

ETSI EN 301 489-1 V2.1.1: 2017/-17 V3.1.1: 2017
EMISSION/IMMUNITY/HARMONICS/FLICKER
COMPLIANCE

Test Report

FOR

Wireless business earbud

Model No.: P326.751, CT16236

Trade Mark: N/A

Report No.: ED170904030E

Issue Date: September 13, 2017

Prepared for

Prepared by

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1 TEST RESULT CERTIFICATION

Applicant :

Manufacture :

EUT : Wireless business earbud

Model : P326.751, CT16236

Trademark : N/A

Measurement Procedure Used:

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
ETSI EN 301 489-1 V2.1.1: 2017	PASS
ETSI EN 301 489-17 V3.1.1: 2017	PASS

The device described above is tested by EMTEK (DONGGUAN) CO., LTD and EMTEK (SHENZHEN) CO., LTD. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and EMTEK (DONGGUAN) CO., LTD. is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the ETSI EN 301 489-1 V2.1.1: 2017 and ETSI EN 301 489-17 V3.1.1: 2017 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of EMTEK (DONGGUAN) CO., LTD.

Date of Test : September 04, 2017 to September 12, 2017

Abby Li

Prepared by :

Abby Li/Editor

Tomas Yang

Reviewer :

Tomas Yang/Supervisor

Approve & Authorized Signer :

[Signature]
Sam Lv/Manager

EMTEK (DONGGUAN) CO., LTD.
TESTING

Modified History

Version	Report No.	Revision Date	Summary
V1.0	Original Report	/	ED170904030E

2 EUT DESCRIPTION

Product:	Wireless business earbud		
Model Number:	P326.751, CT16236 (note: The models are the same except appearance and model number, so we prepare P326.751 for the Full test)		
Trademark:	N/A		
Modulation:	<input type="checkbox"/> WIFI	DSSS with DBPSK/DQPSK/CCK for 802.11b; OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n;	
	<input checked="" type="checkbox"/> BT-CM	GFSK, $\pi/4$ -DQPSK, 8DPSK	
	<input type="checkbox"/> BT-LE	GFSK	
Frequency Range:	<input type="checkbox"/> WIFI	<input type="checkbox"/> 2412-2472MHz for 802.11b; <input type="checkbox"/> 2412-2472MHz for 802.11g; <input type="checkbox"/> 2412-2472MHz for 802.11n(HT20); <input type="checkbox"/> 2422-2462MHz for 802.11n(HT40);	
	<input checked="" type="checkbox"/> BT-CM	<input checked="" type="checkbox"/> 2402-2480MHz	
	<input type="checkbox"/> BT-LE	<input checked="" type="checkbox"/> 2402-2480MHz	
Number of Channels:	<input type="checkbox"/> WIFI	<input type="checkbox"/> 13 Channels for 802.11b; <input type="checkbox"/> 13 Channels for 802.11g; <input type="checkbox"/> 13 Channels for 802.11n(HT20); <input type="checkbox"/> 9 Channels for 802.11n(HT40);	
	<input checked="" type="checkbox"/> BT-CM	<input checked="" type="checkbox"/> 79 Channels	
	<input type="checkbox"/> BT-LE	<input checked="" type="checkbox"/> 40 Channels	
Smart system:	<input type="checkbox"/> WIFI	<input type="checkbox"/> SISO	<input type="checkbox"/> MIMO
	<input checked="" type="checkbox"/> BT-CM	<input checked="" type="checkbox"/> SISO	<input type="checkbox"/> MIMO
	<input type="checkbox"/> BT-LE	<input checked="" type="checkbox"/> SISO	<input type="checkbox"/> MIMO
Max Transmit Power:	<input type="checkbox"/> WIFI		
	<input checked="" type="checkbox"/> BT-CM	-0.74dBm	
	<input type="checkbox"/> BT-LE		
Antenna:	<input type="checkbox"/> WIFI		
	<input checked="" type="checkbox"/> BT-CM	PCB Antenna	
	<input type="checkbox"/> BT-LE		
Antenna Gain:	<input type="checkbox"/> WIFI		
	<input checked="" type="checkbox"/> BT-CM	0 dBi	
	<input type="checkbox"/> BT-LE		
Power supply:	<input checked="" type="checkbox"/> DC 3.7V Battery		
	<input type="checkbox"/> AC 230V/50Hz for adapter		
Temperature Range:	-20°C ~ +55°C		

3 SUMMARY OF TEST RESULT

Applicable Standard: ETSI EN 301 489-1 v2.1.1: 2017			
Standard	Description of Test Item	Result	Remarks
EN 55032:2015	Conducted Emissions From The AC Mains Power Ports Emission Test 150 kHz – 30 MHz	-	Note1
	Asymmetric Mode Conducted Emissions Emission Test 150 kHz – 30 MHz	-	Note1
	Radiated Emissions 30 MHz – 1000 MHz @ 3 m 1000 MHz – 6000 MHz @ 3 m	PASS	
EN 61000-3-2:2006 +A1:2009+A2:2009	Harmonic current emission test	-	Note1
EN 61000-3-3:2013	Voltage fluctuations & flicker tests	-	Note1
EN 61000-4-2:2009	Electrostatic Discharge ± 2, 4 kV Contact Discharge ± 2, 4, 8 kV Air Discharge Standard Criterion B	PASS	
EN 61000-4-3:2006 +A1:2008+A2:2010	Radio frequency electromagnetic field Frequency Range: 80 MHz to 6000 MHz and Electromagnetic field: 3 V/m (unmodulated, r.m.s) Amplitude modulated: 80 % AM (1 kHz) Standard Criterion A	PASS	
EN 61000-4-4:2012	Fast transients, common mode AC ports 5/50 ns, ± 1 kV, 5 kHz DC ports 5/50 ns, ± 0.5 kV I/O ports 5/50 ns, ± 0.5 kV, 5 kHz Standard Criterion B	-	Note1
EN 61000-4-5:2006	Surge (Power port 1.2/50 µs, Signal port 10/700 µs / 1.2/50 µs) AC ports: line to line: ± 0.5 kV, 1 kV line to earth: ± 0.5 kV, 1 kV, 2 kV indoor signal ports and telecommunication ports: ± 0.5 kV outdoor signal ports and telecommunication ports for symmetrically operated: ± 1 kV non-symmetrically operated: ± 0.5 kV, 1 kV Standard Criterion B	-	Note1
EN 61000-4-6:2009	Radio frequency, common mode Frequency Range: 150 kHz to 80 MHz Electromagnetic field: 3 V (unmodulated, r.m.s) Amplitude modulated: 80 % AM (1 kHz) Standard Criterion A	-	Note1
EN 61000-4-11:2004	Voltage dips and interruptions voltage dip 0% 10 ms (0.5 cycles) – Standard Criterion B voltage dip 0% 20 ms (1.0 cycles) – Standard Criterion B voltage dip 70% (at 50 Hz) 500 ms (25 cycles) – Standard Criterion C voltage interruption 0% (at 50 Hz) 5000 ms (250 cycles) – Standard Criterion C	-	Note1
Note1: Not applicable			

4 TEST METHODOLOGY

4.1 GENERAL DESCRIPTION OF APPLIED STANDARDS

According to its specifications, the EUT must comply with the requirements of the following standards:
ETSI EN 301 489-1: ElectroMagnetic Compatibility (EMC) standard for radio equipment and services;
Part 1: Common technical requirements; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU and the essential requirements of article 6 of Directive 2014/30/EU
ETSI EN 301 489-17: ElectroMagnetic Compatibility (EMC) standard for radio equipment and services;
Part 17: Specific conditions for Broadband Data Transmission Systems; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU

4.2 MEASUREMENT EQUIPMENT USED

FOR RADIATED EMISSION MEASUREMENT

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCI	100137	May 16, 2017	1 Year
2.	Bilog Antenna	Schwarzbeck	VULB9163	000141	May 16, 2017	1 Year
3.	Power Amplifier	CDS	RSU-M352	818	May 16, 2017	1 Year
4.	Power Amplifier	HP	8447F	OPT H64	May 16, 2017	1 Year
5.	Color Monitor	SUNSPO	SP-140A	N/A	May 16, 2017	1 Year
6.	Single Line Filter	JIANLI	XL-3	N/A	May 16, 2017	1 Year
7.	Single Phase Power Line Filter	JIANLI	DL-2X100B	N/A	May 16, 2017	1 Year
8.	3 Phase Power Line Filter	JIANLI	DL-4X100B	N/A	May 16, 2017	1 Year
9.	DC Power Filter	JIANLI	DL-2X50B	N/A	May 16, 2017	1 Year
10.	Cable	Schwarzbeck	PLF-100	519489	May 17, 2017	1 Year
11.	Cable	Rosenberger	CIL02	A0783566	May 17, 2017	1 Year
12.	Cable	Rosenberger	RG 233/U	525178	May 17, 2017	1 Year

FOR ELECTROSTATIC DISCHARGE TEST

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	ESD Tester	SCHAFFNER	NSG432	1285	May 16, 2017	1 Year

FOR RADIO-FREQUENCY, ELECTROMAGNETIC FIELD IMMUNITY

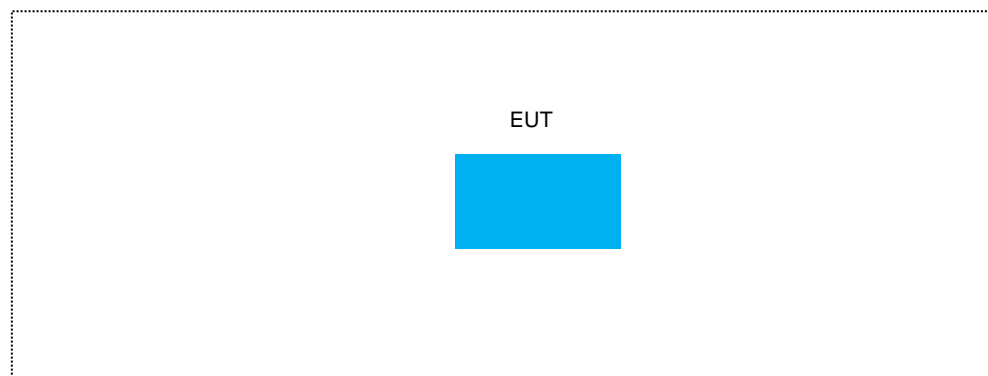
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Signal Generator	Agilent	N5181A	MY50145187	May 16, 2017	1 Year
2	RF Power Meter. Dual Channel	BOONTON	4232A	10539	May 17, 2017	1 Year
3	50ohm Diode Power Sensor	BOONTON	51011EMC	34236/34238	May 17, 2017	1 Year
4	Field Strength Meter	DARE	RSS1006A	10I00037SO2 2	May 17, 2017	1 Year
5	50ohm Diode Power Sensor	BOONTON	51011EMC	36164	May 17, 2017	1 Year
6	Power Amplifier	MILMEGA	80RF1000-175	1059345	May 16, 2017	1 Year
7	Power Amplifier	MILMEGA	AS0102-55	1018770	May 16, 2017	1 Year
8	Power Amplifier	MILMEGA	AS1860-50	1059346	May 16, 2017	1 Year
9	Log.-Per. Antenna	Schwarzbeck	VULP 9118E	811	May 17, 2017	1 Year
10	Broad-Band Horn Antenna	Schwarzbeck	STLP 9149	9149-227	May 17, 2017	1 Year
11	Multi-function interface system	DARE	CTR1009B	12I00250SNO 72	N/A	N/A
12	Automatic switch group	DARE	RSW1004A	N/A	N/A	N/A

4.3 DESCRIPTION OF TEST MODES

Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Mode	Description
1	BT Link
2	BT Idle
3	

4.4 BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM



4.5 SUPPORT EQUIPMENT

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Note
1.	N/A	N/A	N/A	N/A	N/A

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

5 FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

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

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and CISPR Publication 22.

5.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description	
EMC Lab.	<ul style="list-style-type: none">: Accredited by CNAS, 2015.09.24: The certificate is valid until 2018.07.03: The Laboratory has been assessed and proved to be in compliance: with CNAS/CL01:2006The Certificate Registration Number is L3150 Registered on Industry Canada, January 13, 2017The Certificate Number is 9444A

6 TEST SYSTEM UNCERTAINTY

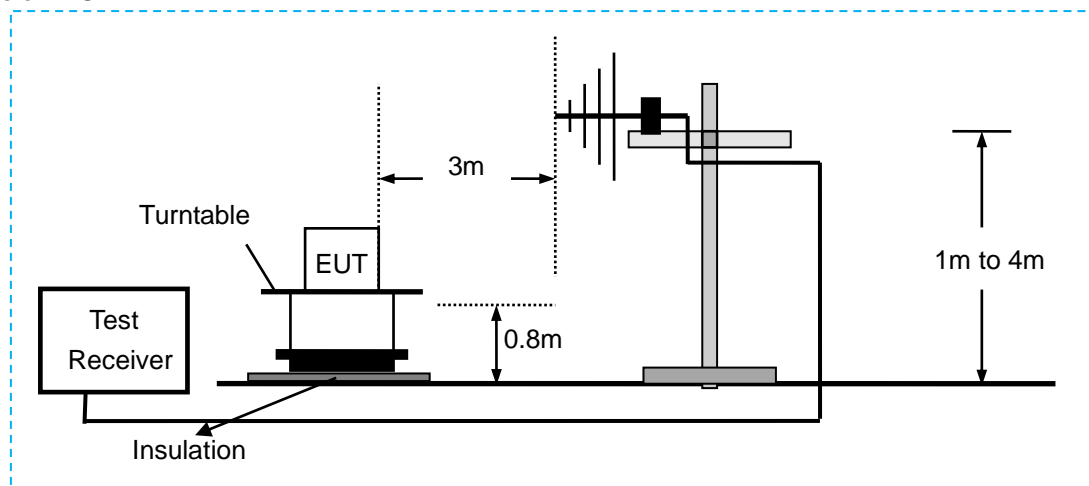
Maximum measurement uncertainty of the test system

Test Item	Measurement Uncertainty
Conducted Emissions	2.96dB(9k~150kHz Conduction 1#) 2.74dB(150k-30MHz Conduction 1#)
Radiated Emission(3m Chamber)	3.78dB (30M~1GHz Polarize: H) 4.27dB (30M~1GHz Polarize: V) 3.7dB (1~18GHz Polarize: H) 3.6dB (1~18GHz Polarize: V)
Voltage fluctuations & flicker tests	0.07%
Harmonic current emission test	1.8%
Electrostatic Discharge	6 %
Radio frequency, common mode	1.45(Using CDN Test) 2.37(Using EM Clamp Test)
Radio frequency electromagnetic field	2.10dB(80MHz-1000MHz) 1.76dB(1000MHz-6000MHz)
Uncertainty for test site temperature and humidity	0.6℃ 4%

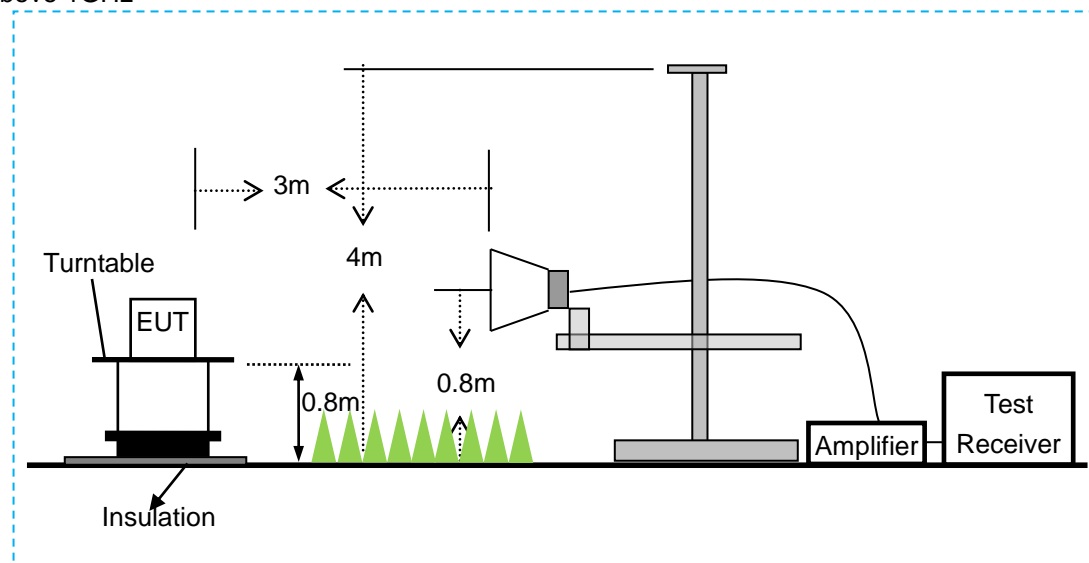
7 RADIATED EMISSIONS

7.1 BLOCK DIAGRAM OF TEST SETUP

Below 1GHz



Above 1GHz



7.2 MEASURING STANDARD

ETSI EN 301 489-1 Clause 8.2
EN 55032: 2015 Clause A.2

7.3 RADIATED EMISSION LIMITS (CLASS B)

All emanations from a class B device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

Table clause	Frequency range MHz	Measurement			Class B limits dB(mV/m)
		Facility (see Table A.1)	Distance m	Detector type /bandwidth	
A4.1	30 to 230	OATS/SAC	10	Quasi Peak / 120 kHz	30
	230 to 1 000				37
A4.2	30 to 230	OATS/SAC	3		40
	230 to 1 000				47
A4.3	30 to 230	FAR	10	Quasi Peak / 120 kHz	32 to 25
	230 to 1 000				32
A4.4	30 to 230	FAR	3		42 to 35
	230 to 1 000				42
Apply only table clause A4.1 or A4.2 or A4.3 or A4.4 across the entire frequency range. These requirements are not applicable to the local oscillator and harmonics frequencies of equipment covered by Table A.6.					

Table clause	Frequency range MHz	Measurement			Class B limits dB(mV/m)
		Facility (see Table A.1)	Distance m	Detector type/ bandwidth	
A5.1	1 000 to 3 000	FSOATS	3	Average/ 1 MHz	50
	3 000 to 6 000				54
A5.2	1 000 to 3 000			Peak/ 1 MHz	70
	3 000 to 6 000				74
Apply A5.1 and A5.2 across the frequency range from 1 000 MHz to the highest required frequency of measurement derived from Table 1.					

7.4 EUT CONFIGURATION ON MEASUREMENT

The EN 55032 regulations test method must be used to find the maximum emission during radiated emission measurement.

7.5 OPERATING CONDITION OF EUT

Operating Condition of EUT is listed in section 4.4.

7.6 TEST PROCEDURE

The EUT is placed on a turntable which is 0.8 meter high above the ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 and 10 meters away from the receiving antenna that is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Bilog antenna (calibrated by Dipole Antenna) and horn antenna are used as a receiving antenna. Both horizontal and vertical polarization of the antenna is set on test.

ResultdB(uV/m):

Measurement Level dB(uV/m)= Antenna factor(dB) –Amp Factor +Cable Loss(dB) +Reading Level dB(uV)

Note: Antenna factor(dB) and Cable Loss(dB) are included Correct factor(dB) in test software.

Margin QP(db)=Reading Level dB(uV/m)- Limit dB(uV/m) for 30~1GHz
Over(db)= Emission Level dB(uV/m)- Limit dB(uV/m) for above 1GHz

The bandwidth of the Receiver is set at 120 kHz (For 30MHz to 1000MHz).
The resolution bandwidth of the receiver RS ESU26 was set at 1MHz ((For above 1GHz.).
The frequency range for 1GHz to 6GHz was checked with peak and average detector, measurement distance is 3m in 3m Anechoic chamber.

The frequency range for 30MHz to 1GHz was checked with Quasi-peak detector, measurement distance is 3m in 3m semi-chamber.

7.7 MEASURING RESULTS

PASS.

All of the Configurations were tested,
the data of the worst case are recorded in the appendix A.

8 PERFORMANCE CRITERIA

8.1 GENERAL PERFORMANCE CRITERIA

The performance criteria are:

- performance criteria A for immunity tests with phenomena of a continuous nature;
- performance criteria B for immunity tests with phenomena of a transient nature;
- performance criteria C for immunity tests with power interruptions exceeding a certain time.

The equipment shall meet the minimum performance criteria as specified in the following clauses.

8.2 PERFORMANCE TABLE

Criteria	During test	After test
A	Shall operate as intended. (see note 1). Shall be no loss of function. Shall be no unintentional transmissions.	Shall operate as intended. Shall be no degradation of performance (see note 3). Shall be no loss of function. Shall be no loss of stored data or user programmable functions.
B	May show loss of function (one or more). May show degradation of performance (see note 2). Shall be no unintentional transmissions.	Functions shall be self-recoverable. Shall operate as intended after recovering. Shall be no degradation of performance (see note 3). Shall be no loss of stored data or user programmable functions.
C	May be loss of function (one or more).	Functions shall be recoverable by the operator. Shall operate as intended after recovering. Shall be no degradation of performance (see note 3).
<p>NOTE 1: Operate as intended during the test allows a level of degradation not below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance.</p> <p>If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.</p> <p>NOTE 2: Degradation of performance during the test is understood as a degradation to a level not below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance.</p> <p>If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.</p> <p>NOTE 3: No degradation of performance after the test is understood as no degradation below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. After the test no change of actual operating data or user retrievable data is allowed.</p> <p>If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.</p>		

8.3 PERFORMANCE CRITERIA FOR CONTINUOUS PHENOMENA APPLIED TO TRANSMITTERS (CT)

The performance criteria A shall apply.

Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an ACKnowledgement (ACK) or Not ACKnowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

8.4 PERFORMANCE CRITERIA FOR TRANSIENT PHENOMENA APPLIED TO TRANSMITTERS (TT)

The performance criteria B shall apply, except for voltage dips of 100 ms and voltage interruptions of 5 000 ms duration, for which performance criteria C shall apply.

Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an acknowledgement (ACK) or not-acknowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

8.5 PERFORMANCE CRITERIA FOR CONTINUOUS PHENOMENA APPLIED TO RECEIVERS (CR)

The performance criteria A shall apply.

Where the EUT is a transceiver, under no circumstances, shall the transmitter operate unintentionally during the test. In systems using acknowledgement signals, it is recognized that an ACK or NACK transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

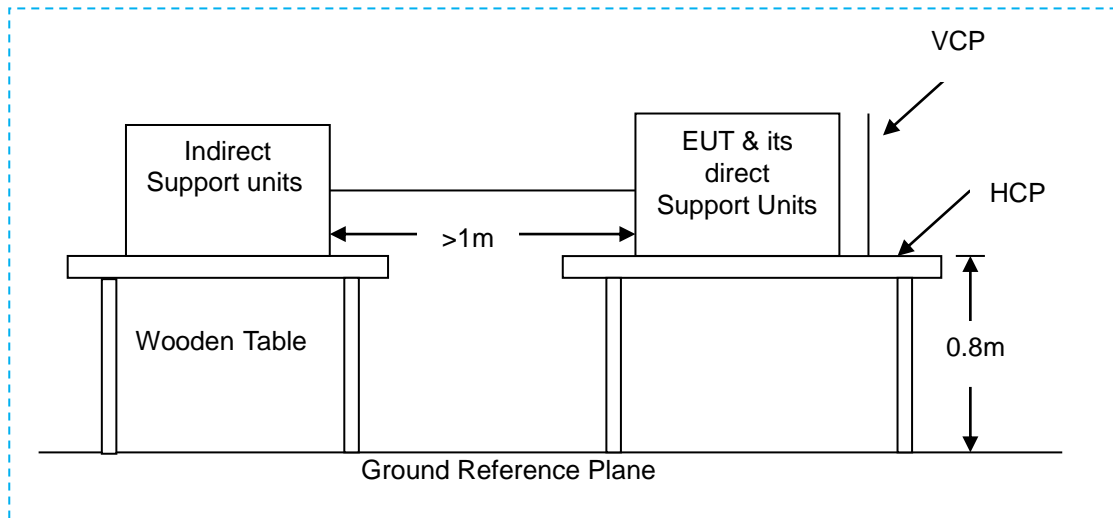
8.6 PERFORMANCE CRITERIA FOR TRANSIENT PHENOMENA APPLIED TO RECEIVERS (TR)

The performance criteria B shall apply, except for voltage dips of 100 ms and voltage interruptions of 5 000 ms duration for which performance criteria C shall apply.

Where the EUT is a transceiver, under no circumstances, shall the transmitter operate unintentionally during the test. In systems using acknowledgement signals, it is recognized that an ACK or NACK transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

9 ELECTROSTATIC DISCHARGE

9.1 BLOCK DIAGRAM OF TEST SETUP



9.2 TEST STANDARD

According to ETSI EN 301 489-1 Clause 9.3 and EN 61000-4-2

9.3 SEVERITY LEVELS AND PERFORMANCE CRITERION

9.3.1 SEVERITY LEVEL

Level	Test Voltage Contact Discharge (kV)	Test Voltage Air Discharge (kV)
1	±2	±2
2	±4	±4
3	±6	±8
4	±8	±15
X	Special	Special

9.3.2 PERFORMANCE CRITERION

<input type="checkbox"/> CT	<input checked="" type="checkbox"/> TT	<input type="checkbox"/> CR	<input checked="" type="checkbox"/> TR
-----------------------------	--	-----------------------------	--

9.4 OPERATING CONDITION OF EUT

Operating Condition of EUT are listed in section 4.4.

9.5 TEST PROCEDURE

Please refer to ETSI EN 301 489-1 Clause 9.3.2 and EN 61000-4-2 for the measurement methods.

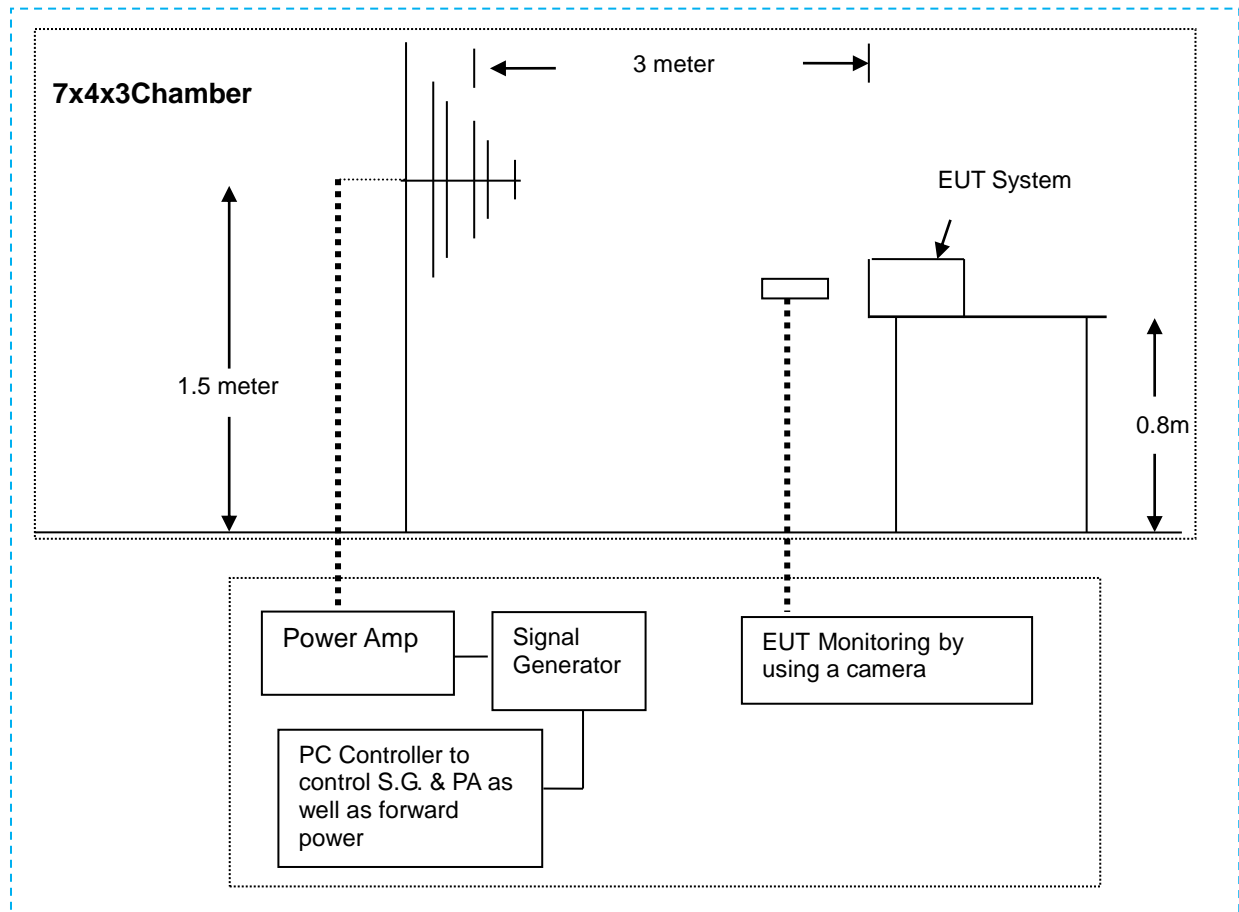
9.6 TEST RESULTS

PASS.

All of the Configurations were tested,
the data of the worst case are recorded in the appendix A.

10 RADIO FREQUENCY ELECTROMAGNETIC FIELD

10.1 BLOCK DIAGRAM OF TEST SETUP



10.2 TEST STANDARD

According to ETSI EN 301 489-1 Clause 9.2 and EN 61000-4-3

10.3 SEVERITY LEVELS AND PERFORMANCE CRITERION

10.3.1 SEVERITY LEVELS

Level	Field Strength V/m
1	1
2	3
3	10
X	Special

10.3.2 PERFORMANCE CRITERION

<input checked="" type="checkbox"/> CT	<input type="checkbox"/> TT	<input checked="" type="checkbox"/> CR	<input type="checkbox"/> TR
--	-----------------------------	--	-----------------------------

10.4 OPERATING CONDITION OF EUT

Operating Condition of EUT are listed in section 4.4.

10.5 TEST PROCEDURE

Please refer to ETSI EN 301 489-1 Clause 9.2.2 and EN 61000-4-3 for the measurement methods.

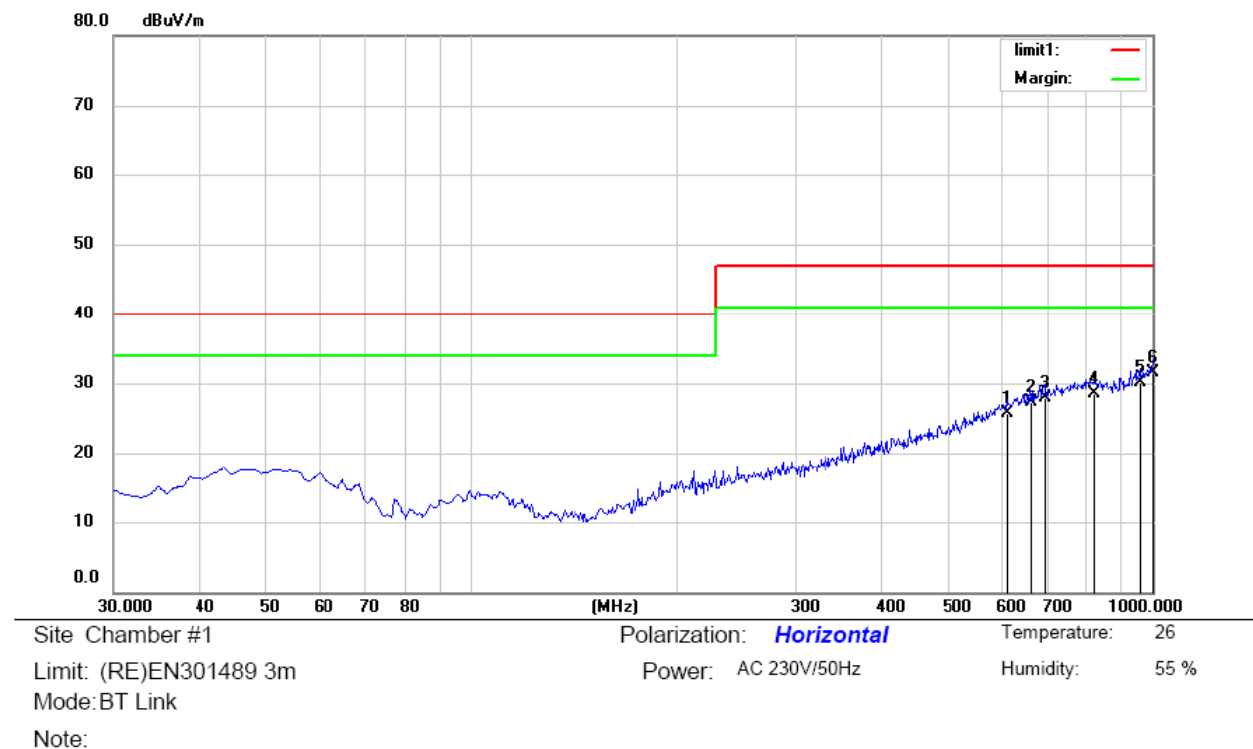
10.6 TEST RESULTS

PASS.

All of the Configurations were tested,
the data of the worst case are recorded in the appendix A.

11 APPENDIX A TEST DATA

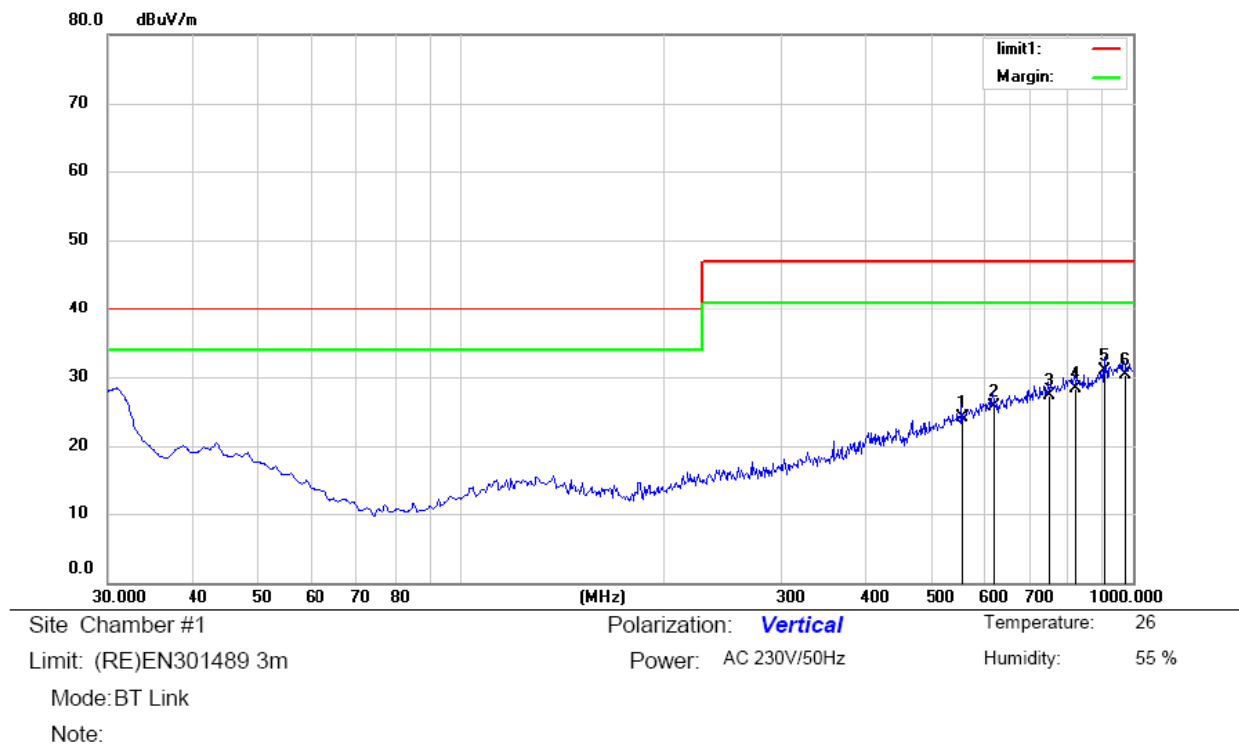
11.1 DATA FOR RADIATED EMISSIONS (THE WORST OF TEST MODE (BT LINK))



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		613.9400	31.53	-5.90	25.63	47.00	-21.37	QP		
2		662.4400	32.21	-4.98	27.23	47.00	-19.77	QP		
3		696.3900	32.15	-4.28	27.87	47.00	-19.13	QP		
4		824.4300	31.80	-3.24	28.56	47.00	-18.44	QP		
5		959.2600	32.00	-1.98	30.02	47.00	-16.98	QP		
6	*	1000.000	32.28	-0.85	31.43	47.00	-15.57	QP		

*:Maximum data x:Over limit !:over margin

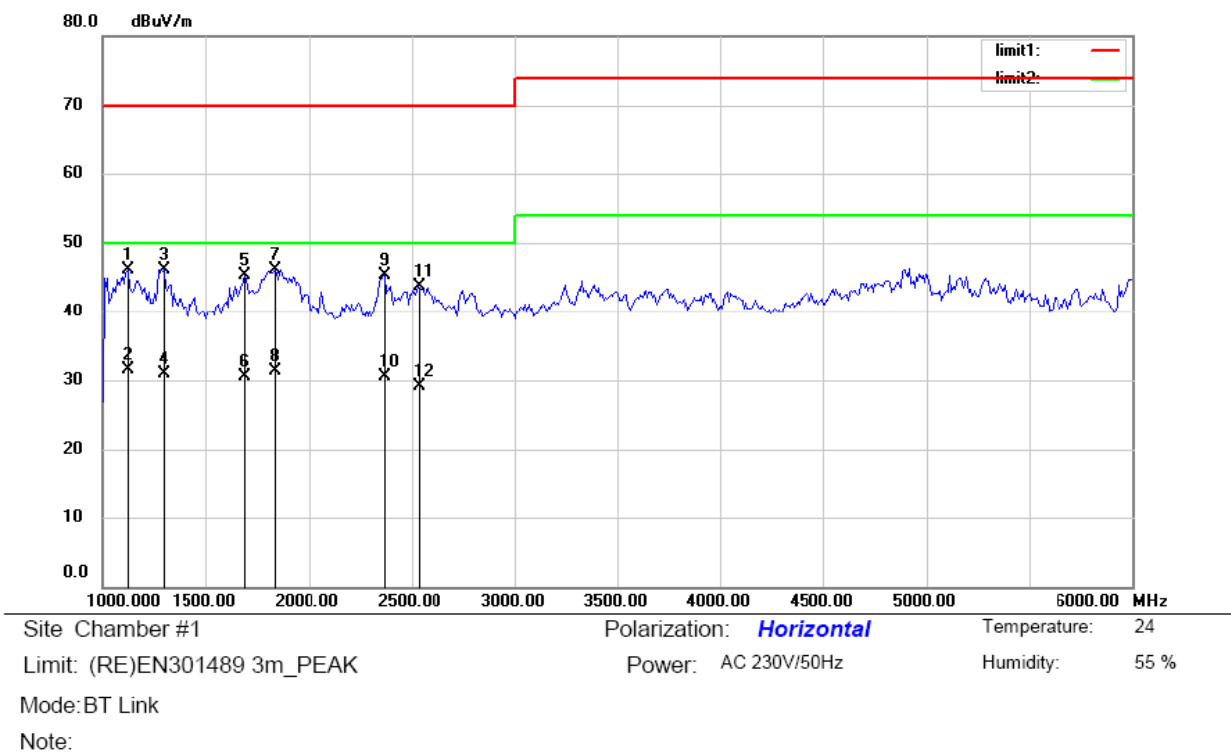
Operator: Lin



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1		557.6800	32.11	-8.02	24.09	47.00	-22.91	QP		
2		618.7900	32.82	-7.16	25.66	47.00	-21.34	QP		
3		747.8000	32.19	-4.79	27.40	47.00	-19.60	QP		
4		819.5800	32.33	-3.96	28.37	47.00	-18.63	QP		
5	*	906.8800	34.01	-3.15	30.86	47.00	-16.14	QP		
6		969.9300	32.20	-1.97	30.23	47.00	-16.77	QP		

*:Maximum data x:Over limit !:over margin

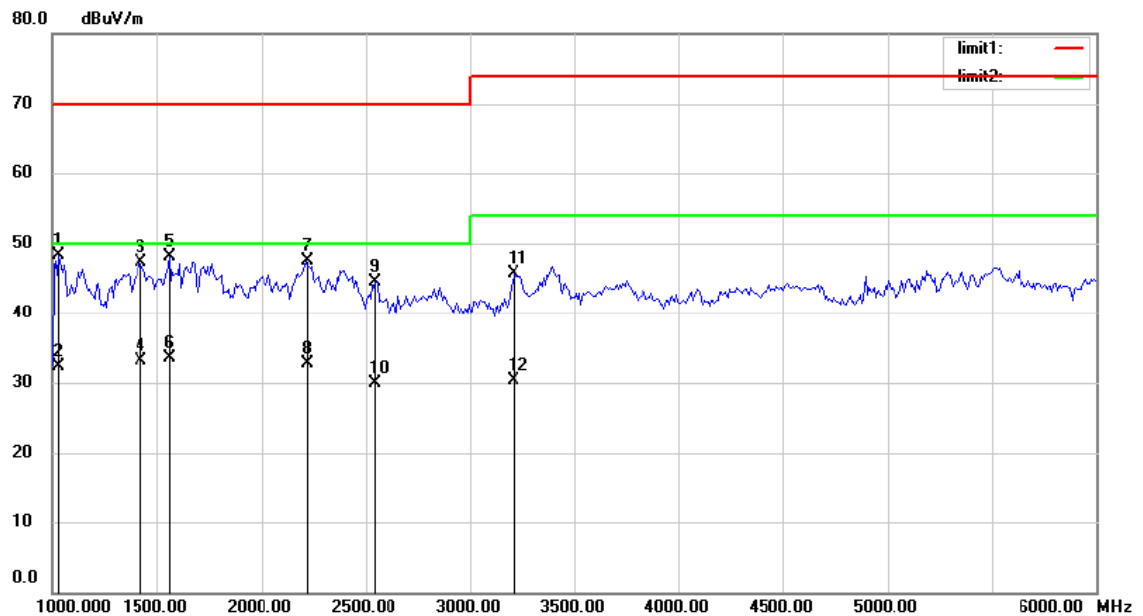
Operator: Lin



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		1120.192	59.06	-13.02	46.04	70.00	-23.96	peak		
2	*	1120.192	44.45	-13.02	31.43	50.00	-18.57	AVG		
3		1296.474	57.89	-11.80	46.09	70.00	-23.91	peak		
4		1296.474	42.80	-11.80	31.00	50.00	-19.00	AVG		
5		1689.102	57.28	-12.01	45.27	70.00	-24.73	peak		
6		1689.102	42.58	-12.01	30.57	50.00	-19.43	AVG		
7		1833.333	57.46	-11.43	46.03	70.00	-23.97	peak		
8		1833.333	42.78	-11.43	31.35	50.00	-18.65	AVG		
9		2370.192	54.00	-8.62	45.38	70.00	-24.62	peak		
10		2370.192	39.05	-8.62	30.43	50.00	-19.57	AVG		
11		2530.449	52.19	-8.55	43.64	70.00	-26.36	peak		
12		2530.449	37.59	-8.55	29.04	50.00	-20.96	AVG		

*:Maximum data x:Over limit !:over margin

Operator: Lin



Site Chamber #1 Polarization: **Vertical** Temperature: 24
 Limit: (RE)EN301489 3m_PEAK Power: AC 230V/50Hz Humidity: 55 %
 Mode: BT Link
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		1032.051	61.51	-13.30	48.21	70.00	-21.79	peak			
2		1032.051	45.51	-13.30	32.21	50.00	-17.79	AVG			
3		1416.667	59.07	-11.86	47.21	70.00	-22.79	peak			
4		1416.667	45.03	-11.86	33.17	50.00	-16.83	AVG			
5		1560.897	60.07	-12.04	48.03	70.00	-21.97	peak			
6	*	1560.897	45.45	-12.04	33.41	50.00	-16.59	AVG			
7		2217.949	56.07	-8.49	47.58	70.00	-22.42	peak			
8		2217.949	41.27	-8.49	32.78	50.00	-17.22	AVG			
9		2546.474	53.01	-8.48	44.53	70.00	-25.47	peak			
10		2546.474	38.48	-8.48	30.00	50.00	-20.00	AVG			
11		3211.538	52.89	-7.12	45.77	74.00	-28.23	peak			
12		3211.538	37.48	-7.12	30.36	54.00	-23.64	AVG			

*:Maximum data x:Over limit !:over margin

Operator: Lin

11.2 DATA FOR ELECTROSTATIC DISCHARGE

Electrostatic Discharge Test Results

Applicant			
EUT	Wireless business earbud	Test Date	September 08, 2017
M/N	P326.751	Temperature	22°C
Power Supply	Battery 3.7V	Humidity	50%
Air discharge	$\pm 2.0, \pm 4.0 \text{ kV}, \pm 8.0 \text{ kV}$	Test engineer	CSL
Contact discharge	$\pm 2.0, \pm 4.0 \text{ kV}$	Criterion	TT&TR
Test Mode	BT Link, BT Idle		
Location		Kind A-Air Discharge C-Contact Discharge	Result
Slots		A	CT&CR
Port		A, C	CT&CR
HCP of front, rear, left, right		C	CT&CR
VCP of front, rear, left, right		C	CT&CR
Note: N/A			

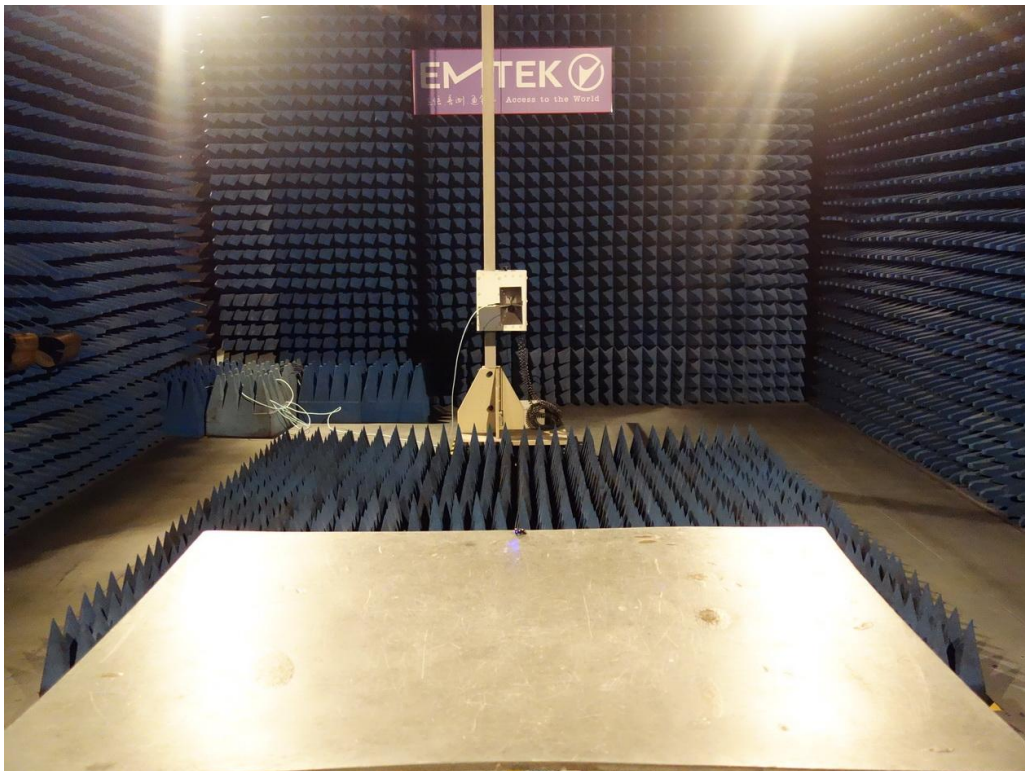
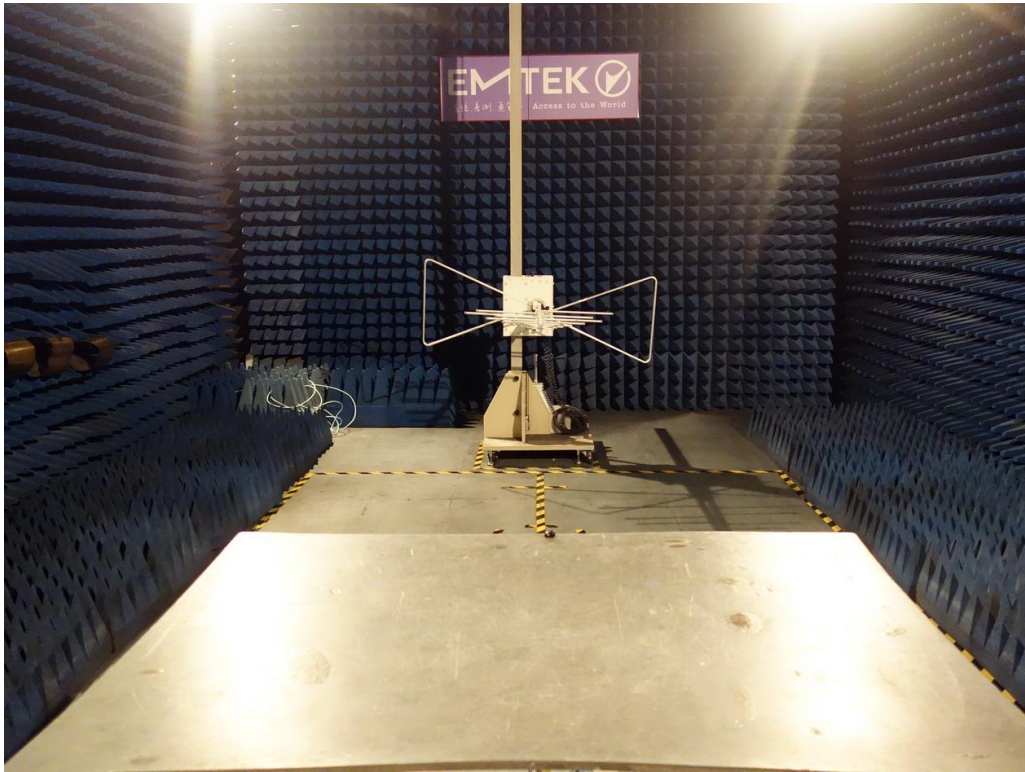
11.3 DATA FOR RADIO FREQUENCY ELECTROMAGNETIC FIELD

Radio-Frequency, Electromagnetic Field Test Results Test Results

Applicant				
EUT	Wireless business earbud		Test Date	September 11, 2017
M/N	P326.751		Temperature	22°C
Field Strength	3 V/m		Humidity	50%
Power Supply	Battery 3.7V		Criterion	CT&CR
Test engineer	CSL		Frequency Range	80MHz to 6000MHz
Modulation	<input type="checkbox"/> None		<input type="checkbox"/> Pulse	<input checked="" type="checkbox"/> AM 1kHz 80%
Steps	1%			
Test Mode	BT Link, BT Idle			
	Horizontal	Vertical	Horizontal	Vertical
Front	CT&CR	CT&CR		
Right	CT&CR	CT&CR		
Rear	CT&CR	CT&CR		
Left	CT&CR	CT&CR		
Note:				

12 APPENDIX B PHOTOGRAPHS OF TEST SETUP

12.1 PHOTO FOR RADIATED EMISSIONS



12.2 PHOTO FOR ELECTROSTATIC DISCHARGE

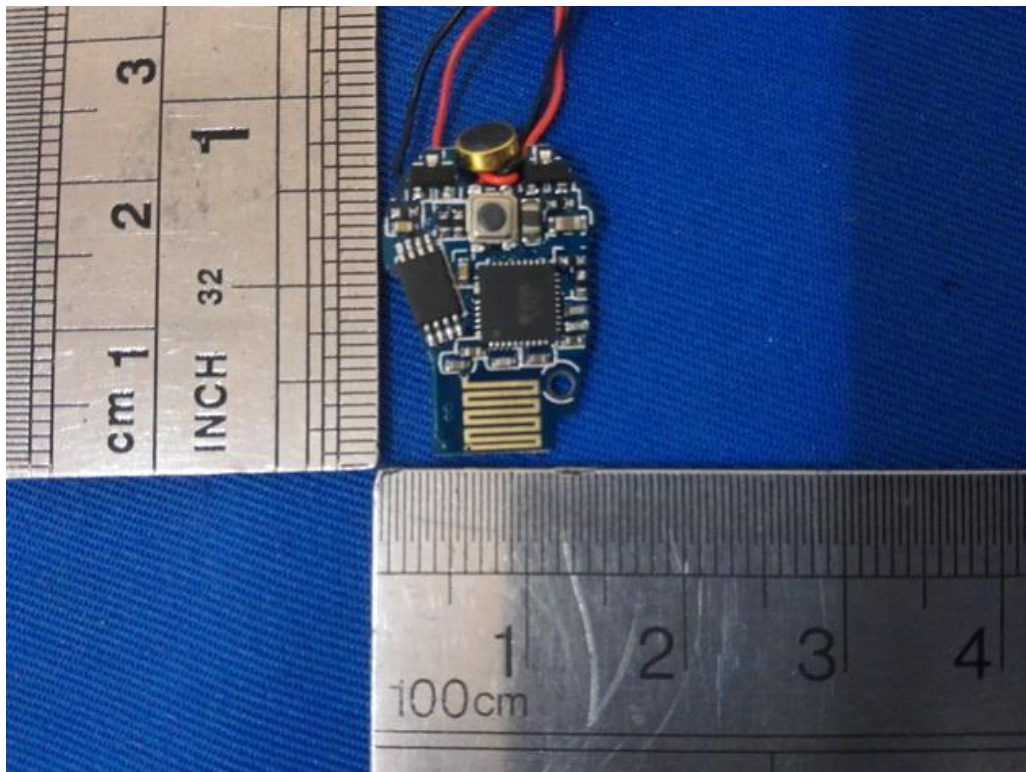
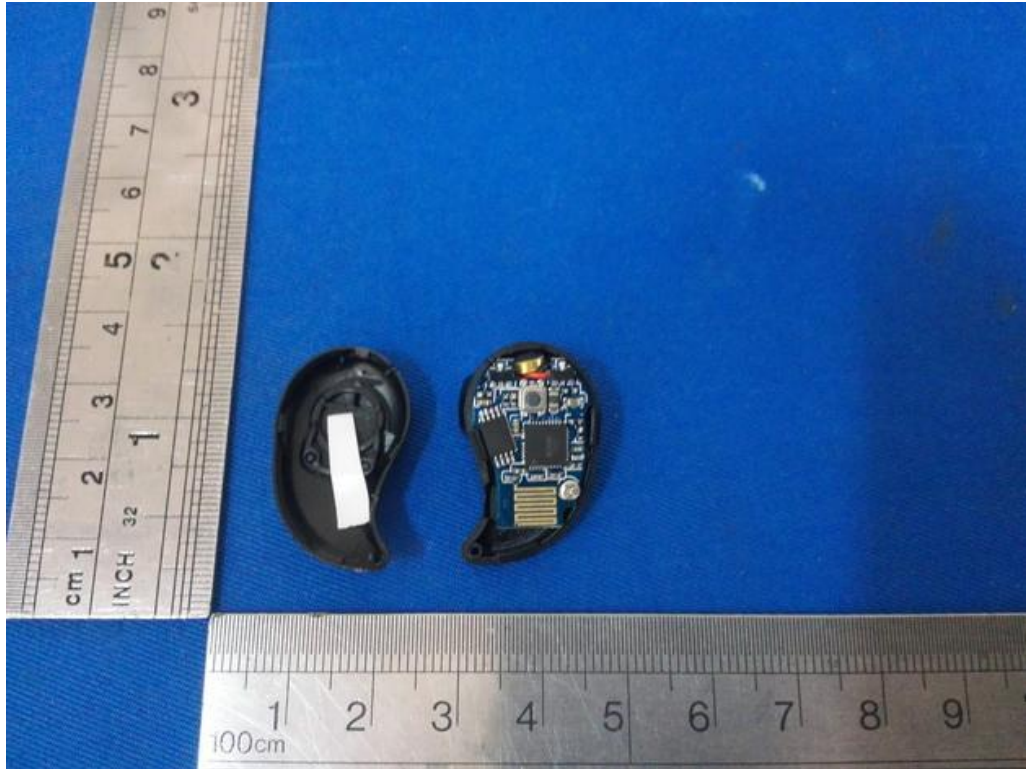


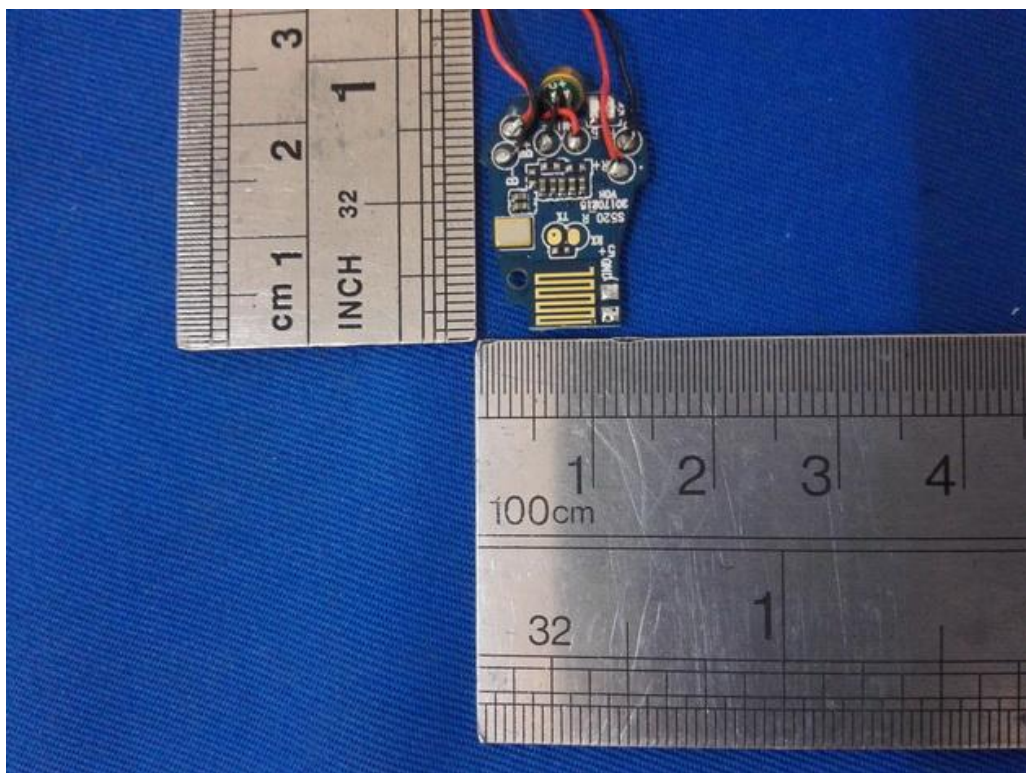
12.3 PHOTO FOR RADIO FREQUENCY ELECTROMAGNETIC FIELD



13 APPENDIX C PHOTOGRAPHS OF EUT







END OF REPORT