
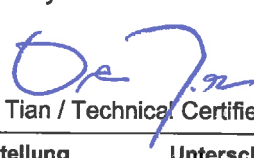


<b>Prüfbericht-Nr.:</b> <i>Test report No.:</i>	<b>50057770 003</b>	<b>Auftrags-Nr.:</b> <i>Order No.:</i>	<b>164072339</b>	<b>Seite 1 von 28</b> <i>Page 1 of 28</i>
<b>Kunden-Referenz-Nr.:</b> <i>Client reference No.:</i>	<b>N/A</b>	<b>Auftragsdatum:</b> <i>Order date.:</i>	<b>24.08.2016</b>	
<b>Auftraggeber:</b> <i>Client:</i>	<b>Lightcomm Technology Co., Ltd.</b> RM 1808 18/F, FO TAN INDUSTRIAL CENTRE, NOS. 26-28 AU PUI WAN STREET, FO TAN SHATIN NEW TERRITORIES HONG KONG			
<b>Prüfgegenstand:</b> <i>Test item:</i>	<b>Tablet PC</b>			
<b>Bezeichnung / Typ-Nr.:</b> <i>Identification / Type No.:</i>	<b>DL1028W</b> <b>(DIGILAND)</b>			
<b>Auftrags-Inhalt:</b> <i>Order content:</i>	<b>FCC approval</b>			
<b>Prüfgrundlage:</b> <i>Test specification:</i>	CFR47 FCC Part 15: Subpart C Section 15.247 CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 15: Subpart C Section 15.209			
<b>Wareneingangsdatum:</b> <i>Date of receipt:</i>	<b>29.08.2016</b>	<b>Refer to photo documents</b>		
<b>Prüfmuster-Nr.:</b> <i>Test sample No.:</i>	<b>A000415310-002</b> <b>A000415310-003</b>			
<b>Prüfzeitraum:</b> <i>Testing period:</i>	<b>01.09.2016 - 10.10.2016</b>			
<b>Ort der Prüfung:</b> <i>Place of testing:</i>	<b>Emtek (Shenzhen ) Co., Ltd.</b>			
<b>Prüflaboratorium:</b> <i>Testing laboratory:</i>	<b>TÜV Rheinland (Shenzhen) Co., Ltd.</b>			
<b>Prüfergebnis*:</b> <i>Test result*:</i>	<b>Pass</b>			
<b>geprüft von / tested by:</b>		<b>kontrolliert von / reviewed by:</b>		
 <b>28.11.2016</b> <b>Andy Yan / Project Manager</b>		 <b>28.11.2016</b> <b>Owen Tian / Technical Certifier</b>		
<b>Datum</b> <i>Date</i>	<b>Name/Stellung</b> <i>Name/Position</i>	<b>Unterschrift</b> <i>Signature</i>	<b>Datum</b> <i>Date</i>	<b>Name/Stellung</b> <i>Name/Position</i>
				<b>Unterschrift</b> <i>Signature</i>
<b>Sonstiges / Other:</b>				
Only the Bluetooth (Dual mode) functions are reported in this test report. FCC ID: XMF-MID1026IB				
<b>Zustand des Prüfgegenstandes bei Anlieferung:</b> <i>Condition of the test item at delivery:</i>		<b>Prüfmuster vollständig und unbeschädigt</b> <i>Test item complete and undamaged:</i>		
<b>* Legende:</b> 1 = sehr gut                      2 = gut                      3 = befriedigend                      4 = ausreichend                      5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n)    F(ail) = entspricht nicht o.g. Prüfgrundlage(n)    N/A = nicht anwendbar    N/T = nicht getestet <b>Legend:</b> 1 = very good                      2 = good                      3 = satisfactory                      4 = sufficient                      5 = poor P(ass) = passed a.m. test specifications(s)    F(ail) = failed a.m. test specifications(s)    N/A = not applicable    N/T = not tested				
<b>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b> <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

## ***Test Summary***

**5.1.1 ANTENNA REQUIREMENT**

RESULT: Pass

**5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER**

RESULT: Pass

**5.1.3 CONDUCTED POWER SPECTRAL DENSITY**

RESULT: Pass

**5.1.4 6dB BANDWIDTH**

RESULT: Pass

**5.1.5 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 kHz BANDWIDTH**

RESULT: Pass

**5.1.6 RADIATED SPURIOUS EMISSION**

RESULT: Pass

**5.1.7 20dB BANDWIDTH**

RESULT: Pass

**5.1.8 CARRIER FREQUENCY SEPARATION**

RESULT: Pass

**5.1.9 NUMBER OF HOPPING FREQUENCY**

RESULT: Pass

**5.1.10 TIME OF OCCUPANCY**

RESULT: Pass

**5.1.11 CONDUCTED EMISSION ON AC MAINS**

RESULT: Pass

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# 1 General Remarks

## 1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Results of Bluetooth 4.2 (Dual mode) of Conducted Testing

Appendix B: Test Results of Bluetooth 4.2 (Dual mode) of Radiated Spurious Emission and Conducted Emission on AC Mains

# 2 Test Sites

## 2.1 Test Facilities

**Emtek (Shenzhen ) Co., Ltd.**

Bldg. 69, Majialong Industry Zone, Nanshan District, Shenzhen Guangdong, China

FCC Registration No.: 406365

Test site Industry Canada No.: 4480A-2

The tests at the test sites have been conducted under the supervision of a TÜV engineer.

## 2.2 List of Test and Measurement Instruments

**Table 1: List of Test and Measurement Equipment**

**Emtek (Shenzhen ) Co., Ltd.**

<b>Radio Spectrum Test</b>				
<b>Equipment</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Cal. Until</b>
Spectrum Analyzer	Agilent	N9010A	My53470879	17.05.2017
<b>Conducted Emission</b>				
<b>Equipment</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Cal. Until</b>
Test Receiver	R&S	ESCI	26115-010-0027	17.05.2017
L.I.S.N.	R&S	ENV216	101161	17.05.2017
50Ω Coaxial Switch	Anritsu	MP59B	6100175589	17.05.2017
Voltage Probe	R&S	ESH2-Z3	100122	17.05.2017
<b>Spurious Emission</b>				
<b>Equipment</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Cal. Until</b>
EMI Test Receiver	R&S	ESU	1302.6005.26	17.05.2017
Loop Antenna	Schwarzbeck	FMZB 1519	1519-012	17.05.2017
Pre-Amplifier	HP	8447F	2944A07999	17.05.2017
Bilog Antenna	Schwarzbeck	VULB9163	142	17.05.2017
Pre-Amplifier	A.H.	PAM-0126	1415261	17.05.2017
Horn Antenna	Schwarzbeck	BBHA 9120	707	17.05.2017
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170399	17.05.2017
Cable	N/A	3M SF104-26.5	295838/4	17.05.2017
Cable	N/A	6M SF104-26.5	295840/4	17.05.2017
Cable	Schwarzbeck	AK9513	ACRX1	17.05.2017
Cable	Rosenberger	N/A	FP2RX2	17.05.2017
Cable	Schwarzbeck	AK9513	CRPX1	17.05.2017
Cable	Schwarzbeck	AK9513	CRRX2	17.05.2017
Cable	H+B	0.5M SF104-26.5	289147/4	17.05.2017
Cable	H+B	3M SF104-26.5	295838/4	17.05.2017
Cable	H+B	6M SF104-26.5	295840/4	17.05.2017

## 2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

## 2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

## 2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table

Item	Extended Uncertainty
Conducted Emission	$\pm 2.96$ dB
Radiated Emission (up to 1GHz)	$\pm 4.27$ dB
Radiated Emission (above 1GHz)	$\pm 4.96$ dB
Antenna Port Emission	$\pm 3.0$ dB
Temperature	$\pm 0.5$ °C
Humidity	$\pm 3.0$ %

## 2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

## 2.7 Status of Facility Used for Testing

The Emtex (Shenzhen ) Co., Ltd. Test facility located at Bldg. 69, Majialong Industry Zone, Nanshan District, Shenzhen Guangdong, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

### 3 General Product Information

#### 3.1 Product Function and Intended Use

The EUT is a 'Tablet PC' device. It supports Bluetooth 4.2 (Dual mode) and 2.4GHz Wi-Fi 802.11 b/g/n(HT20)/n(HT40) wireless technology. This report is only for Bluetooth functions (DTS and DSS).

For details refer to the User Manual, Technical Description and Circuit Diagram.

#### 3.2 Ratings and System Details

Table 2: Technical Specification of EUT

Technical Specification	Value
Kind of Equipment	Tablet PC
Type Designation	DL1028W
Trade Mark	DIGILAND
FCC ID	XMF-MID1026IB
Operating Frequency	2402 - 2480 MHz
Operating Temperature Range	0 °C ~ +40 °C
Operating Voltage	DC 3.7V 6000mAh via internal rechargeable Li-Poly battery DC 5.0V 2.5A via AC/DC adapter for charging
Testing Voltage	Fully charged DC 3.7V internal rechargeable Li-Poly battery DC 5.0V 2.5A via AC/DC adapter with 120V/60Hz input
Type of Modulation	GFSK, $\pi/4$ DQPSK, 8DPSK
Channel Number	BDR & EDR mode:79 channels; Low Energy mode:40 channels
Channel Separation	BDR & EDR mode:1MHz; Low Energy mode:2MHz
Wireless Technology	Bluetooth 4.2 (Dual mode)
Antenna Type	Integral PIFA Antenna
Antenna Gain	-0.68dBi

**Table 3: RF Channel and Frequency of Bluetooth**

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
00	2402.00	20	2422.00	40	2442.00	60	2462.00
01	2403.00	21	2423.00	41	2443.00	61	2463.00
02	2404.00	22	2424.00	42	2444.00	62	2464.00
03	2405.00	23	2425.00	43	2445.00	63	2465.00
04	2406.00	24	2426.00	44	2446.00	64	2466.00
05	2407.00	25	2427.00	45	2447.00	65	2467.00
06	2408.00	26	2428.00	46	2448.00	66	2468.00
07	2409.00	27	2429.00	47	2449.00	67	2469.00
08	2410.00	28	2430.00	48	2450.00	68	2470.00
09	2411.00	29	2431.00	49	2451.00	69	2471.00
10	2412.00	30	2432.00	50	2452.00	70	2472.00
11	2413.00	31	2433.00	51	2453.00	71	2473.00
12	2414.00	32	2434.00	52	2454.00	72	2474.00
13	2415.00	33	2435.00	53	2455.00	73	2475.00
14	2416.00	34	2436.00	54	2456.00	74	2476.00
15	2417.00	35	2437.00	55	2457.00	75	2477.00
16	2418.00	36	2438.00	56	2458.00	76	2478.00
17	2419.00	37	2439.00	57	2459.00	77	2479.00
18	2420.00	38	2440.00	58	2460.00	<b>78</b>	<b>2480.00</b>
19	2421.00	<b>39</b>	<b>2441.00</b>	59	2461.00	--	--

**Table 4: RF Channel and Frequency of Bluetooth Low Energy**

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
00	2402.00	10	2422.00	20	2442.00	30	2462.00
01	2404.00	11	2424.00	21	2444.00	31	2464.00
02	2406.00	12	2426.00	22	2446.00	32	2466.00
03	2408.00	13	2428.00	23	2448.00	33	2468.00
04	2410.00	14	2430.00	24	2450.00	34	2470.00
05	2412.00	15	2432.00	25	2452.00	35	2472.00
06	2414.00	16	2434.00	26	2454.00	36	2474.00
07	2416.00	17	2436.00	27	2456.00	37	2476.00
08	2418.00	18	2438.00	28	2458.00	38	2478.00
09	2420.00	<b>19</b>	<b>2440.00</b>	29	2460.00	<b>39</b>	<b>2480.00</b>



**Table 5: Frequency Hopping Information**

Technical Specification	Description
Hopping Range	<p>Hereby we declare that the maximum frequency of this device is: 2402-2480MHz. This is according the Bluetooth Core Specification for devices which will be operated in the USA. This was checked during the Bluetooth Qualification tests (Test Case: TRM/CA/04-E).</p>
Hopping Sequence	<p>Example of a 79 hopping sequence in data mode:</p> <p>33,04,21,44,23,42,53,46,55,48,40,59,72,29,76,31,08,73,07,75,09,45,60,39,58,13,47,11,77,52,35,50,65,54,67,56,69,62,71,64, 7,25,27,66,57,70,74,61,78,63,10,41,05,43,15,44,64,68,02,70,06,01,51,03,55,05,03,66,53,49,36,47,</p>
Receiver input bandwidth	<p>The input bandwidth of the receiver is 1MHz. In every connection one Bluetooth device is the master and the other one is the slave. The master determines the hopping sequence. The slave follows this sequence. Both devices shift between RX and TX time slot according to the clock of the master.</p> <p>Additionally the type of connection is set up at the beginning of the connection. The master adapts its hopping frequency and its TX/RX timing according to the packet type of the connection. Also the slave of the connection will use these settings.</p> <p>Repeating of a packer has no influence on the hopping sequence. The hopping sequence generated by the master of the connection will be followed in any case.</p> <p>That means a repeated packet will not be send on the same frequency, it is send on the next frequency of the hopping sequence.</p>

### 3.3 Independent Operation Modes

The basic operation modes are:

- A. On
  - 1. Bluetooth Transmitting mode (BDR & EDR mode)
    - 1) Low Channel
    - 2) Middle Channel
    - 3) High Channel
  - 2. Bluetooth Transmitting mode (Low Energy mode)
    - 1) Low Channel
    - 2) Middle Channel
    - 3) High Channel
- B. On, Transmitting on Hopping channel
- C. On, Bluetooth connecting mode
- D. Off

### 3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

### 3.5 Submitted Documents

- |                              |                         |
|------------------------------|-------------------------|
| - Application Form           | - Parts List            |
| - Block Diagram              | - Schematics            |
| - ID Label and Location Info | - Photo Document        |
| - User Manual                | - Operation Description |

## 4 Test Set-up and Operation Modes

### 4.1 Principle of Configuration Selection

**Radio Spectrum:** The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

**Emission:** The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

### 4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.1, all tests were performed on model DL1028W in this report.

### 4.3 Special Accessories and Auxiliary Equipment

Table 6: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N	Rating
Shielded HDMI Cable	N/A	N/A	N/A	150cm
Monitor	Lenovo	N/A	8#	N/A
AC Adapter	TEKA	TEKA018-0502500UK	N/A	Input: AC 100-240V ~ 50/60Hz 0.5A Max. Output: DC 5.0V ~ 2.5A

### 4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

## 4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

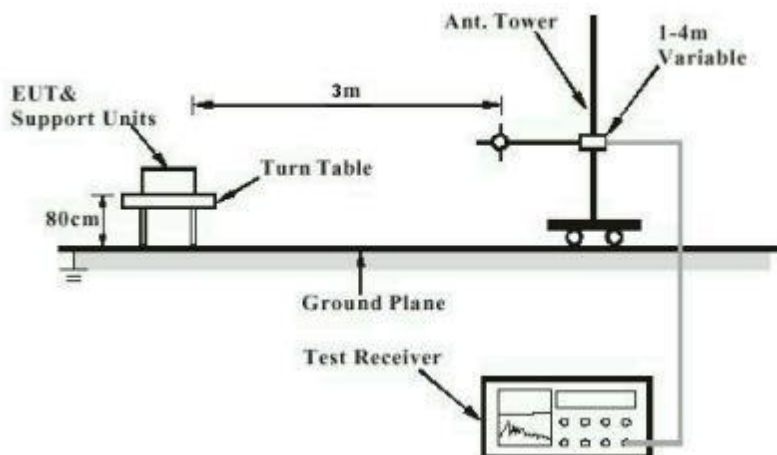
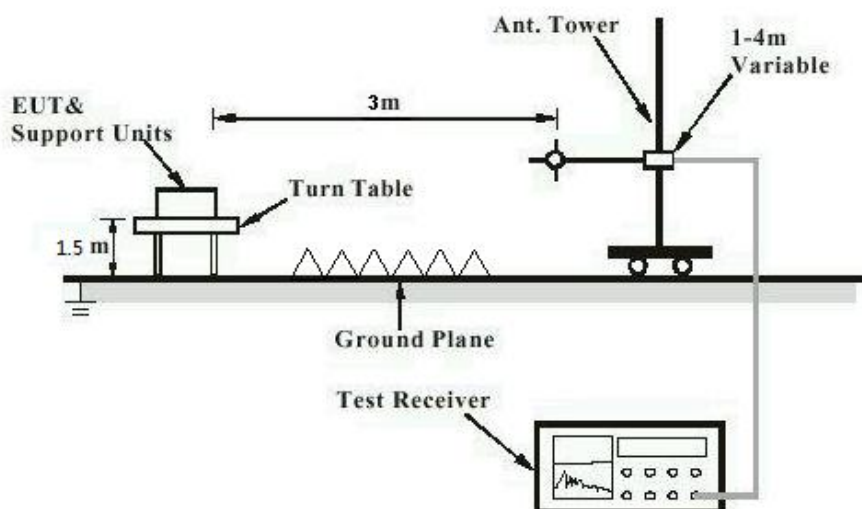
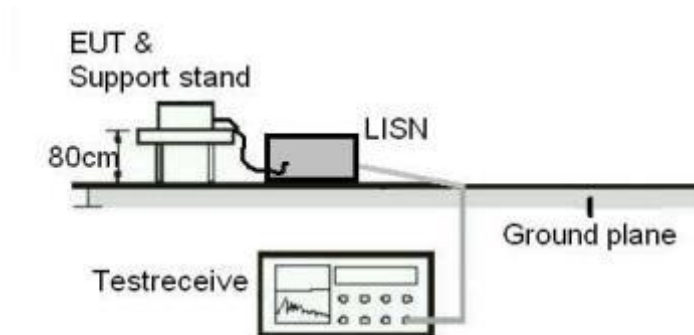


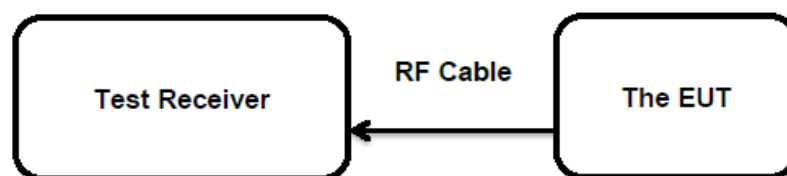
Diagram of Measurement Configuration for Radiation Test (Above 1GHz)



### Diagram of Measurement Configuration for Mains Conduction Measurement



### Diagram of Measurement Configuration for Conducted Transmitter Measurement



## 5 Test Results

### 5.1 Transmitter Requirement & Test Suites

#### 5.1.1 Antenna Requirement

**RESULT:****Pass****Test Specification**

Test standard : FCC Part 15.247(b)(4) and Part 15.203

According to the manufacturer declared, the EUT has an internal antenna, the directional gain of antenna is -0.68 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

## 5.1.2 Maximum Peak Conducted Output Power

**RESULT:**
**Pass**
**Test Specification**

Test standard : FCC Part 15.247(b)(1)&(3)  
 Basic standard : ANSI C63.10: 2013  
 Limits : FHSS < 0.125 Watts, DSSS < 1.0 Watts  
 Kind of test site : Shielded Room

**Test Setup**

Date of testing : 10.10.2016  
 Input voltage : Fully charged DC 3.7V internal rechargeable Li-Poly battery  
 Operation mode : A.1, A.2  
 Test channel : Low / Middle / High  
 Ambient temperature : 24 °C  
 Relative humidity : 50 %  
 Atmospheric pressure : 101 kPa

**Table 7: Test Result of Maximum Peak Conducted Output Power**

Test Mode	Channel Frequency (MHz)	Measured Peak Output Power		Limit (W)
		(dBm)	(W)	
BDR	2402	1.590	1.442	< 0.125
	2441	1.398	1.380	
	2480	1.203	1.319	
EDR	2402	3.102	2.043	< 0.125
	2441	3.001	1.996	
	2480	2.745	1.881	
Low Energy	2402	2.628	1.831	< 1.0
	2440	2.563	1.804	
	2480	2.397	1.737	
Maximum Measured Value		3.102	2.043	/

Note: The cable loss is taken into account in results.

For the measurement records, refer to the appendix A.

### 5.1.3 Conducted Power Spectral Density

**RESULT:****Pass****Test Specification**

Test standard : FCC Part 15.247(e)  
Basic standard : ANSI C63.10: 2013  
Limits : 8 dBm/3kHz  
Kind of test site : Shielded Room

**Test Setup**

Date of testing : 10.10.2016  
Input voltage : Fully charged DC 3.7V internal rechargeable Li-Poly battery  
Operation mode : A.2  
Test channel : Low / Middle / High  
Ambient temperature : 24 °C  
Relative humidity : 50 %  
Atmospheric pressure : 101 kPa

**Table 8: Test Result of Power Spectral Density, Low Energy**

Test Mode	Test Channel (MHz)	Power Spectrum Density(dBm/3kHz)	Limit (dBm/3kHz)
Low Energy	2402	-13.189	< 8.0
	2440	-12.768	
	2480	-13.015	
Maximum Measured Value		-12.768	

Note: The cable loss is taken into account in results.

For the measurement records, refer to the appendix A.



### 5.1.4 6dB Bandwidth

**RESULT:****Pass****Test Specification**

Test standard : FCC Part 15.247(a)(2)  
Basic standard : ANSI C63.10: 2013  
Limits : More than 500 KHz  
Kind of test site : Shielded Room

**Test Setup**

Date of testing : 10.10.2016  
Input voltage : Fully charged DC 3.7V internal rechargeable Li-Poly battery  
Operation mode : A.2  
Test channel : Low / Middle / High  
Ambient temperature : 24 °C  
Relative humidity : 50 %  
Atmospheric pressure : 101 kPa

**Table 9: Test Result of 6dB Bandwidth, Low Energy**

Test Mode	Test Channel (MHz)	-6dB Bandwidth (kHz)	Limit (kHz)
Low Energy	2402	712.4	> 500
	2440	718.1	
	2480	701.1	
Minimum Measured Value		701.1	

Note: The cable loss is taken into account in results.

For the measurement records, refer to the appendix A.

**5.1.5 Conducted Spurious Emissions Measured in 100 kHz Bandwidth****RESULT:****Pass****Test Specification**

Test standard : FCC Part 15.247(d)  
Basic standard : ANSI C63.10: 2013  
Limits : 20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power);

Kind of test site : Shielded Room

**Test Setup**

Date of testing : 10.10.2016  
Input voltage : Fully charged DC 3.7V internal rechargeable Li-Poly battery  
Operation mode : A.1, A.2  
Test channel : Low / Middle / High  
Ambient temperature : 24 °C  
Relative humidity : 50 %  
Atmospheric pressure : 101 kPa

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to following test plot, and compliance is achieved as well.

For the measurement records, refer to the appendix A.

### 5.1.6 Radiated Spurious Emission

**RESULT:****Pass****Test Specification**

Test standard	: FCC Part 15.247(d) & FCC Part 15.205
Basic standard	: ANSI C63.10: 2013
Limits	: Refer to 15.209(a) of FCC part 15.247(d)
Kind of test site	: 3m Semi-anechoic Chamber

**Test Setup**

Date of testing	: 08.10.2016
Input voltage	: Fully charged DC 3.7V internal rechargeable Li-Poly battery DC 5.0V 2.5A via AC/DC adapter with 120V/60Hz input
Operation mode	: A.1, A.2
Test channel	: Low / Middle / High
Ambient temperature	: 24 °C
Relative humidity	: 53 %
Atmospheric pressure	: 101 kPa

**Remark:**

During the pretest the EUT was rotated through three orthogonal axes to determine the attitude that maximizes the emissions. After that the EUT was manually handled to find the orientation that has the maximum emission, which is the orientation shown in the test set-up photos.

Pre-test the EUT in continuous transmitting mode at the low, middle and high channel with different data packet. Compliance test in continuous transmitting mode with EDR mode (DH5) as the worst case was found.

Testing was carried out within frequency range 9kHz to the tenth harmonics.

For the measurement records, refer to the appendix B.

### 5.1.7 20dB Bandwidth

**RESULT:**
**Pass**
**Test Specification**

Test standard : FCC Part 15.247(a)(1)  
 Basic standard : ANSI C63.10: 2013  
 Kind of test site : Shielded Room

**Test Setup**

Date of testing : 10.10.2016  
 Input voltage : Fully charged DC 3.7V internal rechargeable Li-Poly battery  
 Operation mode : A.1  
 Test channel : Low / Middle / High  
 Ambient temperature : 24 °C  
 Relative humidity : 50 %  
 Atmospheric pressure : 101 kPa

**Table 10: Test Result of 20dB Bandwidth**

Test Mode	Channel Frequency (MHz)	20dB Bandwidth (kHz)	2/3 of 20dB Bandwidth (kHz)	Limit (MHz)
BDR	2402	1040	693.3	Within the frequency band 2400 - 2483.5MHz
	2441	1041	694.0	
	2480	1041	694.0	
EDR	2402	1304	869.3	
	2440	1305	870.0	
	2480	1304	869.3	
<b>Maximum Measured Value</b>		1305	870.0	/

For the measurement records, refer to the appendix A.

### 5.1.8 Carrier Frequency Separation

**RESULT:**
**Pass**
**Test Specification**

Test standard : FCC Part 15.247(a)(1)  
 Basic standard : ANSI C63.10: 2013  
 Limits :  $\geq 25\text{kHz}$  or  $2/3$  of 20dB bandwidth, whichever is greater  
 Kind of test site : Shielded Room

**Test Setup**

Date of testing : 10.10.2016  
 Input voltage : Fully charged DC 3.7V internal rechargeable Li-Poly battery  
 Operation mode : B  
 Test channel : Low / Middle / High  
 Ambient temperature : 24 °C  
 Relative humidity : 50 %  
 Atmospheric pressure : 101 kPa

**Table 11: Test Result of Carrier Frequency Separation**

Channel	Channel Frequency (MHz)	Measured Channel Separation (KHz)	Limit (kHz)	Result
Low Channel	2402	999	≥ 25kHz or 2/3 of 20dB bandwidth	Pass
Adjacency Channel	2403			
Middle Channel	2441	990		Pass
Adjacency Channel	2442			
High Channel	2480	996		Pass
Adjacency Channel	2479			

Note:

The limit is maximum  $2/3$  of the 20 dB bandwidth: 870.0KHz.

For the measurement records, refer to the appendix A.

### 5.1.9 Number of Hopping Frequency

**RESULT:****Pass****Test Specification**

Test standard : FCC part 15.247(a)(1)(iii)  
Basic standard : ANSI C63.10: 2013  
Limits :  $\geq 15$  non-overlapping channels  
Kind of test site : Shielded Room

**Test Setup**

Date of testing : 10.10.2016  
Input voltage : Fully charged DC 3.7V internal rechargeable Li-Poly battery  
Operation mode : B  
Ambient temperature : 24 °C  
Relative humidity : 50 %  
Atmospheric pressure : 101 kPa

**Table 12: Test Result of Number of Hopping Frequency**

Frequency Range	Measured Quantity of Hopping Channel	Limit	Result
2402 to 2480 MHz	79	$\geq 15$	Pass

For the measurement records, refer to the appendix A.

**5.1.10 Time of Occupancy****RESULT:****Pass****Test Specification**

Test standard : FCC part 15.247(a)(1)(iii)  
Basic standard : ANSI C63.10: 2013  
Limits : < 0.4s  
Kind of test site : Shielded Room

**Test Setup**

Date of testing : 10.10.2016  
Input voltage : Fully charged DC 3.7V internal rechargeable Li-Poly battery  
Operation mode : B  
Test channel : Low / Middle / High  
Ambient temperature : 24 °C  
Relative humidity : 50 %  
Atmospheric pressure : 101 kPa

**Table 13: Test Result of Time of Occupancy**

Test Mode	Test Channel	Data Packet	Pulse width (ms)	Measured Dwell time(s)	Limit (s)
BDR mode	2402	DH1	0.356	0.114	< 0.4s
		DH3	1.610	0.258	
		DH5	2.880	0.307	
	2441	DH1	0.360	0.115	
		DH3	1.624	0.260	
		DH5	2.860	0.305	
	2480	DH1	0.368	0.118	
		DH3	1.617	0.259	
		DH5	2.880	0.307	
EDR mode	2402	3DH1	0.388	0.124	
		3DH3	1.638	0.262	
		3DH5	2.870	0.306	
	2440	3DH1	0.384	0.123	
		3DH3	1.638	0.262	
		3DH5	2.900	0.309	
	2480	3DH1	0.384	0.123	
		3DH3	1.638	0.262	
		3DH5	2.890	0.308	
Maximum Measured Value			2.900	0.309	

Note:

Dwell time = Pulse width x (Hopping rate / Number of channels) x Period

Period = 0.4 (seconds/ channel) x 79 (channel) = 31.6 seconds

For the measurement records, refer to the appendix A.



**5.1.11 Conducted Emission on AC Mains****RESULT:****Pass****Test Specification**

Test standard	: FCC Part 15.207(a)
Basic standard	: ANSI C63.10: 2013
Frequency range	: 0.15 – 30MHz
Limits	: FCC Part 15.207(a)
Kind of test site	: Shielded Room

**Test Setup**

Date of testing	: 01.09.2016
Operation mode	: B
Earthing	: Not connected
Ambient temperature	: 22 °C
Relative humidity	: 55 %
Atmospheric pressure	: 101 kPa

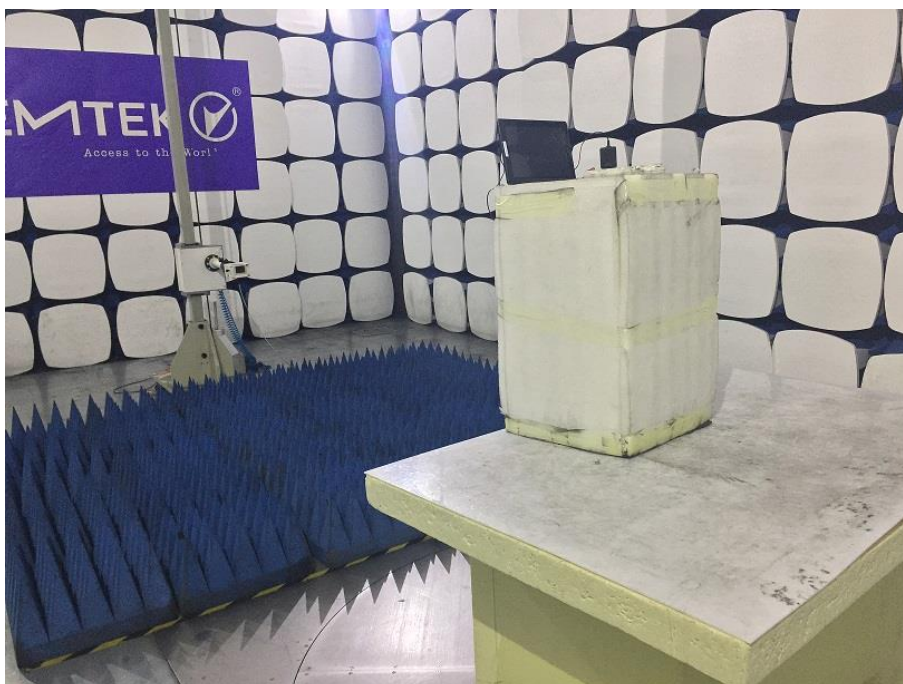
For the measurement records, refer to the appendix B.

## 6 Photographs of the Test Set-Up

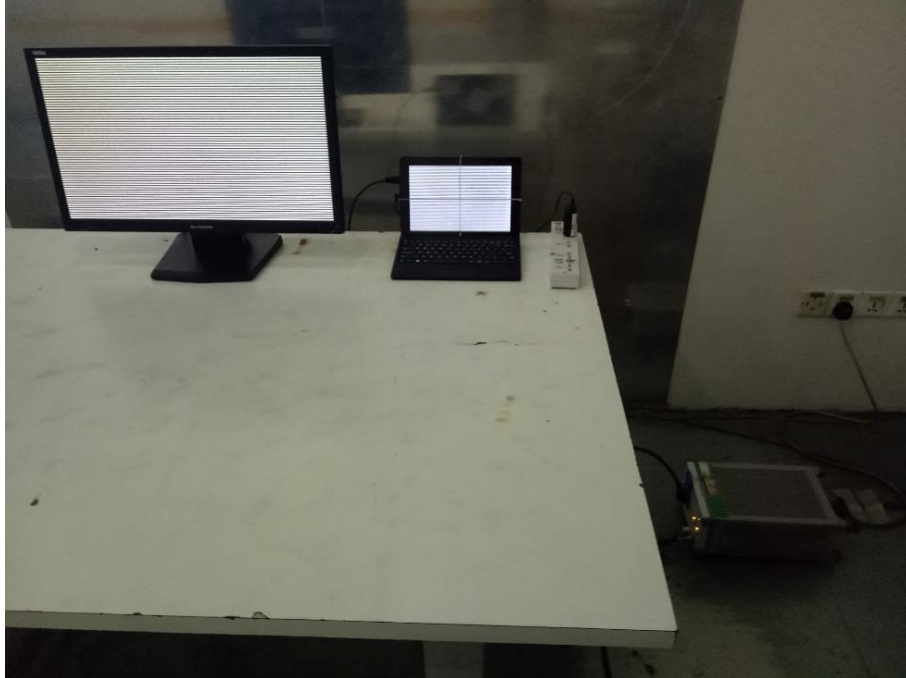
**Photograph 1: Set-up for Radiated Spurious Emission (Up to 1GHz)**



**Photograph 2: Set-up for Radiated Spurious Emission (Above 1GHz)**



**Photograph 3: Set-up for Conducted Emission on AC Mains**



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