EMC TEST REPORT

Applicant	: Miwa Lock Co., Ltd 3-1-12,Shiba, Minato-ku, Tokyo, Japan, 105-8510
Type of Equipment	: ALV2 ENTRANCE READER
Model Number	: ALV2DCU・DP
FCC ID	: VBU-ALV2DCU
Standard	: 47 CFR Part 15 Subpart C Section 15.225
Receipt Date of Sample	: 2010-07-22
Date Tested	: 2010-08-03, 2010-08-04 and 2011-05-25
Date Report Issued	: 2011-05-31
Report Number	: EMC11126

APPROVED by: TESTS SUPERVISED by:

Tetsushi Yamaguchi / Manager H. Fujimoto

Hidemasa Fujimoto

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Contents

1 GENERAL INFORMATION

1.1 Product Description and Specification

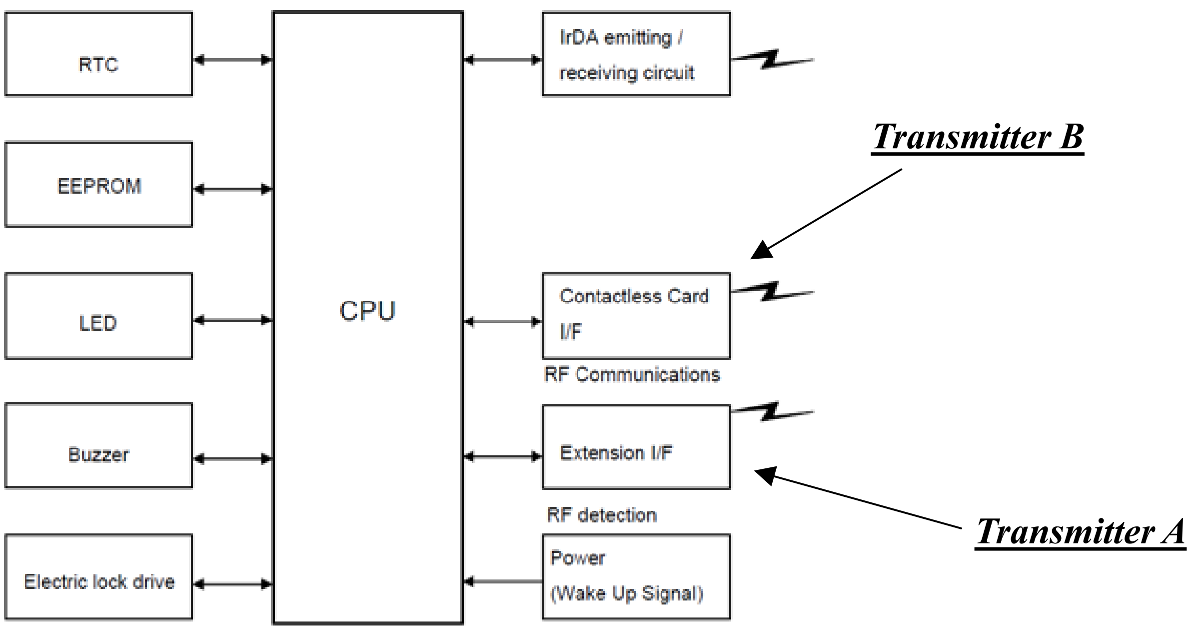
The Equipment Under Test (EUT) Model: ALV2DCU•DP is a low power transmitter for hotel card lock and its fundamental frequency is 13.56MHz. Its has two 13.56MHz transmitters. One is for detection of the approach of RFID card, the other is for communication with RFID card. They do not work simultaneity.

Model No.	ALV2DCU•DP
Serial No.	Sample 7
Product Type	Pre-production
Rated Power	3.0VDC(supplied by external controller)
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	42.7dB	PASS	
	15.225(b)	N/A	42.7dB	PASS	
	15.225(c)	N/A	43.2dB	PASS	
Radiated Emission (Spurious)	15.225(d) 15.209	N/A	11.1dB	PASS	
Frequency Stability	15.225(e)	N/A	0.00019%	PASS	

Transmitter B (Communication mode)

Item	Specification	Deviation	Worst Margin	Results	Remarks
Radiated Emission (Fundamental)	15.225(a)	N/A	33.5dB	PASS	
	15.225(b)	N/A	33.5dB	PASS	
	15.225(c)	N/A	43.4dB	PASS	
Radiated Emission (Spurious)	15.225(d) 15.209	N/A	8.4dB	PASS	
Frequency Stability	15.225(e)	N/A	0.00061%	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 ENTRANCE READER	MIWA LOCK CO., LTD.	ALV2DCU・DP	Sample 7	

Peripherals

Equipment ID	Equipment Name	Manufacturer	Model No.	Serial No.	FCC ID & Note
B	DOOR CONTROL UNIT	COWBELL ENGINEERING CO., LTD.	CMHL-001	08G000004T	----

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:2011-05-25

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 1" 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	284.765	30.0	0.9	30.9	46.0	15.1	H	117.1	154.0	Pattern 1
2	48.114	37.1	-8.2	28.9	40.0	11.1	V	100.0	163.0	Pattern 1
3	58.293	34.5	-11.2	23.3	40.0	16.7	V	100.0	152.0	Pattern 1
4	89.917	36.0	-11.8	24.2	43.5	19.3	V	100.0	241.0	Pattern 1
5	284.765	30.2	0.9	31.1	46.0	14.9	V	100.0	156.0	Pattern 1
6	881.404	30.5	4.7	35.2	46.0	10.8	V	109.4	338.0	Pattern 1
7	881.403	30.2	4.7	34.9	46.0	11.1	H	100.0	316.0	Pattern 2
8	881.402	29.8	4.7	34.5	46.0	11.5	H	100.0	306.0	Pattern 3

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 1” 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	94.924	44.7	-10.6	34.1	43.5	9.4	H	182.0	259.0	Pattern 1
2	122.044	38.6	-5.4	33.2	43.5	10.3	H	149.5	127.0	Pattern 1
3	40.682	31.8	-5.7	26.1	40.0	13.9	V	100.0	354.0	Pattern 1
4	48.448	35.4	-8.3	27.1	40.0	12.9	V	100.0	160.0	Pattern 1
5	94.923	45.7	-10.6	35.1	43.5	8.4	V	100.0	312.0	Pattern 1
6	94.924	45.1	-10.6	34.5	43.5	9.0	V	100.0	302.0	Pattern 2
7	94.923	44.5	-10.6	33.9	43.5	9.6	V	100.0	58.0	Pattern 3
8	108.483	37.3	-7.5	29.8	43.5	13.7	V	100.0	39.0	Pattern 1
9	122.045	35.0	-5.4	29.6	43.5	13.9	V	192.8	229.0	Pattern 1

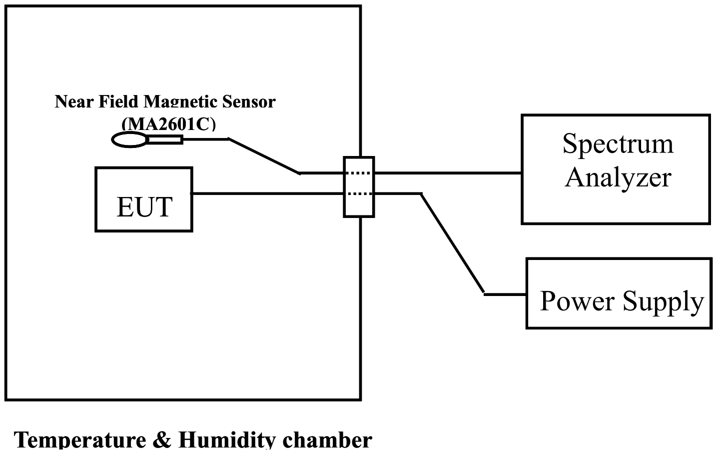
Individual test data and spectrum chart : Refer to section 6.3.

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"	0.000192%

Temperature	Time				Diviation
-20℃	start up	2.min.	5min.	10min	(Max)-(Min)
Frequency (MHz)	13.559939	13.559933	13.559931	13.559927	0.000012
Frequency stability : "Diviation"/"Carrier Frequency" @ -20℃					0.000089%

Temperature	Time				Diviation
20℃	start up	2.min.	5min.	10min	(Max)-(Min)
Frequency (MHz)	13.559931	13.559935	13.559939	13.559947	0.000016
Frequency stability : "Diviation"/"Carrier Frequency" @ 20℃					0.000118%

Temperature	Time				Diviation
50℃	start up	2.min.	5min.	10min	(Max)-(Min)
Frequency (MHz)	13.559923	13.559923	13.559921	13.559923	0.000002
Frequency stability : "Diviation"/"Carrier Frequency" @ 50℃					0.000015%

5.3.2 Communication Mode

Frequency stability "Diviation"/"Carrier Frequency"	0.000606%

Temperature	Time				Diviation
-20℃	start up	2.min.	5min.	10min	(Max)-(Min)
Frequency (MHz)	13.560019	13.560013	13.560011	13.560005	0.000014
Frequency stability : "Diviation"/"Carrier Frequency" @ -20℃					0.000103%

Temperature	Time				Diviation
20℃	start up	2.min.	5min.	10min	(Max)-(Min)
Frequency (MHz)	13.559997	13.559989	13.559985	13.559979	0.000018
Frequency stability : "Diviation"/"Carrier Frequency" @ 20℃					0.000133%

Temperature	Time				Diviation
50℃	start up	2.min.	5min.	10min	(Max)-(Min)
Frequency (MHz)	13.559945	13.559994	13.559939	13.559937	0.000057
Frequency stability : "Diviation"/"Carrier Frequency" @ 50℃					0.000422%

6 TEST DATA

6.1 Radiated Emission 0.15MHz – 30MHz Detection mode

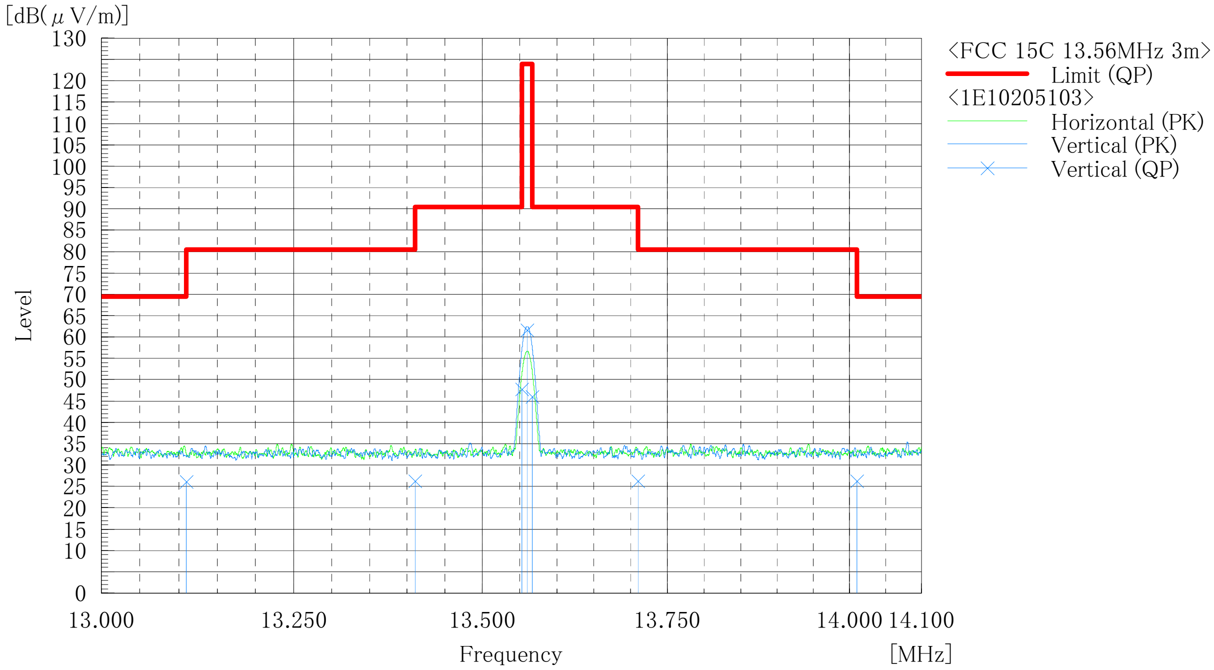
IPS Corporation
EMC Center

<<Radiated Emission>>

25 May,2011 17:51
1E10205103.dat

Model : ALV2DCU･DP
S/N : Sample7
Product Name : ALV2 ENTRANCE READER
File No : 103
Power Source : DC3V supplied by external controller

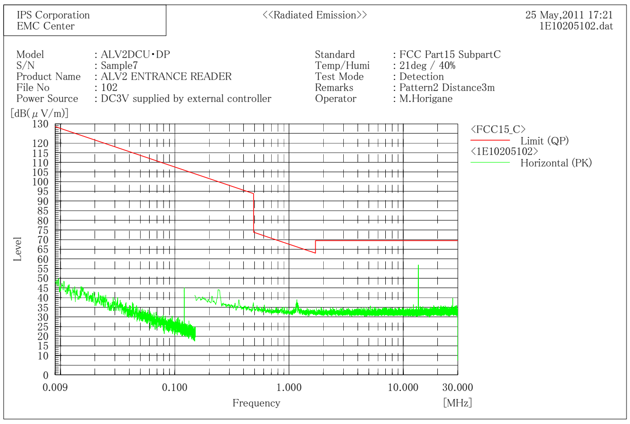
Standard : FCC 15C 13.56MHz 3m
Temp/Humi : 21deg / 40%
Test Mode : Detection
Remarks : Pattern2 Distance3m
Operator : M.Horigane

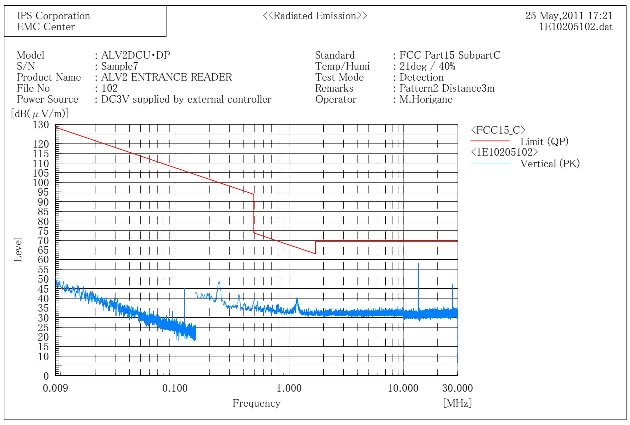


Final Result

--- 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	4.0	22.1	26.1	69.5	43.4	100.0	216.0
2	13.410	4.1	22.2	26.3	80.5	54.2	100.0	216.0
3	13.553	25.6	22.2	47.8	90.5	42.7	100.0	216.0
4	13.560	39.4	22.2	61.6	124.0	62.4	100.0	216.0
5	13.567	23.8	22.2	46.0	90.5	44.5	100.0	216.0
6	13.710	4.1	22.2	26.3	80.5	54.2	100.0	216.0
7	14.010	4.0	22.3	26.3	69.5	43.2	100.0	216.0





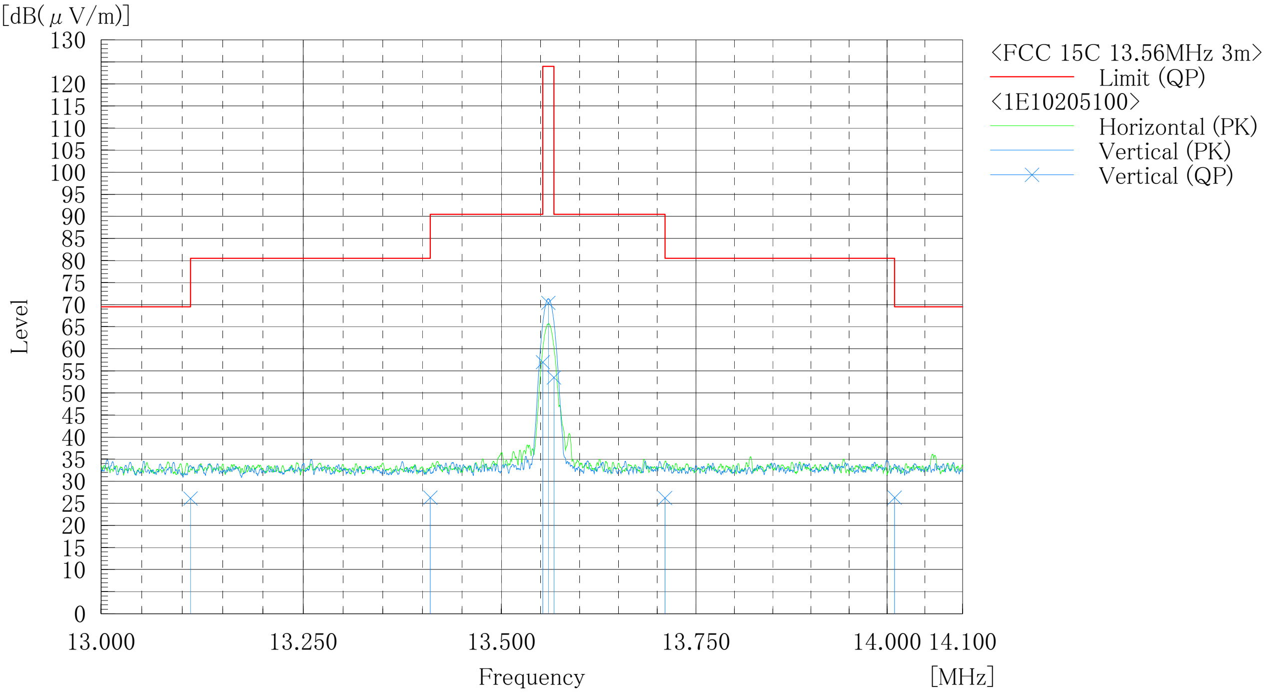
6.2 Radiated Emission 0.15MHz – 30MHz Communication mode

IPS Corporation
EMC Center

<<Radiated Emission>>

25 May,2011 14:31
1E10205100.dat

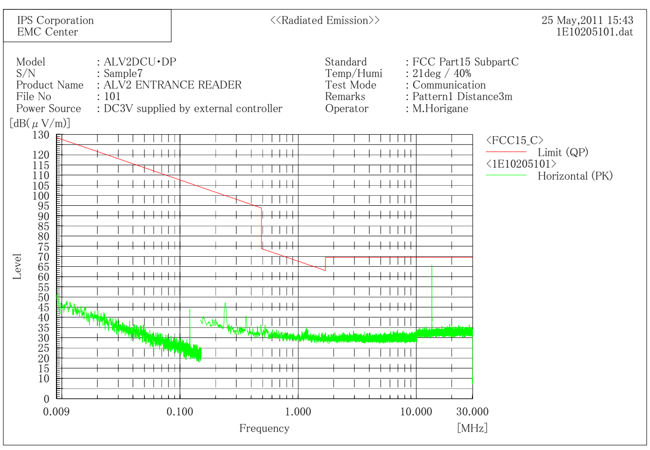
Model	: ALV2DCU・DP	Standard	: FCC 15C 13.56MHz 3m
S/N	: Sample7	Temp/Humi	: 21deg / 40%
Product Name	: ALV2 ENTRANCE READER	Test Mode	: Communication
File No	: 100	Remarks	: Pattern1 Distance3m
Power Source	: DC3V supplied by external controller	Operator	: M.Horigane

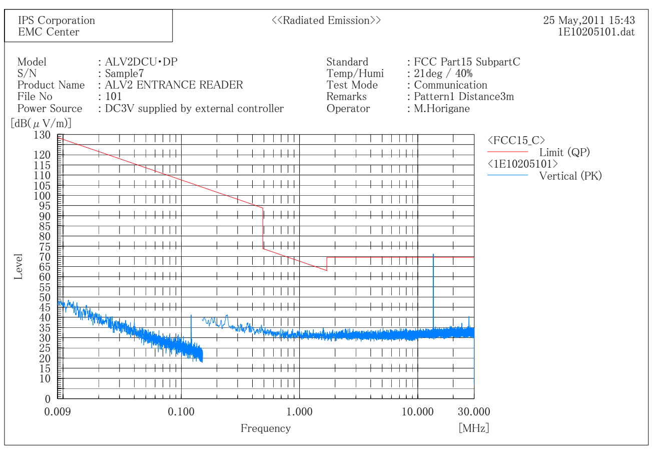


Final Result

--- 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	4.0	22.1	26.1	69.5	43.4	100.0	212.0
2	13.410	4.1	22.2	26.3	80.5	54.2	100.0	212.0
3	13.553	34.8	22.2	57.0	90.5	33.5	100.0	212.0
4	13.560	48.2	22.2	70.4	124.0	53.6	100.0	212.0
5	13.567	31.3	22.2	53.5	90.5	37.0	100.0	212.0
6	13.710	4.0	22.2	26.2	80.5	54.3	100.0	212.0
7	14.010	4.0	22.3	26.3	69.5	43.2	100.0	212.0





6.3 Radiated Emission 30MHz – 1000MHz Detection mode

Axial Direction of EUT : Pattern 1

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*****************************************  IPS Corporation  *****************************************
                                  <<Radiated Emission>>                          4 August,2010 11:09
                                                                                     1E10205018.dat

Standard            : FCC Part15 SubpartB ClassB
Model               : ALV2DCU・DP
S/N                 : Sample7
Product Name        : ALV2 ENTRANCE READER
File No             : 018
Power Source        : AC120V / 60Hz
Temp /Humi          : 24deg / 48%
Test Mode           : Detection
Remarks             : Pattern 1
Operator            : M.Furihata
*****************************************************************************************************
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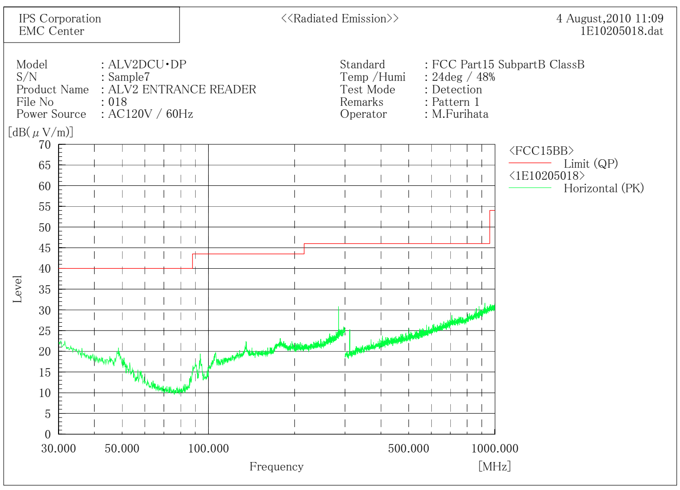
Final Result

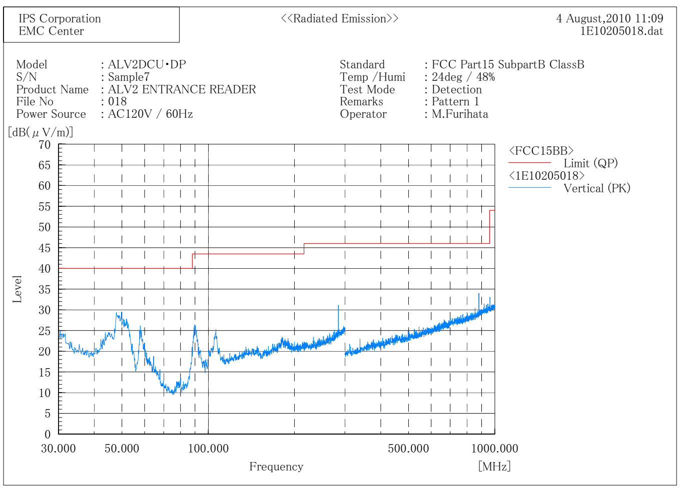
--- Horizontal Polarization (QP)---

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	284.765	30.0	0.9	30.9	46.0	15.1	117.1	154.0

--- 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	48.114	37.1	-8.2	28.9	40.0	11.1	100.0	163.0
2	58.293	34.5	-11.2	23.3	40.0	16.7	100.0	152.0
3	89.917	36.0	-11.8	24.2	43.5	19.3	100.0	241.0
4	284.765	30.2	0.9	31.1	46.0	14.9	100.0	156.0
5	881.404	30.5	4.7	35.2	46.0	10.8	109.4	338.0





Axial Direction of EUT : Pattern 2

************************************** IPS Corporation **************************************
<<Radiated Emission>> 4 August,2010 10:02
1E10205017.dat

Standard	:	FCC Part15 SubpartB ClassB
Model	:	ALV2DCU・DP
S/N	:	Sample7
Product Name	:	ALV2 ENTRANCE READER
File No	:	017
Power Source	:	AC120V / 60Hz
Temp /Humi	:	24deg / 48%
Test Mode	:	Detection
Remarks	:	Pattern 2
Operator	:	M.Furihata

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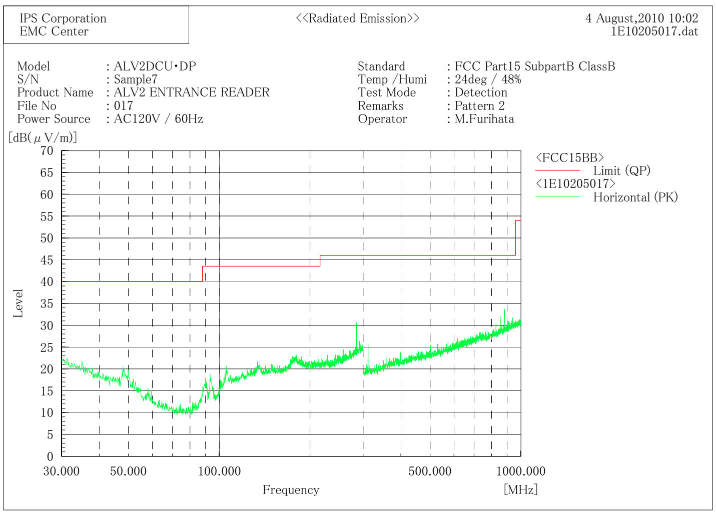
Final Result

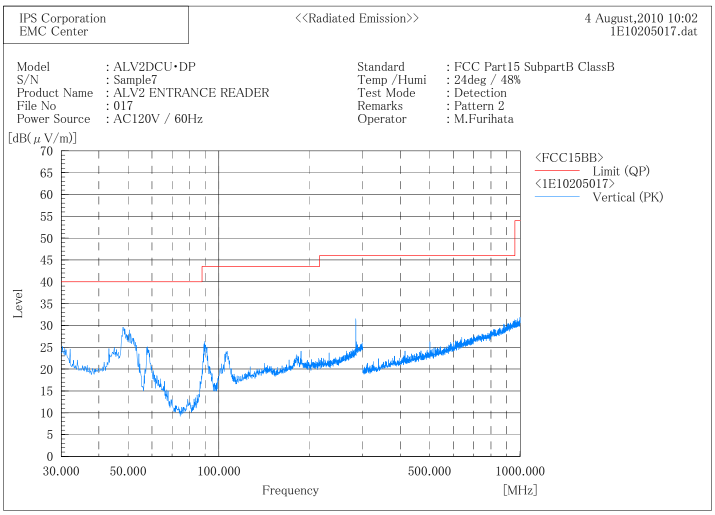
--- Horizontal Polarization (QP)---

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	284.765	31.1	0.9	32.0	46.0	14.0	114.4	152.0
2	881.403	30.2	4.7	34.9	46.0	11.1	100.0	316.0

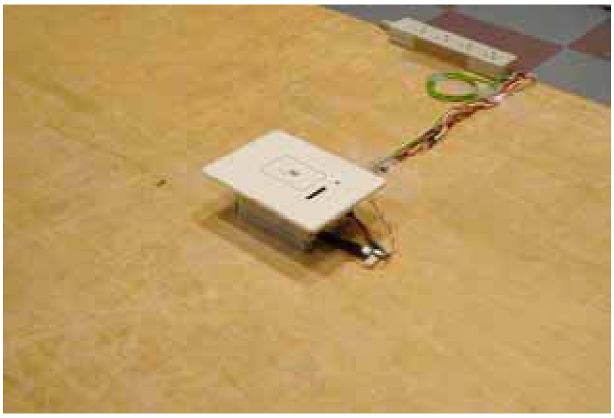
--- Vertical Polarization (QP)---

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	47.988	36.5	-8.1	28.4	40.0	11.6	100.0	175.0
2	58.159	34.5	-11.2	23.3	40.0	16.7	100.0	141.0
3	89.560	35.2	-11.9	23.3	43.5	20.2	100.0	234.0
4	284.765	30.9	0.9	31.8	46.0	14.2	100.0	155.0





Axial Direction of EUT : Pattern 3



** IPS Corporation **
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1E10205016.dat

Standard	:	FCC Part15 SubpartB ClassB
Model	:	ALV2DCU・DP
S/N	:	Sample7
Product Name	:	ALV2 ENTRANCE READER
File No	:	016
Power Source	:	AC120V / 60Hz
Temp /Humi	:	24deg / 48%
Test Mode	:	Detection
Remarks	:	Pattern 3
Operator	:	M.Furihata

****

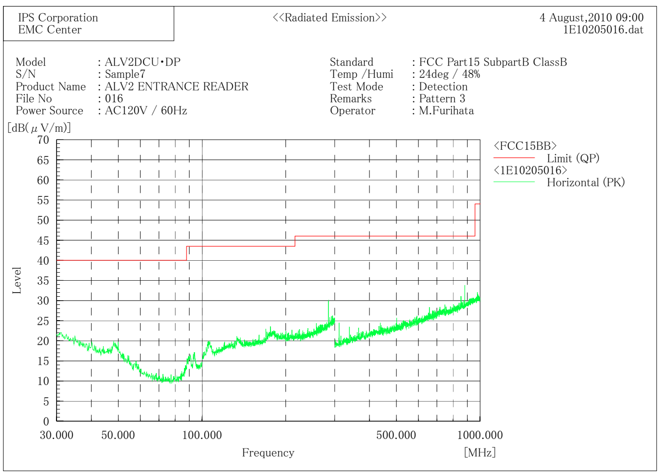
Final Result

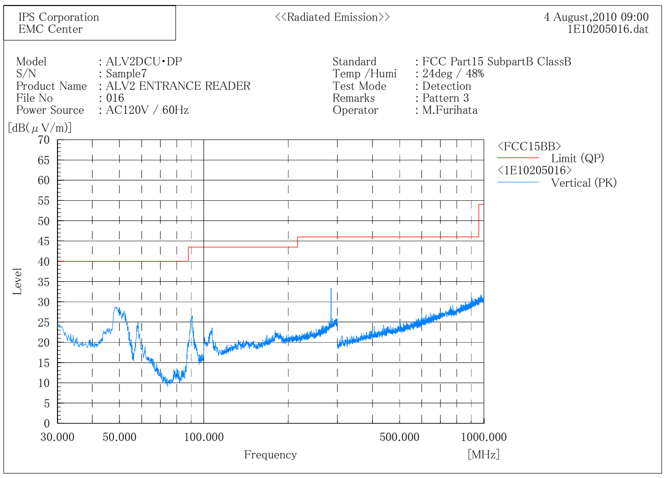
--- Horizontal Polarization (QP)---

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	284.763	29.7	0.9	30.6	46.0	15.4	114.5	238.0
2	881.402	29.8	4.7	34.5	46.0	11.5	100.0	306.0

--- 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	48.128	36.7	-8.2	28.5	40.0	11.5	100.0	195.0
2	58.048	34.0	-11.1	22.9	40.0	17.1	100.0	127.0
3	90.001	35.5	-11.8	23.7	43.5	19.8	100.0	218.0
4	284.765	32.7	0.9	33.6	46.0	12.4	100.0	156.0





6.4 Radiated Emission 30MHz – 1000MHz Communication mode

Axial Direction of EUT : Pattern 1

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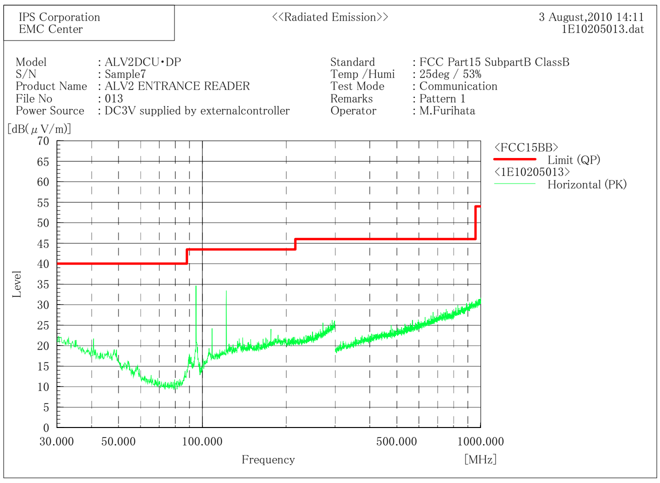
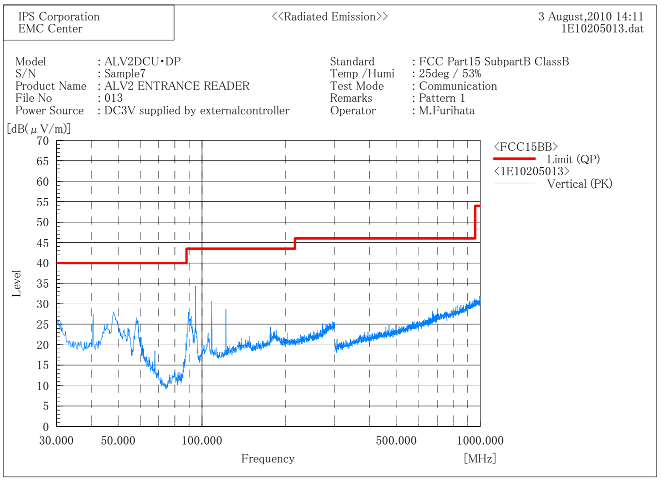
***************************************  IPS Corporation  ************************************
                                   <<Radiated Emission>>                    3 August,2010 14:11
                                                                              1E10205013.dat

Standard          : FCC Part15 SubpartB ClassB
Model             : ALV2DCU・DP
S/N               : Sample7
Product Name      : ALV2 ENTRANCE READER
File No           : 013
Power Source      : DC3V supplied by externalcontroller
Temp /Humi        : 25deg / 53%
Test Mode         : Communication
Remarks           : Pattern 1
Operator          : M.Furihata
*******************************************************************************************
```

Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [°]
1	94.924	H	44.7	-10.6	34.1	43.5	9.4	182.0	259.0
2	122.044	H	38.6	-5.4	33.2	43.5	10.3	149.5	127.0
3	40.682	V	31.8	-5.7	26.1	40.0	13.9	100.0	354.0
4	48.448	V	35.4	-8.3	27.1	40.0	12.9	100.0	160.0
5	94.923	V	45.7	-10.6	35.1	43.5	8.4	100.0	312.0
6	108.483	V	37.3	-7.5	29.8	43.5	13.7	100.0	39.0
7	122.045	V	35.0	-5.4	29.6	43.5	13.9	192.8	229.0





Axial Direction of EUT : Pattern 2

*************************************** IPS Corporation ***************************************

<<Radiated Emission>> 3 August, 2010 15:28

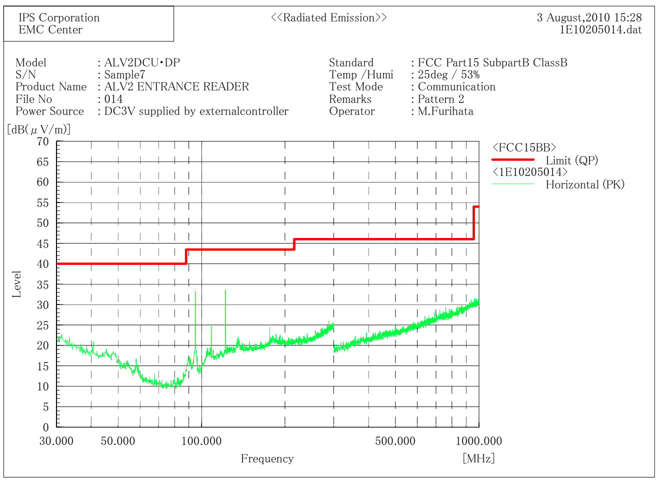
1E10205014.dat

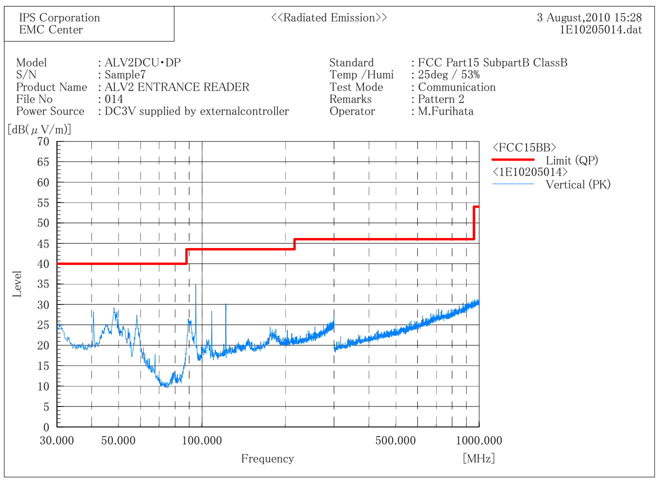
Standard : FCC Part15 SubpartB ClassB
Model : ALV2DCU・DP
S/N : Sample7
Product Name : ALV2 ENTRANCE READER
File No : 014
Power Source : DC3V supplied by externalcontroller
Temp /Humi : 25deg / 53%
Test Mode : Communication
Remarks : Pattern 2
Operator : M.Furihata

****

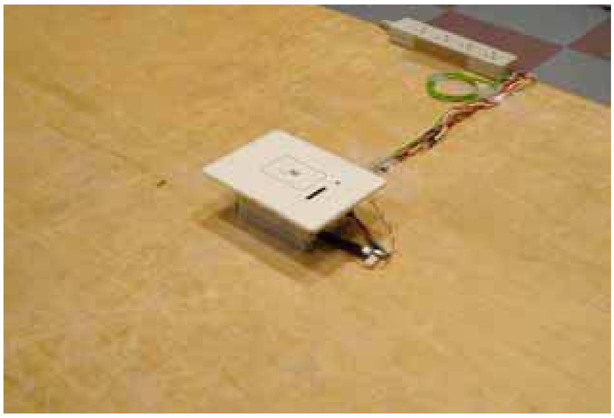
Final Result

No.	Frequency	(P)	Reading	c.f	Result	Limit	Margin	Height	Angle
			QP		QP		QP		
	[MHz]		[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[cm]	[°]
1	94.926	H	42.8	-10.6	32.2	43.5	11.3	185.0	270.0
2	122.044	H	38.7	-5.4	33.3	43.5	10.2	146.6	127.0
3	40.683	V	32.6	-5.7	26.9	40.0	13.1	100.0	1.0
4	48.195	V	35.2	-8.2	27.0	40.0	13.0	100.0	186.0
5	94.924	V	45.1	-10.6	34.5	43.5	9.0	100.0	302.0
6	122.045	V	35.1	-5.4	29.7	43.5	13.8	100.0	218.0





Axial Direction of EUT : Pattern 3



** IPS Corporation **

<<Radiated Emission>> 3 August, 2010 16:30

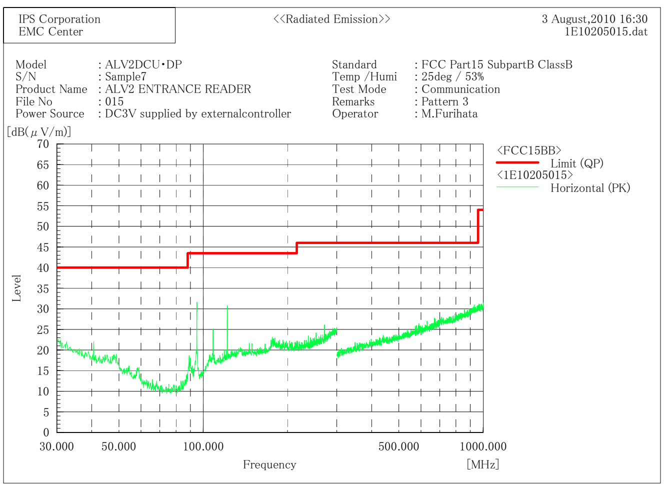
1E10205015.dat

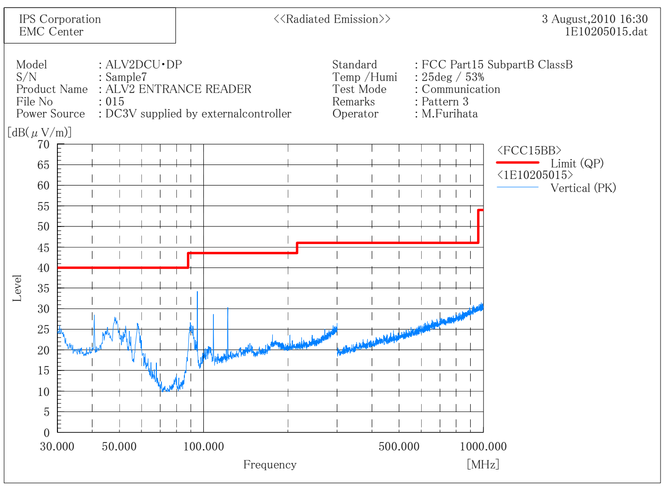
Standard	:	FCC Part15 SubpartB ClassB
Model	:	ALV2DCU・DP
S/N	:	Sample7
Product Name	:	ALV2 ENTRANCE READER
File No	:	015
Power Source	:	DC3V supplied by externalcontroller
Temp /Humi	:	25deg / 53%
Test Mode	:	Communication
Remarks	:	Pattern 3
Operator	:	M.Furihata

****

Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [°]
1	94.924	H	41.3	-10.6	30.7	43.5	12.8	189.1	270.0
2	122.046	H	36.0	-5.4	30.6	43.5	12.9	153.4	129.0
3	40.683	V	33.6	-5.7	27.9	40.0	12.1	100.0	68.0
4	48.184	V	35.2	-8.2	27.0	40.0	13.0	100.0	179.0
5	94.923	V	44.5	-10.6	33.9	43.5	9.6	100.0	58.0
6	122.044	V	35.4	-5.4	30.0	43.5	13.5	100.0	226.0





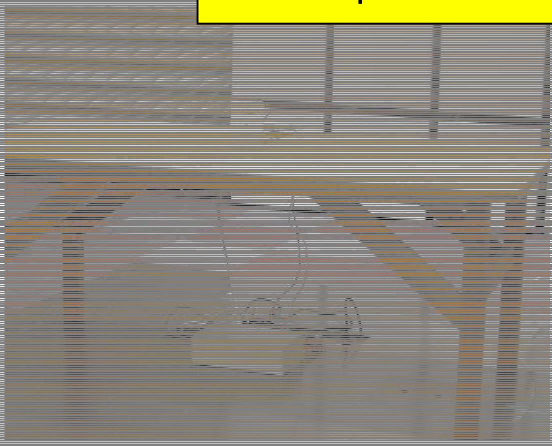
7 TEST CONFIGURATION PHOTOS

7.1 Photos of Radiated Emission Test (blow 30MHz)

TEST CONFIGURATION PHOTOS

were separated from this report

7.2 Photos of R



7.3 Photos of Frequency Stability Test