

## TEST REPORT

Report Number: 100818754ATL-001

October 3, 2012

### Product Designation: Remote Monitoring System, BPA-060

Standard: FCC 15.249 - Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHZ, and 24.0-24.25 GHz

#### Tested by:

Intertek Testing Services NA Inc.  
1950 Evergreen Blvd., Suite 100  
Duluth, GA 30096

#### Tests performed by:



Yuneush Khan  
EMC Associate Engineer

#### Client:

Arrayant Health  
dba Ambio Health  
1266 E Main Street  
Soundview Plaza, Suite 700R  
Stamford, CT 06902  
Contact: Kevin Jones  
Email: kevin.jones@ambiohealth.com

#### Report reviewed by:



Richard C. Bianco  
EMC Team Leader

All services undertaken are subject to the following general policy: This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to copy or distribute this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program. This report must not be used to claim product endorsement by A2LA, NIST, or any agency of the US Government.

## 1.0 Introduction and Conclusion

The tests indicated in section 2.0 were performed on the product constructed as described in section 3.0. 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.

## 2.0 Test Summary

Section	Test Full Name	Test Date	Result
4.0	System setup including cable interconnection details, support equipment and simplified block diagram. (System Setup)		
5.0	Overview of EUT (Low Power Transmitters) (FCC 15C - EUT Overview)		
6.0	Radiated emissions (E-field) for low power intentional radiators. (Radiated Emissions LPD)	09/21/2012	PASS
7.0	Occupied Bandwidth (FCC Part 2.1049)	09/22/2012	PASS
8.0	Additional provisions to the general radiated emission limitations. (FCC 15C - 15.215)	09/22/2012	PASS
9.0	Revision History (Revision History)		
NA	Conducted emissions on AC power lines (Conducted Emissions) was waived due to is battery powered.		

### 3.0 Description of Equipment Under Test

Equipment Under Test			
Description	Manufacturer	Model Number	Serial Number
Remote Monitor System	Ambio Health	BPA-060	N/A
EUT receive date:			07-19-2012
EUT receive condition:			Good

Description of EUT provided by Client:

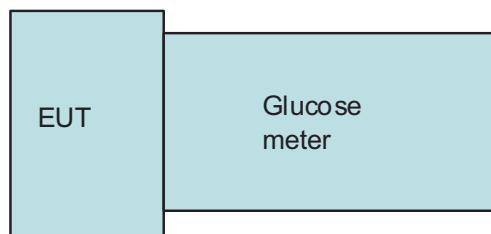
Ambio Health is an affordable and easy to use wireless remote health and activity monitoring system. It enables people to take health readings at home and get support from loved ones and caregivers who may not be able to visit every day.

Description of EUT exercising:

The EUT operated with 3VDC Battery.

**4.0 System setup including cable interconnection details, support equipment and simplified block diagram. (System Setup)****Method:**

Record the details of EUTcabling, document the support equipment, and show the interconnections in a block diagram.

**Drawing:**

Block Diagram

**4.0 System setup including cable interconnection details, support equipment and simplified block diagram. (System Setup)**

EUT Cabling						
ID	Description	Length	Shielding	Ferrites	Connection	
					From	To
No EUT Cabling						

Support Equipment			
Description	Manufacturer	Model Number	Serial Number
Glucose Monitor	Arryant Health	N/A	N/A

## 5.0 Overview of EUT (Low Power Transmitters) (FCC 15C - EUT Overview)

**Method:**

Complete the overview spreadsheet.

Related Submittal(s) Grants: This report is for use with an application for certification of a low power transmitter. One transmitter is included in the application.

**Data:**

Applicant	Arrayant Health 1266 E Main St. Soundview Plaza, Suite 700R
Trade Name & Model No.	Remote Monitoring System
FCC Identifier	TBD
Frequency Range (MHz)	902-928
Antenna Type (15.203)	Integral - PCB
Manufacturer name & address	Same as above

Related Submittals and Grants:	This report is for use with an application for certification of a low power transmitter. One transmitter is included in the application.
Additions, deviations and exclusions from standards	None required

## 6.0 Radiated emissions (E-field) for low power intentional radiators. (Radiated Emissions LPD)

### Method:

Measurements shall be performed with a quasi-peak detector instrument that meets the requirements of Section One of CISPR 16.

#### Bandwidths:

30 MHz to 1000 MHz: 120 kHz RBW and 1 MHz VBW

Above 1000 MHz: 1 MHz RBW and 3 MHz VBW

#### Detectors:

Equal to or less than 1000 MHz: CISPR quasi-peak detector (alternative: peak detector)

Above 1000 MHz: Average detector (applies to average limit)

Above 1000 MHz: Peak detector (applies to peak limit)

#### Limits:

Equal to or less than 1000 MHz, the limits are specified as quasi-peak. If a peak detector is used, the limit does not change.

Above 1000 MHz, the limits are specified as average. The peak limit is 20 dB above the average limit. Both peak and average measurements are required to be reported.

#### Frequency range of radiated measurements

For an intentional radiator, the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to at least the frequency shown in this paragraph:

(1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

(2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.

(3) If the intentional radiator operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.

(4) If the intentional radiator contains a digital device, regardless of whether this digital device controls the functions of the intentional radiator or the digital device is used for additional control or function purposes other than to enable the operation of the intentional radiator, the frequency range shall be investigated up to the range specified in paragraphs (a)(1) through (a)(3) of this section or the range applicable to the digital device, as shown in paragraph (b)(1) of this section, whichever is the higher frequency range of investigation.

#### Measurement antenna requirements:

Below 30 MHz - Loop antenna

30 to 1000 MHz - Biconical, Log Periodic, or equivalent

Above 1000 MHz - Horn or equivalent

Measurements of the radiated field are made with the antenna located at a distance of 3 or 10 meters from the EUT. The limit applied to the measurement shall be appropriate for the test distance. The test distance shall be indicated in the results section.

The EUT shall be arranged and connected with cables terminated in accordance with the product specification.

Exploratory tests should be carried out while varying the cable positions to determine the maximum or near-maximum emission level. During manipulation, cables shall not be placed under or on top of the system test components unless such placement is required by the inherent equipment design.

The antenna shall be adjusted between 1m and 4m in height above the ground plane for maximum meter reading at each test frequency.

The antenna-to-EUT azimuth shall be varied during the measurement to find the maximum field-strength readings.

The antenna-to-EUT polarization (horizontal and vertical) shall be varied during the measurements to find the maximum field-strength readings.

If the EUT is handheld, it shall be oriented in each of its orthogonal axes.

If the EUT is intended for tabletop use, it shall be placed on a table whose top is 0.8m above the ground plane. The table shall be constructed of non-conductive materials. Its dimensions are at least 1m by 1.5m, but may be extended for larger EUT.

If EUT is floor standing, the EUT was placed on a horizontal metal ground plane and isolated from the ground plane by up to 12 mm of insulating material.

Equipment setup for radiated disturbance tests shall follow the guidelines of ANSI C63.4:2003.

#### TEST SITE

The test site for radiated emissions is located at 1950 Evergreen Blvd, Suite 100, Duluth, Georgia 30096.

### Test Equipment Used:

Description:	Manufacturer:	Model:	Asset Number:	Cal Date:	Cal Due:
Antenna, BiLog, 20-2000MHz	Chase	CBL6112B	211386	10/25/2011	10/25/2012

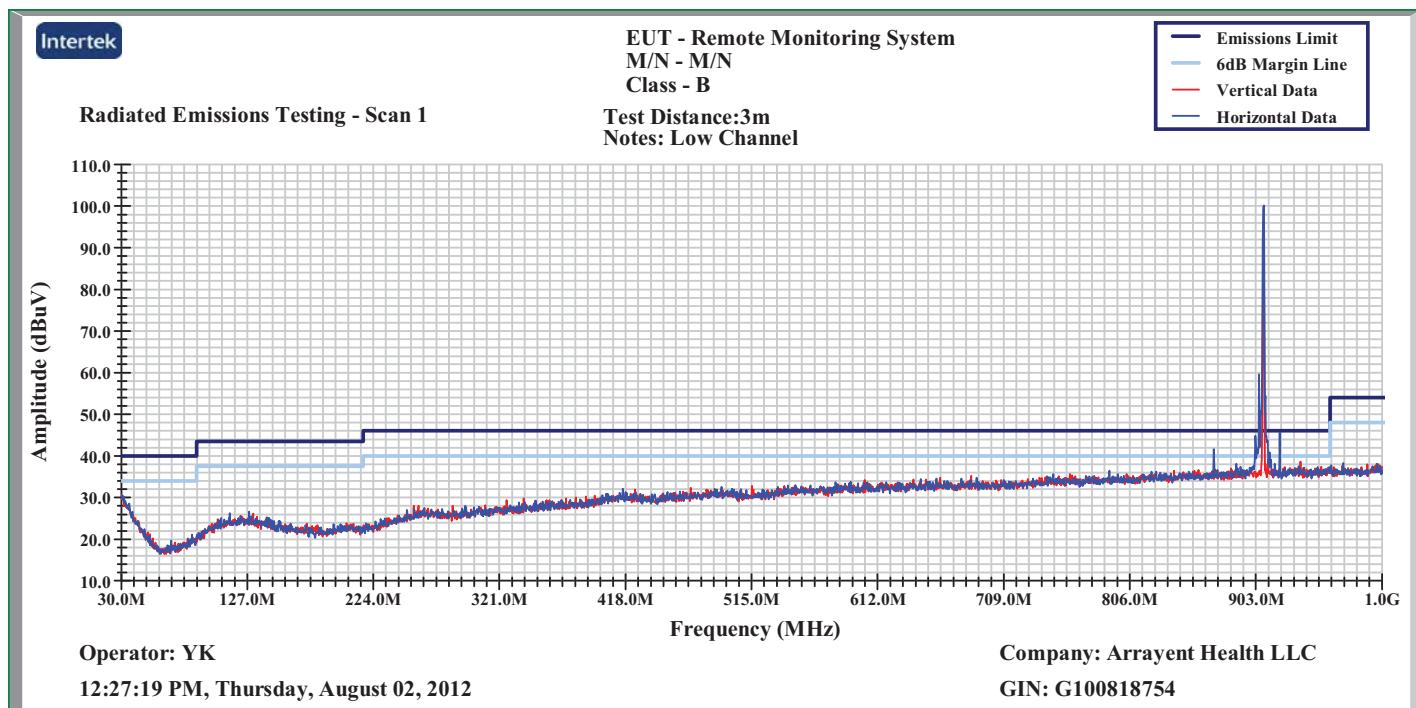
## 6.0 Radiated emissions (E-field) for low power intentional radiators. (Radiated Emissions LPD)

### Test Equipment Used:

Description:	Manufacturer:	Model:	Asset Number:	Cal Date:	Cal Due:
Antenna, Horn, <18 GHz	EMCO	3115	213061	07/19/2012	07/19/2013
Cable E11, <18GHz	Huber-Suhner	Sucoflex 104PEA	E11 211266	09/10/2012	09/10/2013
Cable MP3, 18 GHz, N, 10m	Megaphase	G919-NKNK-394	MP3	05/07/2012	05/07/2013
Cable, 7 meters, 1-18GHz	Storm Products Co.	PR90-195-7MTR	ST-3	09/07/2011	VBU
Cable, N-N, 3 meters, 18GHz	Megaphase	TM18-NKNK-118	E204	05/07/2012	05/07/2013
EMI Receiver	Hewlett Packard	8546A	211505	04/05/2012	04/05/2013
EMI Receiver, Preselector section	Hewlett Packard	85460A	015762	04/05/2012	04/05/2013
Excel spreadsheet for radiated emissions	Software	Excel - RE Worksh	SW004	12/08/2011	12/08/2012
Preamplifier, 10 MHz to 2000 MHz, 30 dB gain	Mini-Circuits	ZKL-2	200069	07/19/2012	07/19/2013
Preamplifier, 20 MHz to 18 GHz, 40 dB	A.H. Systems	PAM-0118	200108	05/22/2012	05/22/2013
Tile - software profile for radiated and conducted emissions testing.	Software	Tile - Emissions	SW006	12/08/2011	12/08/2012

**Results: The sample tested was found to Comply.**

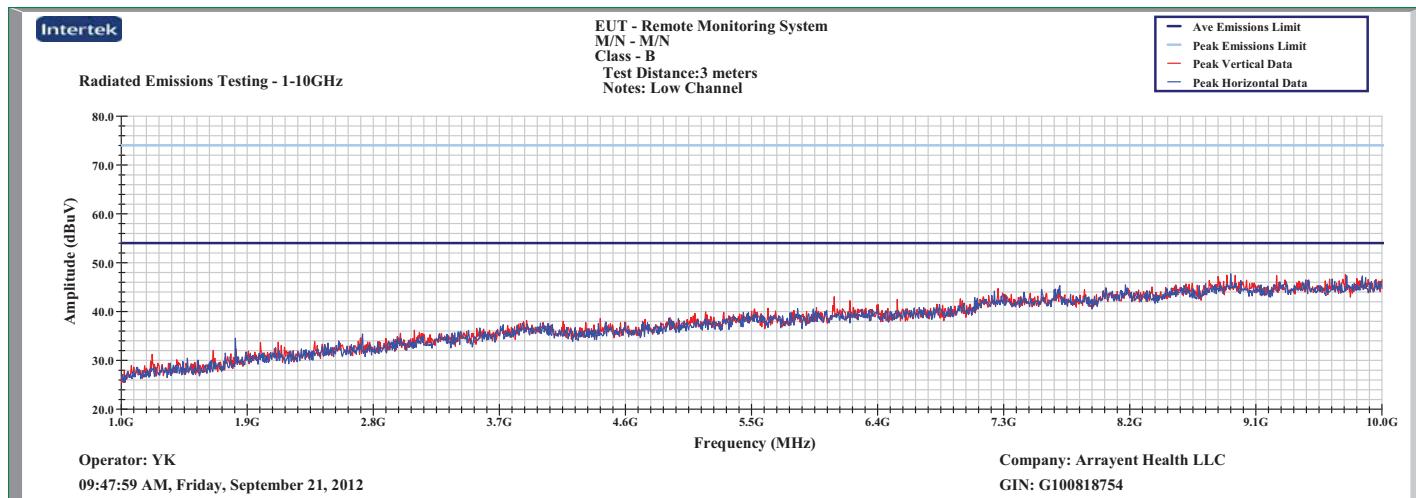
### Plot:



Radiated Emissions from 30-1000MHz - Low Channel

## 6.0 Radiated emissions (E-field) for low power intentional radiators. (Radiated Emissions LPD)

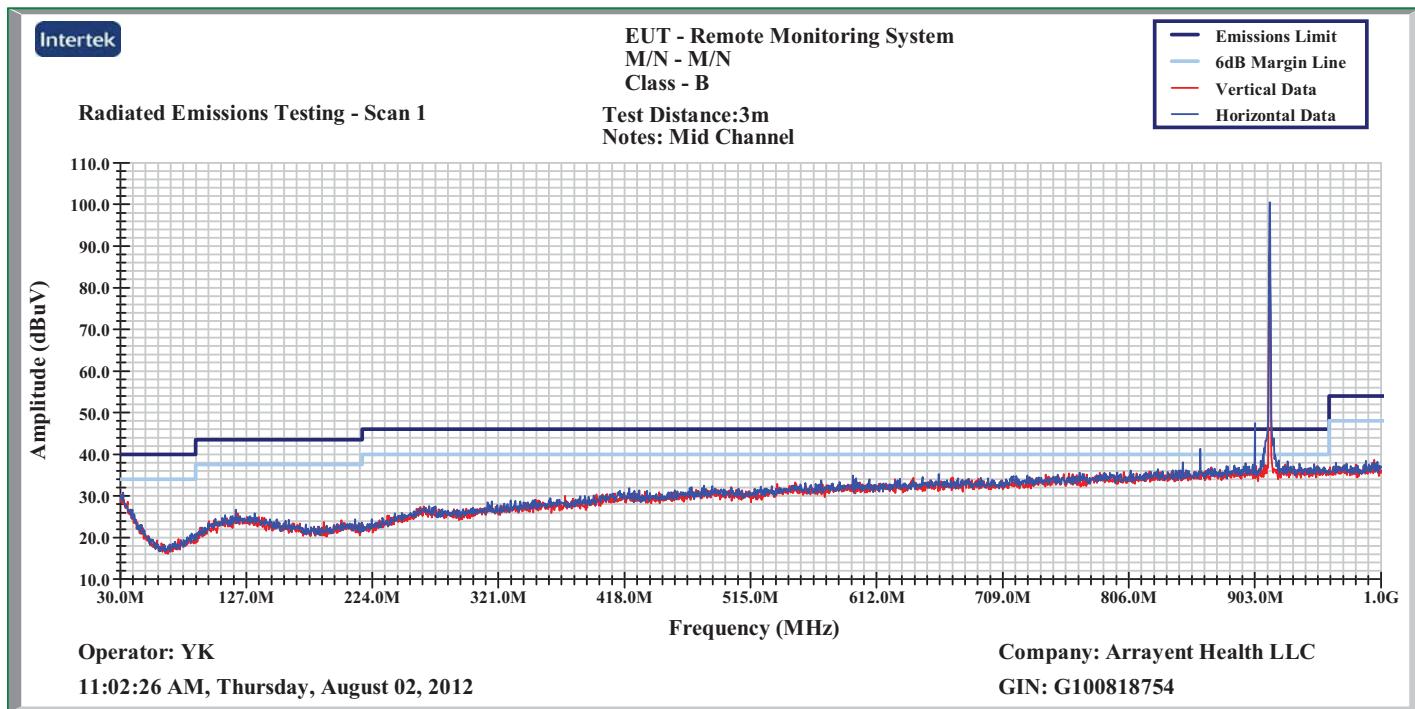
### Plot:



Radiated Emissions from 1-10GHz - Low Channel

## 6.0 Radiated emissions (E-field) for low power intentional radiators. (Radiated Emissions LPD)

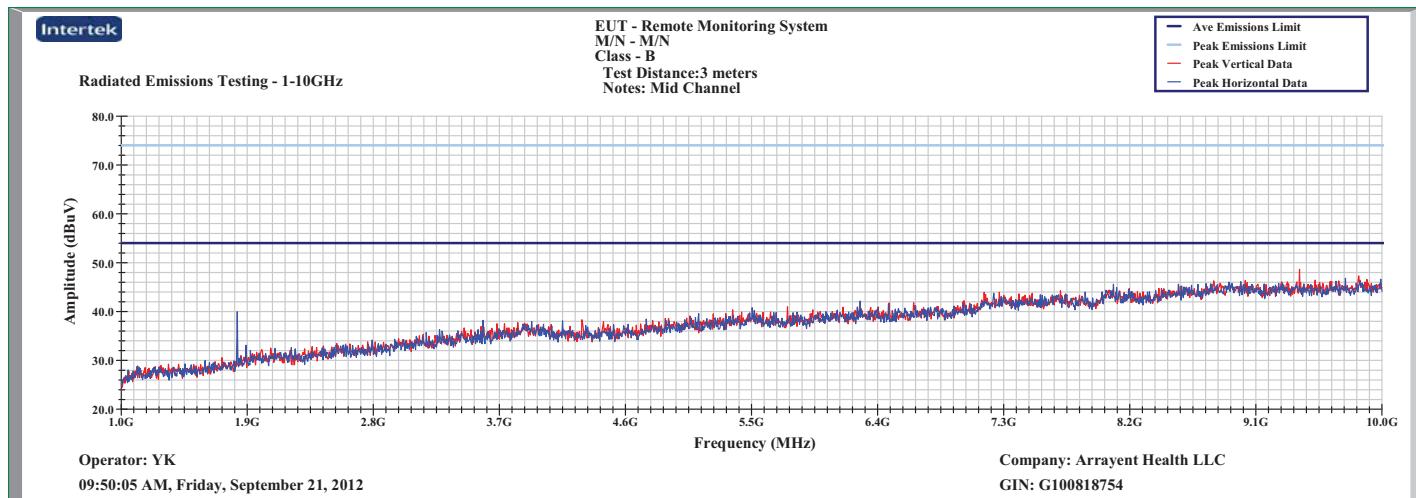
Plot:



Radiated Emissions from 30-1000MHz - Mid Channel

## 6.0 Radiated emissions (E-field) for low power intentional radiators. (Radiated Emissions LPD)

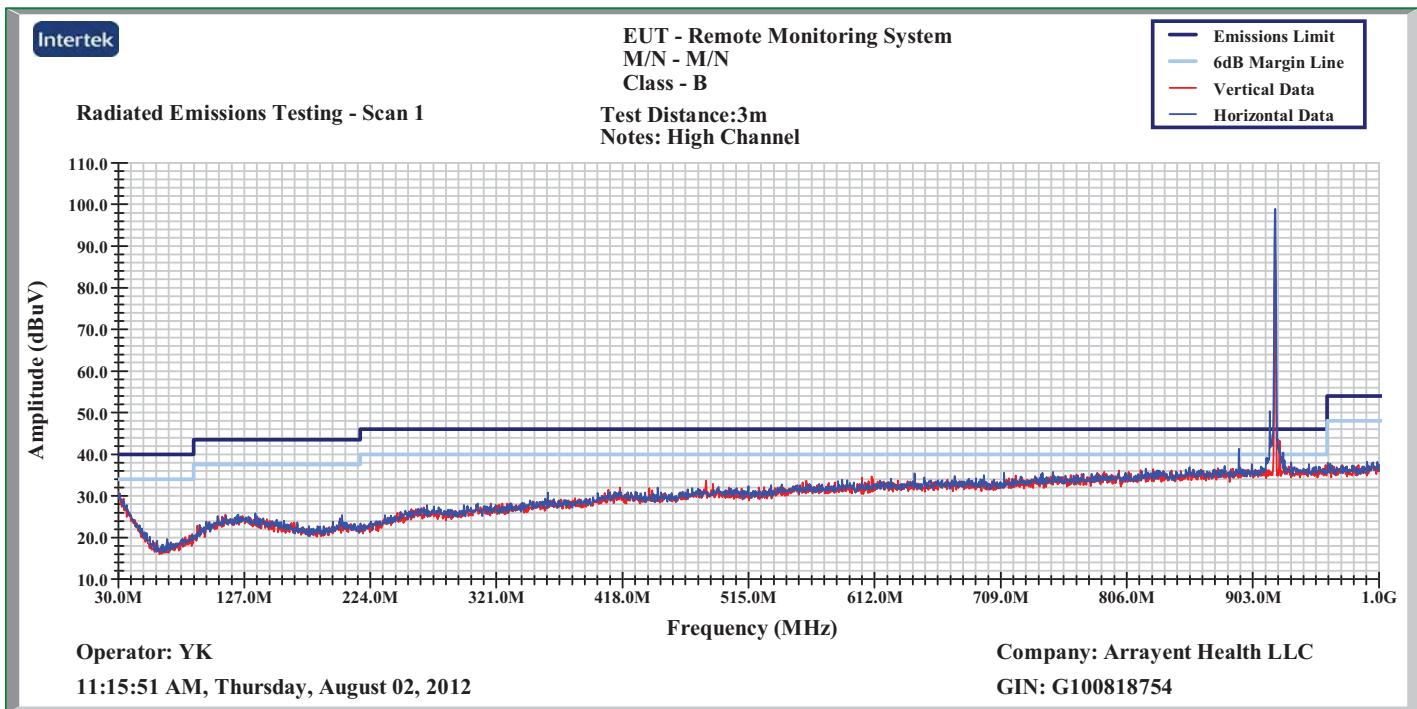
### Plot:



Radiated Emissions from 1-10GHz - Mid Channel

## 6.0 Radiated emissions (E-field) for low power intentional radiators. (Radiated Emissions LPD)

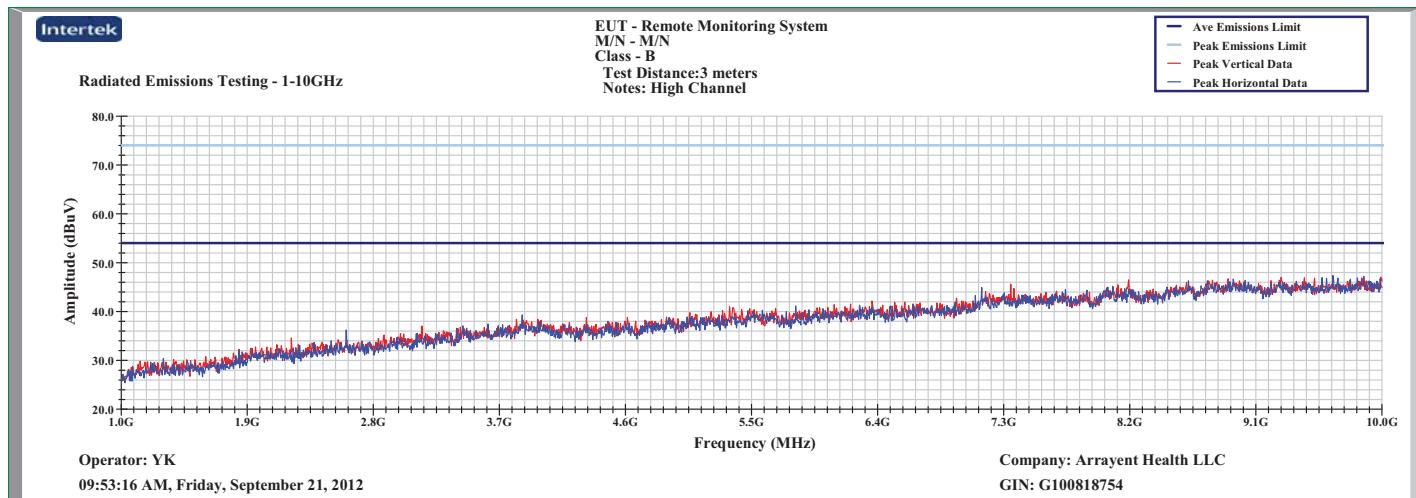
## Plot:



## Radiated Emissions from 30-1000MHz - High Channel

## 6.0 Radiated emissions (E-field) for low power intentional radiators. (Radiated Emissions LPD)

### Plot:



Radiated Emissions from 1-10GHz - High Channel

## 6.0 Radiated emissions (E-field) for low power intentional radiators. (Radiated Emissions LPD)

Frequency Range (MHz): 902-928

Test Distance (m): 3

Input power: 3VDC

Limit: FCC15 Class B-3m

Modifications for compliance (y/n): N

A	B	C	D	E	F	G	H	I	J
Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Net dB(uV/m)	3m Limit dB(uV/m)	Margin dB	Detectors / Bandwidths Det/RBW/VBW
V	908.658	99.5	21.7	1.4	36.2	86.4	114.0	-27.6	Pk/1M/3M
H	908.658	113.7	20.7	1.4	36.2	99.6	114.0	-14.4	Pk/1M/3M
V	914.720	101.2	21.7	1.4	36.2	88.2	114.0	-25.8	Pk/1M/3M
H	914.720	114.8	20.7	1.4	36.2	100.8	114.0	-13.2	Pk/1M/3M
V	920.379	99.3	21.7	1.4	36.2	86.3	114.0	-27.7	Pk/1M/3M
H	920.379	112.9	20.8	1.4	36.2	99.0	114.0	-15.0	Pk/1M/3M
V	908.658	79.9	21.7	1.4	36.2	66.8	94.0	-27.2	Av/1M/3M
H	908.658	96.8	20.7	1.4	36.2	82.7	94.0	-11.3	Av/1M/3M
V	914.720	82.9	21.7	1.4	36.2	69.9	94.0	-24.1	Av/1M/3M
H	914.720	99.7	20.7	1.4	36.2	85.7	94.0	-8.3	Av/1M/3M
V	920.379	80.9	21.7	1.4	36.2	67.9	94.0	-26.1	Av/1M/3M
H	920.379	98.1	20.8	1.4	36.2	84.2	94.0	-9.8	Av/1M/3M
<b>Calculations</b>		$G=C+D+E-F$			$I=G-H$				

Radiated Emissions - Fundamental

## 6.0 Radiated emissions (E-field) for low power intentional radiators. (Radiated Emissions LPD)

## Data:

**Client:** Arrayent Health LLC**Receiver:** HP 8546A**Model Number:** Remote Monitoring System**Antenna:** Chase 2622**Project Number:** G100818754**Cables:** ST-4+MP3+E-206+E-205**Tested By:** YK**Preamp:** ZKL-2 200069**Date:** 08-02-2012**Frequency Range (MHz):** 30~1000**Test Distance (m):** 3**Input power:** 3VDC**Limit:** FCC15 Class B-3m**Note: Low Channel****Modifications for compliance (y/n):** N

A	B	C	D	E	F	G	H	I
Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Net dB(uV/m)	3m Limit dB(uV/m)	Margin dB
H	870.660	29.9	20.8	15.9	36.3	30.3	46.0	-15.7
H	870.660	29.8	20.8	15.9	36.3	30.2	46.0	-15.8

Radiated Spurs from 30-1000MHz - Low Channel

## 6.0 Radiated emissions (E-field) for low power intentional radiators. (Radiated Emissions LPD)

### Data:

**Client:** Arrayent Health LLC

**Model Number:** Remote Monitoring System

**Project Number:** G100818754

**Tested By:** YK

**Date:** 08-02-2012

**Frequency Range (MHz):** 30~1000

**Input power:** 3VDC

**Note:** Mid Channel

**Receiver:** HP 8546A

**Antenna:** Chase 2622

**Cables:** ST-4+MP3+E-206+E-203+Weinschel 2000

**Preamp:** ZKL-2 200069

**Test Distance (m):** 3

**Limit:** FCC15 Class B-3m

A	B	C	D	E	F	G	H	I	J
Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Net dB(uV/m)	3m Limit dB(uV/m)	Margin dB	Detectors / Bandwidths Det/RBW/VBW
H	860.960	27.8	20.7	15.9	36.3	28.1	46.0	-17.9	X-QP/120k/300K
H	860.960	27.1	20.7	15.9	36.3	27.4	46.0	-18.6	Y-QP/120k/300K

Radiated Spurs from 30-1000MHz - Mid Channel

## 6.0 Radiated emissions (E-field) for low power intentional radiators. (Radiated Emissions LPD)

## Data:

Frequency Range (MHz): 30~1000

Test Distance (m): 3

Input power: 3VDC

Limit: FCC15 Class B-3m

Note: High Channel

Modifications for compliance (y/n): N

A	B	C	D	E	F	G	H	I	J
Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Net dB(uV/m)	3m Limit dB(uV/m)	Margin dB	Detectors / Bandwidths Det/RBW/VBW
H	892.000	28.2	20.5	16.0	36.2	28.5	46.0	-17.5	X-QP/120k/300K
H	892.000	28.7	20.5	16.0	36.2	29.0	46.0	-17.0	Y-QP/120k/300K
H	892.000	28.5	20.5	16.0	36.2	28.8	46.0	-17.2	Z-QP/120k/300K
H	915.000	35.5	20.7	16.1	36.2	36.1	46.0	-9.9	X-QP/120k/300K
H	915.000	31.1	20.7	16.1	36.2	31.7	46.0	-14.3	Y-QP/120k/300K
H	915.000	36.1	20.7	16.1	36.2	36.7	46.0	-9.3	Z-QP/120k/300K
V	923.000	29.7	21.8	16.1	36.2	31.4	46.0	-14.6	X-QP/120k/300K
V	923.000	29.4	21.8	16.1	36.2	31.1	46.0	-14.9	Y-QP/120k/300K
V	923.000	29.5	21.8	16.1	36.2	31.2	46.0	-14.8	Z-QP/120k/300K
Calculations		G=C+D+E-F		I=G-H					

Radiated Spurs from 30-1000MHz - High Channel

## 7.0 Occupied Bandwidth (FCC Part 2.1049)

### Method:

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Connect the antenna port of the EUT to a spectrum analyzer using a calibrated coaxial cable and attenuator. Set the EUT to transmit at its highest power setting. The 99% bandwidth function of the analyzer was used to automatically generate the occupied bandwidth plots. Repeat for low, mid, and high channels of each band of the EUT.

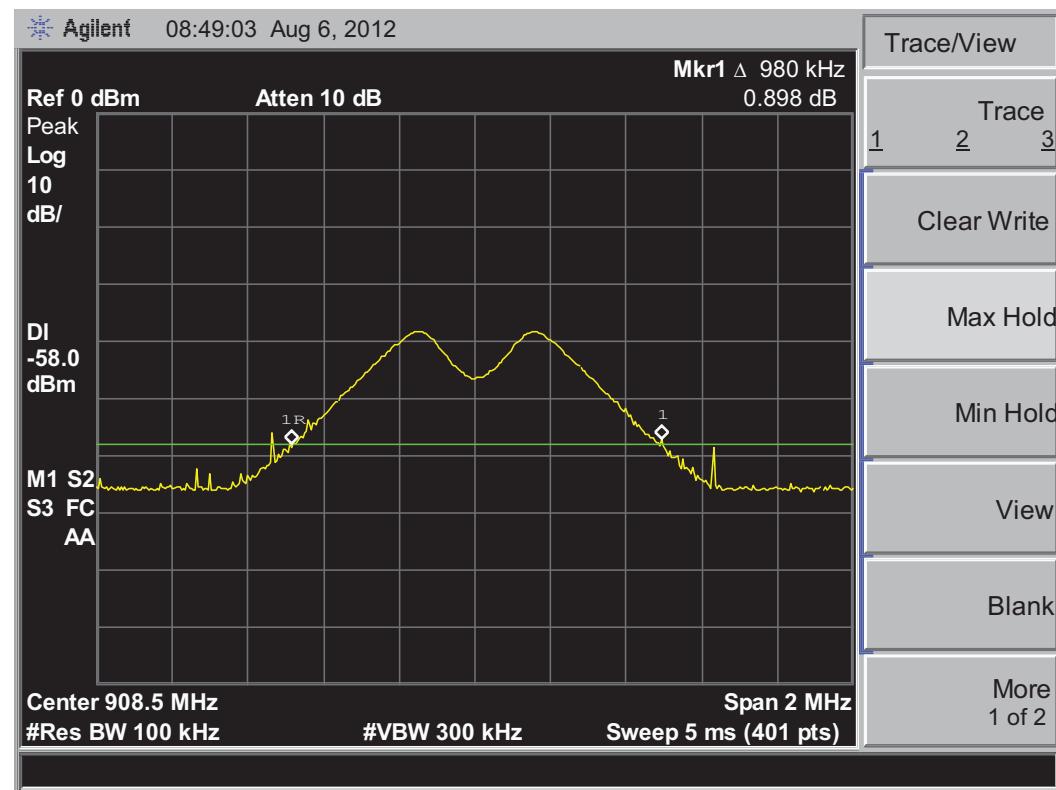
For amplifiers, the output bandwidth shall be less than or equal to the input bandwidth.

### Test Equipment Used:

Description:	Manufacturer:	Model:	Asset Number:	Cal Date:	Cal Due:
Cable E11, <18GHz	Huber-Suhner	Sucoflex 104PEA	E11 211266	09/10/2012	09/10/2013
Spectrum Analyzer, 20Hz-40GHz	Rohde & Schwarz	FSEK30	200062	12/20/2011	12/20/2012

**Results: The sample tested was found to Comply.**

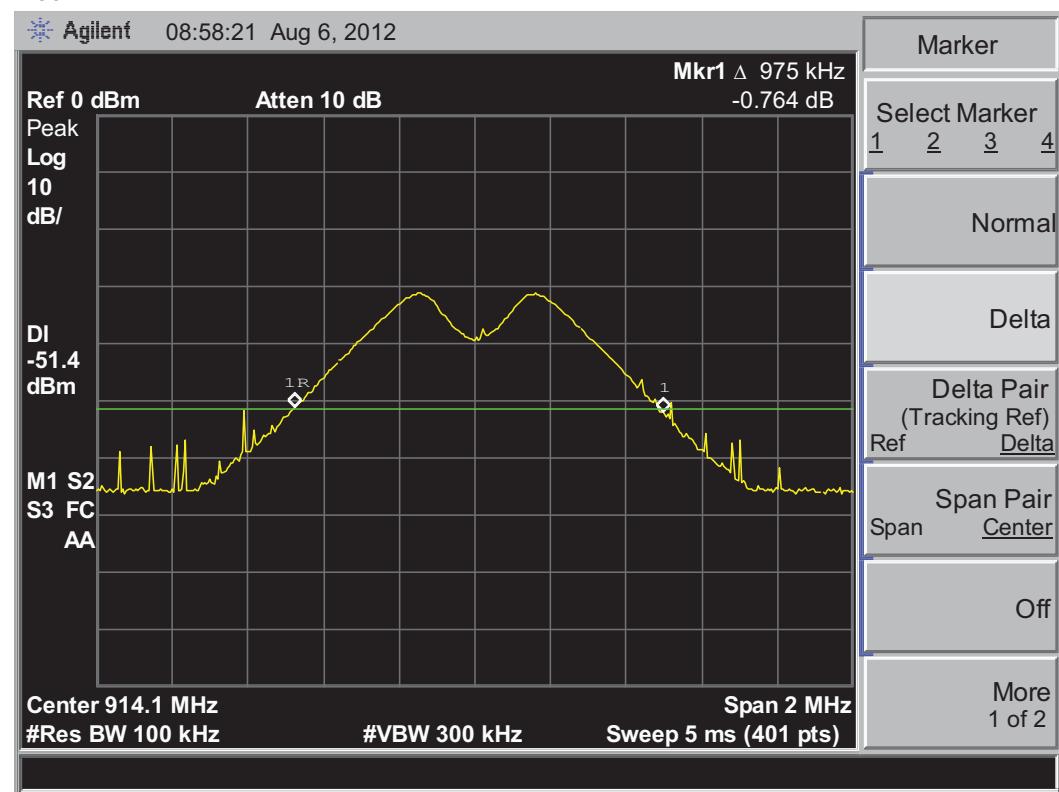
### Plot:



Bandwidth - Low Channel

## 7.0 Occupied Bandwidth (FCC Part 2.1049)

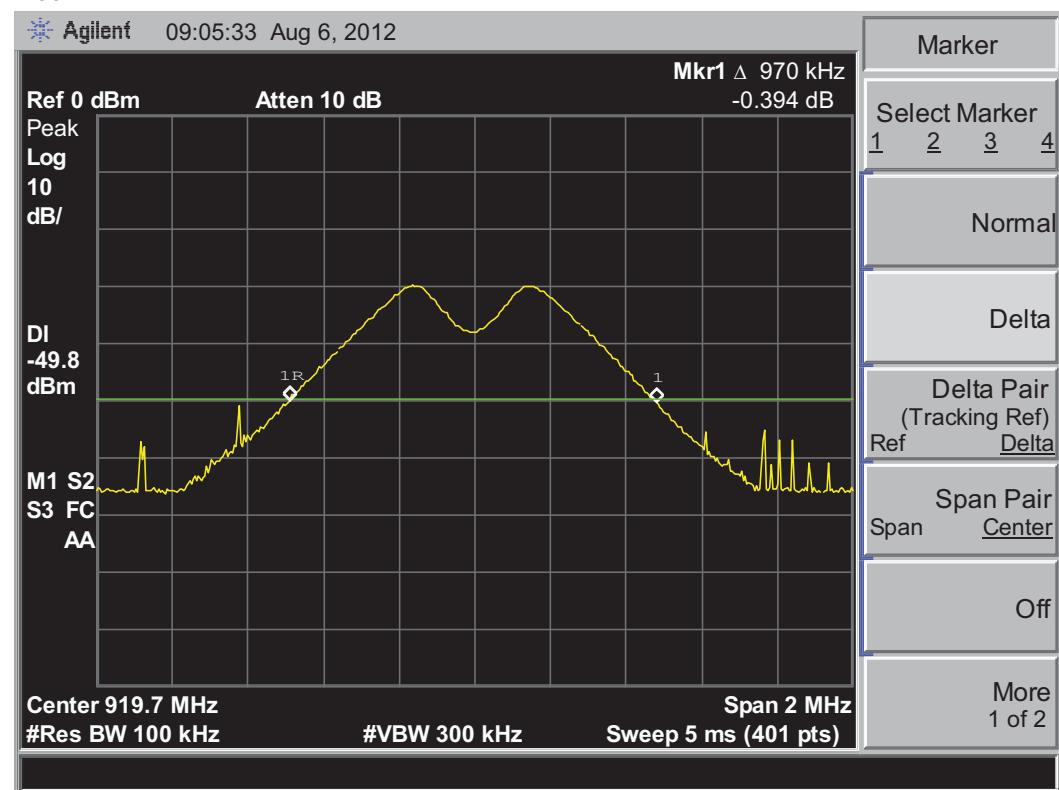
Plot:



Bandwidth - Mid Channel

## 7.0 Occupied Bandwidth (FCC Part 2.1049)

Plot:



Bandwidth - High Channel

**7.0 Occupied Bandwidth (FCC Part 2.1049)**

Mode	Frequency MHz	Resolution Bandwidth (1)	Video Bandwidth	Sweep time mS	Output Measured Bandwidth kHz
TX	908.5	1000 kHz	300 kHz	5	980
TX	914.1	30 kHz	300 kHz	5	975
TX	919.7	30 kHz	300 kHz	5	970

Note (1): Greater or equal to 1% of emission bandwidth.

## **8.0 Additional provisions to the general radiated emission limitations. (FCC 15C - 15.215)**

### **Method:**

§ 15.215 Additional provisions to the general radiated emission limitations.

(a) The regulations in §§15.217 through 15.257 provide alternatives to the general radiated emission limits for intentional radiators operating in specified frequency bands. Unless otherwise stated, there are no restrictions as to the types of operation permitted under these sections.

(b) In most cases, unwanted emissions outside of the frequency bands shown in these alternative provisions must be attenuated to the emission limits shown in §15.209. In no case shall the level of the unwanted emissions from an intentional radiator operating under these additional provisions exceed the field strength of the fundamental emission.

(c) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

**Results: The sample tested was found to Comply.**

## 9.0 Revision History (Revision History)

**Method:**

Document the history of the report.

**Data:**

Revision Level	Date	Report Number	Notes
Original issue	September 21, 2012	100818754ATL-001	--
1	October 3, 2012	100818754ATL-001	- Added model reference to cover page - Corrected report number