



Hong Kong

FCC– Test report

Report Number : **60/960.13.044.01** Date of Issue: September 30, 2013

Model : **BIKELFD**

Product Type : **Bike Speed Transmitter**

Applicant : Dayton Industrial Co., Ltd.

Address : 2-12 Kwai Fat Road, 11-A Kwai Chung, New Territories, Hong Kong

Production Facility : Kendy Enterprise Ltd.

Address : 2-12 Kwai Fat Road, 11-A Kwai Chung, New Territories, Hong Kong

Test Result : **Positive** **Negative**

Total pages including Appendices : 20

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TÜV SÜD HONG KONG LTD., 3/F, West Wing, Lakeside 2, 10 Science Park West Avenue, Science Park, Shatin, HK.
Tel: +852-2776 1323 Fax: +852-2776 1206

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2. Details about the Test Laboratory

Details about the Test Laboratory

Test site 1

Company name: TÜV SÜD HONG KONG LTD.
3/F, West Wing, Lakeside 2,
10 Science Park West Avenue,
Science Park, Shatin
HK.

Telephone: 852 2776 1323

Fax: 852 2776 1372

Test site 2

Company name: Audix Technology (shenzhen) Co.,Ltd.
No.6,Ke Feng Road,Block 52,Shenzhen Science & Industry
Park,Nanshan,Shenzhen,Guangdong,China (518057)

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3. Description of the Equipment Under Test

escription of the Equipment Under Test

Product:	Bike Speed Transmitter
Model no.:	BIKELFD
Serial number:	NIL
Options and accessories:	NIL
Rated Voltage:	Lithium Coin CR2032 (3V DC)
Rated Current:	NIL
Rated Power:	NIL
Frequency:	NIL
RF Transmission Frequency:	121kHz
Antenna gain:	0 dBi
No. of Operated Channel:	1
Modulation:	ASK
Description of the EUT:	Battery operated – 1 x3.0V CR2032 battery More details of EUT technical specification please refer to the User's Manual.





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4. Summary of Test Standards

Test Standards	
FCC Part 15 Subpart C	PART 15 – RADIO FREQUENCY DEVICES Subpart C – Intentional Radiators

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5. Test Methodology

Both conducted and Radiated Emission Measurement was performed according to the procedures in CFR 47 Part 15 Subpart C and ANSI C63.4. 2009. Radiated Emission Measurement was performed at 10 meters distance from antenna to EUT between 9 kHz and 30 MHz, and 3 meters between 30 MHz and 1GHz.



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6. General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: O4GLFD complies with the FCC Part 15, Subpart C Rules.

All the configurations of the product were tested and only the worst test results are listed in the report.

The EUT is a battery-operated equipment; do not need to perform the Power Line Conducted Emission Measurement.

SUMMARY:

All tests according to the regulations cited on page 5 were

- Performed
- **Not** Performed

The Equipment Under Test

- **Fulfills** the general approval requirements.
- **Does not** fulfill the general approval requirements.

Sample Received Date: September 23, 2013

Testing Start Date: September 24, 2013

Testing End Date: September 30, 2013

- TÜV SÜD HONG KONG LTD. -

Reviewed by:

Edmond FUNG

Prepared by:



CHAN Kwong Ngai

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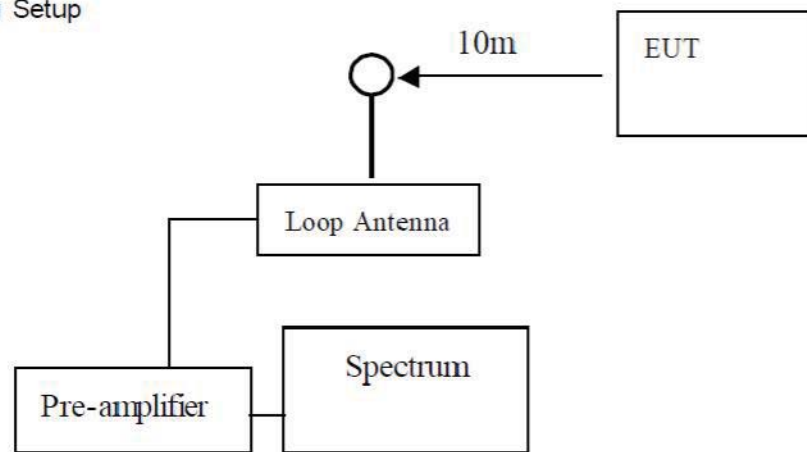
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7. Radiated Emission Measurement(0.009MHz~0.490MHz)

7.1 Block Diagram of Test Configuration

Configuration of Testing Setup

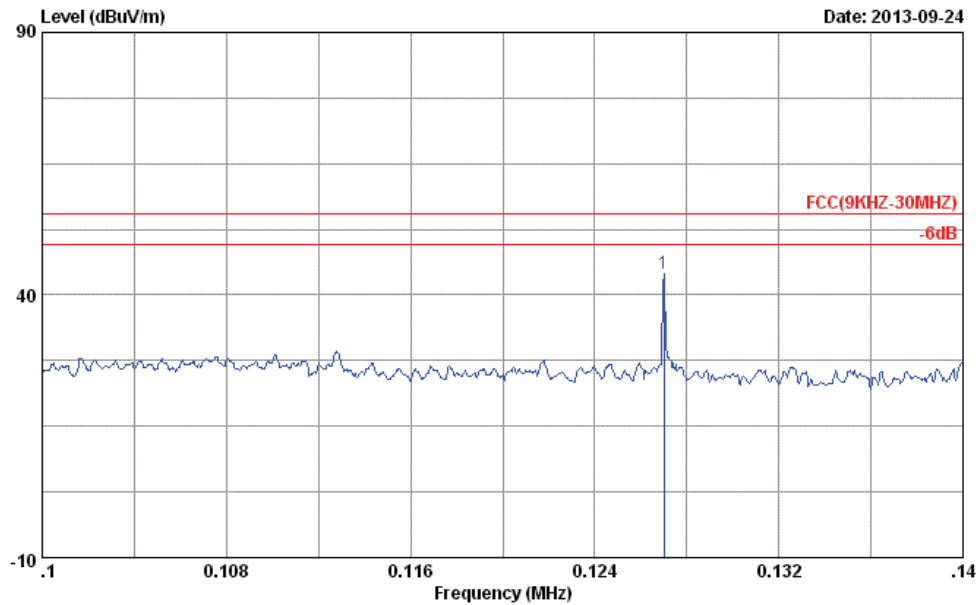


7.2 Radiated Limit

Frequency (MHz)	Antenna factor	Cable loss	Measurement results	Test distance	Limits Part 15.209 dB μ V/m
	dB	dB	dB μ V/m	m	
0.009 – 0.121	20.5	1	-	10	
0.121	19.5	1	44.10	10	85dB μ V/m(10 m)
0.242	19.5	1	-	10	
0.363	19.5	1	-	10	
0.484	19.5	1	-	10	

Remark: except fundamental , no emission found from 9kHz to 30MHz

8..3 Test result



Site no. : 10m Chamber Data no. : 5
 Dis. / Ant. : 10m 2013 LOOP HLA6120 Ant. pol. :
 Limit : FCC(9KHZ-30MHZ)
 Env. / Ins. : 24*C/56% Engineer : ANDY
 EUT : M/N:DR13128
 Power rating :
 Test Mode : Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	0.12100	20.04	0.07	23.99	44.10	85	40.9	QP

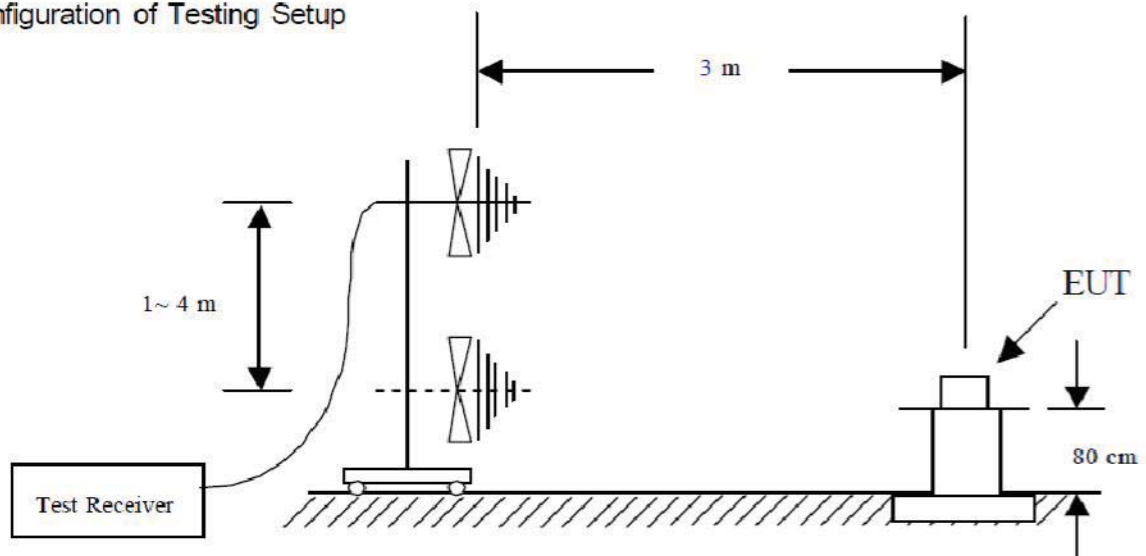
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Remark: The EUT was placed on the top of the turntable in test site area.
 The test shall be made in the operation mode. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
 For emissions measurement, the receiving antenna was placed 10 meters far away from the turntable. Adjust the emission and slightly rotate the turntable to locate the position with maximum reading.
 Both H and V polarity are been tested ,only list the worse case as above

8. Radiated Emission Measurement (30MHz~1000MHz)

8.1 Block Diagram of Test Configuration

Configuration of Testing Setup



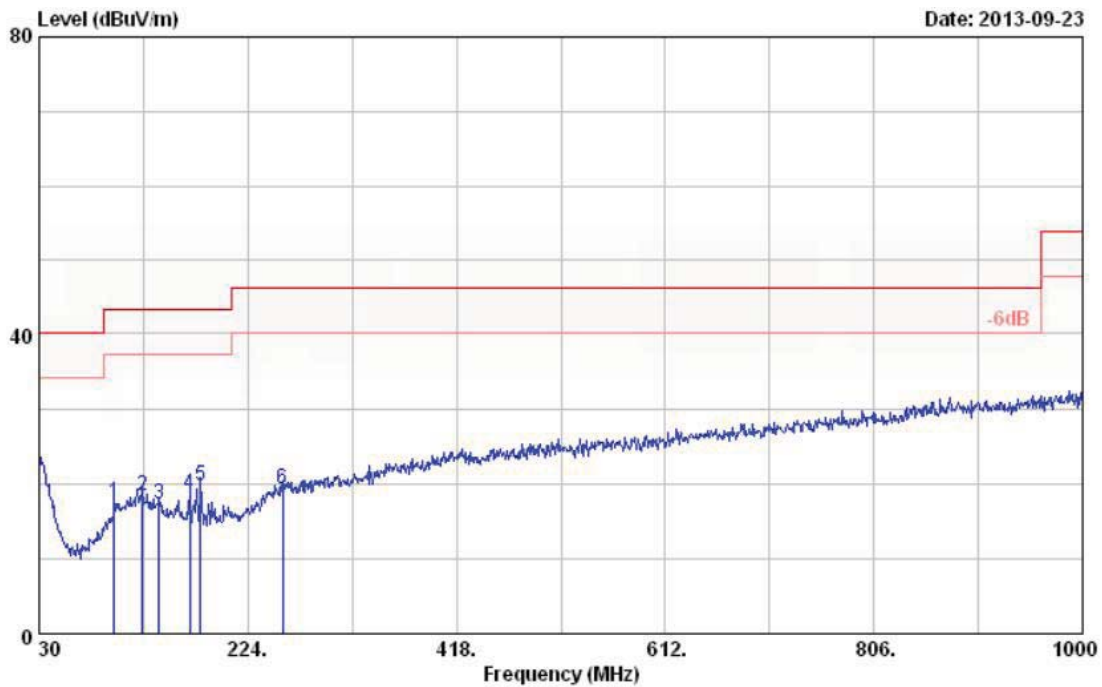
8.2 Radiated Limit

FCC Part 15 Subpart C

Frequency (MHz)	Distance	Field Strength (uV/m)	Quasi-Peak (dBuV/m)
30 ~ 88	3	100	40.00
88 ~ 216	3	150	43.52
216 ~ 960	3	200	46.02
960 above	3	500	53.98

9.3 Test Result

Horizontal

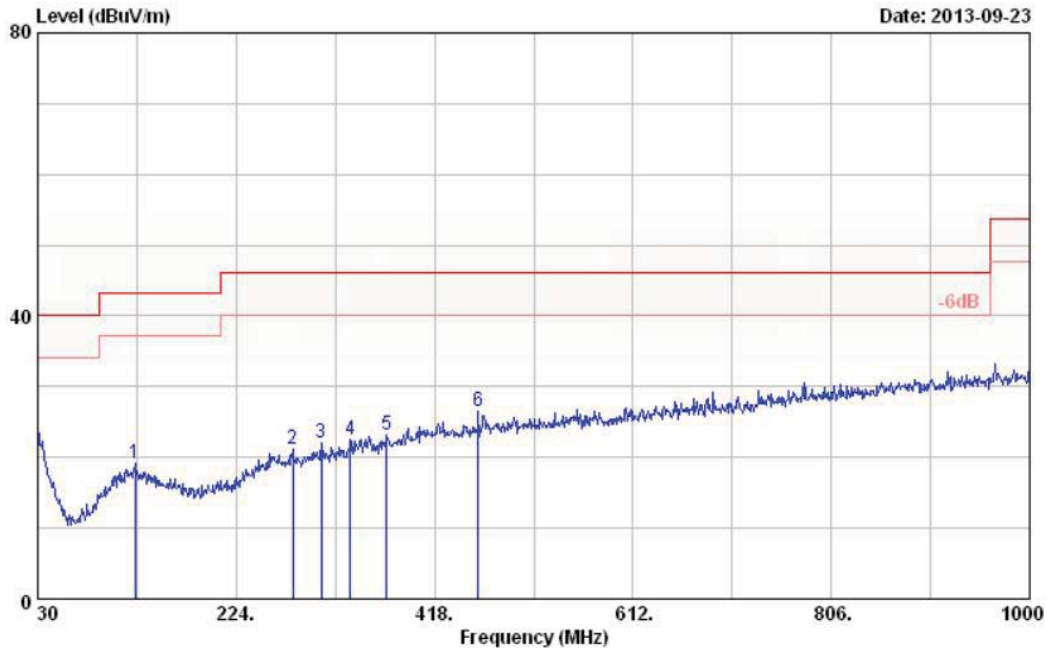


No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	99.840	11.18	1.41	4.94	17.53	43.50	25.97	QP
2	126.030	12.90	1.51	4.11	18.52	43.50	24.98	QP
3	141.550	11.89	1.57	3.87	17.33	43.50	26.17	QP
4	169.680	10.23	1.67	6.76	18.66	43.50	24.84	QP
5	180.350	9.70	1.72	8.51	19.93	43.50	23.57	QP
6	256.010	13.60	2.00	3.86	19.46	46.00	26.54	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Remark: "The EUT was placed on the top of the turntable in test site area. The test shall be made in the operation mode. The turntable was rotated by 360 degrees to determine the position of the highest radiation. For emissions measurement, the receiving antenna was placed 3 meters far away from the turntable. The antenna was fixed on the same height with the EUT to find each suspected emissions of both horizontal and vertical polarization. Adjust the emission and slightly rotate the turntable to locate the position with maximum reading. Adjust the emission and slightly height of the antenna to locate the position with maximum reading.

Vertical



No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	125.060	12.90	1.51	4.85	19.26	43.50	24.24	QP
2	279.290	13.56	2.09	5.58	21.23	46.00	24.77	QP
3	307.420	14.15	2.19	5.76	22.10	46.00	23.90	QP
4	335.550	14.82	2.27	5.37	22.46	46.00	23.54	QP
5	371.440	15.73	2.38	5.13	23.24	46.00	22.76	QP
6	460.680	17.33	2.64	6.45	26.42	46.00	19.58	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Remark: The EUT was placed on the top of the turntable in test site area. The test shall be made in the operation mode. The turntable was rotated by 360 degrees to determine the position of the highest radiation. For emissions measurement, the receiving antenna was placed 3 meters far away from the turntable. The antenna was fixed on the same height with the EUT to find each suspected emissions of both horizontal and vertical polarization. Adjust the emission and slightly rotate the turntable to locate the position with maximum reading. Adjust the emission and slightly height of the antenna to locate the position with maximum reading.



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10 Test Equipment List

Radiated Emission Test

Instrument	Manufacturer	Model	Serial No.	Calibration Due
Loop Antenna	teseq	HLA6120	624436	May.08, 14
EMI Spectrum	Agilent	E4407B	MY41440292	May.08, 14
Test Receiver	Rohde & Schwarz	ESVS10	834468/011	May.08, 14
Amplifier	HP	8447D	2648A04738	May.08, 14
Bilog Antenna	TESEQ	CBL6112D	35375	May.30, 14

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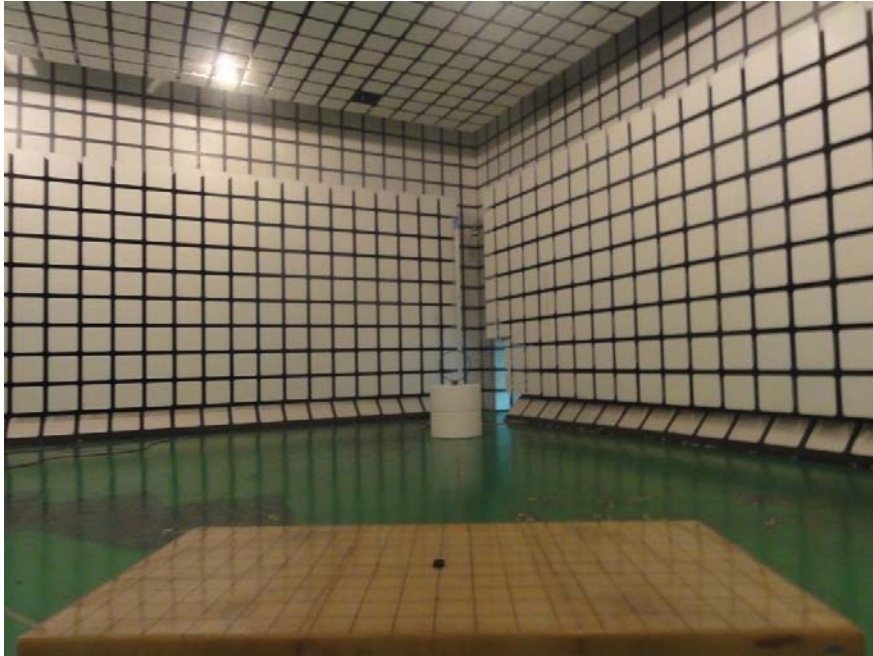
11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty

Items		Extended Uncertainty
RE	Field strength (dB μ V/m)	U=5.08dB (30MHz-1GHz) U=4.56dB (1GHz-6GHz)
RE	Field strength (dB μ A/m)	U=5.43dB (9KHz – 30MHz)

12 Test Set-ups



Radiated Emission Measurement (0.009MHz~0.490MHz)



Radiated Emission Measurement (30MHz~1000MHz)

13 EUT Photo



