



TEST REPORT

NVLAP LAB CODE 600142-0

Please Contact with WSCT www.wsct-cert.com

FCC ID: 2A07LST-9320

Product: Wireless Microphone

Model No.: ST-9320

Additional Model No.: ST-9360, ST-9330, ST-9380, ST-9620, ST-9830, ST-9860, ST-9720, ST-9760, ST-9660, ST-8002, ST-8004, ST-9180, ST-9150, ST-9120

> Trade Mark: STABCL Report No.: FCC18030080A

> Issued Date: June 07, 2018

Issued for:

Enping Xinhong Electronic Factory

Hongda Industrial Park, Dongan Industrial Zone, Enping City, Guangdong Province

Issued By:

World Standardization Certification & Testing Group Co., Ltd. Building A-B, Baoshi Science & Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China TEL: +86-755-26996192 1/27ET

FAX: +86-755-86376605

Note: The results contained in this report pertain only to the tested sample. This report shall not be reproduced, except in full, without written approval of World Standardization Certification & Testing Group Co ., Ltd. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.



rtificatio

ADD:Building A-B Baoshi Science & technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China TEL:86-755-26996143/26996144/26996145/26996192 FAX:86-755-86376605 E-mail:Fendbing.Wang@wsct-cert.com Http://www.wsct-cert.com Report No? FCC18030080A

Page 1 of 39



SL/ N

WSE Table of Contents



N55

W5E



For Question Please Contact with WSCT www.wsct-cert.com

| | 1. TEST CERTIFICATION | AWSLI | AWSLI | 3 |
|------------------|----------------------------------|----------|---------------|-----------------------|
| Х | 2. SUMMARY OF TEST RESULTS | \times | | 4 |
| WSET | 3. EUT DESCRIPTION | wset | | 5 |
| | 4. TEST DESCRIPTION | | | 6 |
| | 4.1 MEASUREMENT UNCERTAINTY | | | 6 |
| | 5. FACILITIES AND ACCREDITATIONS | WSET | WSET | 7 W5 <i>CT</i> |
| \smallsetminus | 5.1 FACILITIES | | | 7 |
| \mathbf{X} | 5.2 ACCREDITATIONS | | / | 7 |
| WSET | 6. MEASUREMENT INSTRUMENTS | wsct | | 8-7° |
| | 7. EMC EMISSION TEST | | | 9 |
| | 8. RADIATED EMISSION MEASUREMEN | лт 🔨 | 1 | 2 |
| | 9. BANDWIDTH TEST | W5LT° | W5LT 1 | 8 W5C7 |
| \mathbf{X} | 10. MAX. CONDUCTED OUTPUT POWE | R 🖌 | 2 | 2 |
| WGFT | 11. NECESSARY BANDWIDTH | | 2 | 5 |
| | 12. FREQUENCY STABILITY | | 2 | 8 |
| | 13. EUT TEST PHOTO | X | 3 | 0 |
| | 14. PHOTOGRAPHS OF EUT | WSET | W5CT 3 | 1 WSET |
| \backslash | | | | |



World Standardization Certification & Report No.: FCC18030080A

resting L

Grou

NSC

certification &

W5C1

ard

5

WSCI

W5C

Page 2 of 39

NSL

W5E

Member of the WSCT INC

W5





TESTING NVLAP LAB CODE 600142-0

For Question, Please Contact with WSCT www.wsct-cert.com

1. TEST CERTIFICATION

| | | | 1 | | |
|---|--------------------------|--|--------------|--|--|
| 1 | Product: | Wireless Microphone | | | |
| | Model No.: | ST-9320 | | | |
| | Additional | ST-9360, ST-9330, ST-9380, ST-9620, ST-9830, ST-9860, | / | | |
| | Model: | ST-9720, ST-9760, ST-9660, ST-8002, ST-8004, ST-9180, | M^{\prime} | | |
| | | ST-9150, ST-9120 | | | |
| | Applicant: | Enping Xinhong Electronic Factory | | | |
| | Address: | Hongda Industrial Park, Dongan Industrial Zone, Enping City, | | | |
| | AWSTER | Guangdong Province | | | |
| | Manufacturer: | Enping Xinhong Electronic Factory | | | |
| | Address: | Hongda Industrial Park, Dongan Industrial Zone, Enping City, | / | | |
| | | Guangdong Province | | | |
| | Date of Test: | June 01, 2018 ~ June 05, 2018 | | | |
| | Applicable Standards: | FCC Part 15.236 | | | |

The above equipment has been tested by World Standardization Certification & Testing Group Co., Ltd. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

| | Tested By: | Pu Shixi | Date: | June 07.2018 | |
|-------|-----------------|----------------------|-------|---------------|--------------------|
| | | (Pu Shixi) | | | |
| | | | | | or certification & |
| | Check By: | ser Qin Shuiguan ser | Date: | June 07, 2018 | |
| | | (Qin Shuiquan) | | | opuo |
| | | Un for burg | | 1 | 5 940 H 01102 |
| | Approved By: | TITE | Date: | June 0 , 201 | * |
| / | | (Wang Fengbing) | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | lificatio | WIST | | | |
| 6 | Certification & | | | | |
| dizan | | | | | |
| F | | | | | |

ADD:Building A-B Baoshi Science & technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China TEL:86-755-26996143/26996144/26996145/26996192 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com Http://www.wsct-cert.com 世标检测认证股份 Report No FCC18030080A





2. SUMMARY OF TEST RESULTS

For Question, Please Contact with WSCT www.wsct-cert.com

| | FCC RULES | DESCRIPTION OF TEST | RESULT | VSET |
|---|---|-----------------------------|-----------|------|
| | §15.236(d) | Output Power Measurement | PASS | |
| | §15.236(f) | Occupied Bandwidth Emission | PASS | |
| X | §15.236(g) | Radiated Spurious Emission | PASS | |
| | §15.236(g) | Emission mask | PASS | Х |
| | \$ [7 ° §15.236(f)(3) % 5 [7 ° | Frequency Stability | WSET PASS | VSET |

V5C

75 L

Note:

15

Certification

WSC1

M

- 1. PASS: Test item meets the requirement.
- 2. Fail: Test item does not meet the requirement.
- 3. N/A: Test case does not apply to the test object.
- 4. The test result judgment is decided by the limit of test standard.

W75

15E

N5

世标检测认证股份 ADD:Building A-B Baoshi Science & technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China TEL:86-755-26996143/26996143/26996145/26996145/26996192 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com Http://www.wsct-cert.com

Report No.: FCC18030080A

20

G

Page 4 of 39

75

Member of the WSCT INC.



W5

W5

W5L

World Standardization Certification & Testing Group Co., Ltd.

174 **A**



Please Contact with WSCT www.wsct-cert.com

TESTING NVLAP LAB CODE 600142-0

3. EUT DESCRIPTION

WSEI

| Produ | ct Name: | Wireless Microphone | WSFT | WSFT | wsrt |
|---------|--------------|---|--|---|---------------|
| Model | : | ST-9320 | | | |
| Additio | onal Model: | ST-9360, ST-9330, ST-9760, ST-9660, ST | ST-9380, ST-9620, I-8002, ST-8004, ST-9 | ST-9830, ST-9860, 180, ST-9150, ST-912 | ST-9720, 0 |
| Trade | Mark: | STABCL W5C | W5 | 7° W5Ľ | 7 |
| Hardw | are version: | N/A | | | |
| Softwa | are version: | N/A | X | X | X |
| Operat | tion | 512MHz-557MHz | WSET | WSET | WSET |
| Freque | ency: | | | | |
| Chann | el Spacing: | 250KHz | \sim | X | |
| Chann | el Number: | 180 | | | |
| Nomin | al | 200KHz W5C | W5C | 7° W5L | 7 ° |
| bandw | vidth | | | | |
| Modul | ation Type: | FM | \sim | \sim | |
| Anten | na Type: | PCB Antenna | WSET | WSCT | WSET |
| Anteni | na Gain: | -2.14 dB | | | |
| Power | Supply: | DC : AA(1.5V)*2 Voltage: 3V | | | |
| Model | differences: | Model name and appear | rance are different, intern | al structure is the same, | all tests are |
| | | performed on ST-9320 | | | |



Certification &

NSC

WSCI

W5C

世标检测认证股份 ADD:Building A-B Baoshi Science & technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China TEL:86-755-26996143/26996144/26996145/26996192 FAX:86-755-86376605 E-mail:Fengbing,Wang@wsct-cert.com Http://www.wsct-cert.com

751

NSE

W5E

N55

W5E

N5

W5.



NSE

World Standardization Certification & Testing Group Co., Ltd.





For Question Please Contact with WSCT www.wsct-cert.com

V5C

4. TEST DESCRIPTION

4.1 MEASUREMENT UNCERTAINTY

WSEI

The reported uncertainty of measurement $\mathbf{y} \pm \mathbf{U}$, where expended uncertainty \mathbf{U} is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 % >

| /5 <i>ГТ</i> ° | No. | Item | Conditions | Uncertainty | |
|----------------|-----|--------------------------------|---------------|-------------|---|
| | 1 | RF Output Power | Conducted | ±0.16dB | |
| | 2 | Occupied Bandwidth | X | ±1×10-7 | |
| | 3 | Frequency Stability | 2.3% | ±5% | |
| | 4 | Conducted Spurious Emission | Conducted | ±4.7dB | 4 |
| \mathbf{X} | 5 | Conducted Emissions | Conducted | ±3.2dB | |
| | 6 | Transmitter Spurious Emissions | Radiated | ±0.21dB | |
| <u>гсгт</u> ° | | | TT W/5 | | |



V5/

Certification &

WSC1

M

NSE

W55

15





VS

N5[

75 /

757

NSE



ADD:Building A-B Baoshi Science & technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China esting Group Co.,Ltd. TEL

V5C

25

15

Report No.: FCC18030080A

20

G

Page 6 of 39

Member of the WSCT IN

cert.com Http:v







For Question Please Contact with WSCT www.wsct-cert.com

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at Building A-B, Baoshi Science & Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China of the World Standardization Certification & Testing Group Co., Ltd.

Registration Number: 366353

5.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

| USA | NVLAP (The certificate registration number is NVLAP LAB CODE:600142-0) |
|------------------|--|
| Japan | VCCI (The certificate registration number is C-4790, R-3684, G-837) |
| Canada | INDUSTRY CANADA |
| | (The certificated registration number is 7700A-1) |
| China | CNAS (The certificated registration number is L3732) |
| Copies of grante | ed accreditation certificates are available for downloading from our web site, |
| http://www.ws | ct-cert.com |







Report No.: FCC18030080A

G

Certification d

WSC1

Page 7 of 39



WS

N5

W5L

N 5

World Standardization Certification & Testing Group Co., Ltd.

SL/ N





For Question Please Contact with WSCT www.wsct-cert.com

6. MEASUREMENT INSTRUMENTS

| 7 | NAME OF EQUIPMENT | MANUFACTURER | MODEL | SERIAL NUMBER | Calibration Date | Calibration Due. | 7 |
|---|---|---------------------------|------------------|------------------|---------------------|---------------------|---|
| | EMI Test Receiver | R&S | ESCI | 100005 | 08/19/2017 | 08/18/2018 | |
| | LISN | AFJ | LS16 | 16010222119 | 08/19/2017 | 08/18/2018 | |
| | LISN(EUT) | Mestec | AN3016 | 04/10040 | 08/19/2017 | 08/18/2018 | |
| | Universal Radio Communication Tester | R&S | CMU 200 | 1100.0008.02 | 08/19/2017 | 08/18/2018 | |
| / | Coaxial cable | Megalon | LMR400 | N/A | 08/12/2017 | 08/11/2018 | |
| | GPIB cable | Megalon | GPIB | N/A | 08/12/2017 | 08/11/2018 | |
| 7 | Spectrum Analyzer | 7° R&S W | 5CT°FSU | 100114 | 08/19/2017 | 08/18/2018 | |
| | Pre Amplifier | H.P. | HP8447E | 2945A02715 | 10/13/2017 | 10/12/2018 | |
| | Pre-Amplifier | CDSI | PAP-1G18-38 | | 10/13/2017 | 10/12/2018 | |
| | Bi-log Antenna | SUNOL Sciences | JB3 /5 [] | A021907 | 09/13/2017 | 09/12/2018 | |
| / | 9*6*6 Anechoic | | <u> </u> | | 08/21/2017 | 08/20/2018 | |
| | Horn Antenna | COMPLIANCE ENGINEERING | CE18000 | | 09/13/2017 | 09/12/2018 | |
| 7 | Horn Antenna | SCHWARZBECK | BBHA9120D | 9120D-631 | 08/23/2017 | 08/22/2018 | |
| | Cable | TIME MICROWAVE | LMR-400 | N-TYPE04 | 04/25/2018 | 04/24/2019 | |
| | System-Controller | CCS | N/A | N/A | N.C.R | N.C.R | |
| / | Turn Table | ccs | N/A | N/A | N.C.R | N.C.R | - |
| | Antenna Tower | ccs | N/A | N/A | N.C.R | N.C.R | |
| | RF cable | Murata | MXHQ87WA3000 | WSFT | 08/21/2017 | 08/20/2018 | |
| | Loop Antenna | EMCO | 6502 | 00042960 | 08/22/2017 | 08/21/2018 | |
| | Horn Antenna | SCHWARZBECK | BBHA 9170 | 1123 | 08/19/2017 | 08/18/2018 | |
| | Power meter | Anritsu • | ML2487A | 6K00003613 | 08/23/2017 | 08/22/2018 | 2 |
| / | Power sensor | Anritsu | MX248XD | / | 08/19/2017 | 08/18/2018 | |

World Standardization Certification & Festing Group Co.,Ltd. Report No.: FCC18030080A

ing

Grou

151

Certification &

WSC1

ard

5

ADD:Building A-B Baoshi Science & technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China TEL:86-755-26996143/26996144/26996145/26996192 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com Http://www.wsct-cert.com 世标检测认证股份

WSE

Member of the WSCT INC

Page 8 of 39

15 E







For Question Please Contact with WSCT www.wsct-cert.com

7. EMC EMISSION TEST

7.1 CONDUCTED EMISSION MEASUREMENT

7.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

| | Conducted | Conducted | |
|------------------|------------|------------|--------------|
| FREQUENCT (MIDZ) | Quasi-peak | Quasi-peak | limit (dBµV) |
| 0.15 -0.5 | 66 - 56 * | 56 - 46 * | FCC |
| 0.50 -5.0 | 56.00 | 46.00 | FCC |
| 5.0 -30.0 | 60.00 | 50.00 | FCC |

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range. WSE

The following table is the setting of the receiver

| | Receiver Parameters | Setting | |
|--------------|---------------------|-----------|------|
| | Attenuation 5 | 10 dB 547 | W5C7 |
| \bigvee | Start Frequency | 0.15 MHz | |
| \mathbf{X} | Stop Frequency | 30 MHz | |
| | IF Bandwidth | 9 kHz | |
| WJLI | | | |



ert.com Http:

Report No.: FCC18030080A

G

Certification

W5C

Page 9 of 39







For Question, Please Contact with WSCT www.wsct-cert.com

- a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

7.1.3 DEVIATION FROM TEST STANDARD

No deviation

7.1.4 TEST SETUP

7.1.2 TEST PROCEDURE



Note: 1.Support units were connected to second LISN. 2.Both of LISNs (AMN) are 80 cm from EUT and at least 80

from other units and other metal planes

7.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

Report No.: FCC18030080A

G

ertification

WSL

世标检测认证股份 ting Group Co.,Ltd. ADD:Building A-B Baoshi Science & technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China TEL:86-755-26996143/26996143/26996145/26996192 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com Http://www.wsct-cert.com

Member of the WSCT INC

Page 10 of 39





8. RADIATED EMISSION MEASUREMENT





For Question, Please Contact with WSCT www.wsct-cert.com

According to FCC 15.236(g), Emissions within the band from one megahertz below to one megahertz above the carrier frequency shall comply with the emission mask in Section 8.4 of ETSI EN 300 422-1 V2.1.2 (2017-01)

(incorporated by reference, see §15.38). Emissions outside this band shall comply with the limit specified at the edges of the ETSI mask.

Limit

Table 3: Limits for spurious emissions

| Frequency | | | | |
|---|---|---|--|--|
| 47 MHz to 74 MHz 87,5 MHz to 137 MHz 174 MHz to 230 MHz 470 MHz to 862 MHz | Other Frequencies below 1 000 MHz | Frequencies above 1 000 MHz | | |
| 4 nW | 250 nW | 1 µW | | |
| 2 nW | 2 nW | 20 nW | | |
| | 47 MHz to 74 MHz 87,5 MHz to 137 MHz 174 MHz to 230 MHz 470 MHz to 862 MHz 4 nW 2 nW | Frequency 47 MHz to 74 MHz Other Frequencies 87,5 MHz to 137 MHz below 1 000 MHz 174 MHz to 230 MHz 400 MHz 470 MHz to 862 MHz 250 nW 2 nW 2 nW | | |

8.1Test Procedure

The setup of EUT is according with ANSI C63.4-2014 measurement procedure. // 5/

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the

EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the was substitution.

8.2. TEST SETUP

(A) Radiated Emission Test-Up Frequency Below 30MHz





Report No.: FCC18030080A

世标检测认证股份 esting Group Co.,Ltd.

TEL 1

Page 13 of 39

ADD:Building A-B Baoshi Science & technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China

Member of the WSCT INC

ert.com Http:





For Question, Please Contact with WSCT

8.4 RESULTS (Below 30 MHz)

| | $ \land $ | | $ \land $ | | / | \sim | www.wsct-cer | .com |
|---|-------------|-------------|-----------|-------------------|----------------------|-----------|---------------|--------------|
| 1 | Temperature | 20 ℃ | W5ET | W5CT [®] | Relative Humidity | 48% | | SET° |
| | Pressure | 1010 I | nPa | F | Polarization | Horizonta | al / Vertical | |
| | | | | | | · | \land | - |
| | Freq. | | Reading | Limit | Margin | | State | |
| | (MHz) | | (dBuV/m) | (dBuV/m) | (dB) | | P/F | |
| | × | | × | <u> </u> | | | Р | \mathbf{X} |
| 1 | NSET - | | WSET | W5CT | /w | SET A | Р | SET° |

TESTING NVLAP LAB CODE 600142-0

NOTE:

No result in this part for margin above 20dB. Distance extrapolation factor =40 log (specific distance/test distance)(dB); Limit line = specific limits (dBuV) + distance extrapolation factor. All the x/y/z orientation has been investigated, and only worst case is presented in this report.



Certification d

F5 F

金洲认证股份 ADD:Building A-B Baoshi Science & technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China TEL:86-755-26996143/26996144/26996145/26996192 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com Http://www.wsct-cert.com

Member of the WSCT INC.



For Question

NVLAP LAB CODE 600142-0

8.5 TEST RESULTS (Between 30M - 1000 MHz)



Remark: All the modes have been investigated, and only worst mode is presented in this report.



G

rtification

WSCI

检测认证股份
ADD:Building A-B Baoshi Science & technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China
Group Co.,Ltd.
TEL:86-755-26996143/26996144/26996145/26996192 FAX:86-755-86376605 E-mail:Fengbing, Wang@wsct-cert.com Http://www.wsct-cert.com

Member of the WSCT INC



WSE1

World Standardization Certification & Testing Group Co.,Ltd.



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure- ment | Limit | Over | ना र |
|-----|-----|----------|------------------|----------------------|------------------|--------|--------|----------|
| | | MHz | dBm | dB | dBm | dBm | dB | Detector |
| 1 | 1 | 30.9619 | -80.66 | 4.43 | -76.23 | -36.00 | -40.23 | QP |
| _2 | 1 | 98.8326 | -77.58 | -4.06 | -81.64 | -54.00 | -27.64 | QP |
| 3 | * | 218.3085 | -71.89 | -6.16 | -78.05 | -54.00 | -24.05 | QP |
| 4 | : | 241.6763 | -68.81 | -5. <mark>1</mark> 1 | -73.92 | -36.00 | -37.92 | QP |
| 5 5 | A. | 383.9318 | -72.52 | -1.16 | -73.68 | -36.00 | -37.68 | QP |
| 6 | 1 | 968.9338 | -78.18 | 6.76 | -71.42 | -36.00 | -35.42 | QP |

Remark: All the modes have been investigated, and only worst mode is presented in this report.

Report No.: FCC18030080A

G

Certification

W5C

ard

World St

Page 16 of 39

15



Spurious Emission Above 1GHz



R

TESTING NVLAP LAB CODE 600142-0

For Question Please Contact with WSCT wsct-cert.com

| 1 | | | | | | | www |
|-------------------|-----------|---------|----------|------------|-------|--------|--------------|
| | Frequency | Reading | Correct | Result | Limit | Margin | Polar |
| | (MHz) | (dBm) | dB | (dBm) | (dBm) | (dBm) | H/V |
| | | | Low Char | nnel (512 | 2MHz) | | |
| | 2048 | -48.60 | 8.23 | -40.37 | -30 | 10.37 | V |
| | 2048 | -49.30 | 8.23 | -41.07 | -30 | 11.07 | Н |
| | 1536 | -48.93 | 9.57 | -39.36 | -3055 | 9.36 | V/5_1 |
| / | 1536 | -46.01 | 9.57 | -36.44 | -30 | 6.44 | Н |
| $\langle \rangle$ | 1024 | -47.26 | 13.02 | -34.24 | -30 | 4.24 | V |
| | 1024 | -46.24 | 13.02 | -33.22 | -30 | 3.22 | Н |
| | | AUCCTT" | | WEFT | 0 | WEI | - - * |

| 4 | Frequency | Reading | Correct | Result | Limit | Margin | Polar | | |
|---|----------------------------|---------|---------|--------|---------|--------|-------|--|--|
| | (MHz) | (dBm) | dB | (dBm) | (dBm) | (dBm) | H/V | | |
| | Middle Channel (534.5MHz) | | | | | | | | |
| | 2138 | -46.79 | 8.23 | -38.56 | -30 5 7 | 8.56 | V/S/ | | |
| | 2138 | -47.17 | 8.23 | -38.94 | -30 | 8.94 | Н | | |
| 1 | 1603.5 | -46.75 | 9.57 | -37.18 | -30 | 7.18 | V | | |
| | 1603.5 | -46.77 | 9.57 | -37.20 | -30 | 7.20 | Н | | |
| | 1069 | -48.22 | 13.02 | -35.20 | -30 | 5.20 | V | | |
| 2 | 1069 | -47.43 | 13.02 | -34.41 | -30 | 4.41 | Н | | |
| | | | | | | | | | |

| Frequency | Reading | Correct | Result | Limit | Margin | Polar |
|-----------------------|--|---|--|---|--|--|
| (MHz) | (dBm) | dB | (dBm) | (dBm) | (dBm) | H/V |
| High Channel (557MHz) | | | | | | WSL |
| 2228 | -46.56 | 8.23 | -38.33 | -30 | 8.33 | V |
| 2228 | -48.25 | 8.23 | -40.02 | -30 | 10.02 | Н |
| 1671 | -46.90 | 9.57 | -37.33 | -30 | 7.33 | V |
| 1671 | -46.01 | 9.57 | -36.44 | -30 | 6.44 5 / | · 7 ⁰ H |
| 1114 | -48.82 | 13.02 | -35.80 | -30 | 5.80 | V |
| 1114 | -47.14 | 13.02 | -34.12 | -30 | 4.12 | Н |
| | Frequency (MHz) 2228 2228 1671 1671 1114 1114 | Frequency Reading (MHz) (dBm) 2228 -46.56 2228 -48.25 1671 -46.90 1671 -46.01 1114 -48.82 1114 -47.14 | Frequency Reading Correct (MHz) (dBm) dB 2228 -46.56 8.23 2228 -48.25 8.23 1671 -46.90 9.57 1671 -46.01 9.57 1114 -48.82 13.02 1114 -47.14 13.02 | FrequencyReadingCorrectResult(MHz)(dBm)dB(dBm)High Channel (552228-46.568.23-38.332228-48.258.23-40.021671-46.909.57-37.331671-46.019.57-36.441114-48.8213.02-35.801114-47.1413.02-34.12 | Frequency Reading Correct Result Limit (MHz) (dBm) dB (dBm) (dBm) High Channel (557MHz) 2228 -46.56 8.23 -38.33 -30 2228 -48.25 8.23 -40.02 -30 1671 -46.90 9.57 -37.33 -30 1671 -46.01 9.57 -36.44 -30 1114 -48.82 13.02 -35.80 -30 1114 -47.14 13.02 -34.12 -30 | Frequency Reading Correct Result Limit Margin (MHz) (dBm) dB (dBm) (dBm) (dBm) (dBm) High Channel (557MHz) 2228 -46.56 8.23 -38.33 -30 8.33 2228 -48.25 8.23 -40.02 -30 10.02 1671 -46.90 9.57 -37.33 -30 7.33 1671 -46.01 9.57 -36.44 -30 6.44 1114 -48.82 13.02 -35.80 -30 5.80 1114 -47.14 13.02 -34.12 -30 4.12 |

Remark:

Certification

WSC1

ation Certifi

World St

15

V۶

Note: is carried out with frequency rang 30MHz to the tenth harmonics, which above 3th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured. With above 1GHz date is based on 1m test transform to 3m.

ndard M * Report No.: FCC18030080A

20

G

ADD:Building A-B Baoshi Science & technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China 世标检测认证股份 esting Group Co.,Ltd. TEL:8 6144/26996145/2 ct-cert.com Http:ww

Member of the WSCT IN

Page 17 of 39



TESTING NVLAP LAB CODE 600142-0



For Question, Please Contact with WSCT www.wsct-cert.com

9. BANDWIDTH TEST

9.1 Applied procedures

According to FCC 15.236(f), The operating frequency within a permissible band of operation as defined in paragraph (c) must comply with the following requirements.

(1) The frequency selection shall be offset from the upper or lower band limits by 25 kHz or an integral multiple

thereof.

(2) One or more adjacent 25 kHz segments within the assignable frequencies may be combined to form a channel whose maximum bandwidth shall not exceed 200 kHz. The operating bandwidth shall not exceed 200 kHz.

Emissions within the band from one megahertz below to one megahertz above the carrier frequency shall comply with the emission mask in Section 8.3 of ETSI EN 300 422-1 V1.4.2 (2011-08) (incorporated by reference, see

§15.38). Emissions outside this band shall comply with the limit specified at the edges of the ETSI mask

9.2 Test Procedure

According to ANSI C63.10-2013 section 6.9 for additional Test Set-Up procedures, the occupied bandwidth of emission was measured with a Spectrum Analyzer connected to the antenna terminal while EUT was operating in

2.5kHz tone at an input level 16 dB greater than that necessary to produce 50 percent modulation. Then mark the –26dB Bandwidth and record it.

9.4 TEST SETUP

| EUT | SPECTRUM ANALYZER | |
|---|--|---|
| WSET WSET WSET | WSET | AWSET |
| WISIET WISIET | WISITT WISIT | • |
| WSITT WSITT | WSFT | WSFT |
| WSCT OF WSCT | WISTET WISTET | |
| World Standardization Certification & Testing Group Co.,Ltd. Report No.: FCC18030080A ADD:Building A-B Baoshi Science & technolog TEL:86-755-26996143/26996144/26996144/26996144/26996144/26996144/26996144/26996144/26996144/26996192 FA: Page 18 of 39 | y Park, Baoshi Road, Bao'an District, Shenzhen, Gua X:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com Http:w Member | ngdong, China ww.wsct-cert.com of the WSCT INC. |













For Question, Please Contact with WSCT www.wsct-cert.com

10. MAX. CONDUCTED OUTPUT POWER

10.1 Limit

Maximum Conducted Output power at Antenna Terminals, FCC Rules 15.236(d): (1) In the bands allocated and assigned for broadcast television and in the 600MHz service band: 50mW EIRP.

(2) In the 600MHz guard bands including the duplex gap: 20mW EIRP

10.2 TEST PROCEDURE

1. The maximum peak output power was measured with a Spectrum Analyzer connected to the antenna terminal while EUT was operating in un modulated situation.

2. Power was supplied to the battery input connector a power supply. The power supply was set for +3.0VDC. The Spectrum Analyzer was connected at antenna terminal to measure RF power of the carrier.

3. A Multimeter was connected in series with final RF Stage to measure the current; A Multimeter was used to measure final RF Stage supply voltage. Then the voltage v.s. current of the final RF Stage can be showed.

10.4 TEST SETUP









For Question, Please Contact with WSCT www.wsct-cert.com

15

5 **Г**1

VSC 1

WSC1

15 E

10.5 Test Result/Plots

WSE'

| | \sim | | | | | |
|---|--------------|---------------|-------------------|-------------|--|--|
| | Test Channel | Frequency | Peak Output Power | Limit (dBm) | | |
| | | | (ubiii) | JOINVY LIKF | | |
| | Low | 512 | 2.51 | 17 | | |
| / | Middle | 534.5 | 2.30 | 17 | | |
| V | 5C7 High | 557_7 | 2.20 W5 | 17 | | |



25*Г*

NSCI

Certification &

WSC1

ard



Date: 4.JUN.2018 10:36:51



WSCI

15 E



世标检测认证股份 TEL:86-755-26996143/26996144/26996145/26996192 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com Http://www.wsct-cert.com

World Standard Ization Certification & Testing Group Co.,Lt 加米 P Report No.: FCC18030080A

sting

Grou

751

Page 23 of 39

15E

Member of the WSCT INC

15

N5.



Report No.: FCC18030080A

Page 24 of 39





Report No.: FCC18030080A

Page 26 of 39









For Question

Please Contact with WSCT www.wsct-cert.com

12. FREQUENCY STABILITY

12.1 Standard Applicable

According to FCC 15.236(f)(3), The frequency tolerance of the carrier signal shall be maintained within $\pm 0.005\%$ of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature

of 20 degrees C. Battery operated equipment shall be tested using a new battery.

12.2 Test Procedure

Setup the configuration of the ambient temperature form -20°C to 50°C with sufficient time. And measure the different power of the EUT with an artificial power from highest to end point voltage.
 Set frequency counter center frequency to the right frequency needs to be measured.



Report No.: FCC18030080A

G

Certification

WSC

Page 28 of 39

Member of the WSCT INC.



WSC

WSC'

WSC1

World Standardization Certification & Testing Group Co., Ltd.

145

SLI





For Question Please Contact with WSCT www.wsct-cert.com

12.3 Test Results/Plots

| WSET WSET | | W5ET [®] | Frequency Error 7 | ws | Γ |
|----------------------------|-------------|-------------------|----------------------|----------|-----------|
| Test conditions | | 512 MHz | 534.5 MHz | 557 MHz | |
| | Vmin(2.55V) | 512.0018 | 534.5026 | 557.0035 | |
| Tnom (20°C) | Vmax(3.0V) | 577 512.0042 | 534.5022 | 557.0024 | |
| T(-20°C) | Vmax(3.0V) | 512.0044 | 534.5031 | 557.0015 | |
| T(-10°C) | Vmax(3.0V) | 512.0039 | 534.5018 | 557.0025 | \langle |
| T(0°C) | Vmax(3.0V) | 512.0017 | 534.5022 | 557.0033 | |
| T(10°C) | Vmax(3.0V) | 512.0028 | 534.5028 | 557.0041 | |
| Tnom(20°C) | Vmax(3.0V) | 512.0022 | 534.5033 | 557.0022 | |
| T(30°C) | Vmax(3.0V) | 512.0010 | 534.5012 | 557.0018 | |
| T(40°C) | Vmax(3.0V) | 512.0027 | 534.5002 | 557.0014 | |
| T(50°C) | Vmax(3.0V) | 512.0028 | 534.5056 | 557.0028 | < |
| | Vmin(2.55V) | 512.0026 | 534.5031 | 557.0009 | |
| Tnom(20°C) | Vmax(3.0V) | 512.0023 | 534.5025 5 57 | 557.0041 | Ľ |
| Max. frequency error (ppm) | | 8.59 | 10.48 | 7.36 | |
| Limit (ppm) | | | 50ppm | | |
| End I | Point DC | 5 C T | W5 DC 3.0V | W5ET° | |

155 151

WSCI

WSE

25

NSE

WSC.

75

WSC1

W5E

5 E 7 ADD:Building A-B Baoshi Science & technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China TEL:86-755-26996143/26996144/26996145/26996192 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com Http://www.wsct-cert.com 世标检测认证股份 lesting Group Co.,Ltd.

World Standardizat Report No.: FCC18030080A

Pullet

Gro

NSCI

Certification &

W5C1

*

zation Certification 8

ard

Page 29 of 39

Member of the WSCT INC

N5

W5[



Report No.: FCC18030080A

Page 30 of 39









Report No.: FCC18030080A

Page 34 of 39











Page 39 of 39