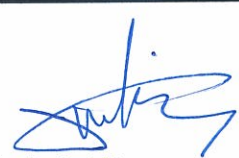


Produkte
Products

Prüfbericht - Nr.: 17029447 002			Seite 1 von 21 Page 1 of 21		
Test Report No.:					
Auftraggeber: Client:		CoCalo LLC 2121 Alton Parkway, Irvine, CA 92606, United States			
Gegenstand der Prüfung: Test item:		Calming Center			
Bezeichnung: Identification:		7934-960A		Serien-Nr.: Serial No.: n.a.	
Wareneingangs-Nr.: Receipt No.:		164001226		Eingangsdatum: Date of receipt: 16.11.2012	
Zustand des Prüfgegenstandes bei Anlieferung: Condition of test item at delivery:			Test samples received were sufficient and intact for testing.		
Prüfort: Testing location:		Shenzhen Accurate Technology Co., Ltd. F1, Bldg. A, Changyuan New Material Port, Keyuan Rd., Science & Industry Park Nanshan District, Shenzhen 518057, P.R. China FCC Registration No.: 752051 Test Site Industry Canada No.: 5077A-2			
Prüfgrundlage: Test specification:		CFR47 FCC Part 15: Subpart C Section 15.231 CFR47 FCC Part 15: Subpart C Section 15.209			
Prüfergebnis: Test Result:		Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n). The test item passed the test specification(s).			
Prüflaboratorium: Testing Laboratory:		TÜV Rheinland (Shenzhen) Co., Ltd.			
geprüft/ tested by:			kontrolliert/ reviewed by:		
 19.02.2013 Owen Tian/Project Manager			 19.02.2013 Sam Lin/Senior Project Manager		
Datum Date	Name/Stellung Name/Position	Unterschrift Signature	Datum Date	Name/Stellung Name/Position	Unterschrift Signature
Sonstiges/ Other Aspects:					
The corresponding FCC ID is RD3-7934-960. This test report supersedes 17029447 001.					
Abkürzungen: P(ass) = entspricht Prüfgrundlage F(ail) = entspricht nicht Prüfgrundlage N/A = nicht anwendbar N/T = nicht getestet			Abbreviations: P(ass) = passed F(ail) = failed N/A = not applicable N/T = not tested		
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. This test report relates to the a. m. test item. 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 safety mark on this or similar products.					

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Test Report No.

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TEST SUMMARY

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 RADIATED EMISSION

RESULT: Pass

5.1.3 20dB BANDWIDTH

RESULT: Pass

5.1.4 MAXIMUM TRANSMITTER TRANSMISSION CEASE TIME

RESULT: Pass

6.1.1 ELECTROMAGNETIC FIELDS

RESULT: Pass

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1. General Remarks

1.1 Complementary Materials

Null

2. Test Sites

2.1 Test Facilities

Shenzhen Accurate Technology Co., Ltd.

F1, Bldg. A, Changyuan New Material Port, Keyuan Rd., Science & Industry Park Nanshan District, Shenzhen 518057, P.R. China

FCC Registration No.: 752051

Test site Industry Canada No.: 5077A

The tests at the test site 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

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
Spurious emission and Radiated emission				
Spectrum Analyzer	Agilent	E7405A	MY45115511	2013-01-07
Test Receiver	Rohde & Schwarz	ESCS30	100307	2013-01-07
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	2013-01-07
Loop Antenna	Schwarzbeck	FMZB1516	1516131	2013-01-07
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	2013-01-07
50 Coaxial Switch	Anritsu Corp	MP59B	6200506474	2013-01-07
Pre-Amplifier	Rohde & Schwarz	CBLU11835 40-01	3791	2013-01-07
Radio Test Suite				
Receiver	Rohde & Schwarz	ESPI	100396/003	2013-01-07

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:

Items		Extended Uncertainty
Conducted Emission (0.15-30MHz)	Disturbance Voltage (dBuV)	$U=\pm 2.23\text{dB}$, $k=2$, $\sigma=95\%$
Radiated Emission (30-1000MHz)	Field strength (dBuV/m)	$U=\pm 4.42\text{dB}$, $k=2$, $\sigma=95\%$
Radiated Emission (30-12750MHz)	Field strength (dBuV/m)	$U=\pm 4.06\text{dB}$, $k=2$, $\sigma=95\%$

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix1 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 Shenzhen Accurate Technology Co., Ltd. test facility located at F1, Bldg. A, Changyuan New Material Port, Keyuan Rd., Science & Industry Park Nanshan District, Shenzhen 518057, P.R. 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 battery operated remote (radio transmitter) working at 433.92 MHz. It controls a warming pad (radio receiver), which not part of evaluation within this test report.

3.2 Ratings and System Details

Table 2: Rating of EUT

Equipment Description:	CALMING CENTER
Type Designation:	7934-960A
FCC ID:	RD3-7934-960

Table 3: Technical Specification of EUT

Technical Specification	Value
Operating Frequency band	433.92 MHz
Multi-Channel or Single	Single
Channel separation	n/a
Extreme Temperature Range	-20°C to +55°C
Operation Voltage	DC 6V (4 x AA size batteries)
Modulation	ASK
Antenna Type	Internal Antenna, Non-User Replaceable
Antenna Gain	0 dBi
RF Output Power	64.47 dBuV@3m

3.3 Independent Operation Modes

The basic operation modes are:

- A. Transmitting
- B. Off

3.4 Noise Generating and Noise Suppressing Parts

Integrated into circuit.

3.5 Submitted Documents

- | | |
|-------------------------|-------------------|
| - Bill of Material | - Circuit Diagram |
| - PCB Layout | - Manual |
| - Photo Document | - Rating Label |
| - Technical Description | |

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power 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 C63.4: 2003.

4.3 Special Accessories and Auxiliary Equipment

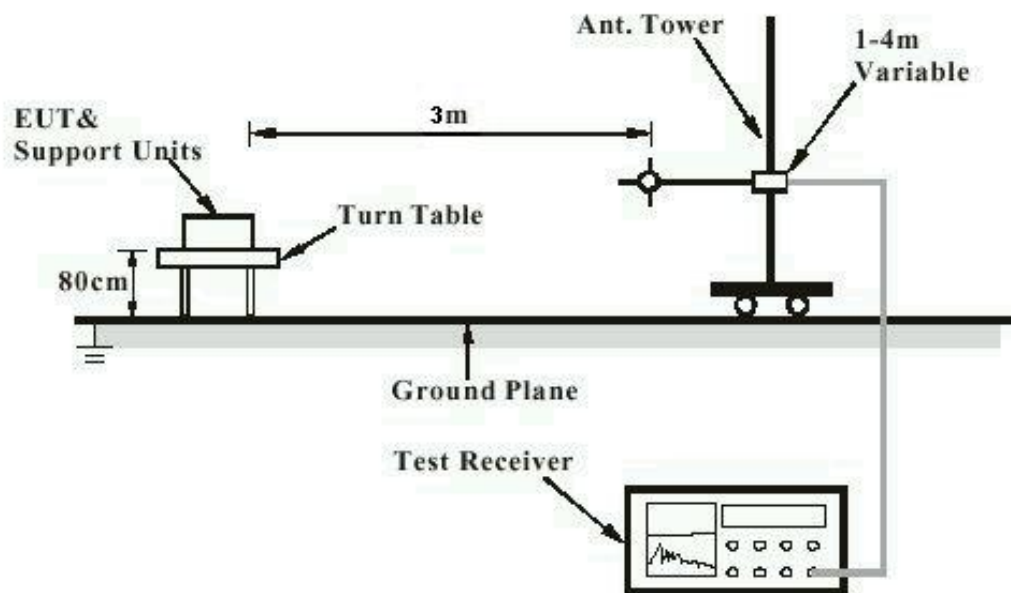
Null.

4.4 Countermeasures to achieve RF/EMC Compliance

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test



5. Test Results

5.1 Transmitter Requirement and Test Suites

5.1.1 Antenna Requirement

RESULT:**Pass**

Test date	:	--
Test standard	:	FCC part 15.203
Limit	:	the use of antennas with directional gains that do not exceed 6 dBi

The EUT has an internal antenna, the directional gain of antenna is 0dBi, and therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT photo for details.

5.1.2 Radiated Emission

RESULT:**Pass**

Date of testing	:	22.11.2012
Test standard	:	FCC part 15.231(b) FCC part 15.205 FCC part 15.209
Basic standard	:	ANSI C63.4: 2003
Limits	:	FCC part 15.231(b)
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Test Channel	:	433.92 MHz
Operation mode	:	A
Ambient temperature	:	24°C
Relative humidity	:	48%
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 setup photos.

Testing was carried out within frequency range 30 MHz to the tenth harmonics.

Note on following test graphs:

The actual limit of fundamental of the test item is 80.82 dBuV/m in fact, and 60.83 dBuV/m for harmonics.

The limits lines of spurious emissions in following test graphs are from FCC part 15.209 only, which much stricter than the applicable FCC part 15.231(b) limit. Since the test item can pass the stricter limit, therefore it is deemed to comply with the product's limit of FCC part 15.231(b) as well.

Figure 1: Test graph of Radiated Emission – 30 MHz-1 GHz, Horizontal

ACCURATE TECHNOLOGY CO., LTD.

 F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
 Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: PYH #485

Standard: FCC Part 15 Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 49 %

EUT: Remote for Calm Center

Mode: Transmitting

Model: E-5588

Manufacturer: Easepal

Polarization: Horizontal

Power Source: DC 3V

Date: 12/11/22/

Time: 8/02/59

Engineer Signature: PEI

Distance: 3m

Note:

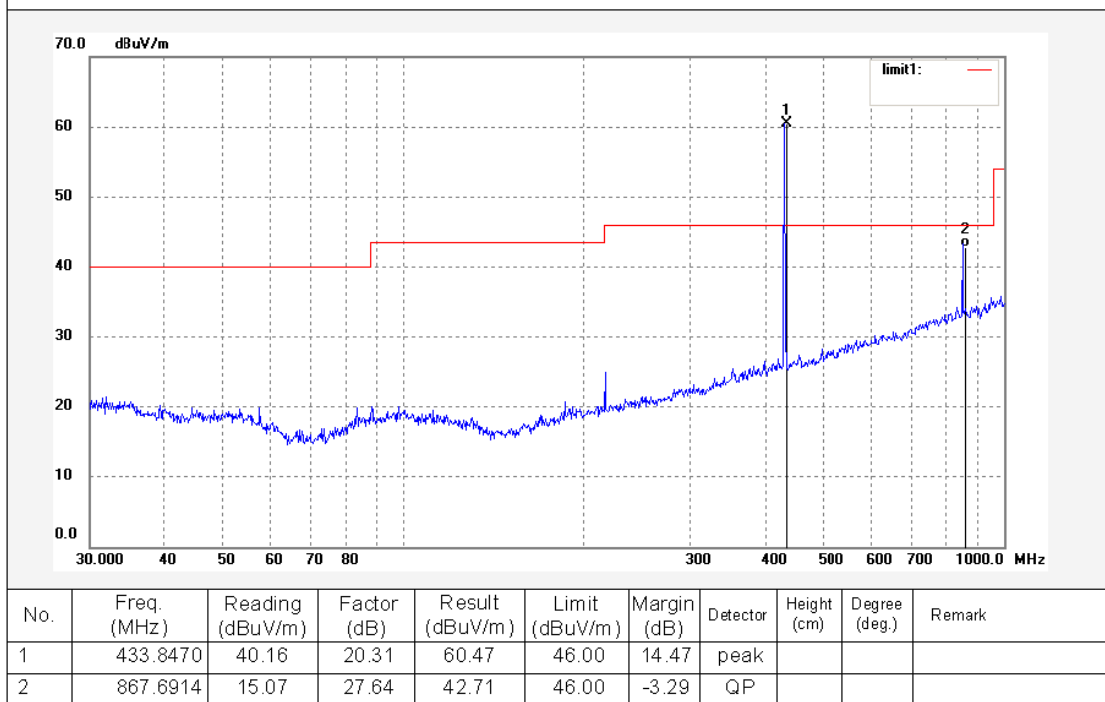


Figure 2: Test graph of Radiated Emission – 30 MHz-1 GHz, Vertical

ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: PYH #486

Standard: FCC Part 15 Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 49 %

EUT: Remote for Calm Center

Mode: Transmitting

Model: E-5588

Manufacturer: Easepal

Polarization: Vertical

Power Source: DC 3V

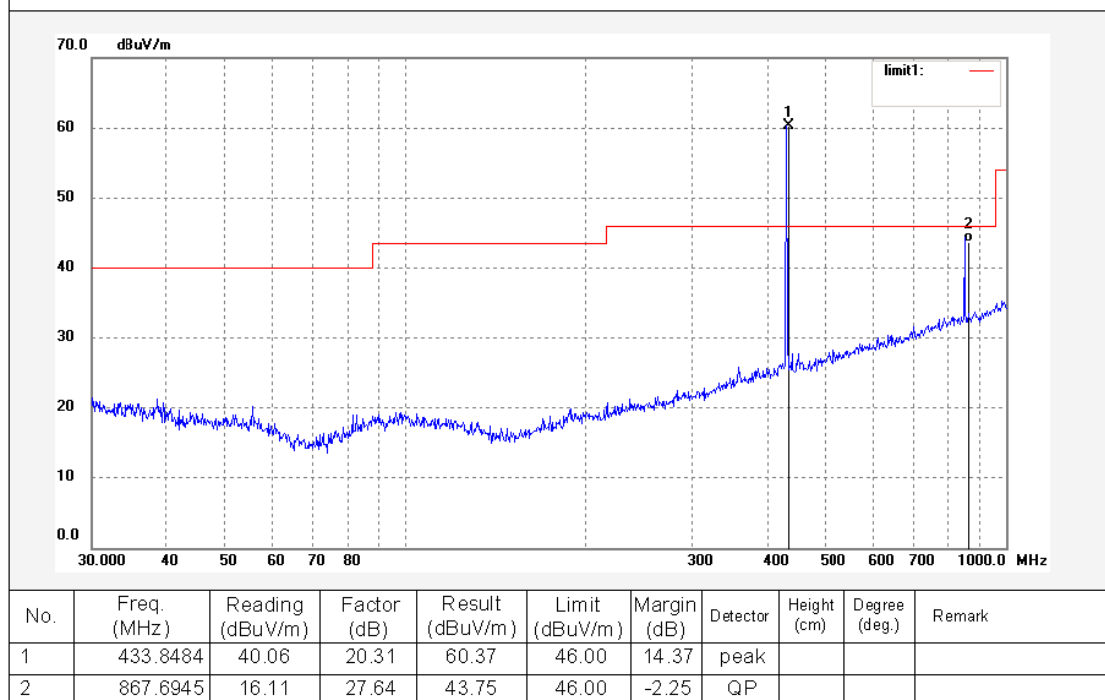
Date: 12/11/22/

Time: 8/12/05

Engineer Signature: PEI

Distance: 3m

Note:


Figure 3: Test graph of Radiated Emission – 1 GHz-5 GHz, Horizontal


ACCURATE TECHNOLOGY CO., LTD.

 F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
 Science & Industry Park,Nanshan Shenzhen,P.R.China

 Site: 966 chamber
 Tel:+86-0755-26503290
 Fax:+86-0755-26503396

Job No.: PYH #491

Standard: FCC Part 15 Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 49 %

EUT: Remote for Calm Center

Mode: Transmitting

Model: E-5588

Manufacturer: Easepal

Polarization: Horizontal

Power Source: DC 3V

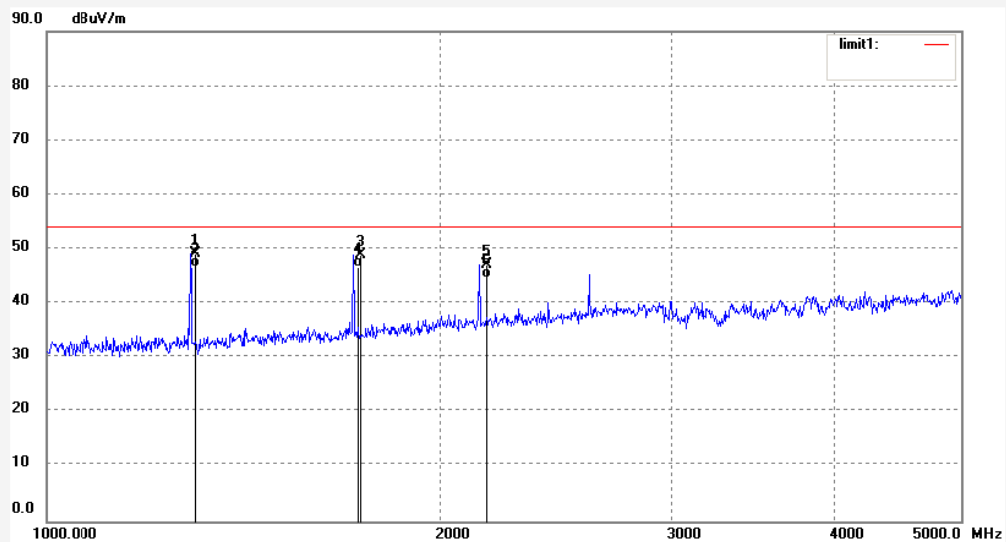
Date: 12/11/22/

Time: 9/02/18

Engineer Signature: PEI

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	1301.470	61.43	-12.20	49.23	54.00	-4.77	peak			
2	1301.470	58.86	-12.20	46.66	54.00	-7.34	AVG			
3	1735.347	59.37	-10.39	48.98	54.00	-5.02	peak			
4	1735.347	57.12	-10.39	46.73	54.00	-7.27	AVG			
5	2169.248	55.56	-8.38	47.18	54.00	-6.82	peak			
6	2169.248	53.03	-8.38	44.65	54.00	-9.35	AVG			

Figure 4: Test graph of Radiated Emission – 1 GHz-5 GHz, Vertical

ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: PYH #492

Standard: FCC Part 15 Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 49 %

EUT: Remote for Calm Center

Mode: Transmitting

Model: E-5588

Manufacturer: Easepal

Polarization: Vertical

Power Source: DC 3V

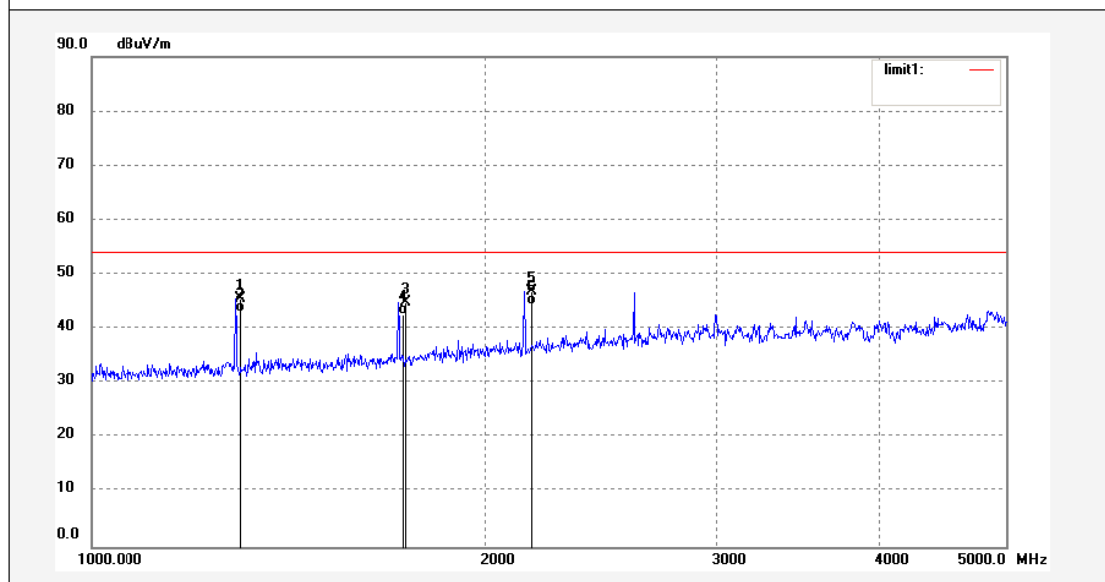
Date: 12/11/22/

Time: 9/13/24

Engineer Signature: PEI

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	1301.459	57.87	-12.20	45.67	54.00	-8.33	peak			
2	1301.459	55.25	-12.20	43.05	54.00	-10.95	AVG			
3	1735.350	55.35	-10.39	44.96	54.00	-9.04	peak			
4	1735.350	53.01	-10.39	42.62	54.00	-11.38	AVG			
5	2169.240	55.30	-8.38	46.92	54.00	-7.08	peak			
6	2169.240	52.89	-8.38	44.51	54.00	-9.49	AVG			

5.1.3 20dB Bandwidth

RESULT:**Pass**

Date of testing : 22.11.2012
Test standard : FCC Part 15.231(c)
Basic standard : ANSI C63.4: 2003
Kind of test site : Shielded room

Test setup

Test Channel : 433.92 MHz
Operation Mode : A
Ambient temperature : 22°C
Relative humidity : 52%
Atmospheric pressure : 101 kPa

Table 4: Test result of 20dB Bandwidth, ASK modulation

Channel	Channel Frequency (MHz)	20dB Bandwidth (kHz)	Limit (kHz)	Result
Fundamental	433.92	54	1,084 (0.25 % of the center frequency)	Pass

5.1.4 Maximum Transmitter Transmission Cease Time

RESULT:**Pass**

Date of testing : 22.11.2012
Test standard : FCC part 15.231(a)(1)
Basic standard : ANSI C63.4: 2003
Limits : 5 s
Kind of test site : Shield room

Test setup

Test Channel : 433.92 MHz
Operation Mode : A
Ambient temperature : 20°C
Relative humidity : 50%
Atmospheric pressure : 101 kPa

Table 5: Test result of

Channel	Frequency (MHz)	Transmission on Time (s)	Limit (s)	Result
Fundamental	433.92	2.92	5	Pass

6. Safety Human exposure

6.1 Radio Frequency Exposure Compliance

6.1.1 Electromagnetic Fields

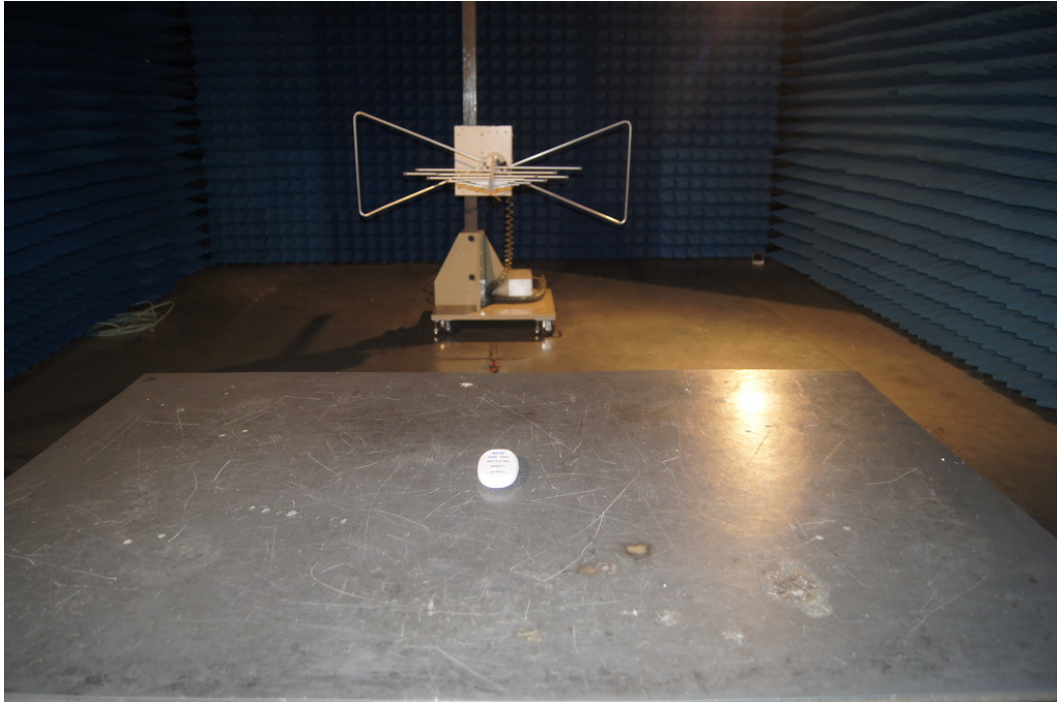
RESULT:**Pass**

Test standard : FCC KDB Publication 447498

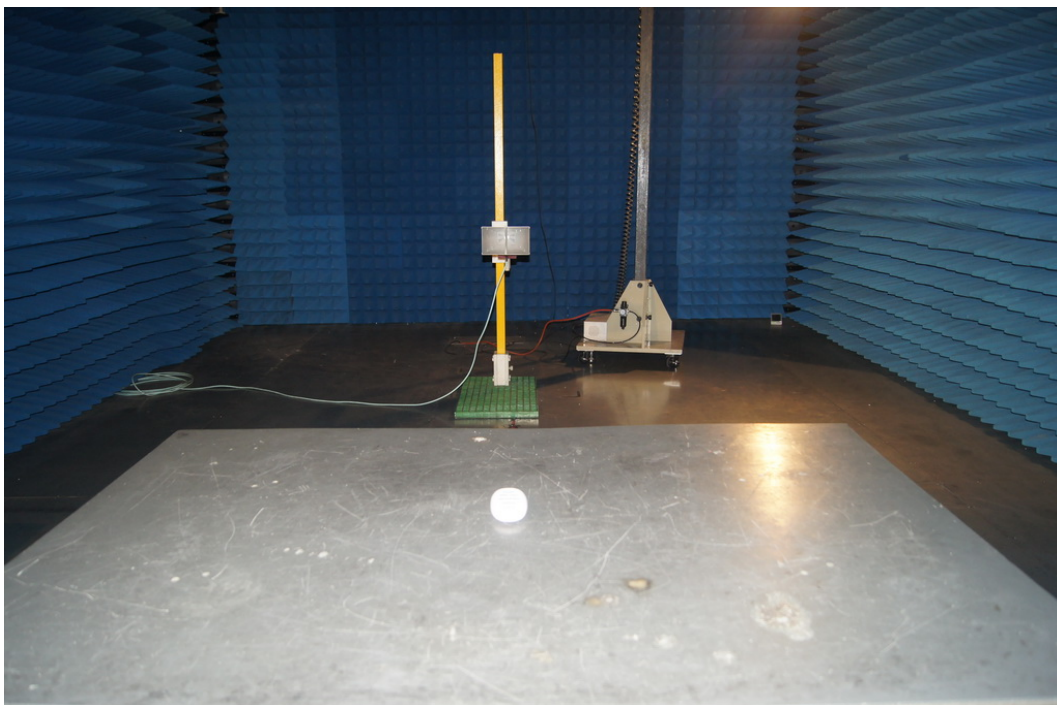
Since maximum peak output power of the transmitter is 0.000334 mW (60.47 dBuV/m at 3m), which far below 1 mW, hence SAR test exclusion applies according to FCC KDB publication "4474989 D01 General RF Exposure Guidance v05".

7. Photographs of the Test Set-Up

Photograph 1: Set-up for Radiated Emissions (30MHz-1GHz)



Photograph 2: Set-up for Radiated Emissions (1GHz-5GHz)



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