dBμV
AF = 7.4 dB/m
CF = 1.6 dB
AG = 29.0 dB
FS = 32 dBμV/m

To convert from dBμV to μV or mV the following was used:

$UF = 10^{(NF / 20)}$ where UF = Net Reading in μV
NF = Net Reading in dBμV

Example:

FS = RA + AF + CF – AG = 52.0 + 7.4 + 1.6 – 29.0 = 32.0
$UF = 10^{(32\ dB\mu V / 20)}$ = 39.8 μV/m

Alternately, when C5 Software is used, the “Level” includes all losses and gains and is compared directly in the “Margin” column to the “Limit”. “AF” is the Antenna Factor; “PA+CL” are Preamp and Cable Loss. These are already accounted for in the “Level” column.

8.2 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV004'	Weather Station	Davis Instruments	7400	PE80529A61A	10/23/2015	10/23/2017
145128'	EMI Receiver (20 Hz - 40 Ghz)	Rohde & Schwarz	ESIB 40	839283/001	03/14/2015	03/14/2016
145-416'	Cables 145-400 145-402 145-404 145-408	Huber + Suhner	3m Track B cables	multiple	10/08/2015	10/08/2016
ETS002'	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	04/10/2015	04/10/2016
EMC04'	ANTENNA, RIDGED GUIDE, 18-40 GHZ	EMCO	3116	2090	04/07/2015	04/07/2016
145014'	Preamplifier (1 GHz to 26.5 GHz)	Hewlett Packard	8449B	3008A00232	05/13/2015	05/13/2016

Software Utilized:

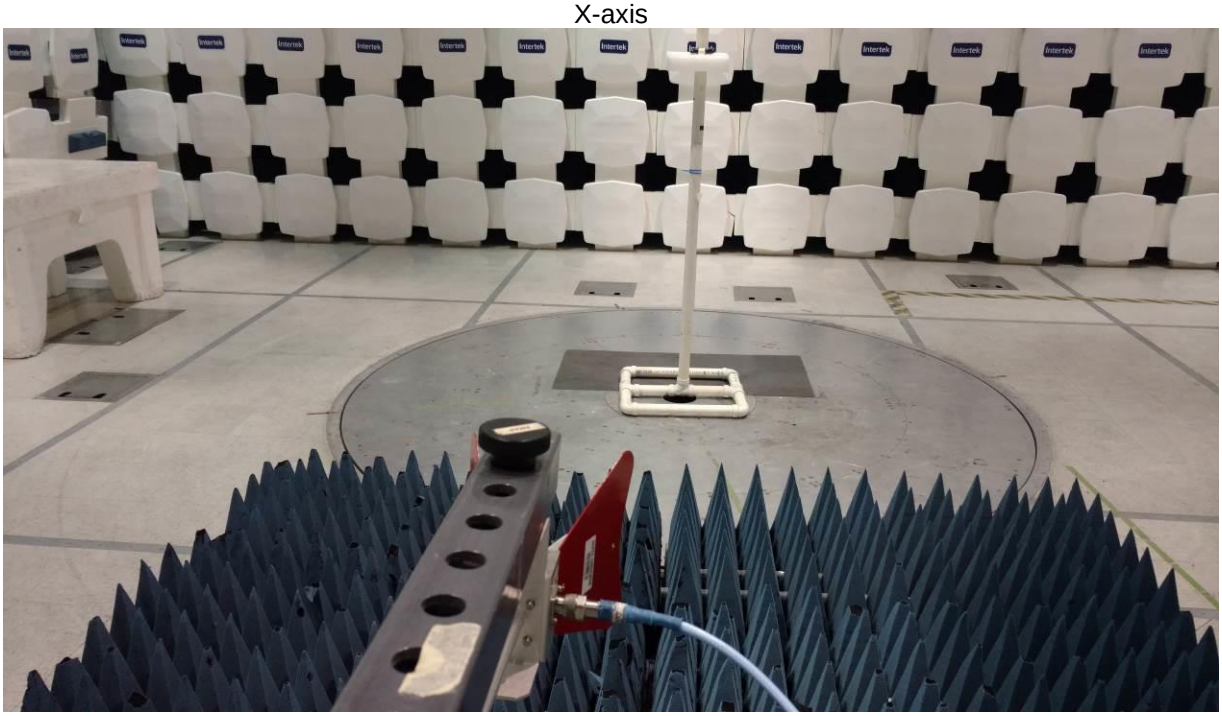
Name	Manufacturer	Version
EMI Boxborough.xls	Intertek	08/27/10

8.3 Results:

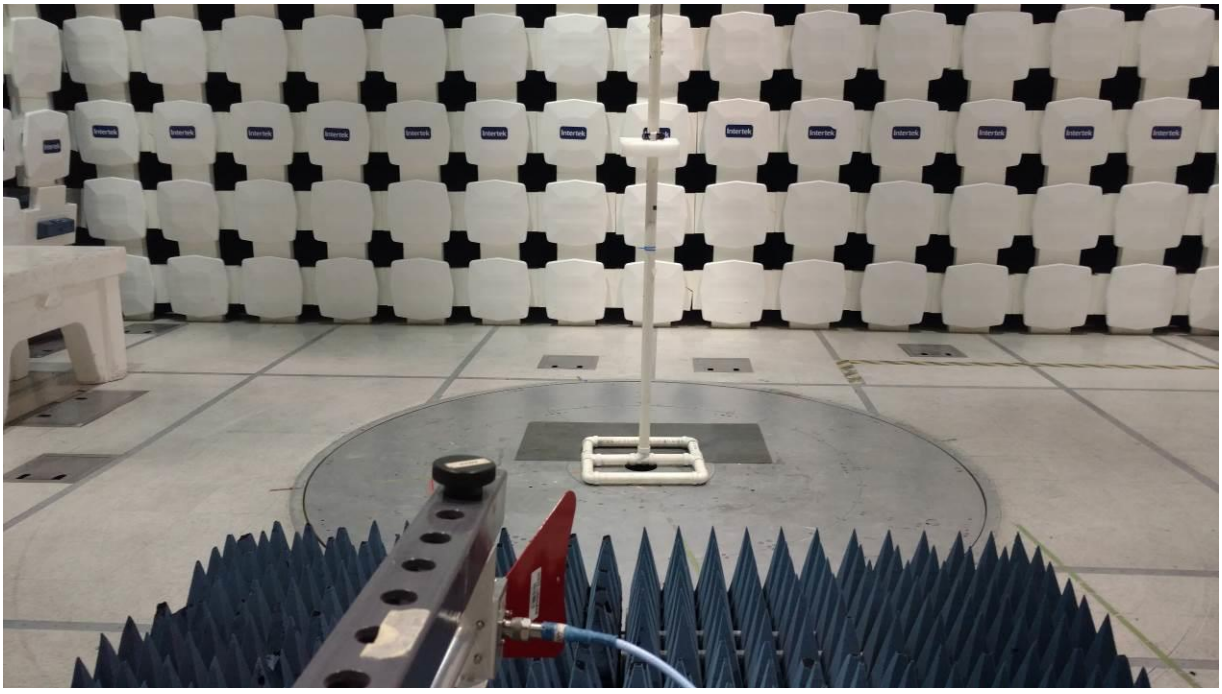
The sample tested was found to Comply. The EIRP must not exceed 30 dBm. The Human RF Exposure limit is 1 mW/cm^2.

8.4 Setup Photographs:

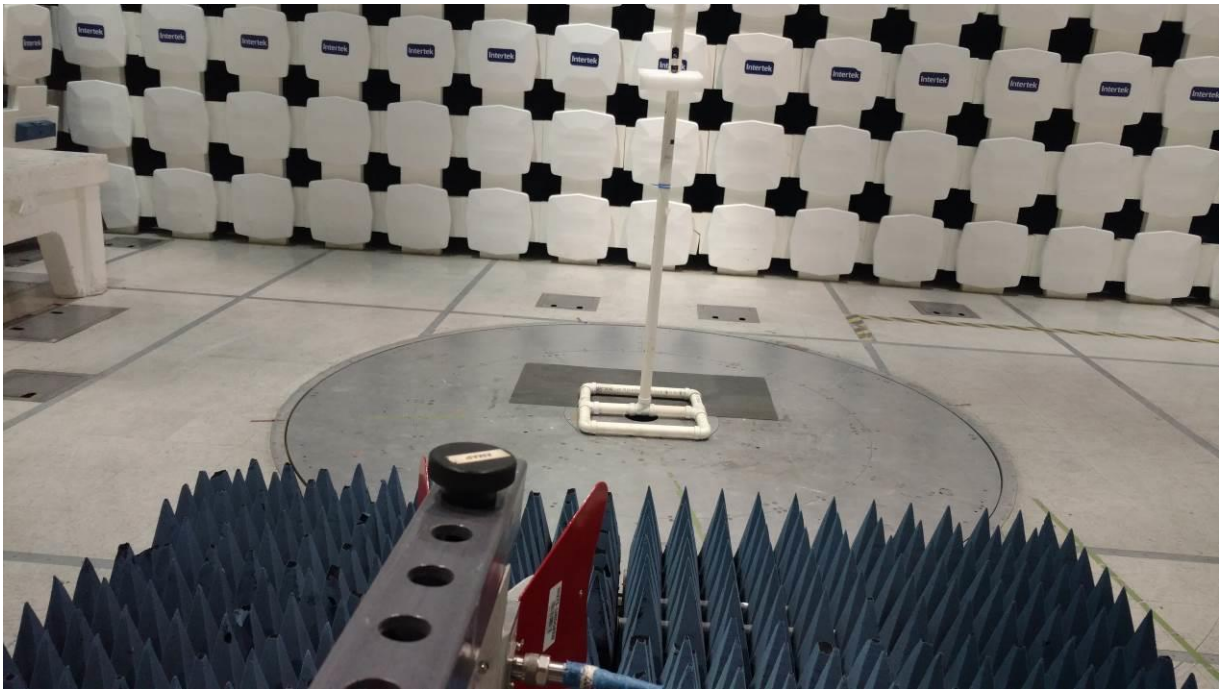
X-axis



Y-axis



Z-axis



8.5 Test Data:

Radiated Fundemental Output Power

Company: Ascensia Diabetes Care | Antenna & Cables: HF | Bands: N, LF, HF, SHF
Model #: Contour Next (Plus) One Wireless Blood Glucose meter | Antenna: ETS002 04-10-16.txt | ETS002 04-10-16.txt
Serial #: P310490 | Cable(s): 145-416 1-18 GHz 10-08-16.txt | NONE.
Engineers: Naga Suryadevara | Location: 10M | Barometer: DAV004 | Filter: NONE
Project #: G102363077 | Date(s): 02/01/16
Standard: FCC Part 15 Subpart C 15.247 | Temp/Humidity/Pressure: 20C | 25% | 1006 mbar
Receiver: R&S ESI (145-128) 03-14-2016 | Limit Distance (m): 3
PreAmp: None | Test Distance (m): 3
PreAmp Used? (Y or N): N | Voltage/Frequency: internal battery | Frequency Range: Frequencies Shown

Net = Reading (dBuV/m) + Antenna Factor (dB1/m) + Cable Loss (dB) - Preamp Factor (dB) - Distance Factor (dB)
Peak: PK Quasi-Peak: QP Average: AVG RMS: RMS; NF = Noise Floor, RB = Restricted Band; Bandwidth denoted as RBW/VBW

Detector Type	Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	EIRP Net dBm	EIRP Limit dBm	Margin dB	Bandwidth
Note: RF Output Power, Channel 0, X-axis											
Note: EIRP Obtained by applying the path loss correction for a 3m test distance, E(dBuV/m)@3m - 95.22 = dBm EIRP											
PK	V	2402.000	53.28	31.98	3.67	0.00	0.00	-6.29	30.00	-36.29	5/10 MHz
PK	H	2402.000	48.73	31.98	3.67	0.00	0.00	-10.84	30.00	-40.84	5/10 MHz
Note: RF Output Power, Channel 0, Y-axis											
Note: EIRP Obtained by applying the path loss correction for a 3m test distance, E(dBuV/m)@3m - 95.22 = dBm EIRP											
PK	V	2402.000	54.83	31.98	3.67	0.00	0.00	-4.74	30.00	-34.74	5/10 MHz
PK	H	2402.000	49.95	31.98	3.67	0.00	0.00	-9.62	30.00	-39.62	5/10 MHz
Note: RF Output Power, Channel 0, Z-axis											
Note: EIRP Obtained by applying the path loss correction for a 3m test distance, E(dBuV/m)@3m - 95.22 = dBm EIRP											
PK	V	2402.000	54.19	31.98	3.67	0.00	0.00	-5.38	30.00	-35.38	5/10 MHz
PK	H	2402.000	54.83	31.98	3.67	0.00	0.00	-4.74	30.00	-34.74	5/10 MHz
Note: RF Output Power, Channel 19, X-axis											
Note: EIRP Obtained by applying the path loss correction for a 3m test distance, E(dBuV/m)@3m - 95.22 = dBm EIRP											
PK	V	2440.000	49.82	32.08	3.73	0.00	0.00	-9.59	30.00	-39.59	5/10 MHz
PK	H	2440.000	54.58	32.08	3.73	0.00	0.00	-4.83	30.00	-34.83	5/10 MHz
Note: RF Output Power, Channel 19, Y-axis											
Note: EIRP Obtained by applying the path loss correction for a 3m test distance, E(dBuV/m)@3m - 95.22 = dBm EIRP											
PK	V	2440.000	54.83	32.08	3.73	0.00	0.00	-4.58	30.00	-34.58	5/10 MHz
PK	H	2440.000	48.87	32.08	3.73	0.00	0.00	-10.54	30.00	-40.54	5/10 MHz
Note: RF Output Power, Channel 19, Z-axis											
Note: EIRP Obtained by applying the path loss correction for a 3m test distance, E(dBuV/m)@3m - 95.22 = dBm EIRP											
PK	V	2440.000	51.87	32.08	3.73	0.00	0.00	-7.54	30.00	-37.54	5/10 MHz
PK	H	2440.000	54.45	32.08	3.73	0.00	0.00	-4.96	30.00	-34.96	5/10 MHz
Note: RF Output Power, Channel 39, X-axis											
Note: EIRP Obtained by applying the path loss correction for a 3m test distance, E(dBuV/m)@3m - 95.22 = dBm EIRP											
PK	V	2480.000	48.90	32.19	3.78	0.00	0.00	-10.35	30.00	-40.35	5/10 MHz
PK	H	2480.000	53.28	32.19	3.78	0.00	0.00	-5.97	30.00	-35.97	5/10 MHz
Note: RF Output Power, Channel 39, Y-axis											
Note: EIRP Obtained by applying the path loss correction for a 3m test distance, E(dBuV/m)@3m - 95.22 = dBm EIRP											
PK	V	2480.000	53.93	32.19	3.78	0.00	0.00	-5.32	30.00	-35.32	5/10 MHz
PK	H	2480.000	49.27	32.19	3.78	0.00	0.00	-9.98	30.00	-39.98	5/10 MHz
Note: RF Output Power, Channel 39, Z-axis											
Note: EIRP Obtained by applying the path loss correction for a 3m test distance, E(dBuV/m)@3m - 95.22 = dBm EIRP											
PK	V	2480.000	52.77	32.19	3.78	0.00	0.00	-6.48	30.00	-36.48	5/10 MHz
PK	H	2480.000	53.93	32.19	3.78	0.00	0.00	-5.32	30.00	-35.32	5/10 MHz

Human RF Exposure

The EUT was measured in a radiated fashion. The RF output power was measured using a resolution bandwidth which encompassed the entire emission bandwidth. The data obtained was adjusted for equipment losses and converted from a field strength reading to a power reading using the provisions of FCC KDB 558074 and RSS-Gen 4.6. .

§1.1310 The criteria listed in table 1 shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices shall be evaluated according to the provisions of §2.1093 of this chapter.

Part §1.1310 Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	$*900/f^2$	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	$*180/f^2$	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

(1) Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when a person is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure. The phrase *fully aware* in the context of applying these exposure limits means that an exposed person has received written and/or verbal information fully explaining the potential for RF exposure resulting from his or her employment. With the exception of *transient* persons, this phrase also means that an exposed person has received appropriate training regarding work practices relating to controlling or mitigating his or her exposure. Such training is not required for *transient* persons, but they must receive written and/or verbal information and notification (for example, using signs) concerning their exposure potential and appropriate means available to mitigate their exposure. The phrase *exercise control* means that an exposed person is allowed to and knows how to reduce or avoid exposure by administrative or engineering controls and work practices, such as use of personal protective equipment or time averaging of exposure.

(2) General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

RSS-102 Issue 5 Exposure Limits:

Table 4: RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)

Frequency Range (MHz)	Electric Field (V/m rms)	Magnetic Field (A/m rms)	Power Density (W/m^2)	Reference Period (minutes)
0.003-10[21]	83	90	-	Instantaneous*
0.1-10	-	$0.73/f$	-	6**
1.1-10	$87/f^{0.5}$	-	-	6**
10-20	27.46	0.0728	2	6
20-48	$58.07/f^{0.25}$	$0.1540/f^{0.25}$	$8.944/f^{0.5}$	6
48-300	22.06	0.05852	1.291	6
300-6000	$3.142 f^{0.3417}$	$0.008335 f^{0.3417}$	$0.02619 f^{0.6834}$	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	$616000/f^{1.2}$
150000-300000	$0.158 f^{0.5}$	$4.21 \times 10^{-4} f^{0.5}$	$6.67 \times 10^{-5} f$	$616000/f^{1.2}$

Note: f is frequency in MHz.
*Based on nerve stimulation (NS).
** Based on specific absorption rate (SAR).

1.1 Test Procedure

An MPE evaluation was performed in order to show that the device was compliant with §2.1091. The maximum power density was calculated for each transmitter at a separation distance of 20 cm.

For each transmitter the maximum power RF exposure at a 20 cm distance using the formula:

Conducted $Power_{mW} = 10^{ConductedPower(dBm)/10}$

Power Density = [Conducted $Power_{mW}$ x Ant.Gain] / [4π x $(20_{cm})^2$] or [EIRP] / [4π x $(20_{cm})^2$]

1.2 Results:

Maximum Output Power = $10^{(-4.58/10)}$ or 0.348337 mW

Power Density = (0.348337) / 5025.6 or 0.000069 mW/cm^2

Limit at 2.4 GHz = 1 mW/cm^2

RSS-102 Issue 5 Exposure Limit at 2.4 GHz = 5.35 W/m^2

Power Density = -0.00069 W/m^2

The calculated maximum power density at 20 cm distance is less than the limit for general population / uncontrolled exposure.

Test Personnel:	Naga Suryadevara NS	Test Date:	02/01/2016
Supervising/Reviewing Engineer: (Where Applicable)	Vathana Ven VJV		
Product Standard:	FCC Part 15 Subpart C and RSS-247	Limit Applied:	Below specified limit
Input Voltage:	Internal Battery	Ambient Temperature:	20 ºC
		Relative Humidity:	25 %
Pretest Verification:	**Yes**	Atmospheric Pressure:	1006 mbars

Deviations, Additions, or Exclusions: None

9 Maximum Power Spectral Density

9.1 Method

Tests are performed in accordance with FCC Part 15 Subpart C (15.247), ANSI C63.10, KDB558074, and RSS-247.

The 10m ALSE is 13m (Length) x 21m (Depth) x 10m (Height) with the effective size in terms of space from the tips of the absorber is 12m (Length) x 20m (Depth) x 8.5m (Height). This chamber achieves broadband performance using a unique arrangement of hybrid and ferrite tile absorber. This chamber has a built in 3m diameter turntable (Embedded type). The metal structure of the table makes electrical connection around the entire circumference of the turntable to the ground plane with a metal brush type connection. The turntable is located on one end of the chamber and the antennas are mounted 3 and 10 meters away at the other end of the chamber on the adjustable an Antenna Mast. The antenna mast is a non-conductive bore sighted type with remote control of antenna height and polarization. The Antenna Mast and the turntable can be remotely controlled through the controller located in the adjacent Control room. A Styrofoam table 80 cm high is used for table-top equipment.

Measurement Uncertainty

Measurement	Frequency Range	Expanded Uncertainty (k=2)	Ucispr
Radiated Emissions, 10m	30-1000 MHz	4.6 dB	6.3 dB
Radiated Emissions, 3m	30-1000 MHz	5.3 dB	6.3 dB
Radiated Emissions, 3m	1-6 GHz	4.5 dB	5.2 dB
Radiated Emissions, 3m	6-15 GHz	5.2 dB	5.5 dB
Radiated Emissions, 3m	15-18 GHz	5.0 dB	5.5 dB
Radiated Emissions, 3m	18-40 GHz	5.0 dB	5.5 dB

As shown in the table above our radiated emissions U_{lab} is less than the corresponding U_{CISPR} reference value in CISPR 16-4-2 Table 1, hence the compliance of the product is only based on the measured value, and no measurement uncertainty correction is required, based on CISPR 22 and CISPR 11 (for 2006 and later revisions) Clause 11.

Sample Calculation

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

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

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.

Assume a receiver reading of 52.0 dBμV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

RA = 52.0 dBμV
AF = 7.4 dB/m
CF = 1.6 dB
AG = 29.0 dB
FS = 32 dBμV/m

To convert from dBμV to μV or mV the following was used:

$UF = 10^{(NF / 20)}$ where UF = Net Reading in μV
NF = Net Reading in dBμV

Example:

FS = RA + AF + CF – AG = 52.0 + 7.4 + 1.6 – 29.0 = 32.0
$UF = 10^{(32\ dB\mu V / 20)}$ = 39.8 μV/m

Alternately, when C5 Software is used, the “Level” includes all losses and gains and is compared directly in the “Margin” column to the “Limit”. “AF” is the Antenna Factor; “PA+CL” are Preamp and Cable Loss. These are already accounted for in the “Level” column.

9.2 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV004'	Weather Station	Davis Instruments	7400	PE80529A61A	10/23/2015	10/23/2017
145128'	EMI Receiver (20 Hz - 40 Ghz)	Rohde & Schwarz	ESIB 40	839283/001	03/14/2015	03/14/2016
145-416'	Cables 145-400 145-402 145-404 145-408	Huber + Suhner	3m Track B cables	multiple	10/08/2015	10/08/2016
ETS002'	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	04/10/2015	04/10/2016
EMC04'	ANTENNA, RIDGED GUIDE, 18-40 GHZ	EMCO	3116	2090	04/07/2015	04/07/2016
145014'	Preamplifier (1 GHz to 26.5 GHz)	Hewlett Packard	8449B	3008A00232	05/13/2015	05/13/2016

Software Utilized:

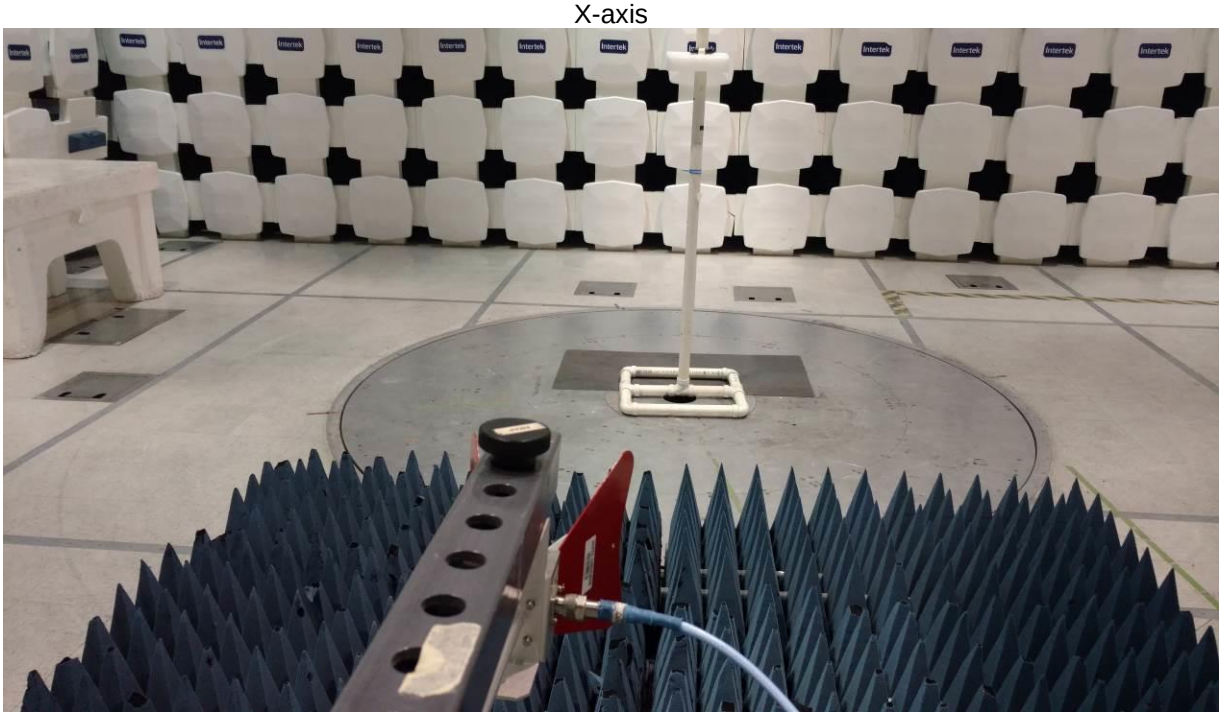
Name	Manufacturer	Version
EMI Boxborough.xls	Intertek	08/27/10

9.3 Results:

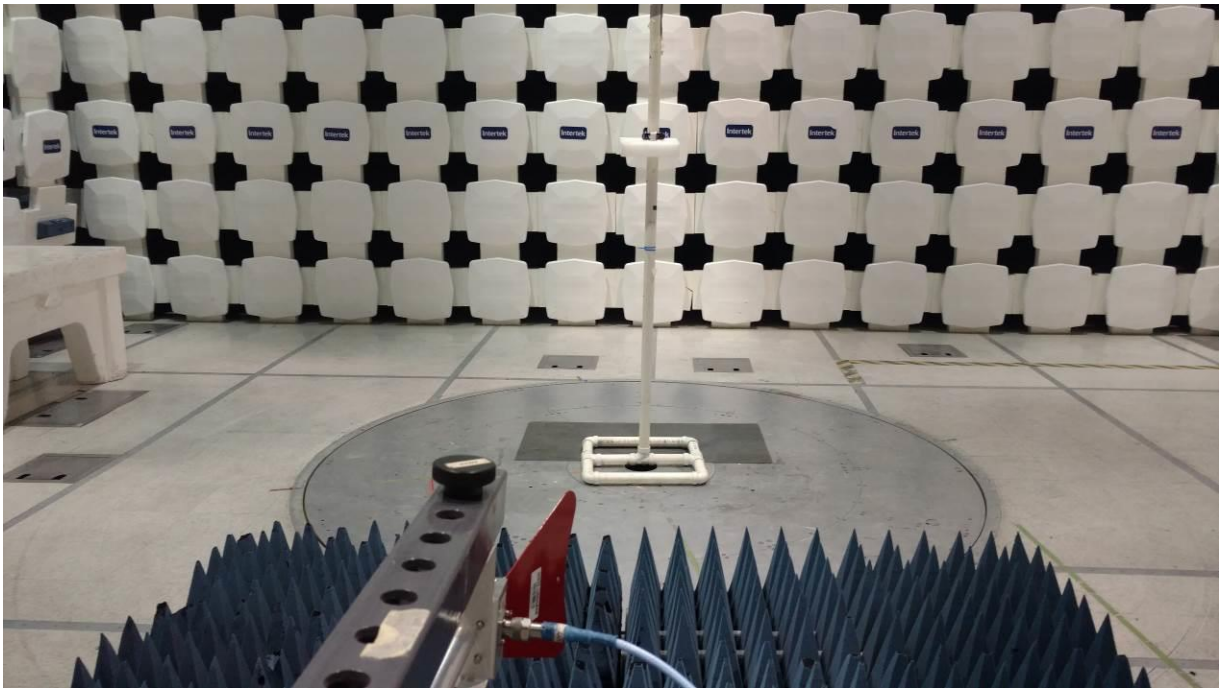
The sample tested was found to Comply. The peak power spectral density must not exceed 8 dBm in any 3 kHz bandwidth using the methods of ANSI C63.10:2009.

9.4 Setup Photographs:

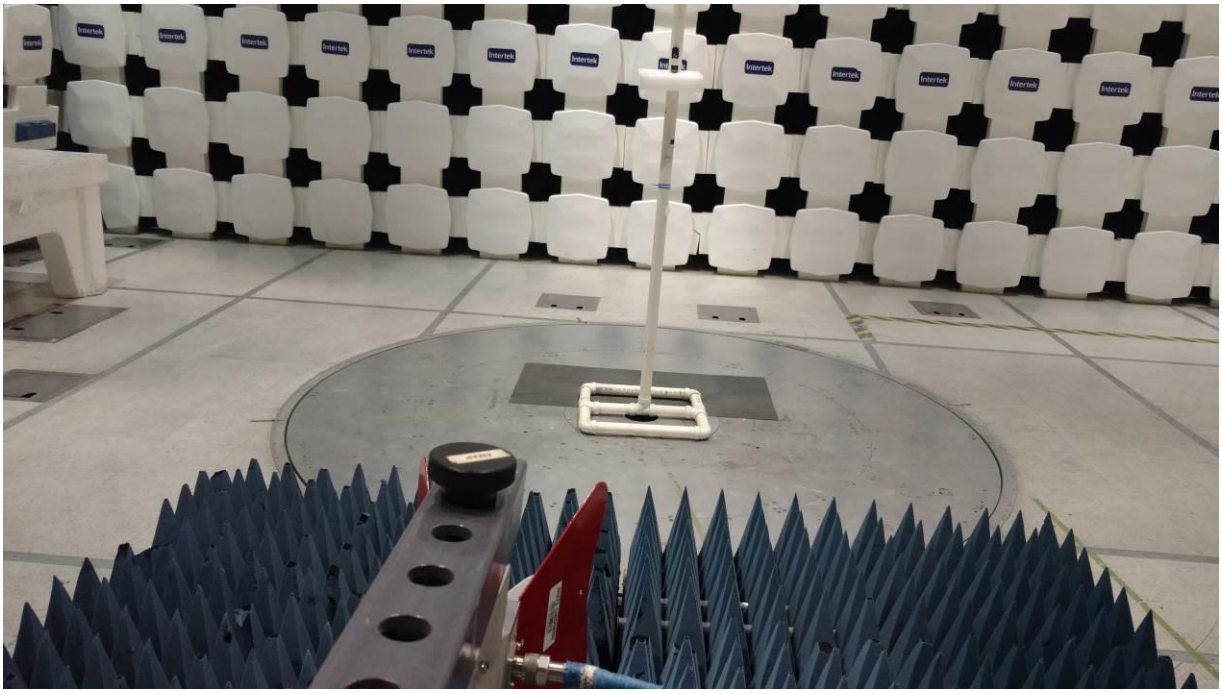
X-axis



Y-axis



Z-axis



9.5 Test Data:

Power Spectral Density

Company: Ascensia Diabetes Care | Antenna & Cables: HF | Bands: N, LF, HF, SHF
Model #: Contour Next (Plus) One | Antenna: ETS002 04-10-16.txt | ETS002 04-10-16.txt
Serial #: P310490 | Cable(s): 145-416 1-18 GHz 10-08-16.txt | NONE.
Engineers: Naga Suryadevara | Location: 10M | Barometer: DAV004 | Filter: NONE
Project #: G102363077 | Date(s): 02/01/16
Standard: FCC Part 15 Subpart C 15.247 | Temp/Humidity/Pressure: 20C | 25% | 1006 mbars
Receiver: R&S ESI (145-128) 03-14-2016 | Limit Distance (m): 3
PreAmp: None | Test Distance (m): 3
PreAmp Used? (Y or N): N | Voltage/Frequency: internal battery | Frequency Range: Frequencies Shown
Net = Reading (dBuV/m) + Antenna Factor (dB1/m) + Cable Loss (dB) - Preamp Factor (dB) - Distance Factor (dB)
Peak: PK Quasi-Peak: QP Average: AVG RMS: RMS; NF = Noise Floor, RB = Restricted Band; Bandwidth denoted as RBW/VBW

Detector Type	Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	EIRP Net dBm	EIRP Limit dBm	Margin dB	Bandwidth
Note: Power Density measured in a 3 kHz RBW Channel 0 X-axis											
PK	V	2402.000	37.02	31.98	3.67	0.00	0.00	-22.55	8.00	-30.55	3/10 kHz
PK	H	2402.000	33.49	31.98	3.67	0.00	0.00	-26.08	8.00	-34.08	3/10 kHz
Note: Power Density measured in a 3 kHz RBW Channel 0 Y-axis											
PK	V	2402.000	37.65	31.98	3.67	0.00	0.00	-21.92	8.00	-29.92	3/10 kHz
PK	H	2402.000	32.85	31.98	3.67	0.00	0.00	-26.72	8.00	-34.72	3/10 kHz
Note: Power Density measured in a 3 kHz RBW Channel 0 Z-axis											
PK	V	2402.000	37.23	31.98	3.67	0.00	0.00	-22.34	8.00	-30.34	3/10 kHz
PK	H	2402.000	37.28	31.98	3.67	0.00	0.00	-22.29	8.00	-30.29	3/10 kHz
Note: Power Density measured in a 3 kHz RBW Channel 19 X-axis											
PK	V	2440.000	32.96	32.08	3.73	0.00	0.00	-26.45	8.00	-34.45	3/10 kHz
PK	H	2440.000	38.13	32.08	3.73	0.00	0.00	-21.28	8.00	-29.28	3/10 kHz
Note: Power Density measured in a 3 kHz RBW Channel 19 Y-axis											
PK	V	2440.000	35.75	32.08	3.73	0.00	0.00	-23.66	8.00	-31.66	3/10 kHz
PK	H	2440.000	31.65	32.08	3.73	0.00	0.00	-27.76	8.00	-35.76	3/10 kHz
Note: Power Density measured in a 3 kHz RBW Channel 19 Z-axis											
PK	V	2440.000	34.14	32.08	3.73	0.00	0.00	-25.27	8.00	-33.27	3/10 kHz
PK	H	2440.000	38.10	32.08	3.73	0.00	0.00	-21.31	8.00	-29.31	3/10 kHz
Note: Power Density measured in a 3 kHz RBW Channel 39 X-axis											
PK	V	2480.000	31.52	32.19	3.78	0.00	0.00	-27.73	8.00	-35.73	3/10 kHz
PK	H	2480.000	35.84	32.19	3.78	0.00	0.00	-23.41	8.00	-31.41	3/10 kHz
Note: Power Density measured in a 3 kHz RBW Channel 39 Y-axis											
PK	V	2480.000	34.76	32.19	3.78	0.00	0.00	-24.49	8.00	-32.49	3/10 kHz
PK	H	2480.000	31.74	32.19	3.78	0.00	0.00	-27.51	8.00	-35.51	3/10 kHz
Note: Power Density measured in a 3 kHz RBW Channel 39 Z-axis											
PK	V	2480.000	34.47	32.19	3.78	0.00	0.00	-24.78	8.00	-32.78	3/10 kHz
PK	H	2480.000	36.82	32.19	3.78	0.00	0.00	-22.43	8.00	-30.43	3/10 kHz

Test Personnel: Naga Suryadevara NS
Supervising/Reviewing Engineer: (Where Applicable) Vathana Ven VSV
Product Standard: FCC Part 15 Subpart C and RSS-247
Input Voltage: Internal Battery
Pretest Verification: **Yes**

Test Date: 02/01/2016
Limit Applied: Below specified limit
Ambient Temperature: 20 ºC
Relative Humidity: 25 %
Atmospheric Pressure: 1006 mbars

Deviations, Additions, or Exclusions: None

10 Band Edge Compliance

10.1 Method

Tests are performed in accordance with FCC Part 15 Subpart C (15.247), ANSI C63.10, KDB558074, and RSS-247.

The 10m ALSE is 13m (Length) x 21m (Depth) x 10m (Height) with the effective size in terms of space from the tips of the absorber is 12m (Length) x 20m (Depth) x 8.5m (Height). This chamber achieves broadband performance using a unique arrangement of hybrid and ferrite tile absorber. This chamber has a built in 3m diameter turntable (Embedded type). The metal structure of the table makes electrical connection around the entire circumference of the turntable to the ground plane with a metal brush type connection. The turntable is located on one end of the chamber and the antennas are mounted 3 and 10 meters away at the other end of the chamber on the adjustable an Antenna Mast. The antenna mast is a non-conductive bore sighted type with remote control of antenna height and polarization. The Antenna Mast and the turntable can be remotely controlled through the controller located in the adjacent Control room. A Styrofoam table 80 cm high is used for table-top equipment.

Measurement Uncertainty

Measurement	Frequency Range	Expanded Uncertainty (k=2)	Ucispr
Radiated Emissions, 10m	30-1000 MHz	4.6 dB	6.3 dB
Radiated Emissions, 3m	30-1000 MHz	5.3 dB	6.3 dB
Radiated Emissions, 3m	1-6 GHz	4.5 dB	5.2 dB
Radiated Emissions, 3m	6-15 GHz	5.2 dB	5.5 dB
Radiated Emissions, 3m	15-18 GHz	5.0 dB	5.5 dB
Radiated Emissions, 3m	18-40 GHz	5.0 dB	5.5 dB

As shown in the table above our radiated emissions U_{lab} is less than the corresponding U_{CISPR} reference value in CISPR 16-4-2 Table 1, hence the compliance of the product is only based on the measured value, and no measurement uncertainty correction is required, based on CISPR 22 and CISPR 11 (for 2006 and later revisions) Clause 11.

Sample Calculation

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

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

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.

Assume a receiver reading of 52.0 dBμV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

RA = 52.0 dBμV
AF = 7.4 dB/m
CF = 1.6 dB
AG = 29.0 dB
FS = 32 dBμV/m

To convert from dBμV to μV or mV the following was used:

$UF = 10^{(NF / 20)}$ where UF = Net Reading in μV
NF = Net Reading in dBμV

Example:

FS = RA + AF + CF – AG = 52.0 + 7.4 + 1.6 – 29.0 = 32.0
$UF = 10^{(32\ dB\mu V / 20)}$ = 39.8 μV/m

Alternately, when C5 Software is used, the “Level” includes all losses and gains and is compared directly in the “Margin” column to the “Limit”. “AF” is the Antenna Factor; “PA+CL” are Preamp and Cable Loss. These are already accounted for in the “Level” column.

10.2 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV004'	Weather Station	Davis Instruments	7400	PE80529A61A	10/23/2015	10/23/2017
145128'	EMI Receiver (20 Hz - 40 Ghz)	Rohde & Schwarz	ESIB 40	839283/001	03/14/2015	03/14/2016
145-416'	Cables 145-400 145-402 145-404 145-408	Huber + Suhner	3m Track B cables	multiple	10/08/2015	10/08/2016
ETS002'	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	04/10/2015	04/10/2016
EMC04'	ANTENNA, RIDGED GUIDE, 18-40 GHZ	EMCO	3116	2090	04/07/2015	04/07/2016
145014'	Preamplifier (1 GHz to 26.5 GHz)	Hewlett Packard	8449B	3008A00232	05/13/2015	05/13/2016

Software Utilized:

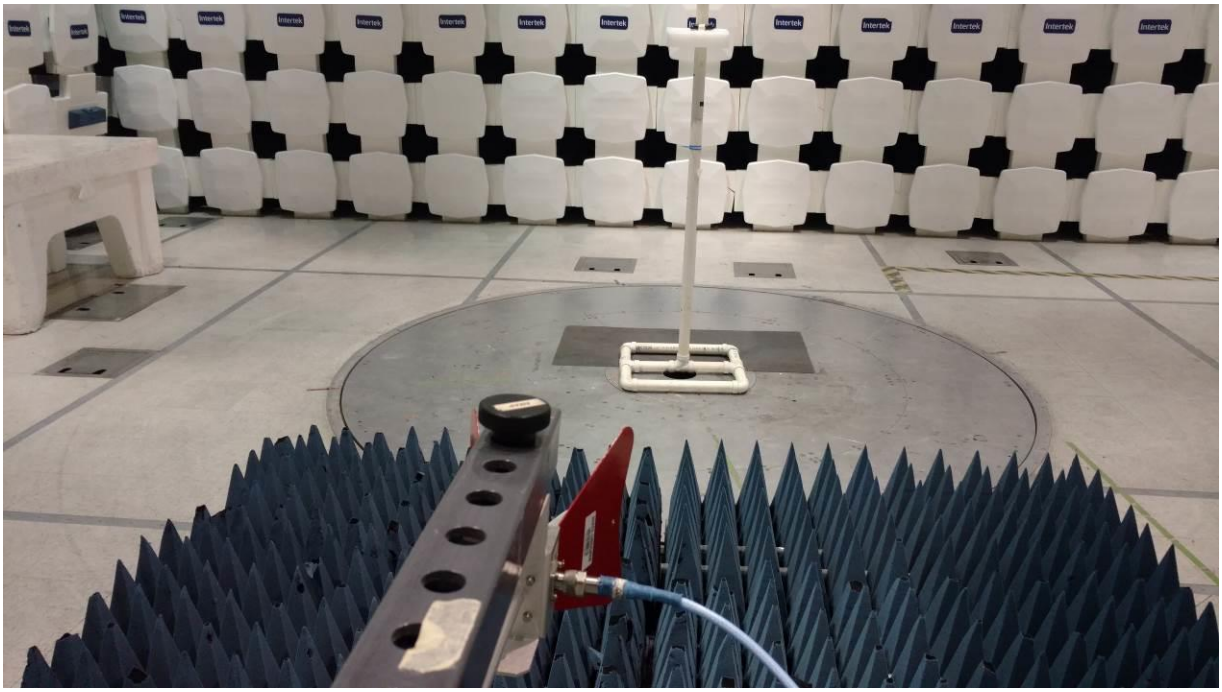
Name	Manufacturer	Version
EMI Boxborough.xls	Intertek	08/27/10

10.3 Results:

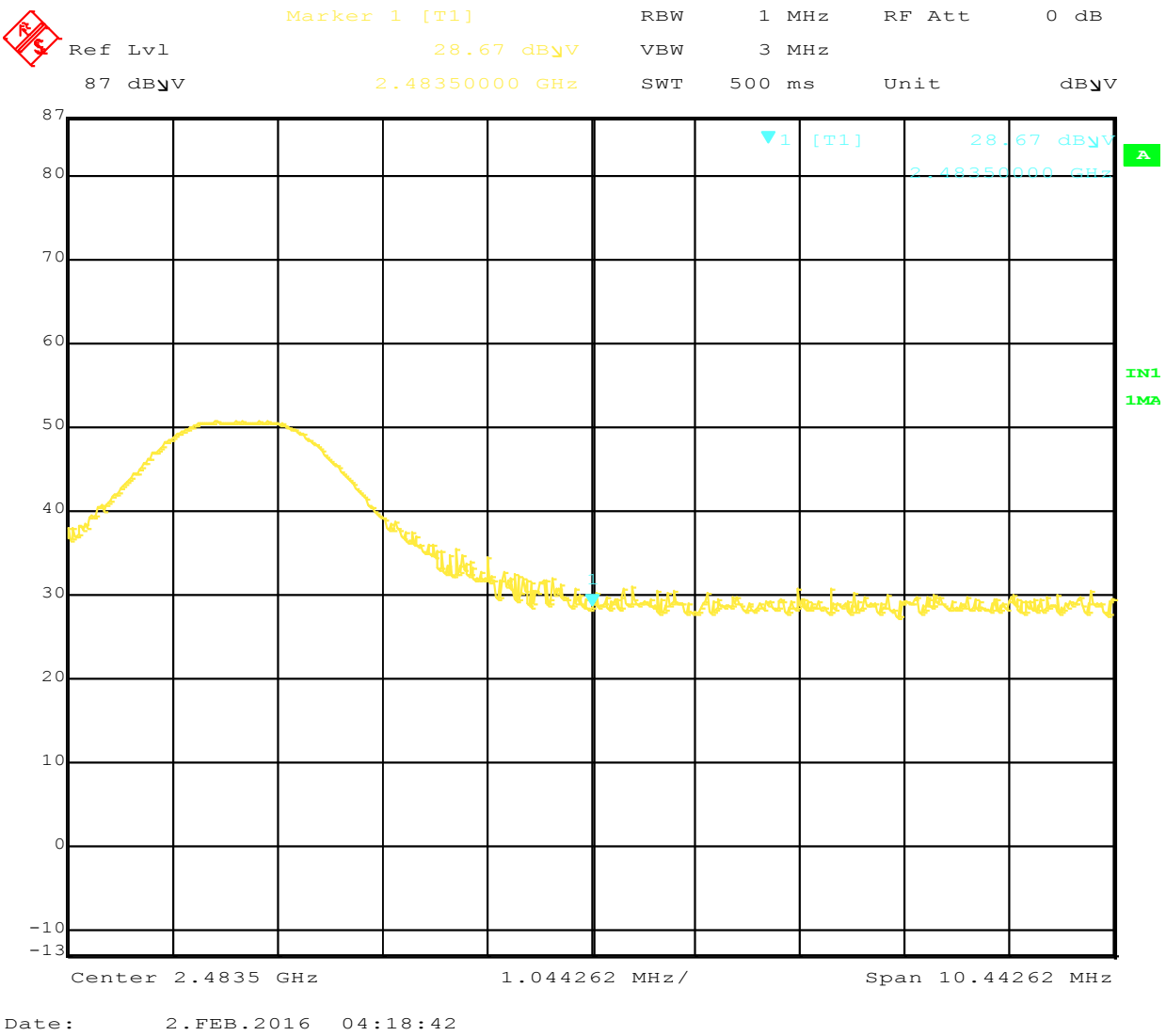
The sample tested was found to Comply.

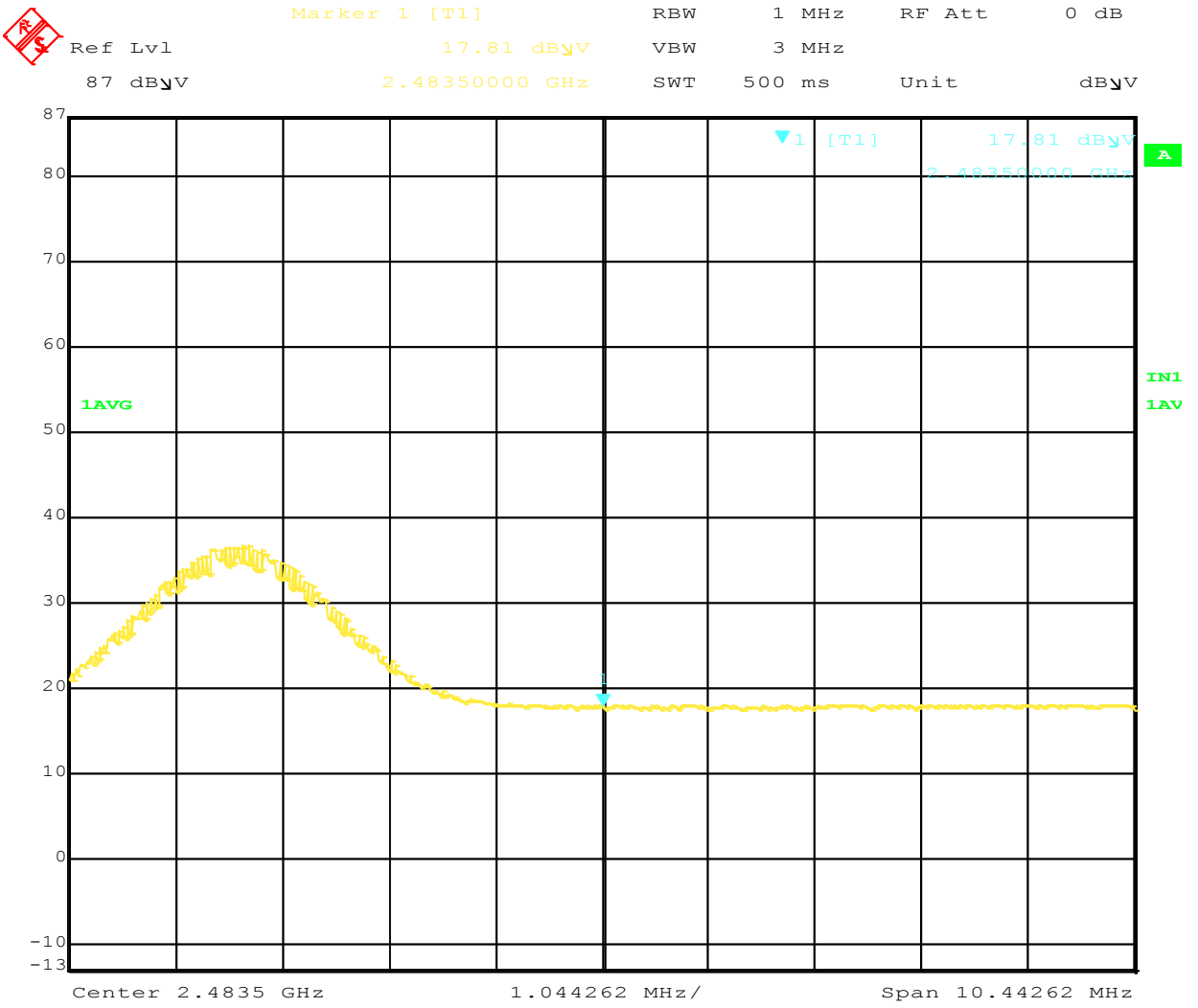
Spurious emissions at the band edges must be at least 20 dB lower than the fundamental field strength when measured with a 100 kHz bandwidth, without the need to be below the general limits of FCC Part 15 Section 15.209 and of RSS-Gen 7.2.5 Table 5. Emissions in restricted bands must meet the general limits of FCC Part 15 Section 15.209 and of RSS-Gen 7.2.5 Table 5.

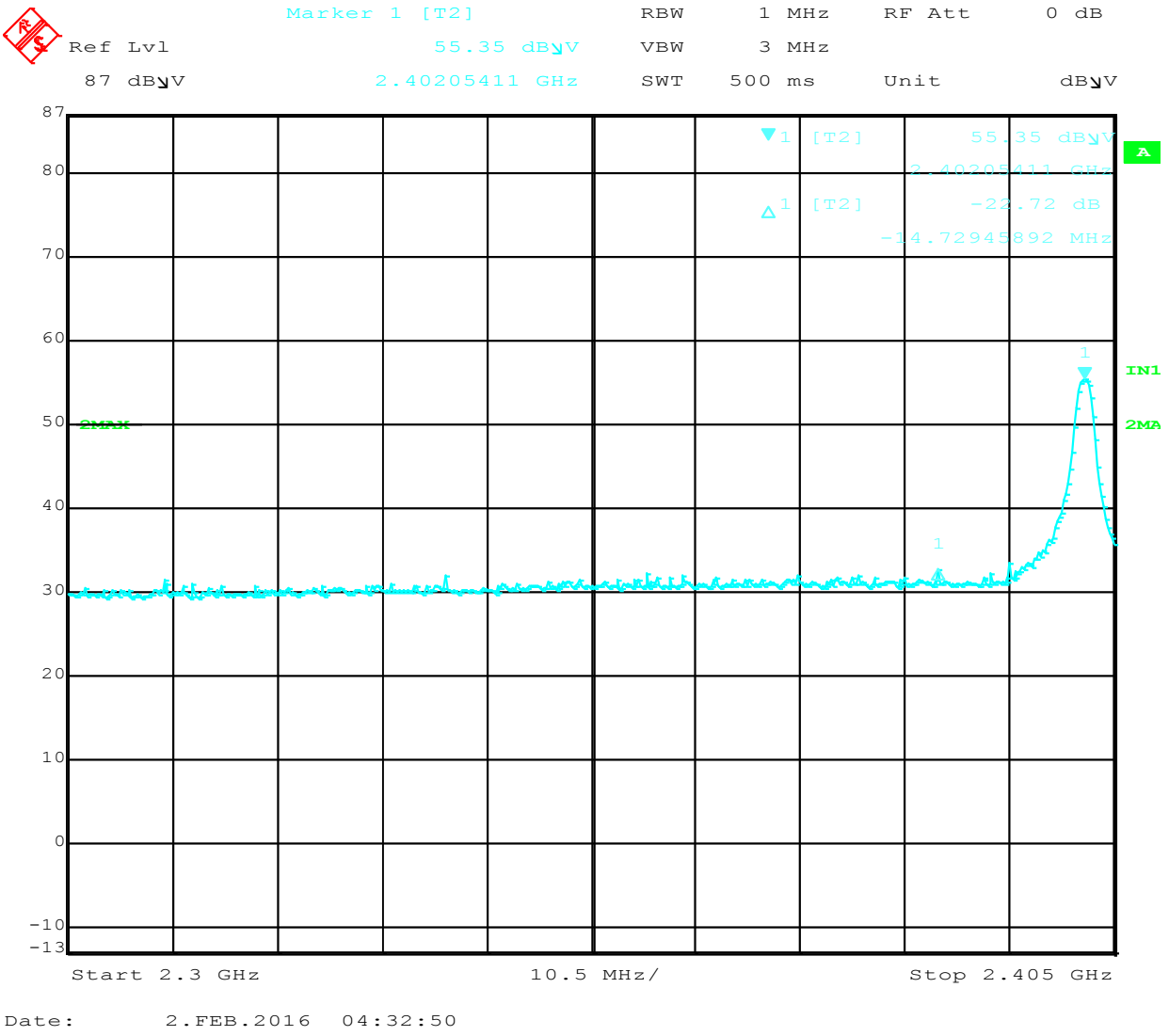
10.4 Setup Photograph:



10.5 Plots/Data:




Marker 1 [T1]
RBW 1 MHz
RF Att 0 dB
Ref Lvl
17.81 dBµV
VBW 3 MHz
87 dBµV
2.48350000 GHz
SWT 500 ms
Unit dBµV
1 [T1]
17.81 dBµV
2.48350000 GHz
A
1AVG
IN1
1AV
87
80
70
60
50
40
30
20
10
0
-10
-13
Center 2.4835 GHz
1.044262 MHz/
Span 10.44262 MHz
Date: 2.FEB.2016 04:19:17



Spurious Emissions at Band Edge											
Detector	Ant Pol	Frequency MHz	Reading dB(uV)	AF dB(1/m)	Cable Loss dB	Pre-Amp Factor dB	Distance Factor dB	EIRP Net dB(uV)	EIRP Limit dB(uV)	Margin dB	BW
PK	H	2483.500	30.10	32.20	3.79	0.00	0.00	66.08	74.00	-7.92	1/3 MHz
AVG	H	2483.500	17.80	32.20	3.79	0.00	0.00	53.78	54.00	-0.22	1/3 MHz

Test Personnel: Naga Suryadevara NS
Test Date: 02/01/2016
Supervising/Reviewing Engineer: (Where Applicable) Vathana Ven VSV
Product Standard: FCC Part 15 Subpart C and RSS-247
Limit Applied: Below specified limit
Input Voltage: Internal Battery
Ambient Temperature: 20 ºC
Relative Humidity: 25 %
Pretest Verification: **Yes**
Atmospheric Pressure: 1006 mbars

11 Revision History

Revision Level	Date	Report Number	Prepared By	Reviewed By	Notes
0	02/26/2016	102363077BOX-003	NS	KPS	Original Issue
1	03/08/2016	102363077BOX-003a	NS	KPS	Updated Human RF Exposure Calculations
2	03/10/2016	102363077BOX-003b	NS	KPS	Updated Human RF Exposure Calculations
3	08/22/2016	102363077BOX-003b	NS	KPS	Updated Standard list on page 1 and Page 6.Updated table in section 10.5.