

# FCC Test Report

Product Name	4 in 1 Multi-Sensor
Model No.	PST02-2
FCC ID.	RHHPST02

Applicant	Philio Technology Corporation
Address	8F.,No.653-2,Zhongzheng Rd., Xinzhuang Dist., New Taipei City 24257,Taiwan(R.O.C)

Date of Receipt	May 20, 2014
Issued Date	July 02, 2014
Report No.	1450469R-RFUSP15V00
Report Version	V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

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# Test Report

Issued Date: July 02, 2014

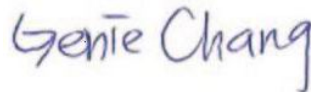
Report No.: 1450469R-RFUSP15V00



Product Name	4 in 1 Multi-Sensor
Applicant	Philio Technology Corporation
Address	8F.,No.653-2,Zhongzheng Rd., Xinzhuang Dist., New Taipei City 24257,Taiwan(R.O.C)
Manufacturer	Philio Technology Corporation
Model No.	PST02-2
FCC ID.	RHHPST02
EUT Rated Voltage	DC 3V (Power by battery)
EUT Test Voltage	DC 3V (Power by battery)
Trade Name	
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2014 ANSI C63.10: 2009
Test Result	Complied

Documented By

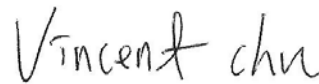
:



( Senior Adm. Specialist / Genie Chang )

Tested By

:



( Engineer / Vincent Chu )

Approved By

:




( Director / Vincent Lin )

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## 1. GENERAL INFORMATION

### 1.1. EUT Description

Product Name	4 in 1 Multi-Sensor
Trade Name	
FCC ID.	RHHPST02
Model No.	PST02-2
Frequency Range	908.42MHz & 916MHz
Type of Modulation	FSK
Number of Channels	2
Channel Control	Auto
Antenna Type	Helical Antenna

Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency
Channel 1:	908.42MHz	Channel 2:	916MHz

Note:

1. The EUT is a 4 in 1 Multi-Sensor with a built-in 908.42MHz & 916MHz Z-Wave transceiver.
2. These tests are conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.249.
3. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

Test Mode	Mode 1: Transmit
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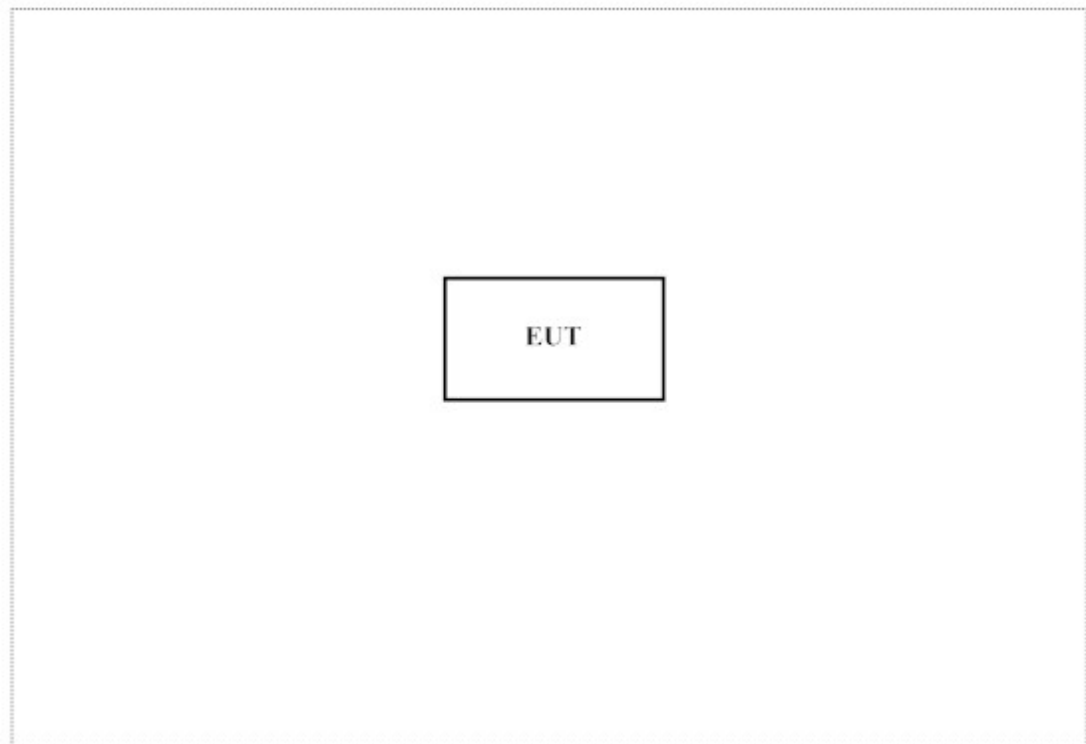
### 1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	Power Cord
N/A				

Signal Cable Type	Signal cable Description
N/A	

### 1.4. Configuration of Test System



### 1.5. EUT Exercise Software

- (1) Setup the EUT as shown in section 1.4.
- (2) Inserts the battery, Starts the continuous transmit.
- (3) Verify that the EUT works correctly.

## 1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site : <http://tw.quietek.com/modules/myalbum/>  
The address and introduction of Quietek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>

Site Description: File on  
Federal Communications Commission  
FCC Engineering Laboratory  
7435 Oakland Mills Road  
Columbia, MD 21046  
Registration Number: 92195

Site Name: Quietek Corporation  
Site Address: No.5-22, Ruishukeng Linkou Dist., New Taipei City  
24451, Taiwan, R.O.C.  
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E-Mail : [service@quietek.com](mailto:service@quietek.com)

FCC Accreditation Number: TW1014

## 2. Conducted Emission

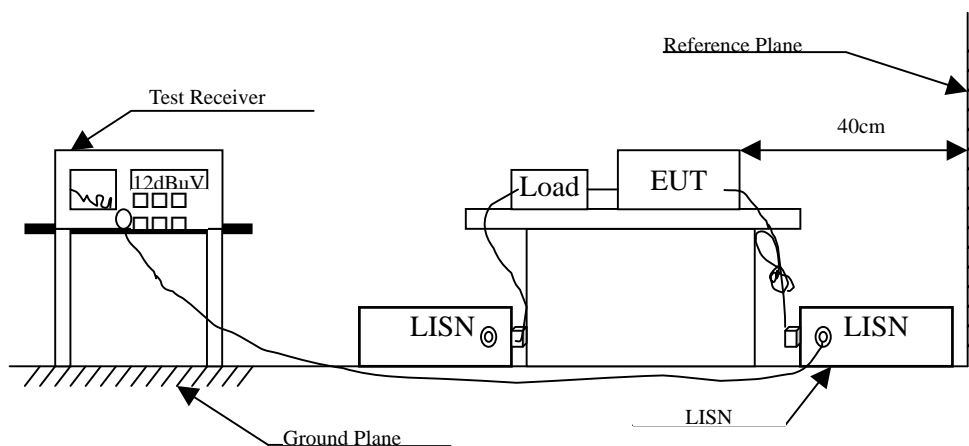
### 2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2013	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2014	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2014	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar, 2014	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2014	
	No.8 Shielded Room				

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

### 2.2. Test Setup



## 2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit		
Frequency MHz	Limits	
	QP	AV
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the band edges.

## 2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2009 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

## 2.5. Uncertainty

$\pm 2.26$  dB



## **2.6. Test Result of Conducted Emission**

Owing to the DC operation of EUT, this test item is not performed.

### 3. Radiated Emission

#### 3.1. Test Equipment

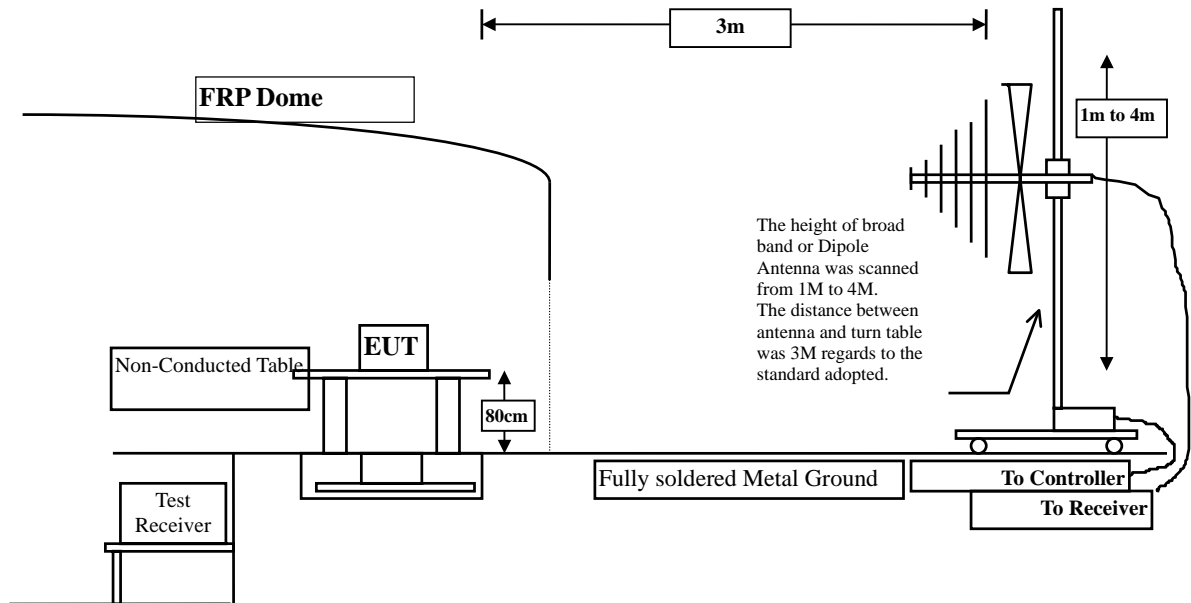
The following test equipment are used during the radiated emission test:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
<input checked="" type="checkbox"/> Site # 3	X Loop Antenna	Teseq	HLA6120 / 26739	Jul., 2014
	X Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2013
	X Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2013
	X Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2014
	X Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2014
	X Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2013
	X Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2014
	X Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2014
	X Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2013
	X Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2014
	X Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X Coaxial Switch	Anritsu	MP59B/6200265729	N/A

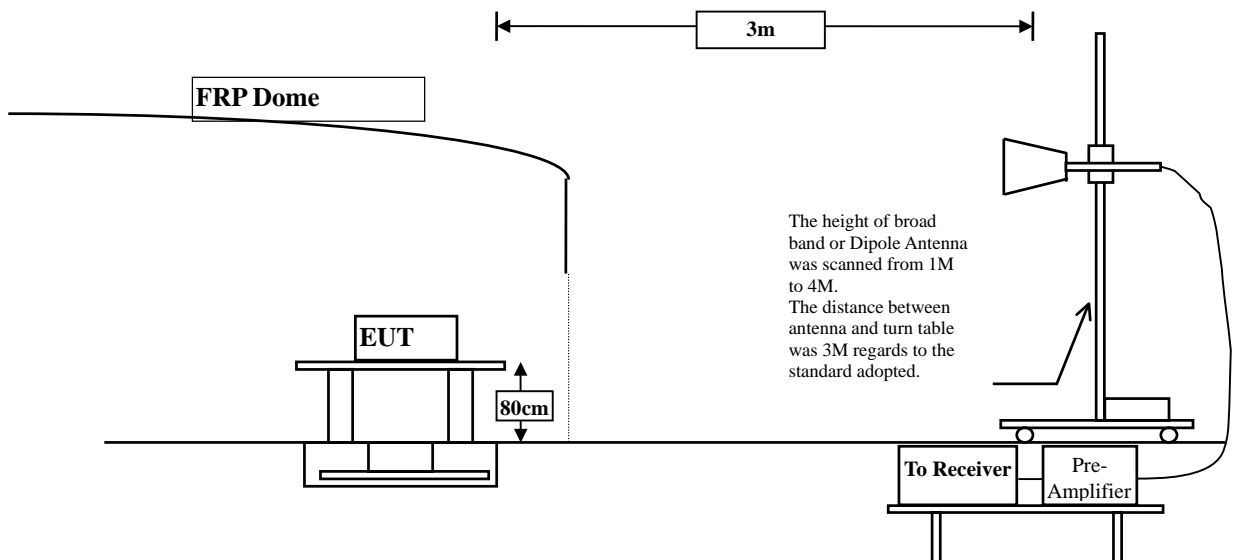
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
  2. The test instruments marked with "X" are used to measure the final test results.

### 3.2. Test Setup

Below 1GHz



Above 1GHz



### 3.3. Limits

#### ➤ Fundamental and Harmonics Emission Limits

FCC Part 15 Subpart C Paragraph 15.249 Limits				
Frequency MHz	Field Strength of Fundamental		Field Strength of Harmonics	
	(mV/m @3m)	(dBuV/m @3m)	(uV/m @3m)	(dBuV/m @3m)
902-928	50	94	500	54
2400-2483.5	50	94	500	54
5725-5875	50	94	500	54

Remarks : 1. RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)  
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

#### ➤ General Radiated Emission Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remarks : 1. RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)  
2. In the Above Table, the tighter limit applies at the band edges.  
3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

### 3.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2009 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

The measurement frequency range from 9kHz - 10th Harmonic of fundamental was investigated.

### 3.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

### 3.6. Test Result of Radiated Emission

Product : 4 in 1 Multi-Sensor  
 Test Item : Fundamental Radiated Emission  
 Test Site : No.3OATS  
 Test Mode : Mode 1: Transmit (X-axis )

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
908.420	5.566	73.644	79.210	-14.790	94.000
916.000	5.654	71.356	77.010	-16.990	94.000
<b>Vertical</b>					
908.420	6.676	73.204	79.880	-14.120	94.000
916.000	6.710	66.870	73.580	-20.420	94.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna Factor + Cable Loss – PreAMP.

Product : 4 in 1 Multi-Sensor  
Test Item : Fundamental Radiated Emission  
Test Site : No.3OATS  
Test Mode : Mode 1: Transmit (Y-asix )

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
908.420	5.566	72.094	77.660	-16.340	94.000
916.000	5.654	69.496	75.150	-18.850	94.000
<b>Vertical</b>					
908.420	6.676	69.604	76.280	-17.720	94.000
916.000	6.710	67.380	74.090	-19.910	94.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna Factor + Cable Loss – PreAMP.

Product : 4 in 1 Multi-Sensor  
 Test Item : Fundamental Radiated Emission  
 Test Site : No.3OATS  
 Test Mode : Mode 1: Transmit (Z-asix )

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
908.420	5.566	75.644	81.210	-12.790	94.000
916.000	5.654	72.496	78.150	-15.850	94.000
<b>Vertical</b>					
908.420	6.676	72.714	79.390	-14.610	94.000
916.000	6.710	69.400	76.110	-17.890	94.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna Factor + Cable Loss – PreAMP.



Product : 4 in 1 Multi-Sensor  
Test Item : Harmonic Radiated Emission Data  
Test Site : No.3 OATS  
Test Mode : Mode 1: Transmit (908.42MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
1816.840	-4.390	48.150	43.760	-30.240	74.000
2725.260	-1.075	54.490	53.414	-20.586	74.000
3633.680	-0.395	48.150	47.755	-26.245	74.000
4542.100	1.901	41.050	42.952	-31.048	74.000
5450.520	4.228	40.230	44.458	-29.542	74.000
6358.940	6.502	41.050	47.552	-26.448	74.000
7267.360	11.106	35.150	46.256	-27.744	74.000
8175.780	14.925	38.760	53.685	-20.315	74.000
9048.200	13.087	39.220	52.308	-21.692	74.000

#### Average Detector:

--

#### Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 4 in 1 Multi-Sensor  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (908.42MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
<b>Vertical</b>					
<b>Peak Detector:</b>					
1816.840	-2.613	48.050	45.437	-28.563	74.000
2725.260	-1.228	49.260	48.032	-25.968	74.000
3633.680	0.379	49.260	49.639	-24.361	74.000
4542.100	5.407	48.260	53.667	-20.333	74.000
5450.520	5.976	42.550	48.525	-25.475	74.000
6358.940	7.975	45.230	53.206	-20.794	74.000
7267.360	11.925	38.660	50.585	-23.415	74.000
8175.780	15.635	37.820	53.455	-20.545	74.000
9084.200	13.021	40.360	53.381	-20.619	74.000

#### Average Detector:

--

#### Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 4 in 1 Multi-Sensor  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (916MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
1832.000	-1.292	47.950	46.658	-27.342	74.000
2748.000	-1.900	54.890	52.990	-21.010	74.000
3664.000	-1.641	47.590	45.949	-28.051	74.000
4580.000	0.670	43.020	43.691	-30.309	74.000
5496.000	4.424	40.360	44.785	-29.215	74.000
6412.000	5.944	40.440	46.385	-27.615	74.000
7328.000	10.103	38.770	48.873	-25.127	74.000
8244.000	10.591	38.920	49.511	-24.489	74.000
9160.000	11.453	40.610	52.063	-21.937	74.000

#### Average Detector:

--

#### Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 4 in 1 Multi-Sensor  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (916MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
<b>Vertical</b>					
<b>Peak Detector:</b>					
1832.000	-0.666	49.630	48.964	-25.036	74.000
2748.000	-2.777	50.240	47.463	-26.537	74.000
3664.000	-1.420	48.960	47.539	-26.461	74.000
4580.000	2.285	49.820	52.105	-21.895	74.000
5496.000	4.419	40.980	45.399	-28.601	74.000
6412.000	6.060	40.650	46.710	-27.290	74.000
7328.000	10.732	38.960	49.692	-24.308	74.000
8244.000	11.499	38.540	50.039	-23.961	74.000
9160.000	11.539	40.630	52.169	-21.831	74.000

#### Average Detector:

--

#### Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 4 in 1 Multi-Sensor  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (908.42MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
<b>Horizontal</b>					
105.660	-6.673	33.812	27.139	-16.361	43.500
202.660	-10.889	37.260	26.371	-17.129	43.500
322.940	-4.442	37.346	32.904	-13.096	46.000
458.740	0.833	37.725	38.558	-7.442	46.000
586.780	3.436	38.199	41.635	-4.365	46.000
757.500	4.361	38.265	42.626	-3.374	46.000
<b>Vertical</b>					
121.180	-3.814	35.822	32.008	-11.492	43.500
295.780	-7.455	37.503	30.048	-15.952	46.000
447.100	-7.746	37.979	30.233	-15.767	46.000
567.380	-5.426	38.025	32.599	-13.401	46.000
724.520	-0.135	36.386	36.251	-9.749	46.000
856.440	0.562	37.628	38.190	-7.810	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : 4 in 1 Multi-Sensor  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (916MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
<b>Horizontal</b>					
159.980	-10.030	34.291	24.260	-19.240	43.500
289.960	-5.470	33.198	27.728	-18.272	46.000
505.300	2.126	32.534	34.660	-11.340	46.000
610.060	3.657	31.453	35.110	-10.890	46.000
796.300	6.389	33.656	40.045	-5.955	46.000
906.880	6.149	31.037	37.186	-8.814	46.000
<b>Vertical</b>					
224.000	-6.379	32.832	26.453	-19.547	46.000
388.900	-0.726	33.605	32.879	-13.121	46.000
524.700	1.130	33.473	34.603	-11.397	46.000
712.880	-1.328	31.848	30.520	-15.480	46.000
831.220	2.041	30.729	32.770	-13.230	46.000
930.160	3.830	34.610	38.440	-7.560	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

## 4. Band Edge

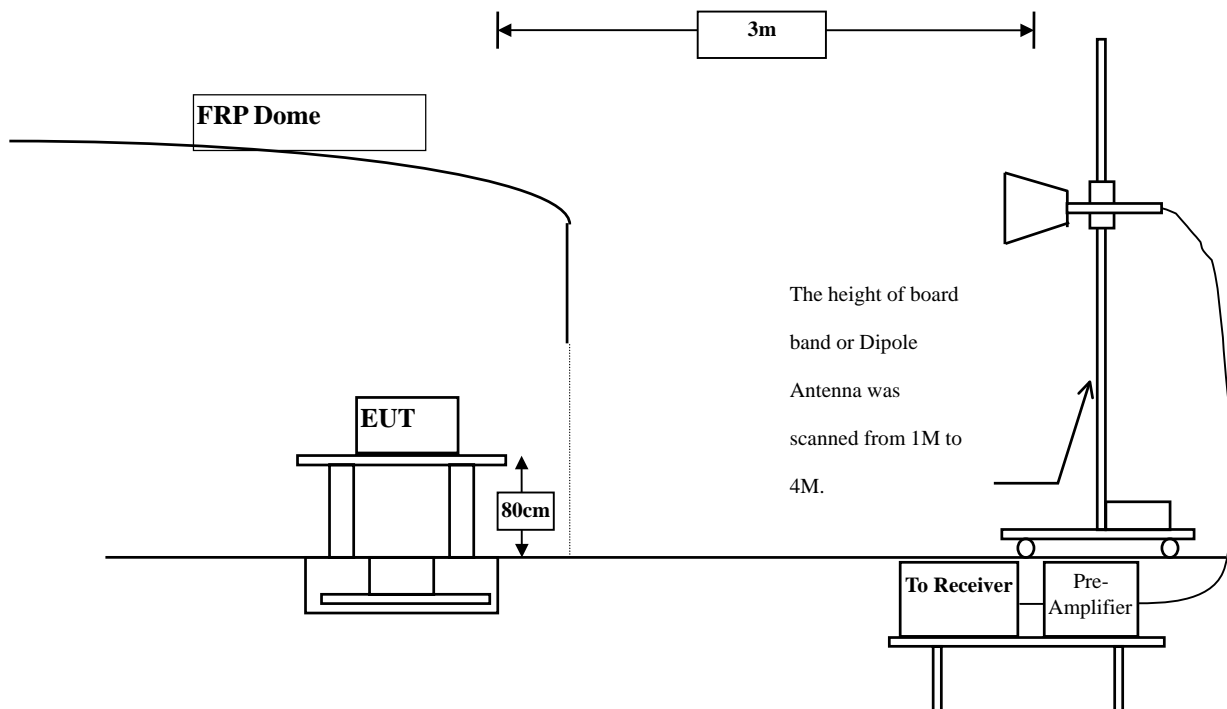
### 4.1. Test Equipment

The following test equipments are used during the band edge tests:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Site # 3	X Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2013
	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2013
	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2014
	X Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2014
	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2013
	Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2014
	X Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2013
	X Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2014
	X Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X Coaxial Switch	Anritsu	MP59B/6200265729	N/A

- Note:
1. All equipments are calibrated every one year.
  2. The test equipments marked by "X" are used to measure the final test results.

### 4.2. Test Setup



#### **4.3. Limit**

Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

#### **4.4. Test Procedure**

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10:2009 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter (R&S Test Receiver ESCS 30 )is 120 kHz, above 1GHz are 1 MHz.

#### **4.5. Uncertainty**

Radiated is  $\pm 3.9$  dB.



#### 4.6. Test Result of Band Edge

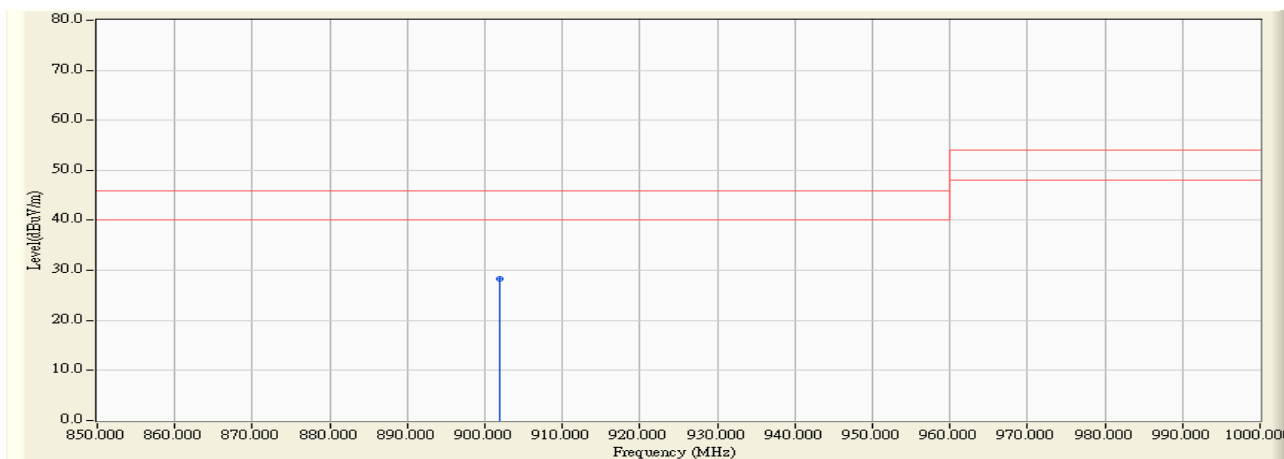
Product : 4 in 1 Multi-Sensor  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (908.42MHz)

##### RF Radiated Measurement (Horizontal):

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Quasi-Peak Limit (dBuV/m)	Result
01(Quasi-Peak)	902.000	5.500	22.891	28.390	46.000	Pass

Figure Channel 01:

Horizontal (Quasi-Peak)



Note:

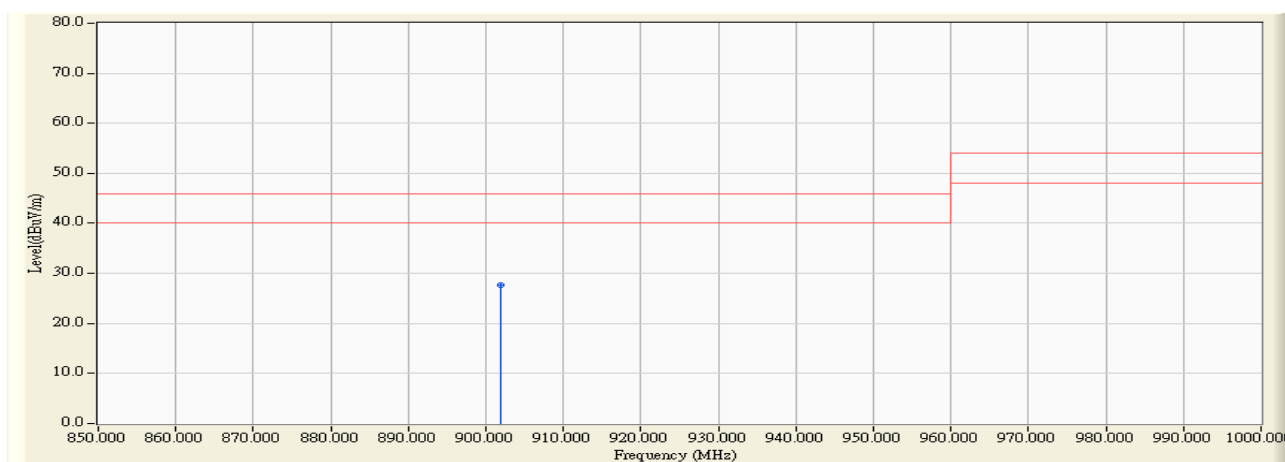
1. Quasi-Peak measurements: RBW=100kHz, VBW=1MHz, Sweep: Auto.
2. “ \* ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Product : 4 in 1 Multi-Sensor  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (908.42MHz)

**RF Radiated Measurement (Vertical):**

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Quasi-Peak Limit (dBuV/m)	Result
01(Quasi-Peak)	902.000	6.650	21.040	27.690	46.000	Pass

**Figure Channel 01: Vertical (Quasi-Peak)**



Note:

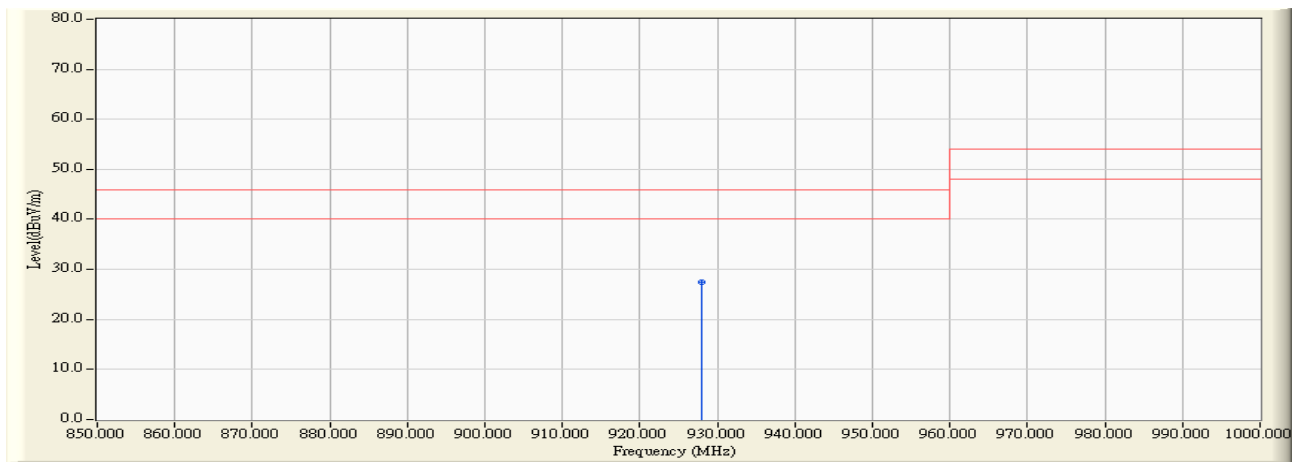
1. Quasi-Peak measurements: RBW=100kHz,VBW=1MHz,Sweep: Auto.
2. “ \* ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Product : 4 in 1 Multi-Sensor  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (916MHz)

**RF Radiated Measurement (Horizontal):**

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Quasi-Peak Limit (dBuV/m)	Result
02(Quasi-Peak)	928.000	5.780	21.600	27.380	46.000	Pass

**Figure Channel 01: Horizontal (Quasi-Peak)**



Note:

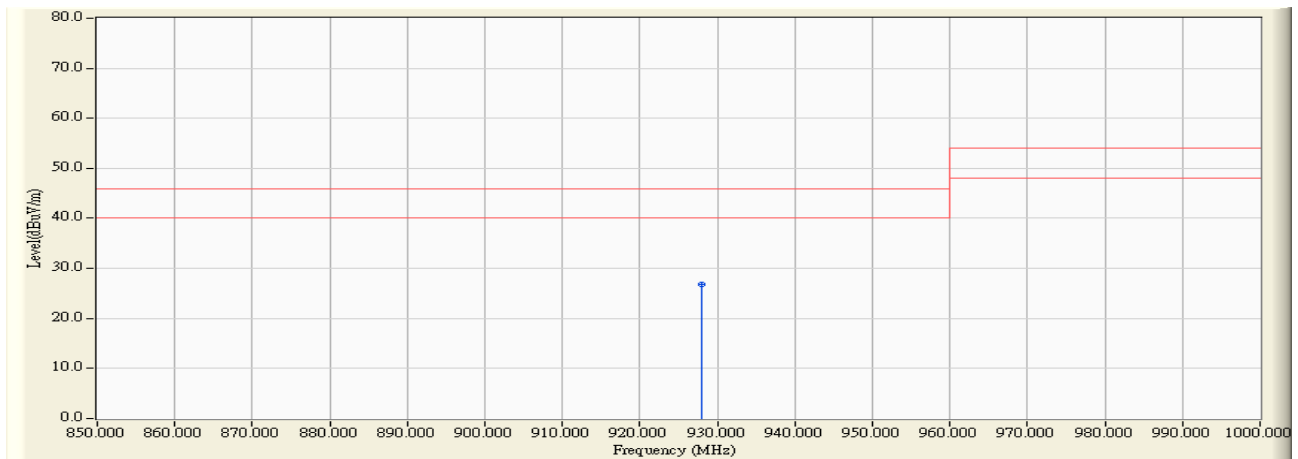
1. Quasi-Peak measurements: RBW=100kHz,VBW=1MHz,Sweep: Auto.
2. “ \* ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Product : 4 in 1 Multi-Sensor  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (916MHz)

**RF Radiated Measurement (Vertical):**

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Quasi-Peak Limit (dBuV/m)	Result
02(Quasi-Peak)	928.000	6.760	20.050	26.810	46.000	Pass

**Figure Channel 01: Vertical (Quasi-Peak)**



Note:

1. Quasi-Peak measurements: RBW=100kHz,VBW=1MHz,Sweep: Auto.
2. “ \* ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

## **5. EMI Reduction Method During Compliance Testing**

No modification was made during testing.