EMI Test Report for FCC

Test Report No.	: KES-E2-13T0022
Date of Issue	: 12. 11. 2013
Description of Product	: Capsule Endoscope
Model No.	: MC1200-B
Variant Model	: MC1200, MC1200-M, MC1200-G, MC1600, MC1600-B, MC1600-M, MC1600-G
Applicant	: IntroMedic
Applicant's Address	: Suite 1104, E&C Venture Dream Tower 6-Cha, 197-28 Guro-Dong, Guro-Gu, Seoul, 152-719, KOREA
Manufacturer	: IntroMedic
Manufacturer's Address	: Suite 1104, E&C Venture Dream Tower 6-Cha, 197-28 Guro-Dong, Guro-Gu, Seoul, 152-719, KOREA
Standards	: FCC Part 15 - Part 15.107(b) : Conducted Emission - Part 15.109(b) : Radiated Emission
Test Date	: 11. 15. 2013
Date of Receipt	: 11. 04. 2013
Test Results	: ■ Pass ☐ Fail
FCC ID	: VAX INTROMEDIC5

The test results relate only to the items tested.

Tested by: Ju Won, Yun
Test Engineer

Reviewed by: Won-Wook, Kim
Technical Manager

Testing Laboratories for EMS and Safety and RF Compliance
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Revision history

Revision	Date of issue	Test report No.	Description
-	12. 11. 2013	KES-E2-13T0022	Initial

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1. General Information

1.1 Introduction

The EMI Test Report of Information Technology Equipment is prepared on behalf of named applicant in accordance with the ANSI C63.4-2009. The test results reported in this document relate only to the item that was tested.

The detailed description of the measurement facility was found to be in compliance with the requirement of Section 2.948 of the FCC Rules. The Federal Communications Commission has the reports on file and is listed under Registration Number. The scope of the accreditation covers the FCC Method - 47 CFR Part 15 or 18 of the Commission's Rules.

All measurements contained in this report were conducted in accordance with ANSI C63.4-2009. The instrumentation utilized for the measurements conforms with CISPR16 Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods. Some accessories are used to increase sensitivity and prevent overloading of the measuring instrument. Calibration checks are performed yearly on the instruments by a local calibration laboratories.

All radiated and conducted emission measurements are performed manually at KES Co., Ltd. (hereinafter referred to as "KES"), 473-29, Gayeo-ro, Yeoju-si, Gyeonggi-do, 469-803 Korea

The radiated emission measurements required by the FCC Rules were performed on 3 meter or 10 meter, Open Area Test Site, test range maintained by KES. Complete ANSI 63.4-2009 description and site attenuation measurement data records are maintained at the test facility and have been placed on file with the Federal Communications Commission. The power line conducted emission measurements were performed in a shielded enclosure also located at the same facility.

The KES EMC test facilities in Anyang-City and Yeoju-City are designated testing laboratory according to ISO/IEC 17025 by Radio Research Agency(RRA), Korea

Communications Commission.

1.2 Geographic location

KES Office Latitude : 37°23'54.59"N, Longitude : 126°58'14.66"E

KES OATS Latitude : 37°13'58.03"N, Longitude : 127°37'21.95"E

1.3 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
USA	**FCC**	3 & 10 meter Open Area Test Sites and one conducted site to perform FCC Part 15/18 measurements.	
KOREA	**KCC**	EMC (10 meter Open Area Test Site and two conducted sites) Radio(3 & 10 meter Open Area Test Sites and one conducted site)	KR0100
Canada	**IC**	3 & 10 meter Open Area Test Sites and one conducted site	4769B-1
Europe	**TUV_SUD**	EMC EN 55011, EN 55022, EN 61000-3-2,EN 61000-3-3, EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 55014-1, EN 61326 EN 50130-4, EN 55024, EN55014-2 EN 61204-3, EN 60601-1-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11	

1.4 Product Description

IntroMedic, Capsule Endoscope, Model No: MC1200-B, or the "E.U.T".

Capsule Endoscope	
Weight: 3.25g	Size: Ø10.8*24.5mm
Light: 6 white LED	Chemical Safety: pH=2~pH=8
Filed of View: 170°	Battery Type: Silver Oxide Cell
Depth of Filed: 3cm	Optimum working distance: 0mm
Enlargement Ratio: 1:8	Direction of View: 0°
Detectable Range: Under 0.1mm	Resolution: 320*320
Sampling Ratio: 3 frames per second	Storage Temperature: -10℃ ~ 70℃
Working Time: 12 Hours	Operating Temperature: 0℃ ~ 40℃
Mechanical Safety: IEC 60601-1	Material: Human Compliance Plastic
Transmission Methods: HBC (Human Body Communication)	Shelf Life: 1 year from date manufacture

Capsule Endoscope Receiver Set	
Recording Time : 11 Hours	Weight : 350 g, include battery
Operation Voltage : 3.7 V.0.45 A	Battery Type : Lithium Ion Battery(3.7 V, 8.8A)
Battery Weight : 215 g	Operation Temperature : 0 ~ 40 ℃
Storage Temperature : 0 ~ 55 ℃	Category : Type BF

Charger	Adapter
Input Voltage : 110~220VAC	Manufacturer : Bridge Power Corp.
Input Current: 3A	Model name : JMW128KA0902F02
Output Voltage: 4.2VDC	Input : 100-240V, 50/60Hz, 1.0A
Output Current: 4A	Output : 9Vdc, 3.0A

1.5 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
Capsule Endoscope	MC1200-B	-	IntroMedic	EUT
Receiver	MR1100	-	IntroMedic	-
Charger	-	-	IntroMedic	-
MEDICAL POWER SUPPLY	JMW128KA0902F02	-	Bridge Power Corp.	-

1.6 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Notebook	TPN-Q114	5CD242B043	HP	-
AC ADAPTER	Series PPP009L-E	2909059901	LITE-ON TECHNOLOGY (CHANGZHOU) CO., LTD.	-
iPad	A1432	DQXJWFHDF193	Apple Inc.	-

1.7 External I/O Cabling

■ Charging mode

Start		END		Cable Spec.	
Description	**I/O Port**	**Description**	**I/O Port**	**Length(m)**	**Shielded**
Receiver	10 PIN	Capsule Endoscope	2 PIN	1.0	Shielded
	Point of contact	Charger	Point of contact	-	-
Charger	DC IN	MEDICAL POWER SUPPLY	DC OUT	1.7	Shielded

■ USB mode

Start		END		Cable Spec.	
Description	**I/O Port**	**Description**	**I/O Port**	**Length(m)**	**Shielded**
Receiver	10 PIN	Capsule Endoscope	2 PIN	1.0	Shielded
	USB	Notebook	USB		Shielded

■ WIFI mode

Start		END		Cable Spec.	
Description	**I/O Port**	**Description**	**I/O Port**	**Length(m)**	**Shielded**
Receiver	10 PIN	Capsule Endoscope	2 PIN	1.0	Shielded
	-	iPad	-	-	-

1.8 Special Accessories

As shown in section 1.10, all interface cables used for compliance testing are shielded as normally supplied or by use respective component manufacturers.

1.9 E.U.T Modifications

■ Charging mode

The test was conducted in the state of charge.

■ USB mode

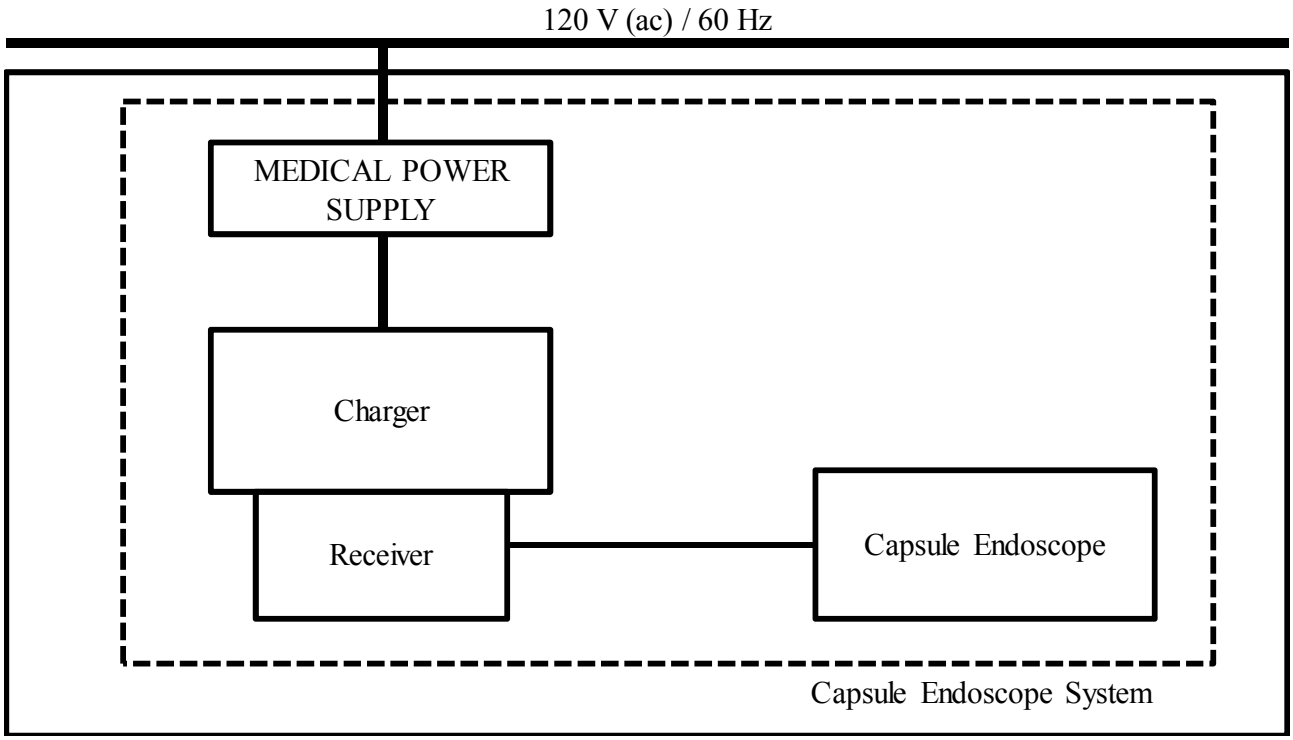
View in real time through the Notebook by USB connection.

■ WIFI mode

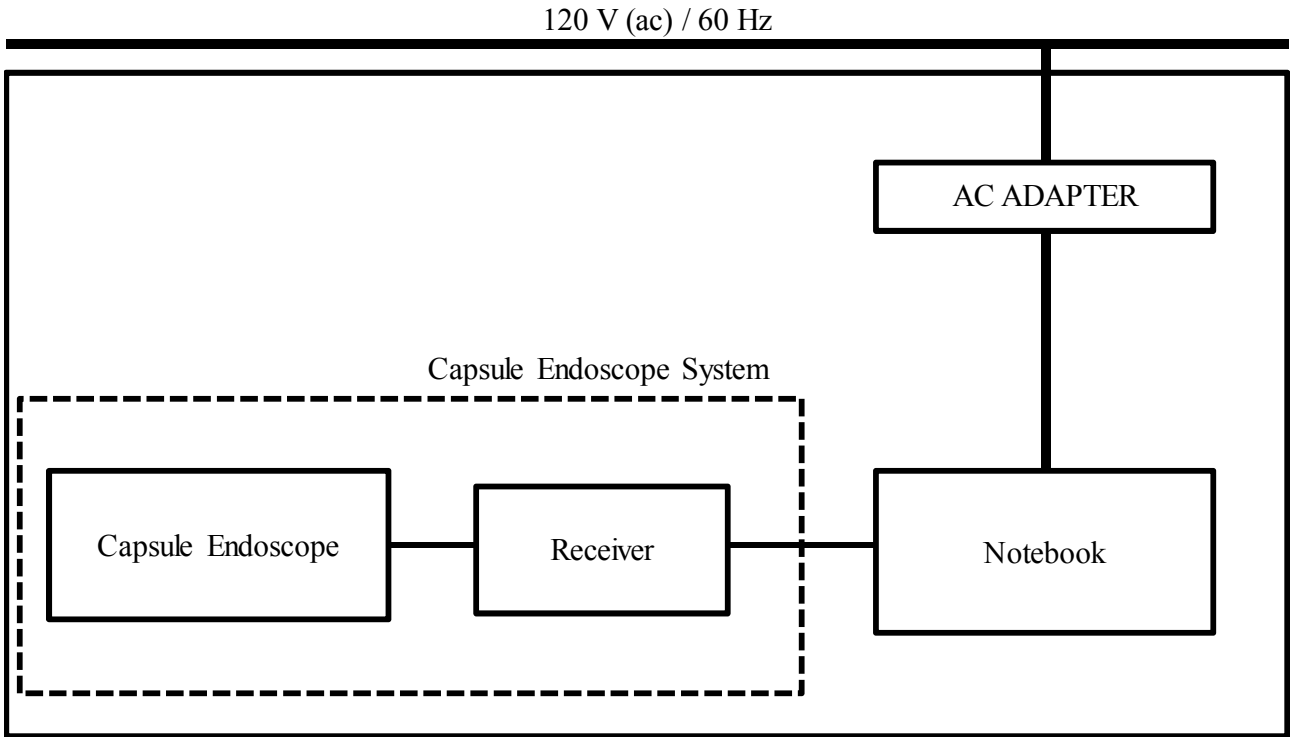
View in real time through the app on the iPad by wireless connection.

1.10 Configuration of Test System

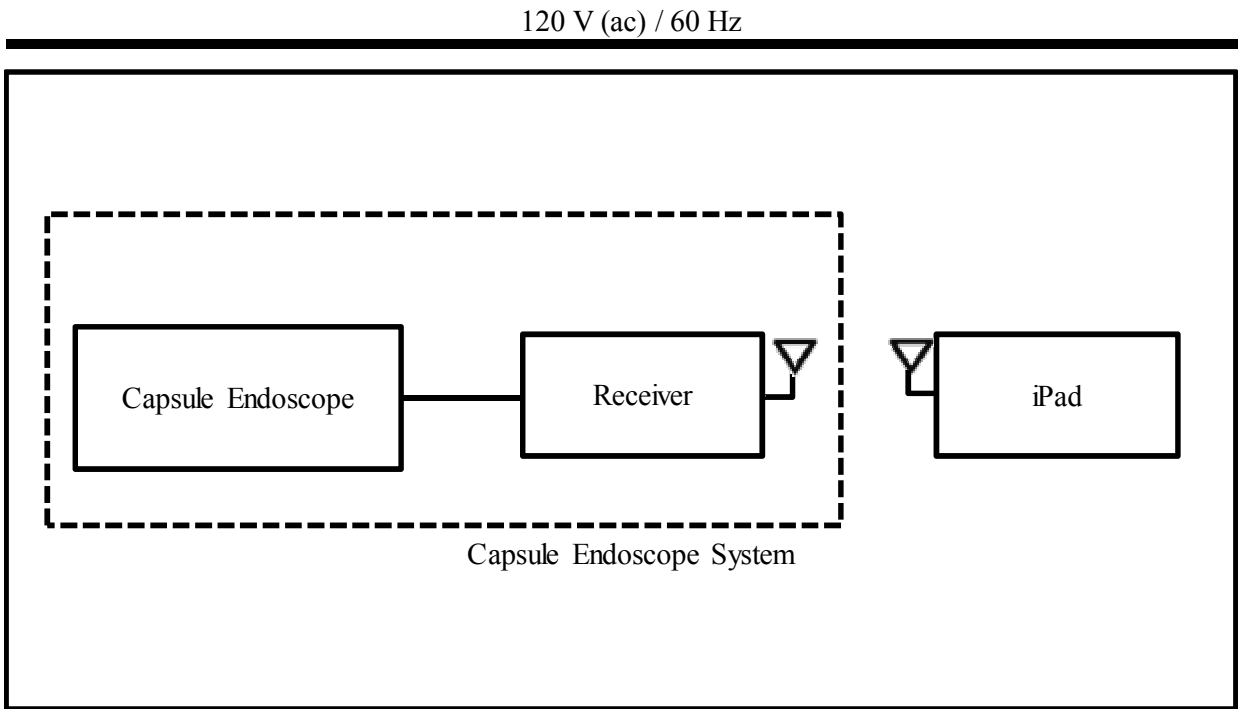
■ Charging mode



■ USB mode



■ Wireless mode



2. Summary of Tests

FCC Part Section(s)	Parameter	Test Condition	Status (note 1)
15.109(b)	Emission limits	Radiated	C
15.107(b)	Emission limits	Conducted	C

Note 1 : C=Complies N/C=Not Complies N/T=Not Tested N/A=Not Applicable

2.1 Conducted Emission Measurements

2.1.1 Test Methods

The power line conducted emission measurements were performed in a shielded enclosure, using the setup in accordance with ANSI C63.4-2009 conducted emission measurement procedure.

2.1.2 Test Equipments

Description	Manufacturer	Model Number	Serial Number	Cal. Due
EMI Test Receiver	R&S	ESHS10	844077/007	2014.07.03
LISN	R&S	ENV216	101137	2014.02.27
LISN	EMCO	3810/2	2228	2014.04.05
Electro wave Shieldroom	SEMITEC	-	-	-

2.1.3 Test Environments

Ambient Temperatures	Relative Humidity
See the data	See the data

2.1.4 Test Limits

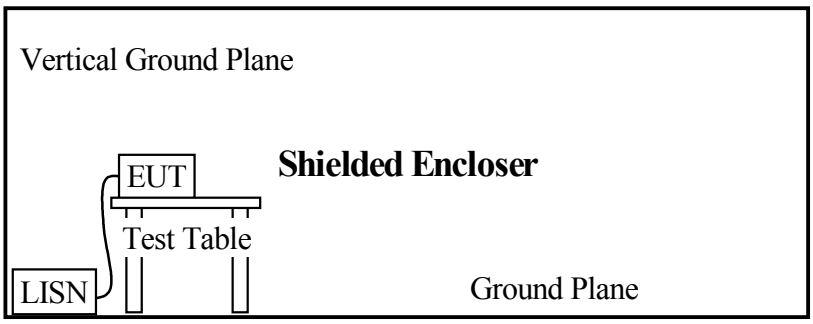
Frequency (㎒)	15.107 Conducted limits			
	Class B (dB㎶)		Class A (dB㎶)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 to 0.50	66.0 to 56.0	56.0 to 46.0	79.0	66.0
0.50 to 5.00	56.0	46.0	73.0	60.0
5.00 to 30.00	60.0	50.0	73.0	60.0

2.1.5 Test Procedure

Conducted emission levels were measured on each current-carrying line with the EMI TEST Receiver operating in the CISPR quasi-peak mode (or peak mode if applicable). The Receiver's 6 dB bandwidth was set to 9 kHz. The initial step in collecting conducted data is a EMI TEST Receiver peak scan of the measurement range. If the conducted emission exceed the average limit with the instrument set to the quasi-peak mode, the measurements are made in the average mode. The emission spectrum was scanned from 150 kHz to 30 MHz. The highest emission amplitudes relative to the appropriate limits were measured and have been recorded. Quasi-peak readings are distinguished with a "QP".

The conducted emission test was performed with the E.U.T exercise program loaded, and the emissions were scanned between 150 kHz to 30 MHz on the HOT side and NEUTRAL side, herein referred to as H and N, respectively.

2.1.6 Test Configuration



2.1.7 Test Results

According to the data in section 2.1.8, the E.U.T complied with the FCC 15.107 limits.

2.1.8 Test Data

■ Charging mode

Frequency [MHz]	Correction		Phase	Quasi peak			Average		
	LISN (dB)	Cable (dB)	Hot/ Neutral	Limit (dBμV/m)	Measure (dBμV/m)	Result (dBμV/m)	Limit (dBμV/m)	Measure (dBμV/m)	Result (dBμV/m)
0.192	9.580	0.016	H	63.950	53.930	53.930	53.950	40.410	40.410
0.195	9.580	0.016	N	63.821	50.870	50.870	53.821	36.630	36.630
0.255	9.570	0.016	N	61.593	42.870	42.870	51.593	30.110	30.110
0.258	9.580	0.016	H	61.496	44.120	44.120	51.496	32.140	32.140
0.321	9.570	0.016	H	59.681	43.070	43.070	49.681	31.930	31.930
0.387	9.570	0.016	N	58.128	35.840	35.840	48.128	23.660	23.660
0.513	9.570	0.016	N	56.000	32.760	32.760	46.000	21.980	21.980
0.516	9.570	0.016	H	56.000	32.340	32.340	46.000	23.180	23.180
0.642	9.580	0.016	N	56.000	31.630	31.630	46.000	23.250	23.250
0.645	9.570	0.016	H	56.000	30.480	30.480	46.000	24.080	24.080
0.774	9.570	0.016	H	56.000	27.930	27.930	46.000	23.520	23.520
3.783	9.600	0.016	N	56.000	27.000	27.000	46.000	23.650	23.650
8.402	9.650	0.016	N	60.000	16.400	16.400	50.000	9.120	9.120
8.753	9.637	0.016	H	60.000	15.740	15.740	50.000	10.330	10.330
16.286	9.746	0.016	N	60.000	24.580	24.580	50.000	19.020	19.020
18.590	9.928	0.016	H	60.000	26.890	26.890	50.000	21.210	21.210
18.914	9.798	0.016	N	60.000	30.980	30.980	50.000	21.560	21.560
29.624	9.767	0.016	H	60.000	40.470	40.470	50.000	32.380	32.380

■ USB mode

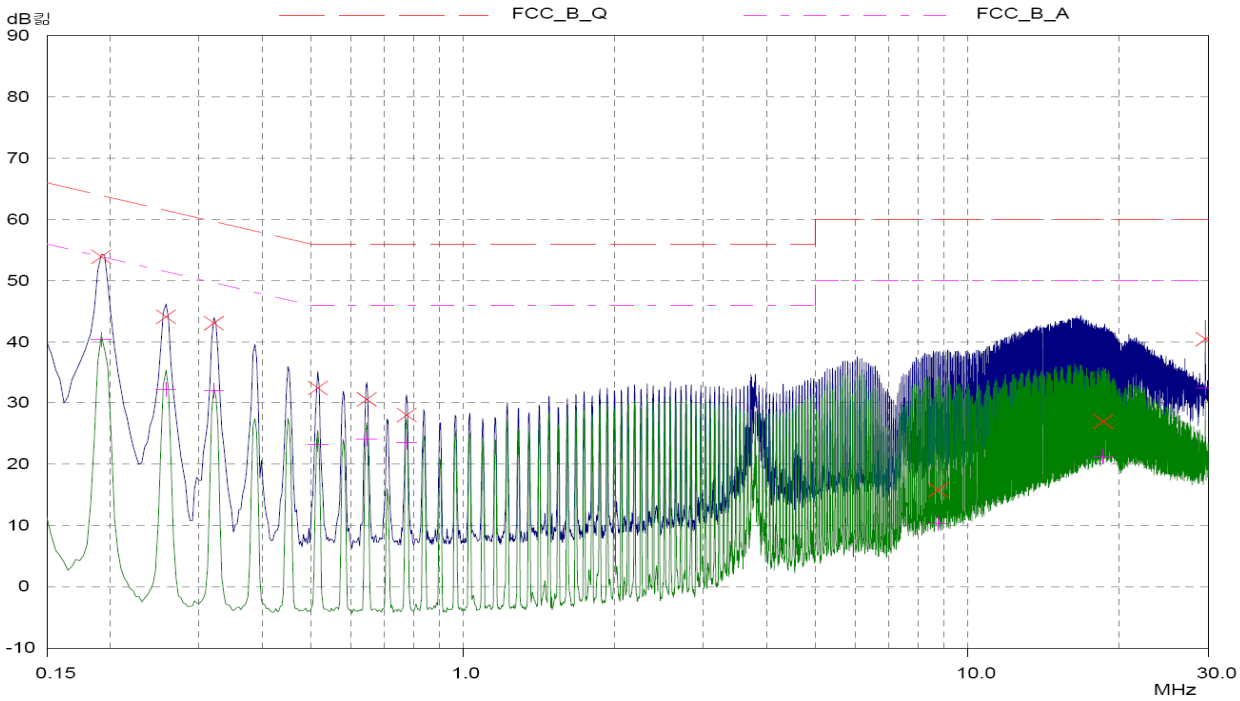
Frequency [MHz]	Correction		Phase Hot/ Neutral	Quasi peak			Average		
	LISN (dB)	Cable (dB)		Limit (dBμV/m)	Measure (dBμV/m)	Result (dBμV/m)	Limit (dBμV/m)	Measure (dBμV/m)	Result (dBμV/m)
0.159	9.580	0.016	N	65.516	49.800	49.800	55.516	31.260	31.260
0.183	9.580	0.016	N	64.348	45.650	45.650	54.348	26.660	26.660
0.195	9.580	0.016	H	63.821	48.080	48.080	53.821	33.270	33.270
0.204	9.570	0.016	N	63.446	42.480	42.480	53.446	26.710	26.710
0.258	9.580	0.016	H	61.496	39.840	39.840	51.496	27.410	27.410
0.306	9.570	0.016	H	60.078	37.310	37.310	50.078	24.940	24.940
1.401	9.580	0.016	N	56.000	27.630	27.630	46.000	18.500	18.500
1.743	9.580	0.016	N	56.000	29.870	29.870	46.000	21.100	21.100
1.998	9.570	0.016	H	56.000	30.420	30.420	46.000	20.750	20.750
2.307	9.590	0.016	N	56.000	25.050	25.050	46.000	16.530	16.530
3.144	9.600	0.016	H	56.000	26.040	26.040	46.000	19.970	19.970
3.930	9.600	0.016	H	56.000	27.800	27.800	46.000	23.050	23.050
10.229	9.650	0.016	H	60.000	33.610	33.610	50.000	23.590	23.590
10.382	9.670	0.016	N	60.000	32.430	32.430	50.000	24.080	24.080
17.627	9.772	0.016	N	60.000	24.490	24.490	50.000	18.850	18.850
19.499	10.014	0.016	H	60.000	28.920	28.920	50.000	16.850	16.850
23.999	9.838	0.016	N	60.000	27.650	27.650	50.000	22.510	22.510
29.624	9.767	0.016	H	60.000	34.500	34.500	50.000	27.430	27.430

Temperature: 20.8 ℃ Humidity: 38 % R.H. Test Date: 11. 15. 2013 Tested by: Ju Won, Yun

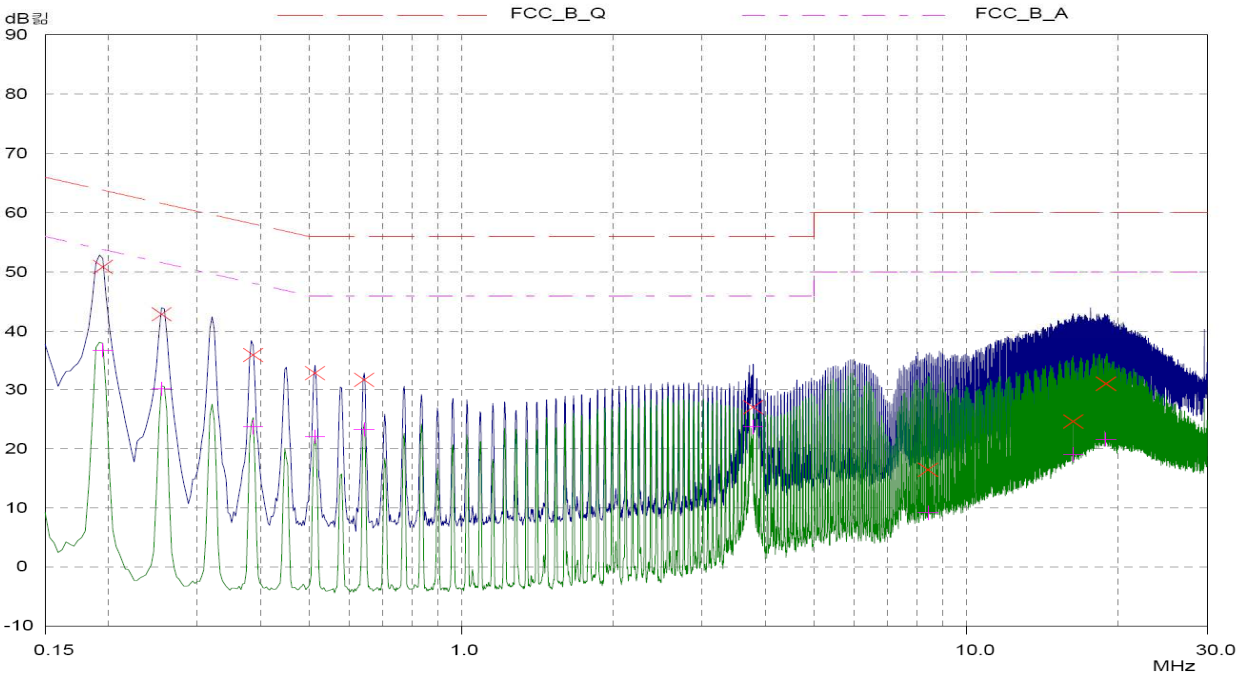
2.1.9 Plots of Test Data

■ Charging mode

Polarization: HOT

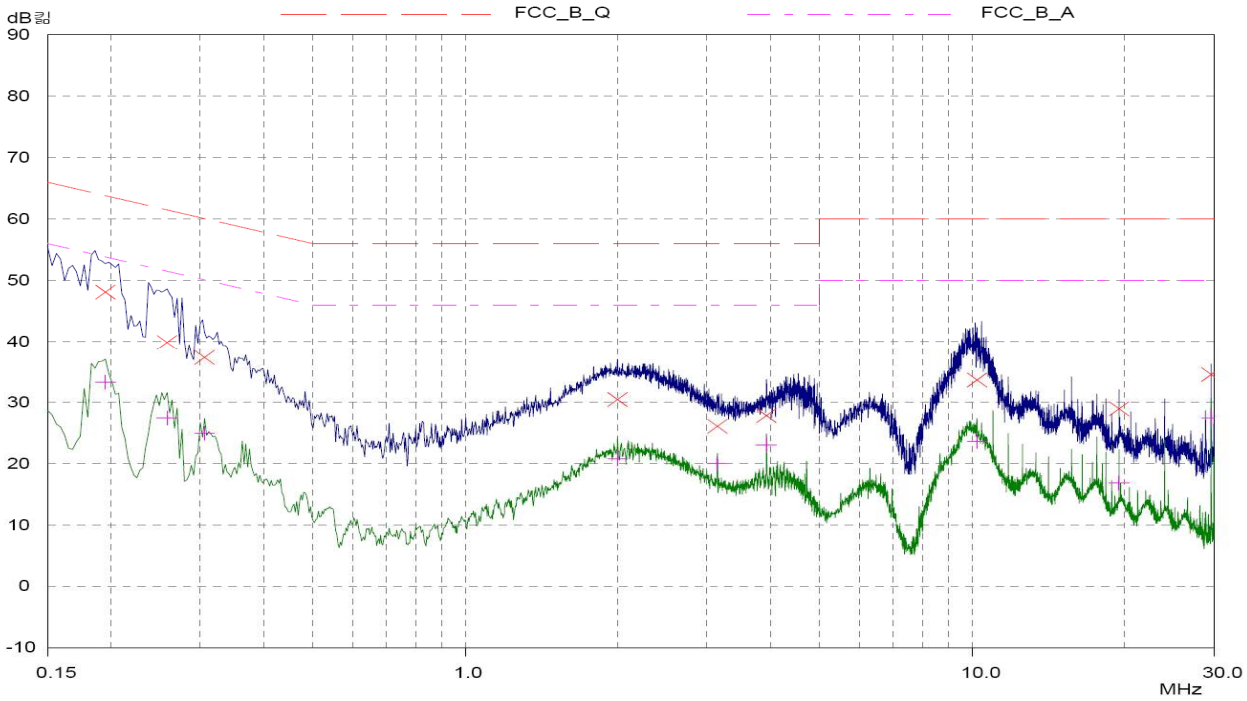


Polarization: NEUTRAL

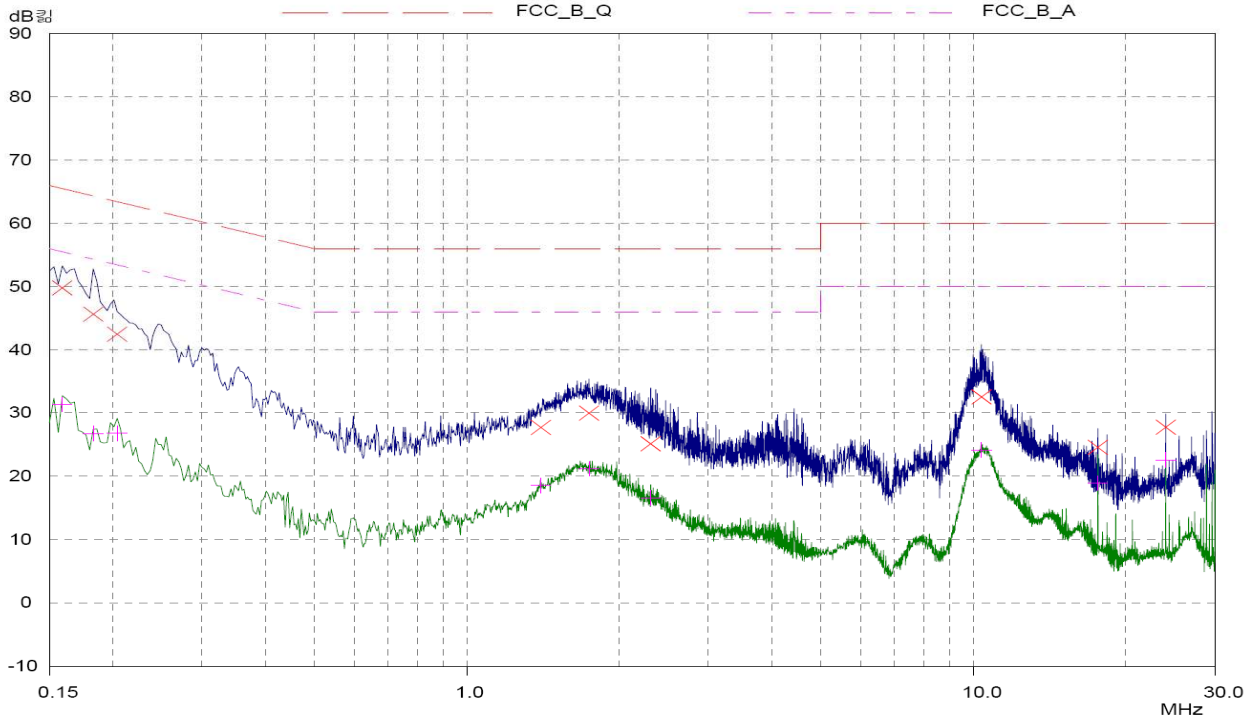


■ USB mode

Polarization: HOT



Polarization: NEUTRAL



2.2 Radiated Emission Measurements

2.2.1 Test Methods

The radiated emission measurements were performed in Open Area Test Site (OATS) and 3 m full chamber. using the setup in accordance with ANSI C63.4-2009 radiated emission measurement procedure.

2.2.2 Test Equipments

Description	Manufacturer	Model Number	Serial Number	Cal. Due
EMI TEST Receiver	R&S	ESVS10	826008/014	04.09.2014
EMC Analyzer	E7405A	Agilent	US41160306	08.16.2014
Loop Antenna	HFH2-E2.335	R&S	82632	04.25.2015
Trilog-Broadband ANT	Schwarzbeck	VULB 9168	9168-385	05.09.2014
Brodband Coaxial Preamplifier	BB9718	Schwarzbeck Mess-Elektronik	9718-245	09.23.2014
Broadband Amplifier	SCHWARZBECK MESS-ELEKTRONIK	BBC 9721	9721-003	09.04.2014
DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	414	02.28.2015
BroadBand-Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9170	9170-551	09.04.2015

2.2.3 Test Environments

Ambient Temperatures	Relative Humidity
see the data	see the data

2.2.4 Test Limits

Frequency (㎒)	15.109 Radiated emission limits			
	Class B @ 3 m		Class A @ 10 m	
	(dB㎶/m)	(㎶/m)	(dB㎶/m)	(㎶/m)
30 to 88	40.0	100	39.0	90
88 to 216	43.5	150	43.5	150
216 to 960	46.0	200	46.5	210
above 960	54.0	500	49.5	300

Frequency (㎒)	15.109 Radiated emission limits			
	Class B @ 3 m (dB㎶/m)		Class A @ 3 m (dB㎶/m)	
	PK	AV	PK	AV
above 1 000	74	54	80	60

2.2.5 Test Procedure

Before final measurements of radiated emission were made at the OATS, the E.U.T was scanned in semi-anechoic chamber in order to determine its emission spectrum signature. The physical arrangement of the test system and associated cabling was varied in order to determine the effect on the E.U.T's emission in amplitude, direction and frequency. This process was repeated during final radiated emission measurements at the OATS range, at each frequency, in order to ensure that maximum emissions amplitudes were attained.

The radiated emission test was performed with E.U.T exercise program loaded, and the emissions were scanned between 30 ㎒ to 1 000 ㎒ using a R&S ESVS10 EMI TEST Receiver and 1 000 ㎒ to 26 000 ㎒ using a E7405A EMC ANALYZER. The EMI TEST Receiver's 6 ㏈ bandwidth was set to 120 ㎑ and 1 ㎒, and EMI TEST Receiver was operated in the CISPR quasi-peak detection mode.

At each frequency, the E.U.T was rotated 360 degrees, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum emission levels. Measurements were taken using both HORIZONTAL and VERTICAL antenna polarization, herein referred to as H and V, respectively.

2.2.6 Field Strength Calculation

F.S = Field Strength

M.R = Meter Reading

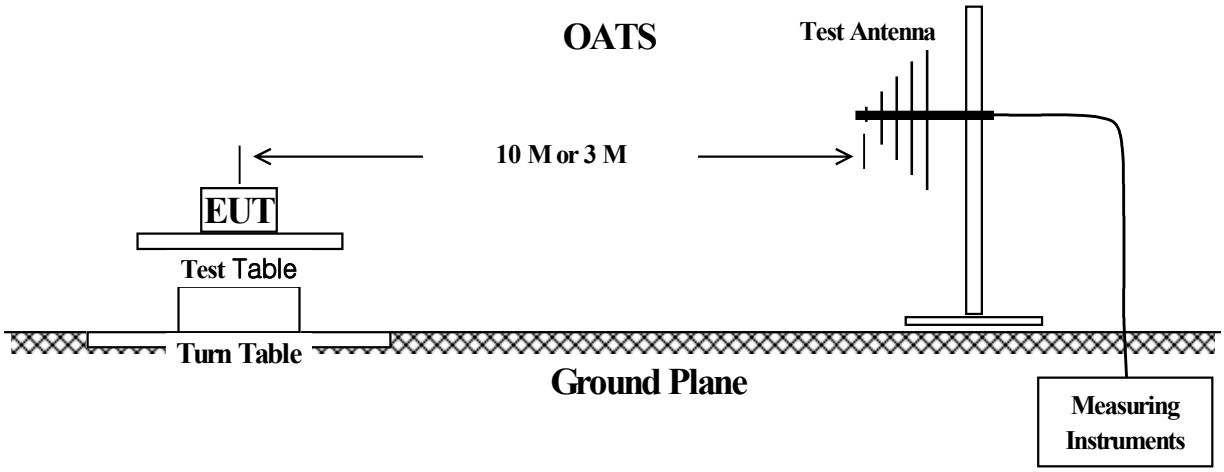
A.F = Antenna Factor

C.L = Cable Loss

A.G= Amplifier Gain(35dB)

* Below 1 ㎓ : F.S(㏈㎶/m) = M.R(㏈㎶) + [A.F(㏈/m) + C.L(㏈)]
* Above 1 ㎓ : F.S(㏈㎶/m) = M.R(㏈㎶) + [A.F(㏈/m) + C.L(㏈)] - A.G(㏈)

2.2.7 Test Configuration



2.2.8 Test Results

According to the data in section 2.2.9, the E.U.T complied with the FCC 15.109 limits.

2.2.9 Test Data

■ Charging mode

Indicated		Antenna		Correction Factor		Results	Class A Limit	Margin
Frequency (㎒)	Reading Value (dBμV/m)	Polar. (H/V)	Height (m)	Ant. (dB)	Cable (dB)	(dBμV/m)	(dBμV/m)	(dB)
63.593	13.200	V	1.000	12.590	1.880	27.670	40.000	12.330
161.892	6.000	H	1.650	13.190	3.210	22.400	43.500	21.100
179.310	10.500	V	1.150	11.770	3.400	25.670	43.500	17.830
179.370	6.700	H	1.980	11.760	3.400	21.860	43.500	21.640
233.682	6.600	V	1.870	11.140	3.970	21.710	46.000	24.290
383.145	7.900	H	2.130	15.210	5.320	28.430	46.000	17.570
455.750	7.000	V	1.740	16.790	5.880	29.670	46.000	16.330
469.480	6.900	H	2.070	17.090	5.980	29.970	46.000	16.030

■ USB mode

Indicated		Antenna		Correction Factor		Results	Class A Limit	Margin
Frequency (㎒)	Reading Value (dB㎶/m)	Polar. (H/V)	Height (m)	Ant. (dB)	Cable (dB)	(dB㎶/m)	(dB㎶/m)	(dB)
96.000	28.200	H	2.340	8.320	2.390	38.910	43.500	4.590
96.000	28.500	V	1.000	8.320	2.390	39.210	43.500	4.290
192.012	21.800	H	2.150	10.610	3.540	35.950	43.500	7.550
239.970	24.600	H	1.840	11.370	4.030	40.000	46.000	6.000
288.101	23.600	H	1.670	13.010	4.470	41.080	46.000	4.920
360.024	21.000	H	2.080	14.710	5.120	40.830	46.000	5.170
360.087	21.200	V	1.000	14.710	5.120	41.030	46.000	4.970
431.989	18.500	H	1.940	16.270	5.700	40.470	46.000	5.530
432.054	15.300	V	1.670	16.280	5.700	37.280	46.000	8.720
480.112	13.400	V	2.140	17.320	6.060	36.780	46.000	9.220

■ WIFI mode

Indicated		Antenna		Correction Factor		Results	Class A Limit	Margin
Frequency (㎒)	Reading Value (dB㎶/m)	Polar. (H/V)	Height (m)	Ant. (dB)	Cable (dB)	(dB㎶/m)	(dB㎶/m)	(dB)
96.000	28.300	H	2.000	8.320	2.390	39.010	43.500	4.490
96.000	28.200	V	1.000	8.320	2.390	38.910	43.500	4.590
288.052	20.800	H	1.620	13.010	4.470	38.280	46.000	7.720
335.934	20.900	H	1.850	14.180	4.900	39.980	46.000	6.020
360.012	20.400	H	1.870	14.710	5.120	40.230	46.000	5.770
360.106	20.600	V	1.380	14.710	5.120	40.430	46.000	5.570
432.025	18.600	H	2.110	16.270	5.700	40.570	46.000	5.430
432.050	16.500	V	1.720	16.280	5.700	38.480	46.000	7.520
479.981	17.300	H	2.350	17.320	6.060	40.680	46.000	5.320
527.840	14.800	V	1.880	18.270	6.420	39.490	46.000	6.510
527.965	16.200	H	1.980	18.270	6.420	40.890	46.000	5.110

Temperature: 10.0 ℃ Humidity: 40 % R.H. Test Date: 11. 15. 2013 Tested by: Ju Won, Yun

3. Product Labelling Requirements

3.1 FCC Statement

Product shall be labelled the following statement on the user's manual:

> This device complies with part 15 of the FCC Rules. Operation in subject to the fol-lowing two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference re-ceived, including interference that may cause undesired operation.

Note : When the device is so small or for such use that it is not practicable to place the statement on it, the information shall be placed in prominent location in the instruction manual or pamphlet supplied to the user. However, the FCC identifier or unique identifier, as appropriate, must be displayed on the device.

Note : This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

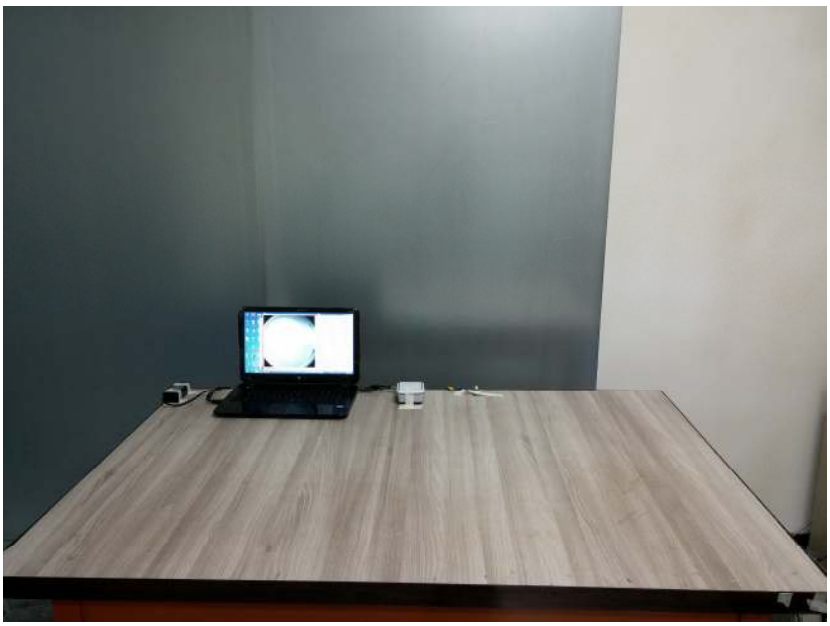
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

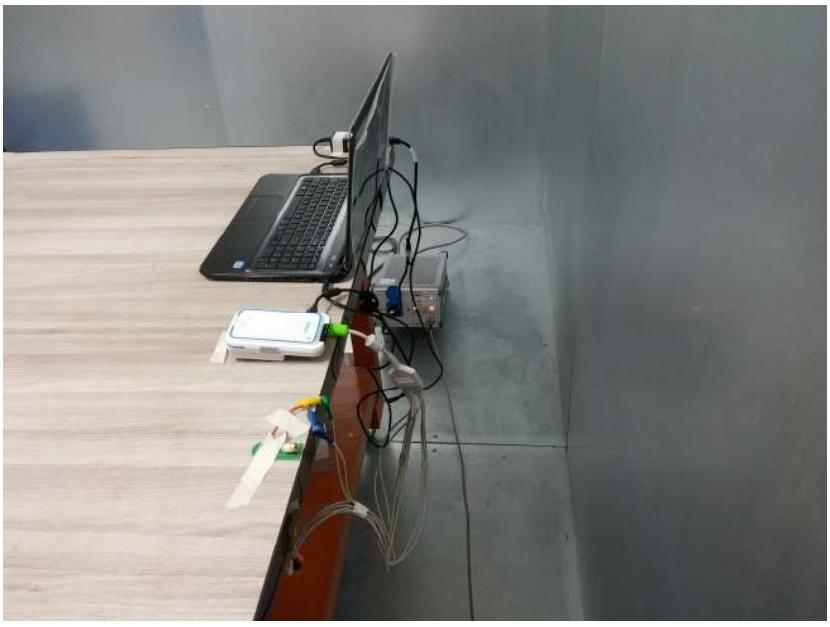
4. Test Setup Photographs

4.1 Conducted Emission

■ Charging mode

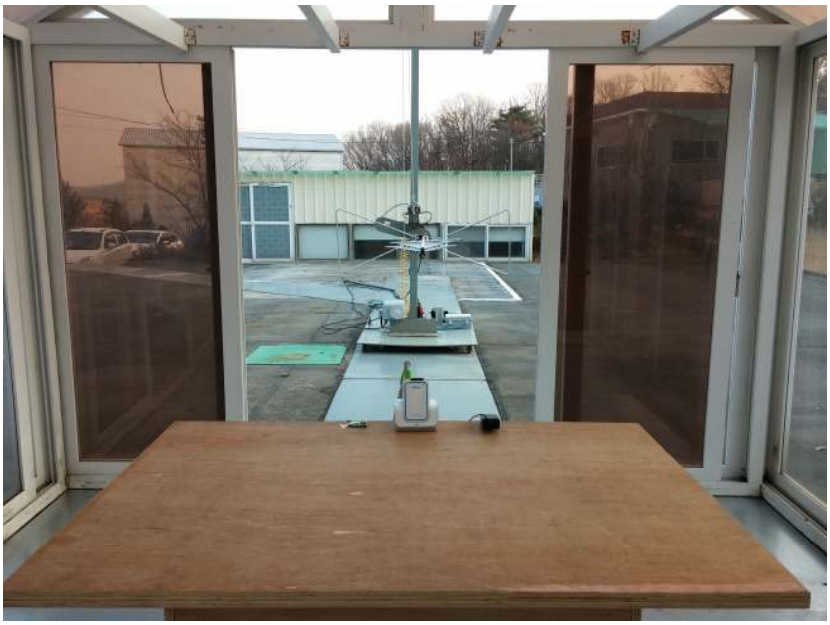
■ USB mode





4.2 Radiated Emission

■ Charging mode



■ USB mode

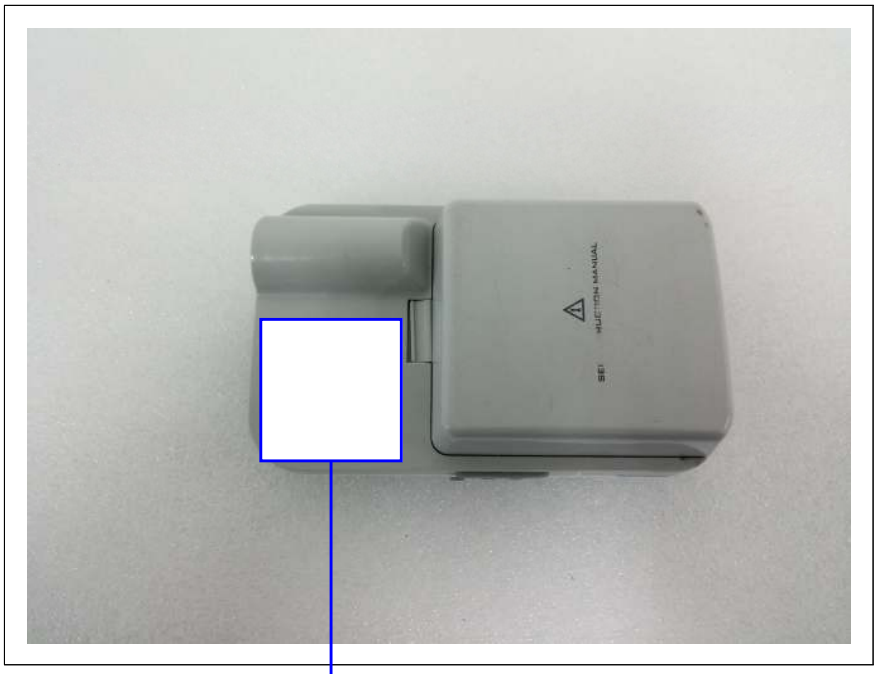
■ WIFI mode

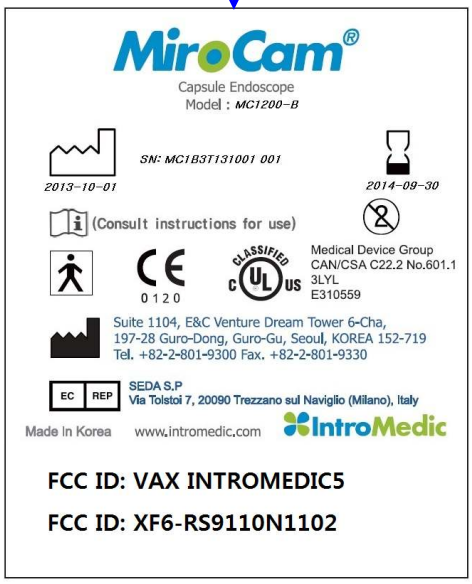
5. External Photographs

5.1 E.U.T: Front View

5.2 E.U.T: Rear View

5.3 E.U.T: Label View





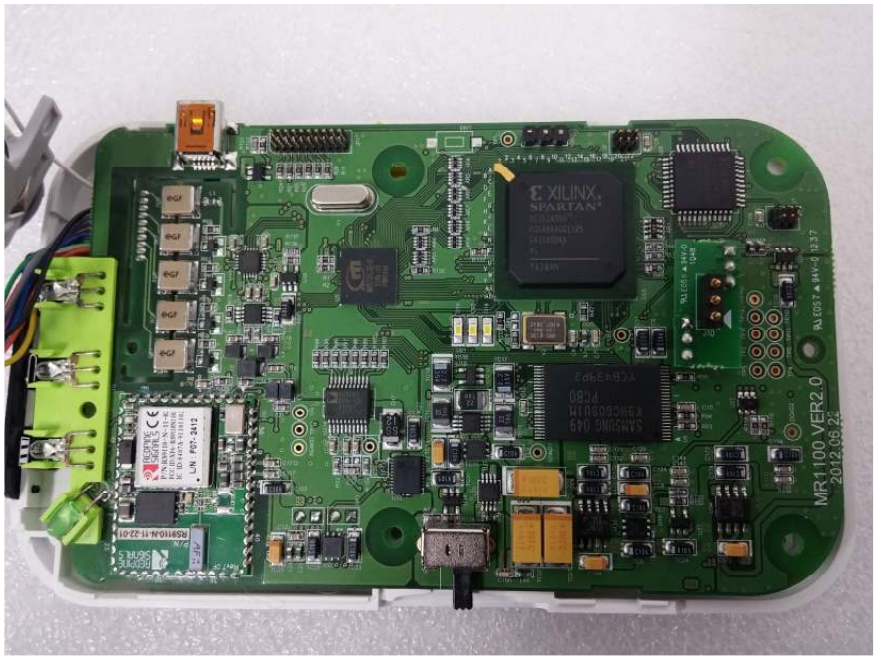
This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

Note : When the device is so small or for such use that it is not practicable to place the statement on it, the information shall be placed in prominent location in the instruction manual or pamphlet supplied to the user. However, the FCC identifier or unique identifier, as appropriate, must be displayed on the device.

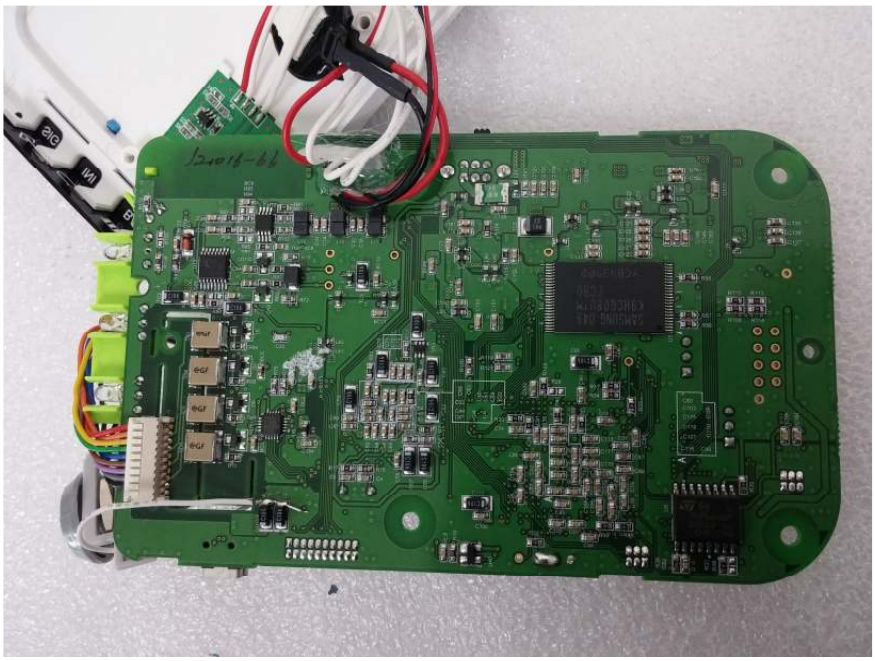
6. Internal Photographs

Receiver

[INSIDE]



[MAIN BOARD FRONT VIEW]



[MAIN BOARD REAR VIEW]

[SUB BOARD FRONT VIEW]

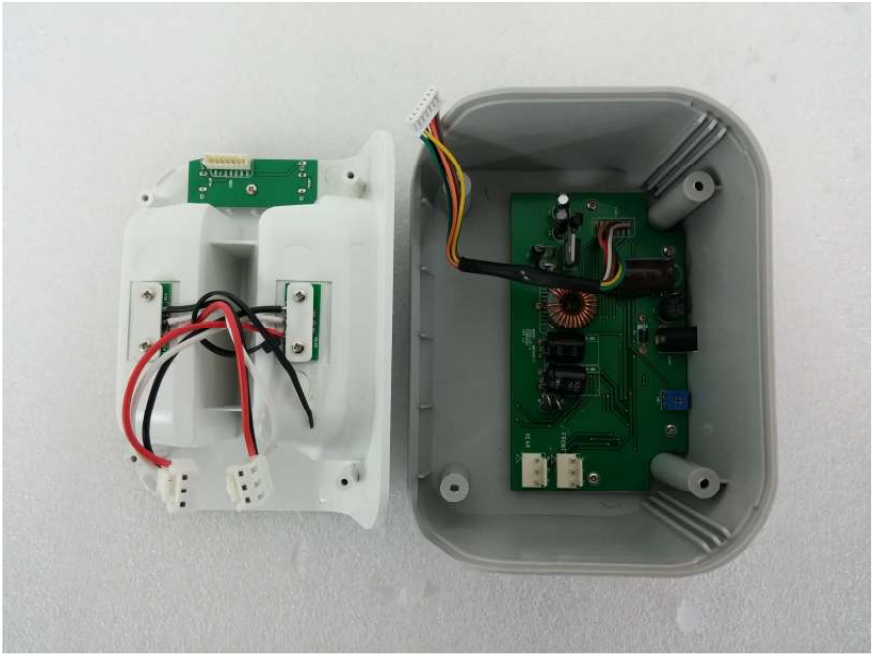
Capsule Endoscope

[INSIDE]

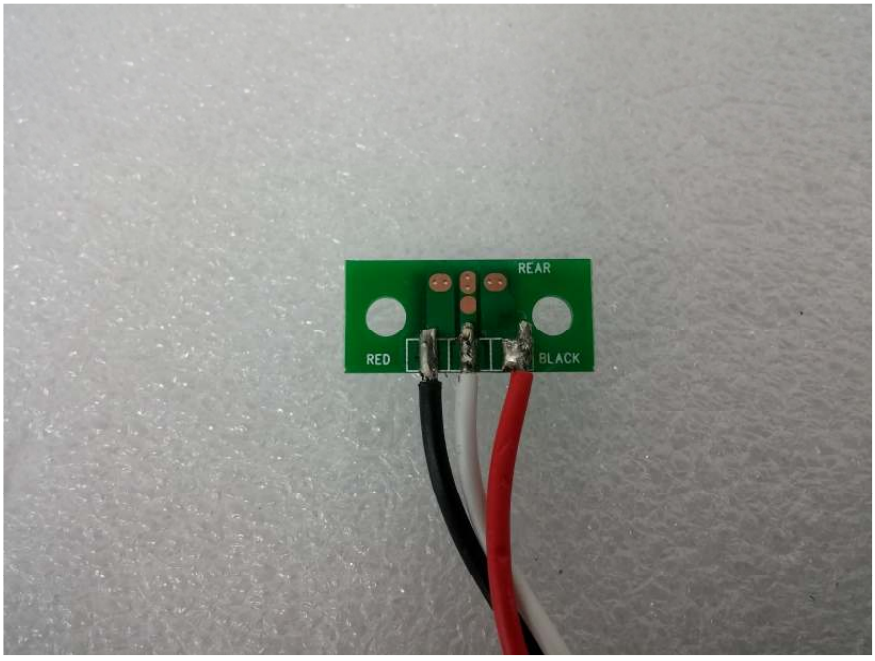
[MAIN BOARD FRONT VIEW]

[MAIN BOARD REAR VIEW]

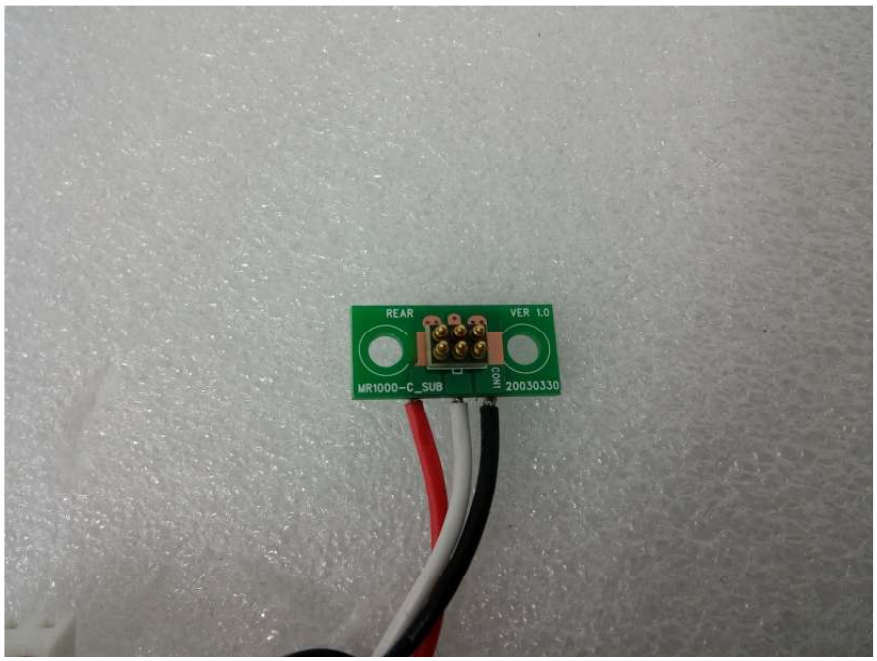
Charger



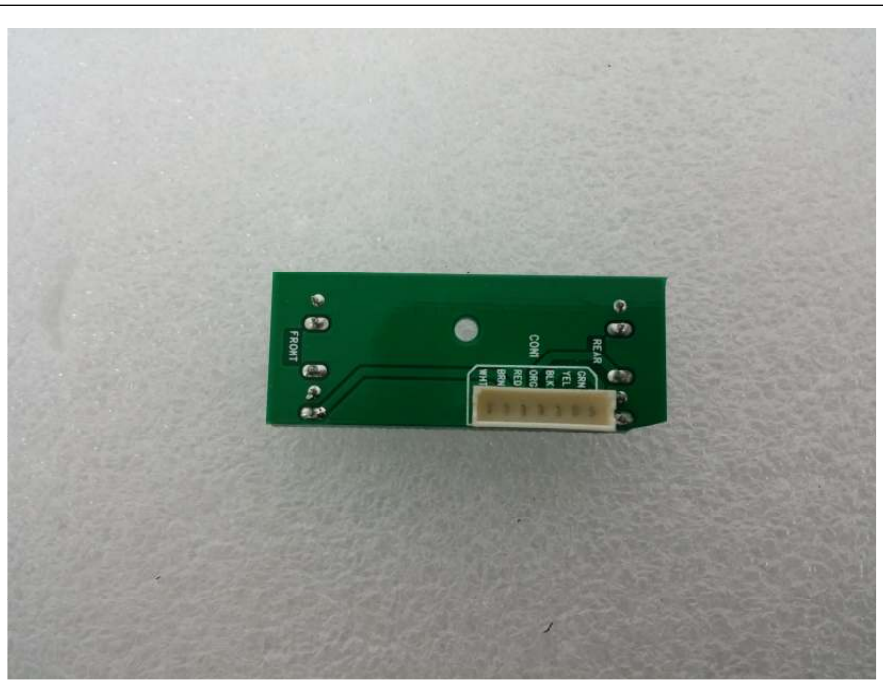
[INSIDE]



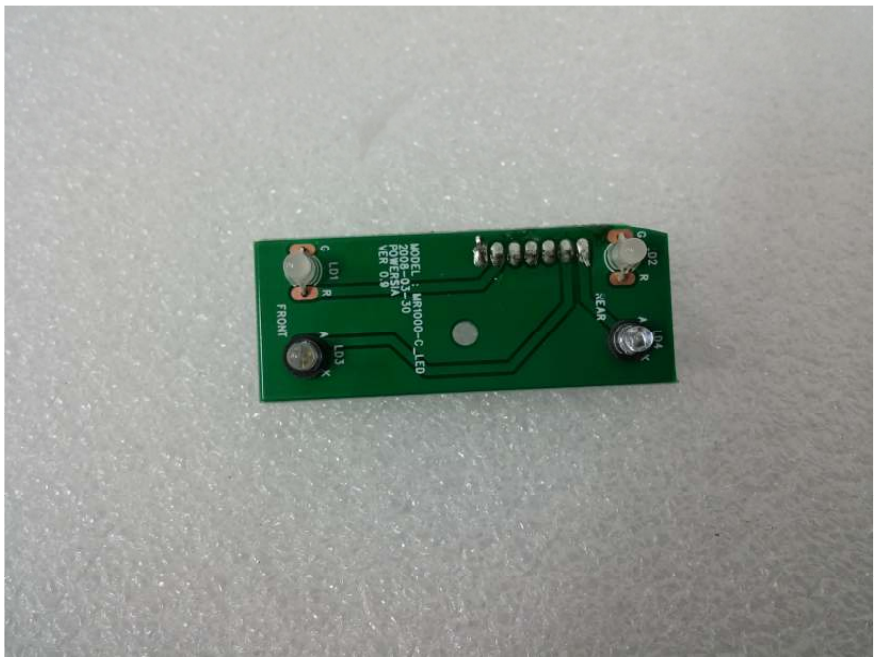
[SUB BOARD1 FRONT VIEW]



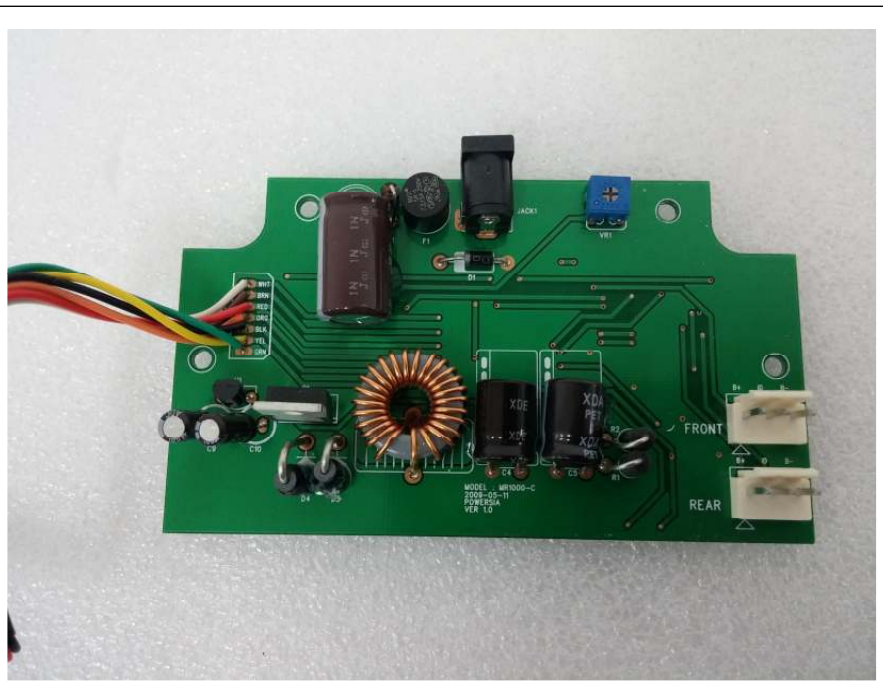
[SUB BOARD1 REAR VIEW]



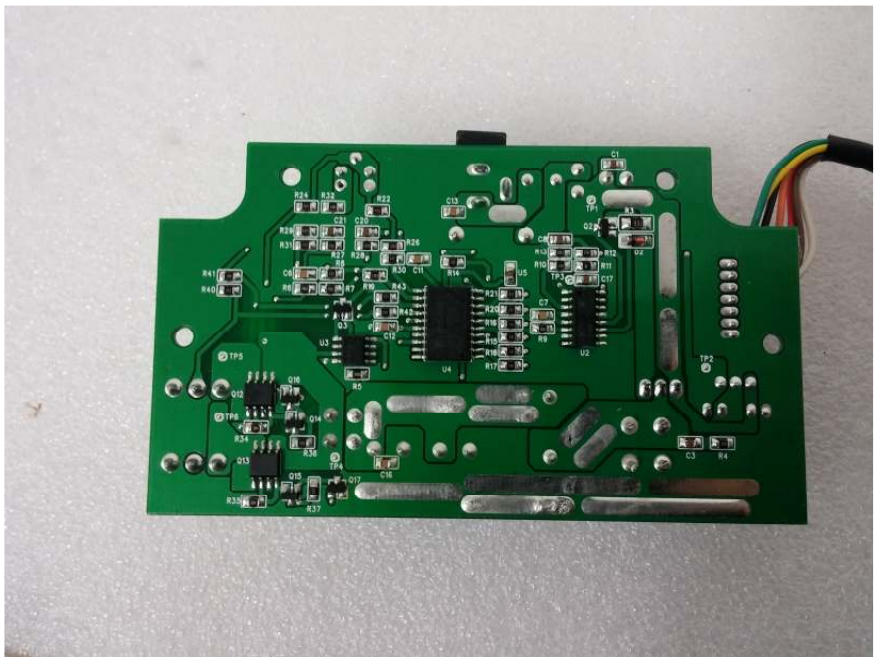
[SUB BOARD2 FRONT VIEW]



[SUB BOARD2 REAR VIEW]



[MAIN BOARD FRONT VIEW]



[MAIN BOARD REAR VIEW]