FCC PART 15C TEST REPORT FOR CERTIFICATION On Behalf of

Chunghsin Technology Group CO.,LTD

10.1" ANDROID TABLET WITH DETACHABLE KEYBOARD

Model Number: 100005209

Additional Model: ONA19TB007

FCC ID: 2AE2WT1016M

Prepared for:	Chunghsin Technology Group CO.,LTD
	No. 618-2 GONGREN WEST ROAD, JIAOJIANG AREA, TAIZHOU CITY,
	ZHEJIANG, CHINA
Prepared By:	EST Technology Co., Ltd.
	Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China
	Tel: 86-769-83081888-808

Report Number:	ESTE-R1901072-3
Date of Test:	Jul. 18~26, 2019
Date of Report:	Jul. 27, 2019



TABLE OF CONTENTS

Descr	iption	1	Page
TEST R	EPORT	Γ VERIFICATION	3
1.		IERAL INFORMATION	
	1.1.	Description of Device (EUT)	4
2.	SUM	1MARY OF TEST	5
	2.1.	Summary of test result	
	2.2.	Test Facilities	6
	2.3.	Measurement uncertainty	7
	2.4.	Assistant equipment used for test	7
	2.5.	Block Diagram	7
	2.6.	Test mode	8
	2.7.	Channel List	8
	2.8.	Test Equipment	9
4	RAD	DIATED EMISSION TEST	11
	4.1	Limit	11
	4.2.	Block Diagram of Test setup	12
	4.3.	Test Procedure	
	4.4.	Test Result	13
	4.5.	Test Data	14
5	TES	ST SETUP PHOTO	19
6	PHC	OTO FUT	20



EST Technology Co., Ltd.

	EST Tecl	hnology Co., Ltd	d
Applicant: Address:	Chunghsin Technology No. 618-2 GONGREN ZHEJIANG, CHINA		IANG AREA, TAIZHOU CITY,
Manufacturer: Address:	Chunghsin Technology No. 618-2 GONGREN ZHEJIANG, CHINA		IANG AREA, TAIZHOU CITY,
E.U.T:	10.1" ANDROID TABI	LET WITH DETACH	ABLE KEYBOARD
Model Number:	100005209		
Additional Model:	ONA19TB007 (They are identical exce	ept model name only)	
Power Supply:	DC 5V From Adapter I DC 3.7V From battery	nput AC 100~240V, 50	0/60Hz, 0.3A
Test Voltage:	DC 5V From Adapter I DC 5V From Adapter I		
Trade Name:	onn.	Serial No.:	
Date of Receipt:	Jul. 18, 2019	Date of Test:	Jul. 18~Jul. 26, 2019
Test Specification:	FCC Rules and Regula ANSI C63.10:2013	tions Part 15 Subpart C	C:2018
Test Result:	measurement results we Ltd. was assumed full is measurements. Also, the with the FCC Rules and	ere contained in this te responsibility for the a- nis report shows that the d Regulations Part 15 to above tested sample on	
			Date: Jul. 27, 201981
Prepared by:	Reviewe	ed by:	Approved by:

Other Aspects:

Ring / Assistant

1. This report base on the previous report with report number: ESTE-R1901072-1, two IC are add in this report.

Tony / Engineer

2. Because only the add IC, so just re-tested Radiated Emissions (30-1000Mhz), other test item needn't re-tested(IC model: SU (M) TJ9A7ZZ5D7DKFRL-107BT and SUTJ9B7ZZ7D7DKLAH-107BT)

Abbreviations: OK/P=passed

fail/F=failed

n.a/N=not applicable

E.U.T=equipment under tested

Iceman Hu / Manager

This test report is based on a single evaluation of one sample of above mentioned products, It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd.

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Product Name		10.1" ANDROID TABLET WITH DETACHABLE KEYBOARD
FCC ID	:	2AE2WT1016M
Model Number	:	100005209
Operation frequency	:	2402MHz~2480MHz
Number of channel	:	40
Antenna	:	Internal antenna (Antenna Gain: 1.5 dBi)
Modulation	:	BLE: GFSK
Sample Type	:	Prototype production



EST Technology Co., Ltd Report No. ESTE-R1901072-3 Page 4 of 29

2. SUMMARY OF TEST

2.1. Summary of test result

Description of Test Item	Standard	Results
Power Line Conducted Emission	FCC Part 15: 15.207	N/A
Tower Ellie Conducted Ellission	ANSI C63.10:2013	1 1/11
	FCC Part 15: 15.209	
Radiated Emission	ANSI C63.10:2013	PASS
	KDB 558074	
	FCC Part 15: 15.247	
Band Edge Compliance	ANSI C63.10:2013	N/A
	KDB 558074	
	FCC Part 15: 15.247	
6dB Bandwidth	ANSI C63.10:2013	N/A
	KDB 558074	
	FCC Part 15: 15.247	
Peak Output Power	ANSI C63.10:2013	N/A
	KDB 558074	
	FCC Part 15: 15.247	
Power Spectral Density	ANSI C63.10:2013	N/A
	KDB 558074	
Antenna requirement	FCC Part 15: 15.203	N/A
	1	<u> </u>

Note: KDB 558074 D01 15.247 Meas Guidance v05



EST Technology Co., Ltd Report No. ESTE-R1901072-3 Page 5 of 29

2.2. Test Facilities

EMC Lab : Certificated by CNAS, CHINA

Registration No.: L5288

Date of registration: November 13, 2017

Certificated by FCC, USA Designation Number: CN1215

Test Firm Registration Number: 722932 Date of registration: November 21, 2017

Certificated by A2LA, USA Registration No.: 4366.01

Date of registration: November 07, 2017

Certificated by Industry Canada CAB identifier No.: CN0035

Date of registration: January 04, 2019

Certificated by VCCI, Japan

Registration No.: R-13663; C-14103 Date of registration: July 25, 2017

This Certificate is valid until: July 24, 2020

Certificated by TUV Rheinland, Germany Registration No.: UA 50413872 0001 Date of registration: July 31, 2018

Certificated by TUV/PS, Shenzhen

Registration No.: SCN1017

Date of registration: January 27, 2011

Certificated by Intertek ETL SEMKO Registration No.: 2011-RTL-L2-64 Date of registration: April 28, 2011

Certificated by Nemko, Hong Kong

Registration No.: 175193

Date of registration: May 4, 2011

Name of Firm : EST Technology Co., Ltd.

Site Location : Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong,

China



2.3. Measurement uncertainty

Test Item	Uncertainty
Uncertainty for Conduction emission test	±3.48dB
Uncertainty for spurious emissions test	±4.60 dB(Polarize: H)
(30MHz-1GHz)	±4.68 dB(Polarize: V)
Uncertainty for spurious emissions test (1GHz to 18GHz)	±4.96dB
Uncertainty for radio frequency	7×10 ⁻⁸
Uncertainty for conducted RF Power	0.20dB
Uncertainty for Power density test	0.26dB

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2.4. Assistant equipment used for test

2.4.1. Adapter

Manufacturer : onn

M/N : BSY01J3050200U U

Input : AC 100-240V, 50/60Hz, 0.3A

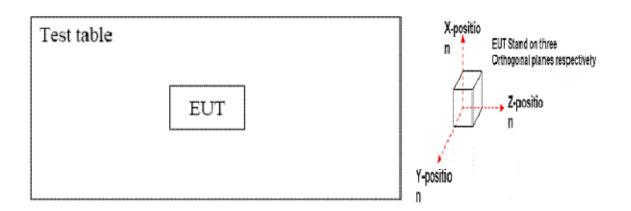
Output : DC 5V, 2.0A

2.5. Block Diagram

For radiated emissions test: EUT was placed on a turn table, which is 0.8 (or 1.5) meter high above ground. EUT was beset into Bluetooth test mode by software before test.



(EUT: 10.1" ANDROID TABLET WITH DETACHABLE KEYBOARD)





EST Technology Co., Ltd Report No. ESTE-R1901072-3 Page 7 of 29

2.6. Test mode

A special test software was used to control EUT work in Continuous TX mode(100% duty cycle), and select test channel, wireless mode and data rate.

Mode	Channel	Frequency
BT 4.0-BLE GFSK	Low	2402MHz
	Middle	2440MHz
	High	2480MHz

2.7. Channel List

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	2402	2	2404
3	2406	4	2408
5	2410	6	2412
7	2414	8	2416
9	2418	10	2420
11	2422	12	2424
13	2426	14	2428
15	2430	16	2432
17	2434	18	2436
19	2438	20	2440
21	2442	22	2444
23	2446	24	2448
25	2450	26	2452
27	2454	28	2456
29	2458	30	2460
31	2462	32	2464
33	2466	34	2468
35	2470	36	2472
37	2474	38	2476
39	2478	40	2480



EST Technology Co., Ltd

2.8. Test Equipment

2.8.1. For conducted emission test

Equipment	Manufacturer	Model No.	Serial No.	Calibration	Last Cal.	Next Cal.
		1,10,001,1,01		Body		1 (6110 0 011)
EMI Test Receiver	Rohde	ESHS30	832354	CEPREI	June 14,19	1 Year
	& Schwarz					
Artificial Mains Network	Rohde	ENV216	101260	CEPREI	June 14,19	1 Year
	& Schwarz					
Pulse Limiter	Rohde	ESH3-Z2	101100	CEPREI	June 14,19	1 Year
	& Schwarz					
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A

2.8.2. For radiated emission test(9 kHz-30MHz)

Equipment	Manufacturer	Model No.	Serial No.	Calibration	Last Cal.	Next Cal.
				Body		
EMI Test	Rohde	ESR7	101780	CEPREI	June 14,19	1 Year
Receiver	& Schwarz					
Active Loop Antenna	SCHWAREB	FMZB 1519B	1519B-088	N/A	June 14,19	1 Year
	ECK					
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A

2.8.3. For radiated emissions test (30-1000MHz)

Equipment	Manufacturer	Model No.	Serial No.	Calibration	Last Cal.	Next Cal.
				Body		
EMI Test	Rohde	ESR7	101780	CEPREI	June 14,19	1 Year
Receiver	& Schwarz					
Bilog Antenna	Teseq	CBL 6111D	27090	CEPREI	June 14,19	1 Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A

2.8.4. For radiated emission test(above 1GHz)

Equipment	Manufacturer	Model No.	Serial No.	Calibration	Last Cal.	Next Cal.
				Body		
Horn Antenna	SCHWARZB	BBHA 9120 D	BBHA912	CEPREI	June 14,19	1 Year
	ECK		0D1002			
Horn Antenna	SCHWARZB	BBHA9170	BBHA917	CEPREI	June 14,19	1Year
	ECK		0242			
Signal Amplifier	SCHWARZB	BBV9718	9718-212	CEPREI	June 14,19	1 Year
	ECK					
Spectrum Analyzer	Rohde	FSV	103173	CEPREI	June 14,19	1 Year
	&Schwarz					
PSA Series Spertrum	Agilent	E4447A	MY50180	CEPREI	June 14,19	1Year
Analyzer			031			
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A



EST Technology Co., Ltd Report No. ESTE-R1901072-3 Page 9 of 29

2.8.5. For connect EUT antenna terminal test

Equipment	Manufacturer	Model No.	Serial No.	Calibration Body	Last Cal.	Next Cal.
Snectrum Analyzer	Rohde &Schwarz	FSV	103173	CEPREI	June 14,19	1 Year
Spectrum Analyzer	Agilent	E4408B	MY44211 139	CEPREI	June 14,19	1 Year



4 RADIATED EMISSION TEST

4.1 Limit

4.1.1 15.209 limits

Frequency (MHz)	Field Strength(μV/m)	Distance(m)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark : (1) Emission level $dB\mu V = 20 \log$ Emission level $\mu V/m$

- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

4.1.2 15.205 Restricted bands of operation

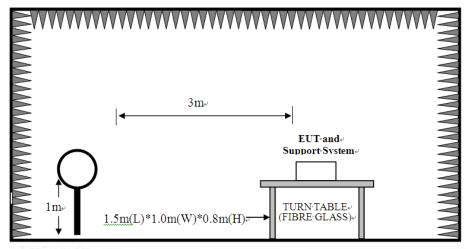
MHz	MHz MHz		GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 -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

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

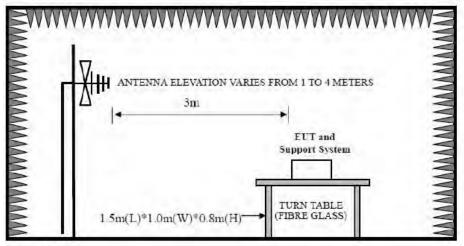


4.2. Block Diagram of Test setup

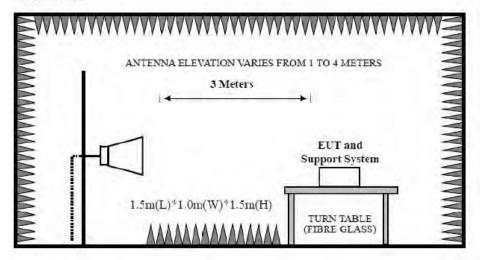
9kHz~30MHz



30~1000MHz



Above 1GHz





EST Technology Co., Ltd

4.3. Test Procedure

EUT was placed on a turn table, which is 0.8 meter high above ground for 9kHz~1000MHz test, and which is 1.5 meter high above ground for above 1GHz test. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

The test frequency analyzer system was set to Peak Detect (300Hz RBW in 9kHz to 150kHz and 10kHz RBW in 150kHz to 30MHz) Function and Specified Bandwidth with Maximum Hold Mode.

The bandwidth of the EMI test receiver (R&S ESVS10) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's VBW is set at 1MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz

PEAK detector, 1MHz/1MHz for PAEK measurement, PEAK detector, 1MHz/10Hz for Average measurement

The frequency range from 30MHz to 10th harmonic (25GHz) are checked.

4.4. Test Result

PASS.

All the emissions from 30MHz to 25 GHz were comply with 15.209 limits.

- Note: 1. For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.
 - 2. The frequency 2402MHz . 2440MHz and 2480 MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.



4.5. Test Data

9 kHz – 30 MHz

Pass

Note: The amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

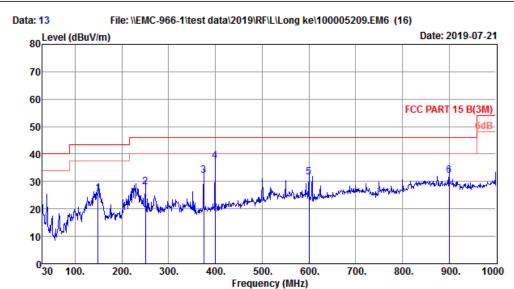


30-1000 MHz

EST Technology

Chilingxiang, Qishantou, Santun, Houjie, Dongguan,Guangdong,China Tel:+86-769-83081888

Fax:+86-769-83081878



Site no. : 1# 966 Chamber Data no. : 13
Dis. / Ant. : 3m 37062 Ant. pol. : VERTICAL

Limit : FCC PART 15 B(3M)

Env. / Ins. : Temp:24.5'; Humi:65%; Press:101.52kPa

Engineer : Tea

EUT : 10.1 ANDROID TABLET
WITH DETACHABLE KEYBOARO

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

M/N : 100005209 Test Mode : TX Mode

IC:SU(M)TJ9A7ZZ5D7DKFRL-107BT

		ANT	Cable		Emission			
	Freq. (MHz)	Factor (dB/m)	Loss (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	149.31	11.62	1.09	12.85	25.56	43.50	17.94	QP
2	250.19	12.40	1.62	14.15	28.17	46.00	17.83	QP
3	375.32	15.60	2.19	14.40	32.19	46.00	13.81	QP
4	399.57	16.20	2.14	19.09	37.43	46.00	8.57	QP
5	600.36	20.40	2.97	8.10	31.47	46.00	14.53	QP
6	900.09	23.90	3.89	4.26	32.05	46.00	13.95	QP

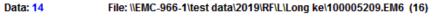
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

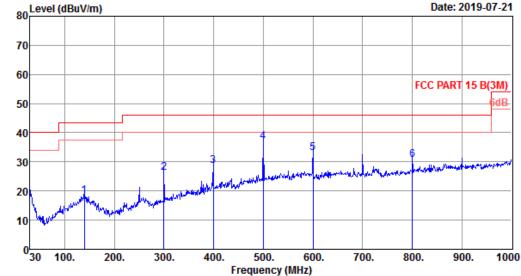
- 2. Margin= Limit Emission Level.
- 3. The emission levels that are 20dB below the official limit are not reported.



EST Technology

Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China Tel:+86-769-83081888 Fax:+86-769-83081878





Site no. : 1# 966 Chamber Data no. : 14

Dis. / Ant. : 3m 37062 Ant. pol. : HORIZONTAL

Limit : FCC PART 15 B(3M)

Env. / Ins. : Temp:24.5'; Humi:65%; Press:101.52kPa

Engineer : Tea

EUT : 10.1 ANDROID TABLET

WITH DETACHABLE KEYBOARO

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

M/N : 100005209 Test Mode : TX Mode

IC:SU(M)TJ9A7ZZ5D7DKFRL-107BT

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	139.61	12.50	1.03	4.72	18.25	43.50	25.25	QP
2	299.66	13.80	1.85	10.74	26.39	46.00	19.61	QP
3	399.57	16.20	2.14	10.39	28.73	46.00	17.27	QP
4	499.48	18.28	2.66	16.10	37.04	46.00	8.96	QP
5	600.36	20.40	2.97	9.78	33.15	46.00	12.85	QP
6	800.18	22.90	3.58	4.09	30.57	46.00	15.43	QP

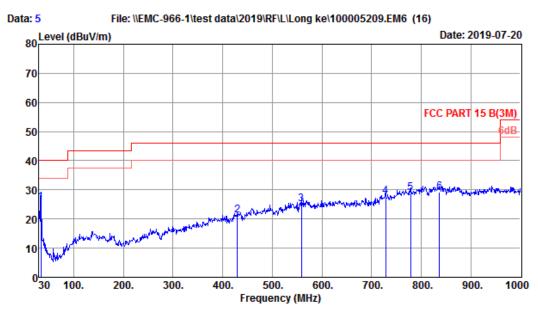
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

- 2. Margin= Limit Emission Level.
- 3. The emission levels that are 20dB below the official limit are not reported.



EST Technology

Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China Tel:+86-769-83081888 Fax:+86-769-83081878



Site no. : 1# 966 Chamber Data no. : 5
Dis. / Ant. : 3m 37062 Ant. pol. : VERTICAL

Limit : FCC PART 15 B(3M)

Env. / Ins. : Temp:24.5'; Humi:65%; Press:101.52kPa

Engineer : Tea

EUT : 10.1 ANDROID TABLET

WITH DETACHABLE KEYBOARO

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

M/N : 100005209 Test Mode : TX Mode

IC:SUTJ9B7ZZ7D7DKLAH-107BT

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	33.88	15.60	0.18	9.80	25.58	40.00	14.42	QP
2	429.64	16.90	2.34	2.03	21.27	46.00	24.73	QP
3	558.65	19.72	2.87	2.59	25.18	46.00	20.82	QP
4	728.40	21.70	3.53	2.44	27.67	46.00	18.33	QP
5	778.84	22.59	3.51	2.72	28.82	46.00	17.18	QP
6	837.04	23.47	3.70	2.02	29.19	46.00	16.81	QP

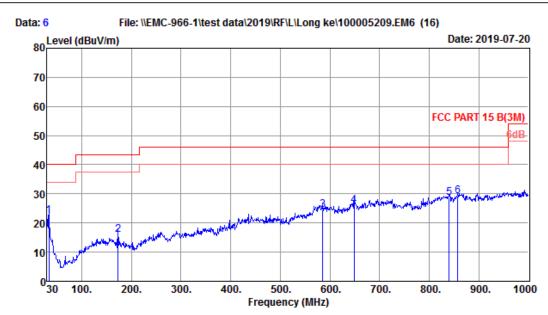
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

- 2. Margin= Limit Emission Level.
- 3. The emission levels that are 20dB below the official limit are not reported.



EST Technology

Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China Tel:+86-769-83081888 Fax:+86-769-83081878



Site no. : 1# 966 Chamber Data no. : 6

Dis. / Ant. : 3m 37062 Ant. pol. : HORIZONTAL

Limit : FCC PART 15 B(3M)

Env. / Ins. : Temp:24.5'; Humi:65%; Press:101.52kPa

Engineer : Tea

EUT : 10.1 ANDROID TABLET

WITH DETACHABLE KEYBOARO

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

M/N : 100005209 Test Mode : TX Mode

IC:SUTJ9B7ZZ7D7DKLAH-107BT

	Freq.	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	33.88	15.60	0.18	6.63	22.41	40.00	17.59	QP
2	173.56	9.78	1.19	4.91	15.88	43.50	27.62	QP
3	585.81	20.18	2.94	1.36	24.48	46.00	21.52	QP
4	648.86	21.39	3.17	1.37	25.93	46.00	20.07	QP
5	839.95	23.50	3.71	1.35	28.56	46.00	17.44	QP
6	857.41	23.75	3.74	1.70	29.19	46.00	16.81	QP

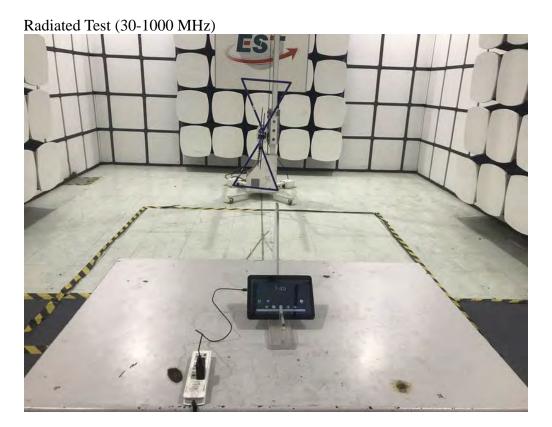
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

2. Margin= Limit - Emission Level.

3. The emission levels that are 20dB below the official limit are not reported.



5 TEST SETUP PHOTO

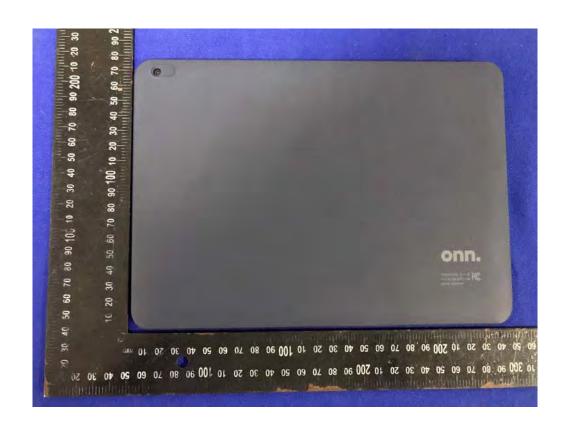




6 PHOTO EUT

External Photos







EST Technology Co., Ltd Report No. ESTE-R1901072-3 Page 20 of 29

External Photos M/N: 100005209

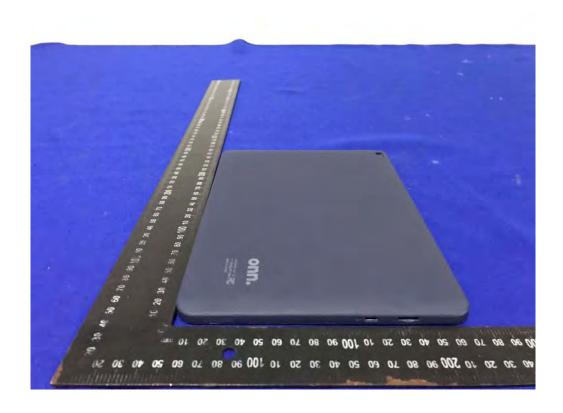




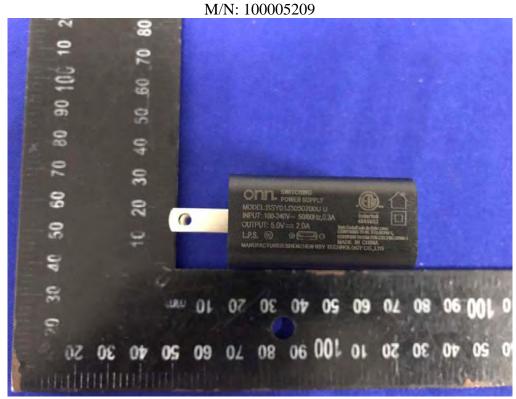


External Photos M/N: 100005209





External Photos



IC Model: SUTJ9B7ZZ7D7DKLAH-107BT

Internal Photos

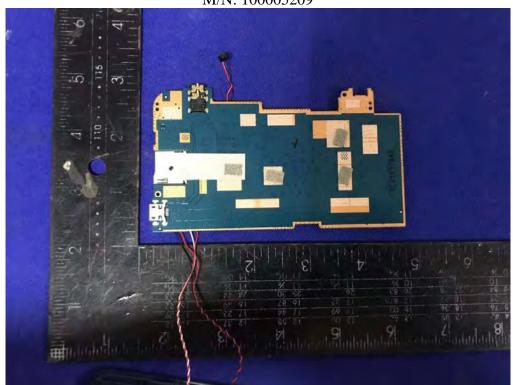


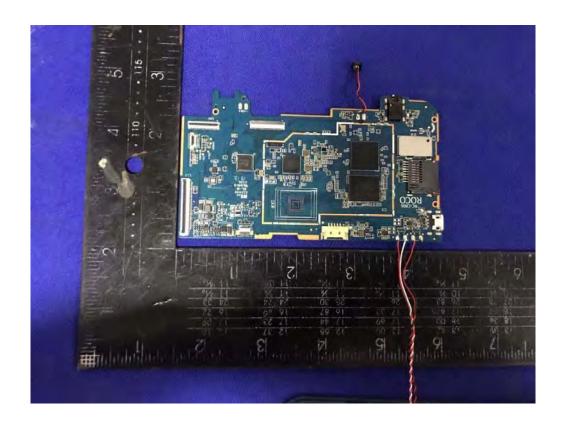


RF Antenna



Internal Photos M/N: 100005209



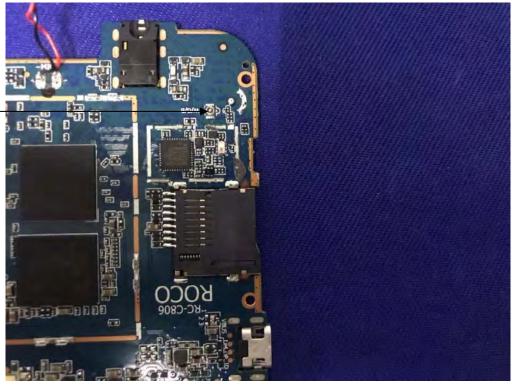




Internal Photos

M/N: 100005209









IC Model: SU (M) TJ9A7ZZ5D7DKFRL-107BT

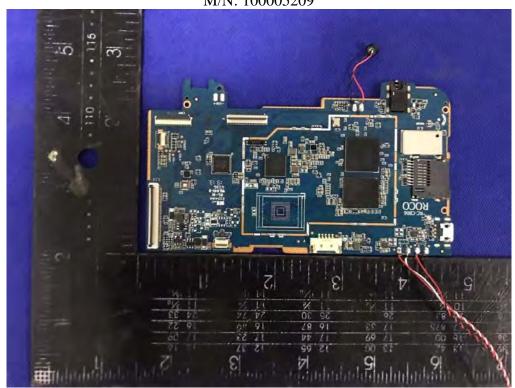
Internal Photos

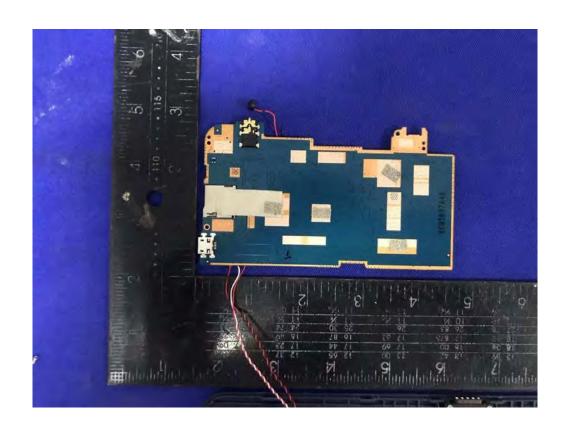




RF Antenna

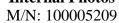
Internal Photos M/N: 100005209







Internal Photos



RF Antenna Port

