

APPLICATION CERTIFICATION FCC Part 15C
On Behalf of
findbox GmbH

SmartESL

Model No.: 210005, 220001, 220002, 220003, 220004, 220005, 220006, 220007

FCC ID: 2AJDH-210005

Prepared for : findbox GmbH
Address : Bundesstrasse 16, Ettenheim 77955,
Baden-Wuerttemberg, Germany

Prepared by : ACCURATE TECHNOLOGY CO., LTD
Address : F1, Bldg. A, Chan Yuan New Material Port, Keyuan
Rd. Science & Industry Park, Nan Shan, Shenzhen,
Guangdong P.R. China

Tel: (0755) 26503290
Fax: (0755) 26503396

Report No. : ATE20161073
Date of Test : May 31-June 1, 2016
Date of Report : July 10, 2016

TABLE OF CONTENTS

| Description | Page |
|---|-----------|
| Test Report Certification | |
| 1. GENERAL INFORMATION | 5 |
| 1.1. Description of Device (EUT)..... | 5 |
| 1.2. Accessory and Auxiliary Equipment..... | 5 |
| 1.3. Carrier Frequency of Channels..... | 6 |
| 1.4. Description of Test Facility | 7 |
| 1.5. Measurement Uncertainty..... | 7 |
| 2. MEASURING DEVICE AND TEST EQUIPMENT | 8 |
| 3. OPERATION OF EUT DURING TESTING..... | 9 |
| 3.1. Operating Mode..... | 9 |
| 3.2. Configuration and peripherals | 9 |
| 4. TEST PROCEDURES AND RESULTS | 10 |
| 5. 20DB BANDWIDTH TEST..... | 11 |
| 5.1. Block Diagram of Test Setup..... | 11 |
| 5.2. The Requirement For Section 15.247(a)(1)..... | 11 |
| 5.3. EUT Configuration on Measurement | 11 |
| 5.4. Operating Condition of EUT | 11 |
| 5.5. Test Procedure | 11 |
| 5.6. Test Result | 12 |
| 6. CARRIER FREQUENCY SEPARATION TEST..... | 15 |
| 6.1. Block Diagram of Test Setup..... | 15 |
| 6.2. The Requirement For Section 15.247(a)(1)..... | 15 |
| 6.3. EUT Configuration on Measurement | 15 |
| 6.4. Operating Condition of EUT | 15 |
| 6.5. Test Procedure | 16 |
| 6.6. Test Result | 16 |
| 7. NUMBER OF HOPPING FREQUENCY TEST | 19 |
| 7.1. Block Diagram of Test Setup..... | 19 |
| 7.2. The Requirement For Section 15.247(a)(1)(iii)..... | 19 |
| 7.3. EUT Configuration on Measurement | 19 |
| 7.4. Operating Condition of EUT | 19 |
| 7.5. Test Procedure | 19 |
| 7.6. Test Result | 20 |
| 8. DWELL TIME TEST | 21 |
| 8.1. Block Diagram of Test Setup..... | 21 |
| 8.2. The Requirement For Section 15.247(a)(1)(iii)..... | 21 |
| 8.3. EUT Configuration on Measurement | 21 |
| 8.4. Operating Condition of EUT | 21 |
| 8.5. Test Procedure | 21 |
| 8.6. Photos of Dwell time Measurement..... | 22 |
| 8.7. Test Result | 22 |
| 9. MAXIMUM PEAK OUTPUT POWER TEST | 24 |
| 9.1. Block Diagram of Test Setup..... | 24 |
| 9.2. The Requirement For Section 15.247(b)(1)..... | 24 |

| | | |
|------------|--|-----------|
| 9.3. | EUT Configuration on Measurement | 24 |
| 9.4. | Operating Condition of EUT | 24 |
| 9.5. | Test Procedure | 24 |
| 9.6. | Test Result | 25 |
| 10. | RADIATED EMISSION TEST | 27 |
| 10.1. | Block Diagram of Test Setup..... | 27 |
| 10.2. | The Limit For Section 15.247(d) | 28 |
| 10.3. | Restricted bands of operation | 29 |
| 10.4. | Configuration of EUT on Measurement | 29 |
| 10.5. | Test Procedure | 30 |
| 10.6. | The Field Strength of Radiation Emission Measurement Results | 30 |
| 11. | BAND EDGE COMPLIANCE TEST | 43 |
| 11.1. | Block Diagram of Test Setup..... | 43 |
| 11.2. | The Requirement For Section 15.247(d) | 43 |
| 11.3. | EUT Configuration on Measurement | 43 |
| 11.4. | Operating Condition of EUT | 43 |
| 11.5. | Test Procedure | 44 |
| 11.6. | Test Result | 44 |
| 12. | ANTENNA REQUIREMENT..... | 51 |
| 12.1. | The Requirement | 51 |
| 12.2. | Antenna Construction | 51 |

Test Report Certification

Applicant : findbox GmbH
Manufacturer : findbox GmbH
EUT Description : SmartESL
Model No. : 210005, 220001, 220002, 220003, 220004, 220005, 220006,
 220007
Trade Mark : CROSLEY

Measurement Procedure Used:

**FCC Rules and Regulations Part 15 Subpart C Section 15.247: 2015
ANSI C63.10: 2013**

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

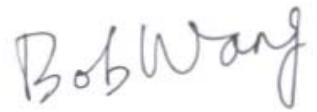
This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test :
Date of Report:

May 31-June 1, 2016

July 10, 2016

Prepared by :


(Bob Wang, Engineer)

Approved & Authorized Signer :


(Sean Liu, Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT : SmartESL
Model Number : 210005, 220001, 220002, 220003, 220004, 220005, 220006, 220007
(Note: Above models are identical in schematic, structure and critical components except for model name and size. So we prepare 210005 for test only.)
Trade Mark : N/A
Frequency Range : 902.5MHz-927.5MHz
Number of Channels : 101
Antenna Gain : 0dBi
Antenna type : Integral Antenna
Power Supply : DC 3V
Modulation mode : FSK
Applicant : findbox GmbH
Address : Bundesstrasse 16, Ettenheim 77955, Baden-Wuerttemberg, Germany
Manufacuter : findbox GmbH
Address : Bundesstrasse 16, Ettenheim 77955, Baden-Wuerttemberg, Germany
Date of sample received : May 30, 2016
Date of Test : May 31-June 1, 2016

1.2. Accessory and Auxiliary Equipment

N/A

1.3.Carrier Frequency of Channels

| Channel | Freq (Mhz) | Channel | Freq (Mhz) | Channel | Freq (Mhz) |
|---------|------------|---------|------------|---------|------------|
| | | 34 | 910,750 | 68 | 919,250 |
| 1 | 902,500 | 35 | 911,000 | 69 | 919,500 |
| 2 | 902,750 | 36 | 911,250 | 70 | 919,750 |
| 3 | 903,000 | 37 | 911,500 | 71 | 920,000 |
| 4 | 903,250 | 38 | 911,750 | 72 | 920,250 |
| 5 | 903,500 | 39 | 912,000 | 73 | 920,500 |
| 6 | 903,750 | 40 | 912,250 | 74 | 920,750 |
| 7 | 904,000 | 41 | 912,500 | 75 | 921,000 |
| 8 | 904,250 | 42 | 912,750 | 76 | 921,250 |
| 9 | 904,500 | 43 | 913,000 | 77 | 921,500 |
| 10 | 904,750 | 44 | 913,250 | 78 | 921,750 |
| 11 | 905,000 | 45 | 913,500 | 79 | 922,000 |
| 12 | 905,250 | 46 | 913,750 | 80 | 922,250 |
| 13 | 905,500 | 47 | 914,000 | 81 | 922,500 |
| 14 | 905,750 | 48 | 914,250 | 82 | 922,750 |
| 15 | 906,000 | 49 | 914,500 | 83 | 923,000 |
| 16 | 906,250 | 50 | 914,750 | 84 | 923,250 |
| 17 | 906,500 | 51 | 915,000 | 85 | 923,500 |
| 18 | 906,750 | 52 | 915,250 | 86 | 923,750 |
| 19 | 907,000 | 53 | 915,500 | 87 | 924,000 |
| 20 | 907,250 | 54 | 915,750 | 88 | 924,250 |
| 21 | 907,500 | 55 | 916,000 | 89 | 924,500 |
| 22 | 907,750 | 56 | 916,250 | 90 | 924,750 |
| 23 | 908,000 | 57 | 916,500 | 91 | 925,000 |
| 24 | 908,250 | 58 | 916,750 | 92 | 925,250 |
| 25 | 908,500 | 59 | 917,000 | 93 | 925,500 |
| 26 | 908,750 | 60 | 917,250 | 94 | 925,750 |
| 27 | 909,000 | 61 | 917,500 | 95 | 926,000 |
| 28 | 909,250 | 62 | 917,750 | 96 | 926,250 |
| 29 | 909,500 | 63 | 918,000 | 97 | 926,500 |
| 30 | 909,750 | 64 | 918,250 | 98 | 926,750 |
| 31 | 910,000 | 65 | 918,500 | 99 | 927,000 |
| 32 | 910,250 | 66 | 918,750 | 100 | 927,250 |
| 33 | 910,500 | 67 | 919,000 | 101 | 927,500 |

1.4. Description of Test Facility

EMC Lab

: Accredited by TUV Rheinland Shenzhen

Listed by FCC

The Registration Number is 752051

Listed by Industry Canada

The Registration Number is 5077A-2

Accredited by China National Accreditation Committee
for Laboratories

The Certificate Registration Number is L3193

Name of Firm

: ACCURATE TECHNOLOGY CO. LTD

Site Location

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

1.5. Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2

Radiated emission expanded uncertainty = 3.08dB, k=2
(9kHz-30MHz)

Radiated emission expanded uncertainty = 4.42dB, k=2
(30MHz-1000MHz)

Radiated emission expanded uncertainty = 4.06dB, k=2
(Above 1GHz)

2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

| Kind of equipment | Manufacturer | Type | S/N | Calibrated dates | Calibrated until |
|--------------------|------------------------|-----------------------------------|------------|------------------|------------------|
| EMI Test Receiver | Rohde&Schwarz | ESCS30 | 100307 | Jan. 9, 2016 | Jan. 09, 2017 |
| EMI Test Receiver | Rohde&Schwarz | ESPI3 | 101526/003 | Jan. 9, 2016 | Jan. 09, 2017 |
| Spectrum Analyzer | Agilent | E7405A | MY45115511 | Jan. 9, 2016 | Jan. 09, 2017 |
| Pre-Amplifier | Rohde&Schwarz | CBLU118354 0-01 | 3791 | Jan. 9, 2016 | Jan. 09, 2017 |
| Loop Antenna | Schwarzbeck | FMZB1516 | 1516131 | Jan. 14, 2016 | Jan. 13, 2017 |
| Bilog Antenna | Schwarzbeck | VULB9163 | 9163-323 | Jan. 14, 2016 | Jan. 13, 2017 |
| Horn Antenna | Schwarzbeck | BBHA9120D | 9120D-655 | Jan. 14, 2016 | Jan. 12, 2017 |
| Horn Antenna | Schwarzbeck | BBHA9170 | 9170-359 | Jan. 14, 2016 | Jan. 13, 2017 |
| LISN | Rohde&Schwarz | ESH3-Z5 | 100305 | Jan. 9, 2016 | Jan. 09, 2017 |
| LISN | Schwarzbeck | NSLK8126 | 8126431 | Jan. 9, 2016 | Jan. 09, 2017 |
| Highpass Filter | Wainwright Instruments | WHKX3.6/18 G-10SS | N/A | Jan. 9, 2016 | Jan. 09, 2017 |
| Band Reject Filter | Wainwright Instruments | WRCG2400/2 485-2375/2510 -60/11SS | N/A | Jan. 9, 2016 | Jan. 09, 2017 |

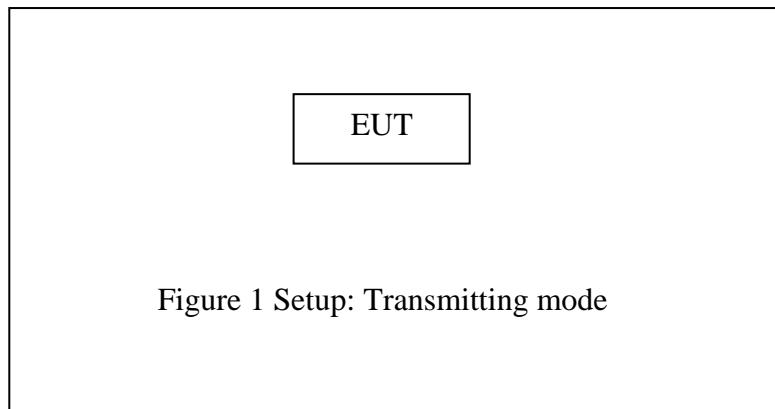
3. OPERATION OF EUT DURING TESTING

3.1.Operating Mode

The mode is used: Transmitting mode

Low Channel: 902.5MHz
Middle Channel: 914.75MHz
High Channel: 927.5MHz
Hopping

3.2.Configuration and peripherals



(EUT: SmartESL)

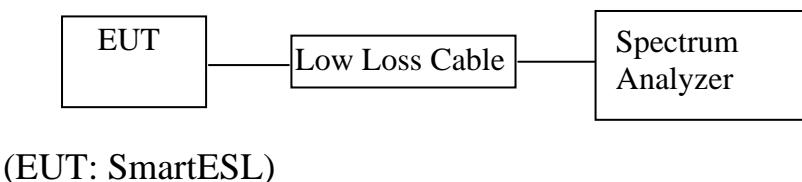
4. TEST PROCEDURES AND RESULTS

| FCC Rules | Description of Test | Result |
|-------------------------------------|-----------------------------------|-----------|
| Section 15.207 | Conducted Emission Test | N/A |
| Section 15.247(a)(1) | 20dB Bandwidth Test | Compliant |
| Section 15.247(a)(1) | Carrier Frequency Separation Test | Compliant |
| Section 15.247(a)(1)(iii) | Number Of Hopping Frequency Test | Compliant |
| Section 15.247(a)(1)(iii) | Dwell Time Test | Compliant |
| Section 15.247(b)(1) | Maximum Peak Output Power Test | Compliant |
| Section 15.247(d) Section 15.209 | Radiated Emission Test | Compliant |
| Section 15.247(d) | Band Edge Compliance Test | Compliant |
| Section 15.203 | Antenna Requirement | Compliant |

Note: The power supply mode of the EUT is DC 3V, According to the FCC standard requirements, conducted emission is not applicable

5. 20DB BANDWIDTH TEST

5.1. Block Diagram of Test Setup



(EUT: SmartESL)

5.2. The Requirement For Section 15.247(a)(1)

Section 15.247(a)(1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

5.3. EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

5.4. Operating Condition of EUT

5.4.1. Setup the EUT and simulator as shown as Section 5.1.

5.4.2. Turn on the power of all equipment.

5.4.3. Let the EUT work in TX (Hopping off) modes measure it. The transmit frequency are 902.5-927.5MHz. We select 902.5MHz, 914.75MHz, and 927.5MHz TX frequency to transmit.

5.5. Test Procedure

5.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

5.5.2. Set RBW of spectrum analyzer to 30 kHz and VBW to 100 kHz.

5.5.3. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

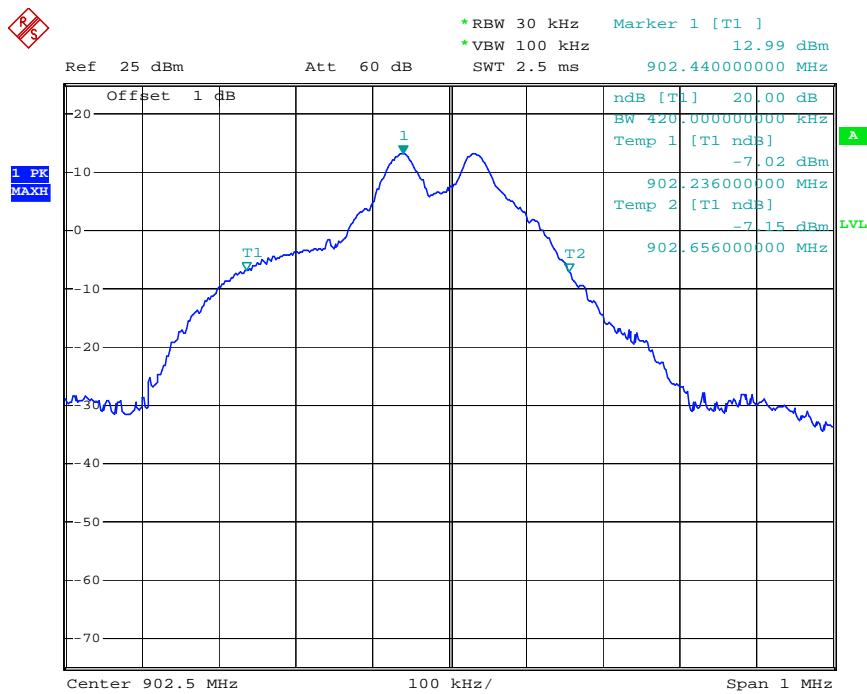
5.6. Test Result

| Channel | Frequency (MHz) | FSK 20dB Bandwidth (MHz) | Result |
|---------|--------------------|--------------------------------|--------|
| Low | 902.5 | 0.420 | Pass |
| Middle | 914.75 | 0.444 | Pass |
| High | 927.5 | 0.392 | Pass |

The spectrum analyzer plots are attached as below.

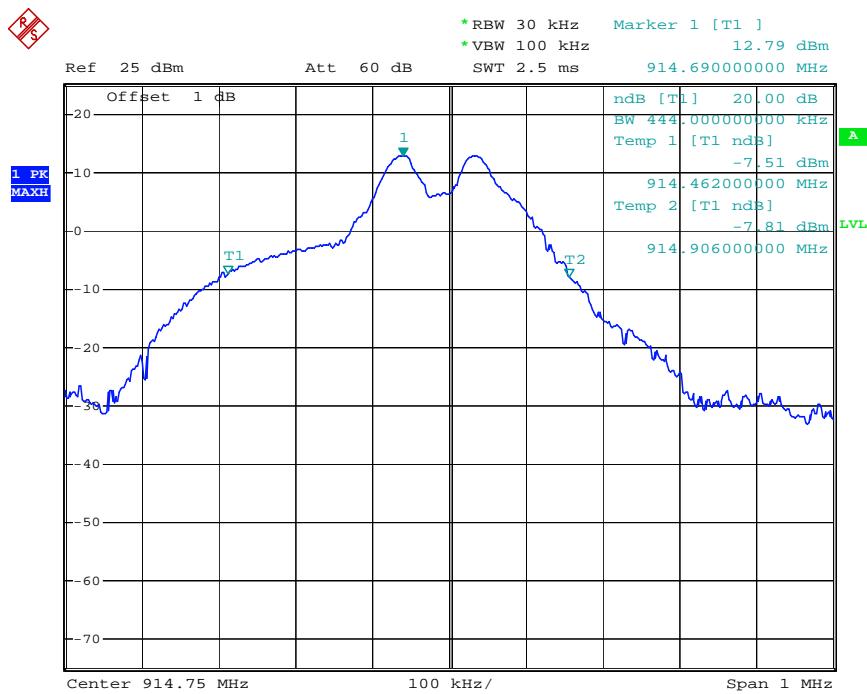
FSK Mode

Low channel



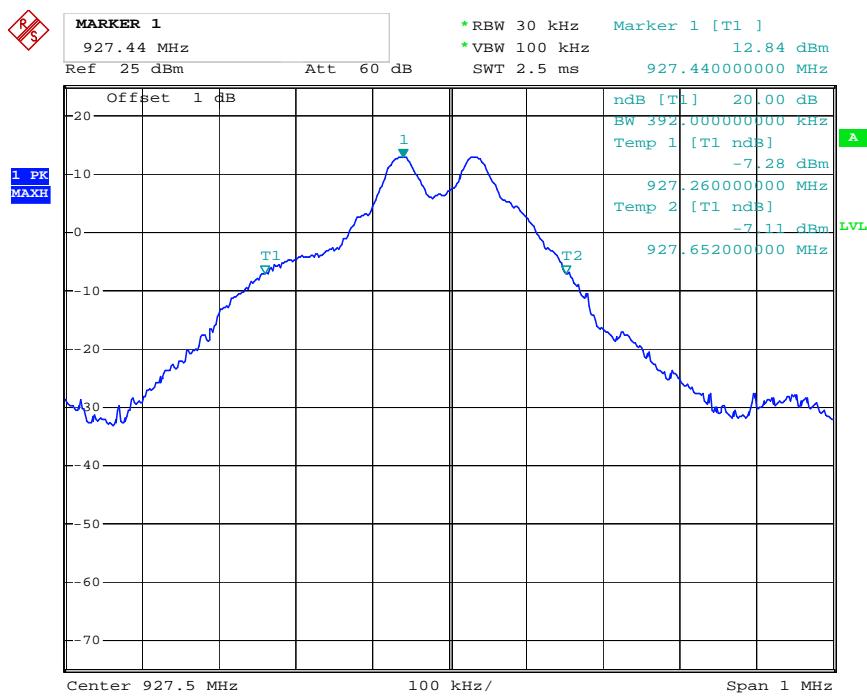
Date: 1.JUN.2016 11:17:03

Middle channel



Date: 1.JUN.2016 11:19:58

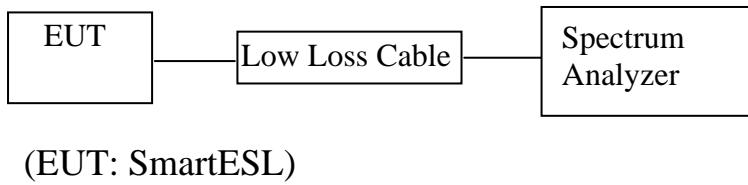
High channel



Date: 1.JUN.2016 11:23:55

6. CARRIER FREQUENCY SEPARATION TEST

6.1. Block Diagram of Test Setup



(EUT: SmartESL)

6.2. The Requirement For Section 15.247(a)(1)

Section 15.247(a)(1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 902-928 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudorandomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

6.3. EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.4. Operating Condition of EUT

6.4.1. Setup the EUT and simulator as shown as Section 6.1.

6.4.2. Turn on the power of all equipment.

6.4.3. Let the EUT work in TX (Hopping on) modes measure it. The transmit frequency are 902.5-927.5MHz. We select 902.5MHz, 914.75MHz, and 927.5MHz TX frequency to transmit.

6.5. Test Procedure

- 6.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 6.5.2. Set RBW of spectrum analyzer to 100 kHz and VBW to 100 kHz. Adjust Span to 500kHz.
- 6.5.3. Set the adjacent channel of the EUT maxhold another trace.
- 6.5.4. Measurement the channel separation

6.6. Test Result

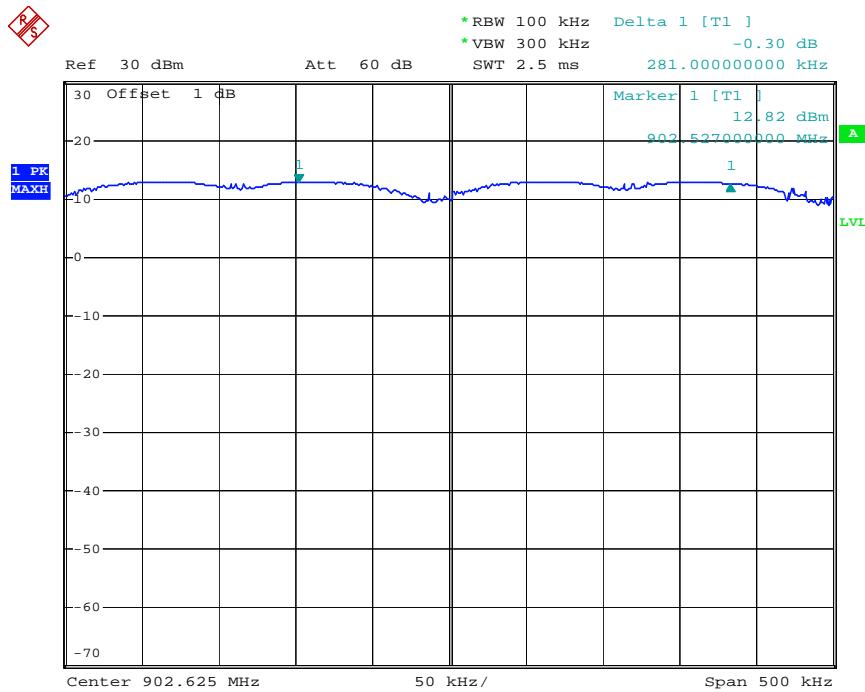
FSK

| Channel | Frequency (MHz) | Channel Separation(MHz) | Limit (MHz) | Result |
|---------|-----------------|-------------------------|--|--------|
| Low | 902.5 | 0.281 | At least 25KHz or 2/3*20dB bandwidth(0.280MHz) | PASS |
| | 902.6 | | | |
| Middle | 914.65 | 0.281 | At least 25KHz or 2/3*20dB bandwidth(0.296MHz) | PASS |
| | 914.75 | | | |
| High | 927.4 | 0.280 | At least 25KHz or 2/3*20dB bandwidth(0.261MHz) | PASS |
| | 927.5 | | | |

The spectrum analyzer plots are attached as below.

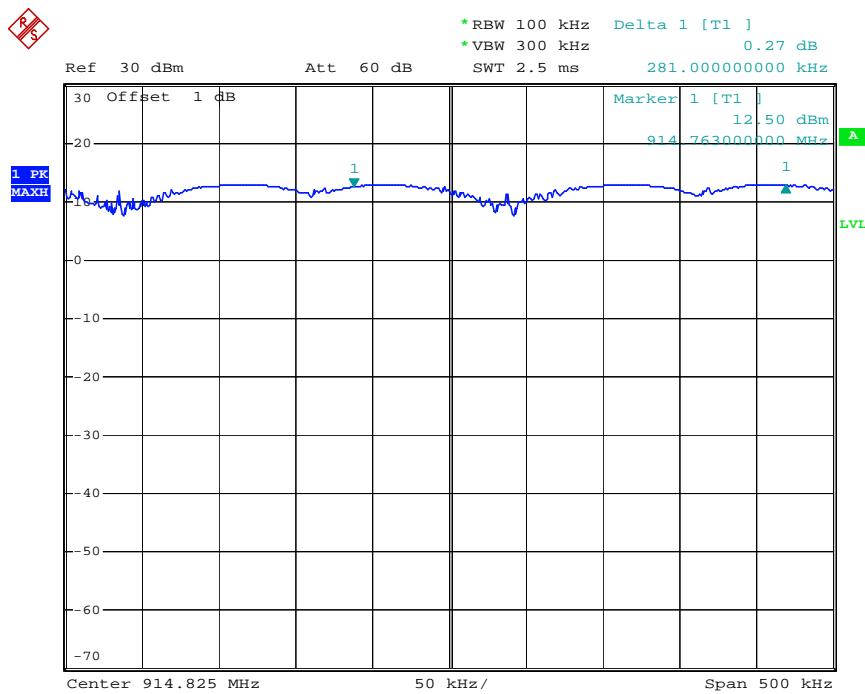
FSK Mode

Low channel



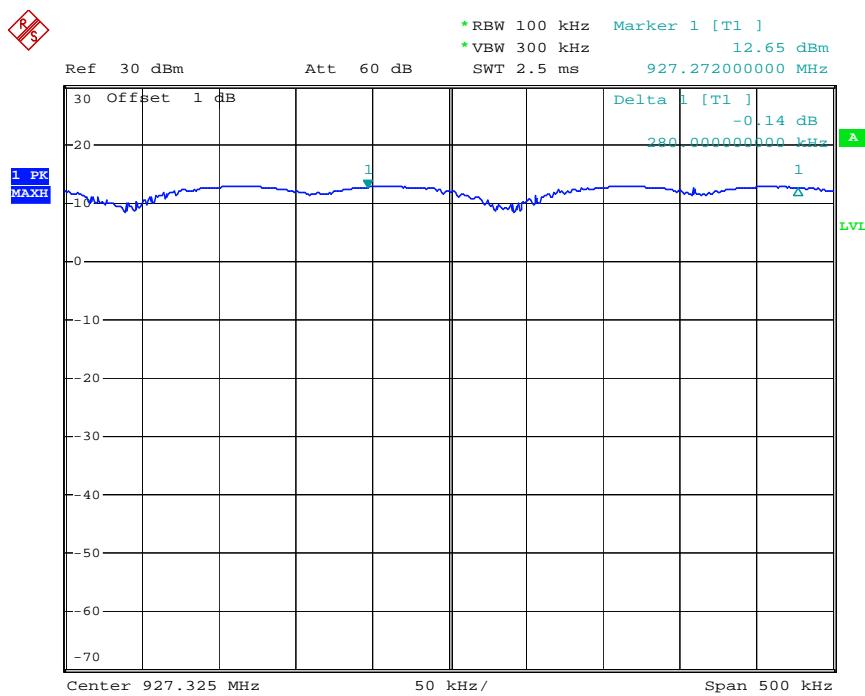
Date: 1.JUN.2016 11:48:37

Middle channel



Date: 1.JUN.2016 11:54:07

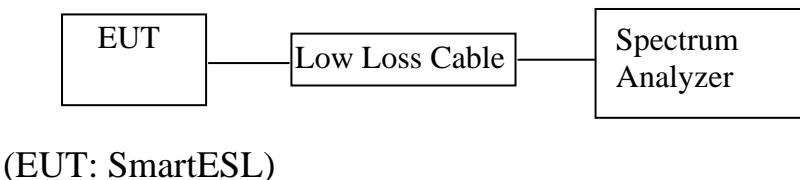
High channel



Date: 1.JUN.2016 11:53:18

7. NUMBER OF HOPPING FREQUENCY TEST

7.1. Block Diagram of Test Setup



(EUT: SmartESL)

7.2. The Requirement For Section 15.247(a)(1)(iii)

Section 15.247(a)(1)(iii): Frequency hopping systems in the 902-928 MHz band shall use at least 15 channels.

7.3. EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

7.4. Operating Condition of EUT

7.4.1. Setup the EUT and simulator as shown as Section 7.1.

7.4.2. Turn on the power of all equipment.

7.4.3. Let the EUT work in TX (Hopping on) modes measure it.

7.5. Test Procedure

7.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

7.5.2. Set the spectrum analyzer as Span=83.5MHz, RBW=100 kHz, VBW=300 kHz.

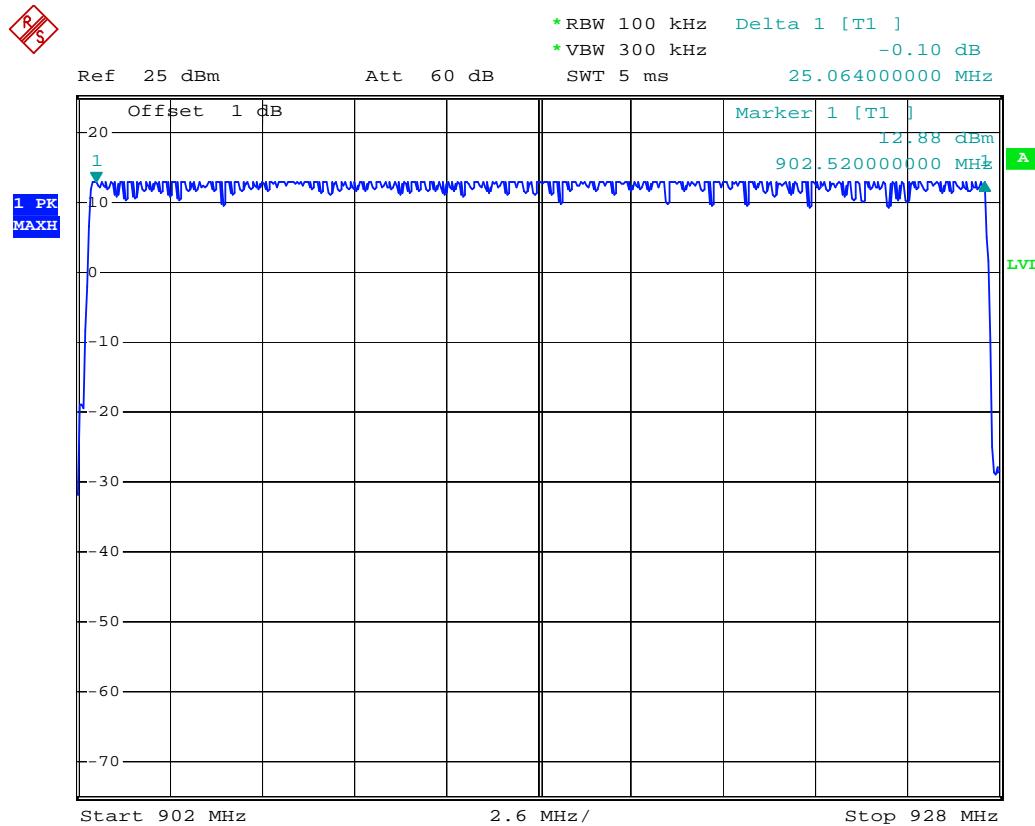
7.5.3. Max hold, view and count how many channel in the band.

7.6. Test Result

| Total number of hopping channel | Measurement result(CH) | Limit(CH) |
|---------------------------------|------------------------|-----------|
| | 101 | ≥15 |

The spectrum analyzer plots are attached as below.

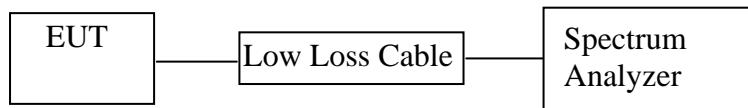
Number of hopping channels(FSK)



Date: 1.JUN.2016 11:30:16

8. DWELL TIME TEST

8.1. Block Diagram of Test Setup



(EUT: SmartESL)

8.2. The Requirement For Section 15.247(a)(1)(iii)

Section 15.247(a)(1)(iii): Frequency hopping systems in the 902-928 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

8.3. EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

8.4. Operating Condition of EUT

8.4.1. Setup the EUT and simulator as shown as Section 8.1.

8.4.2. Turn on the power of all equipment.

8.4.3. Let the EUT work in TX (Hopping on) modes measure it. The transmit frequency are 902.5-927.5MHz. We select 902.5MHz, 914.75MHz, and 927.5MHz TX frequency to transmit.

8.5. Test Procedure

8.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

8.5.2. Set center frequency of spectrum analyzer = operating frequency.

8.5.3. Set the spectrum analyzer as RBW=100kHz, VBW=300kHz, Span=0Hz, Adjust Sweep=20s. Get the pulse time.

8.5.4. Repeat above procedures until all frequency measured were complete.

8.6.Photos of Dwell time Measurement

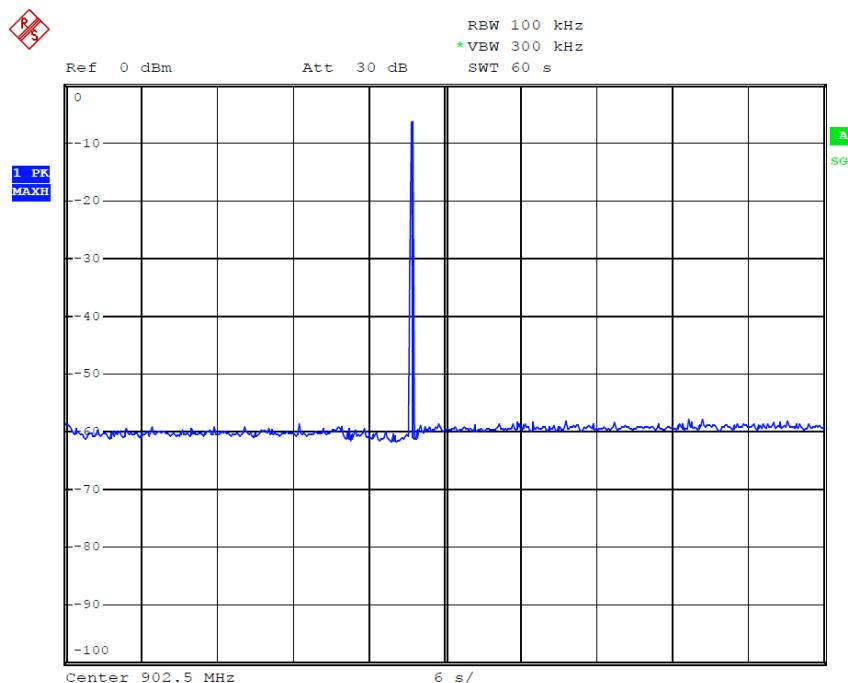
In the connection mode RFID uses 101 channels, As defined in 15.247, a 1 I, the limit for time of occupancy is 0.4s over time of 20s.

8.7.Test Result

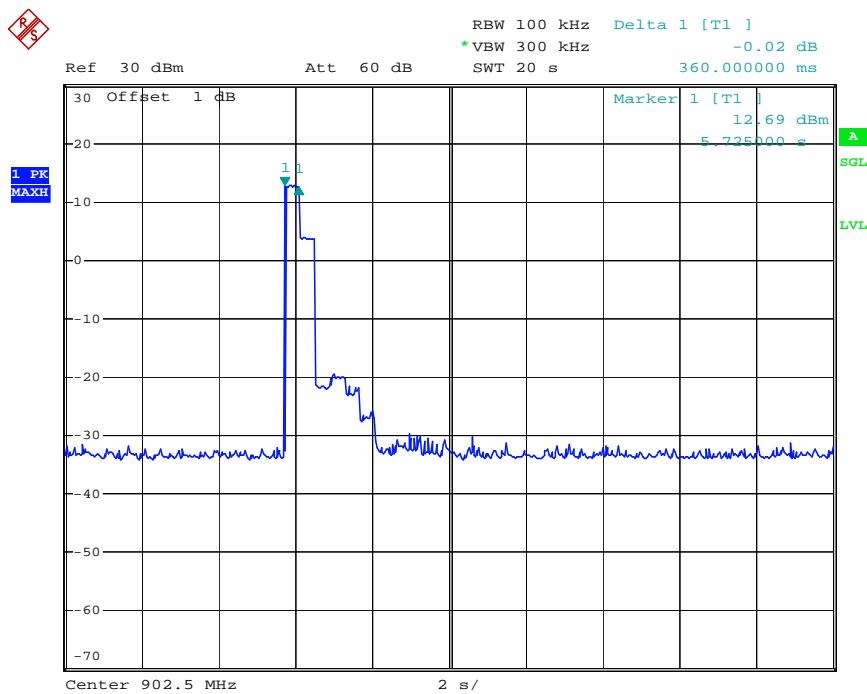
| Modulation Mode | Channel Frequency (MHz) | Occupied time for each channel (ms) | Dwell time (ms) | Limit (ms) | Verdict |
|-----------------|-------------------------|-------------------------------------|-----------------|------------|---------|
| FSK | 902.5 | 360 | 242.4 | 400 | Pass |

Note:

The number of occupied channels per second $1/60=0.017(\text{number/sec})$
 The total number of occupied channels per second $101*1/60=1.683(\text{number/sec})$
 Occupied time for each channel 360ms
 Dwell time per second $101*1/60*360=606\text{ms}$
 Dwell time for 0.4second $101*1/60*360*0.4=242.4\text{ms}$



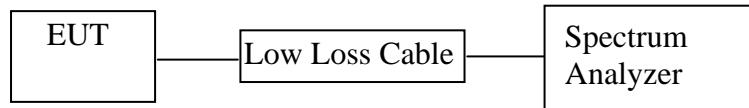
Date: 1.JUN.2016



Date: 1.JUN.2016 11:39:47

9. MAXIMUM PEAK OUTPUT POWER TEST

9.1. Block Diagram of Test Setup



(EUT: SmartESL)

9.2. The Requirement For Section 15.247(b)(1)

Section 15.247(b)(1): For frequency hopping systems operating in the 902-928 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 902-928 MHz band: 0.125 watts.

9.3. EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

9.4. Operating Condition of EUT

9.4.1. Setup the EUT and simulator as shown as Section 9.1.

9.4.2. Turn on the power of all equipment.

9.4.3. Let the EUT work in TX (Hopping off) modes measure it. The transmit frequency are 902.5-927.5MHz. We select 902.5MHz, 914.75MHz, and 927.5MHz TX frequency to transmit.

9.5. Test Procedure

9.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

9.5.2. Set RBW of spectrum analyzer to 1MHz and VBW to 3MHz for FSK mode

9.5.3. Set RBW of spectrum analyzer to 3MHz and VBW to 3MHz for other mode

9.5.4. Measurement the maximum peak output power.

9.6. Test Result

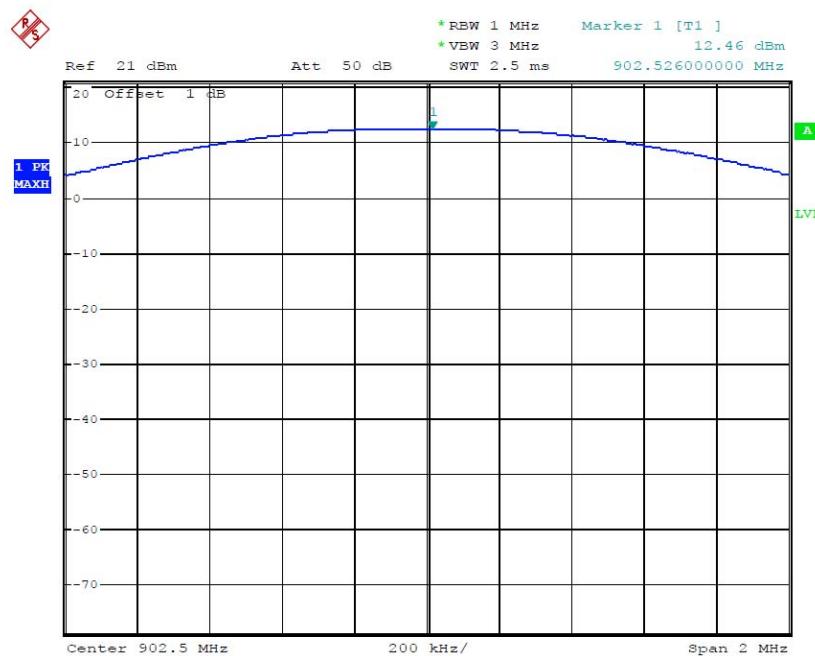
FSK Mode

| Channel | Frequency (MHz) | Peak Output Power (dBm/W) | Limits dBm / W |
|---------|-----------------|---------------------------|----------------|
| Low | 902.5 | 12.46/0.0177 | 20.97/ 0.125 |
| Middle | 914.75 | 12.59/0.0182 | 20.97/ 0.125 |
| High | 927.5 | 12.82/0.0191 | 20.97/ 0.125 |

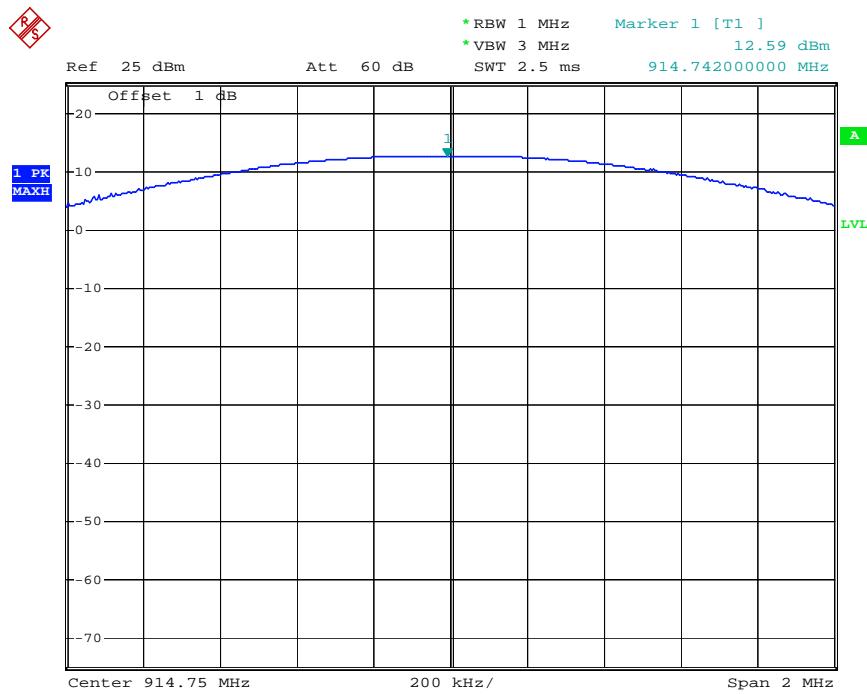
The spectrum analyzer plots are attached as below.

FSK Mode

Low channel

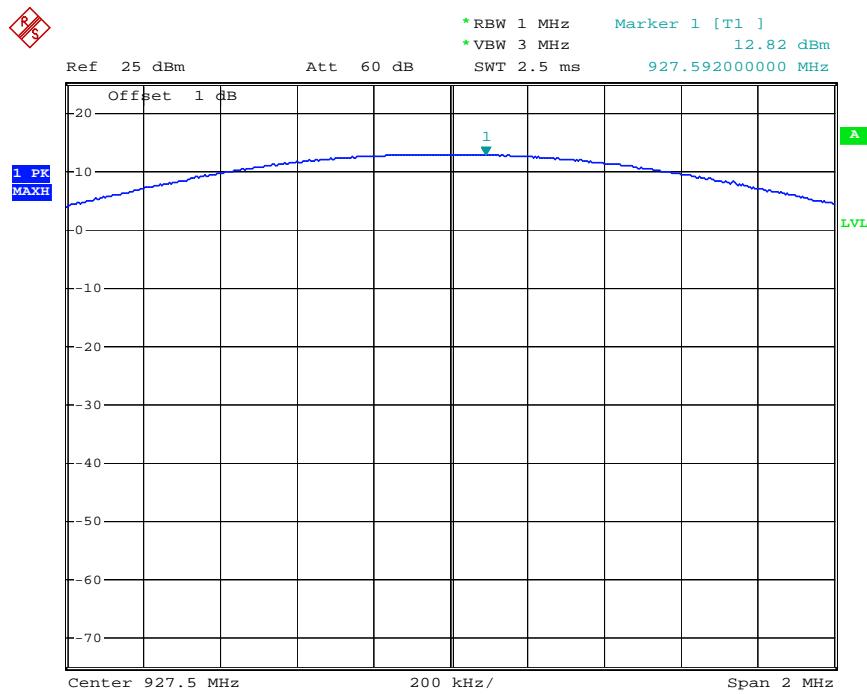


Middle channel



Date: 1.JUN.2016 11:20:17

High channel



Date: 1.JUN.2016 11:22:47

10.RADIATED EMISSION TEST

10.1.Block Diagram of Test Setup

10.1.1.Block diagram of connection between the EUT and peripherals

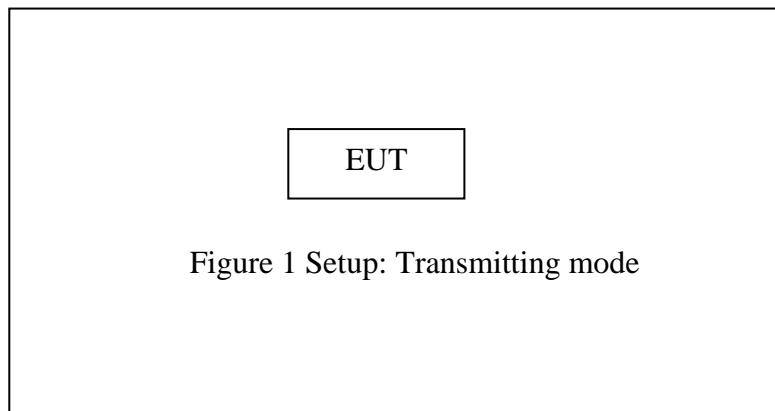
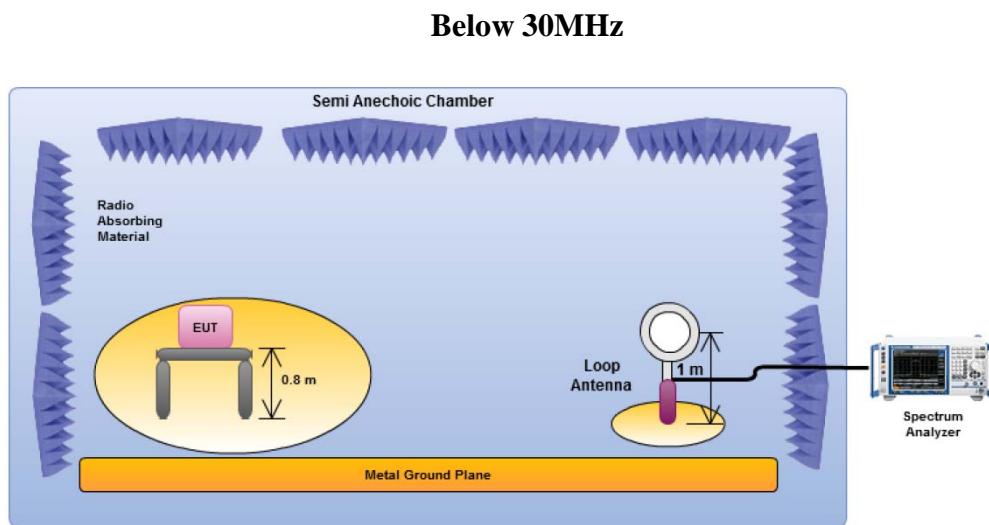


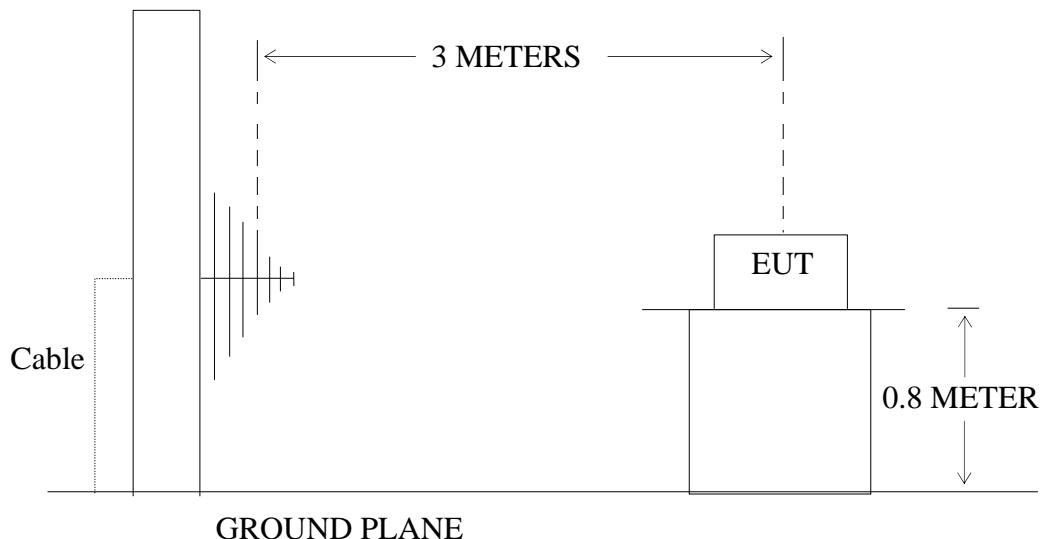
Figure 1 Setup: Transmitting mode

10.1.2.Semi-Anechoic Chamber Test Setup Diagram

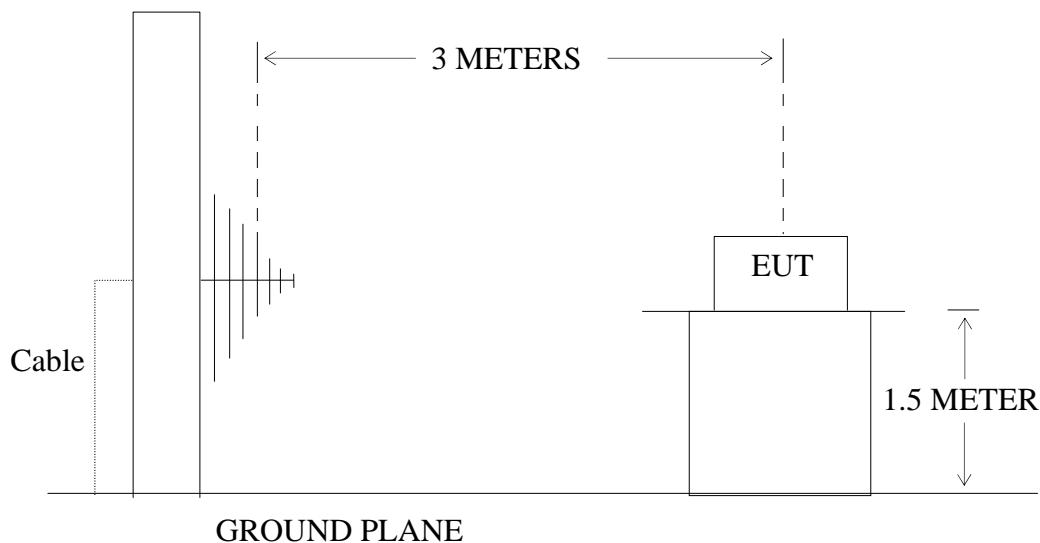


30MHz-1GHz

ANTENNA ELEVATION VARIES FROM 1 TO 4 METERS

**Above 1GHz**

ANTENNA ELEVATION VARIES FROM 1 TO 4 METERS

**10.2.The Limit For Section 15.247(d)**

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging

over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. 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).

10.3. Restricted bands of operation

10.3.1. FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

| MHz | MHz | MHz | GHz |
|--------------------------|---------------------|---------------|------------------|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| ¹ 0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.17725-4.17775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 |
| 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2690-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293 | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | (²) |
| 13.36-13.41 | | | |

¹Until February 1, 1999, this restricted band shall be 0.490-0.510

²Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

10.4. Configuration of EUT on Measurement

The equipment is installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

10.5. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground(Below 1GHz). The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground(Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

During the radiated emission test, the spectrum analyzer was set with the following configurations:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

10.6. The Field Strength of Radiation Emission Measurement Results

Below 1GHz



ACCURATE TECHNOLOGY CO., LTD.

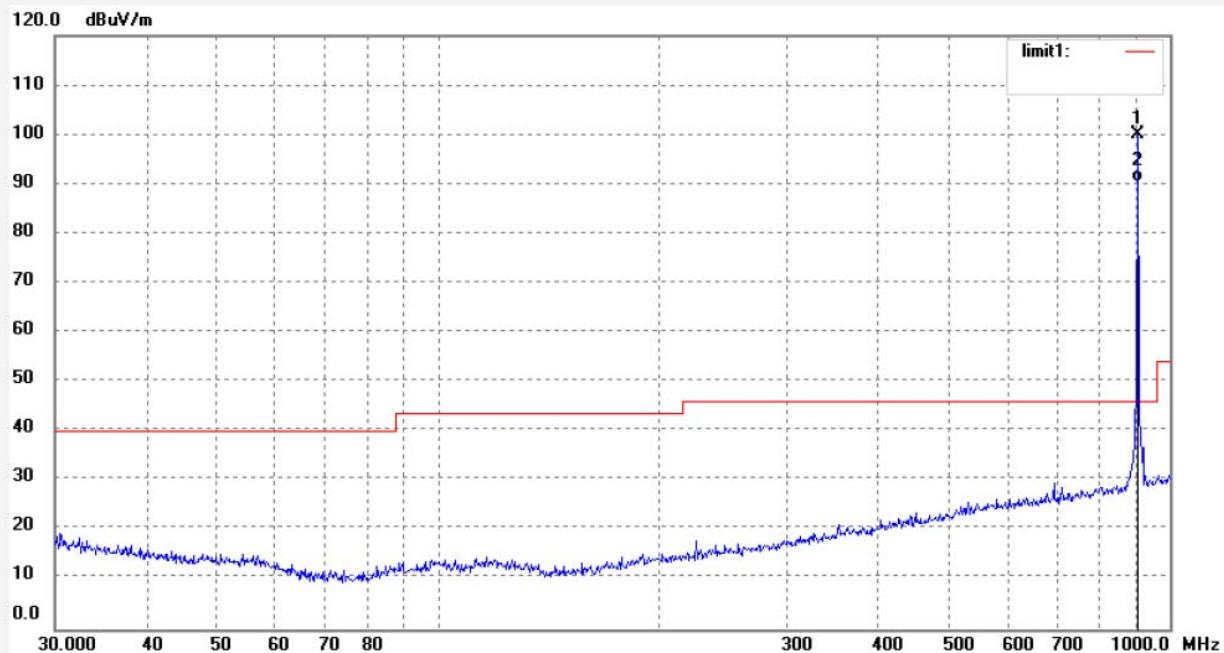
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

| | |
|-----------------------------------|--------------------------|
| Job No.: STAR2015 #1268 | Polarization: Horizontal |
| Standard: FCC Class B 3M Radiated | Power Source: DC 6V |
| Test item: Radiation Test | Date: 2016-5-31 |
| Temp.(C)/Hum.(%) 23 C / 48 % | Time: 19:38:26 |
| EUT: SmartESL | Engineer Signature: STAR |
| Mode: TX 902.5MHz | Distance: 3m |
| Model: 210005 | |
| Manufacturer: Findbox GmbH | |
| Note: Report NO.:ATE20161073 | |



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 902.5000 | 98.81 | 1.30 | 100.11 | 114.00 | -13.89 | peak | | | |
| 2 | 902.5000 | 89.04 | 1.30 | 90.34 | 94.00 | -3.66 | AVG | | | |



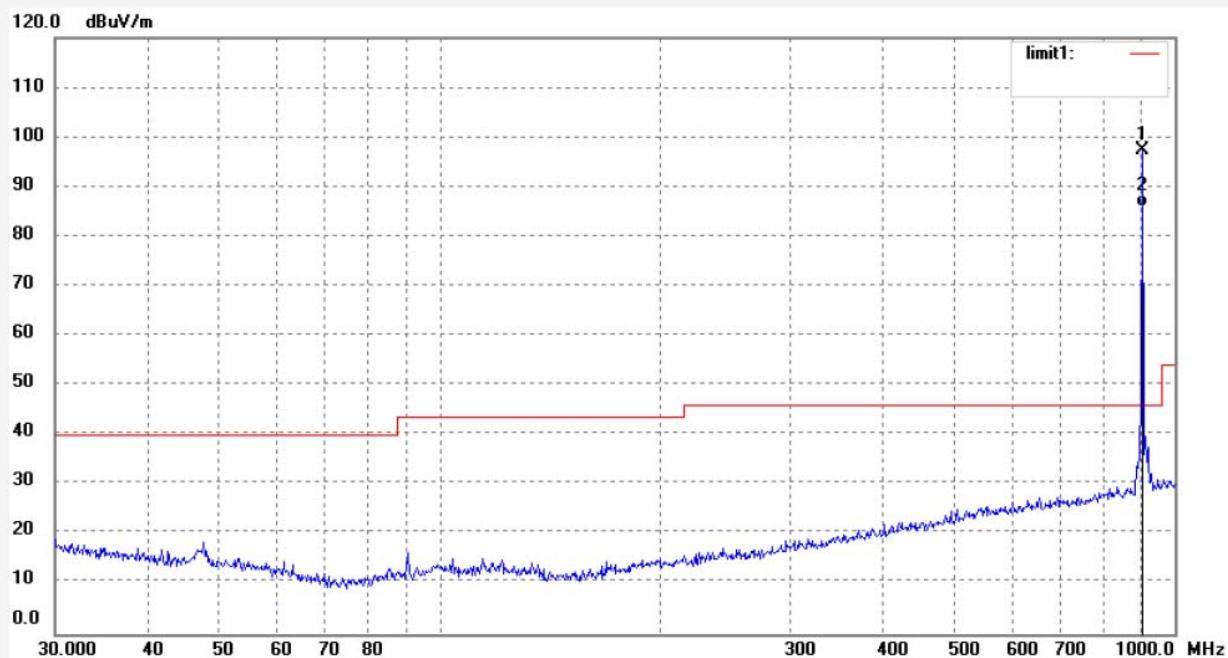
ACCURATE TECHNOLOGY CO., LTD.

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

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|-----------------------------------|--------------------------|
| Job No.: STAR2015 #1267 | Polarization: Vertical |
| Standard: FCC Class B 3M Radiated | Power Source: DC 6V |
| Test item: Radiation Test | Date: 2016-5-31 |
| Temp.(C)/Hum.(%) 23 C / 48 % | Time: 19:36:57 |
| EUT: SmartESL | Engineer Signature: STAR |
| Mode: TX 902.5MHz | Distance: 3m |
| Model: 210005 | |
| Manufacturer: Findbox GmbH | |

Note: Report NO.:ATE20161073



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 902.5000 | 96.13 | 1.30 | 97.43 | 114.00 | -16.57 | peak | | | |
| 2 | 902.5000 | 84.76 | 1.30 | 86.06 | 94.00 | -7.94 | AVG | | | |



ACCURATE TECHNOLOGY CO., LTD.

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

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: STAR2015 #1266

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: DC 6V

Test item: Radiation Test

Date: 2016-5-31

Temp.(C)/Hum.(%) 23 C / 48 %

Time: 19:33:19

EUT: SmartESL

Engineer Signature: STAR

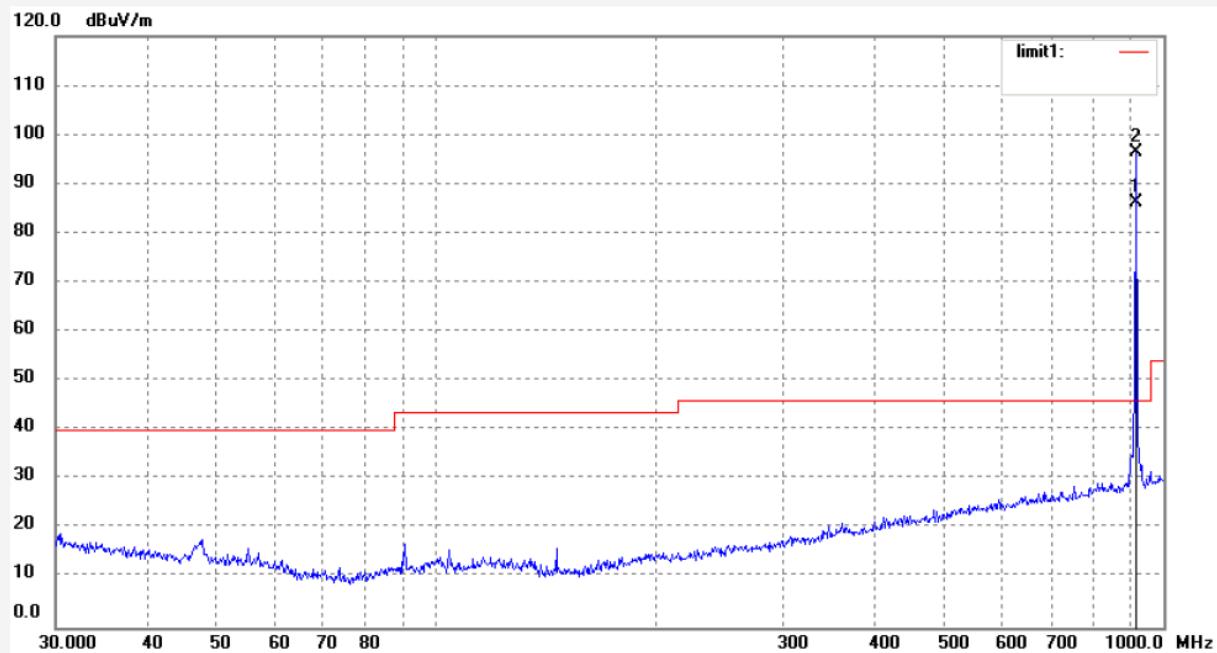
Mode: TX 914.75MHz

Distance: 3m

Model: 210005

Manufacturer: Findbox GmbH

Note: Report NO.:ATE20161073



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 914.7500 | 84.75 | 1.49 | 86.24 | 114.00 | -27.76 | peak | | | |
| 2 | 914.7500 | 95.05 | 1.49 | 92.12 | 94.00 | -1.88 | peak | | | |



ACCURATE TECHNOLOGY CO., LTD.

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

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: STAR2015 #1265

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: DC 6V

Test item: Radiation Test

Date: 2016-5-31

Temp.(C)/Hum.(%) 23 C / 48 %

Time: 19:32:32

EUT: SmartESL

Engineer Signature: STAR

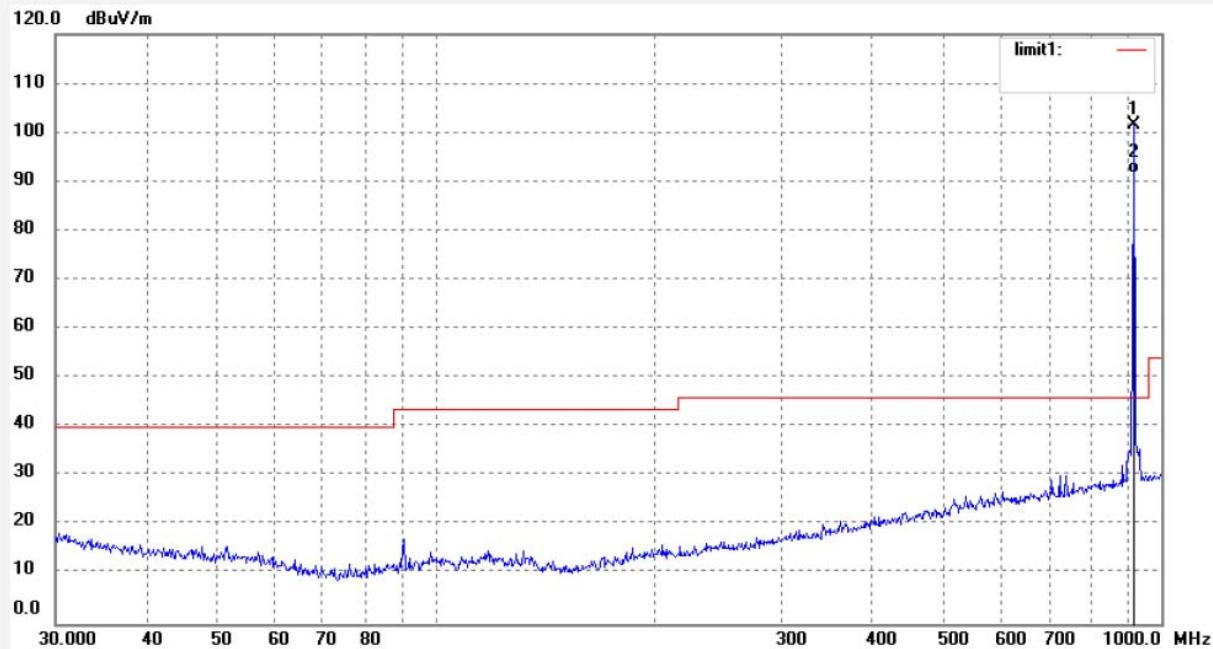
Mode: TX 914.75MHz

Distance: 3m

Model: 210005

Manufacturer: Findbox GmbH

Note: Report NO.:ATE20161073



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 914.7500 | 99.92 | 1.49 | 101.41 | 114.00 | -12.59 | peak | | | |
| 2 | 914.7500 | 90.10 | 1.49 | 91.59 | 94.00 | -2.41 | AVG | | | |

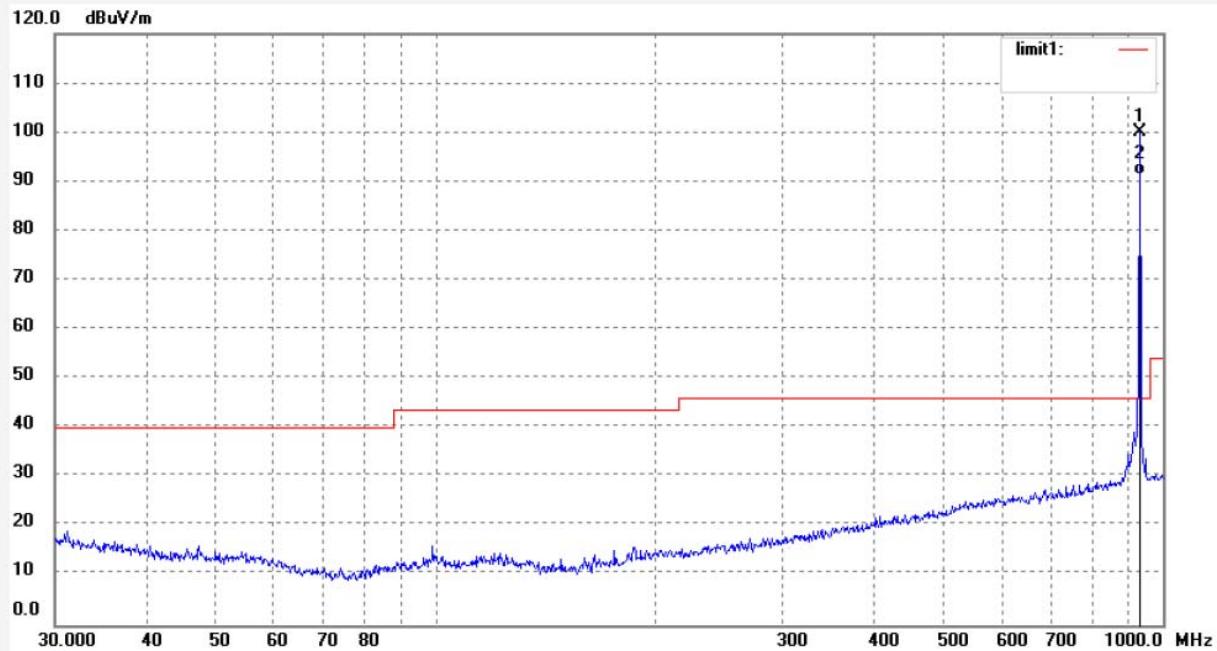


ACCURATE TECHNOLOGY CO., LTD.

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

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|-----------------------------------|--------------------------|
| Job No.: STAR2015 #1264 | Polarization: Horizontal |
| Standard: FCC Class B 3M Radiated | Power Source: DC 6V |
| Test item: Radiation Test | Date: 2016-5-31 |
| Temp.(C)/Hum.(%) 23 C / 48 % | Time: 19:29:39 |
| EUT: SmartESL | Engineer Signature: STAR |
| Mode: TX 927.5MHz | Distance: 3m |
| Model: 210005 | |
| Manufacturer: Findbox GmbH | |
| Note: Report NO.:ATE20161073 | |



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 927.5000 | 98.31 | 1.82 | 100.13 | 114.00 | -13.87 | peak | | | |
| 2 | 927.5000 | 89.46 | 1.82 | 91.28 | 94.00 | -2.72 | AVG | | | |

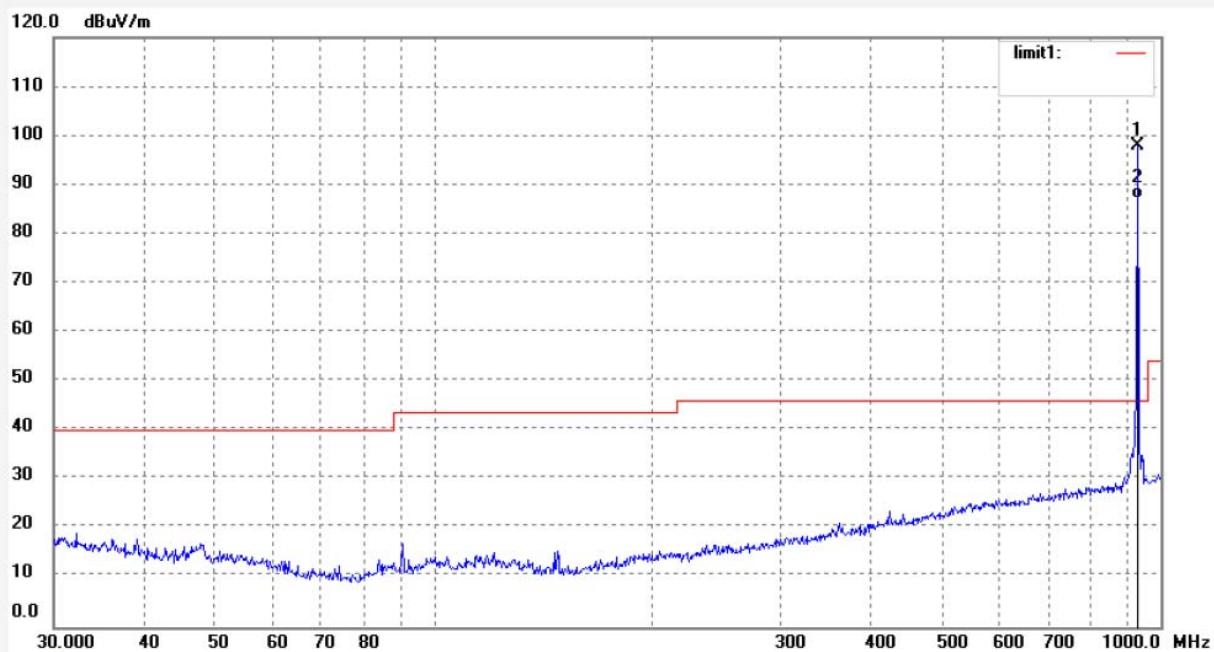


ACCURATE TECHNOLOGY CO., LTD.

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

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|-----------------------------------|--------------------------|
| Job No.: STAR2015 #1263 | Polarization: Vertical |
| Standard: FCC Class B 3M Radiated | Power Source: DC 6V |
| Test item: Radiation Test | Date: 2016-5-31 |
| Temp.(C)/Hum.(%) 23 C / 48 % | Time: 19:28:42 |
| EUT: SmartESL | Engineer Signature: STAR |
| Mode: TX 927.5MHz | Distance: 3m |
| Model: 210005 | |
| Manufacturer: Findbox GmbH | |
| Note: Report NO.:ATE20161073 | |



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 927.5000 | 96.16 | 1.82 | 97.98 | 114.00 | -16.02 | peak | | | |
| 2 | 927.5000 | 85.22 | 1.82 | 87.04 | 94.00 | -6.96 | AVG | | | |

Above 1GHz



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.ChinaSite: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: STAR2015 #1256

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: DC 6V

Test item: Radiation Test

Date: 2016-5-31

Temp.(C)/Hum.(%) 23 C / 48 %

Time: 19:10:45

EUT: SmartESL

Engineer Signature: STAR

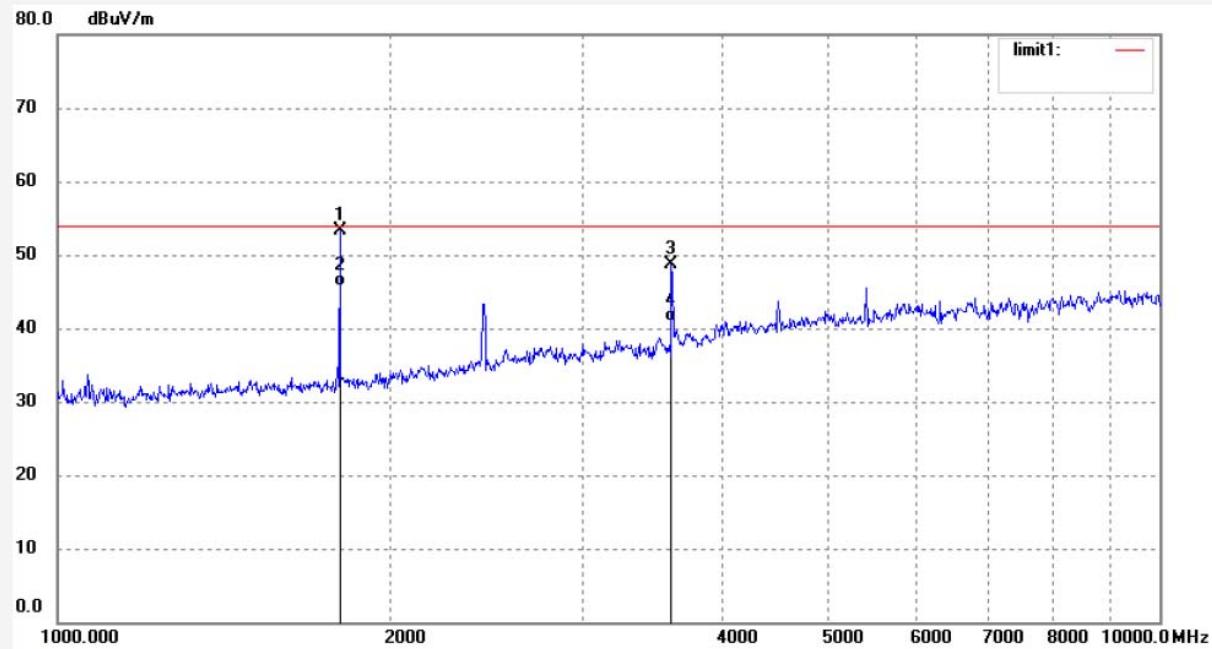
Mode: TX 902.5MHz

Distance: 3m

Model: 210005

Manufacturer: Findbox GmbH

Note: Report NO.:ATE20161073



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 1805.000 | 63.35 | -10.01 | 53.34 | 74.00 | -20.66 | peak | | | |
| 2 | 1805.000 | 55.71 | -10.01 | 45.70 | 54.00 | -8.30 | AVG | | | |
| 3 | 3610.000 | 51.43 | -2.77 | 48.66 | 74.00 | -25.34 | peak | | | |
| 4 | 3610.000 | 43.68 | -2.77 | 40.91 | 54.00 | -13.09 | AVG | | | |

Note: Average measurement with peak detection at No.2



ACCURATE TECHNOLOGY CO., LTD.

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

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: STAR2015 #1257

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: DC 6V

Test item: Radiation Test

Date: 2016-5-31

Temp.(C)/Hum.(%) 23 C / 48 %

Time: 19:11:32

EUT: SmartESL

Engineer Signature: STAR

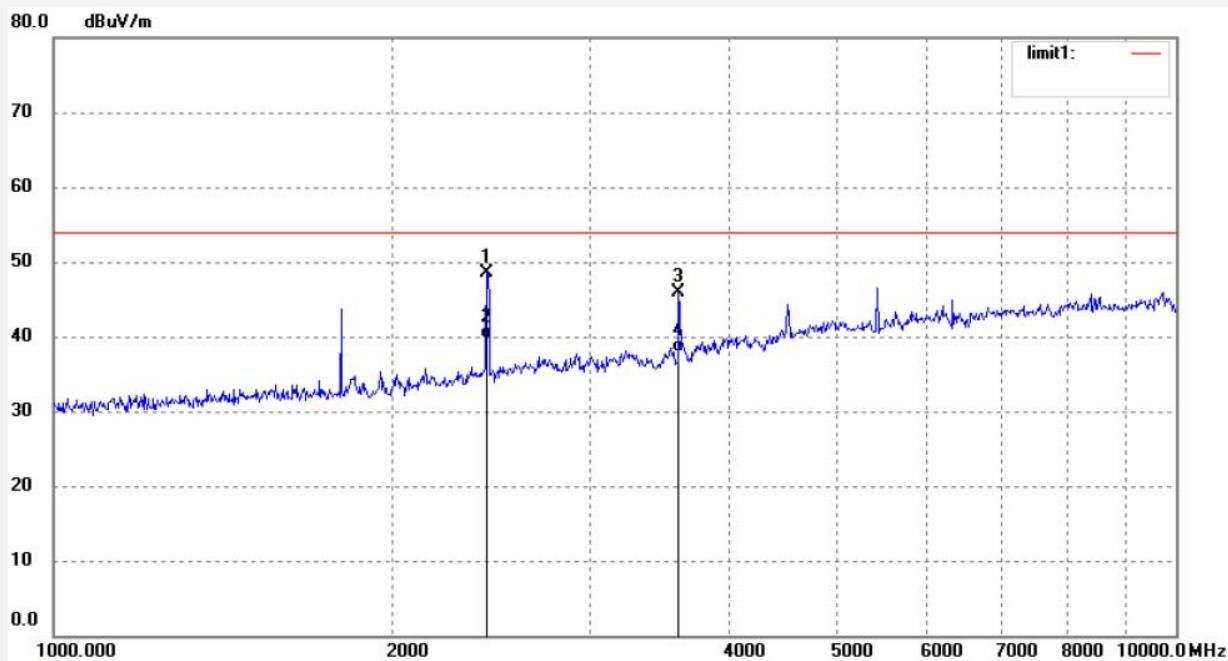
Mode: TX 902.5MHz

Distance: 3m

Model: 210005

Manufacturer: Findbox GmbH

Note: Report NO.:ATE20161073



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 2707.500 | 55.91 | -7.38 | 48.53 | 74.00 | -25.47 | peak | | | |
| 2 | 2707.500 | 47.17 | -7.38 | 39.79 | 54.00 | -14.21 | AVG | | | |
| 3 | 3610.000 | 48.59 | -2.77 | 45.82 | 74.00 | -28.18 | peak | | | |
| 4 | 3610.000 | 40.58 | -2.77 | 37.81 | 54.00 | -16.19 | AVG | | | |

Note: Average measurement with peak detection at No.2

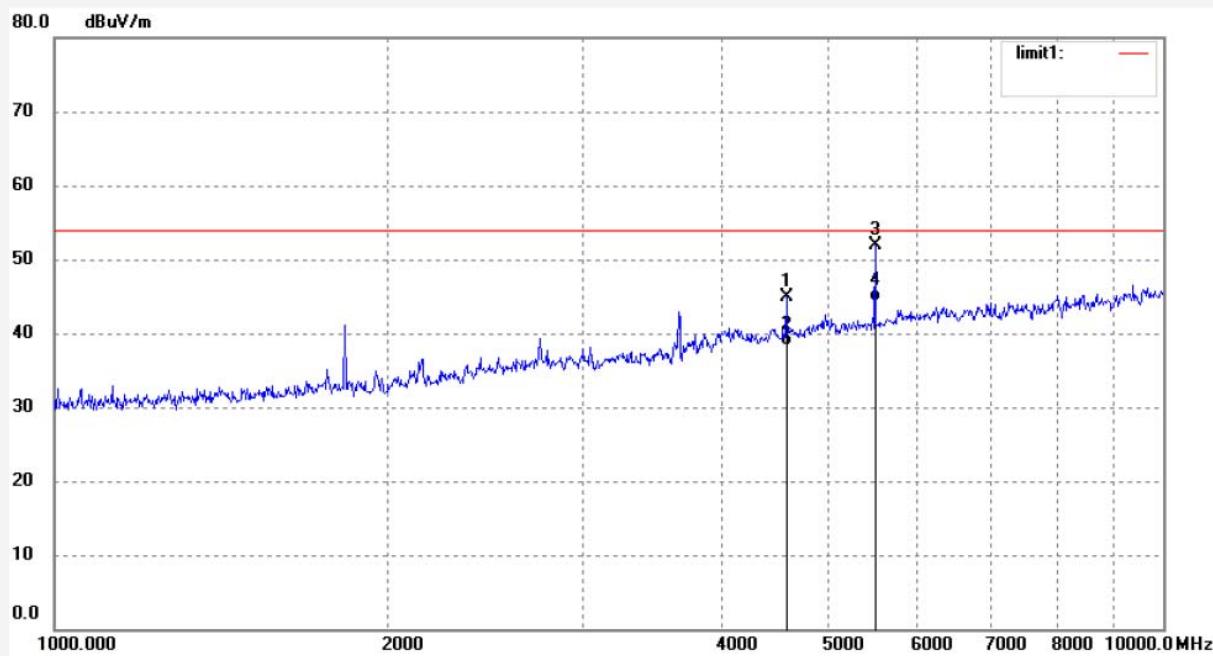


ACCURATE TECHNOLOGY CO., LTD.

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

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | | | |
|-------------------|-------------------------|---------------------|-----------|
| Job No.: | STAR2015 #1258 | Polarization: | Vertical |
| Standard: | FCC Class B 3M Radiated | Power Source: | DC 6V |
| Test item: | Radiation Test | Date: | 2016-5-31 |
| Temp.(C)/Hum.(%) | 23 C / 48 % | Time: | 19:17:15 |
| EUT: | SmartESL | Engineer Signature: | STAR |
| Mode: | TX 914.75MHz | Distance: | 3m |
| Model: | 210005 | | |
| Manufacturer: | Findbox GmbH | | |
| Note: | Report NO.:ATE20161073 | | |



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 4573.750 | 46.04 | -1.19 | 44.85 | 74.00 | -29.15 | peak | | | |
| 2 | 4573.750 | 39.57 | -1.19 | 38.38 | 54.00 | -15.62 | AVG | | | |
| 3 | 5488.500 | 50.66 | 1.18 | 51.84 | 74.00 | -22.16 | peak | | | |
| 4 | 5488.500 | 43.04 | 1.18 | 44.22 | 54.00 | -9.78 | AVG | | | |

Note: Average measurement with peak detection at No.2



ACCURATE TECHNOLOGY CO., LTD.

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

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: STAR2015 #1259

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: DC 6V

Test item: Radiation Test

Date: 2016-5-31

Temp.(C)/Hum.(%) 23 C / 48 %

Time: 19:18:43

EUT: SmartESL

Engineer Signature: STAR

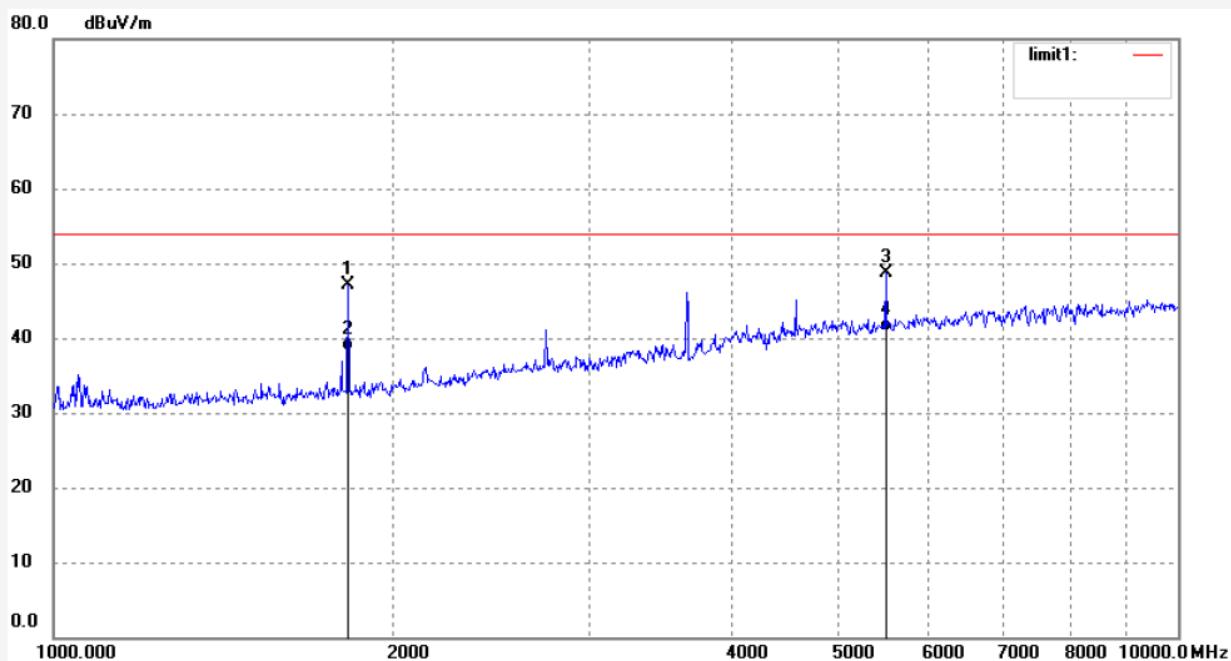
Mode: TX 914.75MHz

Distance: 3m

Model: 210005

Manufacturer: Findbox GmbH

Note: Report NO.:ATE20161073



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 1829.500 | 56.81 | -9.75 | 47.06 | 74.00 | -26.94 | peak | | | |
| 2 | 1829.500 | 48.00 | -9.75 | 38.25 | 54.00 | -15.75 | AVG | | | |
| 3 | 5488.500 | 47.59 | 1.18 | 48.77 | 74.00 | -25.23 | peak | | | |
| 4 | 5488.500 | 39.74 | 1.18 | 40.92 | 54.00 | -13.08 | AVG | | | |

Note: Average measurement with peak detection at No.2



ACCURATE TECHNOLOGY CO., LTD.

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

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: STAR2015 #1261

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: DC 6V

Test item: Radiation Test

Date: 2016-5-31

Temp.(C)/Hum.(%) 23 C / 48 %

Time: 19:23:32

EUT: SmartESL

Engineer Signature: STAR

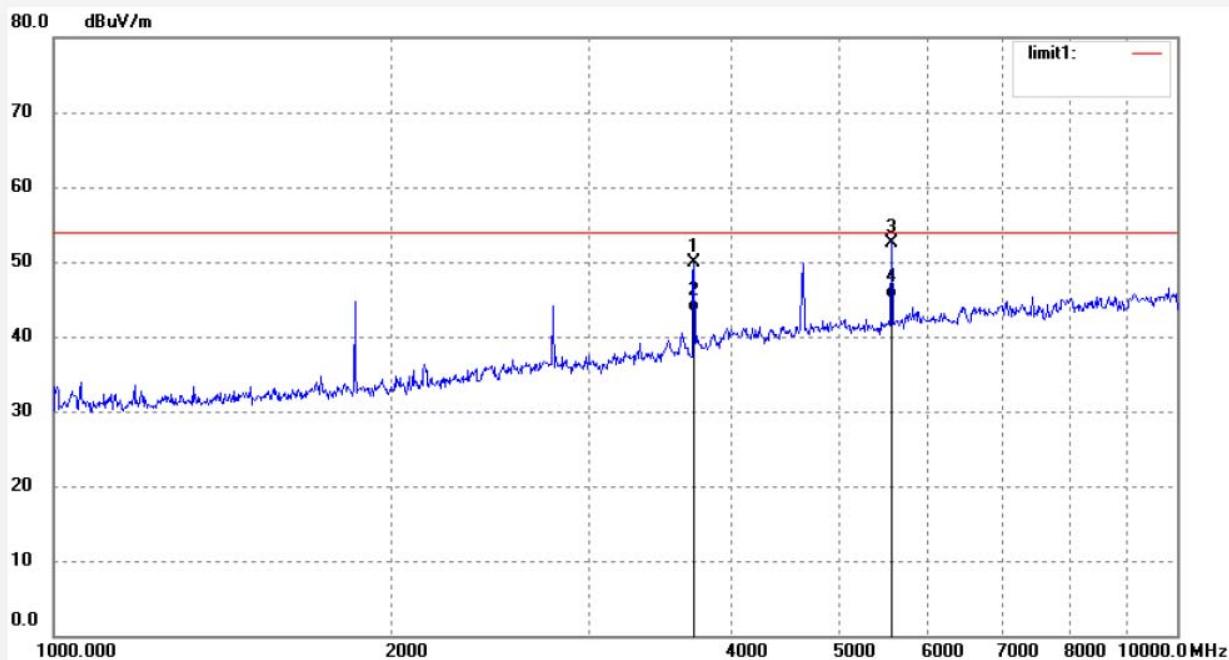
Mode: TX 927.5MHz

Distance: 3m

Model: 210005

Manufacturer: Findbox GmbH

Note: Report NO.:ATE20161073



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 3710.000 | 52.19 | -2.37 | 49.82 | 74.00 | -24.18 | peak | | | |
| 2 | 3710.000 | 45.62 | -2.37 | 43.25 | 54.00 | -10.75 | AVG | | | |
| 3 | 5565.000 | 51.22 | 1.38 | 52.60 | 74.00 | -21.40 | peak | | | |
| 4 | 5565.000 | 43.71 | 1.38 | 45.09 | 54.00 | -8.91 | AVG | | | |

Note: Average measurement with peak detection at No.2



ACCURATE TECHNOLOGY CO., LTD.

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

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: STAR2015 #1262

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: DC 6V

Test item: Radiation Test

Date: 2016-5-31

Temp.(C)/Hum.(%) 23 C / 48 %

Time: 19:25:32

EUT: SmartESL

Engineer Signature: STAR

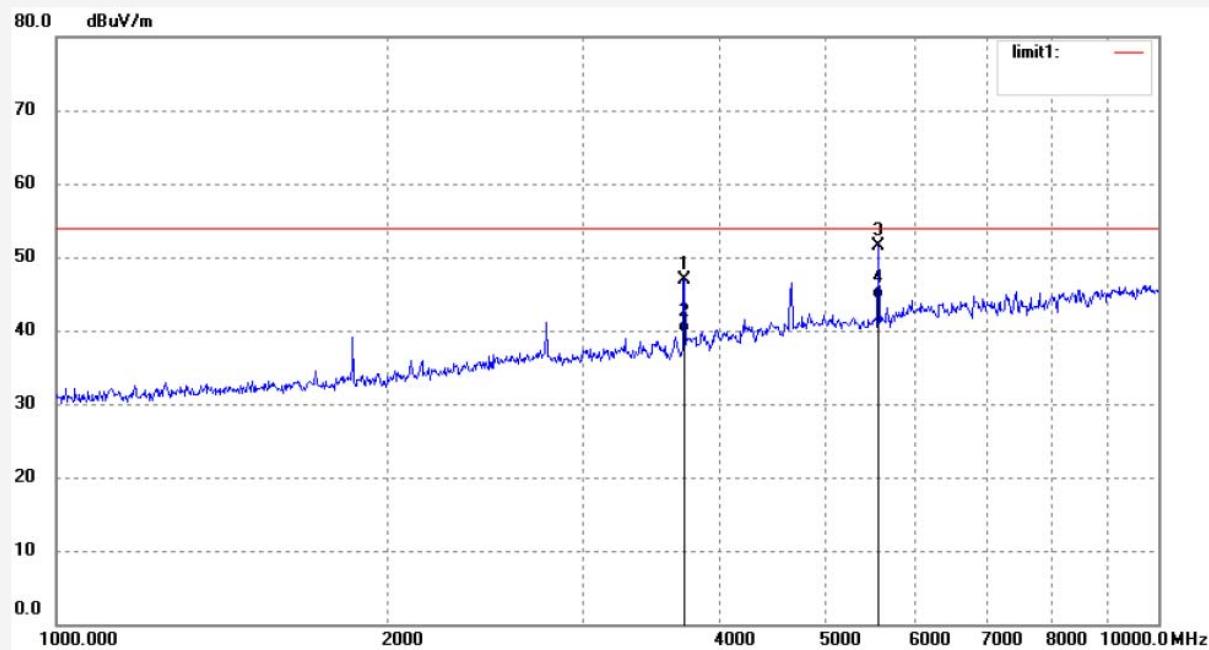
Mode: TX 927.5MHz

Distance: 3m

Model: 210005

Manufacturer: Findbox GmbH

Note: Report NO.:ATE20161073

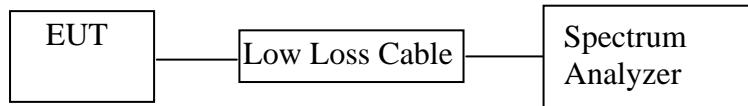


| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 3710.000 | 49.37 | -2.37 | 47.00 | 74.00 | -27.00 | peak | | | |
| 2 | 3710.000 | 42.06 | -2.37 | 39.69 | 54.00 | -14.31 | AVG | | | |
| 3 | 5565.000 | 50.05 | 1.38 | 51.43 | 74.00 | -22.57 | peak | | | |
| 4 | 5565.000 | 43.00 | 1.38 | 44.38 | 54.00 | -9.62 | AVG | | | |

Note: Average measurement with peak detection at No.2

11.BAND EDGE COMPLIANCE TEST

11.1.Block Diagram of Test Setup



(EUT: SmartESL)

11.2.The Requirement For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. 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).

11.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

11.4.Operating Condition of EUT

11.4.1.Setup the EUT and simulator as shown as Section 11.1.

11.4.2.Turn on the power of all equipment.

11.4.3.Let the EUT work in TX (Hopping off, Hopping on) modes measure it. The transmit frequency are 902.5-927.5MHz. We select 902.5MHz, 927.5MHz TX frequency to transmit.

11.5. Test Procedure

11.5.1. The transmitter output was connected to the spectrum analyzer via a low loss cable.

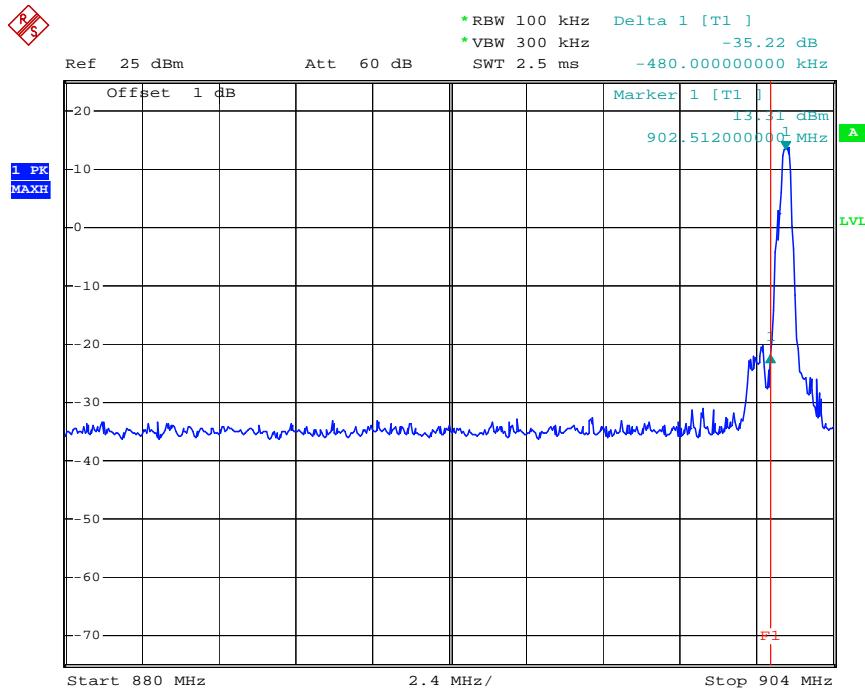
11.5.2. Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz with convenient frequency span including 100 kHz bandwidth from band edge.

11.5.3. The band edges was measured and recorded.

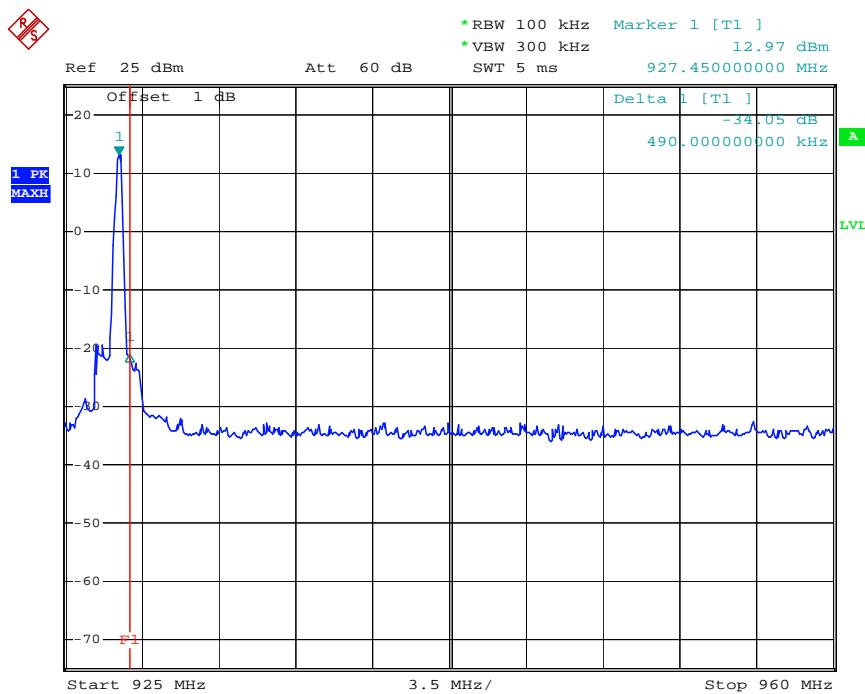
11.6. Test Result

| Frequency (MHz) | Result of Band Edge (dBc) | Limit of Band Edge (dBc) |
|-----------------|---------------------------|--------------------------|
| FSK | | |
| 902.5 | -35.22 | > -20dBc |
| 927.5 | -34.05 | > -20dBc |

FSK



Date: 1.JUN.2016 11:15:40



Radiated Band Edge Result

Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

3. Display the measurement of peak values.

Test Procedure:

The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground(Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

Let the EUT work in TX (Hopping off, Hopping on) modes measure it.

We select 902.5MHz, 927.5MHz TX frequency to transmit(Hopping off mode).

We select 902.5-927.5MHz TX frequency to transmit(Hopping on mode).

During the radiated emission test, the spectrum analyzer was set with the following configurations:

- 1.The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
- 2.The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
- 3.All modes of operation were investigated and the worst-case emissions are reported.

Hopping mode



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.ChinaSite: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: STAR2015 #1269

Polarization: Horizontal

Standard: FCC PK

Power Source: DC 6V

Test item: Radiation Test

Date: 16/06/01/

Temp.(C)/Hum.(%) 23 C / 48 %

Time: 11/51/37

EUT: SmartESL

Engineer Signature: STAR

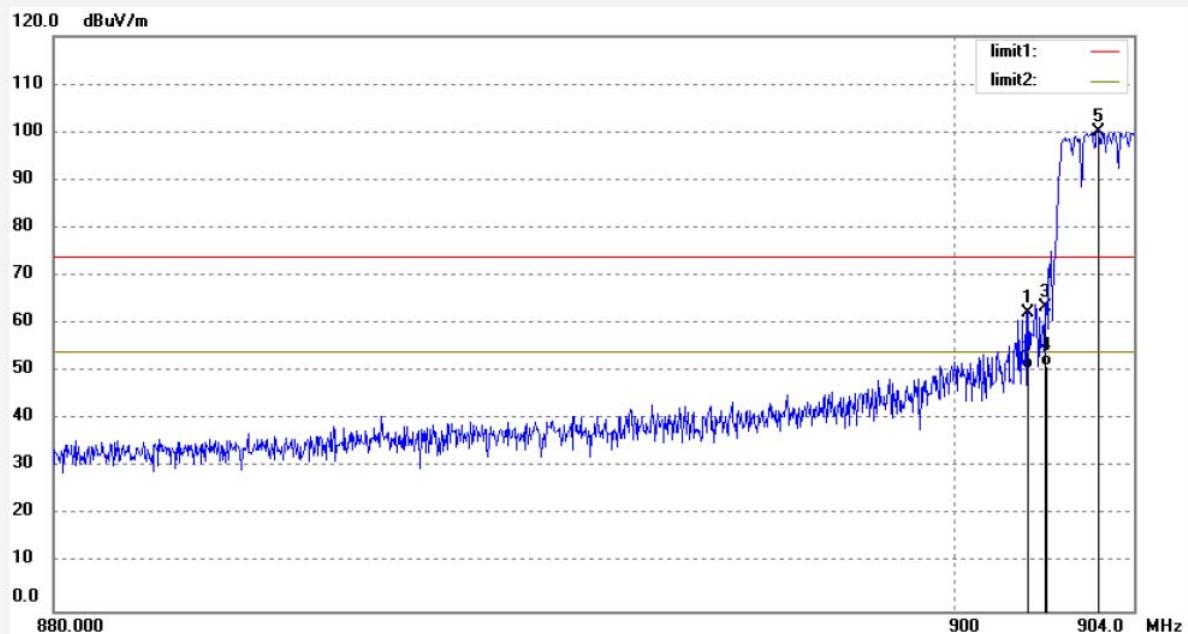
Mode: HOPPING

Distance: 3m

Model: 210005

Manufacturer: Findbox GmbH

Note: Report NO.:ATE20161073



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 901.6240 | 60.98 | 1.28 | 62.26 | 74.00 | -11.74 | peak | | | |
| 2 | 901.6240 | 49.40 | 1.28 | 50.68 | 54.00 | -3.32 | AVG | | | |
| 3 | 902.0000 | 62.31 | 1.28 | 63.59 | 74.00 | -10.41 | peak | | | |
| 4 | 902.0000 | 50.00 | 1.28 | 51.28 | 54.00 | -2.72 | AVG | | | |
| 5 | 903.2078 | 98.63 | 1.30 | 99.93 | 74.00 | 25.93 | peak | | | |

Note: Average measurement with peak detection at No.2, 4, 6, 8



ACCURATE TECHNOLOGY CO., LTD.

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

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: STAR2015 #1270

Polarization: Vertical

Standard: FCC PK

Power Source: DC 6V

Test item: Radiation Test

Date: 16/06/01/

Temp.(C)/Hum.(%) 23 C / 48 %

Time: 11/54/35

EUT: SmartESL

Engineer Signature: STAR

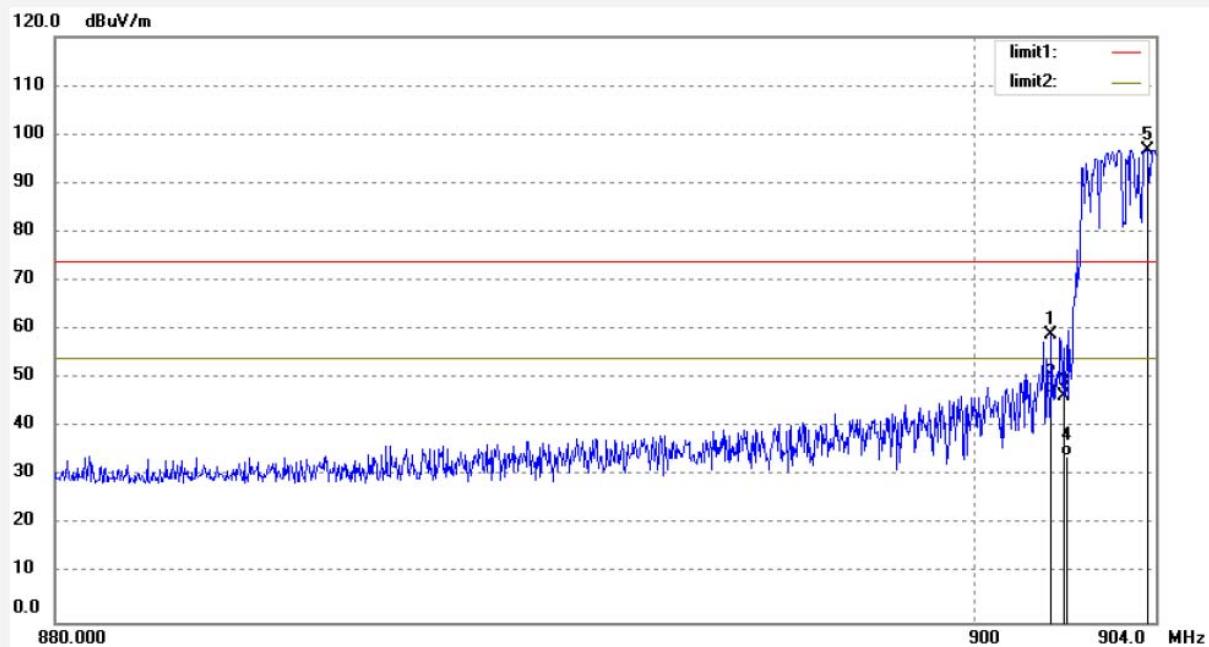
Mode: HOPPING

Distance: 3m

Model: 210005

Manufacturer: Findbox GmbH

Note: Report NO.:ATE20161073



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 901.6960 | 57.62 | 1.28 | 58.90 | 74.00 | -15.10 | peak | | | |
| 2 | 901.6960 | 45.61 | 1.28 | 46.89 | 54.00 | -7.11 | AVG | | | |
| 3 | 902.0000 | 44.97 | 1.28 | 46.25 | 74.00 | -27.75 | peak | | | |
| 4 | 902.0000 | 32.71 | 1.28 | 33.99 | 54.00 | -20.01 | AVG | | | |
| 5 | 903.8079 | 95.53 | 1.30 | 96.83 | 74.00 | 22.83 | peak | | | |

Note: Average measurement with peak detection at No.2, 4, 6, 8



ACCURATE TECHNOLOGY CO., LTD.

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

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: STAR2015 #1271

Polarization: Horizontal

Standard: FCC PK

Power Source: DC 6V

Test item: Radiation Test

Date: 16/06/01/

Temp.(C)/Hum.(%) 23 C / 48 %

Time: 11/57/08

EUT: SmartESL

Engineer Signature: STAR

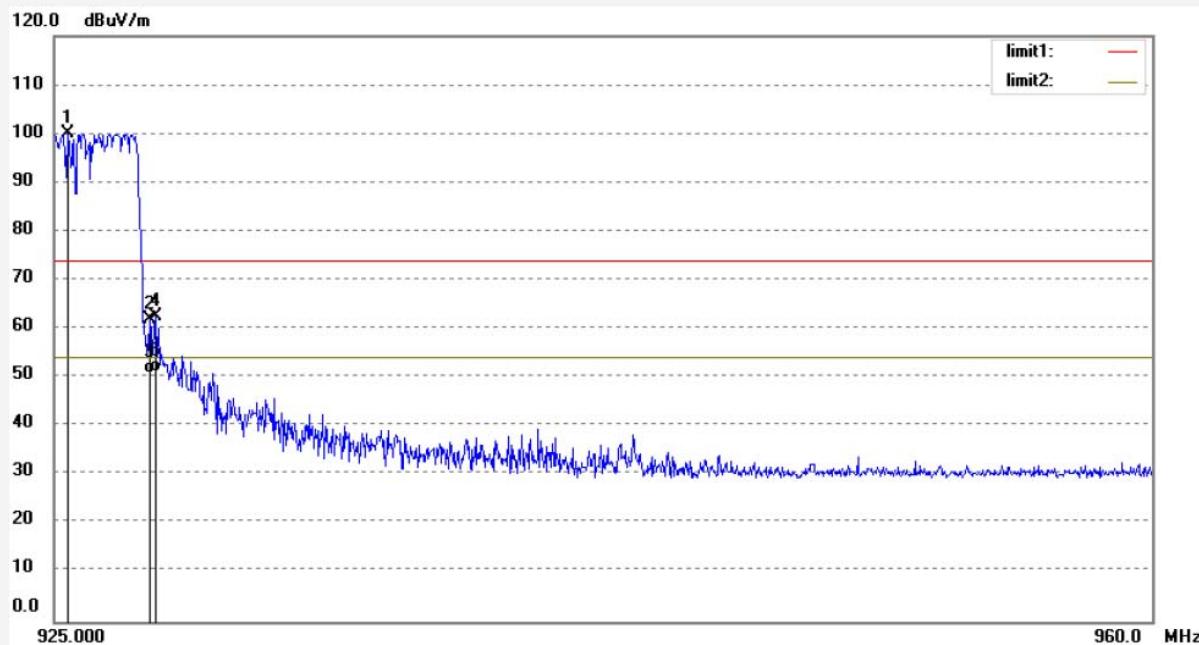
Mode: HOPPING

Distance: 3m

Model: 210005

Manufacturer: Findbox GmbH

Note: Report NO.:ATE20161073



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 925.4200 | 98.19 | 1.73 | 99.92 | 74.00 | 25.92 | peak | | | |
| 2 | 928.0000 | 60.04 | 1.80 | 61.84 | 74.00 | -12.16 | peak | | | |
| 3 | 928.0000 | 49.06 | 1.80 | 50.86 | 54.00 | -3.14 | AVG | | | |
| 4 | 928.2200 | 60.64 | 1.80 | 62.44 | 74.00 | -11.56 | peak | | | |
| 5 | 928.2200 | 49.40 | 1.80 | 51.20 | 54.00 | -2.80 | AVG | | | |

Note: Average measurement with peak detection at No.2, 4, 6, 8



ACCURATE TECHNOLOGY CO., LTD.

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

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: STAR2015 #1272

Polarization: Vertical

Standard: FCC PK

Power Source: DC 6V

Test item: Radiation Test

Date: 16/06/01/

Temp.(C)/Hum.(%) 23 C / 48 %

Time: 11/58/16

EUT: SmartESL

Engineer Signature: STAR

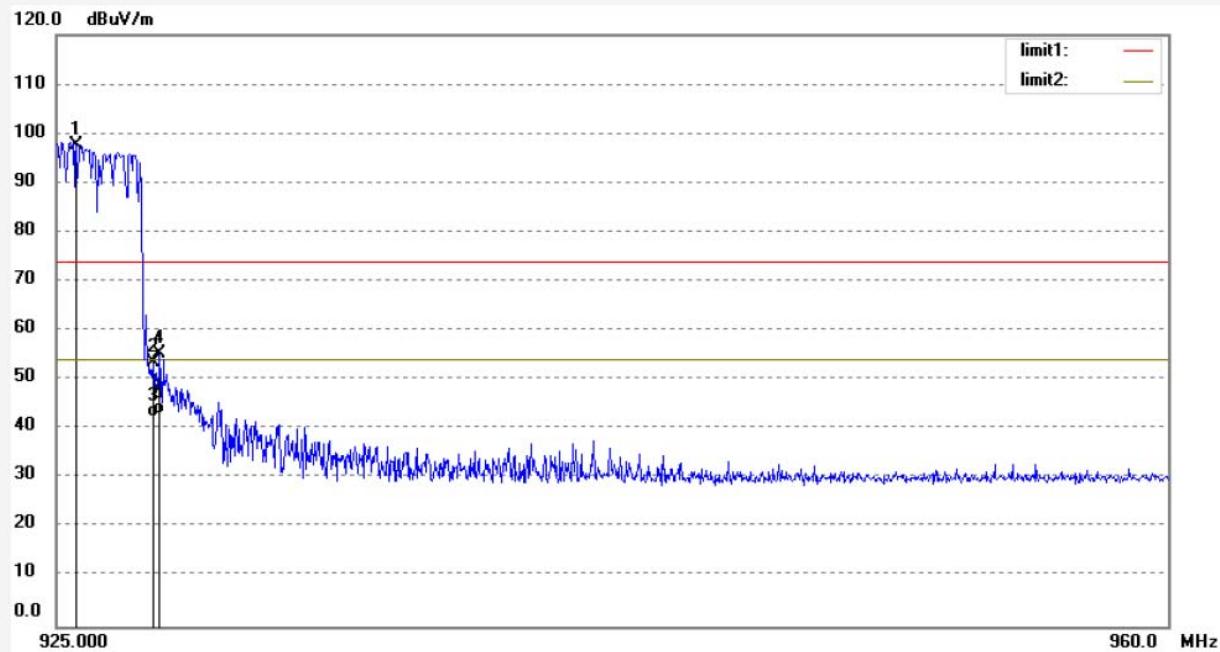
Mode: HOPPING

Distance: 3m

Model: 210005

Manufacturer: Findbox GmbH

Note: Report NO.:ATE20161073



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1 | 925.6300 | 95.83 | 1.73 | 97.56 | 74.00 | 23.56 | peak | | | |
| 2 | 928.0000 | 51.80 | 1.80 | 53.60 | 74.00 | -20.40 | peak | | | |
| 3 | 928.0000 | 40.71 | 1.80 | 42.51 | 54.00 | -11.49 | AVG | | | |
| 4 | 928.2200 | 53.46 | 1.80 | 55.26 | 74.00 | -18.74 | peak | | | |
| 5 | 928.2200 | 41.26 | 1.80 | 43.06 | 54.00 | -10.94 | AVG | | | |

Note: Average measurement with peak detection at No.2, 4, 6, 8

12. ANTENNA REQUIREMENT

12.1. The Requirement

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

12.2. Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Antenna gain of EUT is 0dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.

