Report No.: GTSE15040039601

FCC Report

Applicant:	Shanhai Yuanyi Automobile Technology Co., Ltd
Address of Applicant:	Room 7196, 203 Xinjian Road, Hongkou District, Shanghai, PRC

Equipment Under Test (EUT)

Product Name:	Rearview mirror safety prewarning
Model No.:	ZE-S66
FCC ID:	2AENS-ZE-S66
Applicable standards:	FCC CFR Title 47 Part 15 Subpart B:2014
Date of sample receipt:	April 09, 2015
Date of Test:	April 09-13, 2015
Date of report issue:	April 13, 2015
Test Result :	PASS *

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

Authorized Signature:

Robinson Lo
Laboratory Manager

2 Version

Version No.	Date	Description
00	*April 13, 2015*	*Original*

Prepared By:	Sam. Gao	***Date:***	*April 13, 2015*
	Project Engineer		
Check By:	hank. yan	***Date:***	*April 13, 2015*
	Reviewer		

3 Contents

4 Test Summary

Test Item	Section in CFR 47	Result
Conducted Emission	Part15.107	N/A
Radiated Emissions	Part15.109	PASS

PASS: The EUT complies with the essential requirements in the standard.

N/A: not applicable

5 General Information

5.1 Client Information

Applicant:	Shanhai Yuanyi Automobile Technology Co., Ltd
Address of Applicant:	Room 7196, 203 Xinjian Road, Hongkou District, Shanghai, PRC
Manufacturer:	Shenzhen Xinguan Huida Electronics Co.,Ltd.
Address of Manufacturer:	Longgang District of Shenzhen City Guangdong Province Ai Lian Zhang Bei Er Cun venture tworoad 18-2

5.2 General Description of EUT

Product Name:	Rearview mirror safety prewarning
Model No.:	ZE-S66
Radar Detector:	
Detector Type:	Scanning frequency discriminator
Operation Frequency:	X Band: 10.500~10.550GHz K Band: 24.050~24.250GHz
Power supply:	Input: DC 12V

5.3 Test mode

Test mode: The EUT was connected as user's guide. And during the test, EUT is operation on the following:
X Band: 10.525GHz
K Band: 24.150GHz

5.4 Test Facility

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

● **CNAS —Registration No.: CNAS L5775**

CNAS has accredited Global United Technology Services Co., Ltd. To ISO/IEC 17025 General Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

● **FCC —Registration No.: 600491**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, June 28, 2013.

● **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, June 26, 2013.

5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.
Address: Room 301-309, 3th Floor, Block A, Huafeng Jinyuan Business Building, No. 300 Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, China
Tel: 0755-27798480
Fax: 0755-27798960

5.6 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC approval
GS	Supreme maintenance Free	S5D26R-MFZ	9442804454	Verification

5.7 Deviation from Standards

Biconical, log.per. antenna and horn antenna were used instead of dipole antenna.
Semi-anechoic Chamber was used as alternation of open air test sites, and all test suites were performed with radiated method in it.

5.8 Abnormalities from Standard Conditions

None.

5.9 Other Information Requested by the Customer

None.

6 Test Instruments list

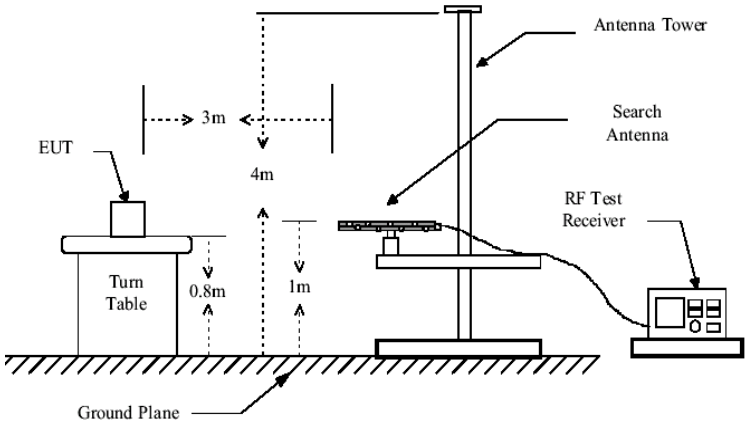
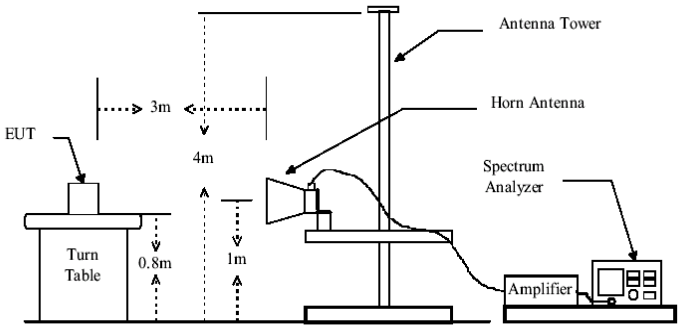
Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	GTS250	Mar. 28 2015	Mar. 27 2016
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	ESU EMI Test Receiver	R&S	ESU26	GTS203	July 01 2014	June 30 2015
4	BiConiLog Antenna	SCHWARZBECK	VULB9163	GTS214	July 01 2014	June 30 2015
5	Double -ridged waveguide horn	SCHWARZBECK	9120D	GTS208	June 27 2014	June 26 2015
6	RF Amplifier	HP	8347A	GTS204	July 01 2014	June 30 2015
7	Preamplifier	HP	8349B	GTS206	July 01 2014	June 30 2015
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial cable	GTS	N/A	GTS210	Mar. 28 2015	Mar. 27 2016
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 28 2015	Mar. 27 2016

General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Barometer	ChangChun	DYM3	GTS257	July 08 2014	July 07 2015

7 Test Results and Measurement Data

7.1 Radiated Emission

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 B Section 15.109</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4:2014</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m (Semi-Anechoic Chamber)</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120kHz</td><td>300kHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td>30MHz-88MHz</td><td>40.00</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.50</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.00</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.00</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.00</td><td>Average Value</td></tr>
<tr><td>74.00</td><td>Peak Value</td></tr>
<tr><td rowspan="2">11.7GHz ~ 12.2GHz</td><td>54.00</td><td>Average Value</td></tr>
<tr><td>74.00</td><td>Peak Value</td></tr>
</table>
Radar detectors shall comply with the emission limits in 15.109 (a) over the frequency range of 11.7–12.2 GHz.
</td></tr>
<tr><td>Test Procedure:</td><td>
1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
</td></tr>
</table>

Test setup:	Below 1GHz  Above 1GHz  					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1 012mbar
Measurement Record:						Uncertainty: ± 4.5dB
Test Instruments:	Refer to section 6 for details					
Test mode:	Refer to section 5.3 for details					
Test results:	Pass					

Note:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

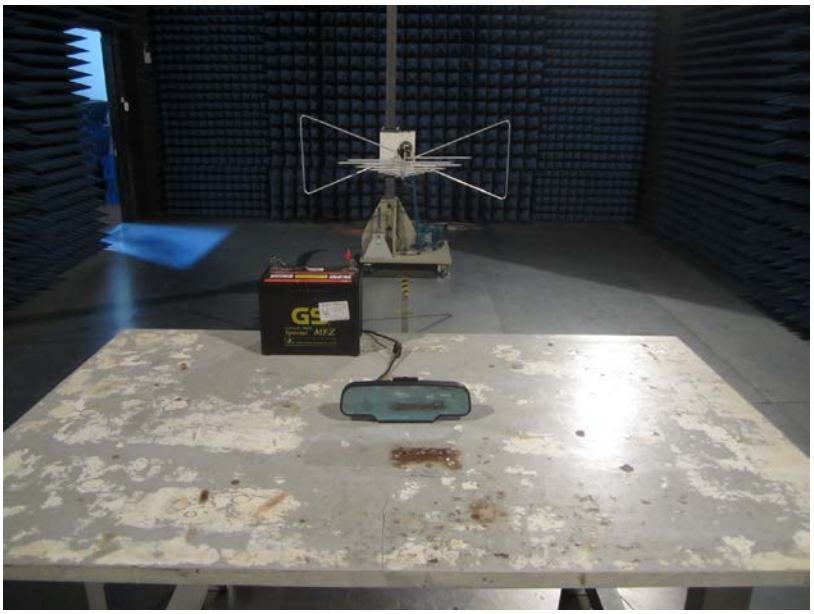
Measurement Data

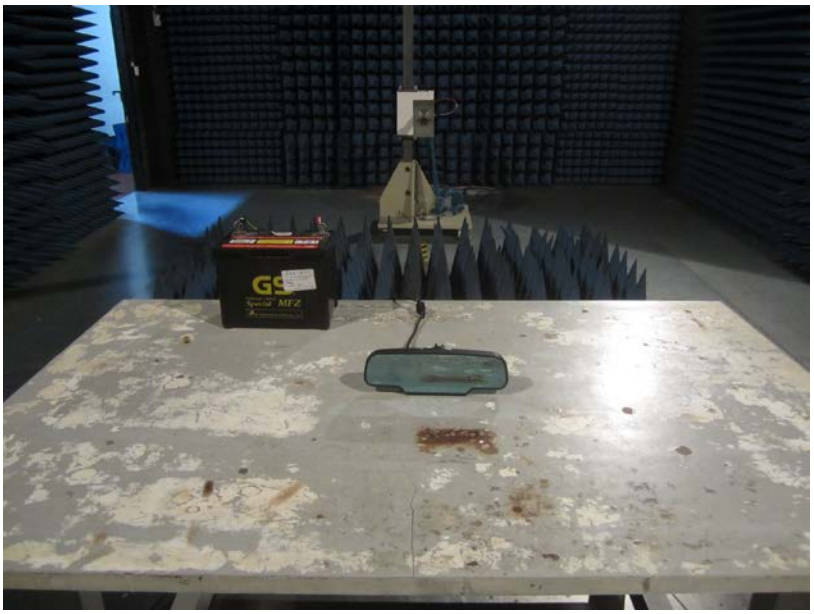
Only the data of worst case(K Band mode) is reported.

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarity
71.83	54.30	10.32	0.96	29.84	35.74	40.00	-4.26	Vertical
189.07	53.72	12.48	1.78	29.24	38.74	43.50	-4.76	Vertical
684.75	46.46	20.75	4.04	29.21	42.04	46.00	-3.96	Vertical
945.44	39.71	23.40	5.03	29.10	39.04	46.00	-6.96	Vertical
11757.00	29.95	39.76	14.99	34.72	49.98	54.00	-4.02	Vertical
71.83	54.23	10.32	0.96	29.84	35.67	40.00	-4.33	Horizontal
135.03	56.10	10.56	1.47	29.49	38.64	43.50	-4.86	Horizontal
531.96	49.39	19.20	3.45	29.30	42.74	46.00	-3.26	Horizontal
945.44	41.71	23.40	5.03	29.10	41.04	46.00	-4.96	Horizontal
11757.00	29.61	39.76	14.99	34.72	49.64	54.00	-4.36	Horizontal

8 Test Setup Photo

Radiated Emission





9 EUT Constructional Details


S6-KEY
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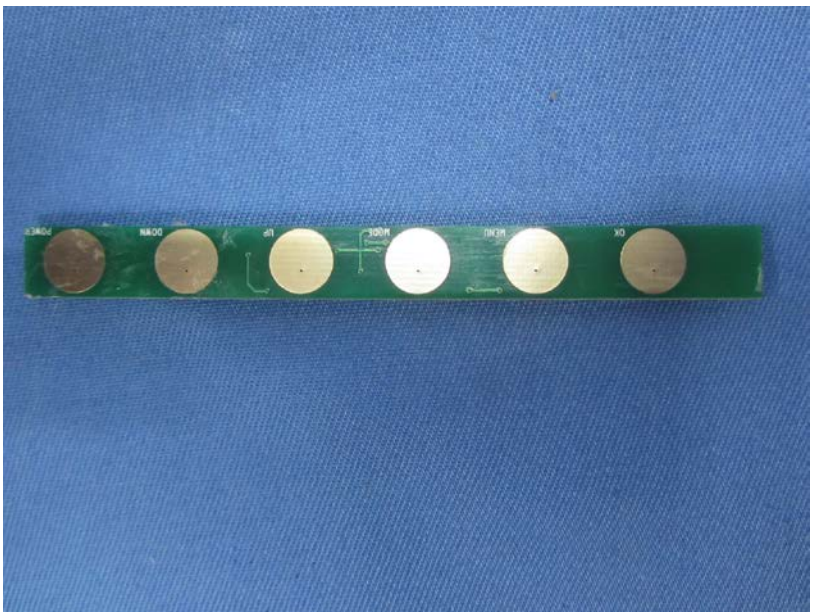

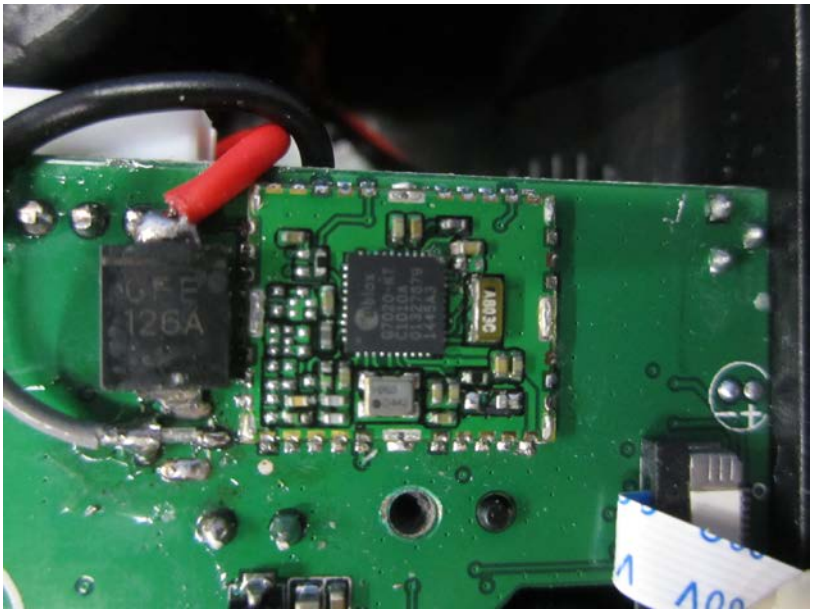

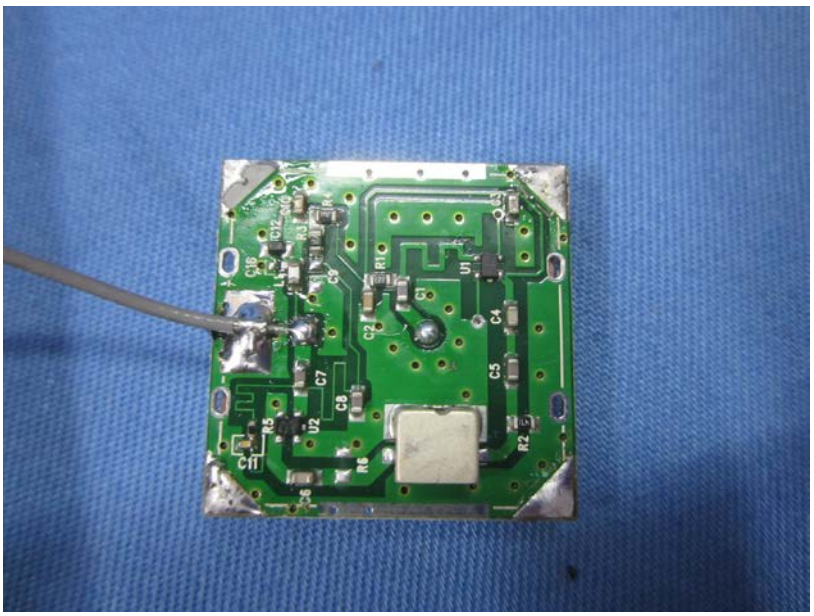


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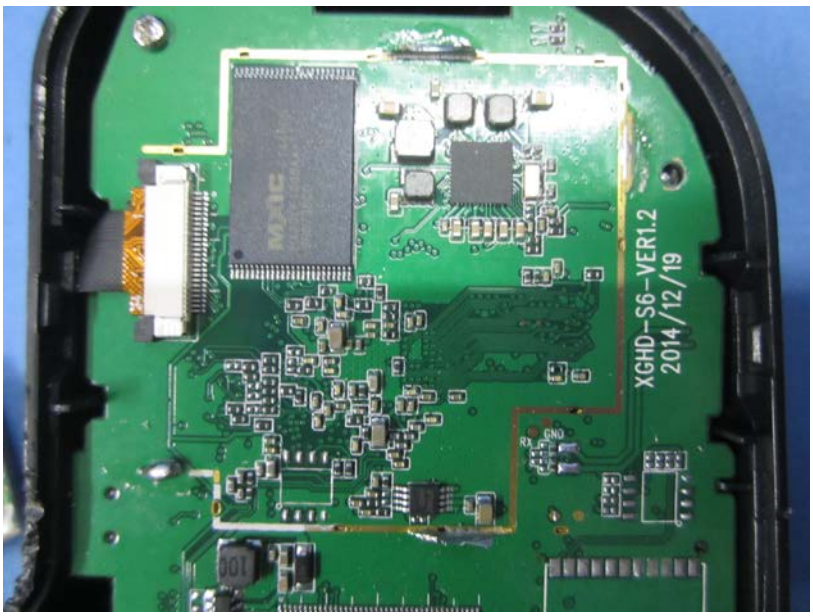
2014/12/19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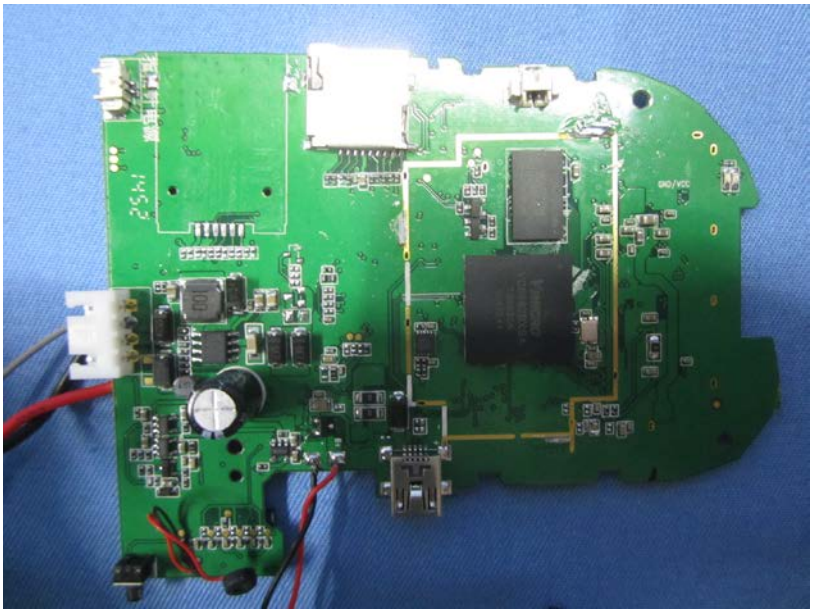

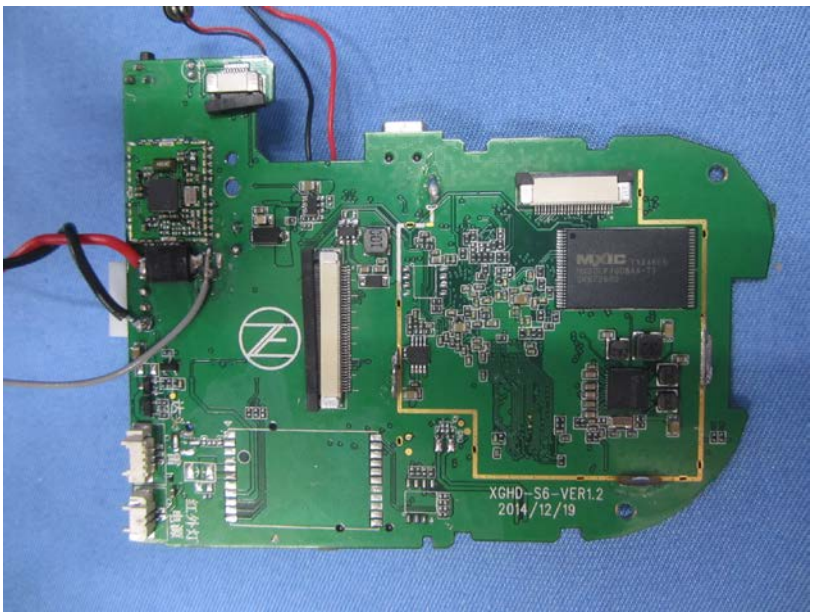
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2014/12/19


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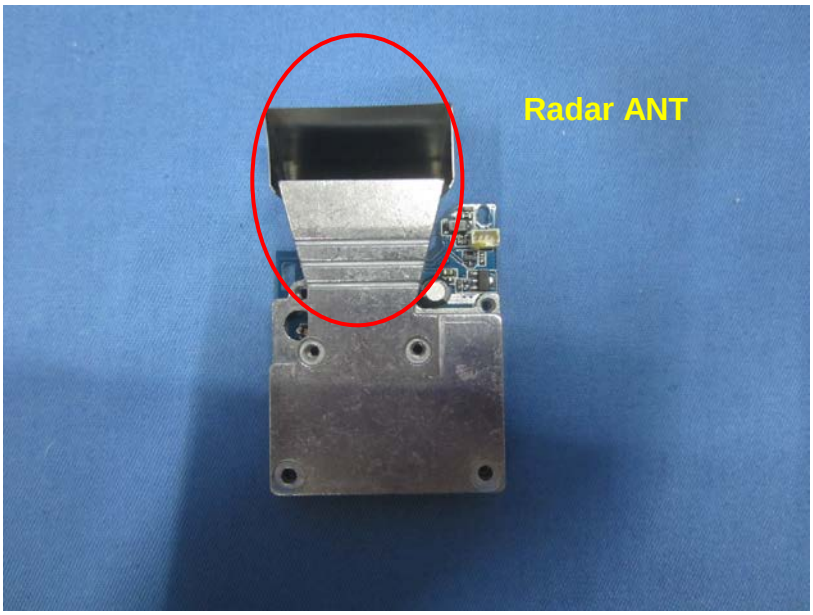
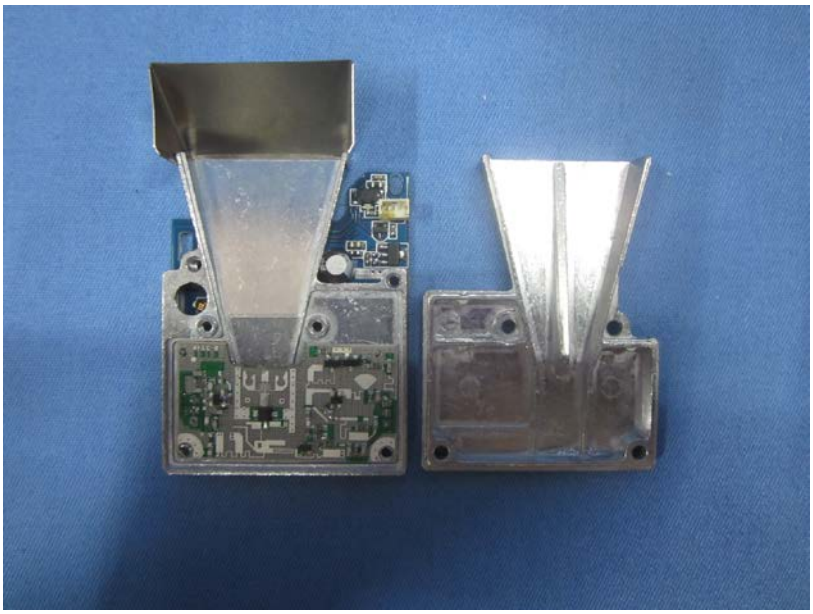
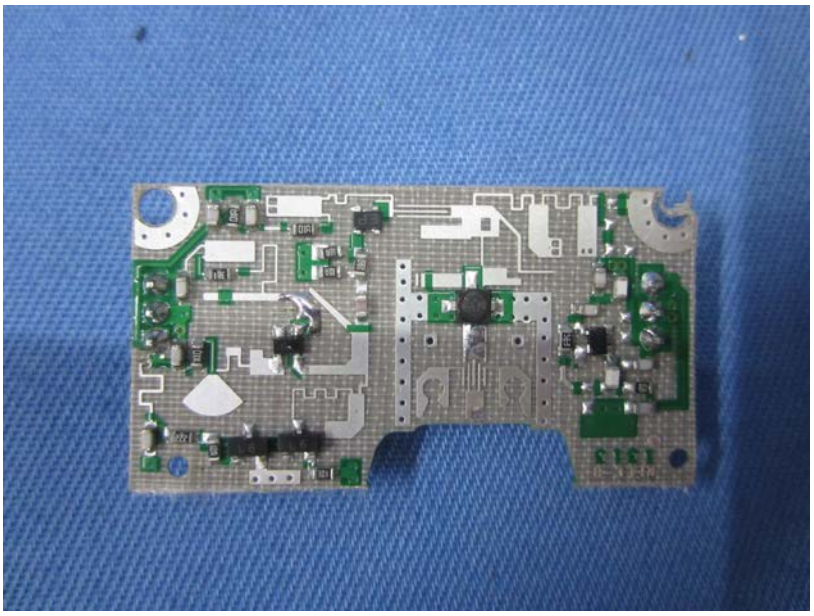
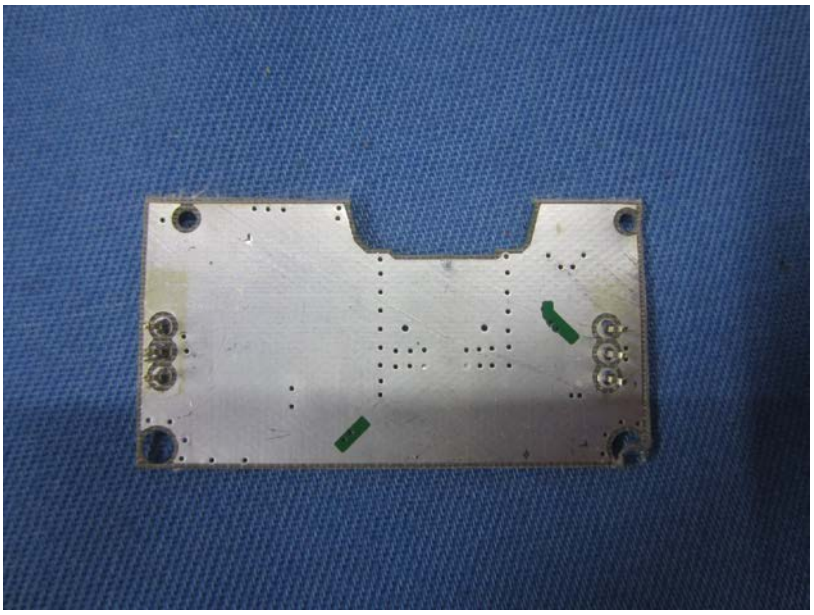
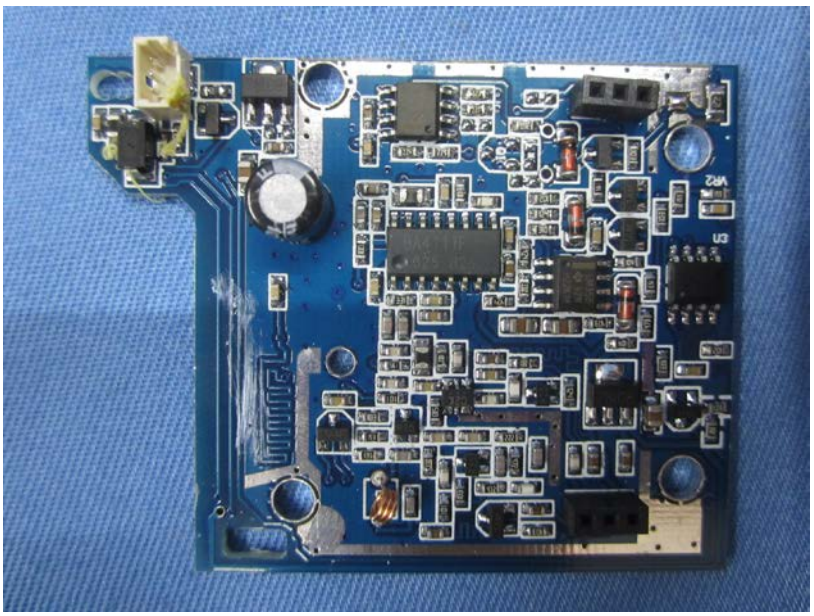
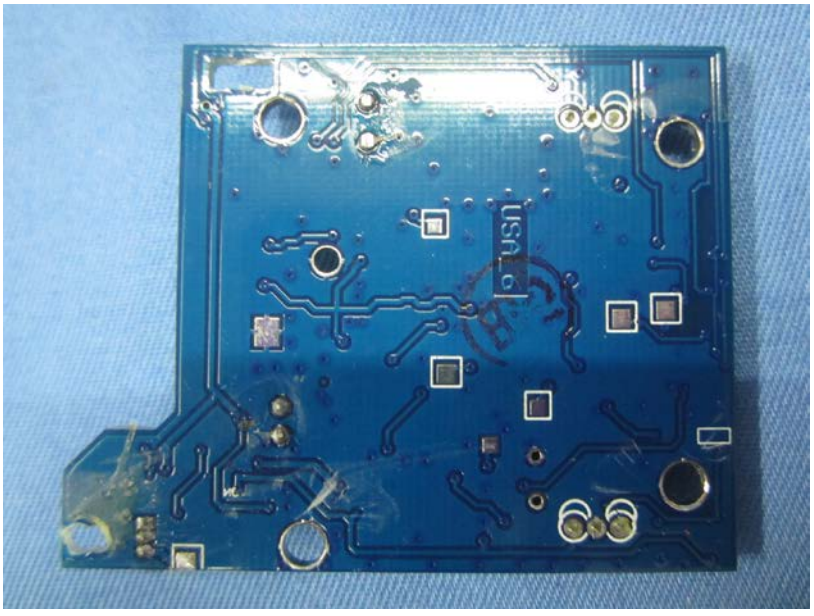

Radar ANT

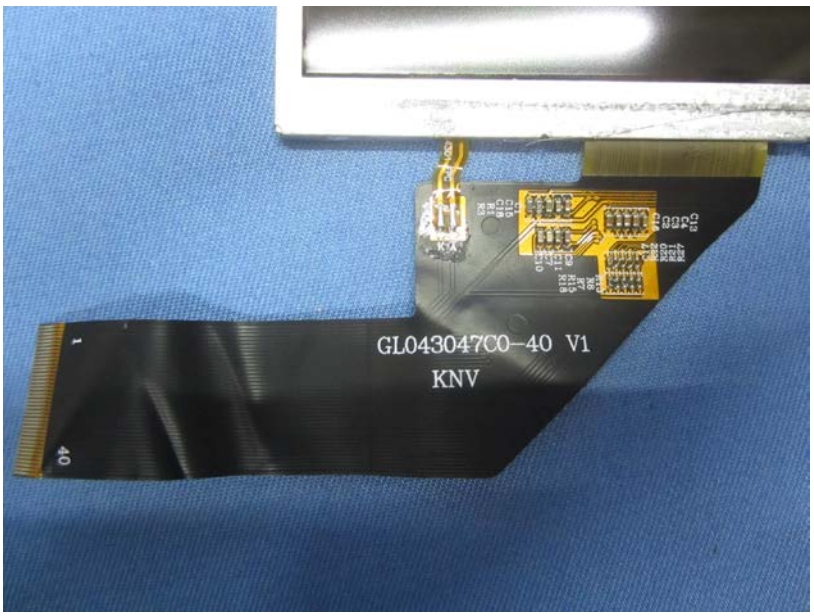








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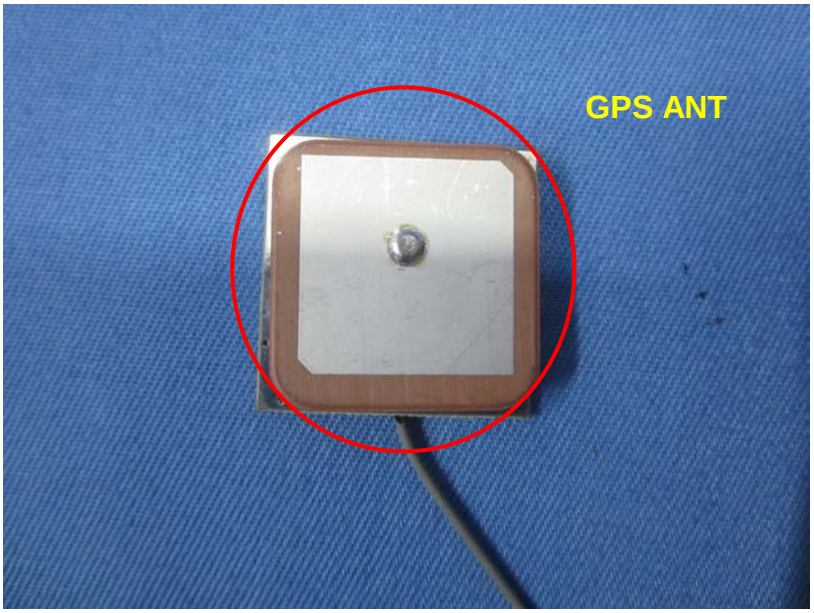
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