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	TEST REPOR	Γ	
FCC ID::	2A4DZ-TSB7300		
Test Report No::	TCT220216E021		
Date of issue::	Feb. 23, 2022		
Testing laboratory:	SHENZHEN TONGCE TESTING	LAB	
Testing location/ address:	TCT Testing Industrial Park Fuqia Street, Bao'an District Shenzhen Republic of China		
Applicant's name::	MITA EXPEDITIONS LLC	(0)	((C))
Address::	3821 Bedford Avenue, Brooklyn,	New York, 11229	, United States
Manufacturer's name:	MITA EXPEDITIONS LLC	(6	
Address::	3821 Bedford Avenue, Brooklyn,	New York, 11229	, United States
Standard(s)::	FCC CFR Title 47 Part 15 Subpa	rt C	
Product Name::	wireless power bank	(0)	(0)
Trade Mark::	Techsmarter		
Model/Type reference:	TSB7300	(c)	3
Rating(s)::	Rechargeable Li-ion Battery DC	3.7V	
Date of receipt of test item ::::::::::::::::::::::::::::::::::::	Feb. 16, 2022	(C)	
Date (s) of performance of test:	Feb. 16, 2022 - Feb. 23, 2022		
Tested by (+signature):	Brews XU	forens *	ONGCE
Check by (+signature):	Beryl ZHAO	Boyl the	TCT)

## General disclaimer:

Approved by (+signature): Tomsin

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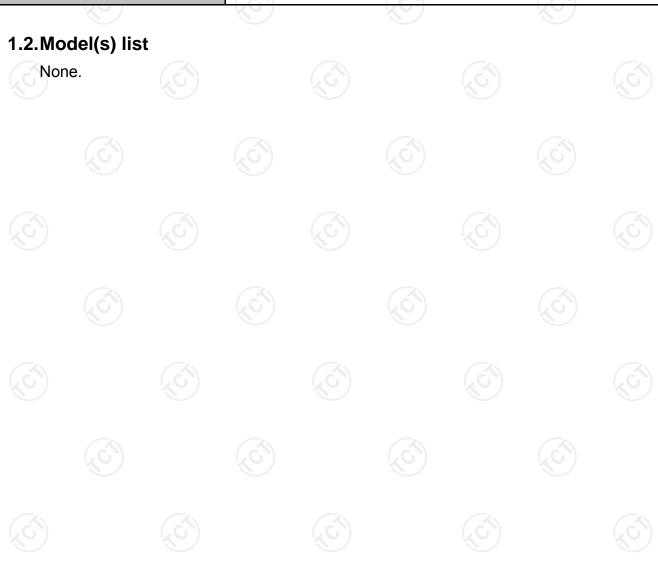
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# 1. General Product Information

# 1.1.EUT description

Product Name:	wireless power bank		
Model/Type reference:	TSB7300		
Sample Number:	TCT220216E021-0101		
Operation Frequency:	111.38kHz - 174.84kHz	(0)	
Modulation Technology:	Load modulation		
Max. Wireless Output Power:	15W (5)		
Antenna Type:	Inductive loop coil Antenna		
Rating(s):	Rechargeable Li-ion Battery DC 3.7V		



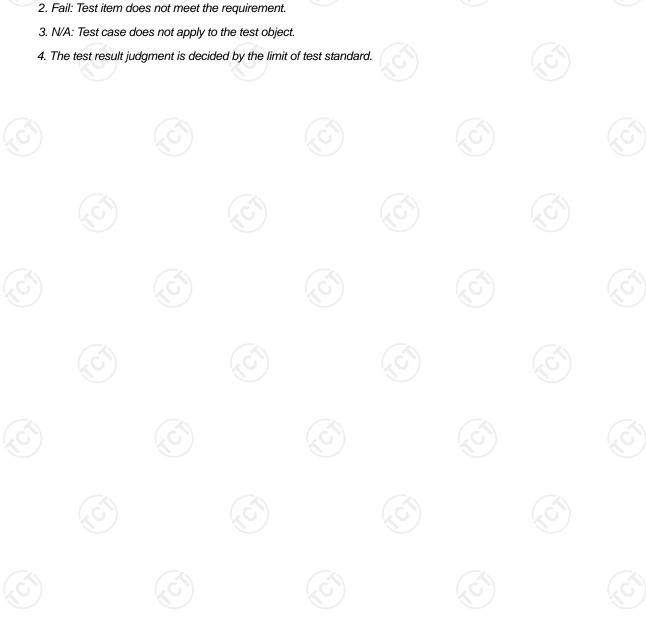


# **Test Result Summary**

Requirement	CFR 47 Section	Result
Antenna requirement	§15.203	PASS
AC Power Line Conducted Emission	§15.207	PASS
Spurious Emission	§15.209(a)(f)	PASS

#### Note:

- 1. PASS: Test item meets the requirement.





### 3. General Information

#### 3.1. Test environment and mode

Operating Environment:						
Condition	Conducted Emission	Radiated Emission				
Temperature:	25.0 °C	25.0 °C				
Humidity:	55 % RH	55 % RH				
Atmospheric Pressure:	1010 mbar					
Test Mode:						
Mode	Mode1	Mode2				
AC mode	100					
Internal Battery Mode	Wireless Charging 15W+ Full Load					

The sample was placed 0.8m above the ground plane for the measurement from 9KHz to 30MHz in 3m chamber. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case(Z axis) are shown in Test Results of the following pages.

# 3.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
Mobile Phone	SM-G9350	R28HA2ER3GT	1	SAMSUNG
Adapter	EP-TA20CBC	R37HAEY0DT1RT3		SAMSUNG

#### Note:

- 1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- 2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
- 3. Both AC mode and internal battery mode have been tested, only worse case is reported



# 4. Facilities and Accreditations

#### 4.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

FCC - Registration No.: 645098

SHENZHEN TONGCE TESTING LAB

**Designation Number: CN1205** 

The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

• IC - Registration No.: 10668A-1

SHENZHEN TONGCE TESTING LAB

CAB identifier: CN0031

The testing lab has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

### 4.2. Location

SHENZHEN TONGCE TESTING LAB

Address: TCT Testing Industrial Park Fuqiao 5th Industrial Zone, Fuhai Street, Bao'an

District Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

# 4.3. Measurement Uncertainty

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

No.	Item	MU
1	Conducted Emission	± 3.10 dB
2	RF power, conducted	± 0.12 dB
3	Spurious emissions, conducted	± 0.11 dB
4	All emissions, radiated(<1 GHz)	± 4.56 dB
5	All emissions, radiated(1 GHz - 18 GHz)	± 4.22 dB
6	All emissions, radiated(18 GHz- 40 GHz)	± 4.36 dB



# 5. Test Results and Measurement Data

# 5.1. Antenna requirement

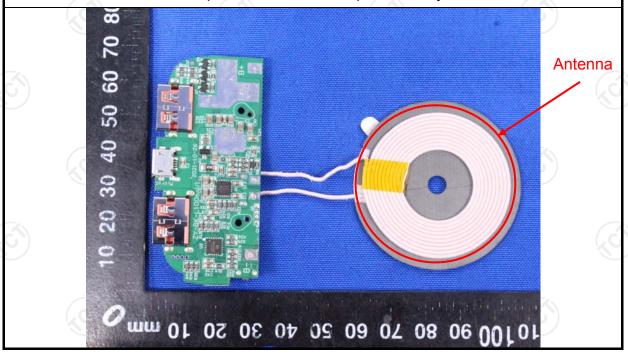
Standard requirement: FCC Part15 C Section 15.203

15.203 requirement:

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

#### **E.U.T Antenna:**

The antenna is inductive loop coil antenna which permanently attached.





# 5.2. Conducted Emission

# 5.2.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.207							
Test Method:	ANSI C63.10:2020							
Frequency Range:	150 kHz to 30 MHz	C)						
Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto							
Limits:	Frequency range         Limit (dBuV)           (MHz)         Quasi-peak         Average           0.15-0.5         66 to 56*         56 to 46           0.5-5         56         46           5-30         60         50							
Test Setup:	Reference Plane  40cm 80cm Filter AC power  EMI Receiver  Remark E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Network							
Test Mode:	Charging + Transmittin	g Mode						
Test Procedure:	<ol> <li>The E.U.T is connected to an adapter through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.</li> <li>The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).</li> <li>Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2020 on conducted measurement.</li> </ol>							
Test Result:	PASS							



# 5.2.2. Test Instruments

Conducted Emission Shielding Room Test Site (843)										
Equipment Manufacturer Model Serial Number Calibration										
EMI Test Receiver	R&S	ESCI3	100898	Jul. 07, 2022						
Line Impedance Stabilisation Newtork(LISN)	Schwarzbeck	NSLK 8126	8126453	Mar. 11, 2022						
Line-5	TCT	CE-05	N/A	Jul. 07, 2022						
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A						

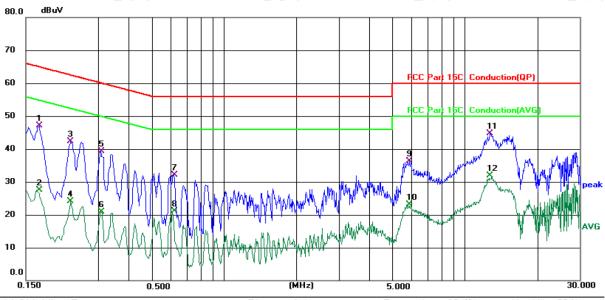




#### 5.2.3. Test data

## Please refer to following diagram for individual

## Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)



Site 844 Shielding Room

Phase: L1

Temperature: 25 (°C)

Humidity: 55 %

Limit: FCC Part 15C Conduction(QP)

Power: DC 5 V(Adapter Input AC 120 V/60 Hz)

No. I	Иk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBu∨	dB	dBu∨	dBu∨	dB	Detector	Comment
1		0.1700	37.57	9.59	47.16	64.96	-17.80	QP	
2		0.1700	17.95	9.59	27.54	54.96	-27.42	AVG	
3		0.2300	32.85	9.36	42.21	62.45	-20.24	QP	
4		0.2300	14.67	9.36	24.03	52.45	-28.42	AVG	
5		0.3060	30.04	9.31	39.35	60.08	-20.73	QP	
6		0.3060	11.60	9.31	20.91	50.08	-29.17	AVG	
7		0.6180	22.83	9.19	32.02	56.00	-23.98	QP	
8		0.6180	11.92	9.19	21.11	46.00	-24.89	AVG	
9		5.9100	26.67	9.56	36.23	60.00	-23.77	QP	
10		5.9100	13.63	9.56	23.19	50.00	-26.81	AVG	
11	*	12.7500	35.12	9.64	44.76	60.00	-15.24	QP	
12		12.7500	22.23	9.64	31.87	50.00	-18.13	AVG	

#### Note:

Freq. = Emission frequency in MHz

Reading level  $(dB\mu V)$  = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement  $(dB\mu V)$  = Reading level  $(dB\mu V)$  + Corr. Factor (dB)

 $Limit (dB\mu V) = Limit stated in standard$ 

 $Margin (dB) = Measurement (dB\mu V) - Limits (dB\mu V)$ 

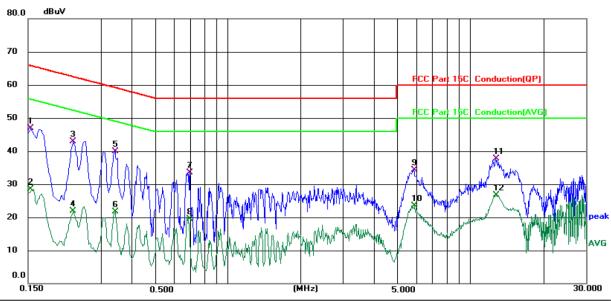
Q.P. =Quasi-Peak

AVG =average

<sup>\*</sup> is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz



## Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)



Site 844 Shielding Room Phase: N Temperature: 25 (°C) Humidity: 55 %

Limit: FCC Part 15C Conduction(QP)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBu∀	dB	dBu∀	dBu∀	dB	Detector	Comment
1	*	0.1539	37.23	9.60	46.83	65.79	-18.96	QP	
2		0.1539	18.84	9.60	28.44	55.79	-27.35	AVG	
3		0.2300	33.68	9.32	43.00	62.45	-19.45	QP	
4		0.2300	12.66	9.32	21.98	52.45	-30.47	AVG	
5		0.3420	30.58	9.31	39.89	59.15	-19.26	QP	
6		0.3420	12.40	9.31	21.71	49.15	-27.44	AVG	
7		0.6939	24.27	9.21	33.48	56.00	-22.52	QP	
8		0.6939	10.26	9.21	19.47	46.00	-26.53	AVG	
9		5.8419	24.82	9.51	34.33	60.00	-25.67	QP	
10		5.8419	14.04	9.51	23.55	50.00	-26.45	AVG	
11		12.7579	27.96	9.65	37.61	60.00	-22.39	QP	
12		12.7579	17.07	9.65	26.72	50.00	-23.28	AVG	

#### Note:

Freq. = Emission frequency in MHz

Reading level  $(dB\mu V)$  = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement  $(dB\mu V)$  = Reading level  $(dB\mu V)$  + Corr. Factor (dB)

 $Limit (dB\mu V) = Limit stated in standard$ 

 $Margin (dB) = Measurement (dB\mu V) - Limits (dB\mu V)$ 

Q.P. =Quasi-Peak AVG =average

\* is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.

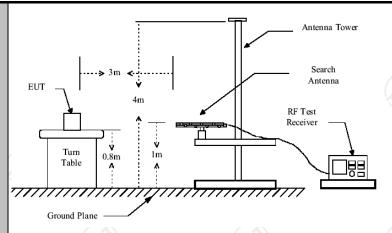


# **5.3. Radiated Spurious Emission Measurement**

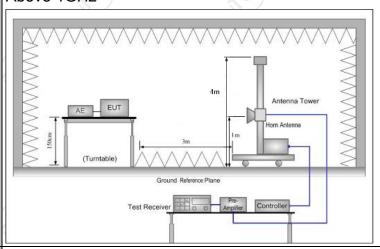
# 5.3.1. Test Specification

	[ (aC		(							
Test Requirement:	FCC Part15 C Section 15.209									
Test Method:	ANSI C63.10: 2020									
Frequency Range:	9 kHz to 25 GHz									
Measurement Distance:	3 m									
Antenna Polarization:	Horizontal & Vertical									
Operation mode:	Refer to item 3.1									
	Frequency	Detector	RBW	VBW	Remark					
	9kHz- 150kHz 150kHz-	Quasi-peak Quasi-peak		1kHz 30kHz	Quasi-peak Value  Quasi-peak Value					
Receiver Setup:	30MHz		())		((C))					
	30MHz-1GHz	Quasi-peak		300KHz	Quasi-peak Value					
	Above 1GHz	Peak	1MHz	3MHz	Peak Value					
	7.5575 151.2	Peak	1MHz	10Hz	Average Value					
	Frequen	су	Field Stre (microvolts	\ \ - /	Measurement Distance (meters)					
	0.009-0.490		2400/F(I	KHz)	300					
	0.490-1.7	705	24000/F(	KHz)	30					
	1.705-3	30		30						
	30-88	100		3						
	88-216	150		3						
Limit:	216-96		200		3					
	Above 9	00	500	·G)	3					
	Frequency		Field Strength (microvolts/meter)		ement once Detector ors)					
	Above 1GHz	,	500		Average					
	71.00VC 10112		5000	3	Peak					
Test setup:	_ †	emissions	s below 30		Computer					
το εταμ.	30MHz to 1GHz									





#### Above 1GHz



Test Procedure:

1. For the radiated emission test below 1GHz: The EUT was placed on a turntable with 0.8 meter. above ground. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower. 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. A pre-amp and a high PASS filter are used for the test in order to get better signal level. For the radiated emission test above 1GHz: Place the measurement antenna on a turntable with 1.5 meter above ground, which is away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT. depending on the radiation pattern of the emission and staying aimed at the emission source for

receiving the maximum signal. The final



3	measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.  2. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level  3. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission
	level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.  4. Use the following spectrum analyzer settings:  (1) Span shall wide enough to fully capture the emission being measured;  (2) Set RBW=120 kHz for f < 1 GHz; VBW ≥RBW; Sweep = auto; Detector function = peak; Trace = max hold;  (3) Set RBW = 1 MHz, VBW= 3MHz for f 1 GHz for peak measurement.  For average measurement: VBW = 10 Hz, when duty cycle is no less than 98 percent. VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Test mode:	Refer to section 3.1 for details
Test results:	



# 5.3.2. Test Instruments

Radiated Emission Test Site (966)												
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due								
EMI Test Receiver	R&S	ESIB7	100197	Jul. 07, 2022								
Spectrum Analyzer	R&S	FSQ40	200061	Jul. 07, 2022								
Pre-amplifier	SKET	LNPA_0118G- 45	SK2021012 102	Mar. 11, 2022								
Pre-amplifier	SKET	LNPA_1840G- 50	SK2021092 03500	Apr. 08, 2022								
Pre-amplifier	HP	8447D	2727A05017	Jul. 07, 2022								
Loop antenna	ZHINAN	ZN30900A	12024	Sep. 05, 2022								
Broadband Antenna	Schwarzbeck	VULB9163	340	Sep. 04, 2022								
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Sep. 04, 2022								
Horn Antenna	Schwarzbeck	BBHA 9170	00956	Apr. 10, 2023								
Antenna Mast	Keleto	RE-AM	N/A	N/A								
Coaxial cable	SKET	RC_DC18G-N	N/A	Apr. 08, 2022								
Coaxial cable	SKET	RC-DC18G-N	N/A	Apr. 08, 2022								
Coaxial cable	SKET	RC-DC40G-N	N/A	Jul. 07, 2022								
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A								

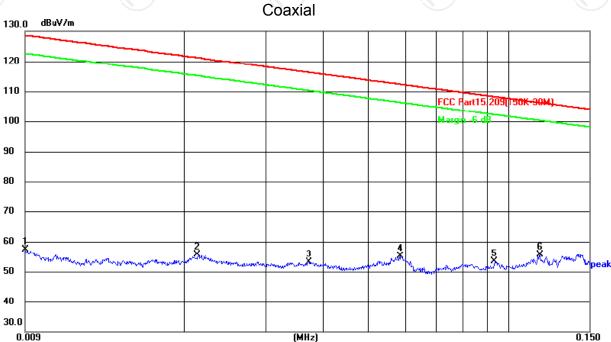


## 5.3.3. Test Data

# Please refer to following diagram for individual

9KHz-30MHz

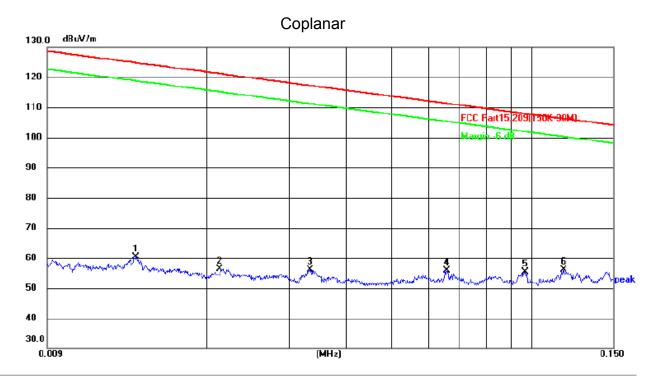
9KHz-150KHz:



Site					Polar	ization:	Temperature: 25(°ℂ)		
Limit:	FCC Part15.	209(150K-	30M)		Powe	er: DO	Humidity: 55 %		
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	0.0088	37.38	20.05	57.43	128.72	-71.29	peak	Р	
2	0.0212	35.43	20.12	55.55	121.08	-65.53	peak	Р	
3	0.0371	33.08	20.10	53.18	116.22	-63.04	peak	Р	
4	0.0585	34.86	20.20	55.06	112.26	-57.20	peak	Р	
5	0.0932	32.80	20.70	53.50	108.22	-54.72	peak	Р	
6 *	0.1170	34.87	20.83	55.70	106.24	-50.54	peak	Р	







Site Polarization: Coplanar Temperature:  $25(^{\circ}\text{C})$  Limit: FCC Part15.209(150K-30M) Power: DC 5 V Humidity: 55%

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector	P/F	Remark
1	0.0140	40.20	20.07	60.27	124.68	-64.41	peak	Р	
2	0.0212	36.30	20.12	56.42	121.08	-64.66	peak	Р	
3	0.0331	35.89	20.13	56.02	117.21	-61.19	peak	Р	
4	0.0656	35.62	20.31	55.93	111.27	-55.34	peak	Р	
5	0.0966	34.69	20.76	55.45	107.90	-52.45	peak	Р	
6 *	0.1170	35.37	20.83	56.20	106.24	-50.04	peak	Р	





#### 150KHz-30MHz:

1.1202

4.1354

33.09

26.02

22.82

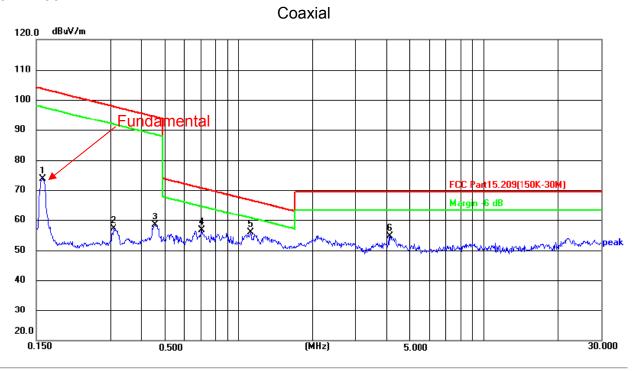
28.73

55.91

54.75

5

6



Site					Polari	zation:	Temperature: 25(°ℂ)		
Limit: FCC Part15.209(150K-30M)						r: DC	5 V		Humidity: 55 %
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	0.1592	52.65	20.90	73.55	103.57	-30.02	peak	Р	
2	0.3108	35.93	21.12	57.05	97.75	-40.70	peak	Р	
3	0.4586	37.20	21.14	58.34	94.38	-36.04	peak	Р	
4	0.7103	34.79	21.75	56.54	70.58	-14.04	peak	Р	

66.64

69.50

-10.73

-14.75

Ρ

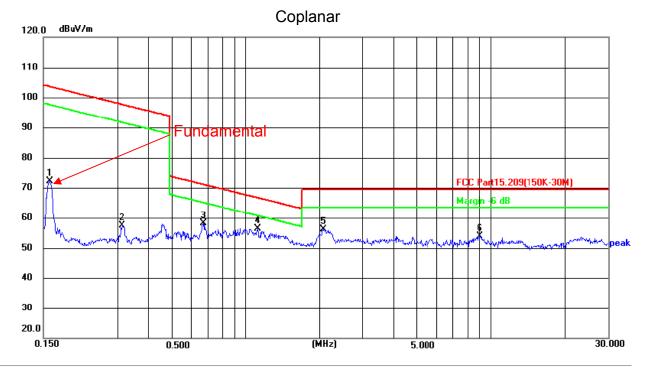
Ρ

peak

peak







Site Polarization: Coplanar Temperature:  $25(^{\circ}\text{C})$  Limit: FCC Part15.209(150K-30M) Power: DC 5 V Humidity: 55%

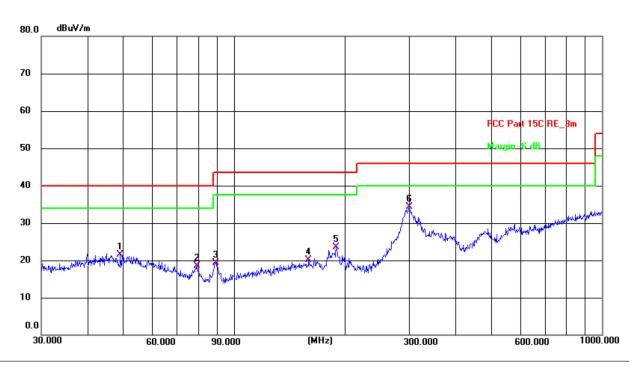
			,						
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	0.1592	51.15	20.90	72.05	103.57	-31.52	peak	Р	
2	0.3140	36.35	21.11	57.46	97.67	-40.21	peak	Р	
3	0.6733	36.38	21.64	58.02	71.05	-13.03	peak	Р	
4 *	1.1202	33.59	22.82	56.41	66.64	-10.23	peak	Р	
5	2.0767	31.60	24.64	56.24	69.50	-13.26	peak	Р	
6	9.0591	15.12	38.79	53.91	69.50	-15.59	peak	Р	





#### 30MHz-1GHz

#### Horizontal:



Site #1 3m Anechoic Chamber Polarization: Horizontal

Temperature: 25.3(C) Humidity: 54 %

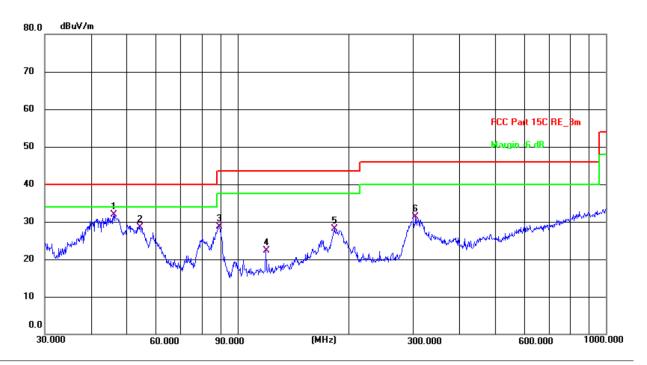
Limit: FCC Part 15C RE\_3m Power: DC 5 V(Adapter Input AC 120 V/60 Hz)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	49.1865	7.65	13.78	21.43	40.00	-18.57	QP	Р	
2	79.5209	9.23	9.36	18.59	40.00	-21.41	QP	Р	
3	88.9639	10.25	9.06	19.31	43.50	-24.19	QP	Р	
4	159.7844	6.21	13.88	20.09	43.50	-23.41	QP	Р	
5	189.7385	12.16	11.31	23.47	43.50	-20.03	QP	Р	
6 *	299.3158	20.25	14.00	34.25	46.00	-11.75	QP	Р	





#### Vertical:



Site #1 3m Anechoic Chamber Polarization: Vertical Temperature: 25.3(C) Humidity: 54 %

Limit: FCC Part 15C RE\_3m Power: DC 5 V(Adapter Input AC 120 V/60 Hz)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	46.1779	18.04	13.85	31.89	40.00	-8.11	QP	Р	
2	54.2610	15.24	13.24	28.48	40.00	-11.52	QP	Р	
3	88.9639	19.74	9.06	28.80	43.50	-14.70	QP	Р	
4	119.4361	10.30	12.08	22.38	43.50	-21.12	QP	Р	
5	183.8440	16.51	11.68	28.19	43.50	-15.31	QP	Р	
6	304.6099	17.17	14.13	31.30	46.00	-14.70	QP	Р	

#### Note:

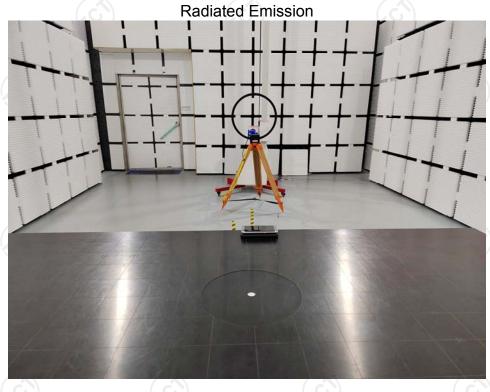
Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss - Pre-amplifier Both AC mode and Internal Battery Mode have been tested, only the data of worse case(Internal Battery Mode) reported.

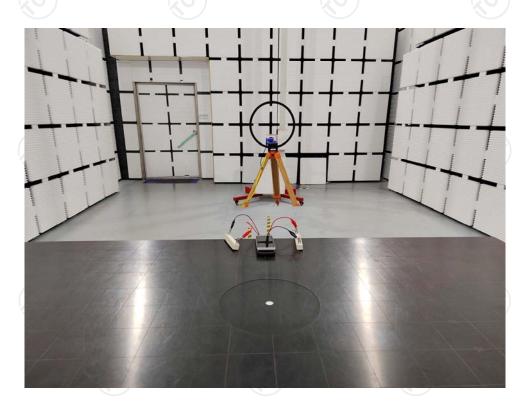




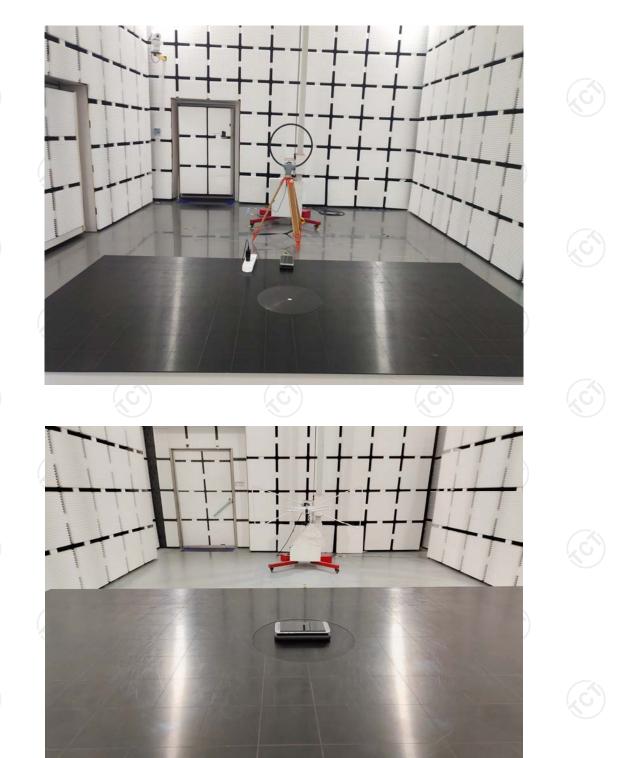
# **Appendix A: Photographs of Test Setup**

Product: wireless power bank Model: TSB7300











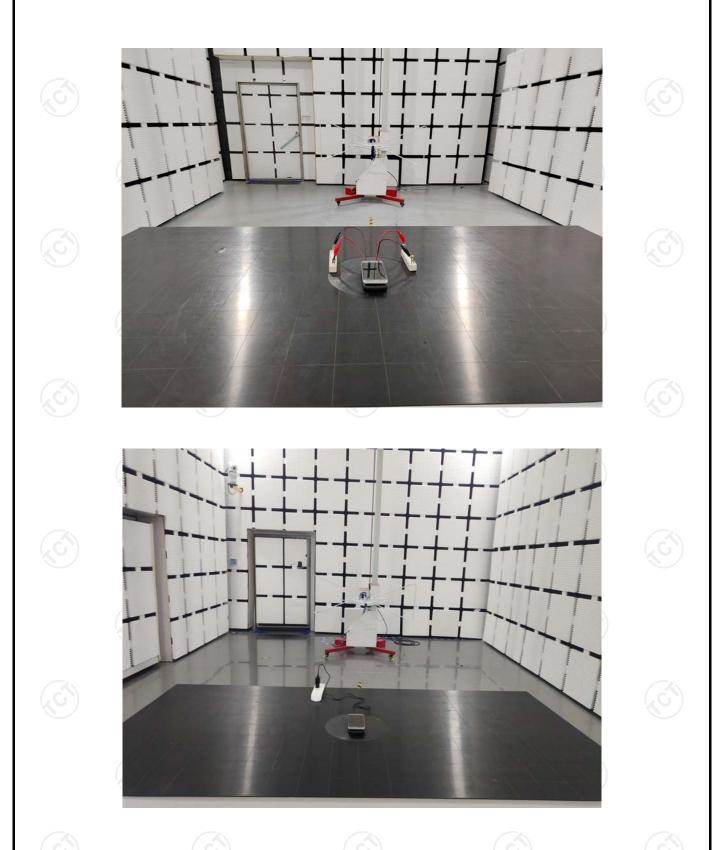






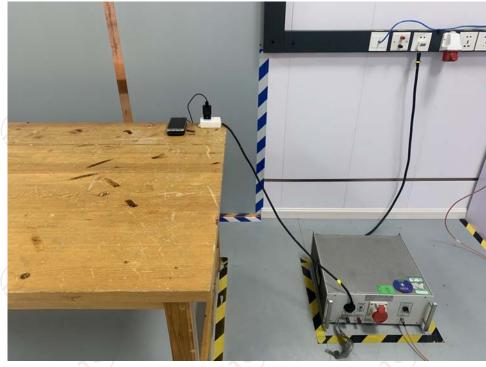








## **Conducted Emission**



























































# Appendix B: Photographs of EUT Product: wireless power bank Model: TSB7300 External Photos









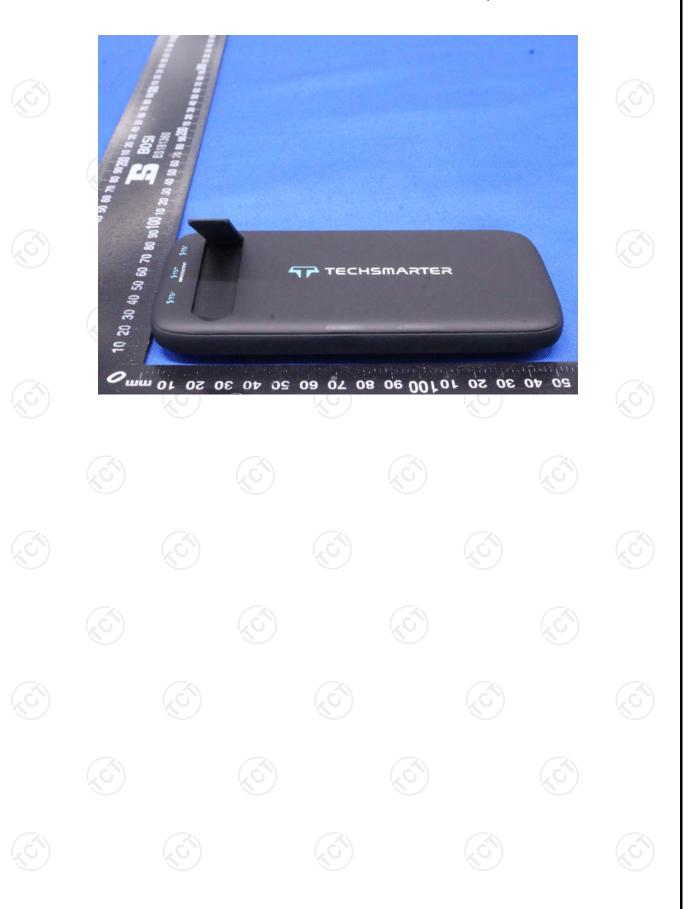














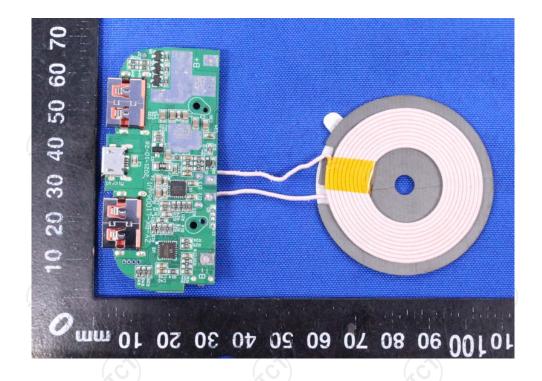
Product: wireless power bank Model: TSB7300 Internal Photos

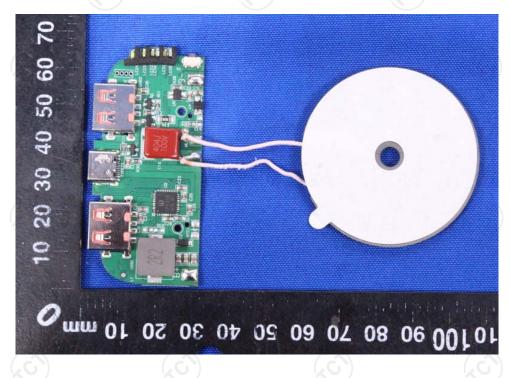






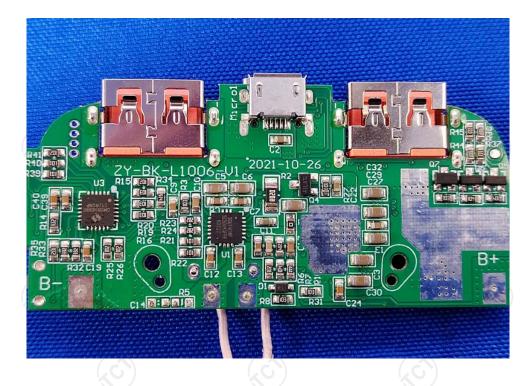


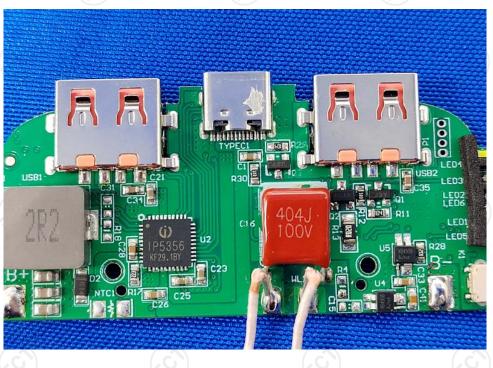




















\*\*\*\*\*END OF REPORT\*\*\*\*