

Prüfbericht-Nr.: 17050207 001 Auftrags-Nr.: 164031505 Seite 1 von 54 Test Report No.: Order No.: Page 1 of 54 Kunden-Referenz-Nr.: Auftragsdatum: N/A 13.05.2015 Client Reference No : Order date: Accent Advanced Systems SLU, Bergueda 43 Local 18 Castellar dei Valles 08211 Auftraggeber: Spain Client: Prüfgegenstand: Bluetooth Low Energy Advertising Device Test item: Bezeichnung / Typ-Nr.: iBKS105 Identification / Type No.: Auftrags-Inhalt: **FCC Certification** Order content: Prüfgrundlage: CFR47 FCC Part 15: Subpart C Section 15.247 Test specification: CFR47 FCC Part 15: Subpart C Section 15.209 FCC KDB Publication 447498 v05r02 Wareneingangsdatum: 22.05.2015 Date of receipt: Prüfmuster-Nr.: 1500919, 1500920, 1500921 Test sample No.: Prüfzeitraum: 24.05.2015 - 30.05.2015 Testing period: Ort der Prüfung: Accurate Technology Co., Ltd. Place of testing: Prüflaboratorium: TÜV Rheinland (Shenzhen) Co., Ltd. Testing laboratory: Prüfergebnis\*: **Pass** Test result\*: geprüft von I tested by: kontrolliert von I reviewed by: Owen Tian/Senior Project Manager 07.07.2015 07.07.2015 Sam Lin/Technical Certicier Datum Name / Stellung Unterschrift Datum Name / Stellung Unterschrift Name | Position Name / Position Date Date Signature Signature Sonstiges I Other. Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt Condition of the test item at delivery: Test item complete and undamaged \* Legende: 1 = sehr gut 2 = aut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet 3 = satisfactory 1 = very good 2 = good4 = sufficient Legend: 5 = poor F(ail) = failed a.m. test specification(s) P(ass) = passed a.m. test specification(s) 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 only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.



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# **TEST SUMMARY**

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 PEAK OUTPUT POWER

RESULT: Pass

5.1.3 6DB BANDWIDTH AND 99% BANDWIDTH

RESULT: Pass

5.1.4 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100KHZ BANDWIDTH

RESULT: Pass

5.1.5 POWER SPECTRAL DENSITY

RESULT: Pass

5.1.6 Spurious Emission

RESULT: Pass

6.1.1 ELECTROMAGNETIC FIELDS

RESULT: Pass

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# 1. General Remarks

# 1.1 Complementary Materials

None.

# 2. Test Sites

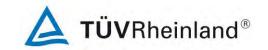
# 2.1 Test Facilities

Accurate Technology Co., Ltd.

(FCC Registration No.: 752051)

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

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



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## 2.2 List of Test and Measurement Instruments

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

Kind of Equipment	Manufacturer	Туре	S/N	Calibrated until
Transmitter spurious emission	s & Receiver spurio	ous emissions		
Spectrum Analyzer	Rohde & Schwarz	FSV40	101495	2016-01-09
Test Receiver	Rohde & Schwarz	ESCS30	100307	2016-01-09
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	2016-01-14
Loop Antenna	Schwarzbeck	FMZB1516	1516131	2016-01-14
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	2016-01-14
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	2016-01-14
RF Switching Unit+PreAMP	Compliance Direction	RSU-M2	38322	2016-01-09
Pre-Amplifier	Rohde&Schwarz	CBLU11835 40-01	3791	2016-01-09
50 Coaxial Switch	Anritsu Corp	MP59B	620050647 4	2016-01-09
RF Coaxial Cable	SUHNER	N-3m	No.8	2016-01-09
RF Coaxial Cable	RESENBERGER	N-3.5m	No.9	2016-01-09
RF Coaxial Cable	SUHNER	N-6m	No.10	2016-01-09
RF Coaxial Cable	RESENBERGER	N-12m	No.11	2016-01-09
RF Coaxial Cable	RESENBERGER	N-0.5m	No.12	2016-01-09
Radio Spectrum Test				
Spectrum Analyzer	Rohde & Schwarz	FSV40	101495	2016-01-09
Vector Signal Generator	Rohde & Schwarz	SMBV100A	260434	2016-01-09
Signal Generator	Rohde & Schwarz	SMB100A	108362	2016-01-09
Open Switch and Control Unit	Rohde & Schwarz	OSP120 + OSP-B157	101244 + 100866	2016-01-09

# 2.3 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, 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 basics using in house standards or comparisons.

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# 2.5 Measurement Uncertainty

**Table 2: Measurement Uncertainty** 

Parameter	Uncertainty
Radio Spectrum	< ± 0.60 dB
Radiated emission of transmitter, valid up to 26.5 GHz	< ± 4.42 dB
Conducted Emission	< ± 2.23 dB
Radiated Emission	< ± 4.42 dB

# 2.6 Location of Original Data

The original copies of all test data taken during actual testing were retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

# 2.7 Status of Facility Used for Testing

Accurate Technology Co., Ltd. test facility located at F1, Bldg. A, Changyuan New Material Port Keyuan Rd., Science & Industry Park, Nanshan, Shenzhen, P.R. China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.



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# 3. General Product Information

# 3.1 Product Function and Intended Use

The EUT is a Bluetooth Low Energy Advertising Device. For details refer to the User Manual and Circuit Diagram.

# 3.2 Ratings and System Details

**Table 3: Technical Specification** 

Technical Specification	Value
Kind of Equipment	Bluetooth Low Energy Advertising Device
Type Designation	iBKS105
FCC ID	2ABTTIBKS105
Operating Frequency band	2402 – 2480MHz
Channel separation	2MHz
Extreme Temperature Range	-25~+75°C
Operation Voltage	DC 1.8 – 3.6V (via built in battery)
Modulation	GFSK
Bluetooth version	4.0, Single Mode
Antenna Gain	5.3dBi

Table 4: RF channel and frequency of Bluetooth LE mode

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402.00	11	2424.00	22	2446.00	33	2468.00
1	2404.00	12	2426.00	23	2448.00	34	2470.00
2	2406.00	13	2428.00	24	2450.00	35	2472.00
3	2408.00	14	2430.00	25	2452.00	36	2474.00
4	2410.00	15	2432.00	26	2454.00	37	2476.00
5	2412.00	16	2434.00	27	2456.00	38	2478.00
6	2414.00	17	2436.00	28	2458.00	39	2480.00
7	2416.00	18	2438.00	29	2460.00		
8	2418.00	19	2440.00	30	2462.00		
9	2420.00	20	2442.00	31	2464.00		
10	2422.00	21	2444.00	32	2466.00		

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# 3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Bluetooth LE mode
  - 1. Transmitting
    - a. Low channel
    - b. Middle channel
    - c. High channel
  - 2. Receiving
- B. Standby
- C. Off

# 3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

# 3.5 Submitted Documents

- Bill of Material
- PCB Layout
- Photo Document

- Circuit Diagram
- Instruction Manual
- Rating Label



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# 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

None.

# 4.4 Countermeasures to achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

Products

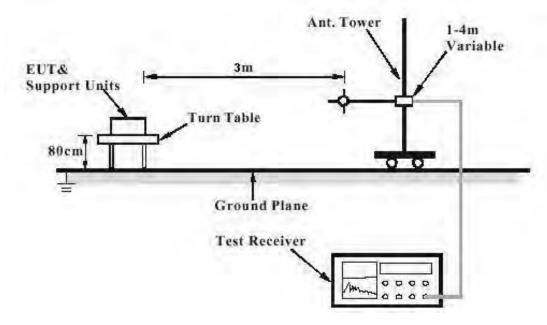


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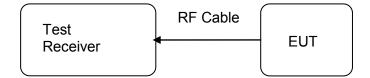
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# 4.5 Test Setup Diagram

**Diagram of Measurement Configuration for Radiation Test** 



**Diagram of Measurement Equipment Configuration for Transmitter Measurement** 





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# 5. Test Results

# 5.1 Transmitter Requirement & Test Suites

## 5.1.1 Antenna Requirement

RESULT: Pass

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

Limit The use of antennas with directional gains that do

not exceed 6dBi

According to the manufacturer declared, the EUT has an internal antenna, the directional gain of antenna is 5.3dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.



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## 5.1.2 Peak Output Power

RESULT: Pass

Test date : 2015-05-24

Test standard : FCC Part 15.247(b)(3)
Basic standard : ANSI C63.4: 2003

Clause 9.1 of KDB 558074 v03r01

Limit : 1W

Kind of test site : Shielded room

**Test setup** 

Test Channel : Low/ Middle/ High

Operation Mode : A.1
Ambient temperature : 24°C
Relative humidity : 48%
Atmospheric pressure : 101kPa

**Table 5: Test result of Peak Output Power** 

Channel	Channel Frequency	Peak Output Power	Limit
Charine	(MHz)	(dBm)	(dBm)
Low Channel	2402	-1.95	30
Middle Channel	2440	-1.09	30
High Channel	2480	-0.69	30



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### 5.1.3 6dB Bandwidth and 99% Bandwidth

**RESULT: Pass** 

Date of testing 2015-05-24

FCC Part 15.247(a)(2) Test standard Basic standard ANSI C63.4: 2003

Clause 8 of KDB 558074 v03r01

Kind of test site Shielded room

**Test setup** 

Low/ Middle/ High

Test Channel :
Operation Mode :
Ambient temperature :
Relative humidity : A.1 **24**℃ 48% Atmospheric pressure : 101kPa

### Table 6: Test result of 6dB & 99% Bandwidth

Channel	Channel	6dB Bandwidth	99% Bandwidth
Charmer	Frequency (MHz)	(MHz)	(MHz)
Low Channel	2402	0.686	1.051
Mid Channel	2440	0.690	1.046
High Channel	2480	0.686	1.051



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# 5.1.4 Conducted Spurious Emissions measured in 100kHz Bandwidth

RESULT: Pass

Date of testing : 2015-05-24

Test standard : FCC part 15.247(d)
Basic standard : ANSI C63.4: 2003

Limit : 20dB (below that in the 100kHz bandwidth within

the band that contains the highest level of the

desired power);

Kind of test site : Shield room

**Test setup** 

Test Channel : Low/ Middle/ High

Operation mode : A.1

Ambient temperature : 24°C

Relative humidity : 48%

Atmospheric pressure : 101kPa

For details refer to following test plot.



**Products** 

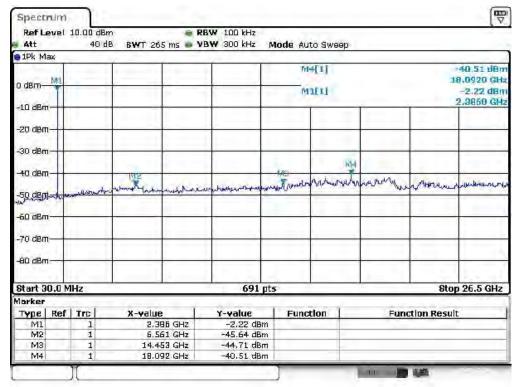
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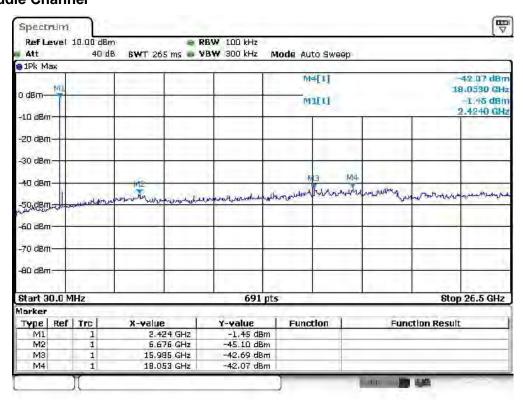
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## Test Plot of Conducted spurious emissions measured in 100kHz **Bandwidth**

#### **Low Channel**



### Middle Channel





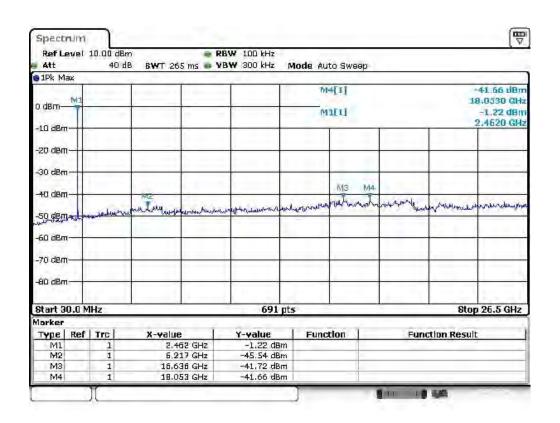
**Products** 

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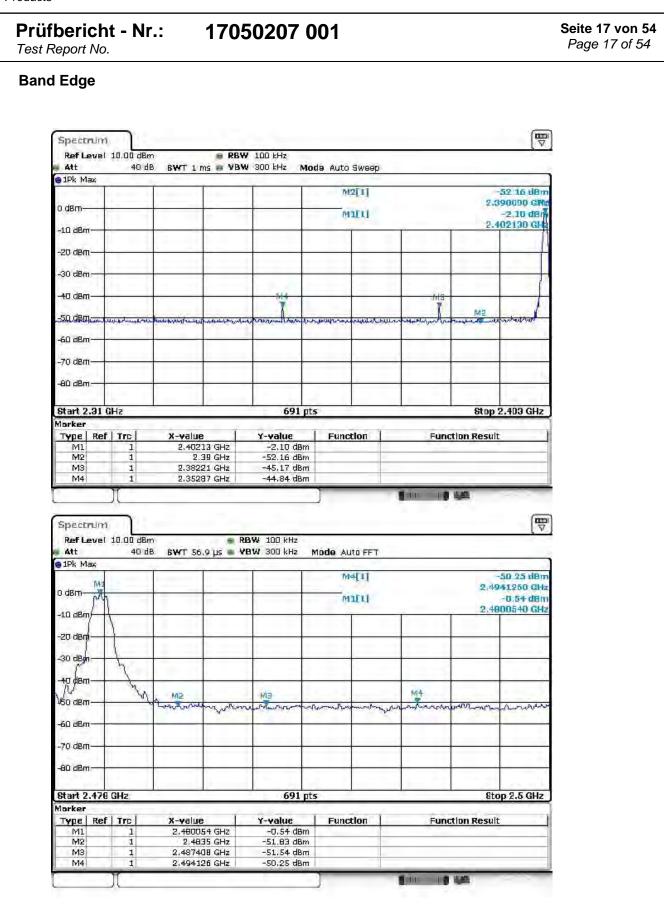
### **High Channel**

Test Report No.





**Products** 





**Products** 

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# 5.1.5 Power spectral density

**RESULT: Pass** 

2015-05-24 Date of testing

Test standard
Basic standard FCC part 15.247(e) ANSI C63.4: 2003

Clause 10 of KDB 558074 v03r01

Limit 8dBm/3kHz Kind of test site Shield room

**Test setup** 

Low/ Middle/ High

Test Channel : Operation mode : Ambient temperature : Relative humidity : A.1 **24**°C 48% Atmospheric pressure : 101kPa

### Table 7: Test result of power spectral density:

Mode	Channel (MHz)	Result (dBm/3kHz)	Limit (dBm/3kHz)	Conclusion
	2402	-16.99	8	Pass
Bluetooth LE mode	2440	-14.41	8	Pass
	2480	-14.06	8	Pass



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# **5.1.6 Spurious Emission**

**RESULT:** Pass

2015-05-30 Date of testing

Date of testing
Test standard
Basic standard FCC part 15.247(d) ANSI C63.4: 2003

Clause 11 of KDB 558074 v03r01

Limits FCC part 15.209(a)

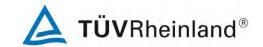
3m Semi-Anechoic Chamber Kind of test site

**Test setup** 

Low/ Middle/ High

Test Channel : Operation mode : Ambient temperature : Relative humidity : Atmospheric pressure : A.1 **23**℃ 48% 101kPa

For details refer to following test plot.



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# **Test Plot of Spurious Emission of transmitting**

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#### FCC Class B 3M Radiated

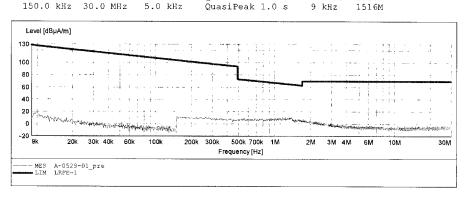
Bluetooth Low Energy Advertising Device M/N:iBKS105 Accent Advanced Systems SLU EUT:

Manufacturer:

Operating Condition: TX 2402MHz
Test Site: 2# Chamber Operator: LAN Test Specification: DC 3V Comment:

Start of Test: X 2015-5-29 /

SCAN TABLE: "LFRE Fin"
Short Description:
Start Stop Step \_SUB\_STD\_VTERM2 1.70 SUB\_STD\_VTERM2 1.76
Detector Meas.
Time
Hz QuasiPeak 1.0 s
Hz QuasiPeak 1.0 s Transducer Frequency Frequency Width
9.0 kHz 150.0 kHz 100.0 Hz
150.0 kHz 30.0 MHz 5.0 kHz Bandw. 200 Hz 1516M





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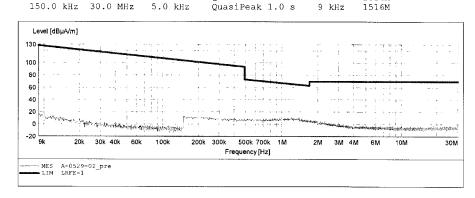
#### ACCURATE TECHNOLOGY CO., LTD

#### FCC Class B 3M Radiated

EUT: Bluetooth Low Energy Advertising Device M/N:iBKS105

Manufacturer: Accent Advanced Systems SLU
Operating Condition: TX 2402MHz
Test Site: 2# Chamber Operator: LAN Test Specification: DC 3V Comment: Start of Test: 2015-5-29 /

SCAN TABLE: "LFRE Fin"
Short Description:
Start Stop Ste \_SUB\_STD\_VTERM2 1.70 Step Detector Meas. Time ΙF Transducer Frequency Frequency Width 9.0 kHz 150.0 kHz 100.0 Hz Bandw. QuasiPeak 1.0 s 1516M 200 Hz





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#### ACCURATE TECHNOLOGY CO., LTD

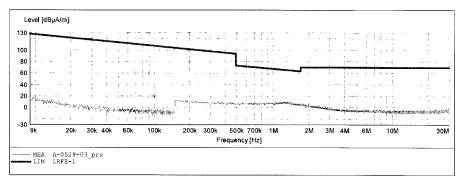
#### FCC Class B 3M Radiated

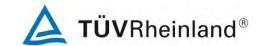
Bluetooth Low Energy Advertising Device M/N:iBKS105

Manufacturer: Accent Advanced Systems SLU
Operating Condition: TX 2402MHz
Test Site: 2# Chamber
Operator: LAM Test Specification: DC 3V Comment: Z Start of Test: 2015-5-29 /

SCAN TABLE: "LFRE Fin"
Short Description:
Start Stop Ste \_SUB\_STD\_VTERM2 1.70 Start Stop Step
Frequency Frequency Width
9.0 kHz 150.0 kHz 100.0 Hz
150.0 kHz 30.0 MHz 5.0 kHz Step Detector Meas. Time IF Transducer Bandw.

QuasiPeak 1.0 s 200 Hz 1516M QuasiPeak 1.0 s 9 kHz 1516M





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#### ACCURATE TECHNOLOGY CO., LTD

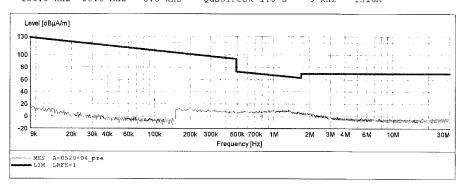
#### FCC Class B 3M Radiated

EUT: Bluetooth Low Energy Advertising Device M/N:iBKS105

Manufacturer: Accent Advanced Systems SLU
Operating Condition: TX 2440MHz
Test Site: 2# Chamber Operator: LAN Test Specification: DC 3V

Comment: Start of Test: 2015-5-29 /

SCAN TABLE: "LFRE Fin"
Short Description:
Start Stop Ste \_SUB\_STD\_VTERM2 1.70 Detector Meas. Time QuasiPeak 1.0 s ΙF Transducer Frequency Frequency Width 9.0 kHz 150.0 kHz 100.0 Hz Bandw. 1516M 200 Hz 150.0 kHz 30.0 MHz 5.0 kHz QuasiPeak 1.0 s 9 kHz 1516M





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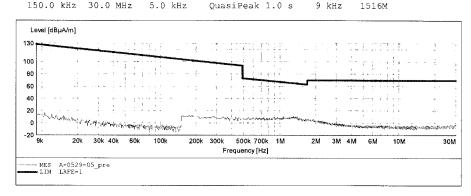
### ACCURATE TECHNOLOGY CO., LTD

#### FCC Class B 3M Radiated

Bluetooth Low Energy Advertising Device M/N:iBKS105

Manufacturer: Accent Advanced Systems SLU
Operating Condition: TX 2440MHz
Test Site: 2# Chamber
Operator: LAN Test Specification: DC 3V Comment: Start of Test: 2015-5-29 /

SCAN TABLE: "LFRE Fin"
Short Description:
Start Stop Step \_SUB\_STD\_VTERM2 1.70 Detector Meas. Time ΙF Transducer Bandw. QuasiPeak 1.0 s QuasiPeak 1.0 s 200 Hz 9 kHz 1516M





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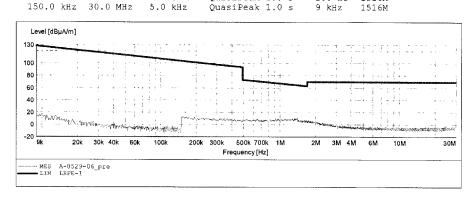
#### ACCURATE TECHNOLOGY CO., LTD

#### FCC Class B 3M Radiated

Bluetooth Low Energy Advertising Device M/N:iBKS105

Manufacturer: Accent Advanced Systems SLU
Operating Condition: TX 2440MHz
Test Site: 2# Chamber Test Site: LAN Test Specification: DC 3V Comment: Z Start of Test: 2015-5-29 /

SCAN TABLE: "LFRE Fin"
Short Description:
Start Stop Ste \_SUB\_STD\_VTERM2 1.70 Step ΙF Detector Meas. Time Transducer Frequency Frequency Width
9.0 kHz 150.0 kHz 100.0 Hz Bandw. QuasiPeak 1.0 s QuasiPeak 1.0 s 200 Hz 1516M





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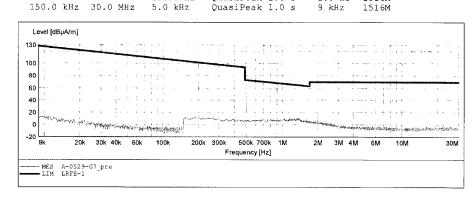
#### ACCURATE TECHNOLOGY CO., LTD

#### FCC Class B 3M Radiated

Bluetooth Low Energy Advertising Device M/N:iBKS105

Manufacturer: Accent Advanced Systems SLU
Operating Condition: TX 2480MHz
Test Site: 2# Chamber Test Site: Operator: T.AN Test Specification: DC 3V Comment: X Start of Test: 2015-5-29 /

SCAN TABLE: "LFRE Fin"
Short Description:
Start Stop Step \_SUB\_STD\_VTERM2 1.70 Step Detector Meas. Time QuasiPeak 1.0 s ΙF Transducer Bandw. 200 Hz 1516M





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#### ACCURATE TECHNOLOGY CO., LTD

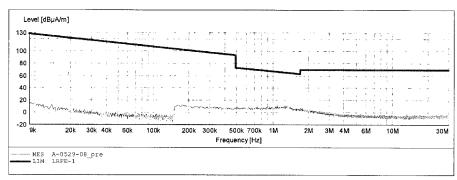
#### FCC Class B 3M Radiated

Bluetooth Low Energy Advertising Device M/N:iBKS105

Manufacturer: Accent Advanced Systems SLU
Operating Condition: TX 2480MHz
Test Site: 2# Chamber Test Site: LAN Operator: Test Specification: DC 3V Comment: Start of Test: 2015-5-29 /

SCAN TABLE: "LFRE Fin"
Short Description:
Start Stop Ste \_SUB\_STD\_VTERM2 1.70 Step IF

Detector Meas. Time Transducer Frequency Frequency Width 9.0 kHz 150.0 kHz 100.0 Hz Bandw. QuasiPeak 1.0 s 1516M 200 Hz 150.0 kHz 30.0 MHz 5.0 kHz QuasiPeak 1.0 s 9 kHz 1516M





**Produkte Products** 

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Test Report No.

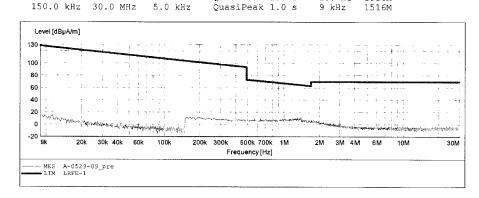
#### ACCURATE TECHNOLOGY CO., LTD

#### FCC Class B 3M Radiated

Bluetooth Low Energy Advertising Device M/N:iBKS105

Manufacturer: Accent Advanced Systems SLU
Operating Condition: TX 2480MHz
Test Site: 2# Chamber Test Site: LAN Operator: Test Specification: DC 3V Comment: Start of Test: 2015-5-29 /

SCAN TABLE: "LFRE Fin"
Short Description:
Start Stop Ste \_SUB\_STD\_VTERM2 1.70 Detector Meas. Time Step ΙF Transducer Frequency Frequency Width 9.0 kHz 150.0 kHz 100.0 Hz Bandw. 200 Hz QuasiPeak 1.0 s 1516M





**Products** 

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### 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.: lan2015-2 #793

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

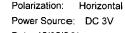
Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Bluetooth Low Energy Advertising Device

Mode: TX 2402MHz Model: iBKS105

Manufacturer: Accent Advanced Systems SLU

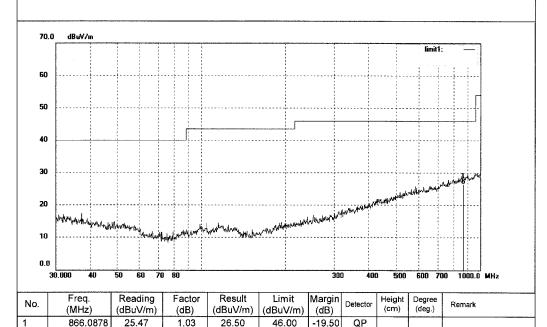
Note: Bluetooth 4.0



Date: 15/05/30/

Time:

Engineer Signature:
Distance: 3m





**Products** 

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ATC ®

ACCURATE TECHNOLOGY CO., LTD.

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

Polarization:

Time:

Date: 15/05/30/

Distance: 3m

Engineer Signature:

Power Source: DC 3V

Vertical

Degree (deg.)

Remark

Height

(cm)

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

Job No.: lan2015-2 #794

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Low Energy Advertising Device

Mode: TX 2402MHz Model: iBKS105

Manufacturer: Accent Advanced Systems SLU

Note: Bluetooth 4.0

Freq.

(MHz)

887.6099

No.

Reading

(dBuV/m)

24.25

Factor

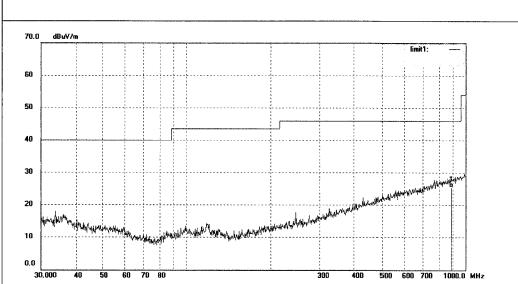
(dB)

1.24

Result

(dBuV/m)

25.49



Limit

(dBuV/m

46.00

Margin

(dB)

-20.51

Detector



**Products** 

Test Report No.

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## 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.: Ian2015-2 #796

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

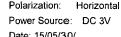
Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Bluetooth Low Energy Advertising Device

Mode: TX 2440MHz Model: iBKS105

Manufacturer: Accent Advanced Systems SLU

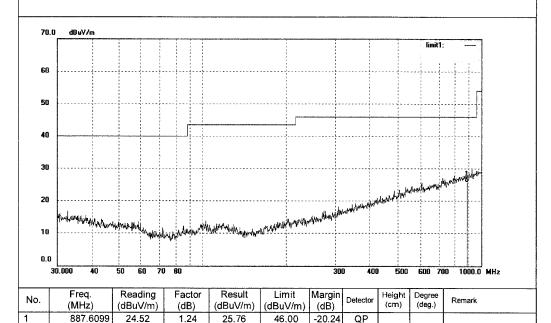
Note: Bluetooth 4.0



Date: 15/05/30/

Time:

Engineer Signature: Distance: 3m





**Products** 

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### 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.: lan2015-2 #795

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

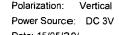
Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Bluetooth Low Energy Advertising Device

Mode: TX 2440MHz Model: iBKS105

Manufacturer: Accent Advanced Systems SLU

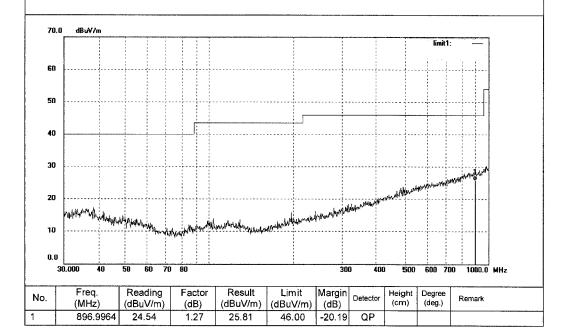
Note: Bluetooth 4.0



Date: 15/05/30/

Time:

Engineer Signature: Distance: 3m





**Products** 

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### ACCURATE TECHNOLOGY CO., LTD.

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

Polarization:

Date: 15/05/30/

Distance: 3m

Time:

Power Source: DC 3V

Engineer Signature:

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

Horizontal

Job No.: lan2015-2 #797

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

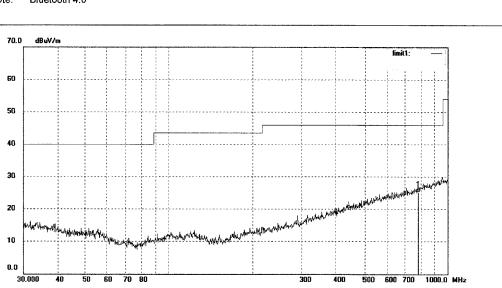
Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Bluetooth Low Energy Advertising Device

Mode: TX 2480MHz Model: iBKS105

Manufacturer: Accent Advanced Systems SLU

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	782.3452	25.40	-0.37	25.03	46.00	-20.97	QP				_



**Products** 

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## ACCURATE TECHNOLOGY CO., LTD.

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

Tel:+86-0755-26503290 Fax:+86-0755-26503396

Site: 2# Chamber

Job No.: lan2015-2 #798 Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

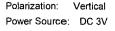
Bluetooth Low Energy Advertising Device

Mode: TX 2480MHz Model: iBKS105

EUT:

Manufacturer: Accent Advanced Systems SLU

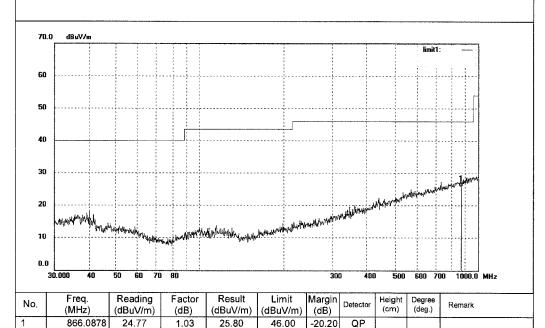
Note: Bluetooth 4,0



Date: 15/05/30/

Time:

Engineer Signature:
Distance: 3m





**Products** 

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.

## 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.: lan2015-2 #784

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Low Energy Advertising Device

Mode: TX 2402MHz

Model: iBKS105

Manufacturer: Accent Advanced Systems SLU

Note: Bluetooth 4.0

Polarization: Horizontal Power Source: DC 3V Date: 15/05/30/

Time:

Engineer Signature:
Distance: 3rn

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90		1		; } ; ;								
80												
70								ļ }				
60				: : : :		ļ	ļ					
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40			المراجعة المراجعة المراجعة	- Lagringerene metalolika		Manual Property Comments	Vanhande		e de la composition della comp	,, gar	many manufacture of the second second	
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20												
10.0				) ! !		1	1	:				

No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2402.000	98.89	-7.45	91.44	1	1	peak				
2	4804.023	48.63	-0.30	48.33	74.00	-25.67	peak				
3	4804.023	41.22	-0.30	40.92	54.00	-13.08	AVG				



**Products** 

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**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.: lan2015-2 #783

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Low Energy Advertising Device

2402.000

4804.011

4804.011

2

3

97.60

48.20

41.75

-7.45

-0.30

-0.30

90.15

47.90

41.45

Mode: TX 2402MHz

Model: iBKS105

Manufacturer: Accent Advanced Systems SLU

Note: Bluetooth 4.0

Polarization: Vertical Power Source: DC 3V Date: 15/05/30/

Time:

peak

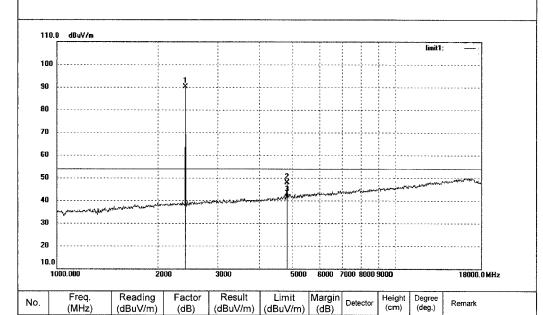
peak

AVG

-56.10

-12.55

Engineer Signature: Distance: 3m



74.00

54.00



**Products** 

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**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.: lan2015-2 #788

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Low Energy Advertising Device

Mode: TX 2440MHz iBKS105 Model:

Manufacturer: Accent Advanced Systems SLU

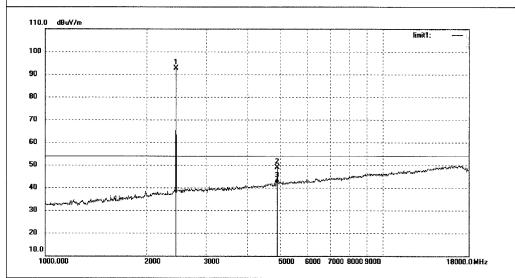
Polarization: Horizontal Power Source: DC 3V

Date: 15/05/30/

Time:

Engineer Signature: Distance: 3m

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2440.000	99.94	-7.36	92.58	/	/	peak			
2	4880.016	48.64	0.13	48.77	74.00	-25.23	peak			
3	4880.016	41.78	0.13	41.91	54.00	-12.09	AVG			



**Products** 

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## 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.: lan2015-2 #787

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Low Energy Advertising Device

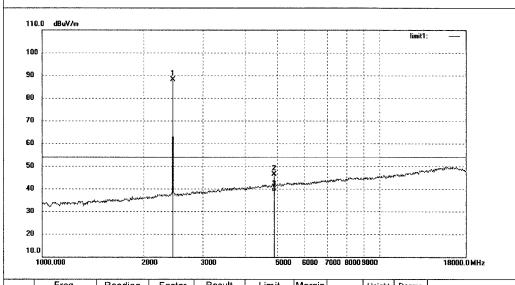
Mode: TX 2440MHz Model: iBKS105

Manufacturer: Accent Advanced Systems SLU

Note: Bluetooth 4.0 Polarization: Vertical Power Source: DC 3V Date: 15/05/30/

Time:

Engineer Signature:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2440.000	95.49	-7.36	88.13	1	1	peak				
2	4880.015	46.32	0.13	46.45	74.00	-27.55	peak				
3	4880.015	38.49	0.13	38.62	54.00	-15.38	AVG				



**Products** 

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## **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.: lan2015-2 #790 Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

Bluetooth Low Energy Advertising Device

Mode: TX 2480MHz Model: iBKS105

EUT:

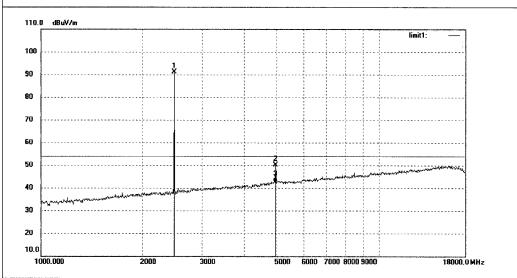
Manufacturer: Accent Advanced Systems SLU

Bluetooth 4.0 Note:

Polarization: Horizontal Power Source: DC 3V Date: 15/05/30/

Engineer Signature: Distance: 3m

Time:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.000	98.49	-7.37	91.12	1	1	peak			
2	4960.013	49.66	0.52	50.18	74.00	-23.82	peak			
3	4960.013	41.99	0.52	42.51	54.00	-11.49	AVG			



**Products** 

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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.: lan2015-2 #789

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Low Energy Advertising Device

Mode: TX 2480MHz Model: iBKS105

Manufacturer: Accent Advanced Systems SLU

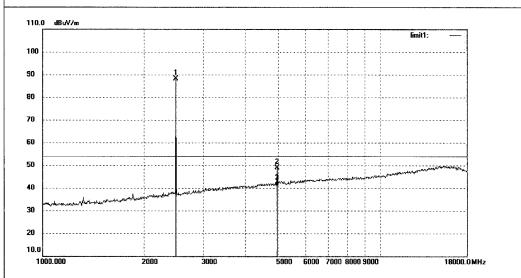
Note: Bluetooth 4.0

Polarization: Vertical Power Source: DC 3V

Date: 15/05/30/

Time:

Engineer Signature: Distance: 3m



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2480.000	95.38	-7.37	88.01	1	1	peak				
2	4960.011	48.26	0.52	48.78	74.00	-25.22	peak				
3	4960.011	40.43	0.52	40.95	54.00	-13.05	AVG				



**Products** 

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## **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.: lan2015-2 #800

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Low Energy Advertising Device

Mode: TX 2402MHz Model: iBKS105

Manufacturer: Accent Advanced Systems SLU

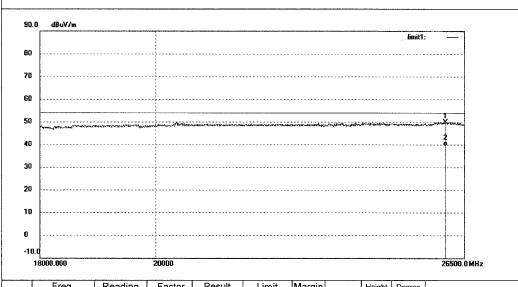
Note: Bluetooth 4.0

Polarization: Horizontal Power Source: DC 3V

Date: 15/05/30/

Time:

Engineer Signature:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	26062.917	33.49	16.50	49.99	74.00	-24.01	peak				
2	26062.917	22.96	16.50	39.46	54.00	-14.54	AVG				



**Products** 

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## 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

lan2015-2 #799

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

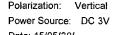
Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Bluetooth Low Energy Advertising Device

Mode: TX 2402MHz Model: iBKS105

Manufacturer: Accent Advanced Systems SLU

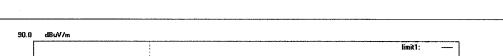
Bluetooth 4.0 Note:

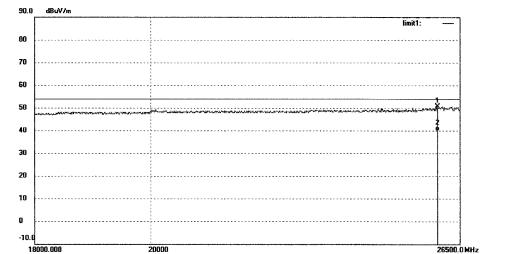


Date: 15/05/30/

Engineer Signature: Distance: 3m

Time:





No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	25972.351	34.17	16.50	50.67	74.00	-23.33	peak			
2	25972.351	23.45	16.50	39.95	54.00	-14.05	AVG			



**Products** 

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## 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.: lan2015-2 #801

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Low Energy Advertising Device

Mode: TX 2440MHz Model: iBKS105

Manufacturer: Accent Advanced Systems SLU

Note: Bluetooth 4.0

2

26305.974

22.72

16.50

39.22

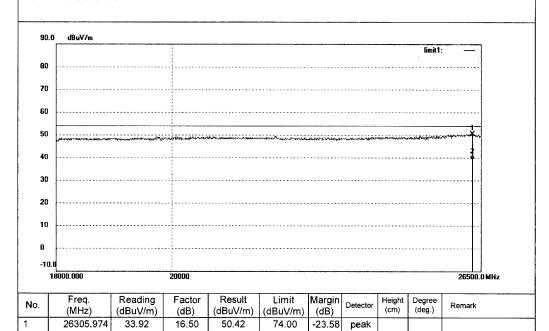
Polarization: Horizontal Power Source: DC 3V

Date: 15/05/30/

Time:

Engineer Signature:

Distance: 3m



54.00

-14.78

AVG



**Products** 

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### 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.: lan2015-2 #802

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: Bluetooth Low Energy Advertising Device

Mode: TX 2440MHz Model: iBKS105

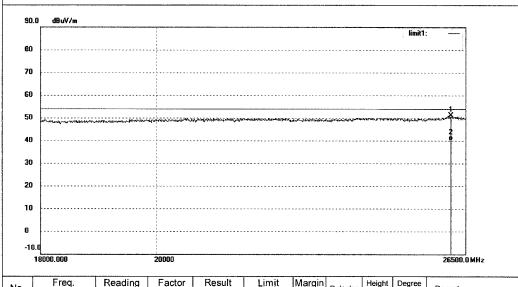
Manufacturer: Accent Advanced Systems SLU

Bluetooth 4.0 Note:

Polarization: Power Source: DC 3V Date: 15/05/30/

Time:

Engineer Signature:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	26153.799	34.75	16.50	51.25	74.00	-22.75	peak			
2	26153.799	23.63	16.50	40.13	54.00	-13.87	AVG			



**Products** 

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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.: lan2015-2 #804

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

Bluetooth Low Energy Advertising Device

Mode: TX 2480MHz Model: iBKS105

EUT:

Manufacturer: Accent Advanced Systems SLU

Note: Bluetooth 4.0

26072.999

26072.999

1

2

33.58

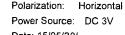
22.56

16.50

16.50

50.08

39.06



Date: 15/05/30/ Time:

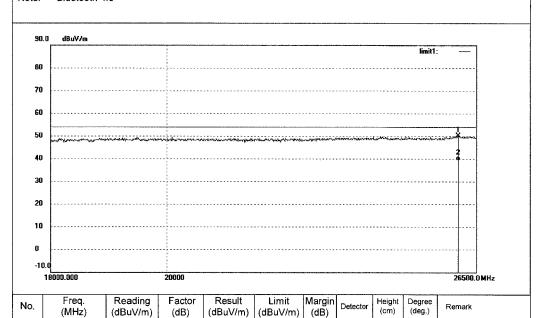
Engineer Signature: Distance: 3m

peak

AVG

-23.92

-14.94



74.00

54.00



**Products** 

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### **ACCURATE TECHNOLOGY CO., LTD.**

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

Polarization:

Time:

Power Source: DC 3V Date: 15/05/30/

Engineer Signature:

Distance: 3m

Vertical

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

Job No.: lan2015-2 #803

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

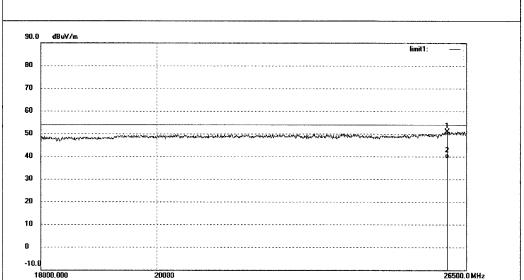
Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Bluetooth Low Energy Advertising Device

Mode: TX 2480MHz Model: iBKS105

Manufacturer: Accent Advanced Systems SLU

Note: Bluetooth 4.0



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	26042.764	34.41	16.50	50.91	74.00	-23.09	peak				
2	26042.764	22.55	16.50	39.05	54.00	-14.95	AVG				



**Products** 

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**Test Plot of Frequency Band Edge** 



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.: lan2015-2 #785 Standard: FCC (Band Edge) Test item: Radiation Test

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

EUT: Bluetooth Low Energy Advertising Device TX 2402MHz Mode: iBKS105

Manufacturer: Accent Advanced Systems SLU

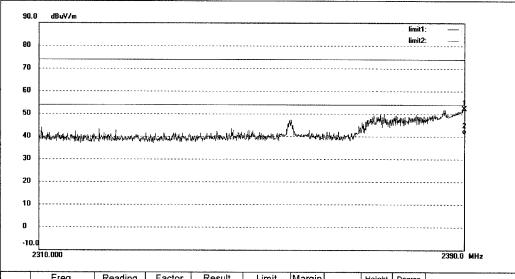
Note: Bluetooth 4.0

Model:

Polarization: Horizontal Power Source: DC 3V

Date: 15/05/30/ Time:

Engineer Signature: Distance: 3m



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	59.74	-7.53	52.21	74.00	-21.79	peak			
2	2390.000	48.70	-7.53	41.17	54.00	-12.83	AVG			



**Products** 

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Job No.: lan2015-2 #786 Standard: FCC (Band Edge) Test item: Radiation Test

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

EUT: Bluetooth Low Energy Advertising Device

EUT: Bluetooth Lo Mode: TX 2402MHz Model: iBKS105

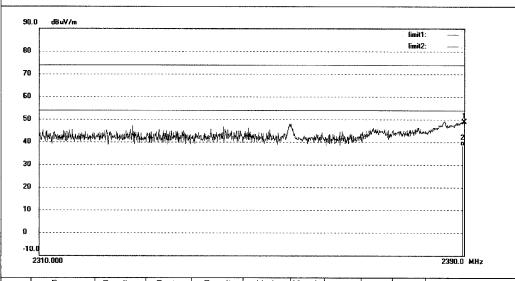
Manufacturer: Accent Advanced Systems SLU

Note: Bluetooth 4.0

Polarization: Vertical
Power Source: DC 3V

Date: 15/05/30/ Time:

Engineer Signature: Distance: 3m



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	56.33	-7.53	48.80	74.00	-25.20	peak			
2	2390.000	45.96	-7.53	38.43	54.00	-15.57	AVG			



**Products** 

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Job No.: lan2015-2 #791
Standard: FCC (Band Edge)
Test item: Radiation Test

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

EUT: Bluetooth Low Energy Advertising Device
Mode: TX 2480MHz
Model: iBKS105

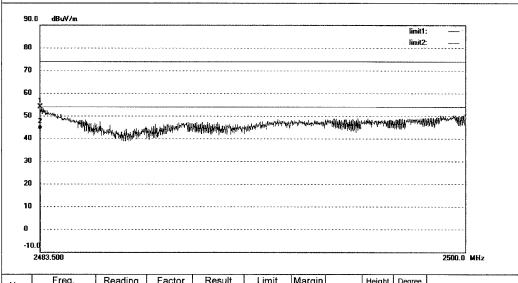
Manufacturer: Accent Advanced Systems SLU

Note: Bluetooth 4.0

Polarization: Horizontal Power Source: DC 3V

Date: 15/05/30/ Time:

Engineer Signature:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	61.23	-7.37	53.86	74.00	-20.14	peak			
2	2483.500	51.37	-7.37	44.00	54.00	-10.00	AVG			



**Products** 

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## 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

Polarization: Vertical

Power Source: DC 3V

Date: 15/05/30/

Distance: 3m

Engineer Signature:

Time:

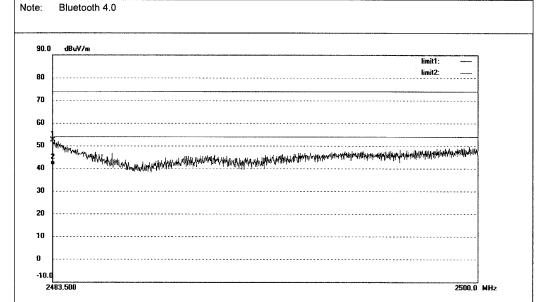
lan2015-2 #792 Job No.: Standard: FCC (Band Edge) Test item: Radiation Test

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

EUT: Bluetooth Low Energy Advertising Device Mode: TX 2480MHz

Model: iBKS105

Manufacturer: Accent Advanced Systems SLU



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2483.500	59.87	-7.37	52.50	74.00	<b>-21.5</b> 0	peak				
2	2483.500	48.83	-7.37	41.46	54.00	-12.54	AVG				



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# 6. Safety Human exposure

## **6.1 Radio Frequency Exposure Compliance**

## **6.1.1 Electromagnetic Fields**

RESULT: Pass

Test standard : FCC KDB Publication 447498 v05r02

Since maximum radiated power of the transmitter is 0.85mW(-0.69dBm)<10mW, and the distance from EUT to human is 5mm, hence the EUT is excluded from SAR evaluation according to FCC KDB publication 447498 D01 General RF Exposure Guidance v05r02.



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# 7. Photographs of the Test Set-Up

Photograph 1: Set-up for Spurious Emissions for below 30MHz







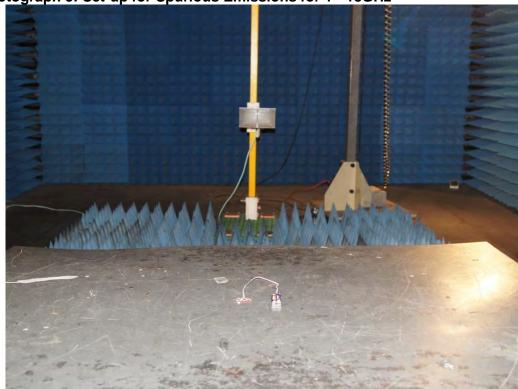


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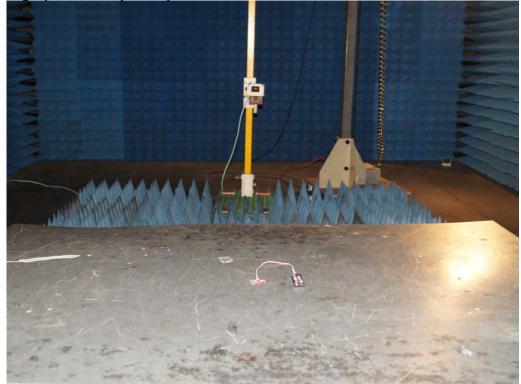
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Photograph 3: Set-up for Spurious Emissions for 1 - 18GHz



Photograph 4: Set-up for Spurious Emissions for 18 - 26.5GHz





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