



Shenzhen Certification Technology Service Co., Ltd  
2F, Building B, East Area of Nanchang Second Industrial  
Zone, Gushu 2nd Road, Bao'an District, Shenzhen  
518126, P.R. China.

# TEST REPORT

**FCC ID: 2AABL-X15**

**Applicant :** Shenzhen GoldenTrek Technology Co., Ltd.

**Address :** Rm 1806, Overseas Chinese Scholar's Venture Building,  
No.29 GaoXinNanHuan Rd., NanShan, Shenzhen

Equipment Under Test (EUT):

Name : Tablet PC  
Model : X15, X15A, X15B, X15C, X15D, X15E, E8, E9

In Accordance with: FCC PART 15.247

Report No : STI130424058-1  
Date of Test : April 25-May 6, 2013  
Date of Issue : May 6, 2013

*	<b>Test Result :</b>	<b>PASS *</b>
---	----------------------	---------------

In the configuration tested, the EUT complied with the standards specified above

Authorized Signature

A handwritten signature in black ink, appearing to read "Mark Zhu".

(Mark Zhu)  
General Manager

The manufacturer should ensure that all the products in series production are in conformity with the product sample detailed in this report.

If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of Shenzhen Certification Technology Service Co., Ltd. Or test done by Shenzhen Certification Technology Service Co., Ltd. Approvals in connection with, distribution or use of the product described in this report must be approved by Shenzhen Certification Technology Service Co., Ltd. Approvals in writing.

**TABLE OF CONTENT**

<b>Description</b>	<b>Page</b>
<b>1 General Information -----</b>	<b>3</b>
1.1 Description of Device (EUT) -----	3
1.2 Description of Test Facility -----	3
<b>2 EMC Equipment List-----</b>	<b>4</b>
<b>3 Test Procedure -----</b>	<b>5</b>
<b>4 Summary of Measurement-----</b>	<b>6</b>
4.1 Summary of test result -----	6
4.2 Test connection -----	6
4.3 Assistant equipment used for test -----	6
4.4 Test mode -----	7
4.5 Test Conditions -----	7
4.6 Measurement Uncertainty (95% confidence levels, k=2)-----	7
<b>5 Spurious Emission-----</b>	<b>8</b>
5.1 Radiation Emission-----	8
<b>6 POWER LINE CONDUCTED EMISSION -----</b>	<b>16</b>
6.1 Conducted Emission Limits(15.207) -----	16
6.2 Test Setup-----	16
6.3 Test Procedure -----	17
6.4 Test Results-----	17
<b>7 Conducted Maximum Output Power -----</b>	<b>20</b>
7.1 Test limit-----	20
7.2 Test Procedure -----	20
7.3 Test Setup-----	20
7.4 Test Results-----	20
<b>8 PEAK POWER SPECTRAL DENSITY-----</b>	<b>24</b>
8.1 Test limit-----	24
8.2 Method of measurement-----	24
8.3 Test Setup-----	24
8.4 Test Results-----	24
<b>9 6dB Bandwidth -----</b>	<b>27</b>
9.1 Test limit-----	27
9.2 Method of measurement-----	27
9.3 Test Setup-----	27
9.4 Test Results-----	27
<b>10 Band Edge Check-----</b>	<b>30</b>
10.1 Test limit-----	30
10.2 Test Procedure -----	30
10.3 Test Setup-----	30
10.4 Test Result-----	30
<b>11 Antenna Requirement -----</b>	<b>35</b>
11.1 Standard Requirement -----	35
11.2 Antenna Connected Construction -----	35
11.3 Result-----	35
<b>12 Photographs of Test Setup-----</b>	<b>36</b>
<b>13 Photographs of EUT -----</b>	<b>39</b>

## 1 General Information

### 1.1 Description of Device (EUT)

EUT : Tablet PC

Model No. : X15, X15A, X15B, X15C, X15D, X15E, E8, E9

DIFF. : Only different in appearance, the other the same. The test model: X15.

Trade mark : KUPA

Power supply : DC 11.1V Supply by battery  
DC 19V from adapter with AC 120V/60Hz adapter

Adapter : Manufacturer: China Great Wall Computer Shenzhen Co., Ltd.  
Model No.:GA40SC2-1902100

Radio Technology : Bluetooth 4.0

FCC Operation : 2402MHz -2480MHz frequency

Channel No. : 40

Modulation : GFSK

Antenna Type : Integral Antenna, Gain: 1.54dBi

Applicant : Shenzhen GoldenTrek Technology Co., Ltd.

Address : Rm 1806, Overseas Chinese Scholar's Venture Building,  
No.29 GaoXinNanHuan Rd., NanShan, Shenzhen

Manufacturer : Shenzhen GoldenTrek Technology Co., Ltd.

Address : Rm 1806, Overseas Chinese Scholar's Venture Building,  
No.29 GaoXinNanHuan Rd., NanShan, China

### 1.2 Description of Test Facility

Shenzhen Certification Technology Service Co., Ltd.  
2F, Building B, East Area of Nanchang Second Industrial Zone,  
Gushu 2nd Road, Bao'an District, Shenzhen 518126, P.R. China  
FCC Registered No.:197647

## 2 EMC Equipment List

<b>Equipment</b>	<b>Manufacture</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Last cal.</b>	<b>Cal Interval</b>
3m Semi-Anechoic	ETS-LINDGREN	N/A	SEL0017	Nov. 16, 12	1 Year
Spectrum analyzer	Agilent	E4407B	MY49510055	Oct. 31, 12	1 Year
Receiver	R&S	ESCI	101165	Oct. 31, 12	1 Year
Receiver	R&S	ESCI	101202	Oct. 31, 12	1 Year
Bilog Antenna	SCHWARZBECK	VULB 9168	9168-438	Feb. 20, 13	1 Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D(1201)	Feb. 20, 13	1 Year
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170 D(1432)	Feb. 20, 13	1 Year
Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	Feb. 20, 13	1 Year
L.I.S.N.	SCHWARZBECK	NSLK8126	8126466	Oct. 31, 12	1 Year
Cable	Resenberger	N/A	No.1	Oct. 31, 12	1 Year
Cable	SCHWARZBECK	N/A	No.2	Oct. 31, 12	1 Year
Cable	SCHWARZBECK	N/A	No.3	Oct. 31, 12	1 Year
Power Meter	Anritsu	ML2487A	6K00001491	Oct. 31, 12	1 Year
Power sensor	Anritsu	ML2491A	32516	Oct. 31, 12	1 Year
Pre-amplifier	SCHWARZBECK	BBV9743	9743-019	Oct. 31, 12	1 Year
Pre-amplifier	Quietek	AP-180C	CHM-0602012	Oct. 31, 12	1 Year

### 3 Test Procedure

**POWER LINE CONDUCTED INTERFERENCE:** The test procedure used was ANSI Standard C63.4-2003 using a 50  $\mu$  H LISN. Both Lines were observed. The bandwidth of the receiver was 10kHz with an appropriate sweep speed. The ambient temperature of the EUT was 25°C with a humidity of 58%.

**RADIATION INTERFERENCE:** The test procedure used was ANSI Standard C63.4-2003 using a ANRITSU spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a micro volt at the output of the antenna. The resolution bandwidth was 100kHz and the video bandwidth was 300 kHz up to 1 GHz and 1 MHz with a video BW of 3MHz above 1 GHz. The ambient temperature of the EUT was 25°C with a humidity of 58%.

**FORMULA OF CONVERSION FACTORS:** The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer and cable loss. The antenna correction factors and cable loss are stated in terms of dB. The gain of the Pre-selector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

Freq (MHz) METER READING + ACF + CABLE = FS

33.20 dBuV + 10.36 dB + 0.9 dB = 44.46 dBuV/m @ 3m

**ANSI STANDARD C63.4-2003 10.1.7 MEASUREMENT PROCEDURES:** The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes. The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI Standard C63.4-2003 10.1.7 with the EUT 40 cm from the vertical ground wall.

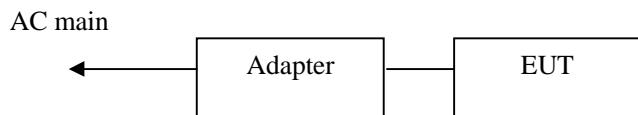
## 4 Summary of Measurement

### 4.1 Summary of test result

Test Item	Test Requirement	Standards Paragraph	Result
Spurious Emission	FCC PART 15 : 2012	Section 15.247&15.209	Compliance
Conduction Emission	FCC PART 15: 2012	Section 15.207	Compliance
6dB Bandwidth Test	FCC PART 15: 2012	Section 15.247	Compliance
Peak Power	FCC PART 15: 2012	Section 15.247	Compliance
Power Density	FCC PART 15: 2012	Section 15.247	Compliance
Band Edge	FCC PART 15: 2012	Section 15.247	Compliance
Antenna Requirement	FCC PART 15 : 2012	Section 15.203	Compliance

Note: The EUT has been tested as an independent unit. And Continual Transmitting in maximum power (The Adapter be used during Test)

### 4.2 Test connection



### 4.3 Assistant equipment used for test

Description	:	Adapter
Manufacturer	:	China Great Wall Computer Shenzhen Co., Ltd.
Model No.	:	GA40SC2-1902100

#### 4.4 Test mode

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

Tested mode, channel, and data rate information		
Mode	Channel	Frequency (MHz)
GFSK	Low :CH0	2402
	Middle: CH19	2440
	High: CH39	2480

#### 4.5 Test Conditions

Temperature range	21-25°C
Humidity range	40-75%
Pressure range	86-106kPa

#### 4.6 Measurement Uncertainty (95% confidence levels, k=2)

Item	MU	Remark
Uncertainty for Power point Conducted Emissions Test	2.42dB	
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	2.13 dB	Polarize: V
	2.57dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.54dB	Polarize: V
	4.1dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	2.08dB	Polarize: H
	2.56dB	Polarize: V
Uncertainty for radio frequency	$1 \times 10^{-9}$	
Uncertainty for conducted RF Power	0.65dB	
Uncertainty for temperature	0.2 °C	
Uncertainty for humidity	1%	
Uncertainty for DC and low frequency voltages	0.06%	

## 5 Spurious Emission

### 5.1 Radiation Emission

#### 5.1.1 Radiation Emission Limits(15.209)

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

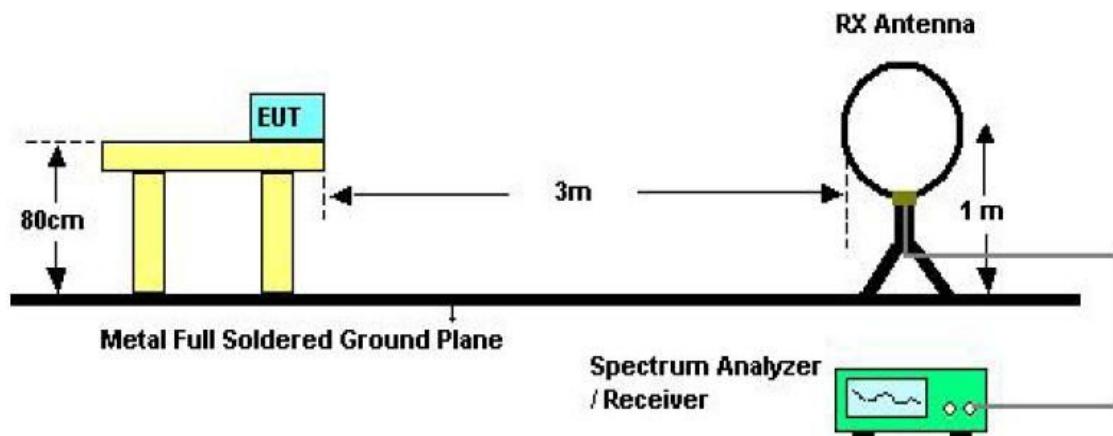
Harmonic emissions limits comply with below 54 dBuV/m at 3m. Other emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or comply with the radiated emissions limits specified in section 15.209(a) limit in the table below has to be followed.

**NOTE:**

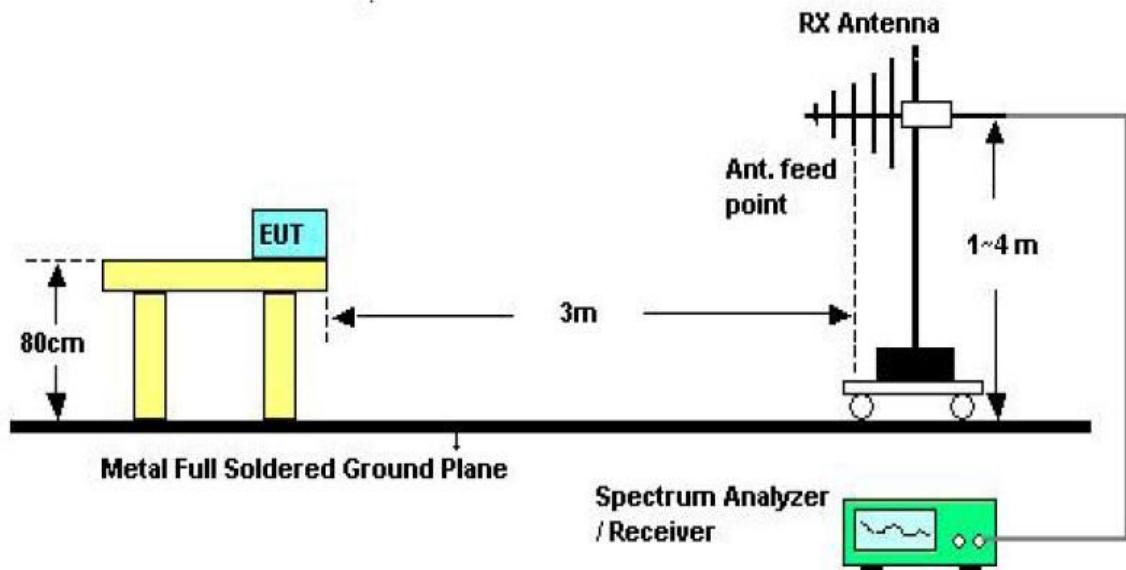
- a) The tighter limit applies at the band edges.
- b) Emission Level(dB uV/m)=20log Emission Level(Uv/m)

#### 5.1.2 Test Setup

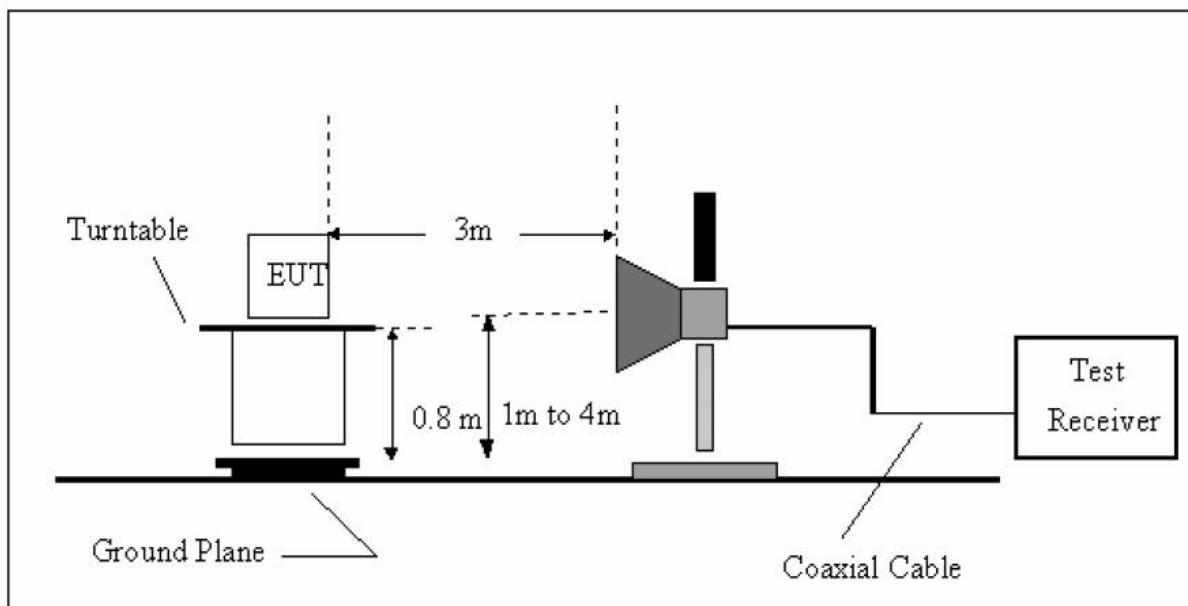
See the next page



Below 30MHz Test Setup



Above 30MHz Test Setup



Above 1GHz Test Setup

### 5.1.3 Test Procedure

- a) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1GHz, The EUT was placed on a rotating 0.8 m high above ground, The table was rotated 360 degrees to determine the position of the highest radiation
- b) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set of make measurement.
- c) The initial step in collecting conducted emission data is a spectrum analyzer Peak detector mode pre-scanning the measurement frequency range. Significant Peaks are then marked. and then Qusia Peak Detector mode premeasured
- d) If Peak value comply with QP limit Below 1GHz.The EUT deemed to comply with QP limit. But the Peak value and average value both need to comply with applicable limit above 1GHz.
- e) For the actual test configuration, please see the test setup photo.

### 5.1.4 Test Equipment Setting For emission test Result

9KHz~150KHz	RBW 200Hz	VBW1KHz
150KHz~30MHz	RBW 9KHz	VBW 30KHz
30MHZ~1GHz	RBW 120KHz	VBW 300KHz
Above 1GHz	RBW 1MHz	VBW 3MHz

### 5.1.5 Test Condition

Continual Transmitting in maximum power.

### 5.1.6 Test Result

We have scanned the 10th harmonic from 9KHz to the EUT.

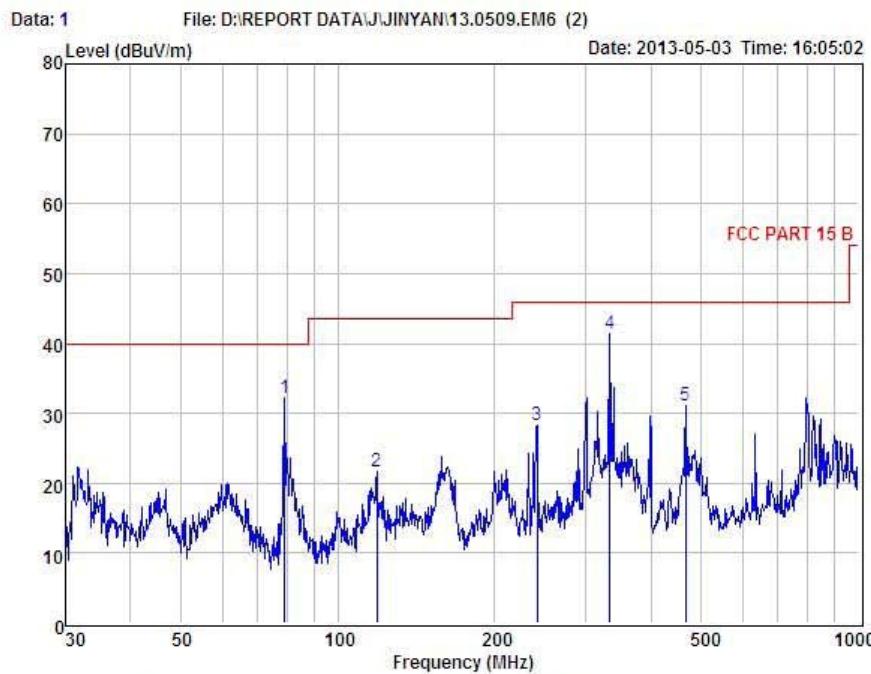
Detailed information please see the following page.

From 9KHz to 30MHz:      Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



Shenzhen Certification Technology Service Co., Ltd.  
2F, Building B, East Area of Nanchang Second Industrial Zone,  
Gushu 2nd Road, Bao'an District, Shenzhen 518126, P.R. China  
Tel: 4006786199 FAX: +86-755-26736857  
Website <http://www.cessz.com> Email: [Service@cessz.com](mailto:Service@cessz.com)



Condition : FCC PART 15 B 3m POL: HORIZONTAL  
EUT : Tablet PC  
Model No : X15  
Test Mode : Link Mode  
Power : DC 19V From Adapter AC 120V/60Hz  
Test Engineer : Reak  
Remark :  
Temp : 24 °C  
Hum : 56%

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	78.97	49.27	9.29	26.79	0.31	32.08	40.00	-7.92	QP
2	119.02	36.06	12.06	26.88	0.33	21.57	43.50	-21.93	QP
3	241.68	43.44	11.47	27.09	0.53	28.35	46.00	-17.65	QP
4	333.69	54.30	13.55	27.24	0.81	41.42	46.00	-4.58	QP
5	465.60	41.71	16.11	27.53	0.88	31.17	46.00	-14.83	QP

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

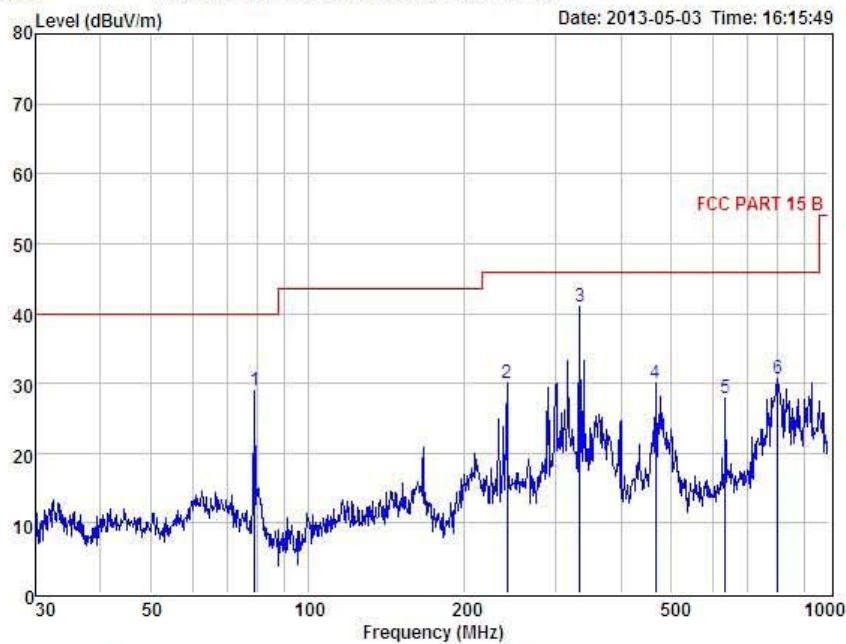


Shenzhen Certification Technology Service Co., Ltd.  
2F, Building B, East Area of Nanchang Second Industrial Zone,  
Gushu 2nd Road, Bao'an District, Shenzhen 518126, P.R. China  
Tel: 4006786199 FAX: +86-755-26736857  
Website <http://www.cessz.com> Email: [Service@cessz.com](mailto:Service@cessz.com)

Data: 2

File: D:\REPORT DATA\J\JINYAN\13.0509.EM6 (2)

Date: 2013-05-03 Time: 16:15:49



Condition : FCC PART 15 B 3m POL: HORIZONTAL  
EUT : Tablet PC  
Model No : X15  
Test Mode : Link Mode  
Power : DC 19V From Adapter AC 120V/60Hz  
Test Engineer : Reak  
Remark :  
Temp : 24  
Hum : 56%

Item	Freq	Read	Antenna	Preamp	Cable	Level	Limit	Margin	Remark
		Level	Factor	Factor	Loss				
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	78.97	46.17	9.29	26.79	0.31	28.98	40.00	-11.02	QP
2	241.68	45.16	11.47	27.09	0.53	30.07	46.00	-15.93	QP
3	333.69	53.94	13.55	27.24	0.81	41.06	46.00	-4.94	QP
4	465.60	40.55	16.11	27.53	0.88	30.01	46.00	-15.99	QP
5	633.91	35.51	18.90	27.82	1.23	27.82	46.00	-18.18	QP
6	798.98	36.08	20.69	27.65	1.49	30.61	46.00	-15.39	QP

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

1GHz—25GHz Radiated emission Test result									
EUT: Tablet PC M/N: X15									
Power: DC 19V Supply by adapter with AC 120V/60Hz									
Test date: 2013-05-02 Test site: 3m Chamber Tested by: Anna Fan									
Test mode: GFSK Tx CH0 2402MHz									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(d B)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804	45.48	33.95	10.18	34.26	55.35	74.00	18.65	PK
2	4804	36.24	33.95	10.18	34.26	46.11	54.00	7.89	AV
3	7206	/							
4	9608	/							
5	12010	/							
Antenna Polarity: Horizontal									
1	4804	44.73	33.95	10.18	34.26	54.60	74.00	19.4	PK
2	4804	36.17	33.95	10.18	34.26	46.04	54.00	7.96	AV
3	7206	/							
4	9608	/							
5	12010	/							
Note:									
1, Measuring frequency from 1GHz to 25GHz									
2, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK									
2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK									
3, Result = Read level + Antenna factor + cable loss-Amp factor									
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.									

1GHz—25GHz Radiated emission Test result									
EUT: Tablet PC	M/N: X15								
Power: DC 19V Supply by adapter with AC 120V/60Hz									
Test date: 2013-05-02	Test site: 3m Chamber Tested by: Anna Fan								
Test mode: GFSK Tx CH19 2440MHz									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(d B)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/ m)	Margin (dB)	Remark
1	4880	46.38	33.93	10.20	34.29	56.22	74.00	17.78	PK
2	4880	37.54	33.93	10.20	34.29	47.38	54.00	6.62	AV
3	7320	/							
4	9760	/							
5	12200	/							
Antenna Polarity: Horizontal									
1	4880	44.93	33.93	10.20	34.29	54.77	74.00	19.23	PK
2	4880	35.19	33.93	10.20	34.29	45.03	54.00	8.97	AV
3	7320	/							
4	9760	/							
5	12200	/							
Note:									
1, Measuring frequency from 1GHz to 25GHz									
2, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK									
2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK									
3, Result = Read level + Antenna factor + cable loss-Amp factor									
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.									

1GHz—25GHz Radiated emission Test result									
EUT: Tablet PC M/N: X15									
Power: DC 19V Supply by adapter with AC 120V/60Hz									
Test date: 2013-05-02 Test site: 3m Chamber Tested by: Anna Fan									
Test mode: GFSK Tx CH39 2480MHz									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(d B)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/ m)	Margin (dB)	Remark
1	4960	46.24	33.98	10.22	34.25	56.19	74.00	17.81	PK
2	4960	37.19	33.98	10.22	34.25	47.14	54.00	6.86	AV
3	7440	/							
4	9920	/							
5	12400	/							
Antenna Polarity: Horizontal									
1	4960	45.87	33.98	10.22	34.25	55.82	74.00	18.18	PK
2	4960	36.49	33.98	10.22	34.25	46.440	54.00	7.560	AV
3	7440	/							
4	9920	/							
5	12400	/							
Note:									
1, Measuring frequency from 1GHz to 25GHz									
2, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK									
2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK									
3, Result = Read level + Antenna factor + cable loss-Amp factor									
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.									

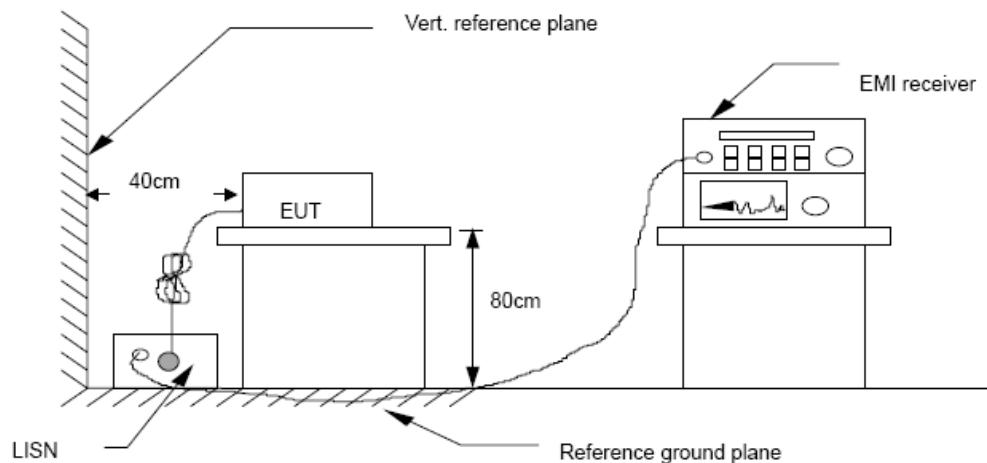
## 6 POWER LINE CONDUCTED EMISSION

### 6.1 Conducted Emission Limits(15.207)

Frequency MHz	Limits dB( $\mu$ V)	
	Quasi-peak Level	Average Level
0.15 -0.50	66 -56*	56 - 46*
0.50 -5.00	56	46
5.00 -30.00	60	50

- Notes:
1. \*Decreasing linearly with logarithm of frequency.
  2. The lower limit shall apply at the transition frequencies.
  - 3.The limit decreases in line with the logarithm of the frequency in the rang of 0.15 to 0.50 MHz.

### 6.2 Test Setup



### 6.3 Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4-2003 on Conducted Emission Measurement.

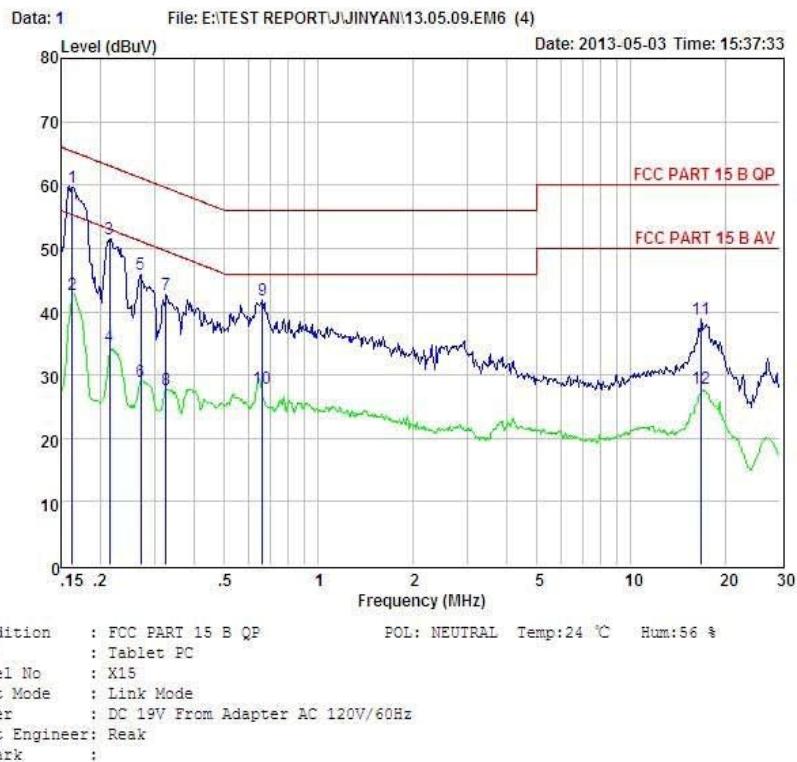
The bandwidth of test receiver (R & S ESCS30) is set at 9 kHz.

### 6.4 Test Results

**PASS.** Detailed information please see the following page.



Shenzhen Certification Technology Service Co., Ltd.  
2F, Building B, East Area of Nanchang Second Industrial Zone,  
Gushu 2nd Road, Bao'an District, Shenzhen 518126, P.R. China  
Tel: 4006786199 Fax: +86-755-26736857  
Website: <http://www.cessz.com> Email: [Service@cessz.com](mailto:Service@cessz.com)

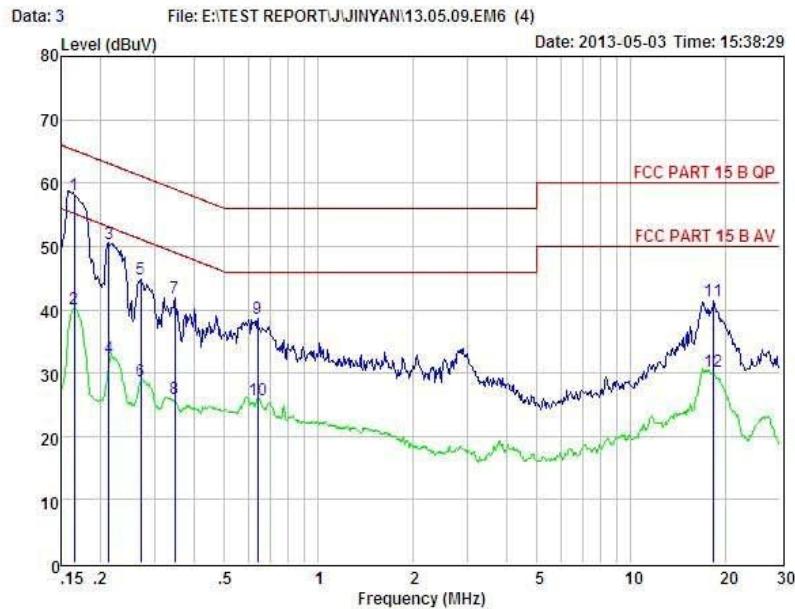


Item	Freq	Read	LISN Factor	Preamp Factor	Cable Lose	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	0.163	49.78	0.03	-9.72	0.10	59.63	65.30	-5.67	QP
2	0.163	32.78	0.03	-9.72	0.10	42.63	55.30	-12.67	Average
3	0.215	41.64	0.03	-9.72	0.10	51.49	63.01	-11.52	QP
4	0.215	24.64	0.03	-9.72	0.10	34.49	53.01	-18.52	Average
5	0.270	36.01	0.03	-9.72	0.10	45.86	61.12	-15.26	QP
6	0.270	19.01	0.03	-9.72	0.10	28.86	51.12	-22.26	Average
7	0.325	32.73	0.03	-9.72	0.10	42.58	59.57	-16.99	QP
8	0.325	17.73	0.03	-9.72	0.10	27.58	49.57	-21.99	Average
9	0.661	32.06	0.04	-9.72	0.10	41.92	56.00	-14.08	QP
10	0.661	18.06	0.04	-9.72	0.10	27.92	46.00	-18.08	Average
11	16.839	28.81	0.27	-9.42	0.29	38.79	60.00	-21.21	QP
12	16.839	17.81	0.27	-9.42	0.29	27.79	50.00	-22.21	Average

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss



Shenzhen Certification Technology Service Co., Ltd.  
2F, Building B, East Area of Nanchang Second Industrial Zone,  
Gushu 2nd Road, Bao'an District, Shenzhen 518126, P.R. China  
Tel: 4006786199 Fax: +86-755-26736857  
Website: <http://www.cessz.com> Email: [Service@cessz.com](mailto:Service@cessz.com)



Condition : FCC PART 15 B QP POL: NEUTRAL Temp:24 °C Hum:56 %  
 EUI : Tablet PC  
 Model No : X15  
 Test Mode : Link Mode  
 Power : DC 19V From Adapter AC 120V/60Hz  
 Test Engineer: Reak  
 Remark :

Item	Freq	Read	LISN Factor	Preamp Factor	Cable Lose	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	0.165	48.28	0.03	-9.72	0.10	58.13	65.21	-7.08	QP
2	0.165	30.28	0.03	-9.72	0.10	40.13	55.21	-15.08	Average
3	0.214	40.63	0.03	-9.72	0.10	50.48	63.05	-12.57	QP
4	0.214	22.63	0.03	-9.72	0.10	32.48	53.05	-20.57	Average
5	0.270	34.94	0.03	-9.72	0.10	44.79	61.12	-16.33	QP
6	0.270	18.94	0.03	-9.72	0.10	28.79	51.12	-22.33	Average
7	0.346	32.06	0.03	-9.72	0.10	41.91	59.05	-17.14	QP
8	0.346	16.06	0.03	-9.72	0.10	25.91	49.05	-23.14	Average
9	0.641	28.80	0.03	-9.72	0.10	38.65	56.00	-17.35	QP
10	0.641	15.80	0.03	-9.72	0.10	25.65	46.00	-20.35	Average
11	18.426	31.23	0.29	-9.46	0.32	41.30	60.00	-18.70	QP
12	18.426	20.23	0.29	-9.46	0.32	30.30	50.00	-19.70	Average

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss

## 7 Conducted Maximum Output Power

### 7.1 Test limit

Please refer section 15.247.

Regulation 15.247(b) The limit of Maximum Peak Output Power Measurement is 1W(30dBm)

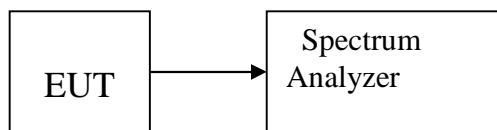
### 7.2 Test Procedure

Details see the KDB558074 Meas Guidance V02

- 7.2.1 Place the EUT on the table and set it in transmitting mode.
- 7.2.2 Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 7.2.3 Set the spectrum analyzer as RBW = 1MHz, VBW = 3MHz, Sweep=auto.
- 7.2.4 Record the max. reading.
- 7.2.5 Repeat the above procedure until the measurements for all frequencies are completed.

Details see the KDB558074 DTS Meas Guidance V02

### 7.3 Test Setup



### 7.4 Test Results

**PASS**

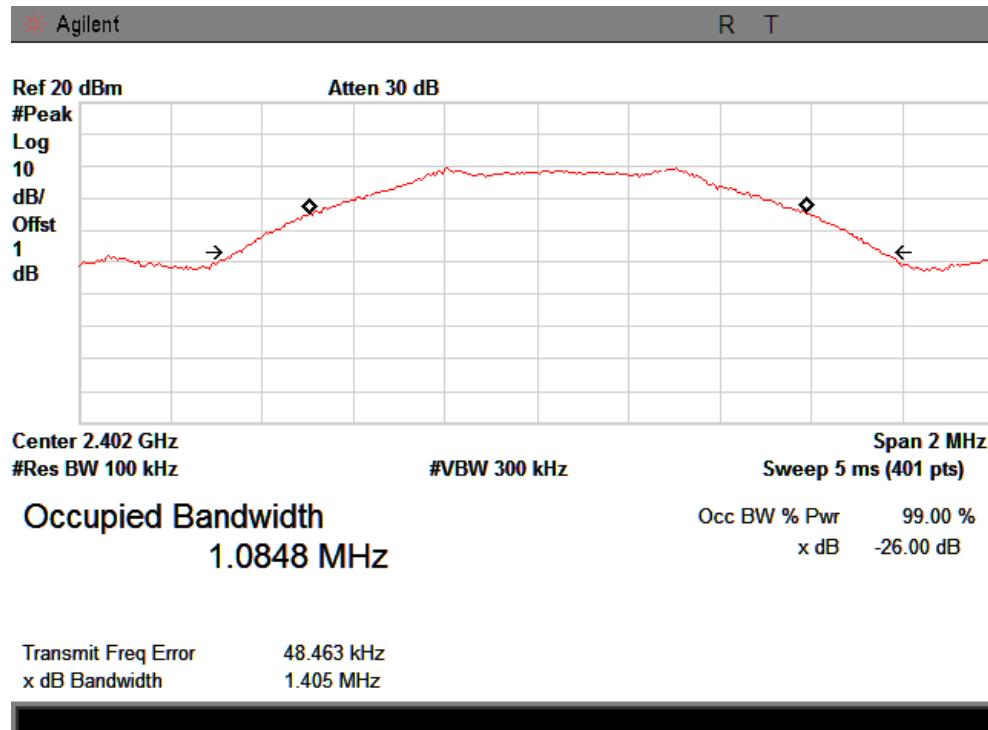
Detailed information please see the following page.

Channel	Frequency (MHz)	PK Output Power (dBm)	PK Output Power (mW)	Limit (dBm)
CH0	2402	1.13	1.29	30
CH19	2440	1.28	1.37	30
CH39	2480	1.74	1.49	30

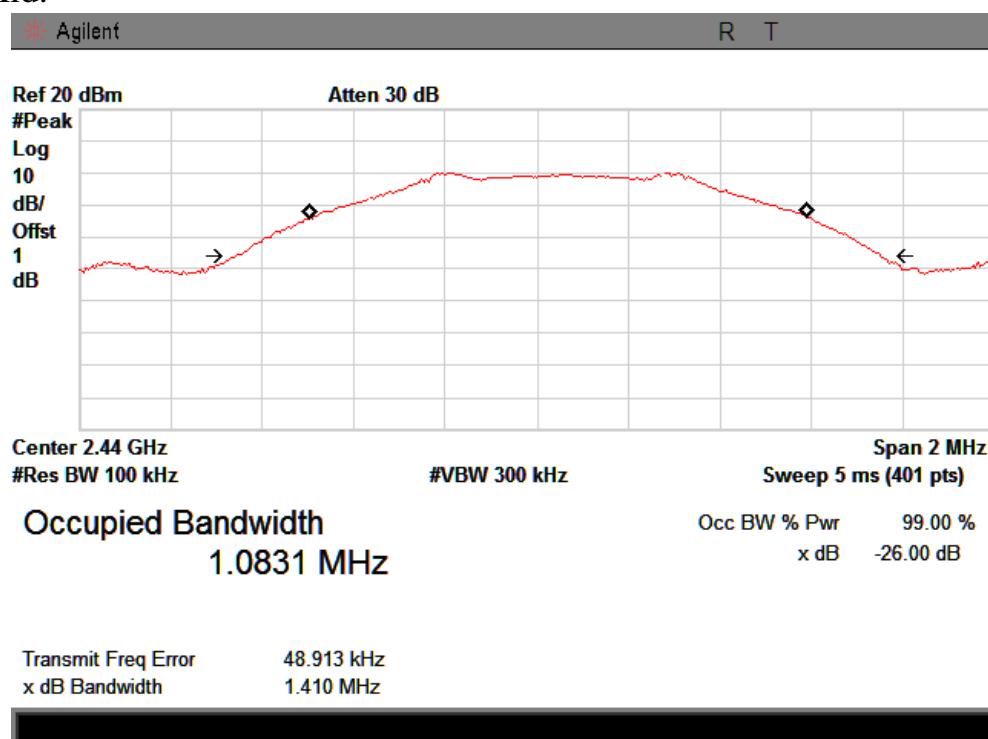
Report No.: STI130424058-1

## 26dB bandwidth

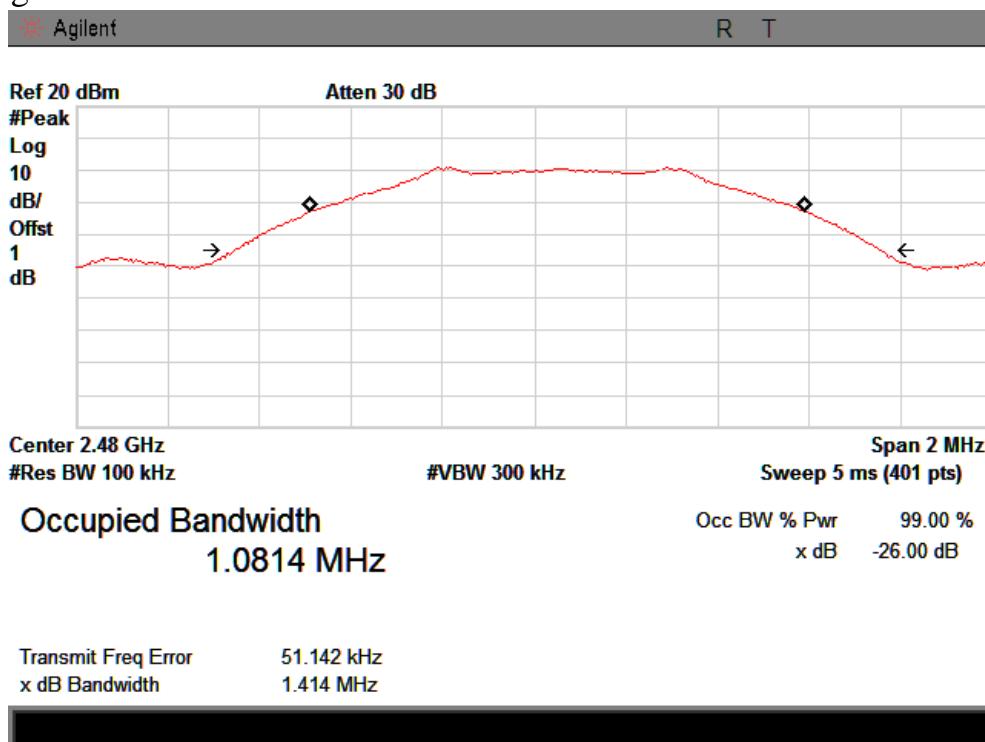
CH Low :



CH Mid:

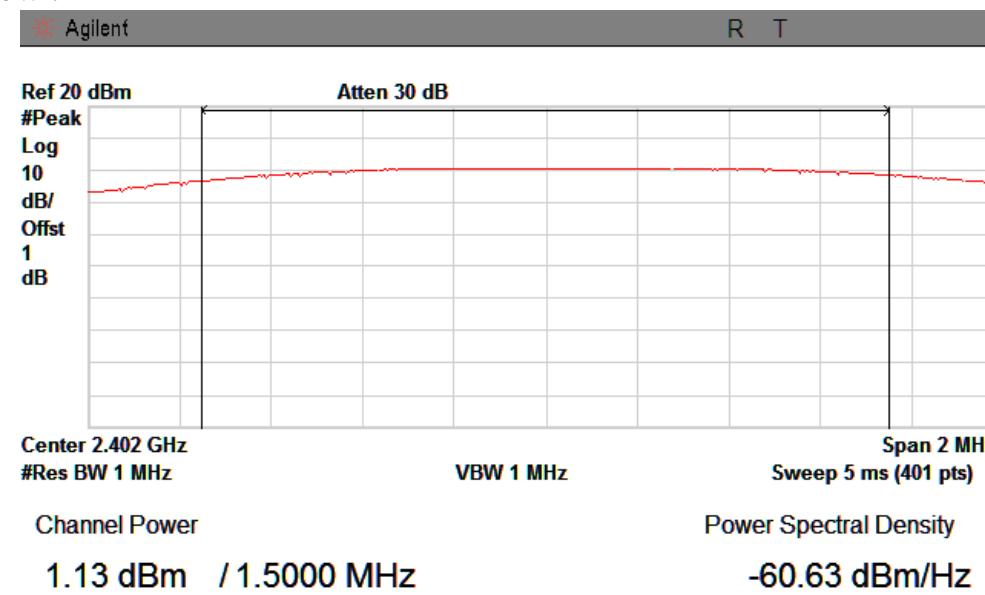


CH High:

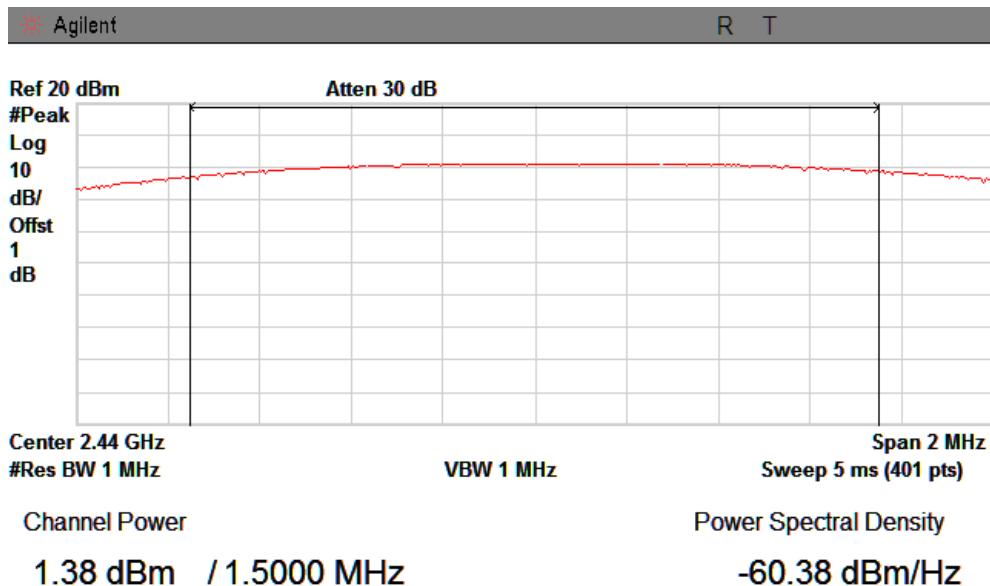


Maximum Peak Conducted Output Power

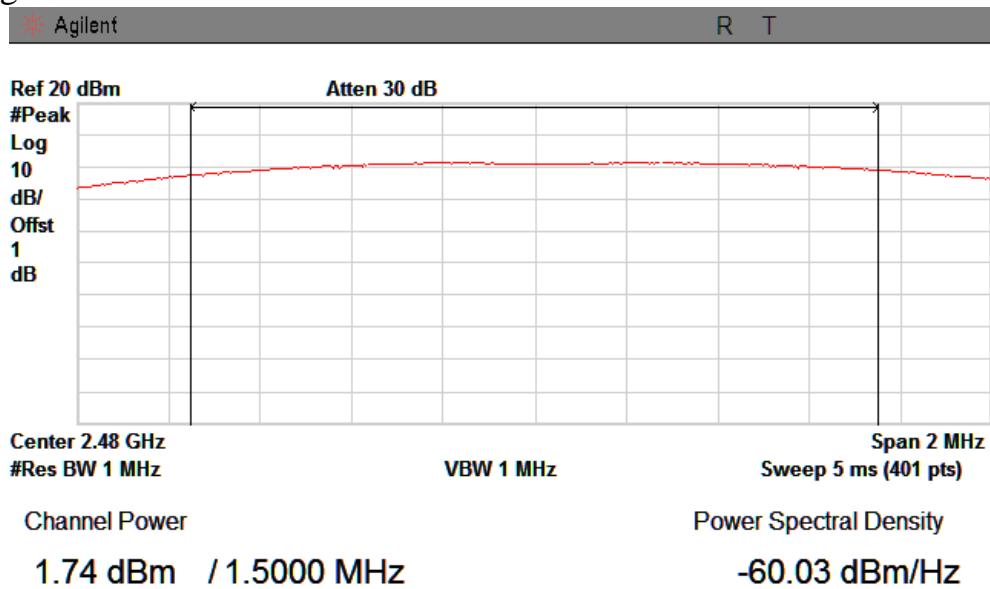
CH Low :



CH Mid :



CH High :



## 8 PEAK POWER SPECTRAL DENSITY

### 8.1 Test limit

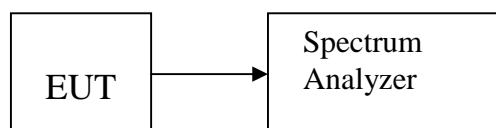
- 8.1.1 Please refer section 15.247.
- 8.1.2 For direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.
- 8.1.3 The direct sequence operating of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section.

### 8.2 Method of measurement

Details see the KDB558074 D01 Meas Guidance

- 8.2.1 Place the EUT on the table and set it in transmitting mode.
- 8.2.2 Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 8.2.3 Set the spectrum analyzer as RBW = 3kHz, VBW = 10kHz, span=5-30%EBW, detail see the test plot.
- 8.2.4 Record the max reading.
- 8.2.5 Repeat the above procedure until the measurements for all frequencies are completed.

### 8.3 Test Setup



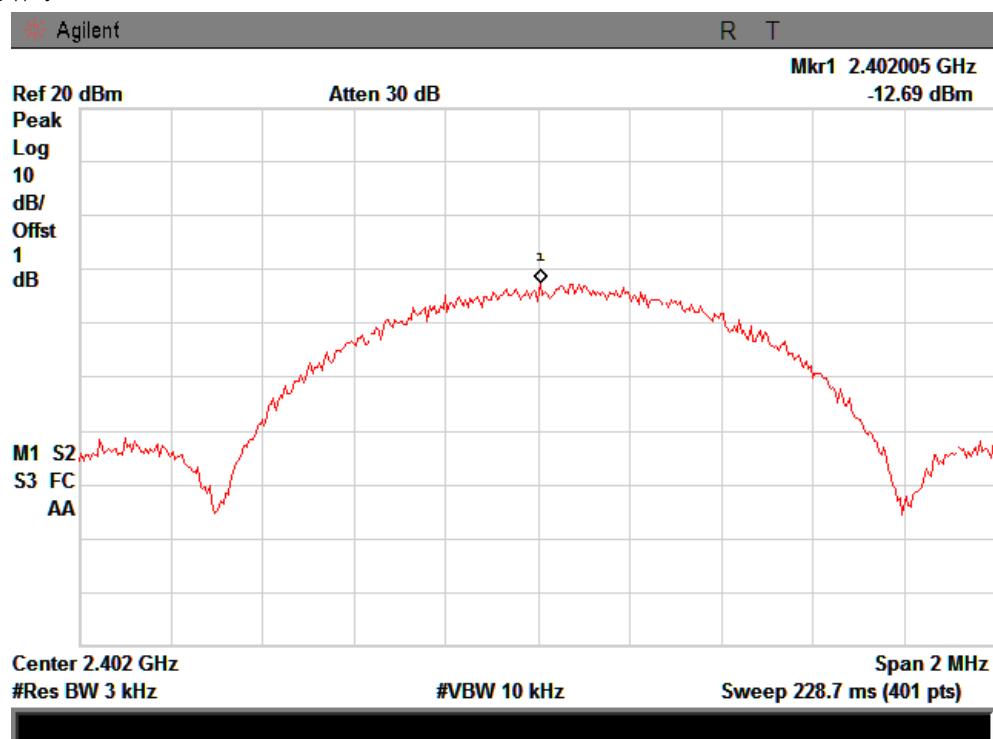
### 8.4 Test Results

PASS.

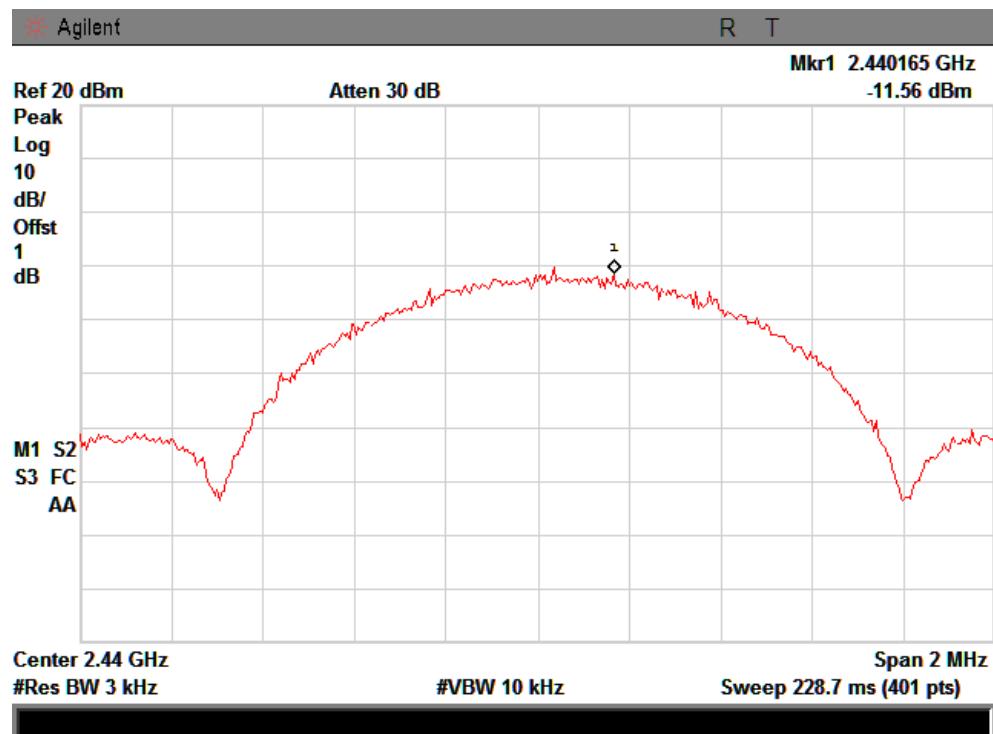
Detailed information please see the following page.

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limit (dBm)	Result
CH0	2402	-12.69	8	PASS
CH19	2440	-11.56	8	PASS
CH39	2480	-11.54	8	PASS

CH Low :

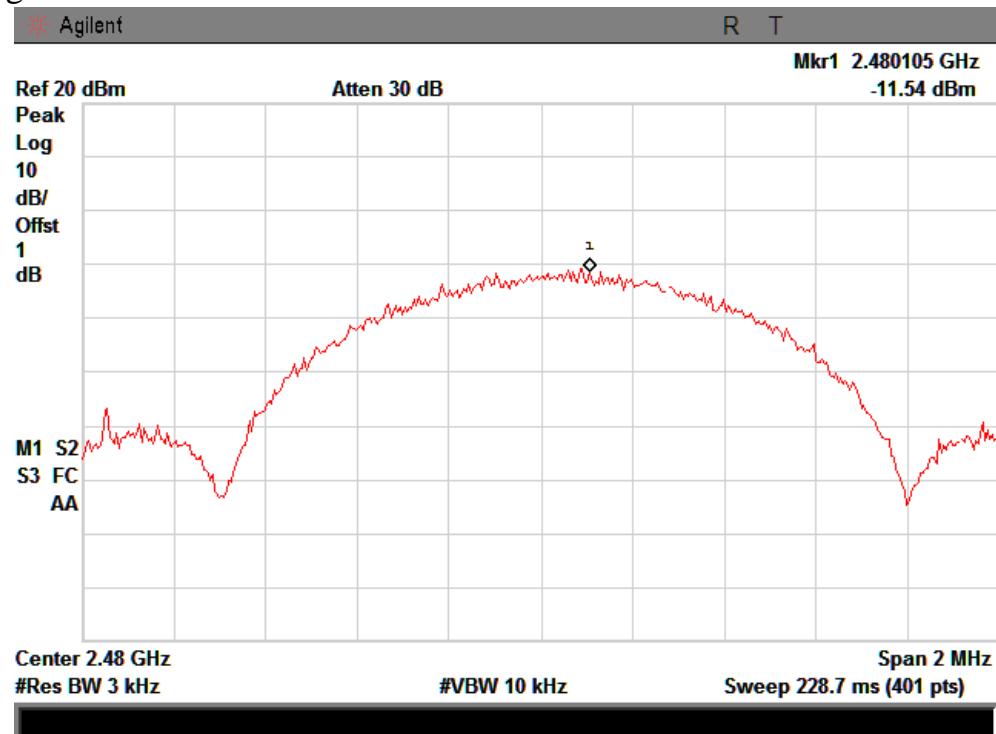


CH Mid :



Report No.: STI130424058-1

CH High :



## 9 6dB Bandwidth

### 9.1 Test limit

Please refer section 15.247

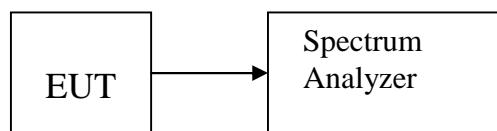
For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz.

### 9.2 Method of measurement

Details see the KDB558074 D01 Meas Guidance

- a) The bandwidth is measured at an amplitude level reduced 20dB from the reference level.  
The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.
- b) The test receiver set RBW = 1-5 % EBW, VBW  $\geq$  3RBW, Sweep time set auto, detail see the test plot.

### 9.3 Test Setup



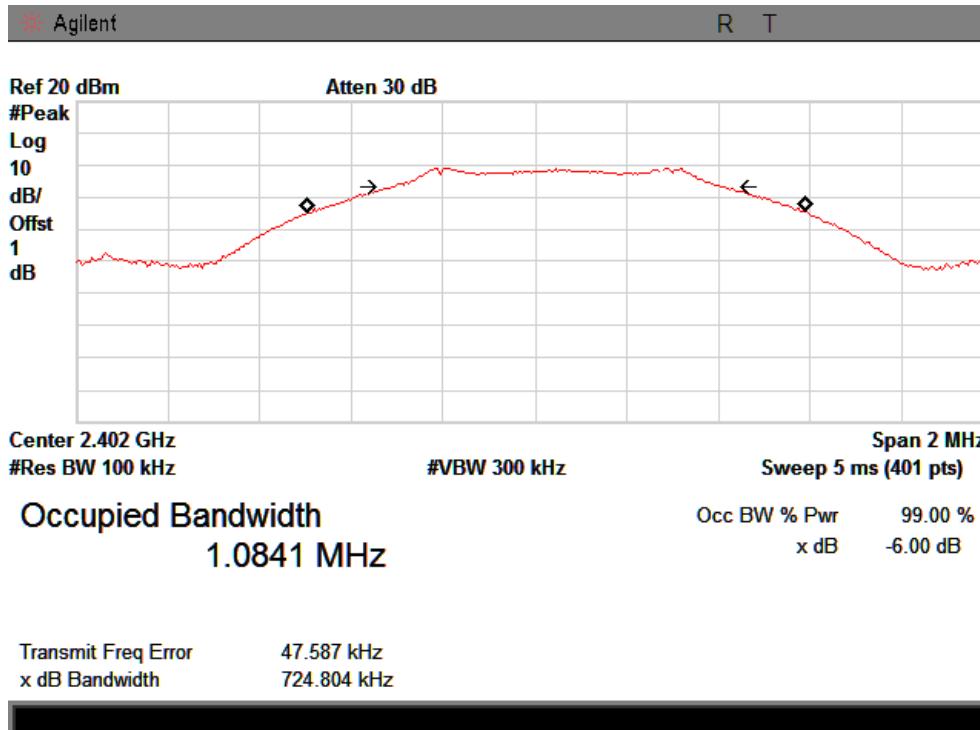
### 9.4 Test Results

PASS.

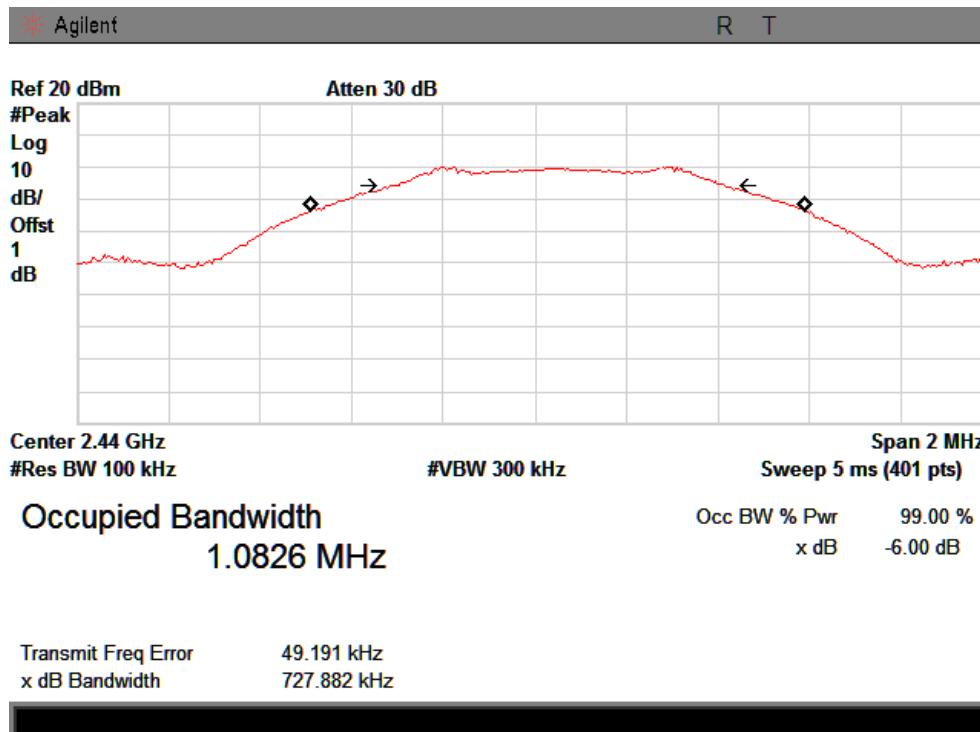
Detailed information please see the following page.

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
CH0	2402	0.724	0.5	PASS
CH19	2440	0.727	0.5	PASS
CH39	2480	0.720	0.5	PASS

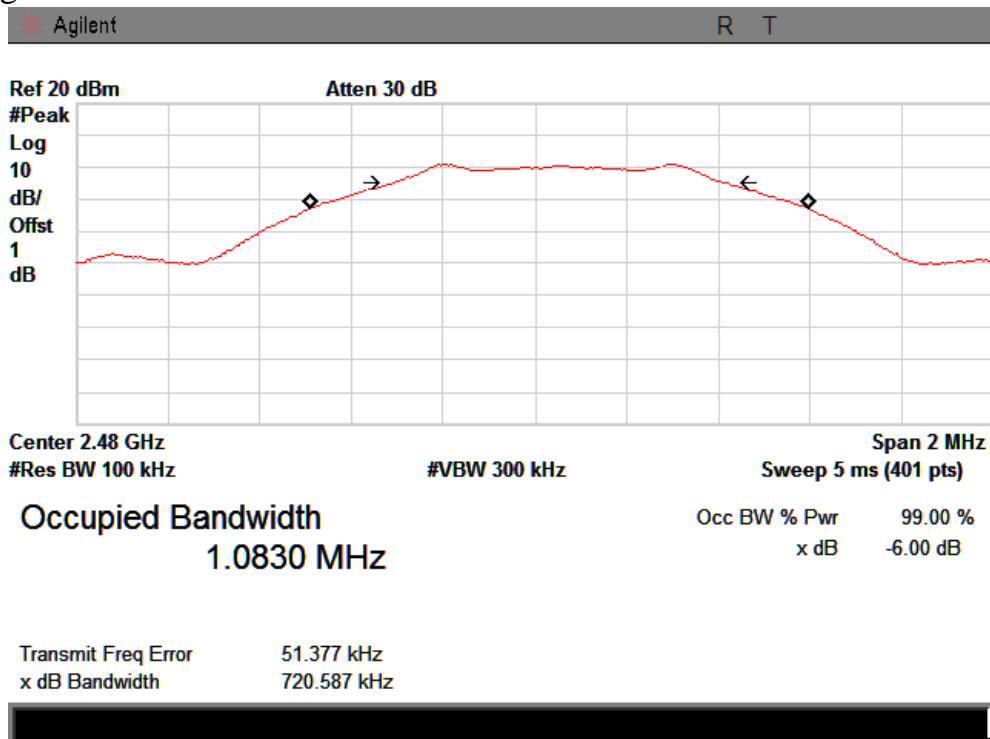
CH Low :



CH Mid :



CH High :



## 10 Band Edge Check

### 10.1 Test limit

Please refer section 15.247

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

### 10.2 Test Procedure

- 12.2.1 Put the EUT on a 0.8m high table, power on the EUT. Emissions were scanned and measured rotating the EUT to 360 degrees, Find the maximum Emission
- 12.2.2 Check the spurious emissions out of band.
- 12.2.3 RBW, VBW Setting, please see the following test plot.

### 10.3 Test Setup

Same as 5.2.2.

### 10.4 Test Result

PASS.

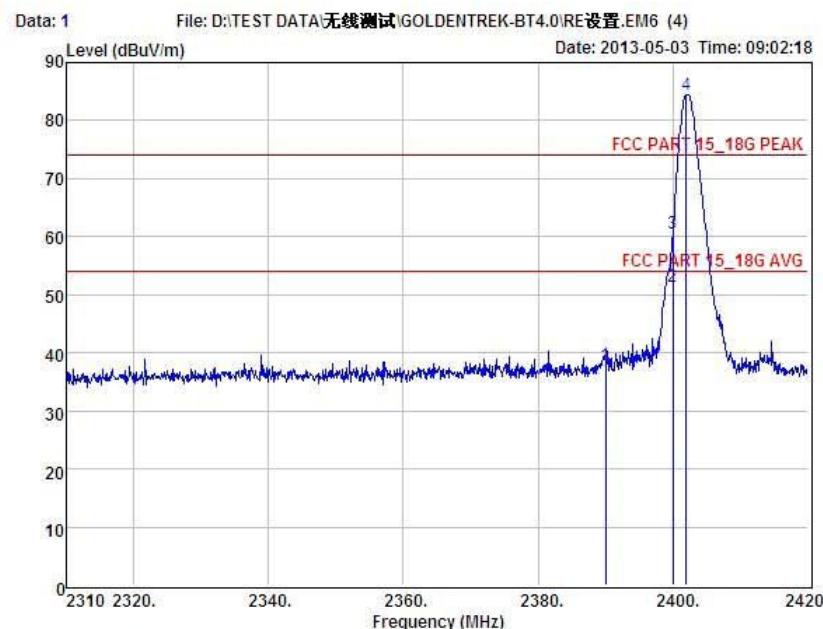
Detailed information please see the following page.

Report No.: STI130424058-1

CH LOW :



Shenzhen Certification Technology Service Co., Ltd.  
2F, Building B, East Area of Nanchang Second Industrial Zone,  
Gushu 2nd Road, Bao'an District, Shenzhen 518126, P.R. China  
Tel: 4006786199 FAX: +86-755-26736857  
Website: <http://www.cessz.com> Email: [Service@cessz.com](mailto:Service@cessz.com)



Condition : FCC PART 15\_18G PEAK 3m POL: VERTICAL

EUT : Tablet PC

Model No : X15

Test Mode : GFSK 2402MHz

Power : DC19V Supply by adapter

Test Engineer : Simple

Remark :

Temp :

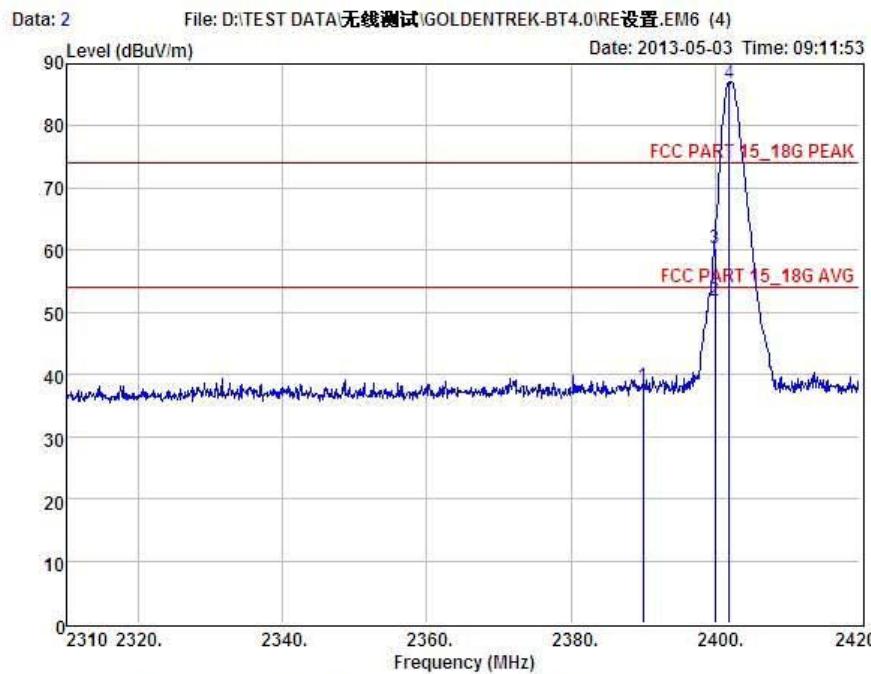
Hum :

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	2390.00	41.36	27.62	34.97	3.92	37.93	74.00	-36.07	Peak
2	2400.00	54.80	27.62	34.97	3.94	51.39	54.00	-2.61	Average
3	2400.00	63.90	27.62	34.97	3.94	60.49	74.00	-13.51	Peak
4	2402.00	87.75	27.62	34.97	3.94	84.34	74.00	10.34	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



Shenzhen Certification Technology Service Co., Ltd.  
2F, Building B, East Area of Nanchang Second Industrial Zone,  
Gushu 2nd Road, Bao'an District, Shenzhen 518126, P.R. China  
Tel: 4006786199 FAX: +86-755-26736857  
Website: <http://www.cessz.com> Email: [Service@cessz.com](mailto:Service@cessz.com)



Condition : FCC PART 15\_18G PEAK 3m POL: HORIZONTAL

EUT : Tablet PC

Model No : X15

Test Mode : GFSK 2402MHz

Power : DC19V Supply by adapter

Test Engineer : Simple

Remark :

Temp :

Hum :

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	2390.00	41.67	27.62	34.97	3.92	38.24	74.00	-35.76	Peak
2	2400.00	55.19	27.62	34.97	3.94	51.78	54.00	-2.22	Average
3	2400.00	63.71	27.62	34.97	3.94	60.30	74.00	-13.70	Peak
4	2402.00	90.37	27.62	34.97	3.94	86.96	74.00	12.96	Peak

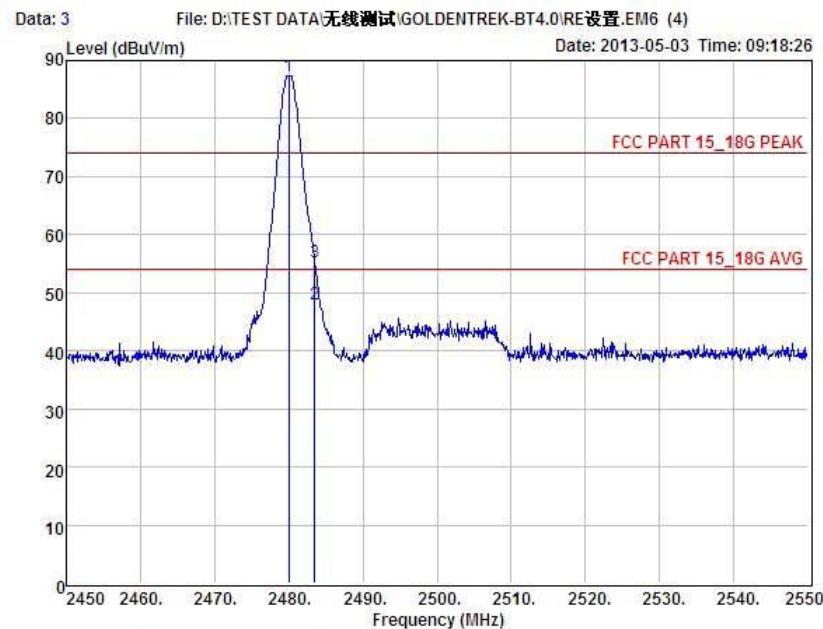
Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

Report No.: STI130424058-1

CH High :



Shenzhen Certification Technology Service Co., Ltd.  
2F, Building B, East Area of Nanchang Second Industrial Zone,  
Gushu 2nd Road, Bao'an District, Shenzhen 518126, P.R. China  
Tel: 4006786199 FAX: +86-755-26736857  
Website: <http://www.cessz.com> Email: [Service@cessz.com](mailto:Service@cessz.com)



Condition : FCC PART 15\_18G PEAK 3m POL: HORIZONTAL

EUT : Tablet PC

Model No : X15

Test Mode : GFSK 2480MHz

Power : DC19V Supply by adapter

Test Engineer : Simple

Remark :

Temp :

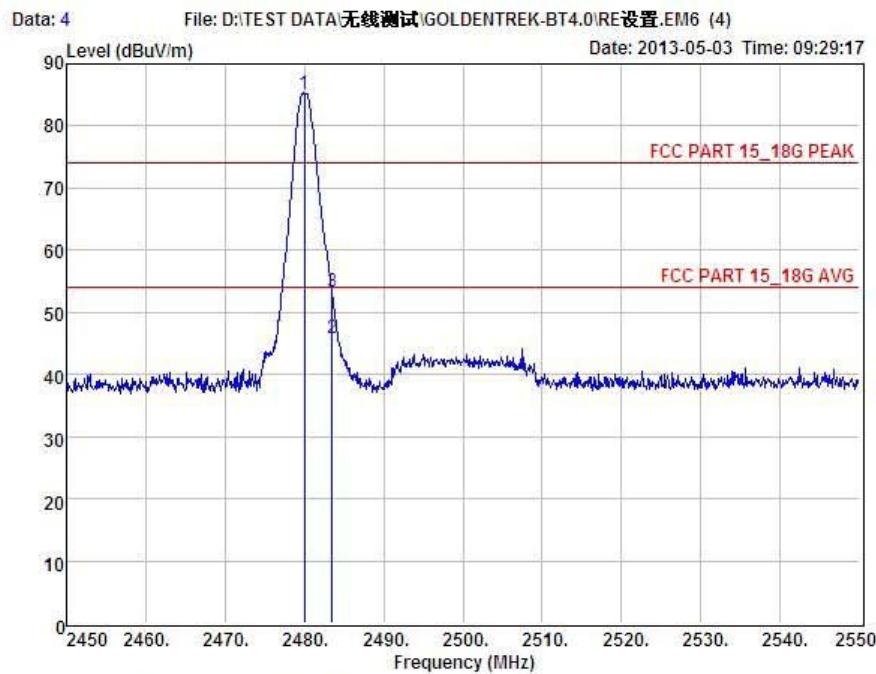
Hum :

Item	Freq	Read Level	Antenna Factor	Preamplifier Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	2480.00	90.64	27.59	34.97	4.00	87.26	74.00	13.26	Peak
2	2483.50	51.31	27.59	34.97	4.00	47.93	54.00	-6.07	Average
3	2483.50	58.67	27.59	34.97	4.00	55.29	74.00	-18.71	Peak

Remark: Level = Read Level + Antenna Factor - Preamplifier Factor + Cable Loss



Shenzhen Certification Technology Service Co., Ltd.  
2F, Building B, East Area of Nanchang Second Industrial Zone,  
Gushu 2nd Road, Bao'an District, Shenzhen 518126, P.R. China  
Tel: 4006786199 FAX: +86-755-26736857  
Website: <http://www.cessz.com> Email: [Service@cessz.com](mailto:Service@cessz.com)



Condition : FCC PART 15\_18G PEAK 3m POL: VERTICAL

EUT : Tablet PC

Model No : X15

Test Mode : GFSK 2480MHz

Power : DC19V Supply by adapter

Test Engineer : Simple

Remark :

Temp :

Hum :

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	2480.00	88.61	27.59	34.97	4.00	85.23	74.00	11.23	Peak
2	2483.50	49.17	27.59	34.97	4.00	45.79	54.00	-8.21	Average
3	2483.50	56.66	27.59	34.97	4.00	53.28	74.00	-20.72	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

## 11 Antenna Requirement

### 11.1 Standard 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 shall be considered sufficient to comply with the provisions of this Section. 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.

### 11.2 Antenna Connected Construction

The directional gains of antenna used for transmitting is 1.54 dBi, and the antenna connector is de-signed with permanent attachment and no consideration of replacement. Please see EUT photo for details.

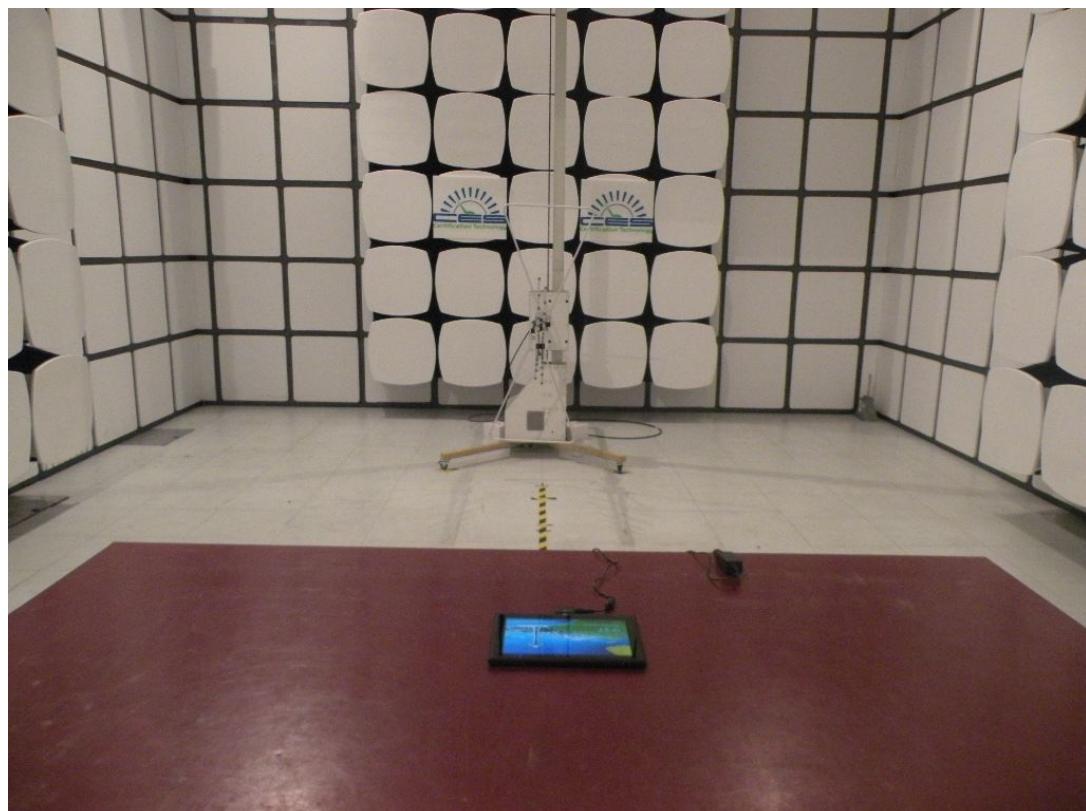
### 11.3 Result

The EUT antenna is Integral Antenna. It comply with the standard requirement.

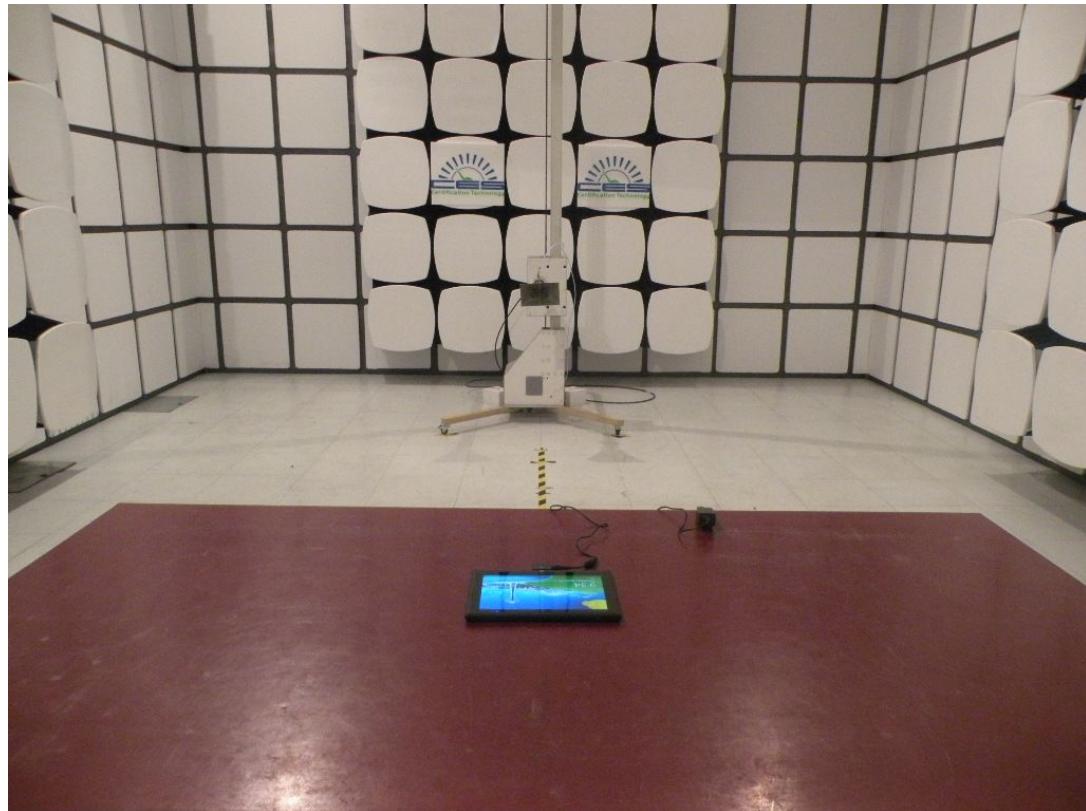
## 12 Photographs of Test Setup

Photographs-Radiated Emission Test Setup in Chamber

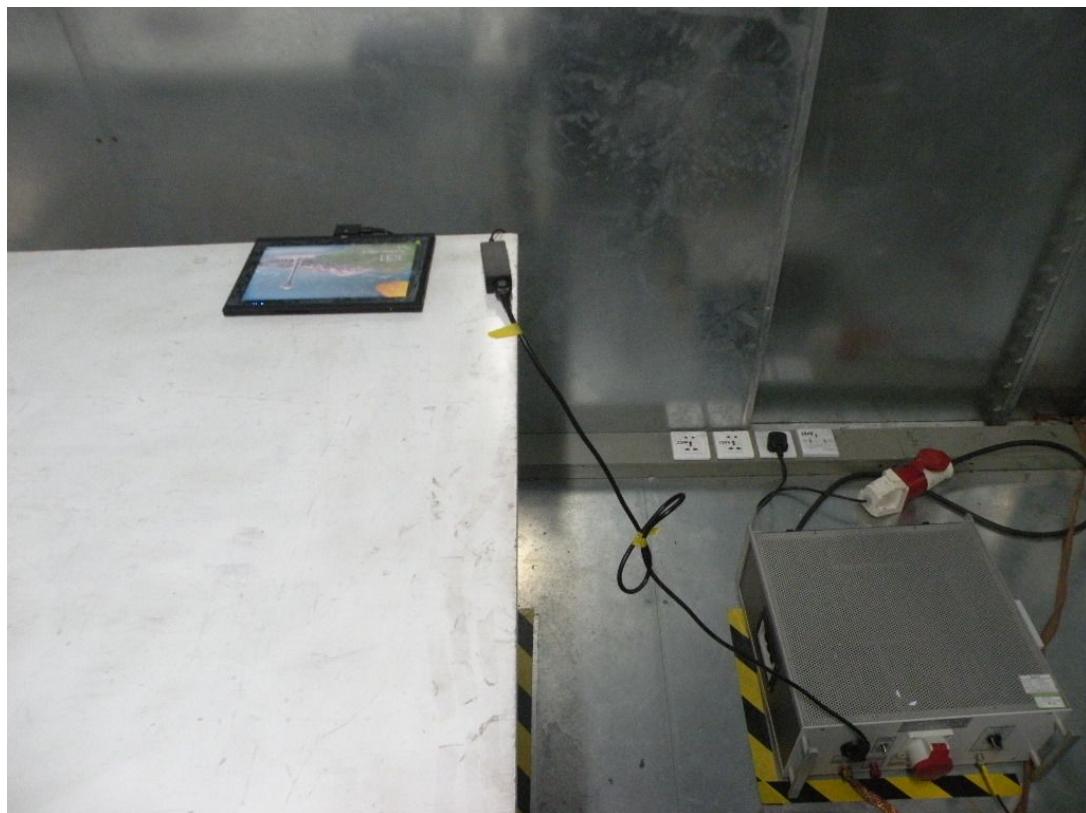
Below 1G



Above 1G



### Photographs-Conducted Emission Test Setup



## 13 Photographs of EUT





Report No.: STI130424058-1

---





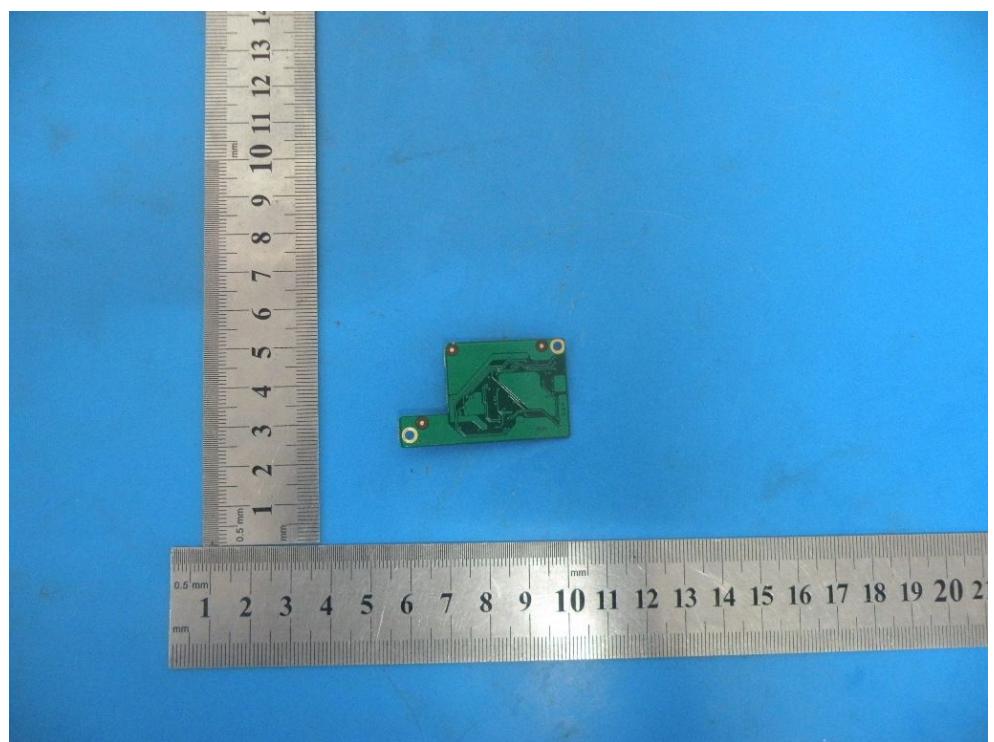
Report No.: STI130424058-1

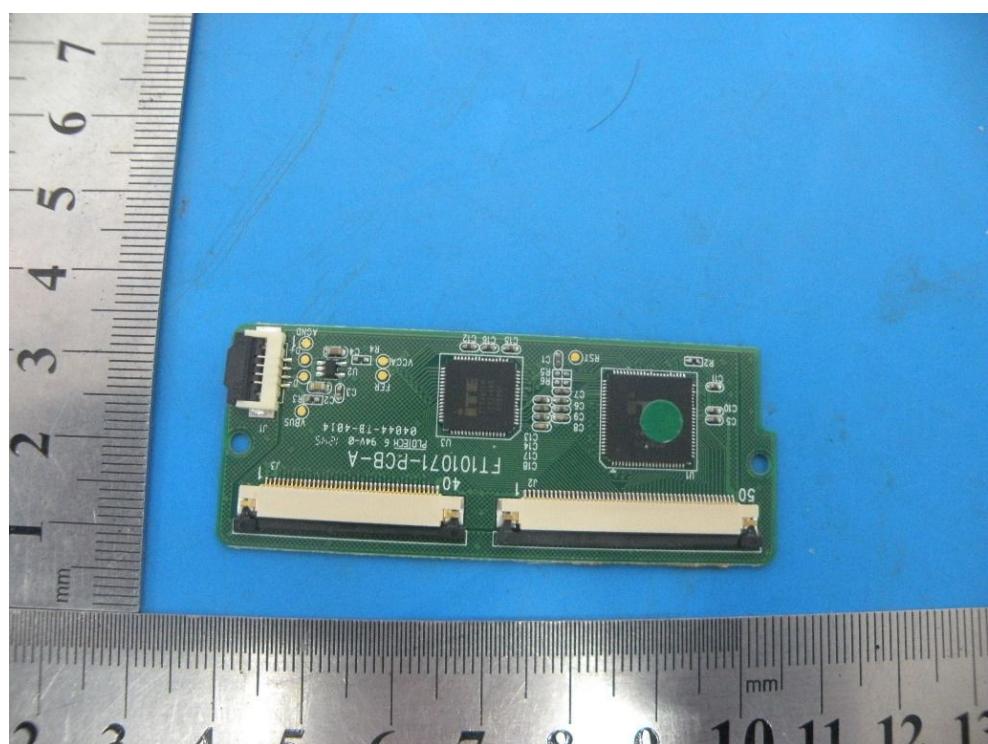
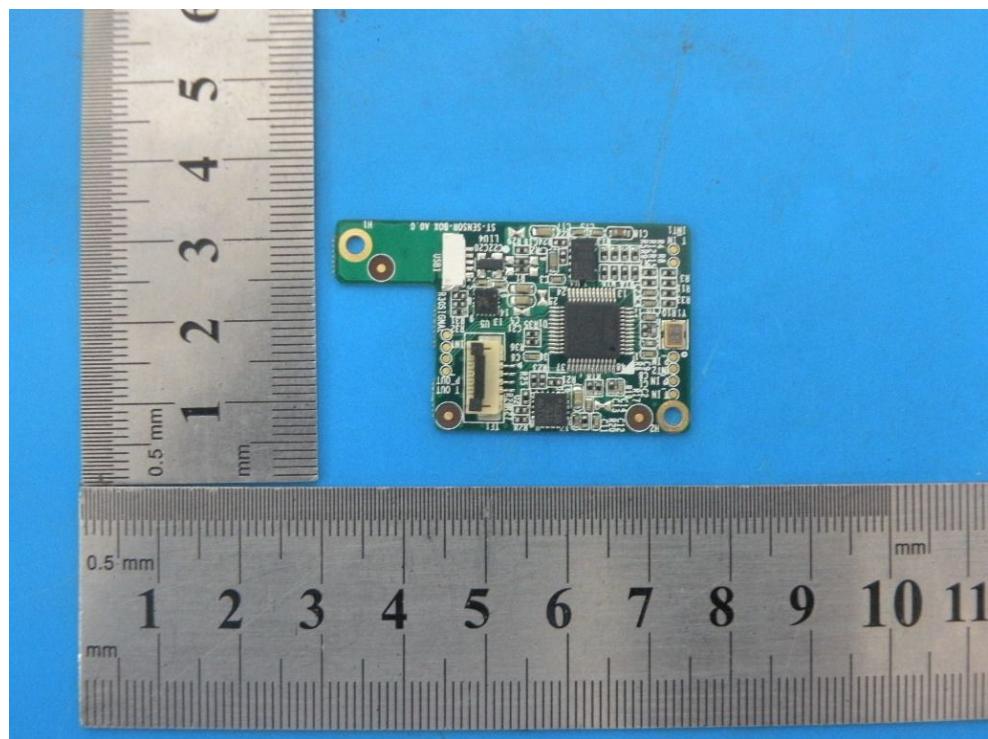
---

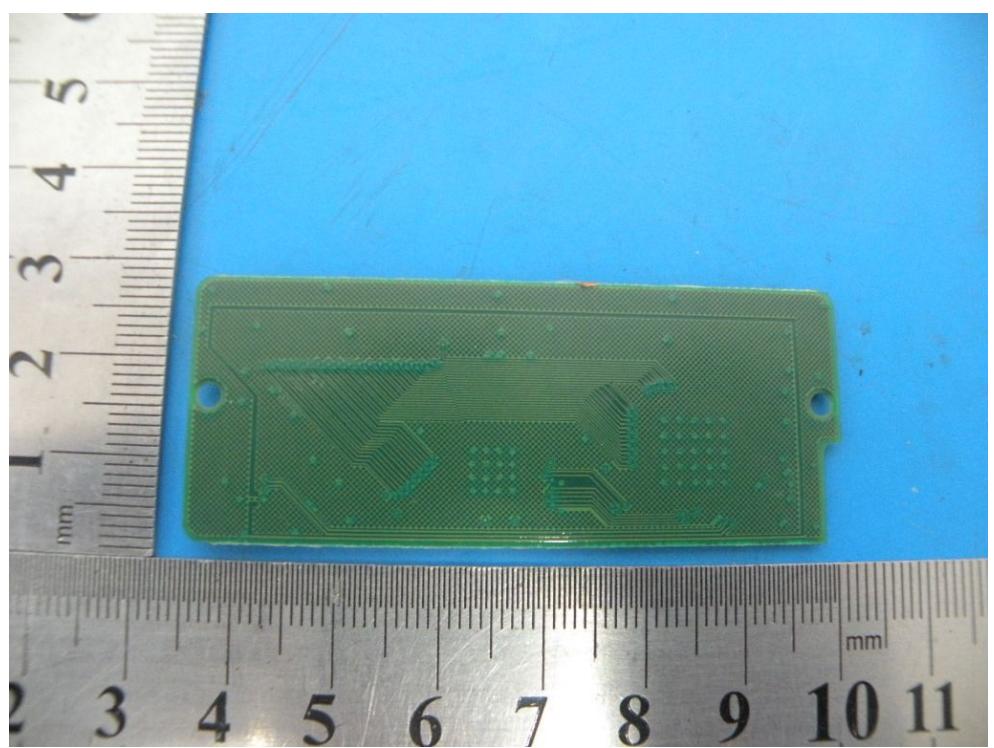
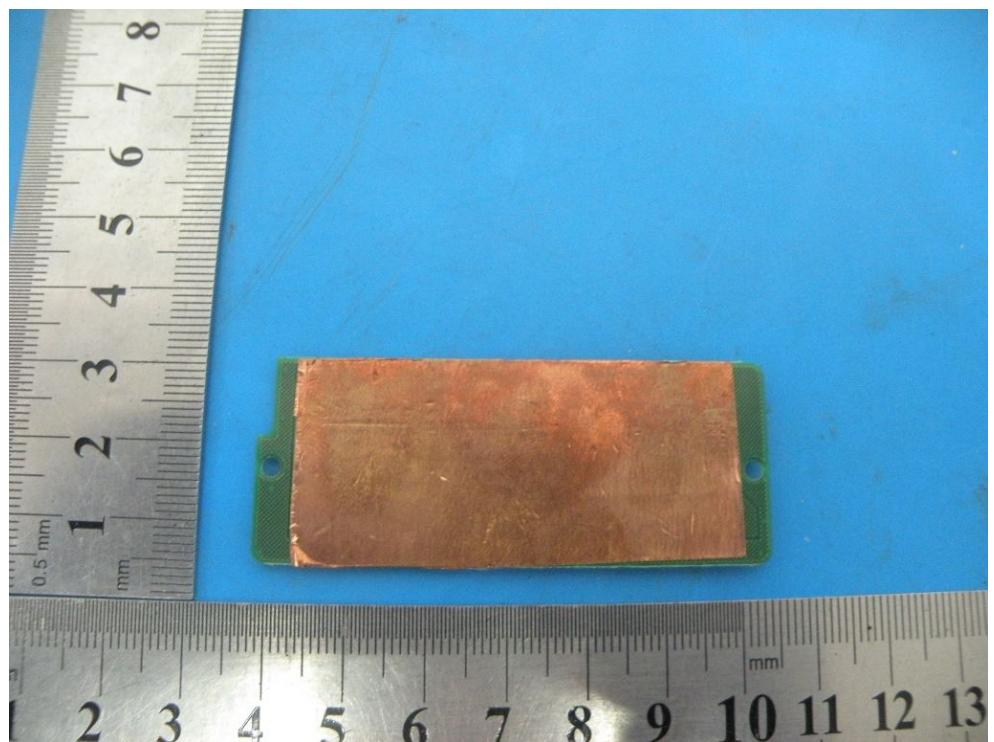


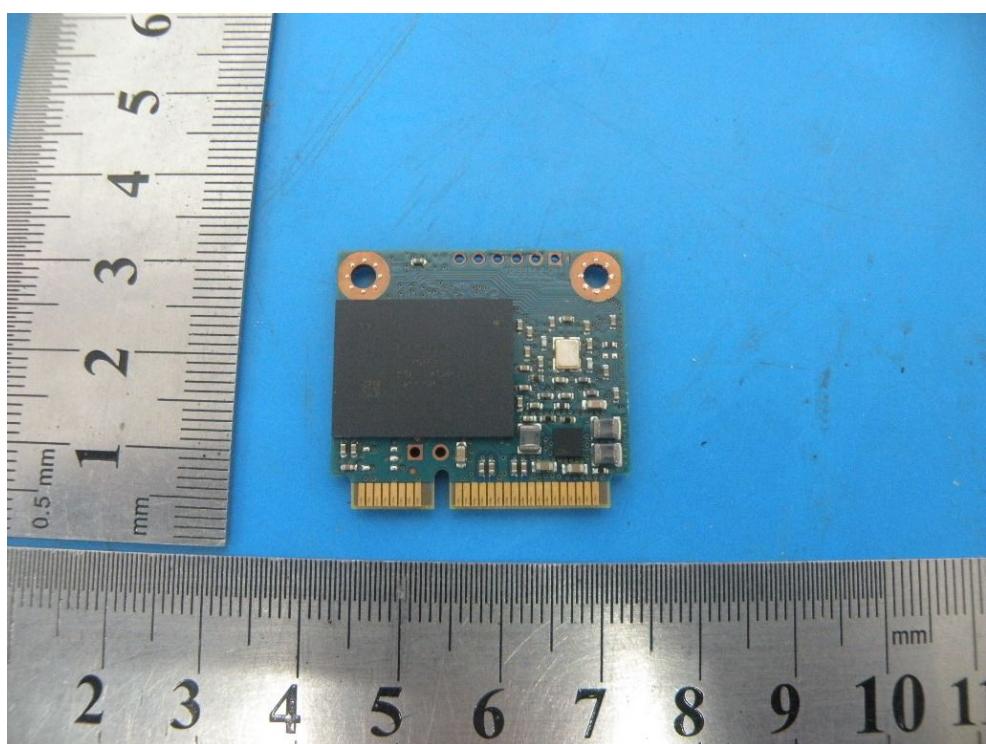
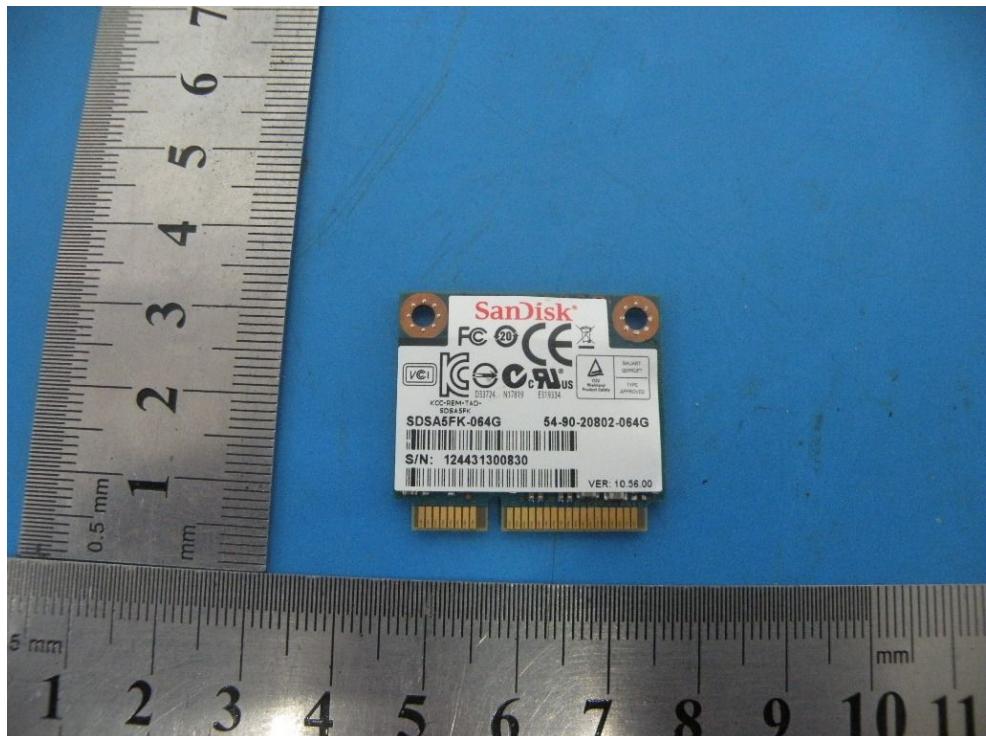
Report No.: STI130424058-1

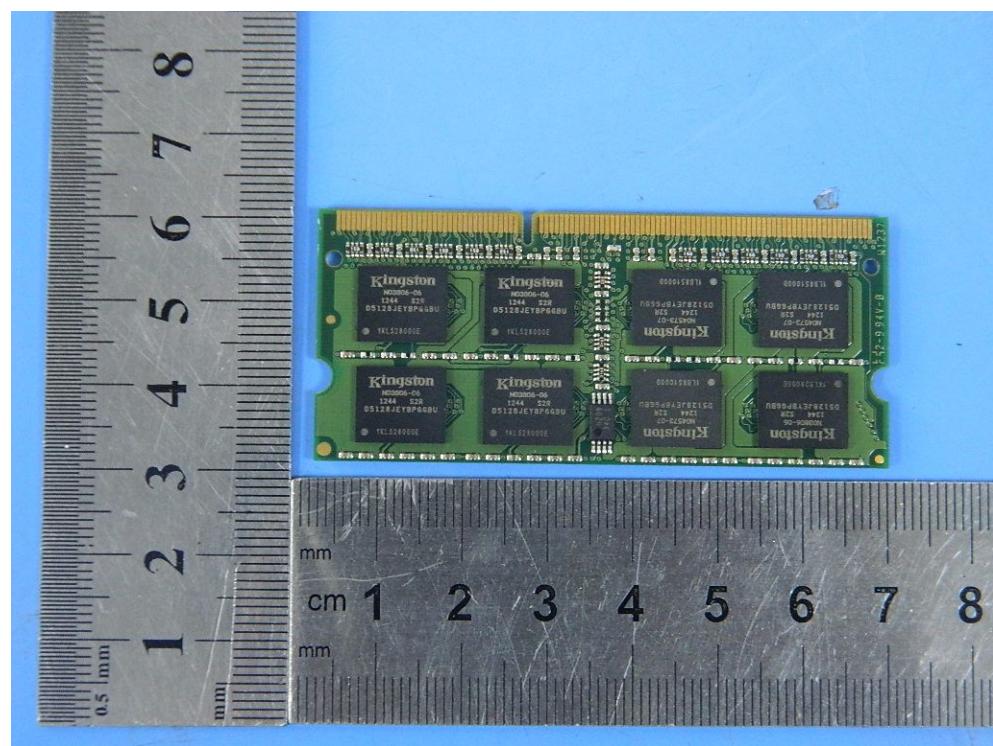
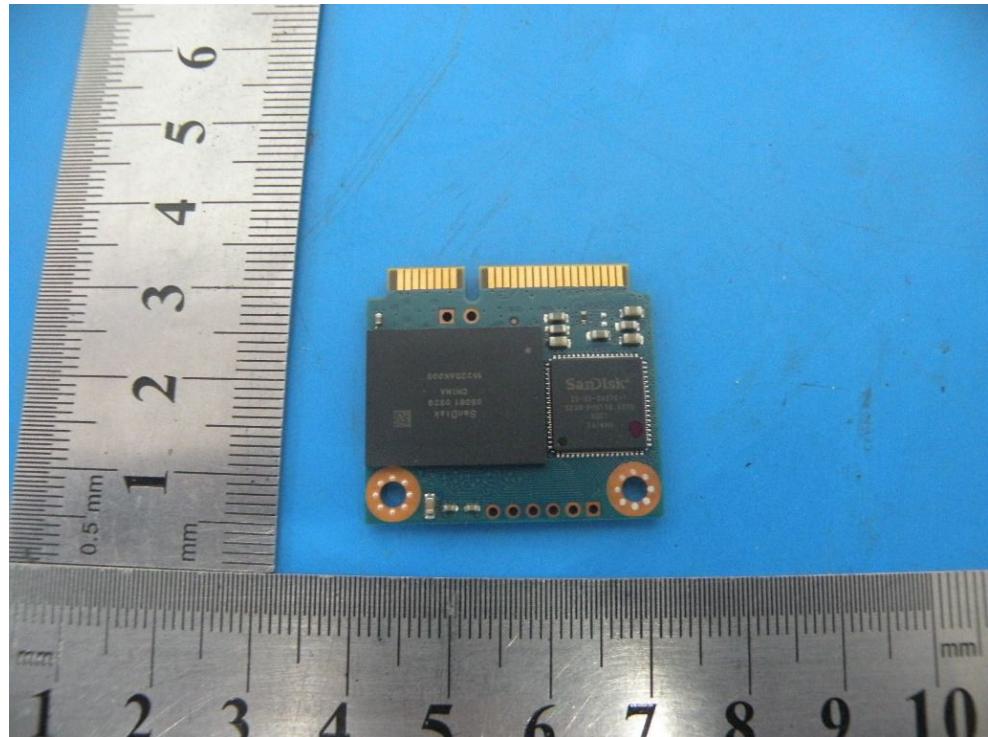
---

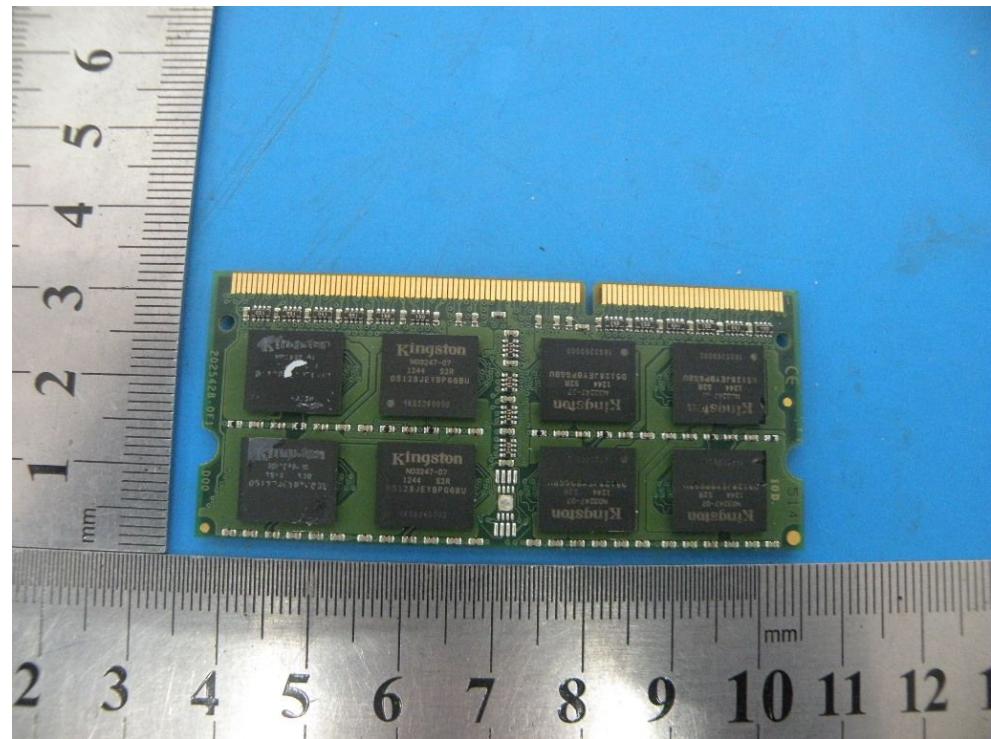
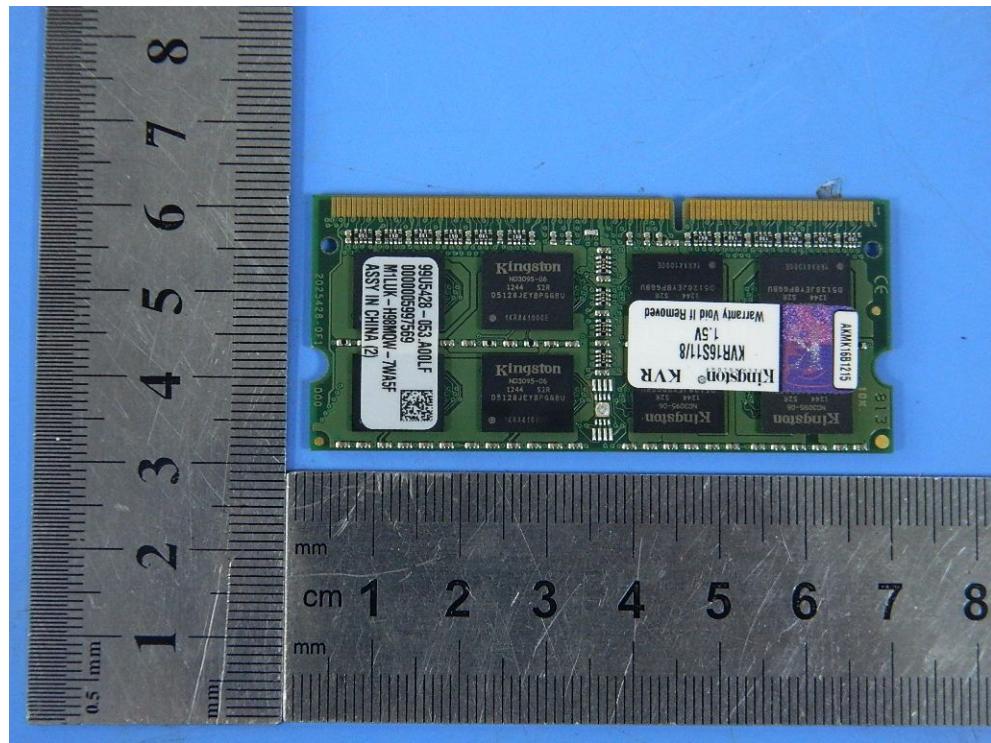


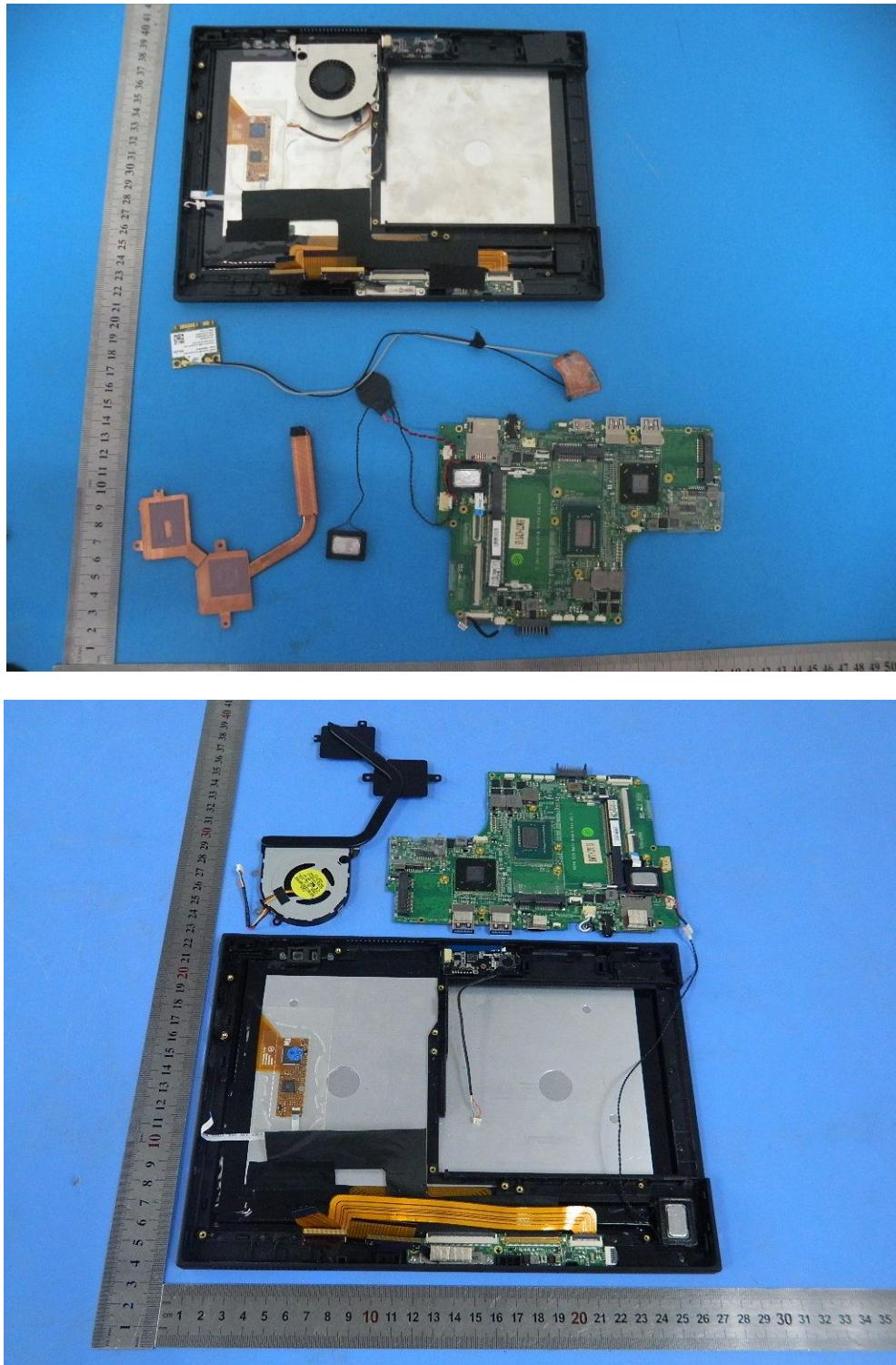






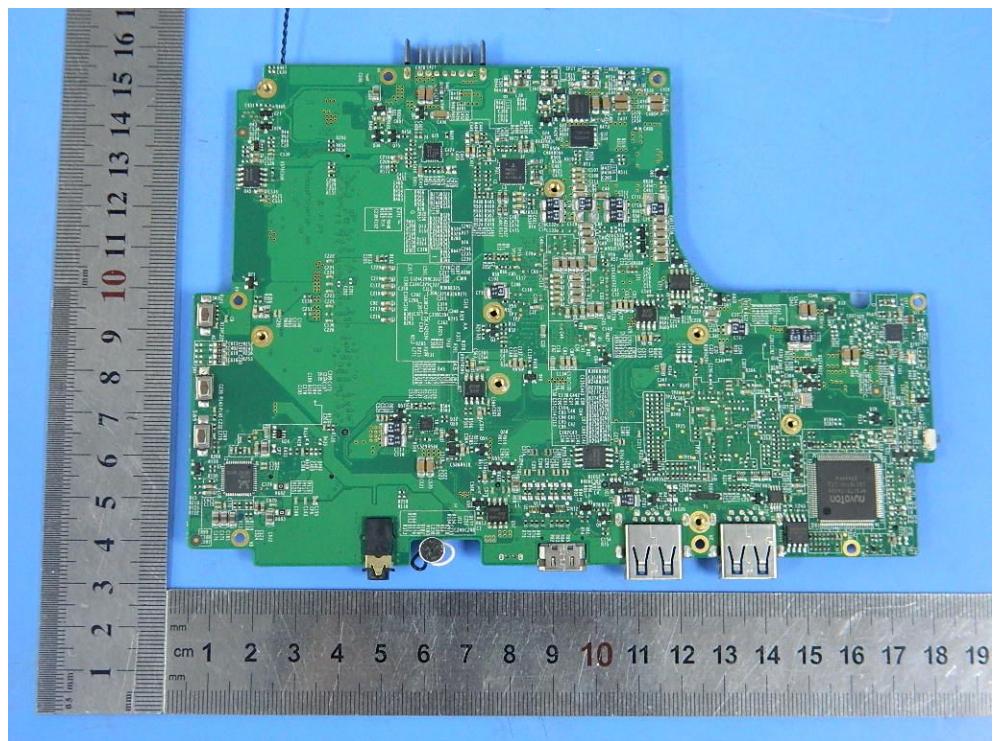
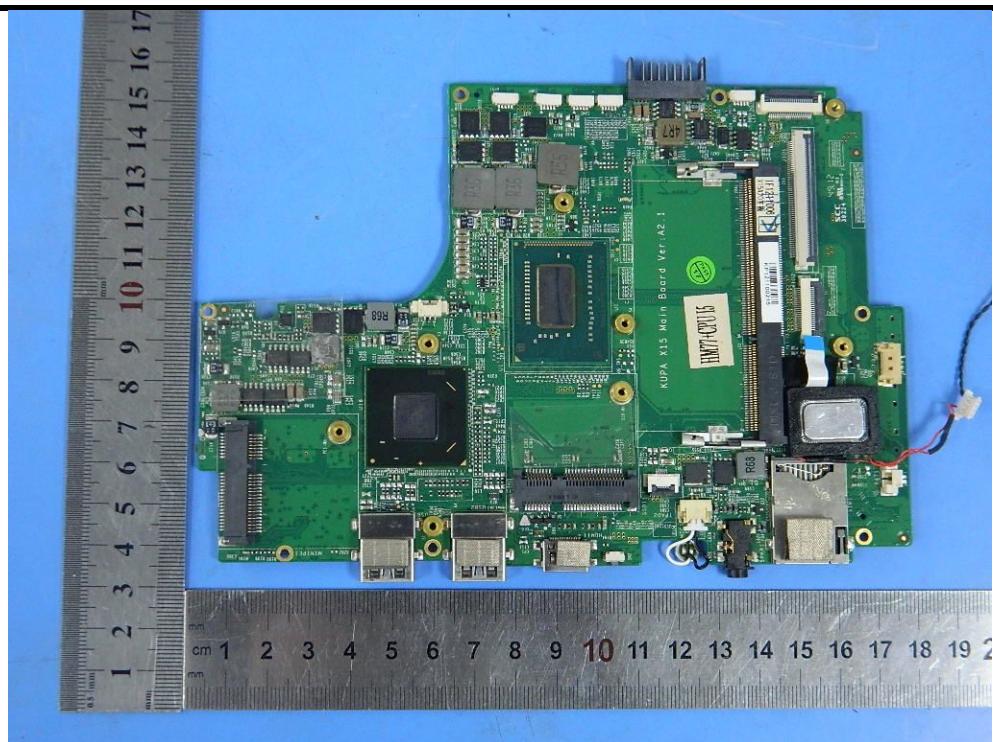


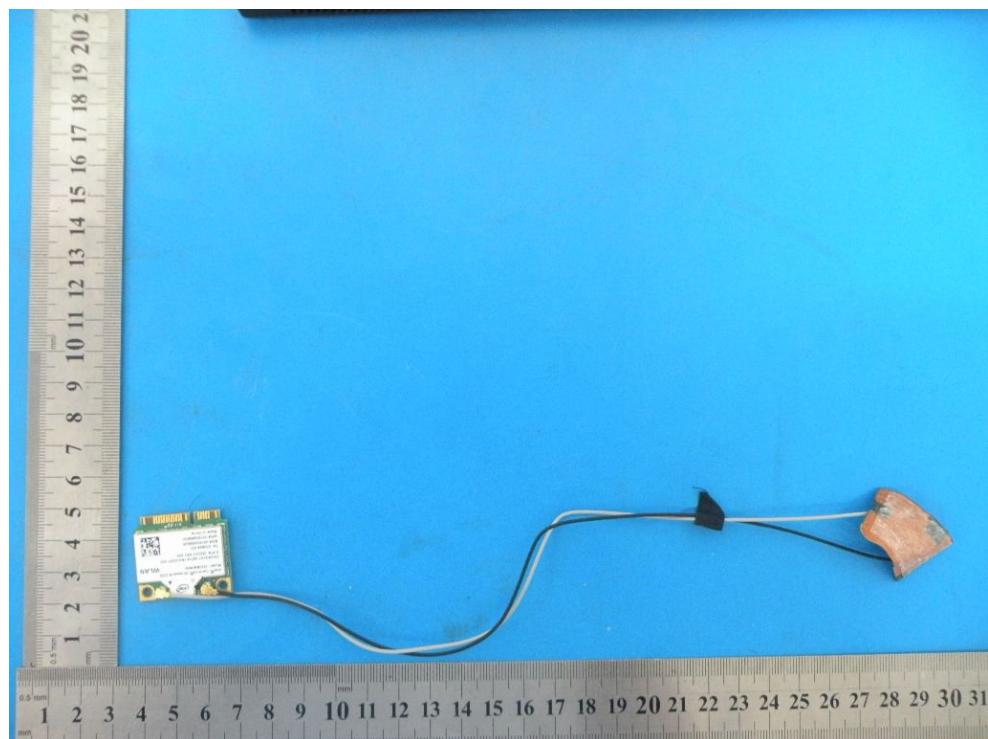


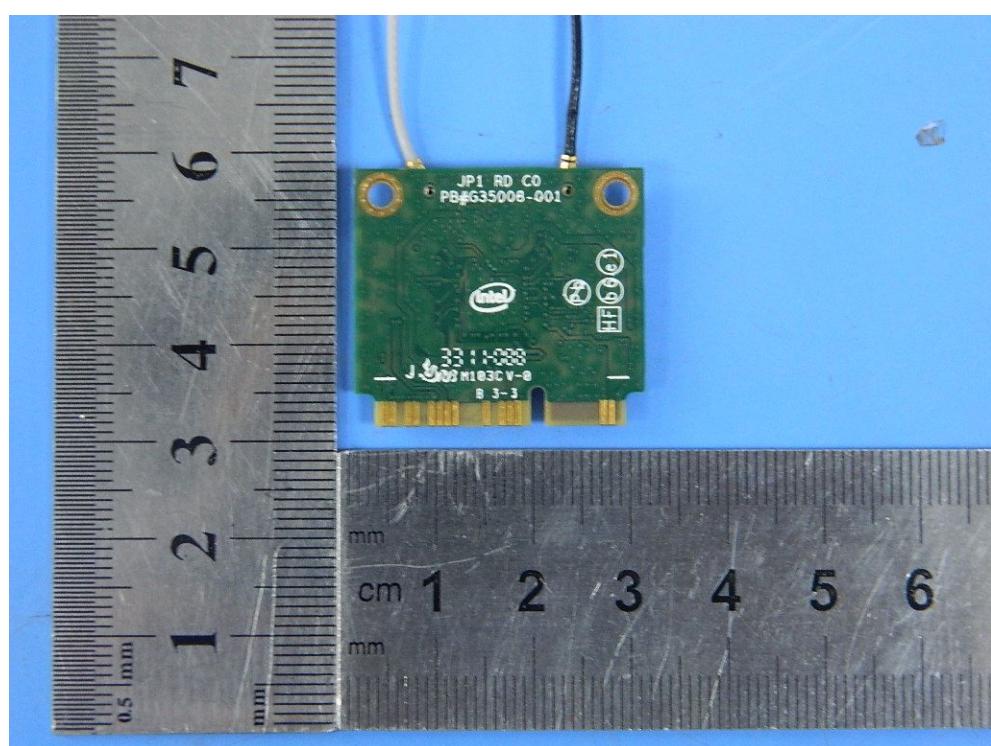
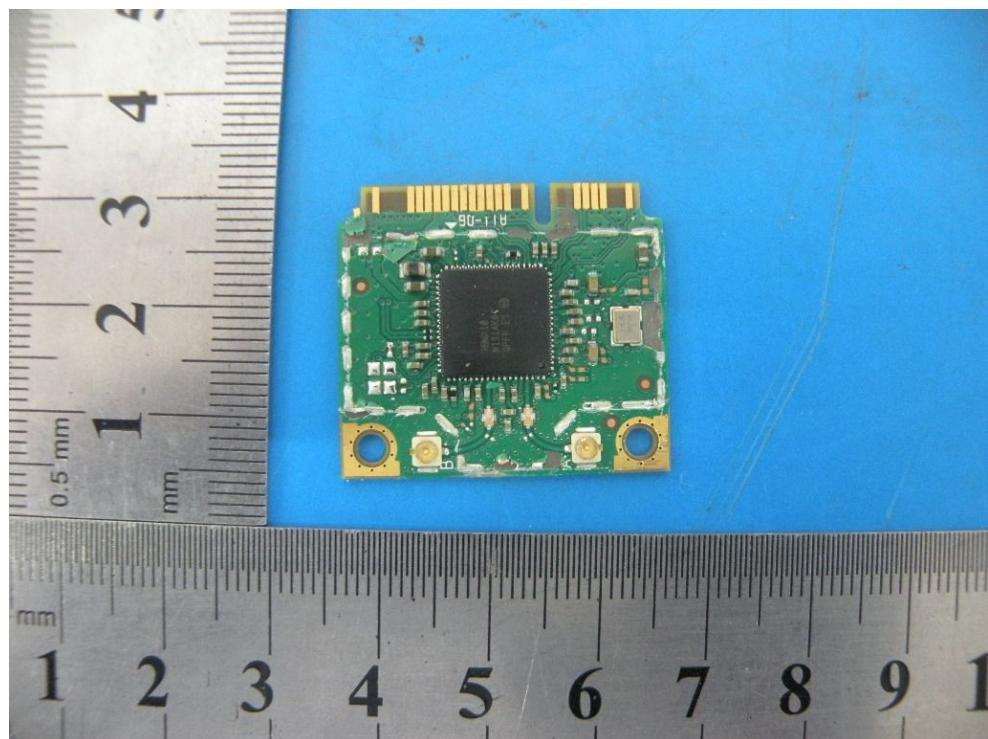


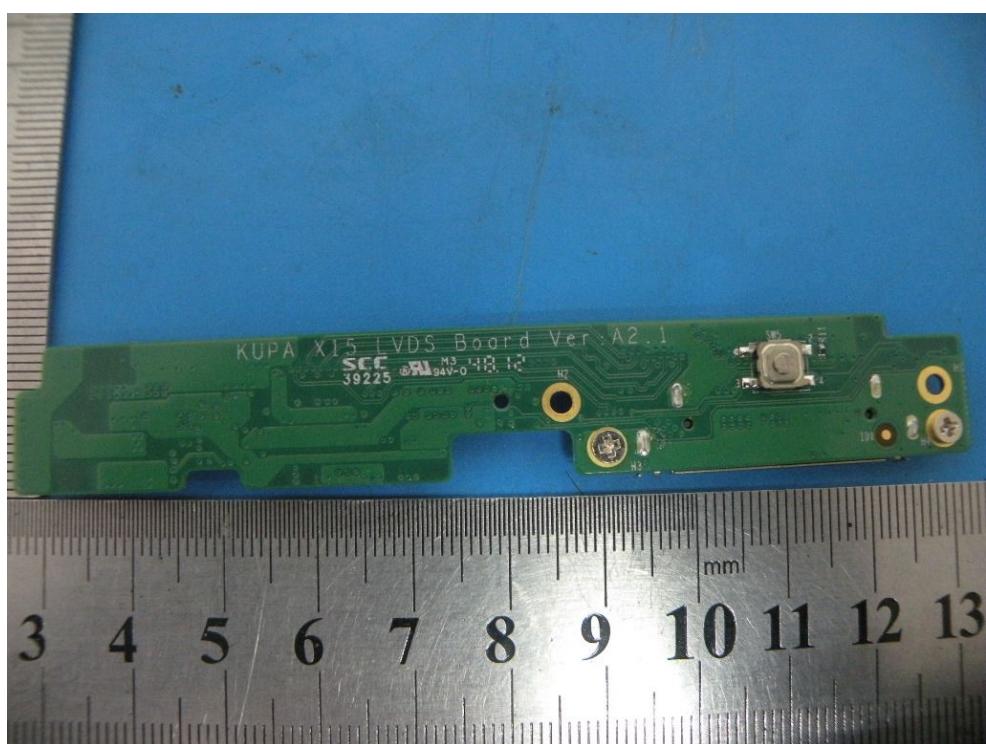
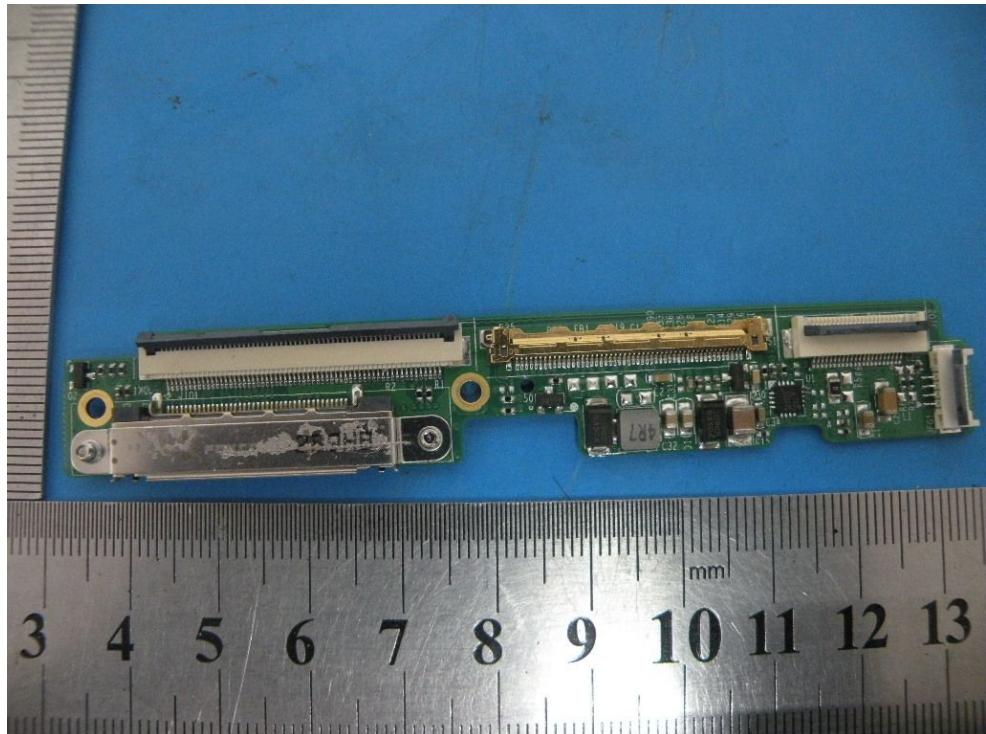
Report No.: STI130424058-1

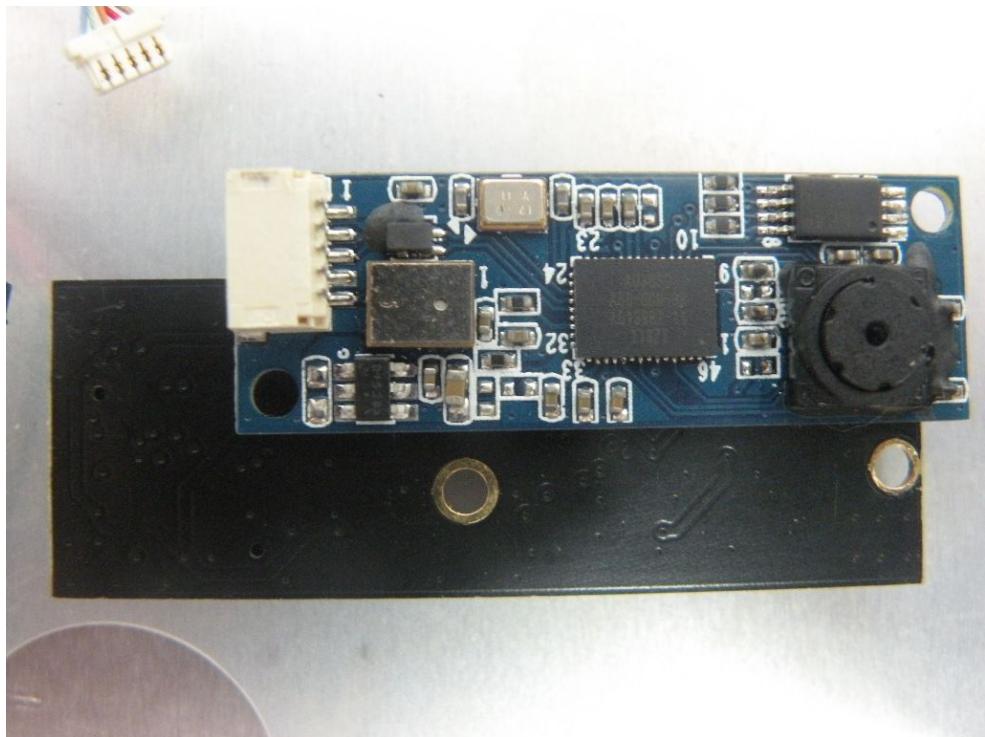
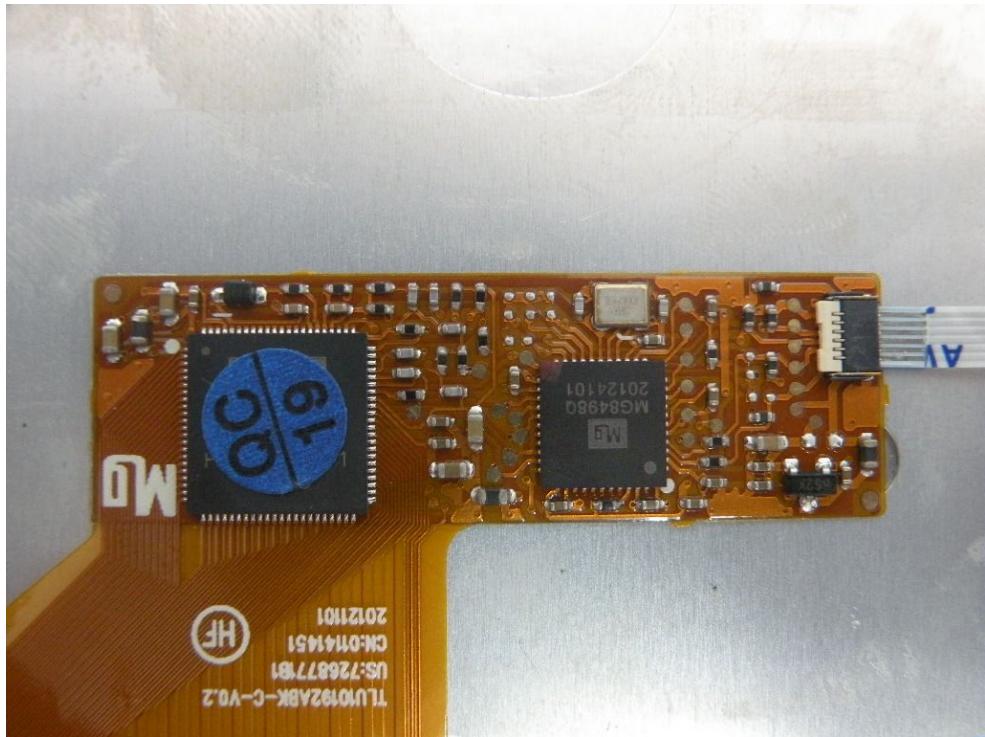
---





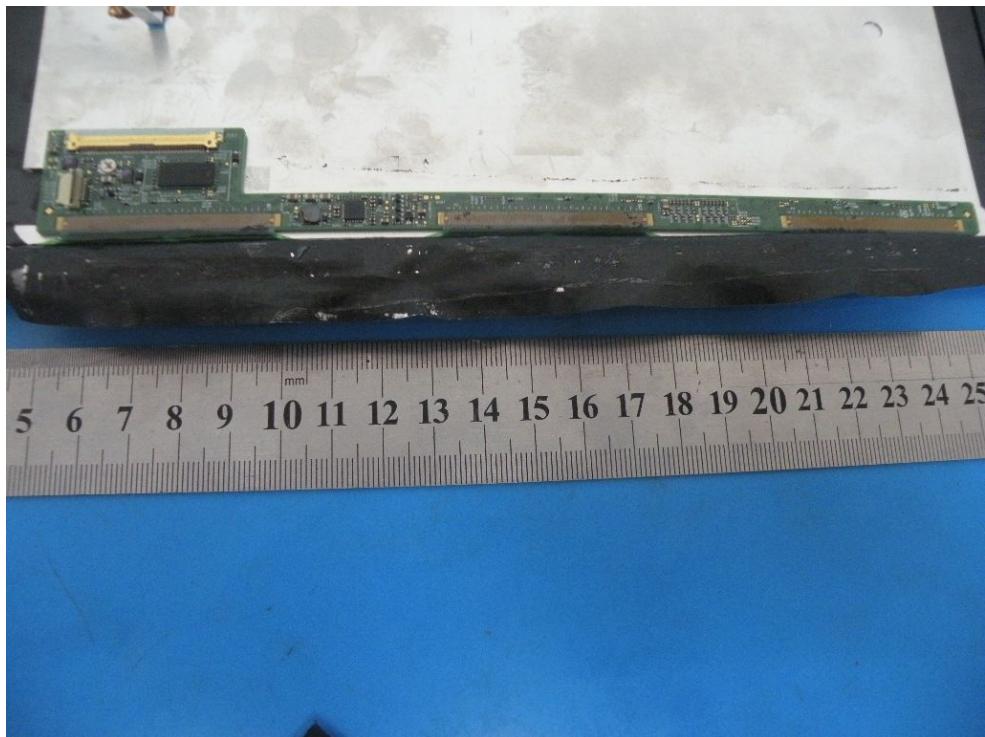
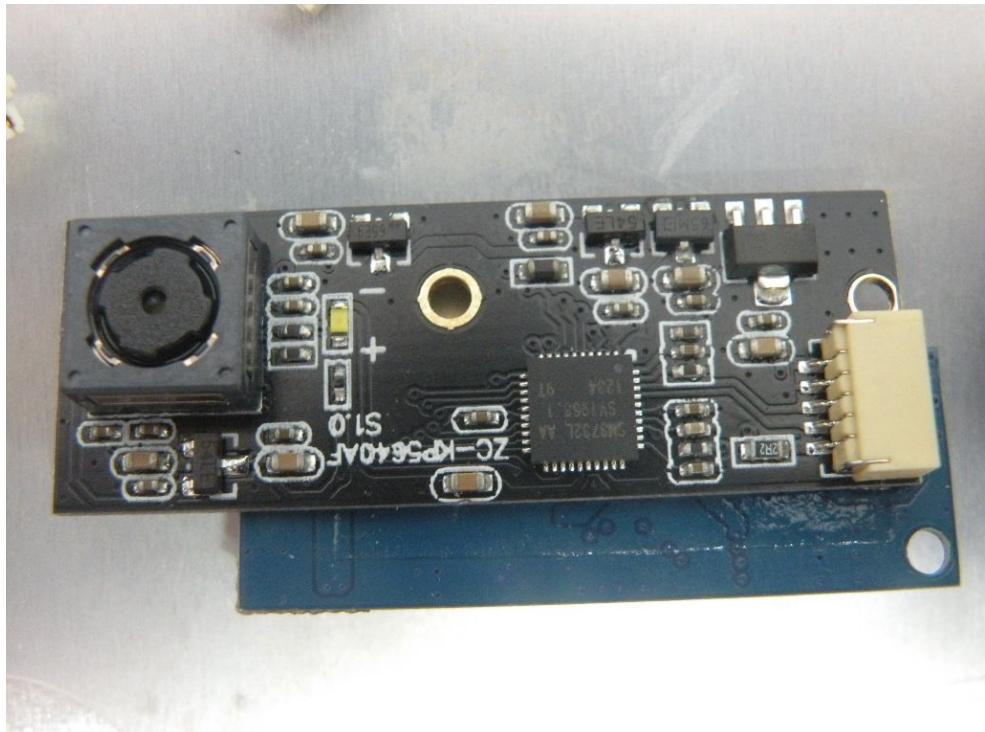






Report No.: STI130424058-1

---



Report No.: STI130424058-1

---



-----END OF THE REPORT-----