## 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-R1901071-3
Date of Test:	Jul. 18~26, 2019
Date of Report:	Jul. 27, 2019



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EST Technology Co., Ltd.

	ESI lecnn	ology Co., Ltd	a.
Applicant: Address:	Chunghsin Technology Gr No. 618-2 GONGREN WI ZHEJIANG, CHINA		JIANG AREA, TAIZHOU CITY,
Manufacturer: Address:	Chunghsin Technology Gr No. 618-2 GONGREN WI ZHEJIANG, CHINA	oup CO.,LTD EST ROAD, JIAOJ	JIANG AREA, TAIZHOU CITY,
E.U.T:	10.1" ANDROID TABLET	WITH DETACHA	ABLE KEYBOARD
Model Number:	100005209		
Additional Model:	ONA19TB007 (They are identical except	model name only)	
Power Supply:	DC 5V From Adapter Inpu DC 3.7V From battery		0/60Hz, 0.3A
Test Voltage:	DC 5V From Adapter Inpu DC 5V From Adapter Inpu		
Trade Name:	onn.	Serial No.:	
Date of Receipt:	Jul. 18, 2019	Date of Test:	Jul. 18~26, 2019
Test Specification:	FCC Rules and Regulation ANSI C63.10:2013	s Part 15 Subpart C	C:2018
Test Result:	Ltd. was assumed full response measurements. Also, this rewith the FCC Rules and Re	contained in this terest consibility for the accept shows that the egulations Part 15 Section 15 Se	st report and EST Technology Co., ccuracy and completeness of these e EUT to be technically compliance Subpart C requirements.  by and shall not be reproduced in
Prepared by:	Davissa J la		Date: h9 27, 2019
Ping	Reviewed by		Approved by
Ring / Assistant	Tony / Engineer		Iceman Hu / Manager
Other Aspects:			

#### Other Aspects:

- 1. This report base on the previous report with report number: ESTE-R1901071-1, two IC are add in this report.
- 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

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
operation frequency	•	2402WH1Z~2460WH1Z
Number of channel	:	79
Antenna	:	Internal antenna (Antenna Gain:1.5 dBi)
Modulation	:	BT BDR: GFSK BT EDR: π/4-DQPSK BT EDR: 8-DPSK
Sample Type	:	Prototype production



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## 2. SUMMARY OF TEST

# 2.1. Summary of test result

Description of Test Item	Standard	Results
Maximum Peak Output Power	FCC Part 15: 15.247(b)(1) KDB 558074	N/A
20dB Bandwidth	FCC Part 15: 15.247a1 KDB 558074	N/A
Carrier Frequency Separation	FCC Part 15: 15.247(a)(1) KDB 558074	N/A
Number Of Hopping Channel	FCC Part 15: 15.247(a)(1)(iii) KDB 558074	N/A
Dwell Time	FCC Part 15: 15.247(a)(1)(iii) KDB 558074	N/A
Radiated Emissions	FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.10:2013 KDB 558074	PASS
Band Edge Compliance	FCC Part 15: 15.247(d) KDB 558074	N/A
Power Line Conducted Emissions	FCC Part 15: 15.207 ANSI C63.10:2013 KDB 558074	N/A
Antenna requirement	FCC Part 15: 15.203	N/A

Note: KDB 558074 D01 15.247 Meas Guidance v05



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#### 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



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#### 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 <sup>-8</sup>
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

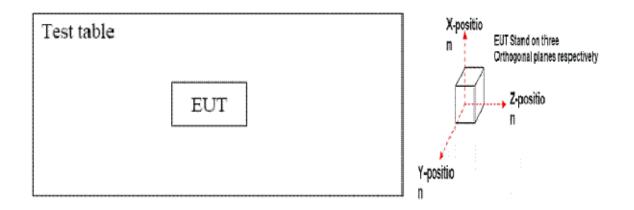
Output : DC 5V, 2.0A

## 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)





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# 2.6. Test mode

The test software was used to control EUT work in Continuous TX mode, and select test channel, wireless mode

Mode	Channel	Frequency
	Low	2402MHz
GFSK	Middle	2441MHz
	High	2480MHz
	Low	2402MHz
8-DPSK	Middle	2441MHz
	High	2480MHz

## 2.7. Channel List

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
No.	(MHz)	No.	(MHz)	No.	(MHz)	No.	(MHz)
1	2402	2	2403	3	2404	4	2405
5	2406	6	2407	7	2408	8	2409
9	2410	10	2411	11	2412	12	2413
13	2414	14	2415	15	2416	16	2417
17	2418	18	2419	19	2420	20	2421
21	2422	22	2423	23	2424	24	2425
25	2426	26	2427	27	2428	28	2429
29	2430	30	2431	31	2432	32	2433
33	2434	34	2435	35	2436	36	2437
37	2438	38	2439	39	2440	40	2441
41	2442	42	2443	43	2444	44	2445
45	2446	46	2447	47	2448	48	2449
49	2450	50	2451	51	2452	52	2453
53	2454	54	2455	55	2456	56	2457
57	2458	58	2459	59	2460	60	2461
61	2462	62	2463	63	2464	64	2465
65	2466	66	2467	67	2468	68	2469
69	2470	70	2471	71	2472	72	2473
73	2474	74	2475	75	2476	76	2477
77	2478	78	2479	79	2480	-	_



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# 2.8. Test Equipment

## 2.8.1. For conducted emission test

Equipment	Manufacturer	Model No.	Serial No.	Calibration	Last Cal.	Next Cal.
				Body		
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

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## 2.8.5. For connect EUT antenna terminal test

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



#### 3. RADIATED EMISSIONS

#### 3.1. Limit

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.

15.205 Restricted frequency band

MHz	MHz MHz		GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
<sup>1</sup> 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)

15.209 Limit

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  $dB\mu V = 20 \log Emission level \mu V/m$ 

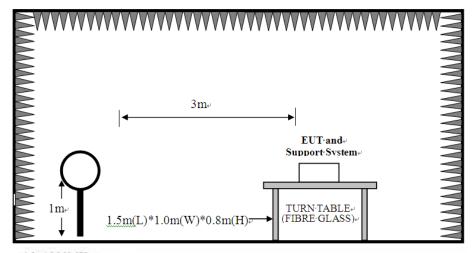
- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.



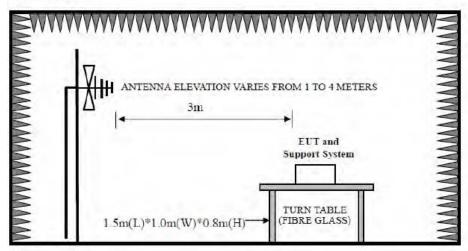
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## 3.2. Block Diagram of Test setup

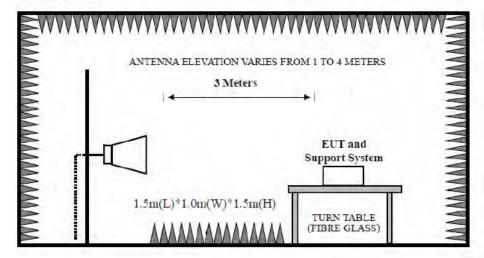
9kHz~30MHz



30~1000MHz



Above 1GHz





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#### 3.3. 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.

#### 3.4. Test Result

Pass

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 \ 2441MHz and 2480MHz 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.



## 3.5. 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.

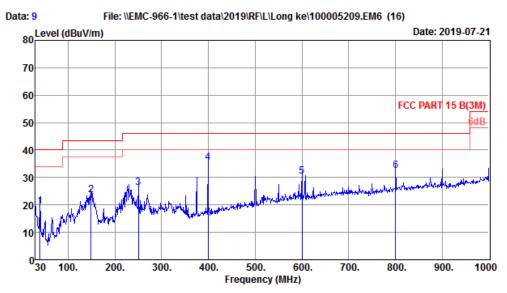


#### 30 MHz - 1000 MHz

## EST Technology

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Fax:+86-769-83081878



Site no. : 1# 966 Chamber Data no. : 9
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

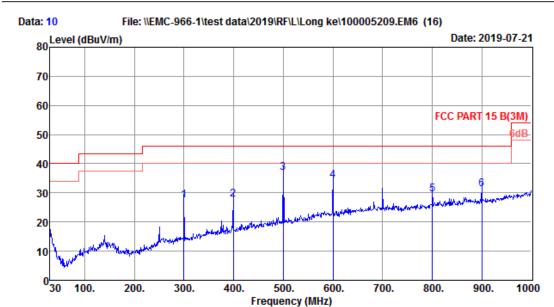
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	39.70	12.20	0.22	6.97	19.39	40.00	20.61	QP
2	149.31	11.62	1.09	10.85	23.56	43.50	19.94	QP
3	250.19	12.40	1.62	12.15	26.17	46.00	19.83	QP
4	399.57	16.20	2.14	17.09	35.43	46.00	10.57	QP
5	600.36	20.40	2.97	7.10	30.47	46.00	15.53	QP
6	800.18	22.90	3.58	6.12	32.60	46.00	13.40	QP

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



# EST Technology

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Site no. : 1# 966 Chamber Data no. : 10

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

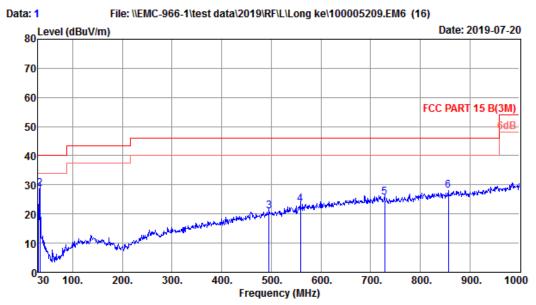
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	299.66	13.80	1.85	11.74	27.39	46.00	18.61	QP
2	399.57	16.20	2.14	9.39	27.73	46.00	18.27	QP
3	499.48	18.28	2.66	16.10	37.04	46.00	8.96	QP
4	600.36	20.40	2.97	10.78	34.15	46.00	11.85	QP
5	800.18	22.90	3.58	3.09	29.57	46.00	16.43	QP
6	900.09	23.90	3.89	3.46	31.25	46.00	14.75	QP

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



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

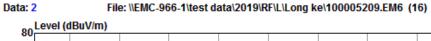
	Freq.	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.00	18.40	0.14	1.16	19.70	40.00	20.30	QP
2	33.88	15.60	0.18	12.80	28.58	40.00	11.42	QP
3	495.60	18.21	2.66	0.04	20.91	46.00	25.09	QP
4	558.65	19.72	2.87	0.59	23.18	46.00	22.82	QP
5	728.40	21.70	3.53	0.44	25.67	46.00	20.33	QP
6	856.44	23.67	3.73	0.56	27.96	46.00	18.04	QP

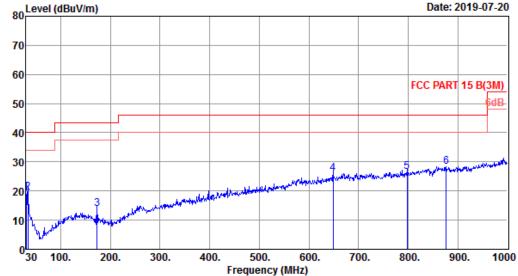
- 2. Margin= Limit Emission Level.
- 3. The emission levels that are 20dB below the official limit are not reported.



# EST Technology

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: 1# 966 Chamber Site no. Data no. : 2

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

Limit : FCC PART 15 B (3M)

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

Engineer : Tea

: 10.1 ANDROID TABLET EUT

WITH DETACHABLE KEYBOARO

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

M/N : 100005209 : TX Mode Test Mode

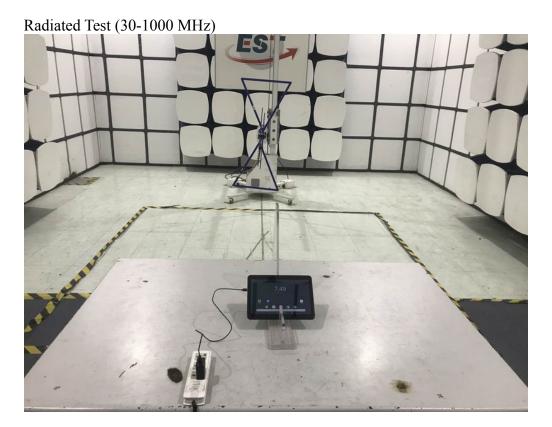
IC:SUTJ9B7ZZ7D7DKLAH-107BT

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.00	18.40	0.14	0.62	19.16	40.00	20.84	QP
2	33.88	15.60	0.18	3.63	19.41	40.00	20.59	QP
3	173.56	9.78	1.19	2.91	13.88	43.50	29.62	QP
4	648.86	21.39	3.17	1.37	25.93	46.00	20.07	QP
5	798.24	22.86	3.59	0.12	26.57	46.00	19.43	QP
6	876.81	23.83	3.86	0.63	28.32	46.00	17.68	QP

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



# 4. TEST SETUP PHOTO

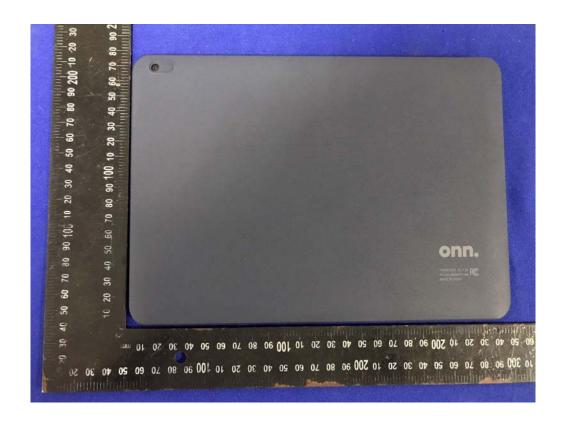




#### 5. PHOTO EUT

External Photos M/N: 100005209







External Photos M/N: 100005209

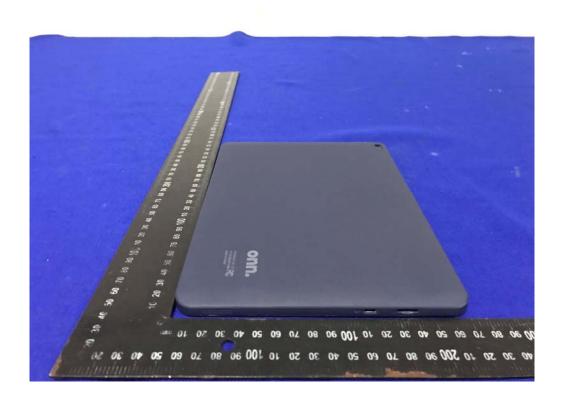






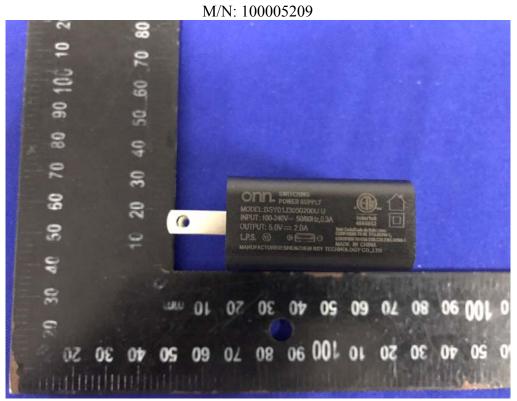
# External Photos M/N: 100005209







# **External Photos**





## IC Model: SUTJ9B7ZZ7D7DKLAH-107BT

Internal Photos



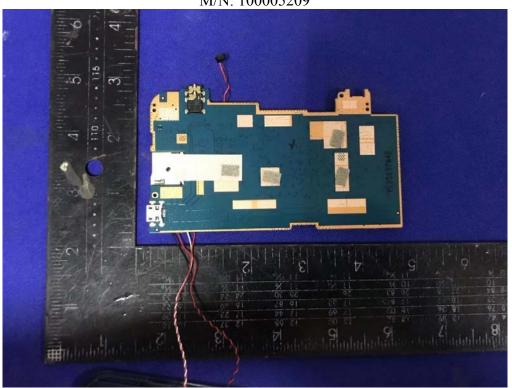


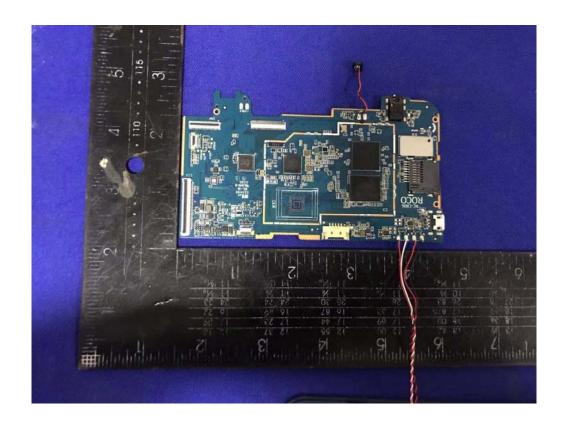
RF Antenna



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## Internal Photos M/N: 100005209







RF

Antenna Port

## **Internal Photos**







# IC Model: SU (M) TJ9A7ZZ5D7DKFRL-107BT

# Internal Photos



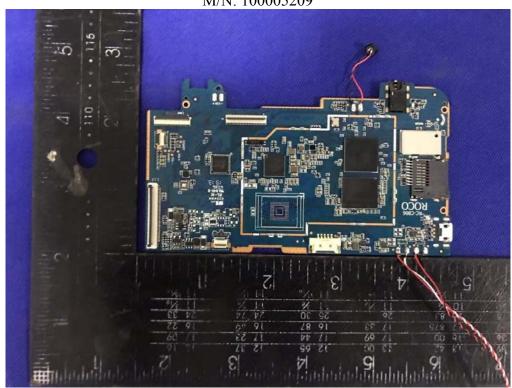


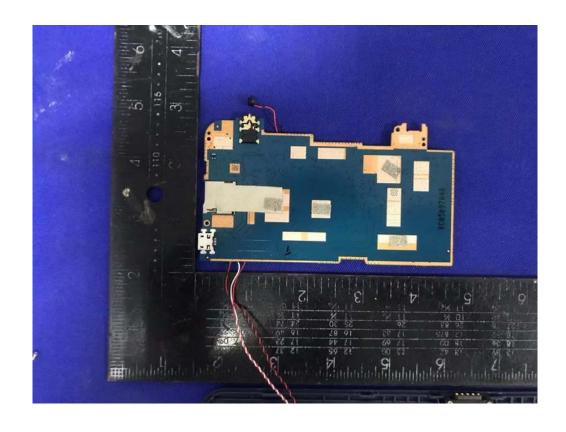
RF Antenna



EST Technology Co., Ltd

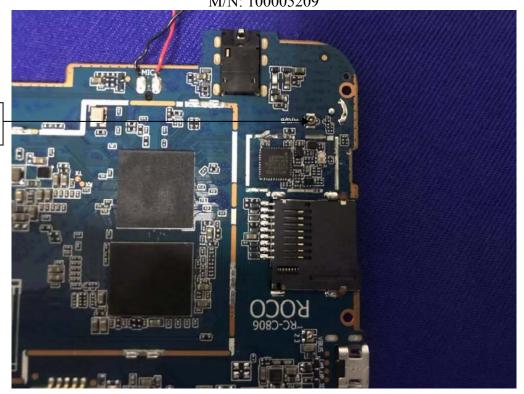
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**Internal Photos** M/N: 100005209



RF Antenna Port



