

Test Location: CKC Laboratories, Inc. • 1120 Fulton Places • Fremont, CA 94539 • (510) 249-1170

Customer: **Proteus Digital Health, Inc.**  
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**  
 Work Order #: **94175** Date: 3/13/2013  
 Test Type: **Radiated Scan** Time: 10:14:45  
 Equipment: **PPM (RP4) Electronics Module** Sequence#: 21  
 Manufacturer: Proteus Digital Health, Inc. Tested By: Hieu Song Nguyenpham  
 Model: SPC-0175  
 S/N: None

**Test Equipment:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05843	Cable	32022-2-29094K-48TC	8/7/2012	8/7/2014
	AN02668	Spectrum Analyzer	E4446A	2/22/2013	2/22/2015
T2	AN03114	Preamp	AMF-7D-00101800-30-10P	5/13/2011	5/13/2013
T3	AN02157	Horn Antenna-ANSI C63.5	3115	1/23/2013	1/23/2015
T4	ANP01210	Cable	FSJ1P-50A-4A	2/19/2013	2/19/2015
T5	AN03309	High Pass Filter	11SH10-3000/T10000-O/O	6/12/2012	6/12/2014
T6	AN03302	Cable	32026-29094K-29094K-72TC	3/21/2012	3/21/2014

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

Function	Manufacturer	Model #	S/N
PPM (RP4) Electronics Module*	Proteus Digital Health, Inc.	SPC-0175	None

**Support Devices:**

Function	Manufacturer	Model #	S/N
Laptop AC/DC Power Adapter	Dell	D130PE1-00	CN-0JU012-48661-09U-K8GG-A04
Laptop	Dell	Latitude E6500	B76FVL1
USB to TTL Serial Cable-1.8m Wire End Version	FTDI	TTL-232RG-VREG1V8-WE	None
DC power Supply	EZ	GP-4303A	01070038

**Test Conditions / Notes:**

Radiated Spurious Emission  
1000MHz to 12000MHz

Temperature: 19.9°C  
Humidity: 40 %  
Atmospheric Pressure: 101.9kPa

High Clock: 26MHz  
Software Used: HCI Lite

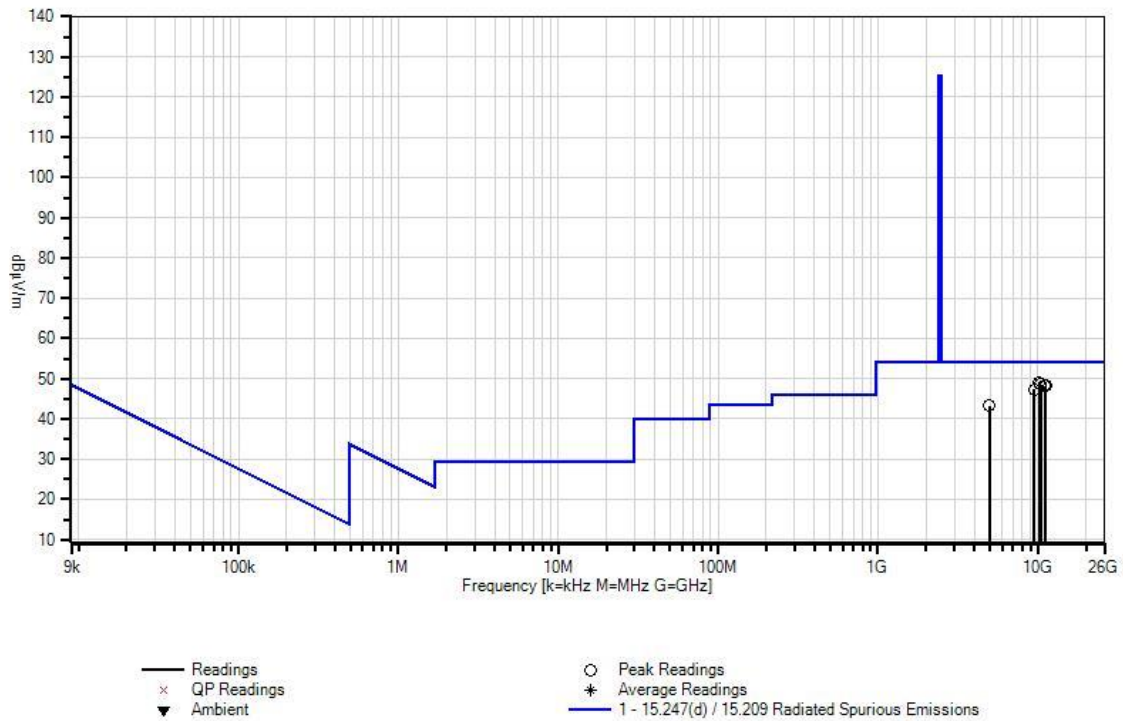
Transmitter Operation Frequency Range: 2400 - 2483.5 MHz  
Rate power = +4dBm (nominal)  
RBW=VBW=1MHz

Note:  
High Channel = 2480 MHz at Y axis  
GFSK is the worst module.  
Bit Pattern = 10101010  
Two ferrites (742 700 32) on a cable which connects from the EUT to a DC power supply with one pass through

Ext Attn: 0 dB

<b>Measurement Data:</b>			Reading listed by margin.				Test Distance: 3 Meters				
#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	T5 dB	T6 dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	10165.317 M	57.1	+2.0 +0.1	-58.4 +2.3	+39.7	+6.3	+0.0	49.1	54.0	-4.9	Horiz
2	10379.715 M	57.5	+1.9 +0.1	-58.6 +2.3	+39.3	+6.1	+0.0	48.6	54.0	-5.4	Vert
3	11184.585 M	55.8	+2.1 +0.2	-57.3 +2.3	+38.9	+6.2	+0.0	48.2	54.0	-5.8	Vert
4	11026.423 M	56.5	+2.1 +0.2	-57.9 +2.3	+38.8	+6.2	+0.0	48.2	54.0	-5.8	Horiz
5	9515.094M	55.9	+1.8 +0.3	-57.8 +2.2	+38.6	+6.3	+0.0	47.3	54.0	-6.7	Horiz
6	4959.643M	61.7	+1.2 +0.2	-59.0 +1.6	+33.6	+3.9	+0.0	43.2	54.0	-10.8	Vert

CKC Laboratories, Inc. Date: 3/13/2013 Time: 10:14:45 Proteus Digital Health, Inc. WO#: 94175  
 Test Distance: 3 Meters Sequence#: 21



Test Location: CKC Laboratories, Inc. • 1120 Fulton Places • Fremont, CA 94539 • (510) 249-1170

Customer: **Proteus Digital Health, Inc.**  
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**  
 Work Order #: **94175** Date: 3/13/2013  
 Test Type: **Radiated Scan** Time: 14:18:24  
 Equipment: **PPM (RP4) Electronics Module** Sequence#: 43  
 Manufacturer: Proteus Digital Health, Inc. Tested By: Hieu Song Nguyenpham  
 Model: SPC-0175  
 S/N: None

**Test Equipment:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	2/22/2013	2/22/2015
T1	AN02741	Active Horn Antenna	AMFW-5F-12001800-20-10P	12/18/2012	12/18/2014
T2	ANP00928	Cable	various	2/10/2012	2/10/2014
T3	ANP05843	Cable	32022-2-29094K-48TC	8/7/2012	8/7/2014
T4	AN03143	Cable	32022-29094K-144TC	8/30/2011	8/30/2013

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

Function	Manufacturer	Model #	S/N
PPM (RP4) Electronics Module*	Proteus Digital Health, Inc.	SPC-0175	None

**Support Devices:**

Function	Manufacturer	Model #	S/N
Laptop AC/DC Power Adapter	Dell	D130PE1-00	CN-0JU012-48661-09U-K8GG-A04
Laptop	Dell	Latitude E6500	B76FVL1
USB to TTL Serial Cable-1.8m Wire End Version	FTDI	TTL-232RG-VREG1V8-WE	None
DC power Supply	EZ	GP-4303A	01070038

**Test Conditions / Notes:**

Radiated Spurious Emission Frequency Range: 12000MHz to 18000MHz  Temperature: 19.9°C, Humidity: 40 %, Atmospheric Pressure:101.9kPa  High Clock: 26MHz Software Used: HCI Lite  Transmitter Operation Frequency Range: 2400 - 2483.5 MHz Rate power = +4dBm (nominal) RBW=VBW=1MHz  Note; High channel= 2480 MHz at Y axis GFSK is the worst module. Bit Pattern =10101010 Two ferrites (742 700 32) on a cable which connects from the EUT to a DC power supply with one pass through.
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Ext Attn: 0 dB

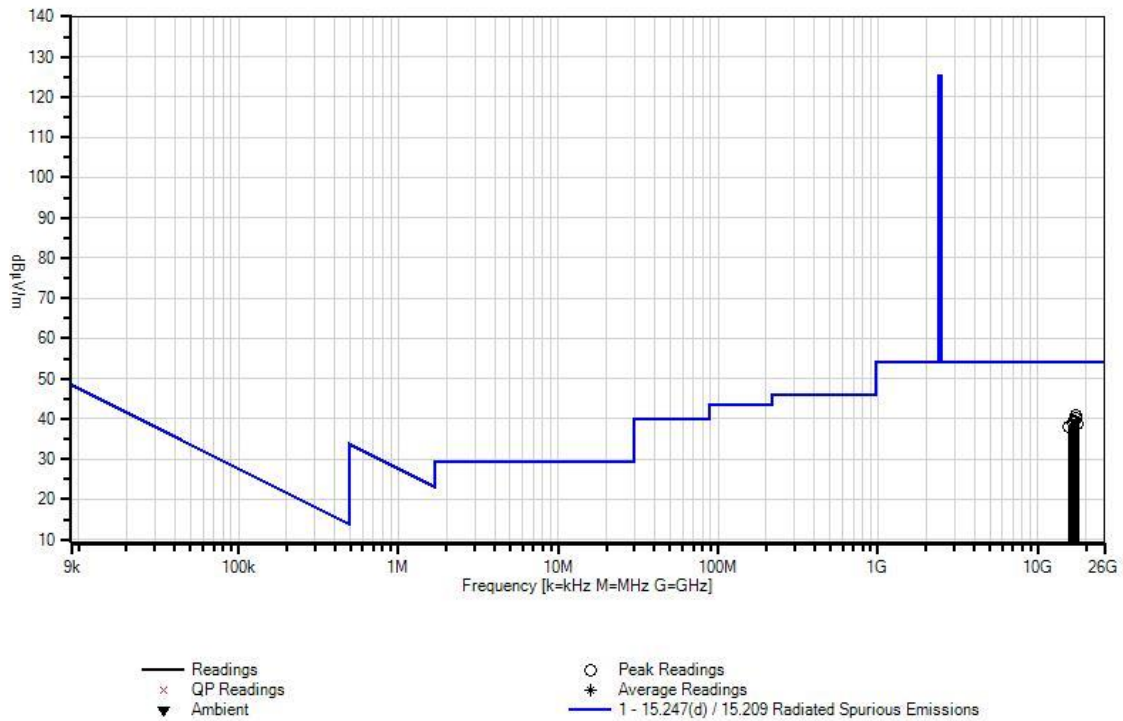
**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	17340.000 M	43.5	-12.3	+0.9	+2.6	+6.0	+0.0	40.7	54.0	-13.3	Vert
2	17238.000 M	43.1	-12.5	+0.8	+2.6	+6.0	+0.0	40.0	54.0	-14.0	Horiz
3	17082.000 M	42.7	-12.8	+0.9	+2.6	+6.0	+0.0	39.4	54.0	-14.6	Horiz
4	16458.000 M	41.4	-11.6	+0.9	+2.6	+5.8	+0.0	39.1	54.0	-14.9	Horiz
5	17694.000 M	40.5	-11.4	+0.8	+2.7	+6.2	+0.0	38.8	54.0	-15.2	Vert
6	15660.000 M	42.1	-13.3	+1.0	+2.5	+5.8	+0.0	38.1	54.0	-15.9	Vert

CKC Laboratories, Inc. Date: 3/13/2013 Time: 14:18:24 Proteus Digital Health, Inc. WO#: 94175  
 Test Distance: 3 Meters Sequence#: 43



Test Location: CKC Laboratories, Inc. • 1120 Fulton Places • Fremont, CA 94539 • (510) 249-1170

Customer: **Proteus Digital Health, Inc.**  
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**  
 Work Order #: **94175** Date: 3/13/2013  
 Test Type: **Radiated Scan** Time: 16:47:20  
 Equipment: **PPM (RP4) Electronics Module** Sequence#: 76  
 Manufacturer: Proteus Digital Health, Inc. Tested By: Hieu Song Nguyenpham  
 Model: SPC-0175  
 S/N: None

**Test Equipment:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	2/22/2013	2/22/2015
T1	ANP05843	Cable	32022-2-29094K-48TC	8/7/2012	8/7/2014
T2	AN03143	Cable	32022-29094K-144TC	8/30/2011	8/30/2013
T3	AN02742	Active Horn Antenna	AMFW-5F-18002650-20-10P	12/17/2012	12/17/2014
T4	ANP00929	Cable	various	2/16/2012	2/16/2014

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

Function	Manufacturer	Model #	S/N
PPM (RP4) Electronics Module*	Proteus Digital Health, Inc.	SPC-0175	None

**Support Devices:**

Function	Manufacturer	Model #	S/N
Laptop AC/DC Power Adapter	Dell	D130PE1-00	CN-0JU012-48661-09U-K8GG-A04
Laptop	Dell	Latitude E6500	B76FVL1
USB to TTL Serial Cable-1.8m Wire End Version	FTDI	TTL-232RG-VREG1V8-WE	None
DC power Supply	EZ	GP-4303A	01070038

**Test Conditions / Notes:**

Radiated Spurious Emission  
 Frequency Range: 18000MHz to 25000MHz  
  
 Temperature: 19.9°C, Humidity: 40 %, Atmospheric Pressure:101.9kPa  
  
 High Clock: 26Mhz  
 Software Used: HCI Lite  
  
 Transmitter Operation Frequency Range: 2400 - 2483.5 MHz  
 Rate power = +4dBm (nominal)  
 RBW=VBW=1MHz  
  
 Note:  
 High channel= 2480 MHz at Y axis  
 GFSK is the worst module.  
 Bit Pattern =10101010  
 Two ferrites (742 700 32) on a cable which connects from the EUT to a DC power supply with one pass through.

Ext Attn: 0 dB

**Measurement Data:**

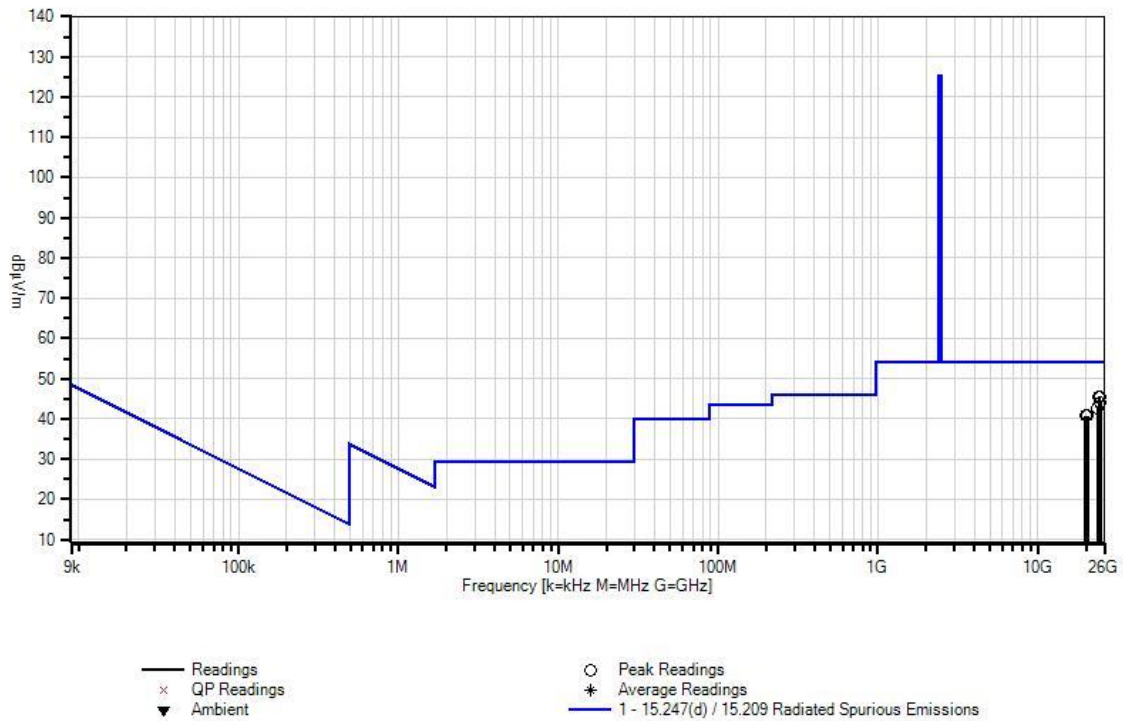
Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	24195.000 M	45.4	+3.1	+7.3	-13.5	+3.0	+0.0	45.3	54.0	-8.7	Vert
2	24335.000 M	45.3	+3.0	+7.3	-13.2	+2.9	+0.0	45.3	54.0	-8.7	Horiz
3	24643.000 M	43.1	+3.4	+7.4	-12.7	+2.9	+0.0	44.1	54.0	-9.9	Vert
4	23586.000 M	44.4	+3.2	+7.1	-15.0	+3.0	+0.0	42.7	54.0	-11.3	Vert
5	20485.000 M	42.1	+2.9	+6.5	-13.9	+3.2	+0.0	40.8	54.0	-13.2	Horiz
6	19911.000 M	41.5	+2.9	+6.5	-13.4	+3.2	+0.0	40.7	54.0	-13.3	Horiz



CKC Laboratories, Inc. Date: 3/13/2013 Time: 16:47:20 Proteus Digital Health, Inc. WO#: 94175  
 Test Distance: 3 Meters Sequence#: 76



## Z AXIS – LOW CHANNEL

Test Location: CKC Laboratories, Inc. • 1120 Fulton Places • Fremont, CA 94539 • (510) 249-1170

Customer: **Proteus Digital Health, Inc.**  
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**  
 Work Order #: **94175** Date: 3/14/2013  
 Test Type: **Radiated Scan** Time: 10:41:17  
 Equipment: **PPM (RP4) Electronics Module** Sequence#: 133  
 Manufacturer: Proteus Digital Health, Inc. Tested By: Hieu Song Nguyenpham  
 Model: SPC-0175  
 S/N: None

### ***Test Equipment:***

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	2/22/2013	2/22/2015
T1	AN00888	Cable	RG213/U	5/21/2012	5/21/2014
T2	ANP05440	Cable	RG214/U	1/21/2013	1/21/2015
T3	AN00432	Loop Antenna	6502	3/31/2011	3/31/2013

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

Function	Manufacturer	Model #	S/N
PPM (RP4) Electronics Module*	Proteus Digital Health, Inc.	SPC-0175	None

### ***Support Devices:***

Function	Manufacturer	Model #	S/N
Laptop AC/DC Power Adapter	Dell	D130PE1-00	CN-0JU012-48661-09U-K8GG-A04
Laptop	Dell	Latitude E6500	B76FVL1
USB to TTL Serial Cable- 1.8m Wire End Version	FTDI	TTL-232RG-VREG1V8-WE	None
DC power Supply	EZ	GP-4303A	01070038

### ***Test Conditions / Notes:***

Radiated Spurious Emission Frequency Range: 9kHz to 30MHz  Temperature: 20.1°C, Humidity: 45 %, Atmospheric Pressure: 101.8kPa  High Clock: 26MHz Software Used: HCI Lite  Transmitter Operation Frequency Range: 2400 - 2483.5 MHz Rate power = +4dBm (nominal) RBW=VBW=200Hz at 9kHz to 150kHz RBW=VBW=9kHz at 150kHz to 30MHz  Note: Low channel= 2402 MHz at Z axis GFSK is the worst module. Bit Pattern = 10101010 Two ferrites (742 700 32) on a cable which connects from the EUT to a DC power supply with one pass through.
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Ext Attn: 0 dB

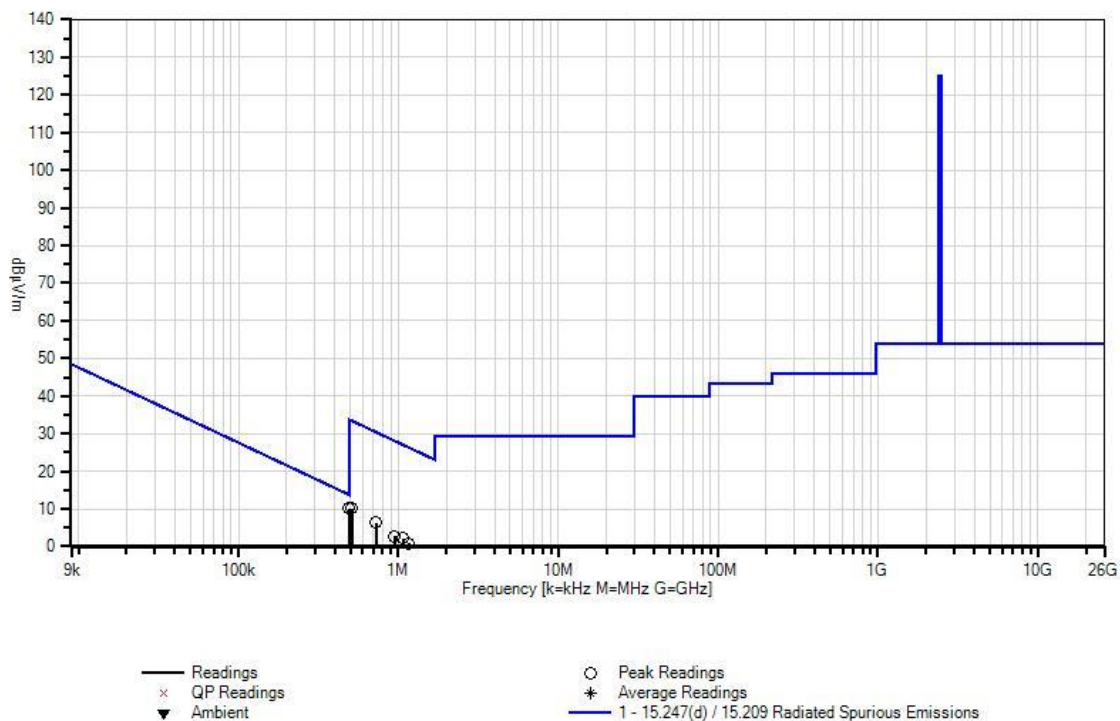
**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB		Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	511.691k	39.0	+0.1	+0.0	+11.1		-40.0	10.2	33.4	-23.2	Perpe
2	490.784k	39.0	+0.1	+0.0	+11.1		-40.0	10.2	33.8	-23.6	Paral
3	722.852k	34.5	+0.2	+0.1	+11.5		-40.0	6.3	30.4	-24.1	Perpe
4	1.074M	30.4	+0.1	+0.1	+11.5		-40.0	2.1	27.0	-24.9	Paral
5	1.166M	29.2	+0.1	+0.1	+11.5		-40.0	0.9	26.3	-25.4	Perpe
6	950.739k	31.1	+0.0	+0.1	+11.5		-40.0	2.7	28.1	-25.4	Paral

CKC Laboratories, Inc Date: 3/14/2013 Time: 10:41:17 Proteus Digital Health, Inc. WO#: 94175  
Test Distance: 3 Meters Sequence#: 133



Test Location: CKC Laboratories, Inc. • 1120 Fulton Places • Fremont, CA 94539 • (510) 249-1170

Customer: **Proteus Digital Health, Inc.**  
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**  
 Work Order #: **94175** Date: 3/13/2013  
 Test Type: **Radiated Scan** Time: 18:00:18  
 Equipment: **PPM (RP4) Electronics Module** Sequence#: 88  
 Manufacturer: Proteus Digital Health, Inc. Tested By: Hieu Song Nguyenpham  
 Model: SPC-0175  
 S/N: None

**Test Equipment:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	2/22/2013	2/22/2015
T1	AN00730	Preamp	8447D	1/17/2013	1/17/2015
T2	AN00852	Biconilog Antenna	CBL 6111C	11/28/2012	11/28/2014
T3	AN00888	Cable	RG213/U	5/21/2012	5/21/2014
T4	ANP05440	Cable	RG214/U	1/21/2013	1/21/2015
T5	ANP01183	Cable	CNT-195	10/24/2011	10/24/2013

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

Function	Manufacturer	Model #	S/N
PPM (RP4) Electronics Module*	Proteus Digital Health, Inc.	SPC-0175	None

**Support Devices:**

Function	Manufacturer	Model #	S/N
Laptop AC/DC Power Adapter	Dell	D130PE1-00	CN-0JU012-48661-09U-K8GG-A04
Laptop	Dell	Latitude E6500	B76FVL1
USB to TTL Serial Cable- 1.8m Wire End Version	FTDI	TTL-232RG-VREG1V8-WE	None
DC power Supply	EZ	GP-4303A	01070038

**Test Conditions / Notes:**

Radiated Spurious Emission Frequency Range: 30MHz to 1000MHz  Temperature: 19.9°C Humidity: 40 % Atmospheric Pressure: 101.9kPa  High Clock: 26MHz Software Used: HCI Lite  Transmitter Operation Frequency Range: 2400 - 2483.5 MHz Rate power = +4dBm (nominal) RBW=VBW=120kHz  Note: Low channel= 2402 MHz at Z axis GFSK is the worst module. Bit Pattern =10101010 Two ferrites (742 700 32) on a cable which connects from the EUT to a DC power supply with one pass through.
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Ext Attn: 0 dB

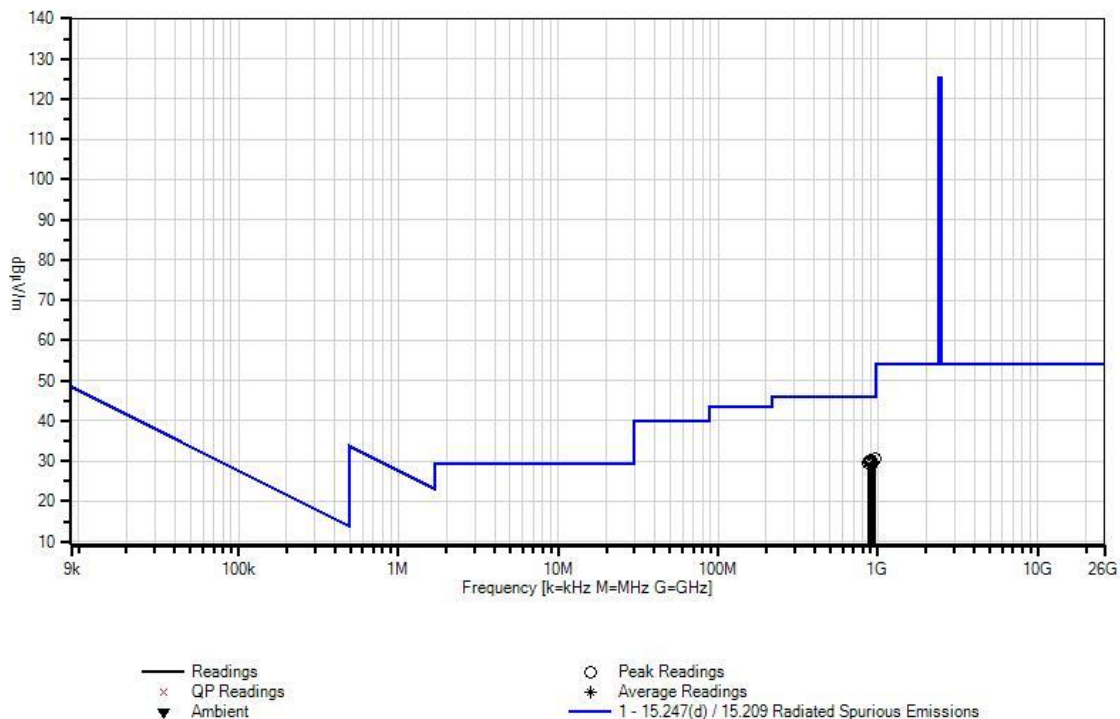
**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 T5 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	959.616M	29.1	-27.2 +1.0	+23.6	+1.9	+2.1	+0.0	30.5	46.0	-15.5	Vert
2	908.200M	29.5	-27.1 +1.0	+22.9	+1.8	+2.1	+0.0	30.2	46.0	-15.8	Vert
3	878.890M	29.0	-27.1 +0.9	+23.1	+1.8	+2.1	+0.0	29.8	46.0	-16.2	Horiz
4	900.752M	29.0	-27.1 +1.0	+23.0	+1.8	+2.1	+0.0	29.8	46.0	-16.2	Horiz
5	874.927M	28.9	-27.0 +0.9	+22.9	+1.8	+2.1	+0.0	29.6	46.0	-16.4	Vert
6	920.572M	29.2	-27.1 +0.9	+22.6	+1.9	+2.1	+0.0	29.6	46.0	-16.4	Horiz

CKC Laboratories, Inc Date: 3/13/2013 Time: 18:00:18 Proteus Digital Health, Inc. WO#: 94175  
Test Distance: 3 Meters Sequence#: 88



Test Location: CKC Laboratories, Inc. • 1120 Fulton Places • Fremont, CA 94539 • (510) 249-1170

Customer: **Proteus Digital Health, Inc.**  
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**  
 Work Order #: **94175** Date: 3/13/2013  
 Test Type: **Radiated Scan** Time: 11:31:45  
 Equipment: **PPM (RP4) Electronics Module** Sequence#: 30  
 Manufacturer: Proteus Digital Health, Inc. Tested By: Hieu Song Nguyenpham  
 Model: SPC-0175  
 S/N: None

**Test Equipment:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05843	Cable	32022-2-29094K-48TC	8/7/2012	8/7/2014
	AN02668	Spectrum Analyzer	E4446A	2/22/2013	2/22/2015
T2	AN03114	Preamp	AMF-7D-00101800-30-10P	5/13/2011	5/13/2013
T3	AN02157	Horn Antenna-ANSI C63.5	3115	1/23/2013	1/23/2015
T4	ANP01210	Cable	FSJ1P-50A-4A	2/19/2013	2/19/2015
T5	AN03309	High Pass Filter	11SH10-3000/T10000-O/O	6/12/2012	6/12/2014
T6	AN03302	Cable	32026-29094K-29094K-72TC	3/21/2012	3/21/2014

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

Function	Manufacturer	Model #	S/N
PPM (RP4) Electronics Module*	Proteus Digital Health, Inc.	SPC-0175	None

**Support Devices:**

Function	Manufacturer	Model #	S/N
Laptop AC/DC Power Adapter	Dell	D130PE1-00	CN-0JU012-48661-09U-K8GG-A04
Laptop	Dell	Latitude E6500	B76FVL1
USB to TTL Serial Cable-1.8m Wire End Version	FTDI	TTL-232RG-VREG1V8-WE	None
DC power Supply	EZ	GP-4303A	01070038

**Test Conditions / Notes:**

Radiated Spurious Emission  
1000MHz to 12000MHz

Temperature: 19.9°C

Humidity: 40 %

Atmospheric Pressure: 101.9kPa

High Clock: 26MHz

Software Used: HCI Lite

Transmitter Operation Frequency Range: 2400 - 2483.5 MHz

Rate power = +4dBm (nominal)

RBW=VBW=1MHz

Note:

Low Channel = 2402 MHz at Z axis

GFSK is the worst module.

Bit Pattern = 10101010

Two ferrites (742 700 32) on a cable which connects from the EUT to a DC power supply with one pass through.

Ext Attn: 0 dB

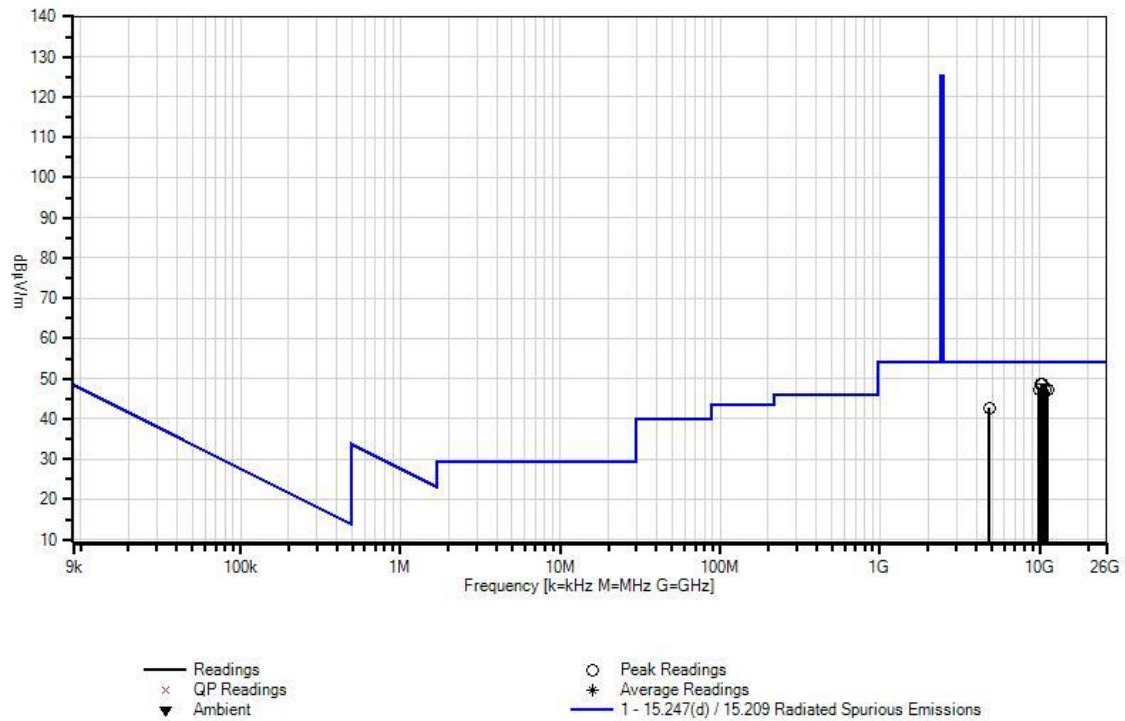
**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	T5 dB	T6 dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	10161.802 M	56.7	+2.0 +0.1	-58.4 +2.3	+39.7	+6.3	+0.0	48.7	54.0	-5.3	Vert
2	10348.082 M	57.3	+1.9 +0.1	-58.6 +2.3	+39.4	+6.2	+0.0	48.6	54.0	-5.4	Horiz
3	9834.933M	56.4	+1.7 +0.1	-58.7 +2.3	+39.4	+6.2	+0.0	47.4	54.0	-6.6	Vert
4	10752.275 M	56.5	+2.0 +0.2	-58.8 +2.3	+38.9	+6.2	+0.0	47.3	54.0	-6.7	Horiz
5	11170.526 M	55.0	+2.1 +0.2	-57.4 +2.3	+38.9	+6.2	+0.0	47.3	54.0	-6.7	Vert
6	4803.238M	61.6	+1.3 +0.2	-58.9 +1.5	+33.2	+3.8	+0.0	42.7	54.0	-11.3	Horiz

CKC Laboratories, Inc. Date: 3/13/2013 Time: 11:31:45 Proteus Digital Health, Inc. WO#: 94175  
 Test Distance: 3 Meters Sequence#: 30





Test Location: CKC Laboratories, Inc. • 1120 Fulton Places • Fremont, CA 94539 • (510) 249-1170

Customer: **Proteus Digital Health, Inc.**  
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**  
 Work Order #: **94175** Date: 3/13/2013  
 Test Type: **Radiated Scan** Time: 13:34:40  
 Equipment: **PPM (RP4) Electronics Module** Sequence#: 34  
 Manufacturer: Proteus Digital Health, Inc. Tested By: Hieu Song Nguyenpham  
 Model: SPC-0175  
 S/N: None

**Test Equipment:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	2/22/2013	2/22/2015
T1	AN02741	Active Horn Antenna	AMFW-5F-12001800-20-10P	12/18/2012	12/18/2014
T2	ANP00928	Cable	various	2/10/2012	2/10/2014
T3	ANP05843	Cable	32022-2-29094K-48TC	8/7/2012	8/7/2014
T4	AN03143	Cable	32022-29094K-144TC	8/30/2011	8/30/2013

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

Function	Manufacturer	Model #	S/N
PPM (RP4) Electronics Module*	Proteus Digital Health, Inc.	SPC-0175	None

**Support Devices:**

Function	Manufacturer	Model #	S/N
Laptop AC/DC Power Adapter	Dell	D130PE1-00	CN-0JU012-48661-09U-K8GG-A04
Laptop	Dell	Latitude E6500	B76FVL1
USB to TTL Serial Cable-1.8m Wire End Version	FTDI	TTL-232RG-VREG1V8-WE	None
DC power Supply	EZ	GP-4303A	01070038

**Test Conditions / Notes:**

Radiated Spurious Emission Frequency Range: 12000MHz to 18000MHz  Temperature: 19.9°C, Humidity: 40 %, Atmospheric Pressure:101.9kPa  High Clock: 26MHz Software Used: HCI Lite  Transmitter Operation Frequency Range: 2400 - 2483.5 MHz Rate power = +4dBm (nominal) RBW=VBW=1MHz  Note: Low channel= 2402MHz at Z axis GFSK is the worst module. Bit Pattern =10101010 Two ferrites (742 700 32) on a cable which connects from the EUT to a DC power supply with one pass through.
--

Ext Attn: 0 dB

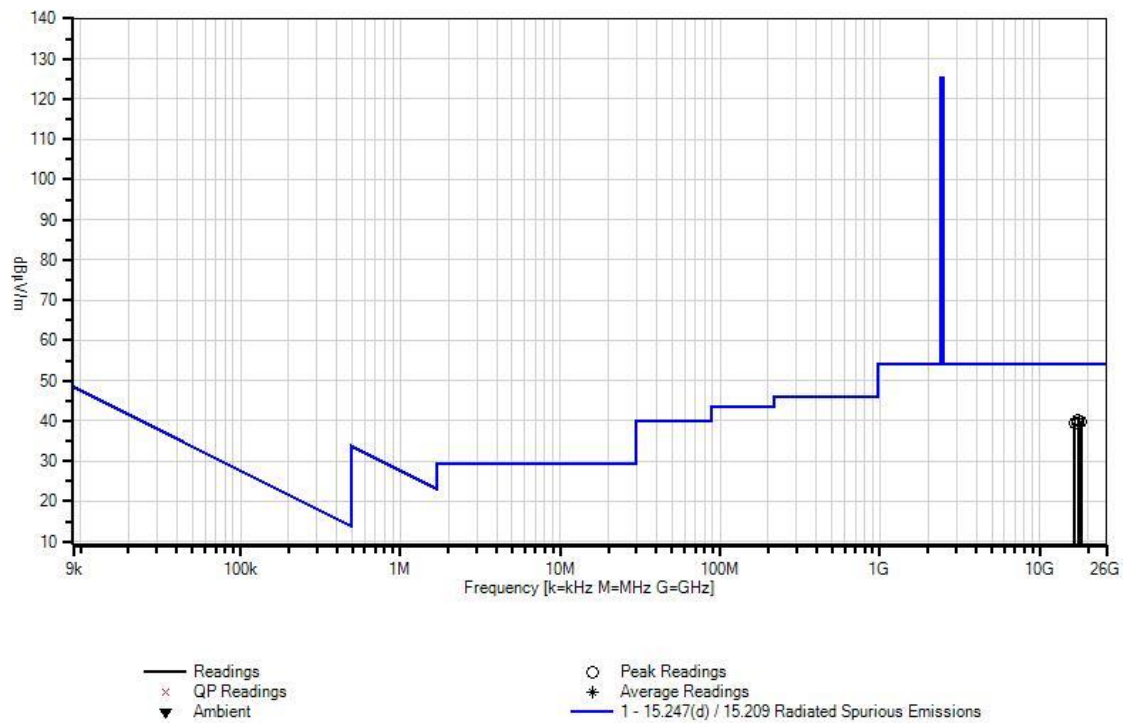
**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	17299.751 M	43.2	-12.3	+0.8	+2.6	+6.0	+0.0	40.3	54.0	-13.7	Vert
2	17321.551 M	43.1	-12.3	+0.8	+2.6	+6.0	+0.0	40.2	54.0	-13.8	Horiz
3	17987.854 M	40.4	-10.2	+0.8	+2.7	+6.2	+0.0	39.9	54.0	-14.1	Horiz
4	17824.938 M	40.9	-10.9	+0.8	+2.7	+6.2	+0.0	39.7	54.0	-14.3	Vert
5	16398.015 M	41.4	-11.1	+0.9	+2.6	+5.8	+0.0	39.6	54.0	-14.4	Vert
6	17390.957 M	42.2	-12.2	+0.8	+2.6	+6.1	+0.0	39.5	54.0	-14.5	Horiz

CKC Laboratories, Inc Date: 3/13/2013 Time: 13:34:40 Proteus Digital Health, Inc. WO#: 94175  
 Test Distance: 3 Meters Sequence#: 34



Test Location: CKC Laboratories, Inc. • 1120 Fulton Places • Fremont, CA 94539 • (510) 249-1170

Customer: **Proteus Digital Health, Inc.**  
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**  
 Work Order #: **94175** Date: 3/13/2013  
 Test Type: **Radiated Scan** Time: 17:16:44  
 Equipment: **PPM (RP4) Electronics Module** Sequence#: 85  
 Manufacturer: Proteus Digital Health, Inc. Tested By: Hieu Song Nguyenpham  
 Model: SPC-0175  
 S/N: None

**Test Equipment:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	2/22/2013	2/22/2015
T1	ANP05843	Cable	32022-2-29094K-48TC	8/7/2012	8/7/2014
T2	AN03143	Cable	32022-29094K-144TC	8/30/2011	8/30/2013
T3	AN02742	Active Horn Antenna	AMFW-5F-18002650-20-10P	12/17/2012	12/17/2014
T4	ANP00929	Cable	various	2/16/2012	2/16/2014

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

Function	Manufacturer	Model #	S/N
PPM (RP4) Electronics Module*	Proteus Digital Health, Inc.	SPC-0175	None

**Support Devices:**

Function	Manufacturer	Model #	S/N
Laptop AC/DC Power Adapter	Dell	D130PE1-00	CN-0JU012-48661-09U-K8GG-A04
Laptop	Dell	Latitude E6500	B76FVL1
USB to TTL Serial Cable-1.8m Wire End Version	FTDI	TTL-232RG-VREG1V8-WE	None
DC power Supply	EZ	GP-4303A	01070038

**Test Conditions / Notes:**

Radiated Spurious Emission  
 Frequency Range: 18000MHz to 25000MHz  
  
 Temperature: 19.9°C, Humidity: 40 %, Atmospheric Pressure:101.9kPa  
  
 High Clock: 26MHz  
 Software Used: HCI Lite  
  
 Transmitter Operation Frequency Range: 2400 - 2483.5 MHz  
 Rate power = +4dBm (nominal)  
 RBW=VBW=1MHz  
  
 Note:  
 Low channel= 2402 MHz at Z axis  
 GFSK is the worst module.  
 Bit Pattern =10101010  
 Two ferrites (742 700 32) on a cable which connects from the EUT to a DC power supply with one pass through.

Ext Attn: 0 dB

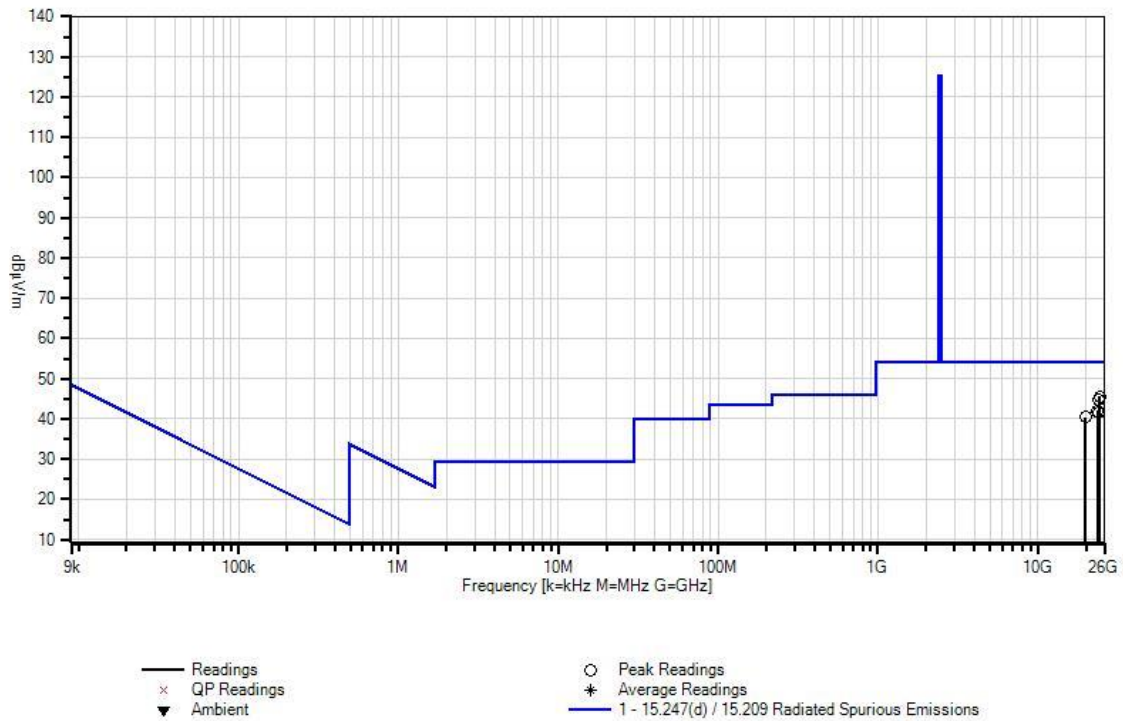
**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	24321.000 M	45.5	+3.0	+7.3	-13.2	+2.9	+0.0	45.5	54.0	-8.5	Vert
2	24006.000 M	45.4	+3.1	+7.2	-14.0	+3.0	+0.0	44.7	54.0	-9.3	Horiz
3	23495.000 M	44.1	+3.1	+7.1	-15.2	+2.9	+0.0	42.0	54.0	-12.0	Horiz
4	23782.000 M	43.0	+3.1	+7.1	-14.5	+3.0	+0.0	41.7	54.0	-12.3	Vert
5	23852.000 M	42.6	+3.1	+7.1	-14.3	+3.0	+0.0	41.5	54.0	-12.5	Horiz
6	19876.000 M	41.3	+2.9	+6.5	-13.4	+3.2	+0.0	40.5	54.0	-13.5	Vert

CKC Laboratories, Inc. Date: 3/13/2013 Time: 17:16:44 Proteus Digital Health, Inc. WO#: 94175  
 Test Distance: 3 Meters Sequence#: 85



## Z AXIS – MIDDLE CHANNEL

Test Location: CKC Laboratories, Inc. • 1120 Fulton Places • Fremont, CA 94539 • (510) 249-1170

Customer: **Proteus Digital Health, Inc.**  
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**  
 Work Order #: **94175** Date: 3/14/2013  
 Test Type: **Radiated Scan** Time: 10:53:37  
 Equipment: **PPM (RP4) Electronics Module** Sequence#: 136  
 Manufacturer: Proteus Digital Health, Inc. Tested By: Hieu Song Nguyenpham  
 Model: SPC-0175  
 S/N: None

### ***Test Equipment:***

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	2/22/2013	2/22/2015
T1	AN00888	Cable	RG213/U	5/21/2012	5/21/2014
T2	ANP05440	Cable	RG214/U	1/21/2013	1/21/2015
T3	AN00432	Loop Antenna	6502	3/31/2011	3/31/2013

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

Function	Manufacturer	Model #	S/N
PPM (RP4) Electronics Module*	Proteus Digital Health, Inc.	SPC-0175	None

### ***Support Devices:***

Function	Manufacturer	Model #	S/N
Laptop AC/DC Power Adapter	Dell	D130PE1-00	CN-0JU012-48661-09U-K8GG-A04
Laptop	Dell	Latitude E6500	B76FVL1
USB to TTL Serial Cable-1.8m Wire End Version	FTDI	TTL-232RG-VREG1V8-WE	None
DC power Supply	EZ	GP-4303A	01070038

### ***Test Conditions / Notes:***

Radiated Spurious Emission Frequency Range: 9kHz to 30MHz  Temperature: 20.1°C, Humidity: 45 %, Atmospheric Pressure:101.8kPa  High Clock: 26MHz Software Used: HCI Lite  Transmitter Operation Frequency Range: 2400 - 2483.5 MHz Rate power = +4dBm (nominal) RBW=VBW=200Hz at 9kHz to 150kHz RBW=VBW=9kHz at 150kHz to 30MHz  Note: Middle channel= 2441MHz at Z axis GFSK is the worst module. Bit Pattern =10101010 Two ferrites (742 700 32) on a cable which connects from the EUT to a DC power supply with one pass through.
--

Ext Attn: 0 dB

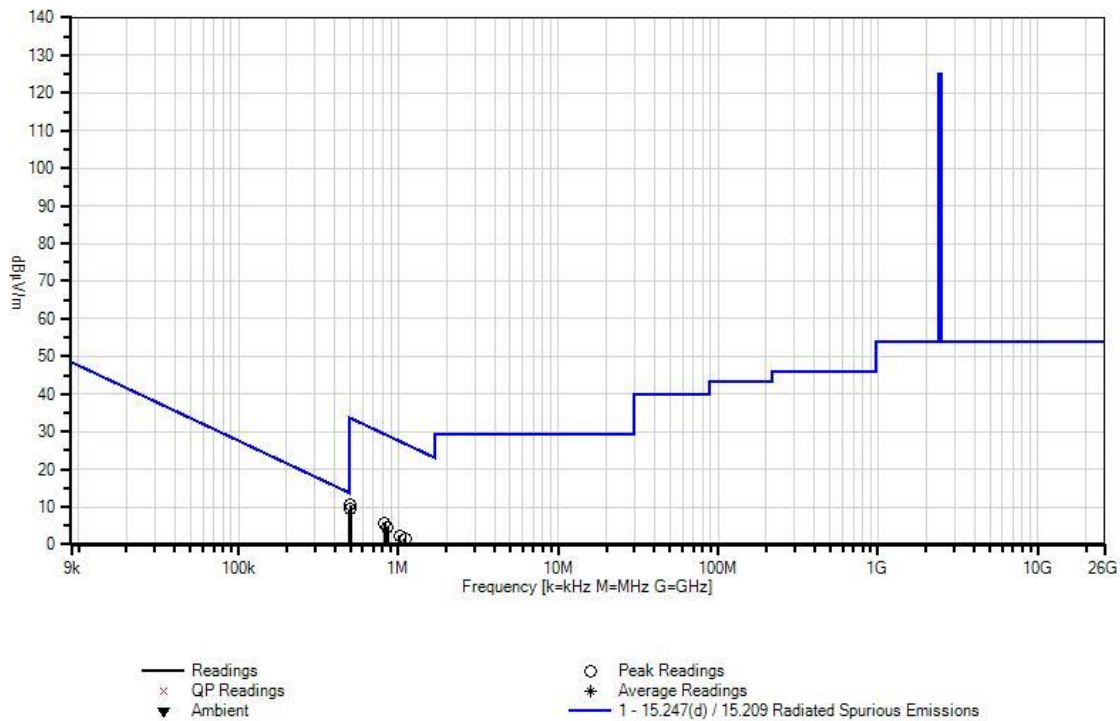
**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB		Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	501.238k	39.3	+0.1	+0.0	+11.1		-40.0	10.5	33.6	-23.1	Paral
2	821.115k	34.2	+0.1	+0.0	+11.4		-40.0	5.7	29.3	-23.6	Perpe
3	494.966k	38.2	+0.1	+0.0	+11.1		-40.0	9.4	33.7	-24.3	Perpe
4	856.657k	32.8	+0.1	+0.1	+11.4		-40.0	4.4	29.0	-24.6	Paral
5	1.016M	30.7	+0.1	+0.1	+11.5		-40.0	2.4	27.5	-25.1	Paral
6	1.103M	29.9	+0.1	+0.1	+11.5		-40.0	1.6	26.8	-25.2	Perpe

CKC Laboratories, Inc Date: 3/14/2013 Time: 10:53:37 Proteus Digital Health, Inc. WO#: 94175  
Test Distance: 3 Meters Sequence#: 136





Test Location: CKC Laboratories, Inc. • 1120 Fulton Places • Fremont, CA 94539 • (510) 249-1170

Customer: **Proteus Digital Health, Inc.**  
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**  
 Work Order #: **94175** Date: 3/13/2013  
 Test Type: **Radiated Scan** Time: 18:18:17  
 Equipment: **PPM (RP4) Electronics Module** Sequence#: 91  
 Manufacturer: Proteus Digital Health, Inc. Tested By: Hieu Song Nguyenpham  
 Model: SPC-0175  
 S/N: None

**Test Equipment:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	2/22/2013	2/22/2015
T1	AN00730	Preamp	8447D	1/17/2013	1/17/2015
T2	AN00852	Biconilog Antenna	CBL 6111C	11/28/2012	11/28/2014
T3	AN00888	Cable	RG213/U	5/21/2012	5/21/2014
T4	ANP05440	Cable	RG214/U	1/21/2013	1/21/2015
T5	ANP01183	Cable	CNT-195	10/24/2011	10/24/2013

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

Function	Manufacturer	Model #	S/N
PPM (RP4) Electronics Module*	Proteus Digital Health, Inc.	SPC-0175	None

**Support Devices:**

Function	Manufacturer	Model #	S/N
Laptop AC/DC Power Adapter	Dell	D130PE1-00	CN-0JU012-48661-09U-K8GG-A04
Laptop	Dell	Latitude E6500	B76FVL1
USB to TTL Serial Cable- 1.8m Wire End Version	FTDI	TTL-232RG-VREG1V8-WE	None
DC power Supply	EZ	GP-4303A	01070038

**Test Conditions / Notes:**

Radiated Spurious Emission  
 Frequency Range: 30MHz to 1000MHz

Temperature: 19.9°C  
 Humidity: 40 %  
 Atmospheric Pressure: 101.9kPa

High Clock: 26MHz  
 Software Used: HCI Lite

Transmitter Operation Frequency Range: 2400 - 2483.5 MHz  
 Rate power = +4dBm (nominal)  
 RBW=VBW=120kHz

Note:  
 Middle channel= 2441 MHz at Z axis  
 GFSK is the worst module.  
 Bit Pattern = 10101010  
 Two ferrites ( 742 700 32) on a cable which connects from the EUT to a DC power supply with one pass through

Ext Attn: 0 dB

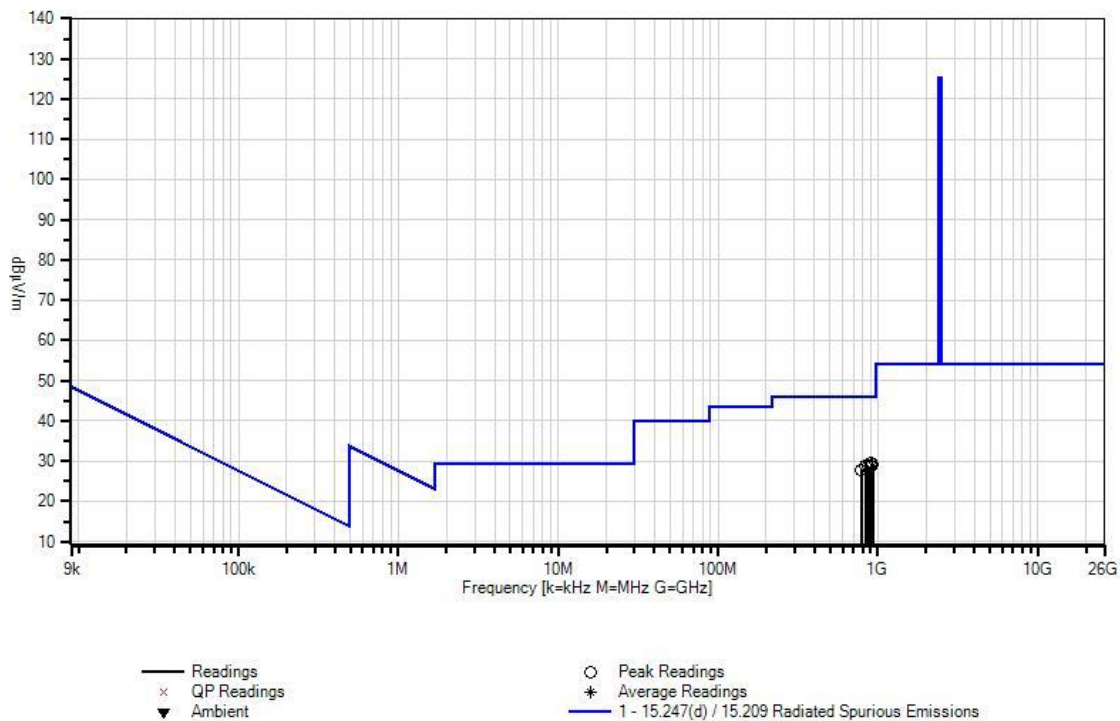
**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 T5 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	904.837M	28.6	-27.1 +1.0	+23.0	+1.8	+2.1	+0.0	29.4	46.0	-16.6	Vert
2	930.525M	28.4	-27.1 +1.0	+22.8	+1.9	+2.1	+0.0	29.1	46.0	-16.9	Horiz
3	863.386M	28.3	-27.0 +1.0	+22.8	+1.8	+2.0	+0.0	28.9	46.0	-17.1	Horiz
4	833.611M	29.0	-26.9 +0.9	+22.1	+1.8	+2.0	+0.0	28.9	46.0	-17.1	Vert
5	900.167M	28.0	-27.1 +1.0	+23.0	+1.8	+2.1	+0.0	28.8	46.0	-17.2	Horiz
6	782.235M	28.3	-26.7 +0.8	+21.8	+1.8	+1.9	+0.0	27.9	46.0	-18.1	Vert

CKC Laboratories, Inc Date: 3/13/2013 Time: 18:18:17 Proteus Digital Health, Inc. WO#: 94175  
Test Distance: 3 Meters Sequence#: 91



Test Location: CKC Laboratories, Inc. • 1120 Fulton Places • Fremont, CA 94539 • (510) 249-1170

Customer: **Proteus Digital Health, Inc.**  
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**  
 Work Order #: **94175** Date: 3/13/2013  
 Test Type: **Radiated Scan** Time: 11:03:59  
 Equipment: **PPM (RP4) Electronics Module** Sequence#: 27  
 Manufacturer: Proteus Digital Health, Inc. Tested By: Hieu Song Nguyenpham  
 Model: SPC-0175  
 S/N: None

**Test Equipment:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05843	Cable	32022-2-29094K-48TC	8/7/2012	8/7/2014
	AN02668	Spectrum Analyzer	E4446A	2/22/2013	2/22/2015
T2	AN03114	Preamp	AMF-7D-00101800-30-10P	5/13/2011	5/13/2013
T3	AN02157	Horn Antenna-ANSI C63.5	3115	1/23/2013	1/23/2015
T4	ANP01210	Cable	FSJ1P-50A-4A	2/19/2013	2/19/2015
T5	AN03309	High Pass Filter	11SH10-3000/T10000-O/O	6/12/2012	6/12/2014
T6	AN03302	Cable	32026-29094K-29094K-72TC	3/21/2012	3/21/2014

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

Function	Manufacturer	Model #	S/N
PPM (RP4) Electronics Module*	Proteus Digital Health, Inc.	SPC-0175	None

**Support Devices:**

Function	Manufacturer	Model #	S/N
Laptop AC/DC Power Adapter	Dell	D130PE1-00	CN-0JU012-48661-09U-K8GG-A04
Laptop	Dell	Latitude E6500	B76FVL1
USB to TTL Serial Cable-1.8m Wire End Version	FTDI	TTL-232RG-VREG1V8-WE	None
DC power Supply	EZ	GP-4303A	01070038

**Test Conditions / Notes:**

Radiated Spurious Emission  
1000MHz to 12000MHz

Temperature: 19.9°C, Humidity: 40 %, Atmospheric Pressure:101.9kPa

High Clock: 26MHz  
Software Used: HCI Lite

Transmitter Operation Frequency Range: 2400 - 2483.5 MHz  
Rate power = +4dBm (nominal)  
RBW=VBW=1MHz

Note:  
Middle Channel = 2441 MHz at Z axis  
GFSK is the worst module.  
Bit Pattern =10101010  
Two ferrites (742 700 32) on a cable which connects from the EUT to a DC power supply with one pass through.

Ext Attn: 0 dB

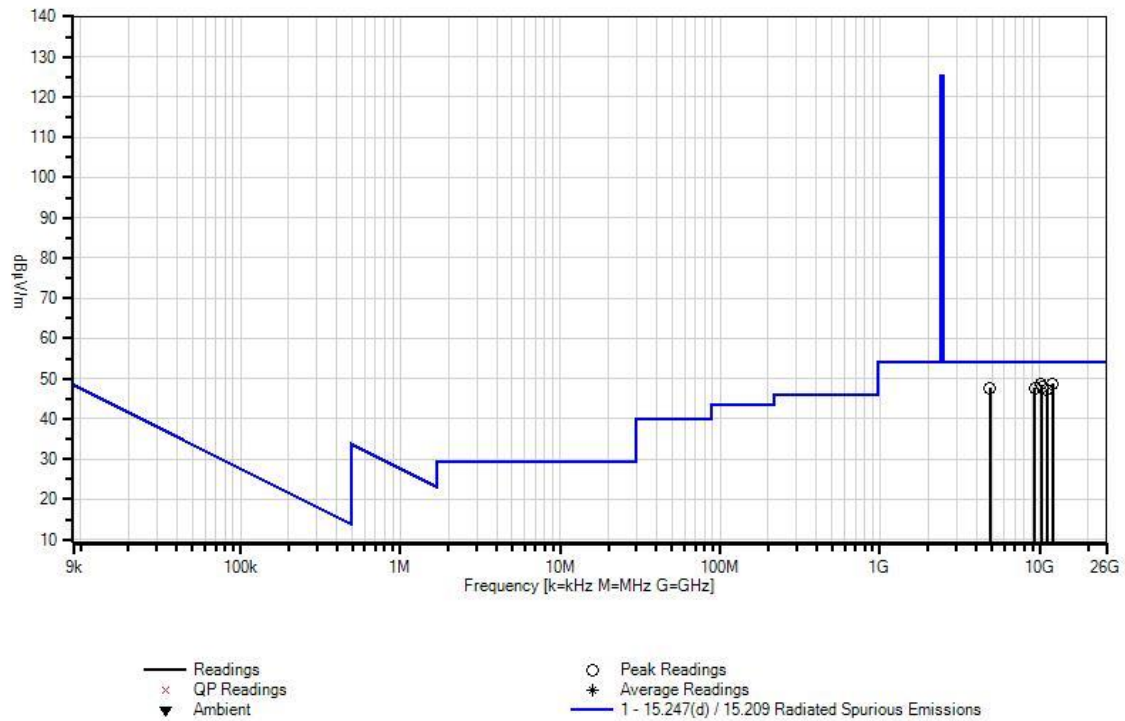
**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dBμV	T1 T5 dB	T2 T6 dB	T3 dB	T4 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	11950.794 M	54.0	+2.2 +0.3	-56.2 +2.4	+39.7	+6.4	+0.0	48.8	54.0	-5.2	Horiz
2	10172.346 M	56.6	+2.0 +0.1	-58.4 +2.3	+39.7	+6.3	+0.0	48.6	54.0	-5.4	Horiz
3	10242.641 M	56.3	+2.0 +0.1	-58.5 +2.3	+39.6	+6.2	+0.0	48.0	54.0	-6.0	Vert
4	4882.319M	66.4	+1.3 +0.3	-59.0 +1.5	+33.4	+3.8	+0.0	47.7	54.0	-6.3	Horiz
5	9332.329M	55.8	+1.7 +0.4	-57.1 +2.2	+38.4	+6.2	+0.0	47.6	54.0	-6.4	Vert
6	11008.849 M	55.8	+2.1 +0.2	-57.9 +2.3	+38.7	+6.2	+0.0	47.4	54.0	-6.6	Vert

CKC Laboratories, Inc Date: 3/13/2013 Time: 11:03:59 Proteus Digital Health, Inc. WO#: 94175  
 Test Distance: 3 Meters Sequence#: 27



Test Location: CKC Laboratories, Inc. • 1120 Fulton Places • Fremont, CA 94539 • (510) 249-1170

Customer: **Proteus Digital Health, Inc.**  
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**  
 Work Order #: **94175** Date: 3/13/2013  
 Test Type: **Radiated Scan** Time: 13:49:25  
 Equipment: **PPM (RP4) Electronics Module** Sequence#: 37  
 Manufacturer: Proteus Digital Health, Inc. Tested By: Hieu Song Nguyenpham  
 Model: SPC-0175  
 S/N: None

**Test Equipment:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	2/22/2013	2/22/2015
T1	AN02741	Active Horn Antenna	AMFW-5F-12001800-20-10P	12/18/2012	12/18/2014
T2	ANP00928	Cable	various	2/10/2012	2/10/2014
T3	ANP05843	Cable	32022-2-29094K-48TC	8/7/2012	8/7/2014
T4	AN03143	Cable	32022-29094K-144TC	8/30/2011	8/30/2013

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

Function	Manufacturer	Model #	S/N
PPM (RP4) Electronics Module*	Proteus Digital Health, Inc.	SPC-0175	None

**Support Devices:**

Function	Manufacturer	Model #	S/N
Laptop AC/DC Power Adapter	Dell	D130PE1-00	CN-0JU012-48661-09U-K8GG-A04
Laptop	Dell	Latitude E6500	B76FVL1
USB to TTL Serial Cable-1.8m Wire End Version	FTDI	TTL-232RG-VREG1V8-WE	None
DC power Supply	EZ	GP-4303A	01070038

**Test Conditions / Notes:**

Radiated Spurious Emission  
 Frequency Range: 12000MHz to 18000MHz  
  
 Temperature: 19.9°C, Humidity: 40 %, Atmospheric Pressure:101.9kPa  
  
 High Clock: 26MHz  
 Software Used: HCI Lite  
  
 Transmitter Operation Frequency Range: 2400 - 2483.5 MHz  
 Rate power = +4dBm (nominal)  
 RBW=VBW=1MHz  
  
 Note:  
 Middle channel= 2441MHz at Z axis  
 GFSK is the worst module.  
 Bit Pattern =10101010  
 Two ferrites (742 700 32) on a cable which connects from the EUT to a DC power supply with one pass through.

Ext Attn: 0 dB

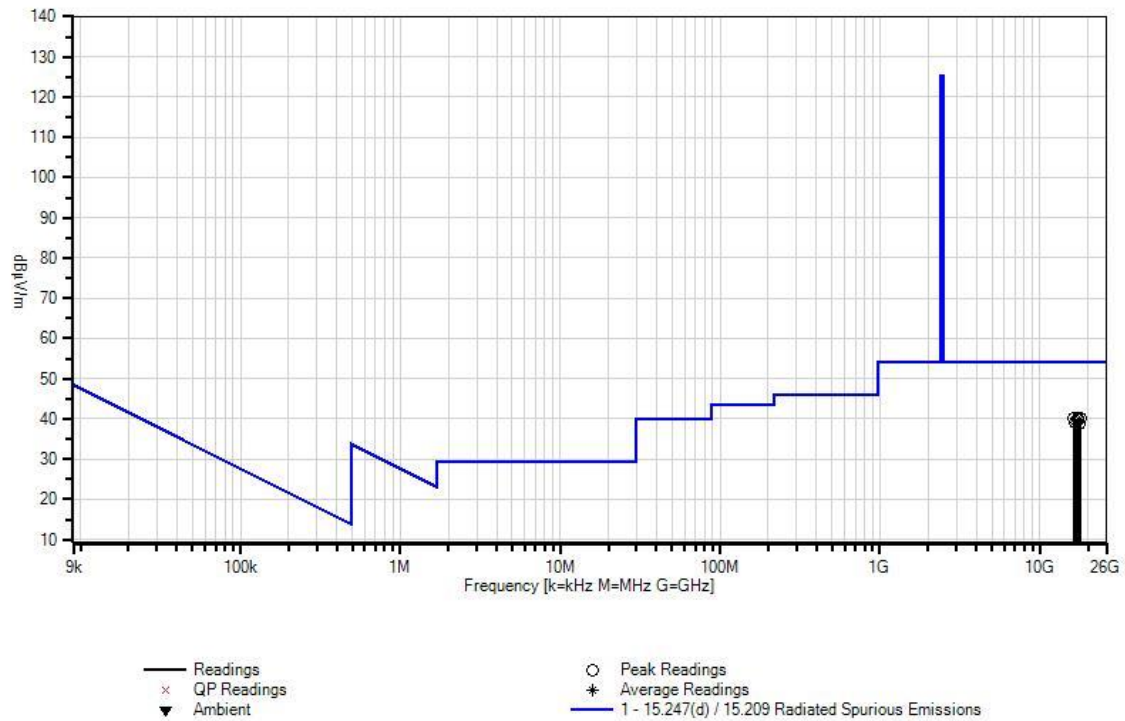
**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	17260.114 M	43.2	-12.4	+0.8	+2.6	+6.0	+0.0	40.2	54.0	-13.8	Horiz
2	16328.651 M	42.1	-11.2	+0.9	+2.6	+5.8	+0.0	40.2	54.0	-13.8	Horiz
3	17937.242 M	40.9	-10.5	+0.8	+2.7	+6.2	+0.0	40.1	54.0	-13.9	Vert
4	17174.235 M	43.1	-12.6	+0.8	+2.6	+6.0	+0.0	39.9	54.0	-14.1	Horiz
5	16417.834 M	41.0	-11.3	+0.9	+2.6	+5.8	+0.0	39.0	54.0	-15.0	Vert
6	17712.634 M	40.5	-11.3	+0.8	+2.7	+6.2	+0.0	38.9	54.0	-15.1	Vert

CKC Laboratories, Inc. Date: 3/13/2013 Time: 13:49:25 Proteus Digital Health, Inc. WO#: 94175  
Test Distance: 3 Meters Sequence#: 37





Test Location: CKC Laboratories, Inc. • 1120 Fulton Places • Fremont, CA 94539 • (510) 249-1170

Customer: **Proteus Digital Health, Inc.**  
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**  
 Work Order #: **94175** Date: 3/13/2013  
 Test Type: **Radiated Scan** Time: 17:06:41  
 Equipment: **PPM (RP4) Electronics Module** Sequence#: 82  
 Manufacturer: Proteus Digital Health, Inc. Tested By: Hieu Song Nguyenpham  
 Model: SPC-0175  
 S/N: None

**Test Equipment:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	2/22/2013	2/22/2015
T1	ANP05843	Cable	32022-2-29094K-48TC	8/7/2012	8/7/2014
T2	AN03143	Cable	32022-29094K-144TC	8/30/2011	8/30/2013
T3	AN02742	Active Horn Antenna	AMFW-5F-18002650-20-10P	12/17/2012	12/17/2014
T4	ANP00929	Cable	various	2/16/2012	2/16/2014

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

Function	Manufacturer	Model #	S/N
PPM (RP4) Electronics Module*	Proteus Digital Health, Inc.	SPC-0175	None

**Support Devices:**

Function	Manufacturer	Model #	S/N
Laptop AC/DC Power Adapter	Dell	D130PE1-00	CN-0JU012-48661-09U-K8GG-A04
Laptop	Dell	Latitude E6500	B76FVL1
USB to TTL Serial Cable-1.8m Wire End Version	FTDI	TTL-232RG-VREG1V8-WE	None
DC power Supply	EZ	GP-4303A	01070038

**Test Conditions / Notes:**

Radiated Spurious Emission Frequency Range: 18000MHz to 25000MHz  Temperature: 19.9°C, Humidity: 40 %, Atmospheric Pressure:101.9kPa  High Clock: 26MHz Software Used: HCI Lite  Transmitter Operation Frequency Range: 2400 - 2483.5 MHz Rate power = +4dBm (nominal) RBW=VBW=1MHz  Note; Middle channel= 2441 MHz at Z axis GFSK is the worst module. Bit Pattern =10101010 Two ferrites (742 700 32) on a cable which connects from the EUT to a DC power supply with one pass through.
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Ext Attn: 0 dB

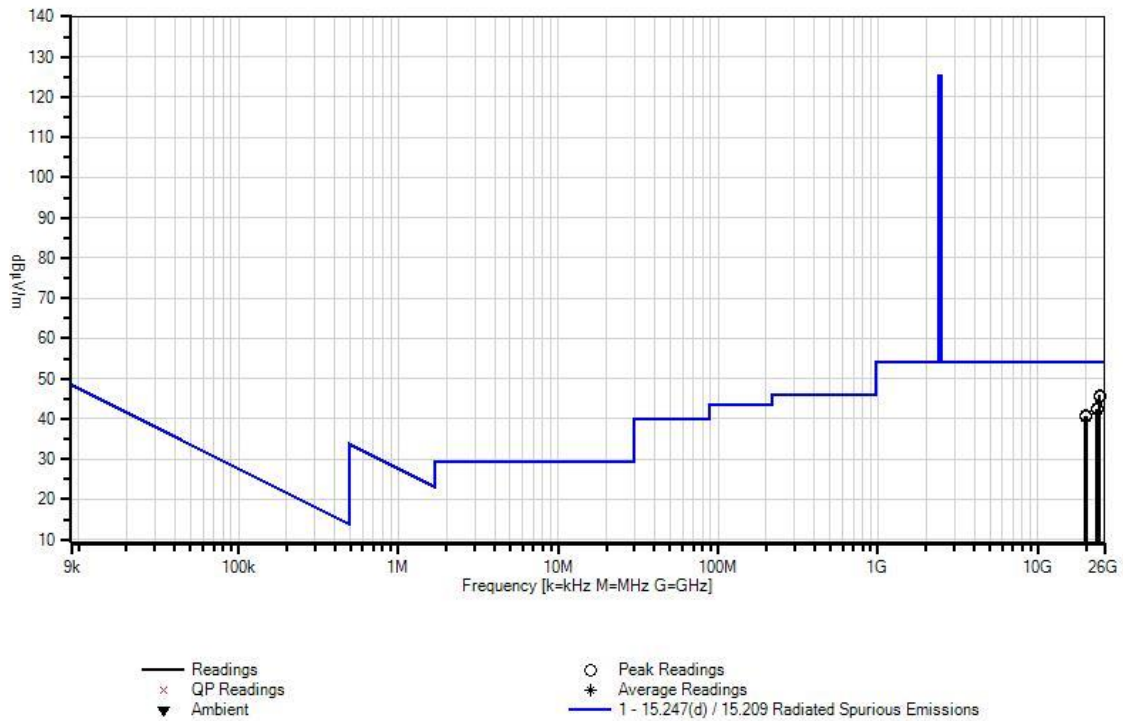
**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	24307.000 M	46.0	+3.0	+7.3	-13.3	+2.9	+0.0	45.9	54.0	-8.1	Vert
2	24279.000 M	45.6	+3.1	+7.3	-13.3	+2.9	+0.0	45.6	54.0	-8.4	Horiz
3	23502.000 M	44.7	+3.1	+7.1	-15.2	+2.9	+0.0	42.6	54.0	-11.4	Vert
4	23467.000 M	44.5	+3.1	+7.1	-15.3	+2.9	+0.0	42.3	54.0	-11.7	Horiz
5	20121.000 M	41.8	+2.9	+6.5	-13.6	+3.2	+0.0	40.8	54.0	-13.2	Horiz
6	19778.000 M	41.3	+2.9	+6.5	-13.4	+3.3	+0.0	40.6	54.0	-13.4	Vert

CKC Laboratories, Inc Date: 3/13/2013 Time: 17:06:41 Proteus Digital Health, Inc. WO#: 94175  
 Test Distance: 3 Meters Sequence#: 82



## **Z AXIS – HIGH CHANNEL**

Test Location: CKC Laboratories, Inc. • 1120 Fulton Places • Fremont, CA 94539 • (510) 249-1170

Customer: **Proteus Digital Health, Inc.**  
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**  
 Work Order #: **94175** Date: 3/14/2013  
 Test Type: **Radiated Scan** Time: 11:12:03  
 Equipment: **PPM (RP4) Electronics Module** Sequence#: 139  
 Manufacturer: Proteus Digital Health, Inc. Tested By: Hieu Song Nguyenpham  
 Model: SPC-0175  
 S/N: None

### ***Test Equipment:***

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	2/22/2013	2/22/2015
T1	AN00888	Cable	RG213/U	5/21/2012	5/21/2014
T2	ANP05440	Cable	RG214/U	1/21/2013	1/21/2015
T3	AN00432	Loop Antenna	6502	3/31/2011	3/31/2013

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

Function	Manufacturer	Model #	S/N
PPM (RP4) Electronics Module*	Proteus Digital Health, Inc.	SPC-0175	None

### ***Support Devices:***

Function	Manufacturer	Model #	S/N
Laptop AC/DC Power Adapter	Dell	D130PE1-00	CN-0JU012-48661-09U-K8GG-A04
Laptop	Dell	Latitude E6500	B76FVL1
USB to TTL Serial Cable-1.8m Wire End Version	FTDI	TTL-232RG-VREG1V8-WE	None
DC power Supply	EZ	GP-4303A	01070038

### ***Test Conditions / Notes:***

Radiated Spurious Emission  
 Frequency Range: 9kHz to 30MHz  
  
 Temperature: 20.1°C, Humidity: 45 %, Atmospheric Pressure:101.8kPa  
  
 High Clock: 26MHz  
 Software Used: HCI Lite  
  
 Transmitter Operation Frequency Range: 2400 - 2483.5 MHz  
 Rate power = +4dBm (nominal)  
 RBW=VBW=200Hz at 9kHz to 150kHz  
 RBW=VBW=9kHz at 150kHz to 30MHz  
  
 Note:  
 High channel= 2480 MHz at Z axis  
 GFSK is the worst module.  
 Bit Pattern =10101010  
 Two ferrites (742 700 32) on a cable which connects from the EUT to a DC power supply with one pass through.

Ext Attn: 0 dB

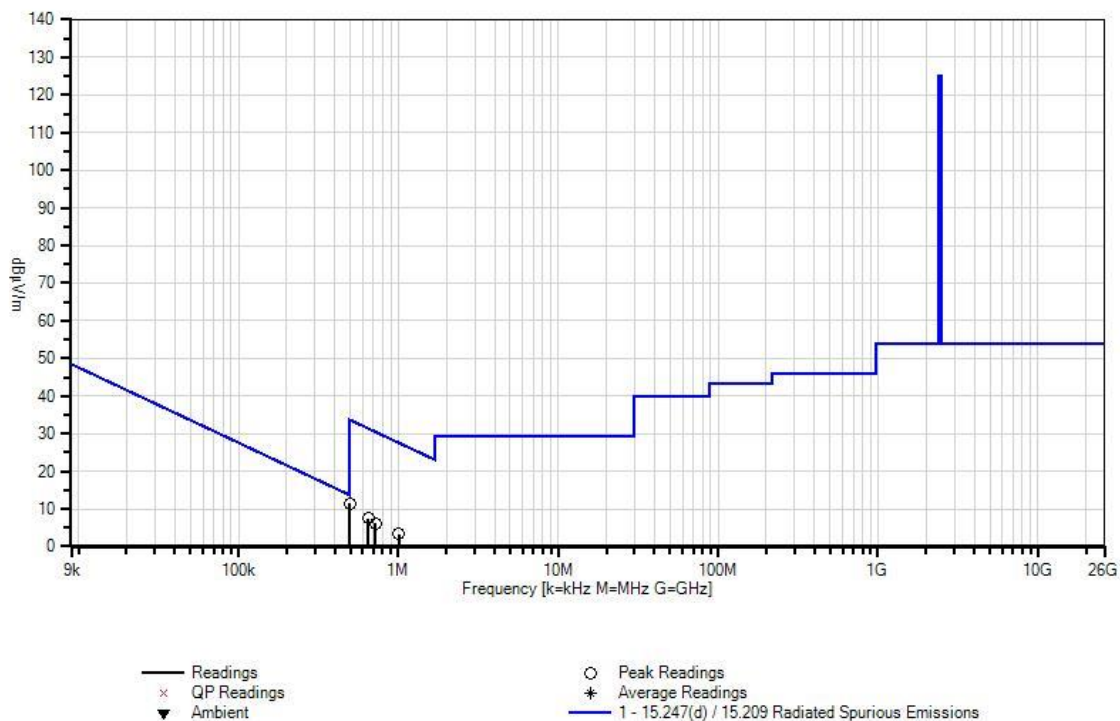
**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB		Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	497.057k	40.3	+0.1	+0.0	+11.1		-40.0	11.5	33.7	-22.2	Perpe
2	645.496k	36.0	+0.1	+0.0	+11.4		-40.0	7.5	31.4	-23.9	Paral
3	718.671k	34.4	+0.2	+0.1	+11.5		-40.0	6.2	30.5	-24.3	Perpe
4	1.007M	31.6	+0.1	+0.1	+11.5		-40.0	3.3	27.6	-24.3	Perpe
5	1.285M	27.7	+0.1	+0.1	+11.4		-40.0	-0.7	25.4	-26.1	Paral
6	1.559M	25.7	+0.1	+0.0	+11.4		-40.0	-2.8	23.8	-26.6	Paral

CKC Laboratories, Inc Date: 3/14/2013 Time: 11:12:03 Proteus Digital Health, Inc. WO#: 94175  
Test Distance: 3 Meters Sequence#: 139



Test Location: CKC Laboratories, Inc. • 1120 Fulton Places • Fremont, CA 94539 • (510) 249-1170

Customer: **Proteus Digital Health, Inc.**  
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**  
 Work Order #: **94175** Date: 3/13/2013  
 Test Type: **Radiated Scan** Time: 20:56:06  
 Equipment: **PPM (RP4) Electronics Module** Sequence#: 94  
 Manufacturer: Proteus Digital Health, Inc. Tested By: Hieu Song Nguyenpham  
 Model: SPC-0175  
 S/N: None

**Test Equipment:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	2/22/2013	2/22/2015
T1	AN00730	Preamp	8447D	1/17/2013	1/17/2015
T2	AN00852	Biconilog Antenna	CBL 6111C	11/28/2012	11/28/2014
T3	AN00888	Cable	RG213/U	5/21/2012	5/21/2014
T4	ANP05440	Cable	RG214/U	1/21/2013	1/21/2015
T5	ANP01183	Cable	CNT-195	10/24/2011	10/24/2013

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

Function	Manufacturer	Model #	S/N
PPM (RP4) Electronics Module*	Proteus Digital Health, Inc.	SPC-0175	None

**Support Devices:**

Function	Manufacturer	Model #	S/N
Laptop AC/DC Power Adapter	Dell	D130PE1-00	CN-0JU012-48661-09U-K8GG-A04
Laptop	Dell	Latitude E6500	B76FVL1
USB to TTL Serial Cable- 1.8m Wire End Version	FTDI	TTL-232RG-VREG1V8-WE	None
DC power Supply	EZ	GP-4303A	01070038

**Test Conditions / Notes:**

Radiated Spurious Emission Frequency Range: 30MHz to 1000MHz  Temperature: 19.9°C, Humidity: 40 %, Atmospheric Pressure:101.9kPa  High Clock: 26MHz Software Used: HCI Lite  Transmitter Operation Frequency Range: 2400 - 2483.5 MHz Rate power = +4dBm (nominal) RBW=VBW=120KHz  Note: High channel= 2480 MHz at Z axis GFSK is the worst module. Bit Pattern =10101010 Two ferrites (742 700 32) on a cable which connects from the EUT to a DC power supply with one pass through.
--

Ext Attn: 0 dB

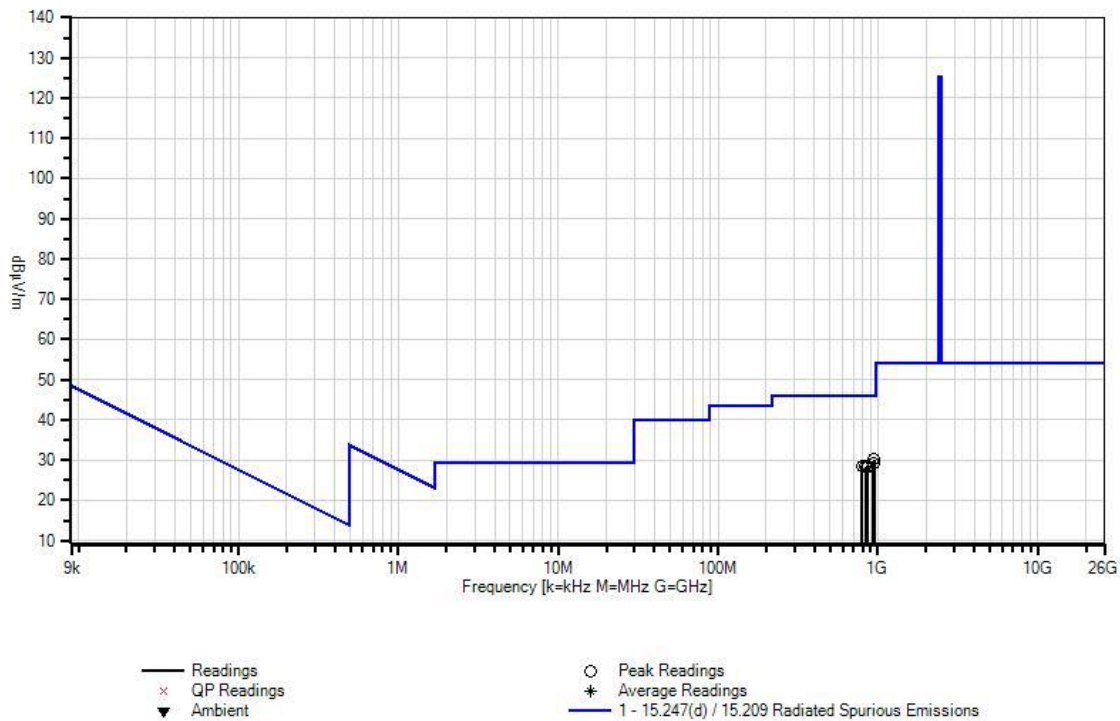
**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 T5 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	948.624M	28.7	-27.1 +1.0	+23.5	+1.9	+2.1	+0.0	30.1	46.0	-15.9	Vert
2	939.283M	28.1	-27.1 +1.0	+23.3	+1.9	+2.1	+0.0	29.3	46.0	-16.7	Horiz
3	793.327M	29.0	-26.7 +0.9	+21.6	+1.8	+1.9	+0.0	28.5	46.0	-17.5	Vert
4	859.299M	27.9	-27.0 +1.0	+22.8	+1.8	+2.0	+0.0	28.5	46.0	-17.5	Vert
5	835.946M	28.3	-26.9 +1.0	+22.1	+1.8	+2.0	+0.0	28.3	46.0	-17.7	Horiz
6	843.536M	28.2	-26.9 +1.0	+22.1	+1.8	+2.0	+0.0	28.2	46.0	-17.8	Horiz

CKC Laboratories, Inc. Date: 3/13/2013 Time: 20:56:06 Proteus Digital Health, Inc. WO#: 94175  
Test Distance: 3 Meters Sequence#: 94



Test Location: CKC Laboratories, Inc. • 1120 Fulton Places • Fremont, CA 94539 • (510) 249-1170

Customer: **Proteus Digital Health, Inc.**  
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**  
 Work Order #: **94175** Date: 3/13/2013  
 Test Type: **Radiated Scan** Time: 10:40:47  
 Equipment: **PPM (RP4) Electronics Module** Sequence#: 24  
 Manufacturer: Proteus Digital Health, Inc. Tested By: Hieu Song Nguyenpham  
 Model: SPC-0175  
 S/N: None

**Test Equipment:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05843	Cable	32022-2-29094K-48TC	8/7/2012	8/7/2014
	AN02668	Spectrum Analyzer	E4446A	2/22/2013	2/22/2015
T2	AN03114	Preamp	AMF-7D-00101800-30-10P	5/13/2011	5/13/2013
T3	AN02157	Horn Antenna-ANSI C63.5	3115	1/23/2013	1/23/2015
T4	ANP01210	Cable	FSJ1P-50A-4A	2/19/2013	2/19/2015
T5	AN03309	High Pass Filter	11SH10-3000/T10000-O/O	6/12/2012	6/12/2014
T6	AN03302	Cable	32026-29094K-29094K-72TC	3/21/2012	3/21/2014

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

Function	Manufacturer	Model #	S/N
PPM (RP4) Electronics Module*	Proteus Digital Health, Inc.	SPC-0175	None

**Support Devices:**

Function	Manufacturer	Model #	S/N
Laptop AC/DC Power Adapter	Dell	D130PE1-00	CN-0JU012-48661-09U-K8GG-A04
Laptop	Dell	Latitude E6500	B76FVL1
USB to TTL Serial Cable-1.8m Wire End Version	FTDI	TTL-232RG-VREG1V8-WE	None
DC power Supply	EZ	GP-4303A	01070038



**Test Conditions / Notes:**

Radiated Spurious Emission  
1000MHz to 12000MHz

Temperature: 19.9°C, Humidity: 40 %, Atmospheric Pressure:101.9kPa

High Clock: 26MHz  
Software Used: HCI Lite

Transmitter Operation Frequency Range: 2400 - 2483.5 MHz  
Rate power = +4dBm (nominal)  
RBW=VBW=1MHz

Note:

High Channel = 2480 MHz at Z axis

GFSK is the worst module.

Bit Pattern =10101010

Two ferrites (742 700 32) on a cable which connects from the EUT to a DC power supply with one pass through.

Ext Attn: 0 dB

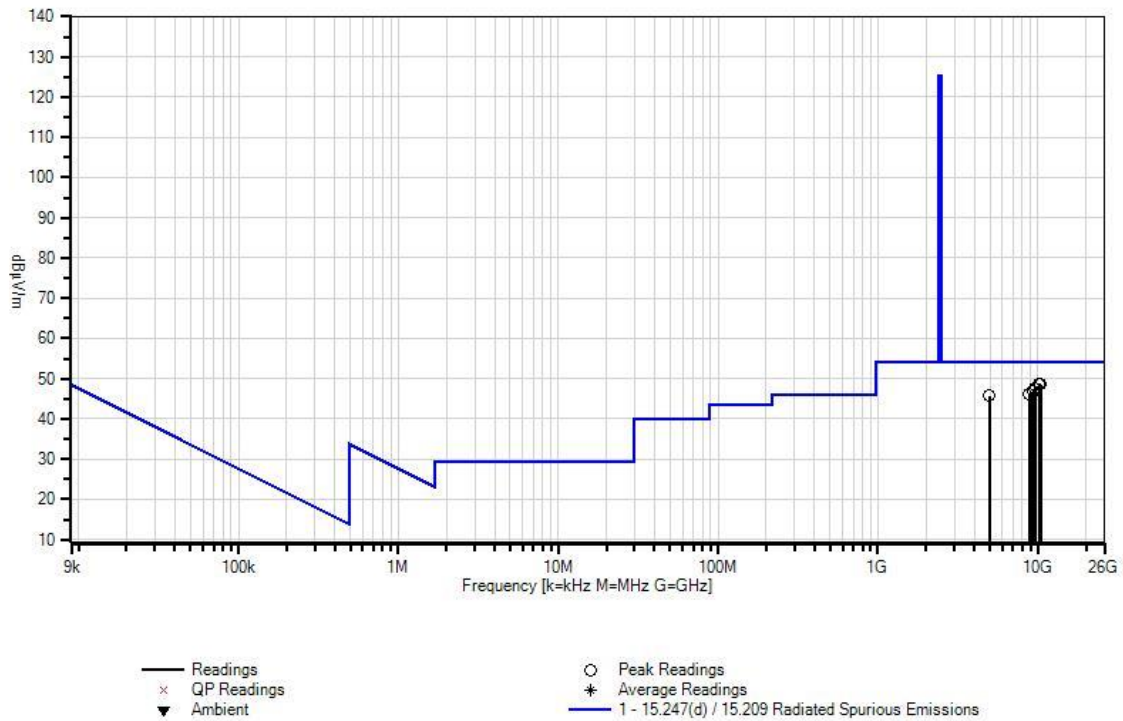
**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dBμV	T1 T5 dB	T2 T6 dB	T3 dB	T4 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	10165.317 M	56.8	+2.0 +0.1	-58.4 +2.3	+39.7	+6.3	+0.0	48.8	54.0	-5.2	Vert
2	10341.053 M	57.3	+1.9 +0.1	-58.6 +2.3	+39.4	+6.2	+0.0	48.6	54.0	-5.4	Horiz
3	9599.447M	56.2	+1.8 +0.4	-57.9 +2.2	+38.6	+6.2	+0.0	47.5	54.0	-6.5	Horiz
4	9328.814M	54.9	+1.7 +0.4	-57.0 +2.2	+38.4	+6.2	+0.0	46.8	54.0	-7.2	Vert
5	8843.783M	55.1	+1.6 +0.3	-56.8 +2.1	+38.1	+5.9	+0.0	46.3	54.0	-7.7	Vert
6	4959.643M	64.3	+1.2 +0.2	-59.0 +1.6	+33.6	+3.9	+0.0	45.8	54.0	-8.2	Horiz

CKC Laboratories, Inc Date: 3/13/2013 Time: 10:40:47 Proteus Digital Health, Inc. WO#: 94175  
 Test Distance: 3 Meters Sequence#: 24



Test Location: CKC Laboratories, Inc. • 1120 Fulton Places • Fremont, CA 94539 • (510) 249-1170

Customer: **Proteus Digital Health, Inc.**  
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**  
 Work Order #: **94175** Date: 3/13/2013  
 Test Type: **Radiated Scan** Time: 14:07:33  
 Equipment: **PPM (RP4) Electronics Module** Sequence#: 40  
 Manufacturer: Proteus Digital Health, Inc. Tested By: Hieu Song Nguyenpham  
 Model: SPC-0175  
 S/N: None

**Test Equipment:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	2/22/2013	2/22/2015
T1	AN02741	Active Horn Antenna	AMFW-5F-12001800-20-10P	12/18/2012	12/18/2014
T2	ANP00928	Cable	various	2/10/2012	2/10/2014
T3	ANP05843	Cable	32022-2-29094K-48TC	8/7/2012	8/7/2014
T4	AN03143	Cable	32022-29094K-144TC	8/30/2011	8/30/2013

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

Function	Manufacturer	Model #	S/N
PPM (RP4) Electronics Module*	Proteus Digital Health, Inc.	SPC-0175	None

**Support Devices:**

Function	Manufacturer	Model #	S/N
Laptop AC/DC Power Adapter	Dell	D130PE1-00	CN-0JU012-48661-09U-K8GG-A04
Laptop	Dell	Latitude E6500	B76FVL1
USB to TTL Serial Cable-1.8m Wire End Version	FTDI	TTL-232RG-VREG1V8-WE	None
DC power Supply	EZ	GP-4303A	01070038

**Test Conditions / Notes:**

Radiated Spurious Emission  
 Frequency Range: 12000MHz to 18000MHz  
  
 Temperature: 19.9°C, Humidity: 40 %, Atmospheric Pressure:101.9kPa  
  
 High Clock: 26MHz  
 Software Used: HCI Lite  
  
 Transmitter Operation Frequency Range: 2400 - 2483.5 MHz  
 Rate power = +4dBm (nominal)  
 RBW=VBW=1MHz  
  
 Note:  
 High channel= 2480 MHz at Z axis  
 GFSK is the worst module.  
 Bit Pattern =10101010  
 Two ferrites (742 700 32) on a cable which connects from the EUT to a DC power supply with one pass through

Ext Attn: 0 dB

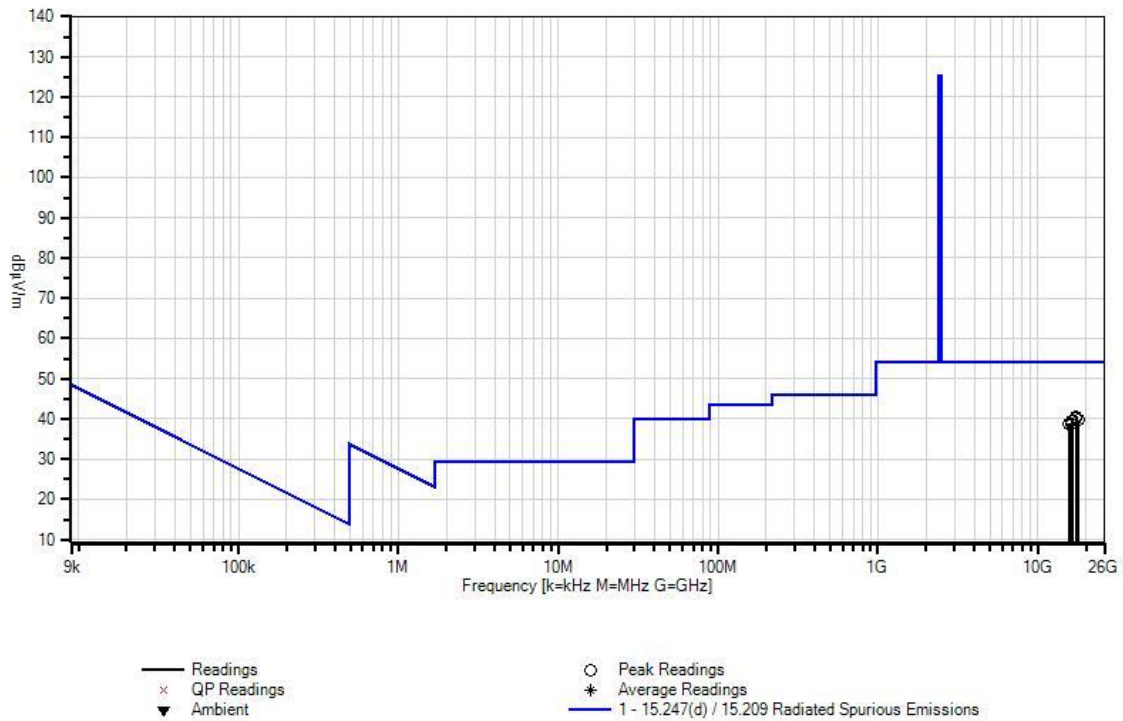
**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	17266.720 M	43.6	-12.4	+0.8	+2.6	+6.0	+0.0	40.6	54.0	-13.4	Vert
2	17296.448 M	42.9	-12.3	+0.8	+2.6	+6.0	+0.0	40.0	54.0	-14.0	Horiz
3	17815.029 M	41.0	-10.9	+0.8	+2.7	+6.2	+0.0	39.8	54.0	-14.2	Horiz
4	16384.803 M	41.2	-11.1	+0.9	+2.6	+5.8	+0.0	39.4	54.0	-14.6	Vert
5	16388.106 M	40.7	-11.1	+0.9	+2.6	+5.8	+0.0	38.9	54.0	-15.1	Horiz
6	15664.735 M	42.8	-13.3	+1.0	+2.5	+5.8	+0.0	38.8	54.0	-15.2	Vert

CKC Laboratories, Inc Date: 3/13/2013 Time: 14:07:33 Proteus Digital Health, Inc. WO#: 94175  
 Test Distance: 3 Meters Sequence#: 40



Test Location: CKC Laboratories, Inc. • 1120 Fulton Places • Fremont, CA 94539 • (510) 249-1170

Customer: **Proteus Digital Health, Inc.**  
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**  
 Work Order #: **94175** Date: 3/13/2013  
 Test Type: **Radiated Scan** Time: 16:56:41  
 Equipment: **PPM (RP4) Electronics Module** Sequence#: 79  
 Manufacturer: Proteus Digital Health, Inc. Tested By: Hieu Song Nguyenpham  
 Model: SPC-0175  
 S/N: None

**Test Equipment:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	2/22/2013	2/22/2015
T1	ANP05843	Cable	32022-2-29094K-48TC	8/7/2012	8/7/2014
T2	AN03143	Cable	32022-29094K-144TC	8/30/2011	8/30/2013
T3	AN02742	Active Horn Antenna	AMFW-5F-18002650-20-10P	12/17/2012	12/17/2014
T4	ANP00929	Cable	various	2/16/2012	2/16/2014

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

Function	Manufacturer	Model #	S/N
PPM (RP4) Electronics Module*	Proteus Digital Health, Inc.	SPC-0175	None

**Support Devices:**

Function	Manufacturer	Model #	S/N
Laptop AC/DC Power Adapter	Dell	D130PE1-00	CN-0JU012-48661-09U-K8GG-A04
Laptop	Dell	Latitude E6500	B76FVL1
USB to TTL Serial Cable-1.8m Wire End Version	FTDI	TTL-232RG-VREG1V8-WE	None
DC power Supply	EZ	GP-4303A	01070038

**Test Conditions / Notes:**

Radiated Spurious Emission  
 Frequency Range: 18000MHz to 25000MHz  
  
 Temperature: 19.9°C, Humidity: 40 %, Atmospheric Pressure:101.9kPa  
  
 High Clock: 26MHz  
 Software Used: HCI Lite  
  
 Transmitter Operation Frequency Range: 2400 - 2483.5 MHz  
 Rate power = +4dBm (nominal)  
 RBW=VBW=1MHz  
  
 Note;  
 High channel= 2480 MHz at Z axis  
 GFSK is the worst module.  
 Bit Pattern =10101010  
 Two ferrites (742 700 32) on a cable which connects from the EUT to a DC power supply with one pass through.

Ext Attn: 0 dB

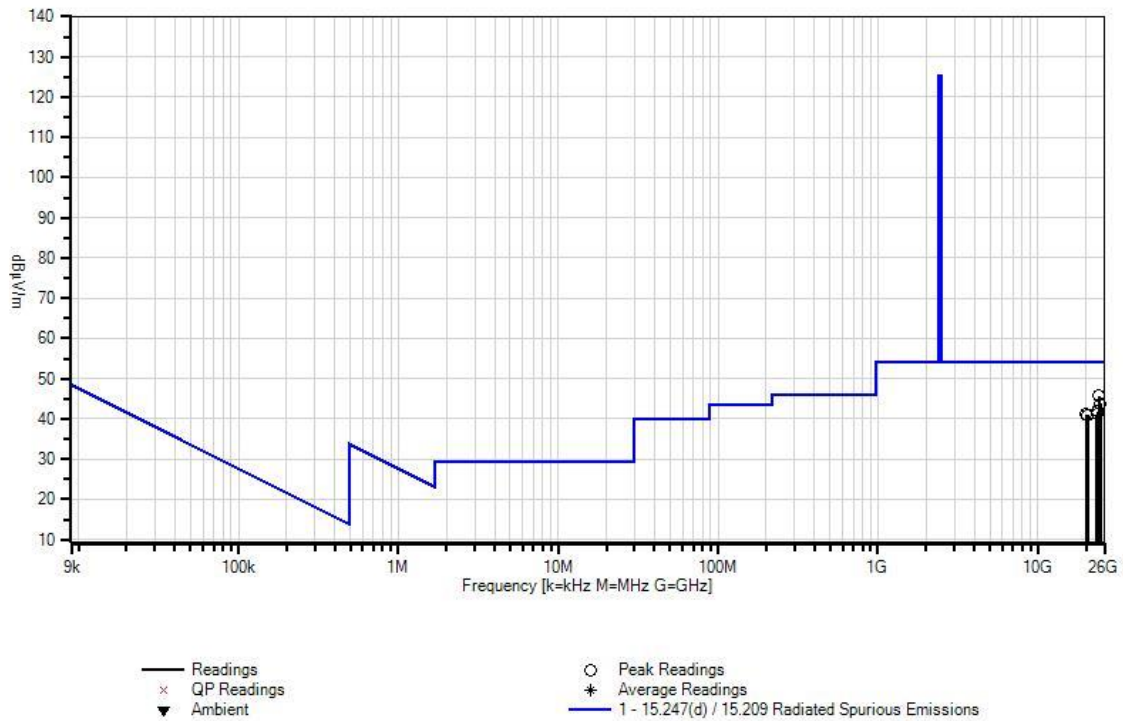
**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

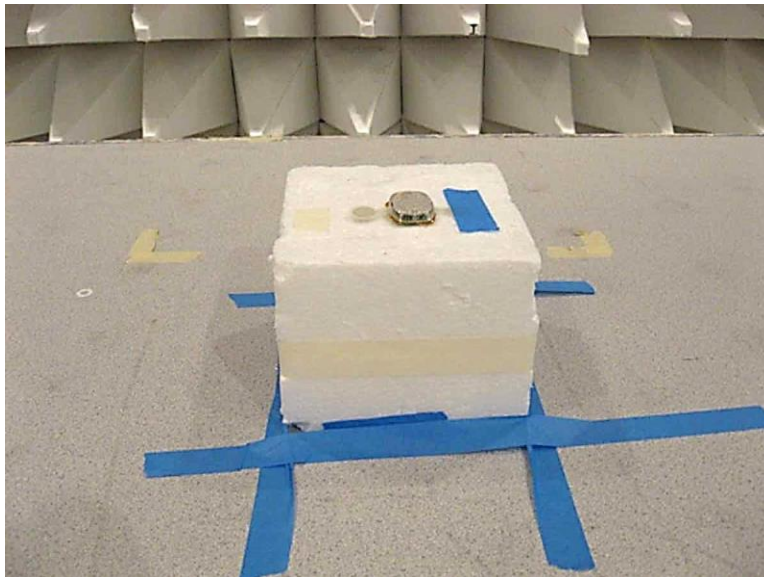
#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	24188.000 M	45.9	+3.1	+7.3	-13.5	+2.9	+0.0	45.7	54.0	-8.3	Vert
2	24630.232 M	42.9	+3.4	+7.3	-12.7	+2.9	+0.0	43.8	54.0	-10.2	Horiz
3	23607.000 M	43.5	+3.2	+7.1	-14.9	+3.0	+0.0	41.9	54.0	-12.1	Vert
4	20114.000 M	42.0	+2.9	+6.5	-13.5	+3.2	+0.0	41.1	54.0	-12.9	Vert
5	23454.449 M	43.4	+3.1	+7.0	-15.3	+2.9	+0.0	41.1	54.0	-12.9	Horiz
6	20470.468 M	42.3	+2.9	+6.5	-13.9	+3.2	+0.0	41.0	54.0	-13.0	Horiz

CKC Laboratories, Inc. Date: 3/13/2013 Time: 16:56:41 Proteus Digital Health, Inc. WO#: 94175  
 Test Distance: 3 Meters Sequence#: 79

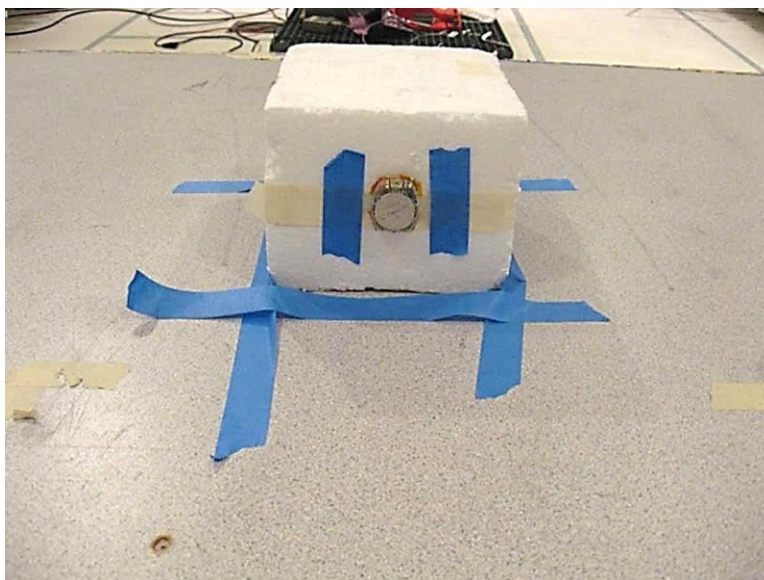




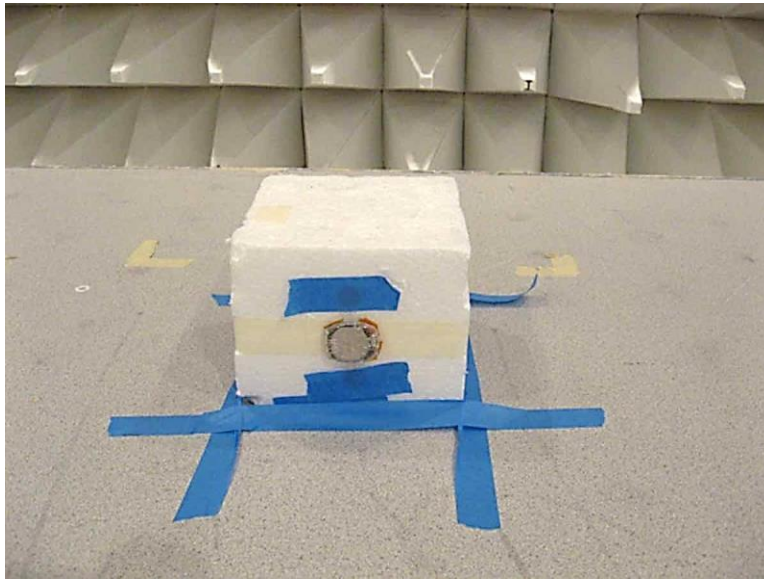
**Test Setup Photos**



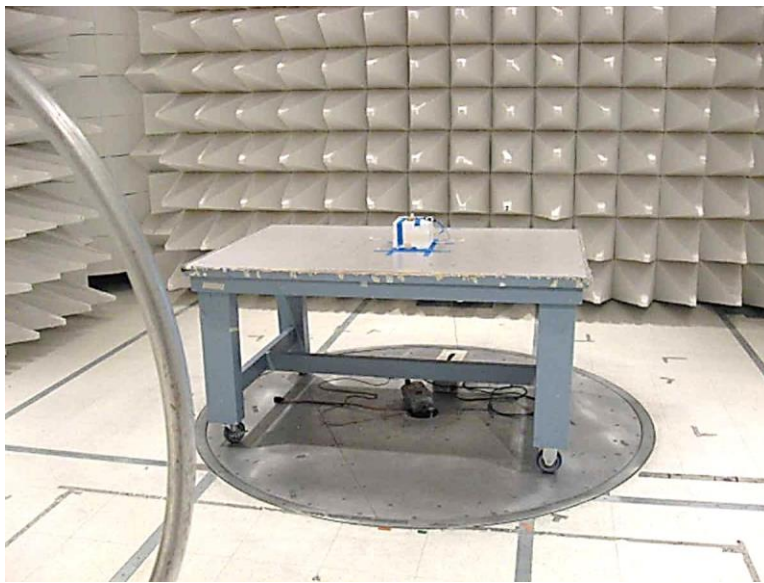
X Axis



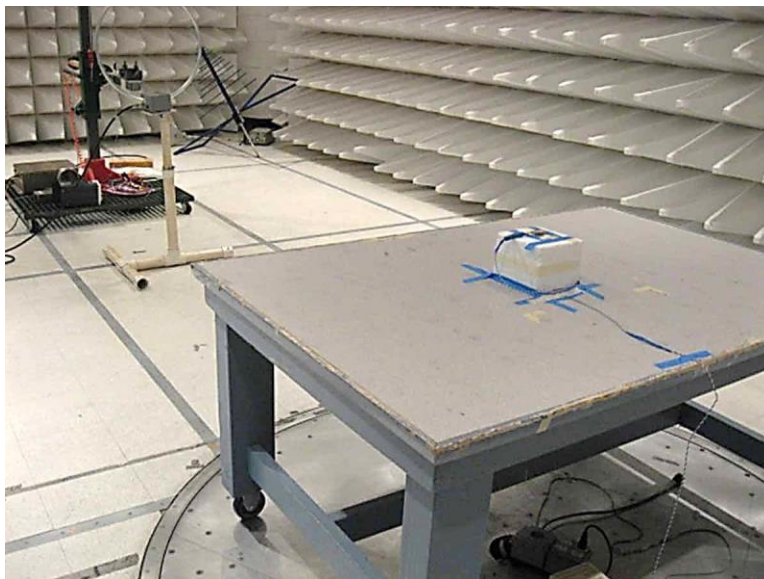
Y axis



Z Axis

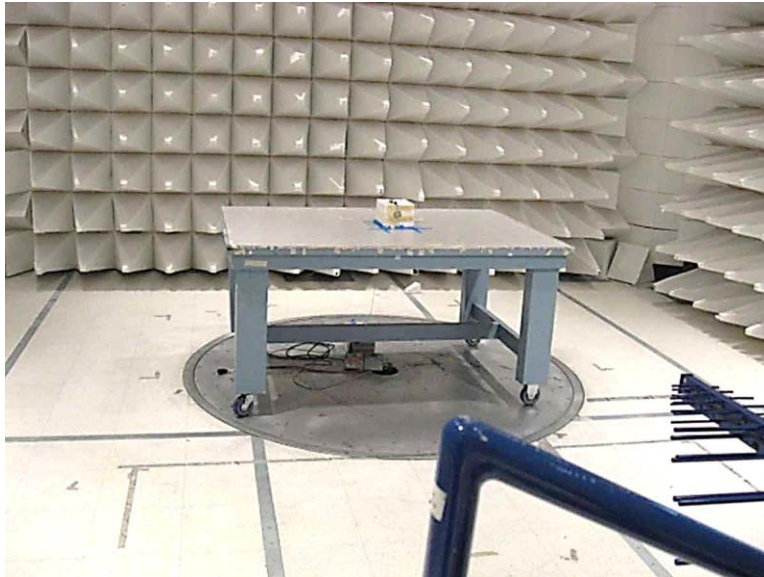


9kHz-30MHz

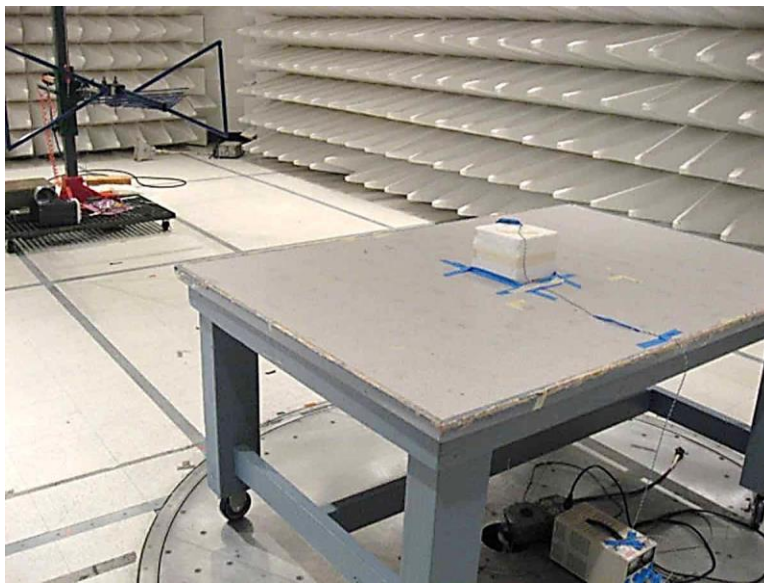


9kHz-30MHz





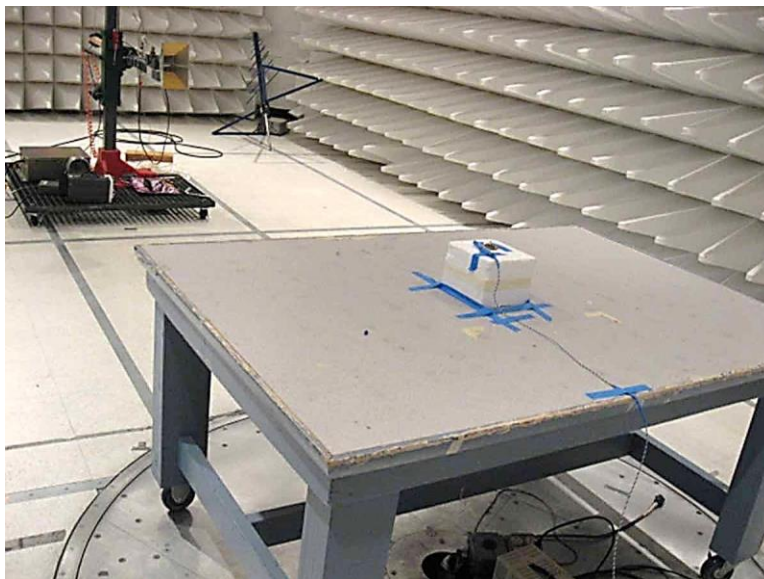
30MHz -1GHz



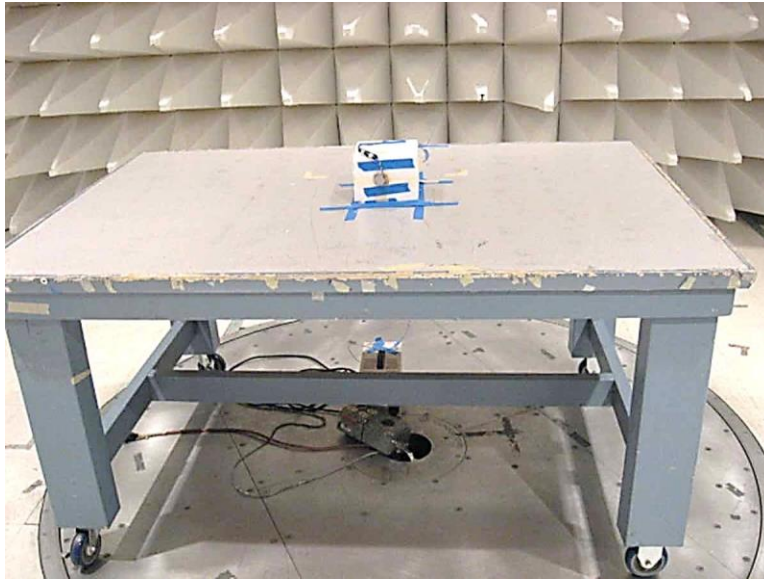
30MHz -1GHz



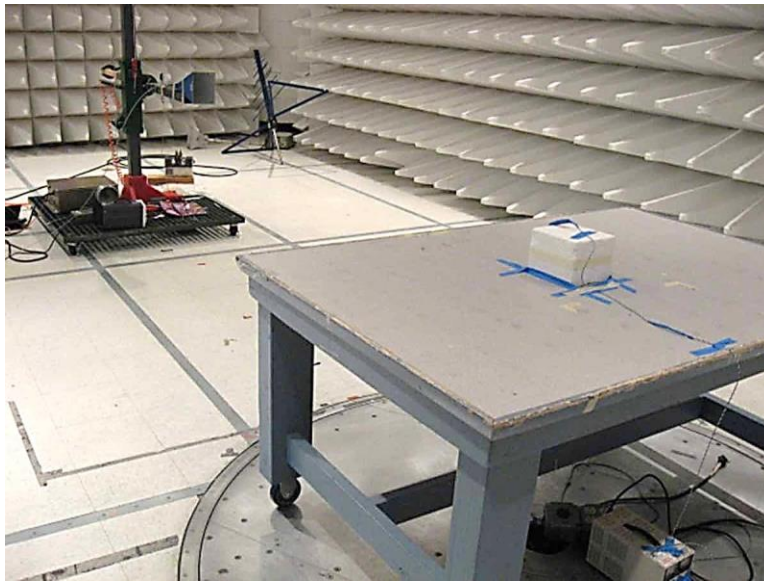
1-12GHz



1-12GHz



12-18GHz

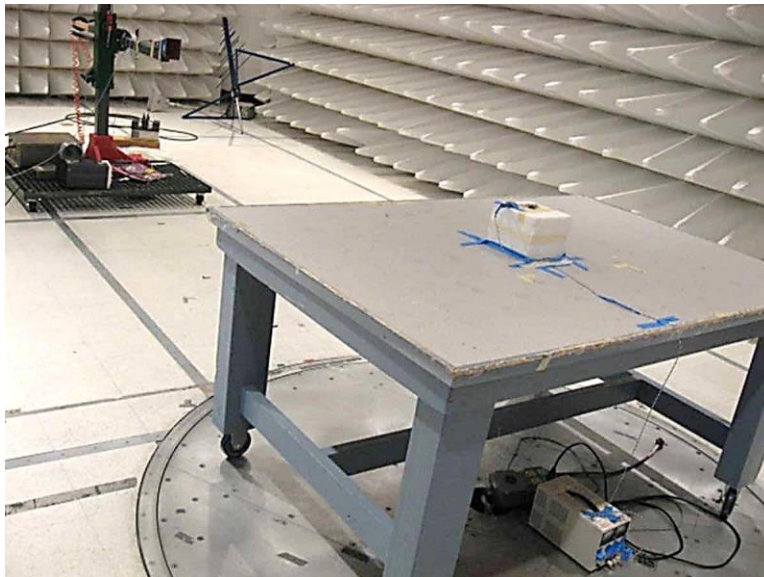


12-18GHz





18-25GHz



18-25GHz

## SUPPLEMENTAL INFORMATION

### Measurement Uncertainty

Uncertainty Value	Parameter
4.73 dB	Radiated Emissions
3.34 dB	Mains Conducted Emissions
3.30 dB	Disturbance Power

The reported measurement uncertainties are calculated based on the worst case of all laboratory environments from CKC Laboratories, Inc. test sites. Only those parameters which require estimation of measurement uncertainty are reported. The reported worst case measurement uncertainty is less than the maximum values derived in CISPR 16-4-2. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ . Compliance is deemed to occur provided measurements are below the specified limits.

### Emissions Test Details

#### TESTING PARAMETERS

Unless otherwise indicated, the following configuration parameters are used for equipment setup: 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 dB $\mu$ V/m, the spectrum analyzer reading in dB $\mu$ V 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. Unless otherwise specified, 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.

MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	>1 GHz	1 MHz

#### 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 "positive peak" detector mode. Whenever a "quasi-peak" or "average" reading was recorded, the measurement was annotated with a "QP" or an "Ave" on the appropriate rows of the data sheets. In cases where quasi-peak or average limits were employed and data exists for multiple measurement types for the same frequency then the peak measurement was retained in the report for reference, however the numbering for the affected row was removed and an arrow or carrot ("^") was placed in the far left-hand column indicating that the row above takes precedence for comparison to the limit. 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 or receiver recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature called "peak hold," the measurement device had the ability to measure intermittent 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

Quasi-peak measurements were taken using the quasi-peak detector when the true peak values exceeded or were within 2 dB of a quasi-peak specification limit. Additional QP measurements may have been taken at the discretion of the operator.

##### Average

Average measurements were taken using the average detector when the true peak values exceeded or were within 2 dB of an average specification limit. Additional average measurements may have been taken at the discretion of the operator. If the specification or test procedure requires trace averaging, then the averaging was performed using 100 samples or as required by the specification. All other average measurements are performed using video bandwidth averaging. 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.