EMC TEST REPORT

Applicant	: Miwa Lock Co., Ltd 3-1-12,Shiba, Minato-ku, Tokyo, Japan, 105-8510
Type of Equipment	: ALV2S
Model Number	: ALV2 (Slim)
FCC ID	: VBU-ALV2S
Standard	: 47 CFR Part 15 Subpart C Section 15.225
Receipt Date of Sample	: 2010-07-22
Date Tested	: 2010-08-02, 2010-08-03 and 2011-04-19
Date Report Issued	: 2011-05-31
Report Number	: EMC11125

APPROVED by:

Tetsushi Yamaguchi / Manager

TESTS SUPERVISED by:

H. Fujimoto

Hidemasa Fujimoto

IPS Corporation

1878-1 Harumiya Ono Tatsuno-machi, Kamiina-gun, Nagano-ken, 399-0601, Japan.

Phone: +81-266-44-5200 Fax: +81-266-44-5300

KF

Contents

Page

1 GENERAL INFORMATION

1.1 Product Description and Specification

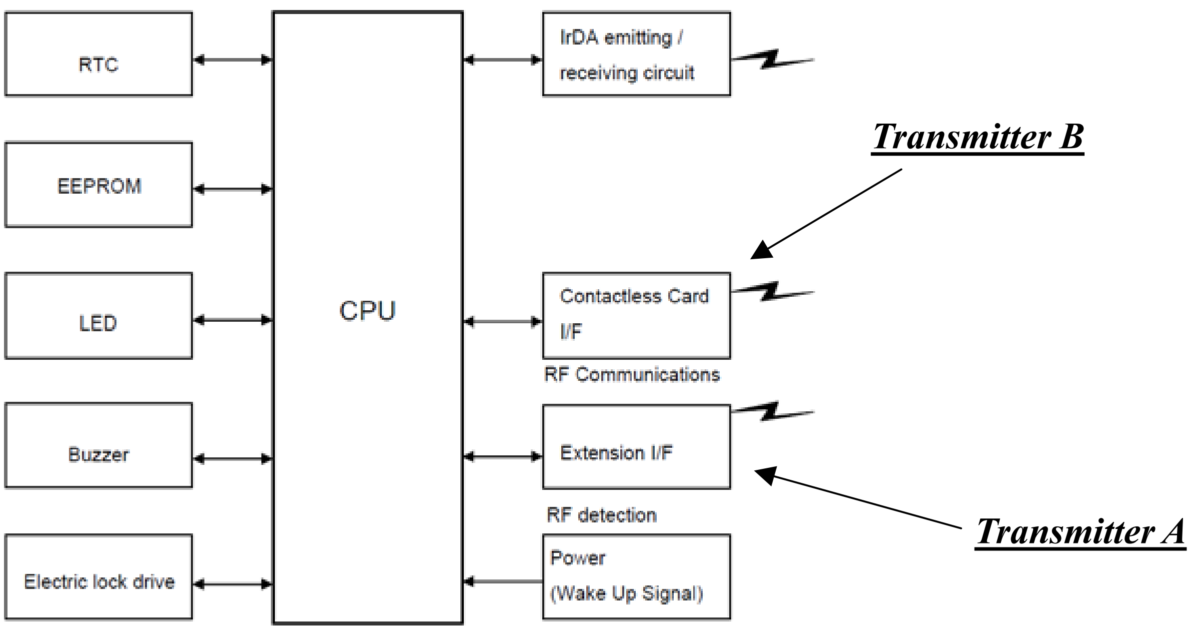
The Equipment Under Test (EUT) Model: ALV2S is a low power transmitter for hotel card lock and its fundamental frequency is 13.56MHz. Its has two 13.56MHz transmitters. One is for detection of the approach of RFID card, the other is for communication with RFID card. They do not work simultaneity.

Model No.	ALV2S(Slim)
Serial No.	Sample 2
Product Type	Pre-production
Rated Power	3.0VDC (AA type Alkaline batteries)
Transmitting Frequency	Transmitter A : 13.56MHz Transmitter B : 13.56MHz
Modulation	Transmitter A : Non modulation Transmitter B : ASK

Operation mode

Detection mode	Detecting the approach of RFID card (by using transmitter A)
Communication mode	Communication with RFID card (by using transmitter B)

< Block Diagram >



1.2 Summary of Test Result

Transmitter A (Detection mode)

Item	Specification	Deviation	Worst Margin	Results	Remarks
Radiated Emission (Fundamental)	15.225(a)	N/A	56.9dB	PASS	
	15.225(b)	N/A	54.3dB	PASS	
	15.225(c)	N/A	43.4dB	PASS	
Radiated Emission (Spurious)	15.225(d) 15.209	N/A	11.9dB	PASS	
Frequency Stability	15.225(e)	N/A	0.00054%	PASS	

Transmitter B (Communication mode)

Item	Specification	Deviation	Worst Margin	Results	Remarks
Radiated Emission (Fundamental)	15.225(a)	N/A	42.7dB	PASS	
	15.225(b)	N/A	42.7dB	PASS	
	15.225(c)	N/A	43.3dB	PASS	
Radiated Emission (Spurious)	15.225(d) 15.209	N/A	10.7dB	PASS	
Frequency Stability	15.225(e)	N/A	0.00021%	PASS	

1.3 Measurement Uncertainty

Radiated Emission Test	Antenna	Frequency range	Polarization	10m U (dB)	3m U (dB)
Radiated Emission	Biconical (BBA9106)	30MHz~300MHz	Horizontal	3.9	3.9
			Vertical	4.1	4.0
	Log.-Periodic (UHALP9108-A)	300MHz~1GHz	Horizontal	4.1	4.1
			Vertical	4.2	4.2
Magnetic Field Emission	Loop (HLA6120)	9kHz~30MHz	-	-	2.6

Note : Coverage factor k=2
: 1) Applied for Code of Federal Regulation 47 Part 15

1.4 Tested Systems Details

EUT

Equipment ID	Equipment Name	Manufacturer	Model No.	Serial No.	Note
A	ALV2(Slim)	MIWA	ALV2S	Sample 2	

Peripherals

Equipment ID	Equipment Name	Manufacturer	Model No.	Serial No.	FCC ID & Note
B	DCU Power supply	KIKUSUI	PAN35-5A	-----	----

1.5 Test Facility

The test facilities are located in following places of IPS Corporation.

- EMC Center
  1878-1 Harumiya Ono, Tatsuno-machi, Kamiina-gun, Nagano-ken 399-0601 Japan.
- Open Test Site
  4593 Hosohora Ono, Tatsuno-machi, Kamiina-gun, Nagano-ken 399-0601 Japan.

Above facilities have been registered at FCC with registration number 171180. Also test facilities are accredited under the National Voluntary Laboratory Accreditation Program (NVLAP) by United States Department of Commerce, National Institute of Standard and Technology (NIST) for satisfactory compliance with criteria established in Title 15, Part 285 Code of Federal Regulations. These criteria encompass the requirements of ISO/IEC 17025 and the relevant requirements of ISO 9002:1994 as suppliers of calibration or test results. Accreditation awarded for specific services, ANSI C63.4 with FCC 47CFR Part 15B and other, listed on the Scope of Accreditation for: ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS.
NVLAP LAB CODE: 200012-0 Effective until: December 31, 2011.

2 SYSTEM TEST CONFIGURATION

2.1 Justification

- All tests were performed without any deviation from the ANSI C63.4:2003.
- The system was configured for testing a typical fashion (as a customer would normally use it). The test data Radiated emission are presented for the "worst case" measurements, that test program as clause 2.2 should be working and the cable routing was attempted to maximize the emission.
- EUT was tested in three orthogonal orientation for Radiated emission in order to present "the worst case".
- EUT was set to transmit continuously during test by using one of two RF circuit.

2.2 Special Accessories

None.

2.3 Equipment Conditions

The condition at the time of receipt of EUT:	Good
The condition at the time of return of EUT:	Good
Limited conditions:	None

EUT has a DIP switch which can control to set to transmit 13.56MHz continuously.
This DIP switch has placed for test purpose only.

3 RADIATED EMISSION TEST 0.15MHz-30MHz (Part15.225(a),(b),(c))

3.1 Test Setup

- The test setup was made according to ANSI C63.4:2003.
- The table size was 0.8 m high×1.8 m wide×1.0 m deep.

3.2 Test Instrumentation

Test Date:2010-07-25

Equipment	Manufacturer	Model	S/N	Calibration	
				Date	Due
Semi-Anechoic Chamber	Otsuka Science	10m	No.3	2010-02-04	2011-02-28
EMI Test Receiver	Rohde & Schwarz	ESCS30	836858/002	2010-04-21	2011-04-30
Spectrum Analyzer	ADVANTEST	R3132	131201410	2009-11-26	2010-11-30
Loop Antenna	Chase	HLA6120	1131	2010-04-01	2011-04-30
Cable System	IPS Corporation	CE(1)	N/A	2009-10-28	2010-10-31

Test Date:2011-04-19

Equipment	Manufacturer	Model	S/N	Calibration	
				Date	Due
Semi-Anechoic Chamber	Otsuka Science	10m	No.3	2011-02-07	2012-02-28
EMI Test Receiver	Rohde & Schwarz	ESCS30	836858/002	2011-04-12	2012-04-30
Spectrum Analyzer	Agilent	N9020A	MY49100247	2010-06-02	2011-06-30
Loop Antenna	Chase	HLA6120	1131	2011-03-31	2012-03-31
Cable System	IPS Corporation	RE(28)	N/A	2011-02-04	2012-02-28

3.3 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:-

$$F\ S = RA + c.f. = RA + AF + CL - AG$$

c.f.	Correction Factor	AF	Antenna Factor
FS	Field Strength (Emission Level - Result)	CL	Cable Loss
RA	Receiver Amplitude (Reading Level)	AG	Amplifier Gain or Attenuator Loss

This measurement was performed at distance of 3m. The limit was extrapolated by using the square of an inverse linear distance extrapolation factor (40 dB/decade).Also the field strength is calculated by converting 30m and 3m distance limit.

3.4 Test Detail

Test data and spectrum chart : Refer to section 6.1. and 6.2

Test configuration photo: Refer to section 7.1

4 RADIATED EMISSION TEST 30MHz – 1000MHz (Part 15.209, 225(d))

4.1 Test Setup

- The test setup was made according to ANSI C63.4:2003.
- The table size was 0.8 m high×1.8 m wide×1.0 m deep.

4.2 Test Instrumentation

Equipment	Manufacturer	Model	S/N	Calibration	
				Date	Due
Semi-Anechoic Chamber	Otsuka Science	3m	No.2	2009-12-25	2010-12-31
EMI Test Receiver	Rohde & Schwarz	ESIB40	100208	2010-06-04	2011-06-30
Biconical Antenna	Schwarzbeck	BBA9106	1586	2010-05-08	2011-05-31
Log.-Periodic Antenna	Schwarzbeck	UHALP9108-A	0942	2010-06-03	2011-06-30
Cable System	IPS Corporation	RE(33)	N/A	2010-02-24	2011-02-28

4.3 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:-

$$F\,S = RA + c.f. = RA + AF + CL - AG$$

c.f.	Correction Factor	AF	Antenna Factor
FS	Field Strength (Emission Level - Result)	CL	Cable Loss
RA	Receiver Amplitude (Reading Level)	AG	Amplifier Gain or Attenuator Loss

4.4 Test Detail

4.4.1 Detection Mode

EUT was tested in three orthogonal orientations and it was found that “Pattern 2” orientation is the worst-case orientation.

No.	Frequency [MHz]	Reading [dB(uV)]	c.f. [dB]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	H/V	Height [cm]	Angle [°]	Axial
1	339.003	35.0	-3.2	31.8	46.0	14.2	H	100.0	4.0	Pattern 2
2	366.123	36.7	-2.6	34.1	46.0	11.9	H	100.0	8.0	Pattern 2
3	366.125	34.8	-2.6	32.2	46.0	13.8	V	142.5	0	Pattern 1
4	366.122	35.7	-2.6	33.1	46.0	12.9	H	100.0	0	Pattern 3
5	393.243	35.0	-2.2	32.8	46.0	13.2	H	100.0	1.0	Pattern 2
6	420.362	34.6	-1.9	32.7	46.0	13.3	H	100.0	346.0	Pattern 2
7	881.400	25.1	4.7	29.8	46.0	16.2	H	100.0	201.0	Pattern 2
8	447.483	25.6	-1.7	23.9	46.0	22.1	V	100.0	31.0	Pattern 2

4.4.1 Detection Mode (Continued)

Individual test data and spectrum chart : Refer to section 6.3.

Test configuration photo: Refer to section 7.2

4.4.2 Communication Mode

EUT was tested in three orthogonal orientations and it was found that “Pattern 2” orientation is the worst-case orientation.

No.	Frequency [MHz]	Reading [dB(uV)]	c.f. [dB]	Result [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]	H/V	Height [cm]	Angle [°]	Axial
1	352.565	36.5	-2.9	33.6	46.0	12.4	H	100.0	4.0	Pattern 2
2	366.125	36.2	-2.6	33.6	46.0	12.4	H	100.0	4.0	Pattern 2
3	949.499	29.4	5.9	35.3	46.0	10.7	H	100.0	8.0	Pattern 2
4	949.206	28.3	5.9	34.2	46.0	11.8	V	100.0	359.0	Pattern 1
5	949.202	28.7	5.9	34.6	46.0	11.4	H	100.0	122.0	Pattern 3
6	216.836	33.3	-2.1	31.2	46.0	14.8	H	142.3	192.0	Pattern 2
7	67.804	33.7	-13.0	20.7	40.0	19.3	H	295.3	256.0	Pattern 2
8	67.805	28.0	-13.0	15.0	40.0	25.0	V	279.0	166.0	Pattern 2

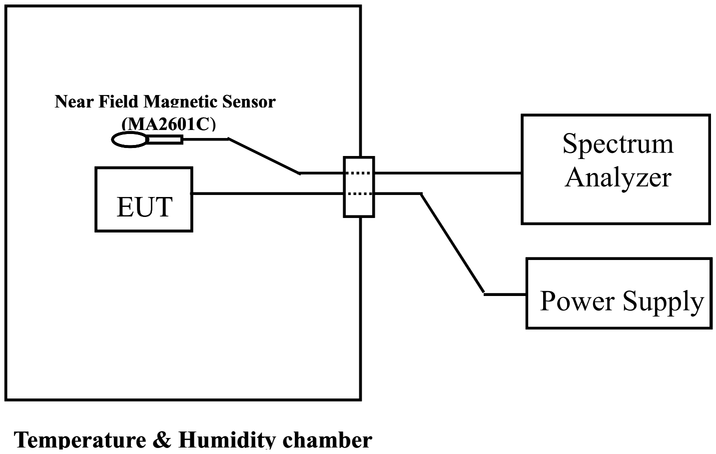
Individual test data and spectrum chart : Refer to section 6.3.

Test configuration photo: Refer to section 7.2

5 FREQUENCY STABILITY TEST (Part 15.225(e))

5.1 Test Setup

- The test setup was made according to ANSI C63.4:2003.
- The EUT was placed in a temperature and humidity chamber.
  The near field magnetic sensor was placed near the EUT inside the chamber.



5.2 Test Instrumentation

Equipment	Manufacturer	Model	S/N	Calibration	
				Date	Due
Temp. & Humi. Chamber	ESPEC	PL-4S	13002260	Non Calibration	
Near Field Magnetic Sensor	Anritsu	MA2601C	MA01	2010-01-07	2011-01-07
Spectrum Analyzer	ADVANTEST	R3132	131201410	2009-11-26	2010-11-30
Power supply	KIKUSUI	PAN35-5A	EH000852	Non Calibration	

5.3 Test Detail

Test configuration photo: Refer to section 7.3

5.3.1 Detection Mode

Frequency stability "Diviation"/"Carrier Frequency"	0.000539%

Temperature	Time				Diviation
-20℃	start up	2.min.	5min.	10min	(Max)-(Min)
Frequency (MHz)	13.560018	13.560018	13.560016	13.560016	0.000002
Frequency stability : "Diviation"/"Carrier Frequency" @ -20℃					0.000015%

Temperature	Time				Diviation
20℃	start up	2.min.	5min.	10min	(Max)-(Min)
Frequency (MHz)	13.560003	13.560005	13.559999	13.560010	0.000011
Frequency stability : "Diviation"/"Carrier Frequency" @ 20℃					0.000081%

Temperature	Time				Diviation
50℃	start up	2.min.	5min.	10min	(Max)-(Min)
Frequency (MHz)	13.559945	13.559949	13.559949	13.559949	0.000004
Frequency stability : "Diviation"/"Carrier Frequency" @ 50℃					0.000030%

5.3.2 Communication Mode

Frequency stability "Diviation"/"Carrier Frequency"	0.000207%

Temperature	Time				Diviation
-20℃	start up	2.min.	5min.	10min	(Max)-(Min)
Frequency (MHz)	13.560035	13.560031	13.560029	13.560027	0.000008
Frequency stability : "Diviation"/"Carrier Frequency" @ -20℃					0.000059%

Temperature	Time				Diviation
20℃	start up	2.min.	5min.	10min	(Max)-(Min)
Frequency (MHz)	13.560025	13.560027	13.560031	13.560035	0.000010
Frequency stability : "Diviation"/"Carrier Frequency" @ 20℃					0.000074%

Temperature	Time				Diviation
50℃	start up	2.min.	5min.	10min	(Max)-(Min)
Frequency (MHz)	13.560009	13.560007	13.560009	13.560011	0.000004
Frequency stability : "Diviation"/"Carrier Frequency" @ 50℃					0.000030%

6 TEST DATA

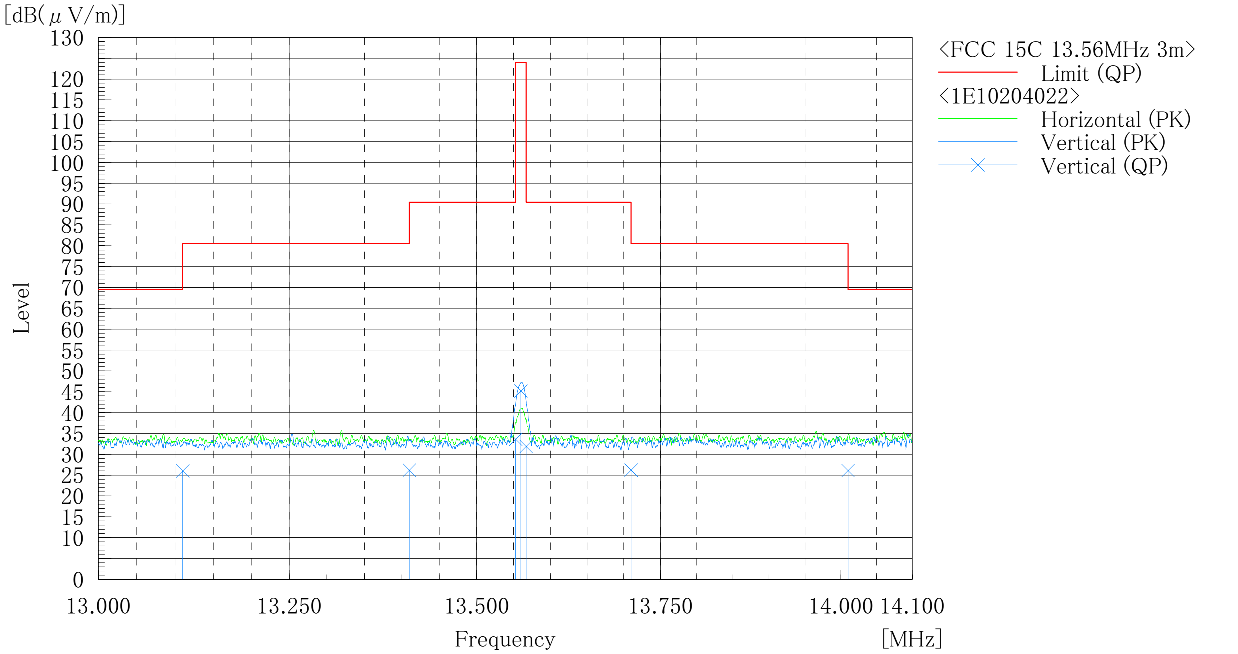
6.1 Radiated Emission 0.15MHz – 30MHz Detection mode

IPS Corporation
EMC Center

<<Radiated Emission>>

19 April,2011
1E10204022.dat

Model	: ALV2(Slim)	Standard	: FCC 15C 13.56MHz 3m
S/N	: Sample2	Temp/Humi	: 21℃ / 30%
Product Name	: ALV2S	Test Mode	: Detection
File No	: 022	Remarks	: Pattern2 Distance3m
Power Source	: DC3V from Dry Battery	Operator	: H.Fujimoto



Final Result

--- Vertical Polarization (QP)---

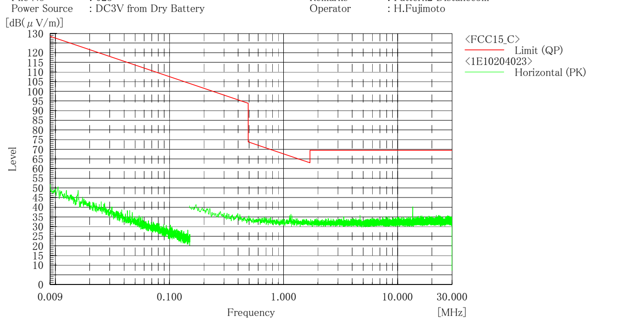
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	13.110	3.9	22.1	26.0	69.5	43.5	100.0	5.0
2	13.410	4.0	22.2	26.2	80.5	54.3	100.0	5.0
3	13.553	11.4	22.2	33.6	90.5	56.9	100.0	5.0
4	13.560	23.0	22.2	45.2	124.0	78.8	100.0	5.0
5	13.567	9.7	22.2	31.9	90.5	58.6	100.0	5.0
6	13.710	4.0	22.2	26.2	80.5	54.3	100.0	5.0
7	14.010	3.8	22.3	26.1	69.5	43.4	100.0	5.0

IPS Corporation
EMC Center

<<Radiated Emission>>

19 April,2011
1E10204023.dat

Model	: ALV2(Slim)	Standard	: FCC Part15 SubpartC
S/N	: Sample2	Temp/Humi	: 21deg / 30%
Product Name	: ALV2S	Test Mode	: Detection
File No	: 023	Remarks	: Pattern2 Distance3m
Power Source	: DC3V from Dry Battery	Operator	: H.Fujimoto

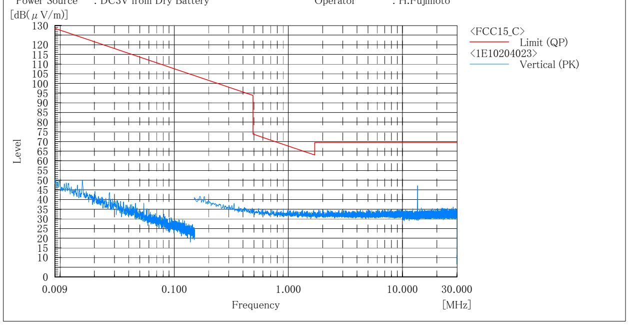


IPS Corporation
EMC Center

<<Radiated Emission>>

19 April,2011
1E10204023.dat

Model	: ALV2(Slim)	Standard	: FCC Part15 SubpartC
S/N	: Sample2	Temp/Humi	: 21deg / 30%
Product Name	: ALV2S	Test Mode	: Detection
File No	: 023	Remarks	: Pattern2 Distance3m
Power Source	: DC3V from Dry Battery	Operator	: H.Fujimoto



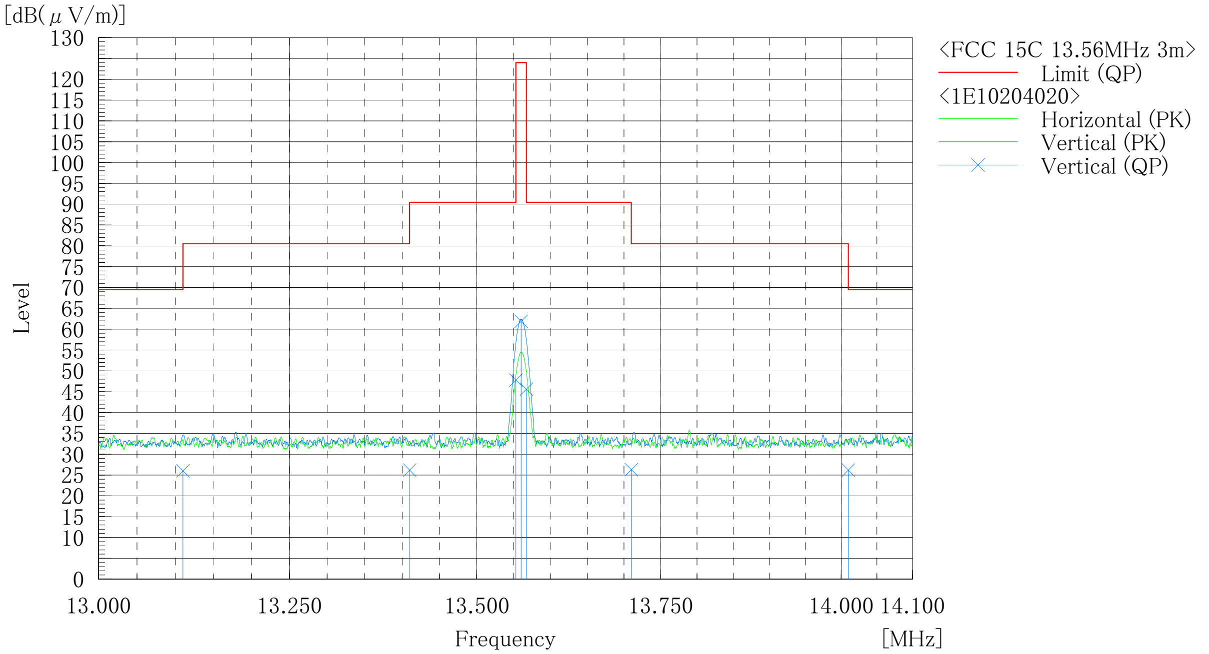
6.2 Radiated Emission 0.15MHz – 30MHz Communication mode

IPS Corporation
EMC Center

<<Radiated Emission>>

19 April,2011
1E10204020.dat

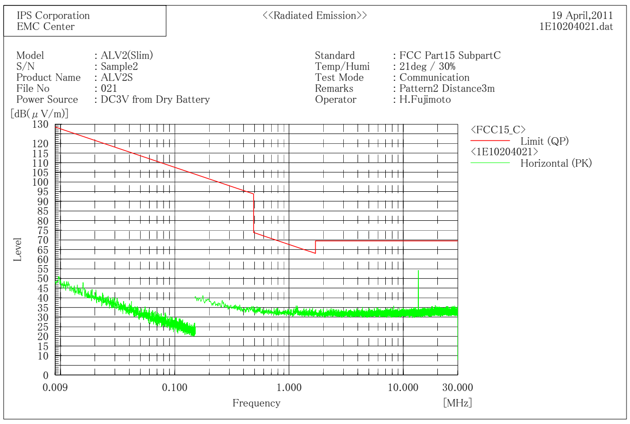
Model	: ALV2(Slim)	Standard	: FCC 15C 13.56MHz 3m
S/N	: Sample2	Temp/Humi	: 21℃ / 30%
Product Name	: ALV2S	Test Mode	: Communication
File No	: 020	Remarks	: Pattern2 Distance3m
Power Source	: DC3V from Dry Battery	Operator	: H.Fujimoto

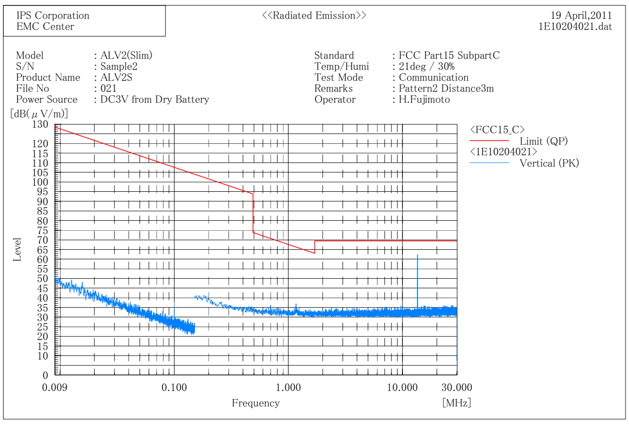


Final Result

--- Vertical Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	13.110	3.9	22.1	26.0	69.5	43.5	100.0	4.0
2	13.410	4.0	22.2	26.2	80.5	54.3	100.0	4.0
3	13.553	25.6	22.2	47.8	90.5	42.7	100.0	4.0
4	13.560	39.7	22.2	61.9	124.0	62.1	100.0	4.0
5	13.567	23.4	22.2	45.6	90.5	44.9	100.0	4.0
6	13.710	4.1	22.2	26.3	80.5	54.2	100.0	4.0
7	14.010	3.9	22.3	26.2	69.5	43.3	100.0	4.0





6.3 Radiated Emission 30MHz – 1000MHz Detection mode

Axial Direction of EUT : Pattern 1

```
****************************************  IPS Corporation  ***************************************
                                          <<Radiated Emission>>                 3 August,2010 12:04
                                                                                    1E10204018.dat

Standard          : FCC Part15 SubpartB ClassB
Model             : ALV2S
S/N               : Sample2
Product Name      : ALV2(Slim)
File No           : 018
Power Source      : DC 3V from Dry Battery
Temp /Humi        : 25deg / 53%
Test Mode         : Detection
Remarks           : Pattern 1
Operator          : M.Furihata
**************************************************************************************************
```

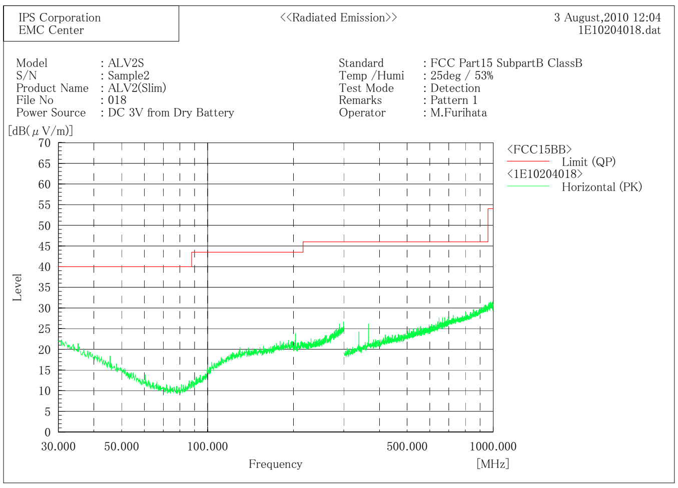
Final Result

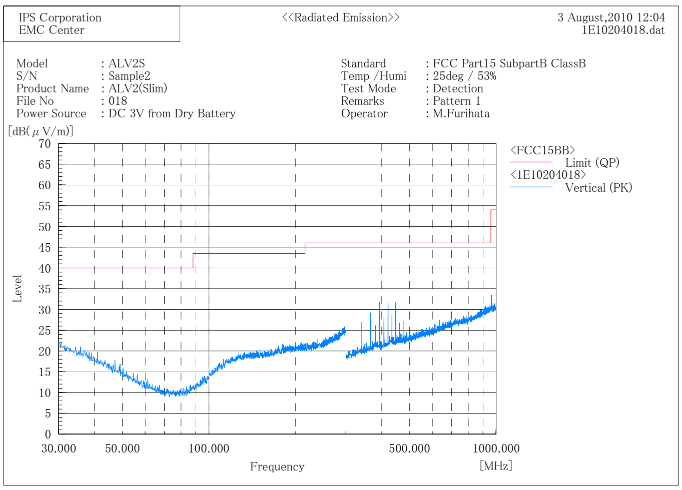
--- Horizontal Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	366.122	28.8	-2.6	26.2	46.0	19.8	184.3	275.0

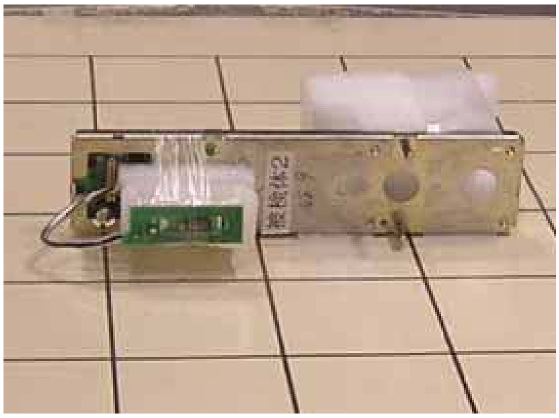
--- Vertical Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	366.125	34.8	-2.6	32.2	46.0	13.8	142.5	0.0
2	393.244	34.4	-2.2	32.2	46.0	13.8	132.0	0.0
3	420.363	34.3	-1.9	32.4	46.0	13.6	120.5	0.0
4	433.926	30.4	-1.8	28.6	46.0	17.4	118.6	0.0
5	447.782	32.8	-1.7	31.1	46.0	14.9	115.0	0.0





Axial Direction of EUT : Pattern 2



** IPS Corporation **
<<Radiated Emission>> 3 August,2010 11:13
1E10204017.dat

Standard	:	FCC Part15 SubpartB ClassB
Model	:	ALV2S
S/N	:	Sample2
Product Name	:	ALV2(Slim)
File No	:	017
Power Source	:	DC 3V from Dry Battery
Temp /Humi	:	25deg / 53%
Test Mode	:	Detection
Remarks	:	Pattern 2
Operator	:	M.Furihata

****

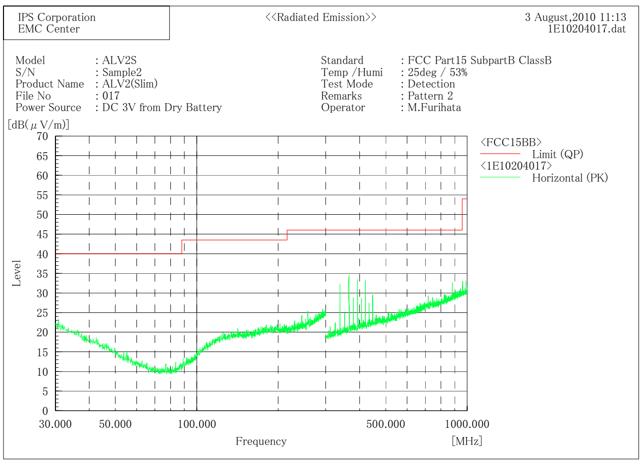
Final Result

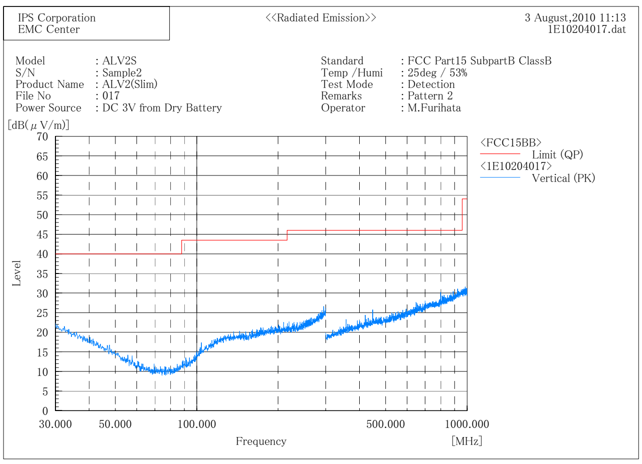
--- Horizontal Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	339.003	35.0	-3.2	31.8	46.0	14.2	100.0	4.0
2	366.123	36.7	-2.6	34.1	46.0	11.9	100.0	8.0
3	393.243	35.0	-2.2	32.8	46.0	13.2	100.0	1.0
4	420.362	34.6	-1.9	32.7	46.0	13.3	100.0	346.0
5	881.400	25.1	4.7	29.8	46.0	16.2	100.0	201.0

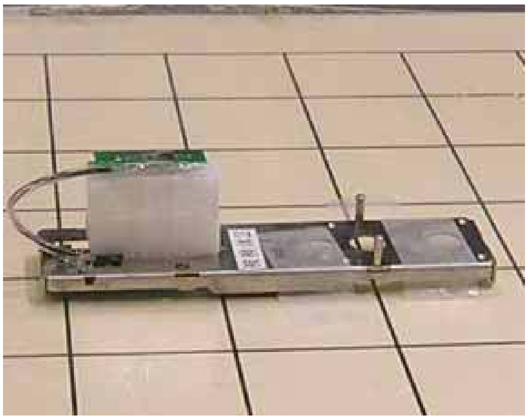
--- Vertical Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	447.483	25.6	-1.7	23.9	46.0	22.1	100.0	31.0





Axial Direction of EUT : Pattern 3



```
****************************************  IPS Corporation  *************************************
                                <<Radiated Emission>>                   3 August,2010 10:03
                                                                          1E10204016.dat
Standard            : FCC Part15 SubpartB ClassB
Model               : ALV2S
S/N                 : Sample2
Product Name        : ALV2(Slim)
File No             : 016
Power Source        : DC 3V from Dry Battery
Temp /Humi          : 25deg / 53%
Test Mode           : Detection
Remarks             : Pattern 3
Operator            : M.Furihata
************************************************************************************************
```

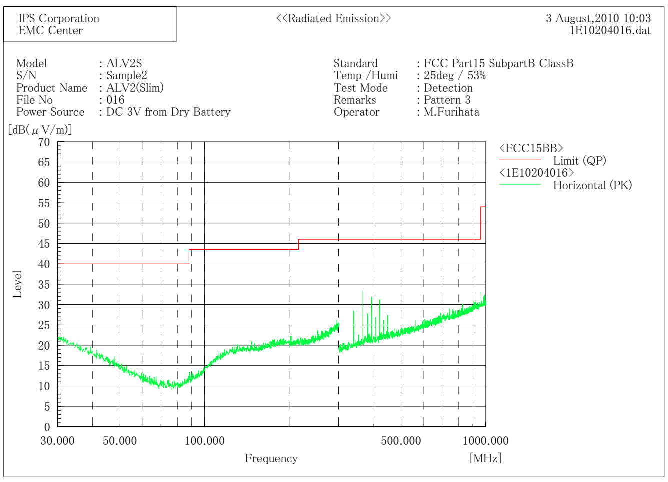
Final Result

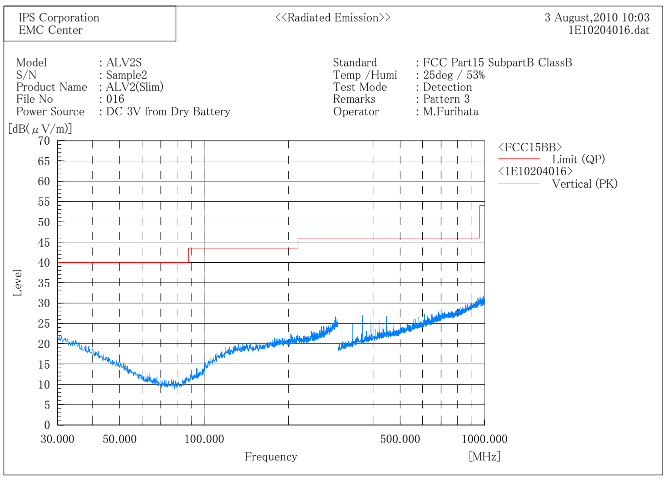
--- Horizontal Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	339.005	31.4	-3.2	28.2	46.0	17.8	100.0	178.0
2	366.122	35.7	-2.6	33.1	46.0	12.9	100.0	0.0
3	379.683	29.8	-2.4	27.4	46.0	18.6	100.0	1.0
4	393.242	34.0	-2.2	31.8	46.0	14.2	100.0	2.0
5	420.364	32.9	-1.9	31.0	46.0	15.0	100.0	179.0

--- Vertical Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	393.244	29.1	-2.2	26.9	46.0	19.1	106.2	320.0





6.4 Radiated Emission 30MHz – 1000MHz Communication mode

Axial Direction of EUT : Pattern 1

```
****************************************  IPS Corporation  *************************************
                                         <<Radiated Emission>>                 2 August,2010 16:21
                                                                                  1E10204013.dat
Standard            : FCC Part15 SubpartB ClassB
Model               : ALV2S
S/N                 : Sample2
Product Name        : ALV2(Slim)
File No             : 013
Power Source        : DC 3V from Dry Battery
Temp /Humi          : 21deg / 44%
Test Mode           : Communication
Remarks             : Pattern 1
Operator            : M.Furihata
************************************************************************************************
```

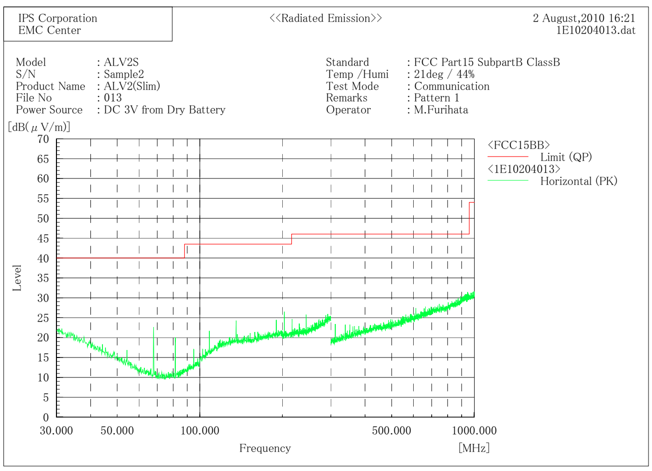
Final Result

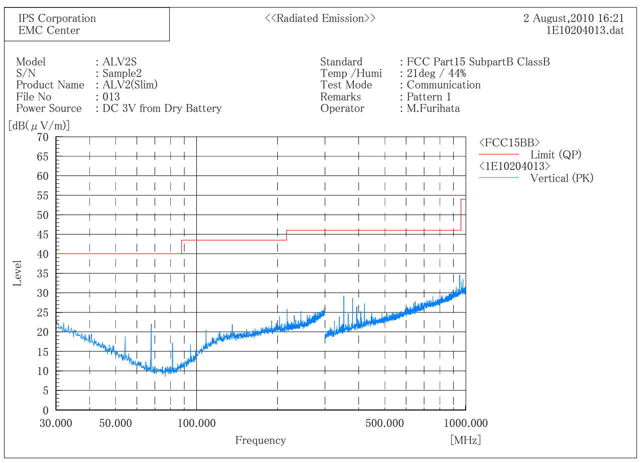
--- Horizontal Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	67.808	35.6	-13.0	22.6	40.0	17.4	265.0	280.0
2	203.409	27.6	-2.3	25.3	43.5	18.2	100.0	89.0

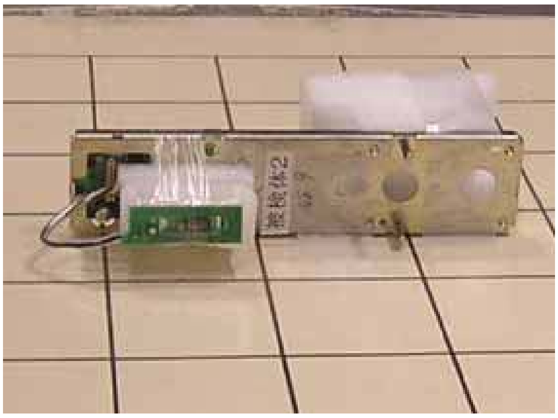
--- Vertical Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	67.806	34.5	-13.0	21.5	40.0	18.5	100.0	52.0
2	216.966	27.0	-2.1	24.9	46.0	21.1	100.0	180.0
3	352.567	34.2	-2.9	31.3	46.0	14.7	144.2	348.0
4	949.206	28.3	5.9	34.2	46.0	11.8	100.0	359.0





Axial Direction of EUT : Pattern 2



** IPS Corporation **

<<Radiated Emission>> 2 August,2010 16:21

1E10204014.dat

Standard	:	FCC Part15 SubpartB ClassB
Model	:	ALV2S
S/N	:	Sample2
Product Name	:	ALV2(Slim)
File No	:	014
Power Source	:	DC 3V from Dry Battery
Temp /Humi	:	21deg / 44%
Test Mode	:	Communication
Remarks	:	Pattern 2
Operator	:	M.Furihata

****

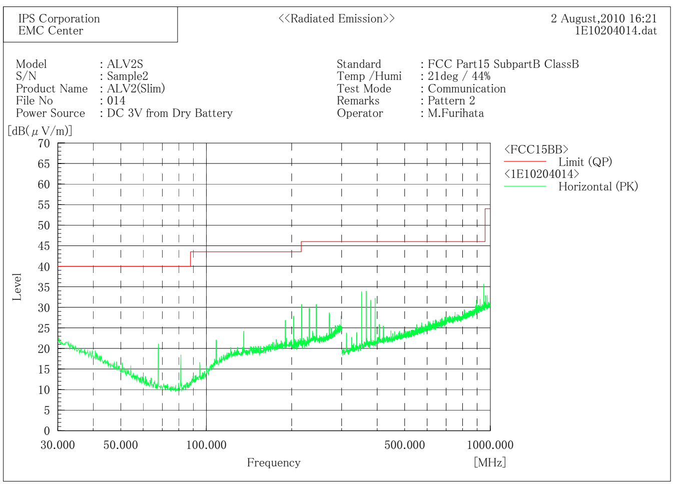
Final Result

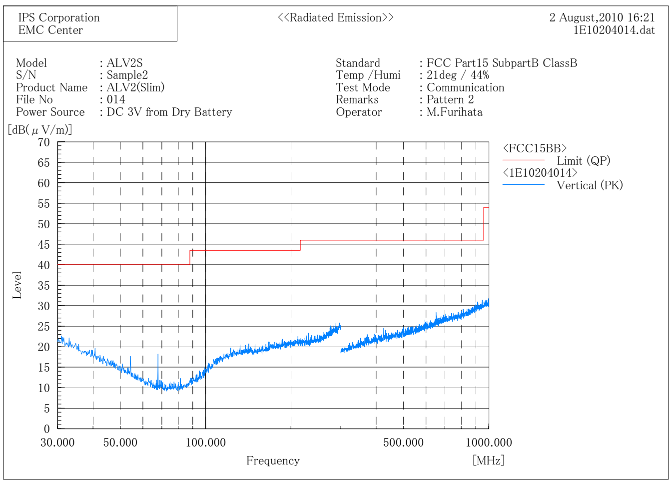
--- Horizontal Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	352.565	36.5	-2.9	33.6	46.0	12.4	100.0	4.0
2	366.125	36.2	-2.6	33.6	46.0	12.4	100.0	4.0
3	949.499	29.4	5.9	35.3	46.0	10.7	100.0	8.0
4	216.836	33.3	-2.1	31.2	46.0	14.8	142.3	192.0
5	67.804	33.7	-13.0	20.7	40.0	19.3	295.3	256.0

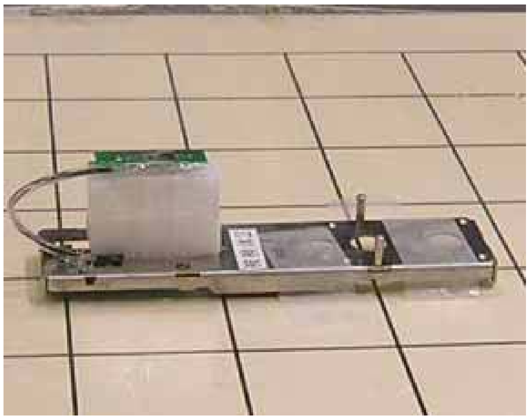
--- Vertical Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	67.805	28.0	-13.0	15.0	40.0	25.0	279.0	166.0





Axial Direction of EUT : Pattern 3



** IPS Corporation **
<<Radiated Emission>> 3 August, 2010 08:52
1E10204015.dat

Standard	:	FCC Part15 SubpartB ClassB
Model	:	ALV2S
S/N	:	Sample2
Product Name	:	ALV2(Slim)
File No	:	015
Power Source	:	DC 3V from Dry Battery
Temp /Humi	:	25deg / 53%
Test Mode	:	Communication
Remarks	:	Pattern 3
Operator	:	M.Furihata

****

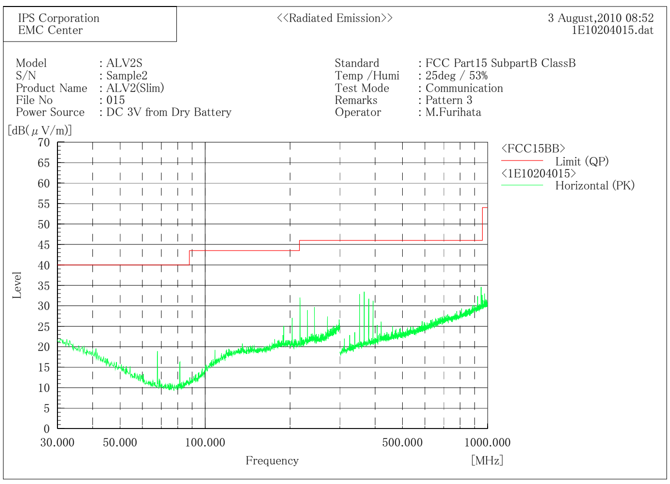
Final Result

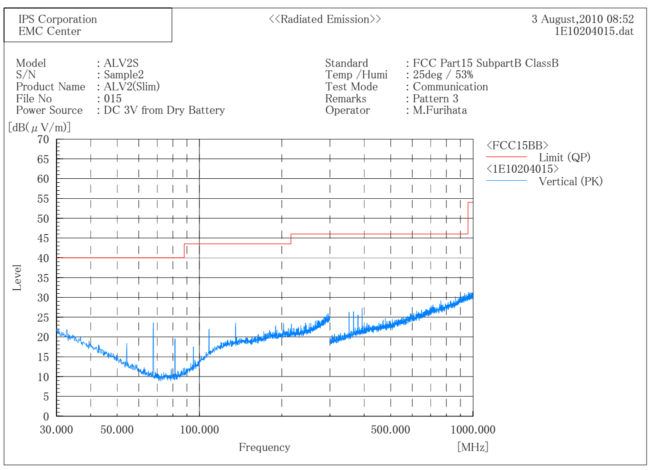
--- Horizontal Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	949.202	28.7	5.9	34.6	46.0	11.4	100.0	122.0
2	366.123	35.8	-2.6	33.2	46.0	12.8	100.0	8.0
3	352.563	35.7	-2.9	32.8	46.0	13.2	100.0	10.0
4	216.966	34.8	-2.1	32.7	46.0	13.3	141.3	5.0

--- Vertical Polarization (QP)---

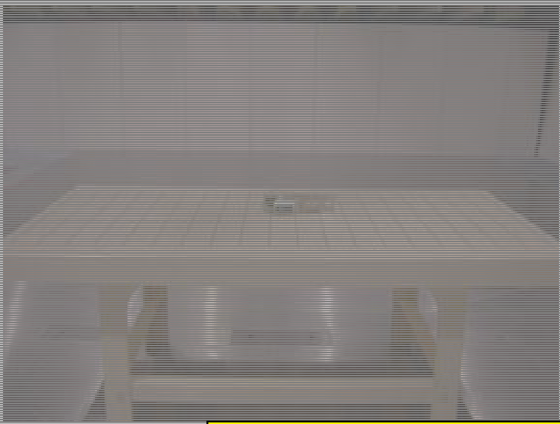
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	67.804	36.3	-13.0	23.3	40.0	16.7	100.0	255.0
2	393.243	29.0	-2.2	26.8	46.0	19.2	126.1	221.0

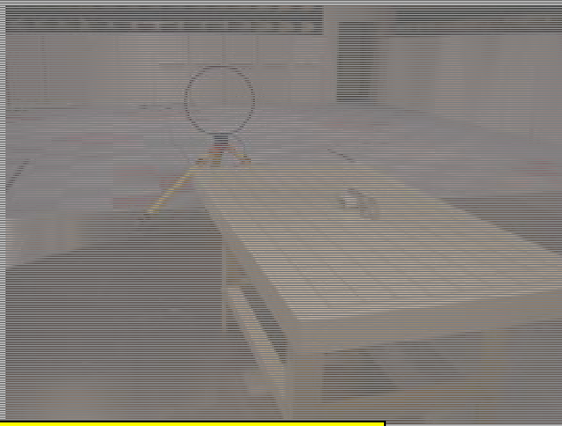




7 TEST CONFIGURATION PHOTOS

7.1 Photos of Radiated Emission Test (blow 30MHz)

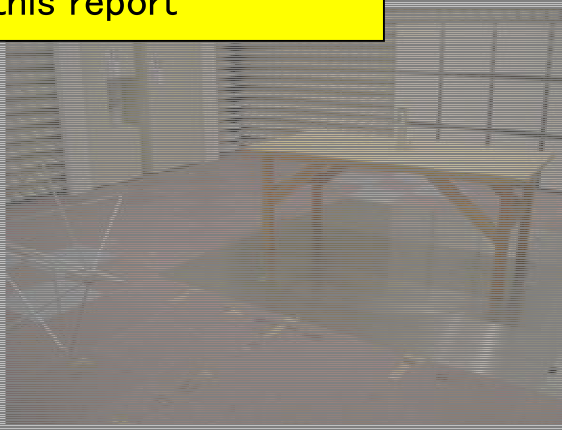




TEST CONFIGURATION PHOTOS

were separated from this report

7.2 Photos of Rad



7.3 Photos of Frequency Stability Test