



# FCC Test Report

**APPLICANT** : Tabletop Media, LLC d/b/a Ziosk  
**EQUIPMENT** : Ziosk Aurizon  
**BRAND NAME** : Ziosk  
**MODEL NAME** : Z500  
**FCC ID** : XOX-Z500  
**STANDARD** : FCC 47 CFR FCC Part 15 Subpart B  
**CLASSIFICATION** : Certification

The product was received on Feb. 08, 2018 and testing was completed on Mar. 27, 2018. We, Sporton International (Shenzhen) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI C63.4-2014 and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (Shenzhen) Inc., the test report shall not be reproduced except in full.



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Approved by: Eric Shih / Manager

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## REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC820812	Rev. 01	Initial issue of report	Apr. 16, 2018



## SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 3.11 dB at 449.040 MHz



## 1. General Description

### 1.1. Applicant

Tabletop Media, LLC d/b/a Ziosk  
12404 Park Central Dr, Suite 350, Dallas, TX 75251

### 1.2. Manufacturer

SMTC de Chihuahua SA. DE C.V.  
Washington 3701 building 20. Parque Industrial Las Americas, Chihuahua, Chih. 31200

### 1.3. Product Feature of Equipment Under Test

Product Feature	
Equipment	Ziosk Aurizon
Brand Name	Ziosk
Model Name	Z500
FCC ID	XOX-Z500
EUT supports Radios application	NFC WLAN2.4GHz 802.11b/g/n HT20/HT40 WLAN5GHz 802.11a/n HT20/HT40 WLAN5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth v3.0+EDR/ Bluetooth v4.0 LE/ Bluetooth v4.1 LE
HW Version	DV2
SW Version	Android 5.1.1
EUT Stage	Identical Prototype

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

## 1.4. Product Specification of Equipment Under Test

Standards-related Product Specification	
<b>Tx Frequency</b>	802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n/ac: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5700 MHz ; 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
<b>Rx Frequency</b>	802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n/ac: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5700 MHz ; 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
<b>Antenna Type</b>	WLAN : PIFA Antenna Bluetooth : PIFA Antenna NFC: inductive loop
<b>Type of Modulation</b>	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM /256QAM) Bluetooth LE : GFSK Bluetooth (1Mbps) : GFSK Bluetooth (2Mbps) : $\pi/4$ -DQPSK Bluetooth (3Mbps) : 8-DPSK NFC: ASK

## 1.5. Modification of EUT

No modifications are made to the EUT during all test items.

## 1.6. Test Location

Sporton International (Shenzhen) Inc. is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600156-0) and the FCC designation No is CN5019.

Test Site	Sporton International (Shenzhen) Inc.	
Test Site Location	No. 3 Bldg the third floor of south, Shahe River west, Fengzeyuan Warehouse, Nanshan District Shenzhen City Guangdong Province 518055 China TEL: +86-755-3320-2398	
Test Site No.	Sporton Site No.	FCC Test Firm Registration No.
	03CH04-SZ	577730

**Note:** The test site complies with ANSI C63.4 2014 requirement.

## 1.7. Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC 47 CFR FCC Part 15 Subpart B
- ANSI C63.4-2014

**Remark:** All test items were verified and recorded according to the standards and without any deviation during the test.

## 2. Test Configuration of Equipment Under Test

### 2.1. Test Mode

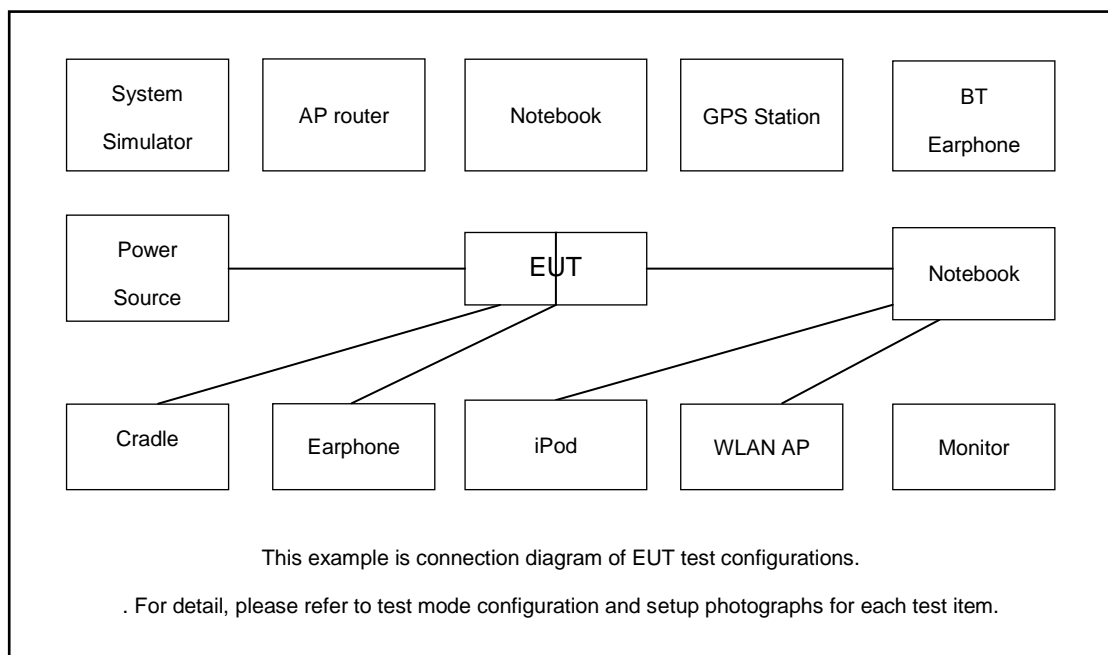
The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Frequency range investigated: radiation emission (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

Test Items	Function Type
Radiated Emissions	Mode 1 : Bluetooth Idle + WLAN2.4G Idle + Camera + Battery
	Mode 2 : Bluetooth Idle + WLAN5G Idle + MPEG4 + Battery
	Mode 3 : Bluetooth Idle + WLAN2.4G Idle + Magnetic card + Battery
	Mode 4 : Bluetooth Idle + WLAN5G Idle + NFC ON + Battery
	Mode 5 : Bluetooth Idle + WLAN2.4G Idle + Print + Battery
<b>Remark:</b> The worst case of RE is mode 5; only the test data of this mode was reported.	



## 2.2.Connection Diagram of Test System



## 2.3. Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
2.	Bluetooth Earphone	Samsung	HS3000	A3LHS3000	N/A	N/A



## **2.4. EUT Operation Test Setup**

The EUT was attached to the Bluetooth earphone or WLAN AP, and the following programs installed in the EUT were programmed during the test.

1. Play MPEG4 files.
2. Turn on camera to capture images.
3. Turn on NFC / Magnetic card / Print function.

### 3. Test Result

#### 3.1. Test of Radiated Emission Measurement

##### 3.1.1. Limit of Radiated Emission

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

##### 3.1.2. Measuring Instruments

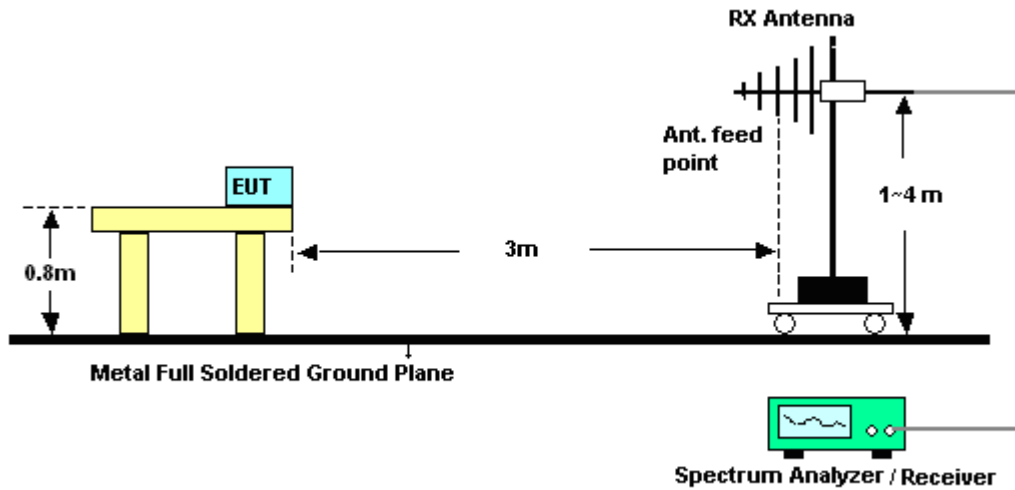
The measuring equipment is listed in the section 4 of this test report.

### 3.1.3. Test Procedures

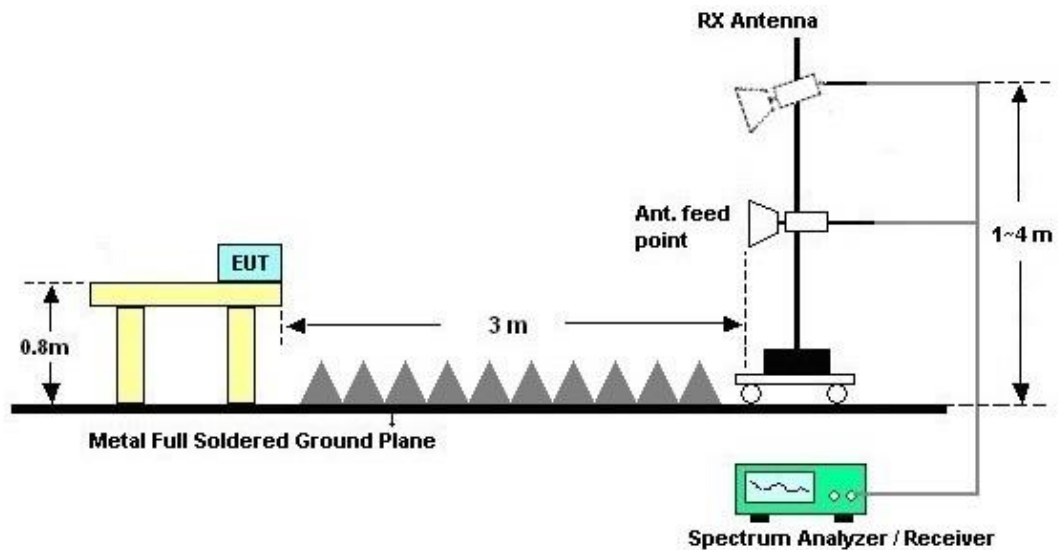
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a Bi-Log antenna and its height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode (RBW=120kHz/VBW=300kHz for frequency below 1GHz; RBW=1MHz VBW=3MHz (Peak), RBW=1MHz/VBW=10Hz (Average) for frequency above 1GHz).
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.
8. Emission level (dB $\mu$ V/m) = 20 log Emission level ( $\mu$ V/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

### 3.1.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz

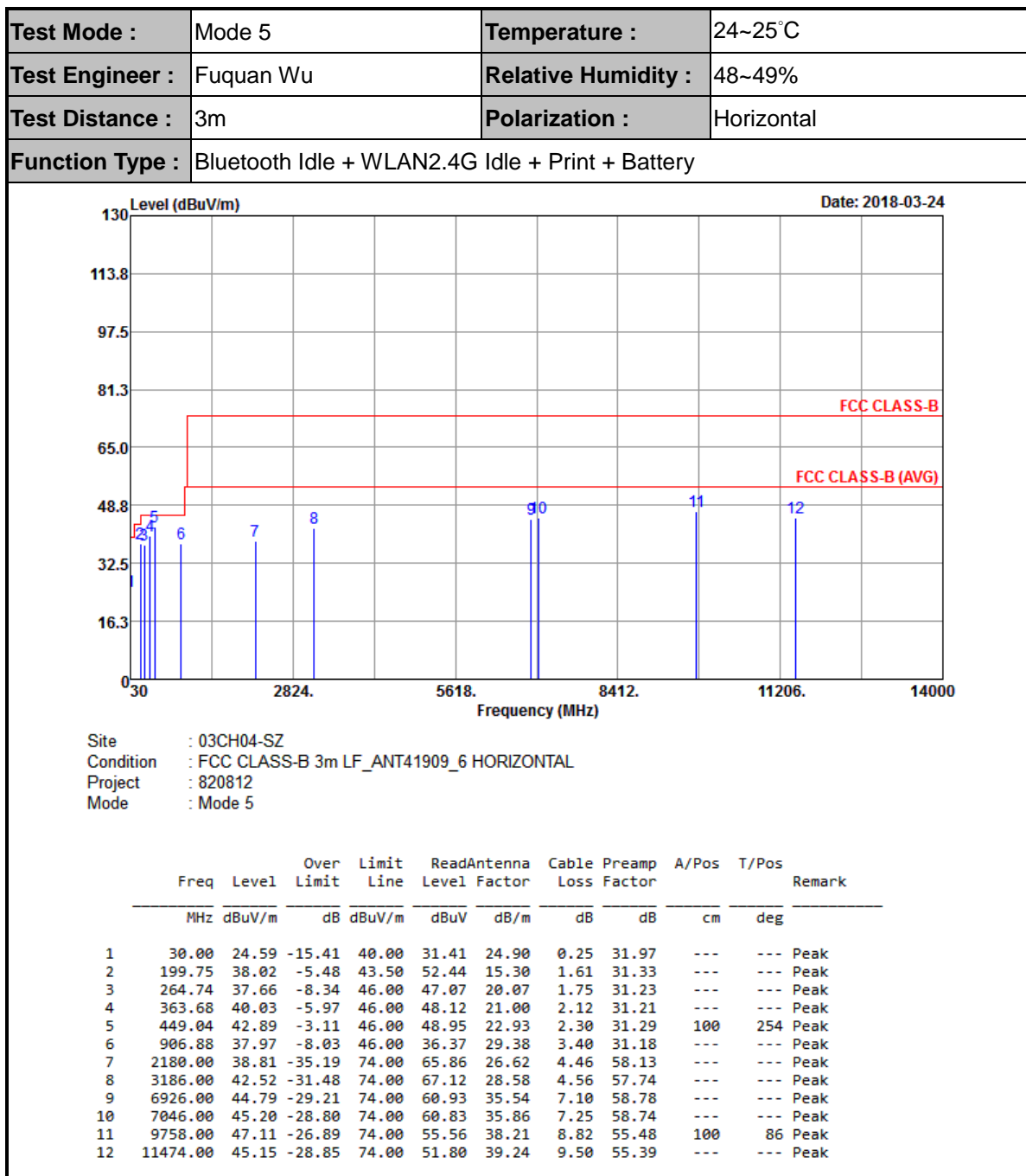


For radiated emissions above 1GHz



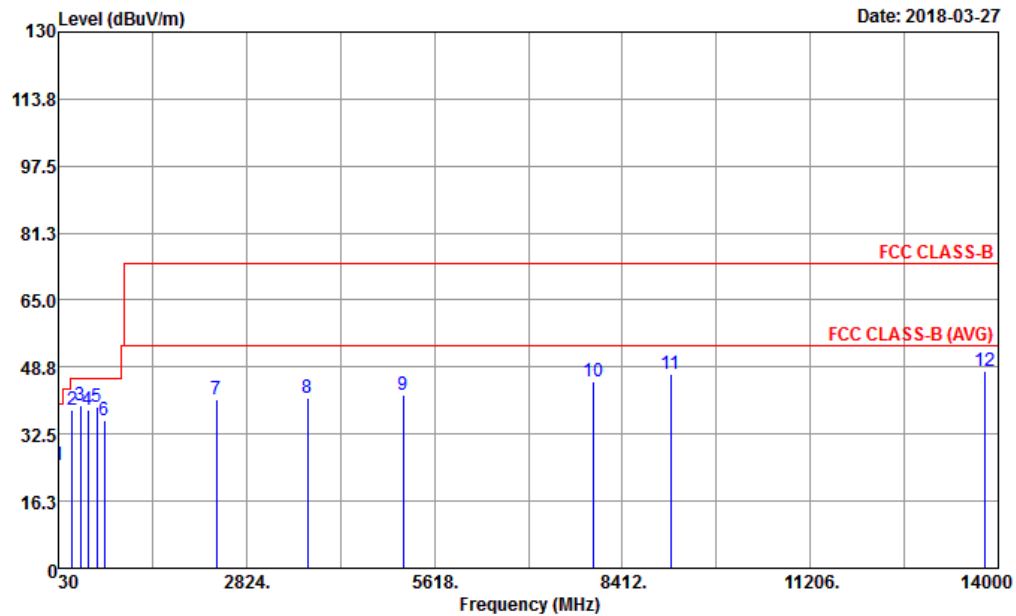


## 3.1.5. Test Result of Radiated Emission





Test Mode :	Mode 5	Temperature :	24~25°C
Test Engineer :	Fuquan Wu	Relative Humidity :	48~49%
Test Distance :	3m	Polarization :	Vertical
Function Type :	Bluetooth Idle + WLAN2.4G Idle + Print + Battery		



Site : 03CH04-SZ  
Condition : FCC CLASS-B 3m LF\_ANT41909\_6 VERTICAL  
Project : 820812  
Mode : Mode 5

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	A/Pos	T/Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	30.00	24.84	-15.16	40.00	31.66	24.90	0.25	31.97	---	---	Peak
2	233.70	38.29	-7.71	46.00	51.04	16.84	1.68	31.27	---	---	Peak
3	353.98	39.30	-6.70	46.00	47.65	20.76	2.10	31.21	100	258	Peak
4	468.44	38.31	-7.69	46.00	43.90	23.33	2.35	31.27	---	---	Peak
5	600.36	38.95	-7.05	46.00	41.72	25.80	2.70	31.27	---	---	Peak
6	716.76	35.97	-10.03	46.00	37.25	27.00	2.96	31.24	---	---	Peak
7	2374.00	40.94	-33.06	74.00	66.78	27.37	4.72	57.93	---	---	Peak
8	3734.00	41.17	-32.83	74.00	65.92	29.28	4.98	59.01	---	---	Peak
9	5160.00	42.05	-31.95	74.00	61.82	31.97	6.04	57.78	---	---	Peak
10	7986.00	45.43	-28.57	74.00	56.39	37.27	7.52	55.75	---	---	Peak
11	9130.00	47.24	-26.76	74.00	56.19	37.70	8.26	54.91	---	---	Peak
12	13808.00	47.89	-26.11	74.00	55.63	41.14	10.10	58.98	100	89	Peak



## 4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	R&S	ESR7	101404	9kHz~7GHz	Apr. 20, 2017	Mar. 24, 2018~ Mar. 27, 2018	Apr. 19, 2018	Radiation (03CH04-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Apr. 20, 2017	Mar. 24, 2018~ Mar. 27, 2018	Apr. 19, 2018	Radiation (03CH04-SZ)
Bilog Antenna	TeseQ	CBL6111D	41909	30MHz~1GHz	May 16, 2017	Mar. 24, 2018~ Mar. 27, 2018	May 15, 2018	Radiation (03CH04-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1285	1GHz~18GHz	Dec. 13, 2017	Mar. 24, 2018~ Mar. 27, 2018	Dec. 12, 2018	Radiation (03CH04-SZ)
Horn Antenna	SCHWARZBECK	BBHA9170	9170#679	15GHz~40GHz	May 17, 2017	Mar. 24, 2018~ Mar. 27, 2018	May 16, 2018	Radiation (03CH04-SZ)
Amplifier	Burgeon	BPA-530	102211	0.01Hz ~3000MHz	Oct. 19, 2017	Mar. 24, 2018~ Mar. 27, 2018	Oct. 18, 2018	Radiation (03CH04-SZ)
HF Amplifier	MITEQ	AMF-7D-0010 1800-30-10P-R	1989346	1GHz~18GHz	Jul. 27, 2017	Mar. 24, 2018~ Mar. 27, 2018	Jul. 26, 2018	Radiation (03CH04-SZ)
HF Amplifier	MITEQ	TTA1840-35-H G	1988315	18GHz~40GHz	Jul. 27, 2017	Mar. 24, 2018~ Mar. 27, 2018	Jul. 26, 2018	Radiation (03CH04-SZ)
Amplifier	Agilent Technologies	83017A	MY53270156	500MHz~26.5G Hz	Apr. 20, 2017	Mar. 24, 2018~ Mar. 27, 2018	Apr. 19, 2018	Radiation (03CH04-SZ)
AC Power Source	Chroma	61601	N/A	N/A	NCR	Mar. 24, 2018~ Mar. 27, 2018	NCR	Radiation (03CH04-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Mar. 24, 2018~ Mar. 27, 2018	NCR	Radiation (03CH04-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Mar. 24, 2018~ Mar. 27, 2018	NCR	Radiation (03CH04-SZ)

NCR: No Calibration Required



## 5. Uncertainty of Evaluation

### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.1 dB
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### Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	4.8 dB
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### Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.1 dB
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