

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT INDUSTRY CANADA RSS-210

OF

Product Name: POS terminal

Brand Name: INGENICO

Model No.: FCC: iPA280, IPA280-01P1802
IC: IPA280-01P1802

Model Differences: IPA280-01P1802: Ortus3.5"LCD(LCM) SWI Q2687RD(Edge module)

FCC ID: XKBIPA280NEWMODEM

IC: 2586D-IPA280NWMDM

Report No.: EH/2011/70055

Issue Date: Dec. 21, 2011

FCC Rule Part: §15.225

IC Rule Part: RSS-210 issue 8: 2010, Annex 2 A2.6

Prepared for: INGENICO
192, avenue Charles de Gaulle , 92200
Neuilly-sur-Seine, FRANCE

Prepared by: SGS Taiwan Ltd.
Electronics & Communication Laboratory
No. 134, Wu Kung Rd., Wuku Industrial Zone,
Taipei County, Taiwan



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VERIFICATION OF COMPLIANCE

Applicant: INGENICO
192, avenue Charles de Gaulle , 92200 Neuilly-sur-Seine, FRANCE

Product Name: POS terminal

Brand Name: INGENICO

FCC ID: XKBIPA280NEWMODEM

IC: 2586D-IPA280NWMDM

Model No.: FCC: iPA280, IPA280-01P1802
IC: IPA280-01P1802

Model Difference: IPA280-01P1802: Ortus3.5”LCD(LCM) SWI Q2687RD(Edge module)

File Number: EH/2011/70055

Date of Test: Nov. 08, 2011 ~ Dec. 21, 2011

Date of EUT Received: Nov. 08, 2011

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.225 and RSS-210 issue 8: 2010 Annex 2 A2.6.

The test results of this report relate only to the tested sample identified in this report

Test By: *Jay Lin* **Date:** Dec. 22, 2011

Jay Lin / Engineer

Prepared By: *Cherry Chen* **Date:** Dec. 22, 2011

Cherry Chen / Clerk

Approved By: *Jim Chang* **Date:** Dec. 22, 2011

Jim Chang / Supervisor

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Version

Version No.	Date	Description
00	Dec. 22, 2011	Initial creation of document

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1 GENERAL INFORMATION

1.1 Product Description

General:

Product Name:	POS terminal	
Brand Name:	INGENICO	
Model No.:	FCC: iPA280, IPA280-01P1802 IC: IPA280-01P1802	
Model Difference:	IPA280-01P1802: Ortus3.5”LCD(LCM) SWI Q2687RD(Edge module)	
Data Cable:	Model No.: N/A, Supplier: Ingenico	
Hardware Version:	PRE-DVT	
Software Version:	0.60.00.G	
Power Supply:	3.6Vdc Lithium Ion battery or 5Vdc by AC/DC power adapter	
	Battery:	Model No.: IPA200-BAT, Supplier: Ingenico
	Adapter:	Model No.: DSA-10CU-05, Supplier: DVE

RFID:

Operating Frequency	13.56MHz
Transmit Power	< 124dBuV/m at 3m.
Number of Channels	1
Operating Mode	Point-to-Point
Antenna Type	Print antenna
Module Type	ASK

The EUT is compliance with RFID Standard.

This report applies for RFID.

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1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID: XKBIPA280NEWMODEM**, filing to comply with Section 15.225 of the FCC Part 15, Subpart C Rules and **IC: 2586D-IPA280NWMDM** filing to comply with Industry Canada RSS-210 issue 8: 2010 Annex 2.. The composite system (digital device) is compliance with Subpart B is authorized under a DoC procedure..

1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 (2003) and RSS-Gen: 2010.. Radiated testing was performed at an antenna to EUT distance 3 meters.

1.4 Test Facility

The measurement facilities used to collect the 3m Radiated Emission and AC power line conducted data are located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003. FCC Registration Number are: 990257 and 236194, Canada Registration Number: 4620A-4.

The 10 m Open Area Test Sites located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No. 29, Pau-Tou-Tsuo Valley Chia-Pau Tsuen, Linkou Hsiang, Taipei county, which is constructed and calibrated to meet the CISPR 22/EN 55022 requirements. SGS Site No. 1(3 &10 meters) and FCC Registration Number: 94644.

1.5 Special Accessories

Not available for this EUT intended for grant.

1.6 Equipment Modifications

Not available for this EUT intended for grant.

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2 System Test Configuration

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The Transmitter was operated in the normal operating mode. the Tx frequency was fixed which was for the purpose of the measurements.

2.3 Test Procedure

2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the requirements in Section 7 and 13 of ANSI C63.4-2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode.

2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 8 and 13 of ANSI C63.4-2003.

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2.4 Limitation

(1) Conducted Emission

According to section 15.207(a) Conducted Emission Limits is as following.

Frequency range MHz	Limits dB (uV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

Note

- 1.The lower limit shall apply at the transition frequencies
- 2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

(2) Radiated Emission

- a. The field strength of any emission within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.
- b. Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.
- c. Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.
- d. The field strength of any emissions appearing outside of the 13.110-14.010 MHz shall not exceed the general radiated emission limits in section 15.209(Intentional Radiators general limit).as below.

Frequency (MHz)	Field strength $\mu\text{V}/\text{m}$	Distance (m)	Field strength at 3m $\text{dB}\mu\text{V}/\text{m}$
1.705-30	30	30	69.54
30-88	100	3	40
88-216	150	3	43.5
216-960	200	3	46
Above 960	500	3	54

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- Remark:
1. Emission level in dBuV/m=20 log (uV/m)
 2. Measurement was performed at an antenna to the closed point of EUT distance of meters.
 3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of ξ 15.205 & RSS210 2.2.7
 4. Emission spurious frequency which appearing within the Restricted Bands specified in provision of ξ 15.205 & RSS210 2.2.7, then the general radiated emission limits in ξ 15.209 & RSS210 2.2.7

(3) Frequency Tolerance

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of 5 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

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2.5 Configuration of Tested System

Fig. 2-1 Configuration of Tested System

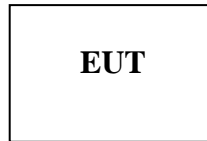


Table 2-1 Equipment Used in Tested System

Equipment	Mfr/Brand	Model/ Type No.	FCC ID	Series No.
N/A				

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3 Summary of Test Results

FCC Rules	Description Of Test	Result
§15.207 & RSS-Gen §7.2.4	Conducted Emission	Compliant
§15.225 (a), (d) & RSS210 2.2.7	Radiated Emission	Compliant
§15.225 (e) & RSS210 Annex 2 A2.6	Frequency Stability	Compliant

4 Description of test modes

The EUT stay in continuous transmitting mode. The frequency 13.56 MHz is chosen for radiated emission testing.

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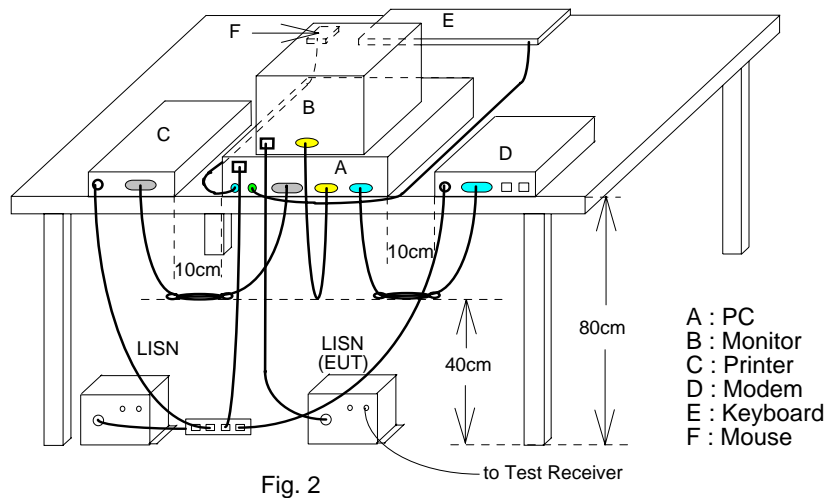
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5 Conducted Emissions Test

5.1 Measurement Procedure:

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

5.2 Test SET-UP (Block Diagram of Configuration)



5.3 Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMI Test Receiver	R&S	ESCS30	828985/004	09/23/2010	09/22/2012
LISN	Rolf-Heine	NNB-2/16Z	99012	03/31/2011	03/30/2012
LISN	FCC	FCC-LISN-50/250-25-2-01	04034	03/31/2011	03/30/2012
Coaxial Cables	N/A	WK CE Cable	N/A	11/28/2011	11/27/2012

5.4 Measurement Result:

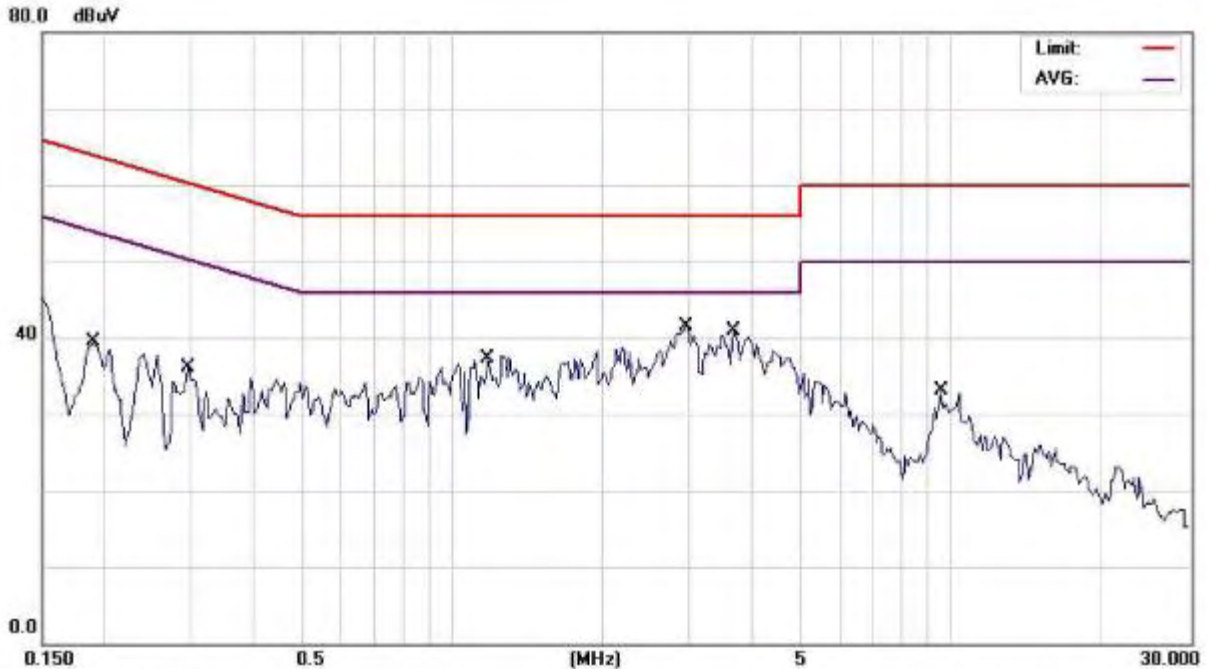
The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peak.

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AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	RFID Operation Mode			Test Date:	Nov. 14, 2011
Temperature:	26 °C	Humidity:	59 %	Test By:	Jay



Site: SGS CONDUCTED #1	Phase: L1	Temperature: 26 °C
Limit: FCC Class B Conduction(QP)	Power: AC 110V/60Hz	Humidity: 59%
EUT: iPA280, IPA280-01P1802	Distance:	Air Pressure: hpa
M/N: NA		
Note: RFID+Adapter		

No.	Mk.	Freq. MHz	Reading Level dBuV	Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1900	39.40	0.10	39.50	64.04	-24.54	QP	
2		0.2950	35.96	0.09	36.05	60.38	-24.33	QP	
3		1.1800	37.28	0.08	37.36	56.00	-18.64	QP	
4	*	2.9600	41.34	0.11	41.45	56.00	-14.55	QP	
5		3.6700	40.84	0.12	40.96	56.00	-15.04	QP	
6		9.5800	32.86	0.17	33.03	60.00	-26.97	QP	

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Site	SGS CONDUCTED #1	Phase:	N	Temperature:	26 °C
Limit:	FCC Class B Conduction(QP)	Power:	AC 110V/60Hz	Humidity:	59%
EUT:	iPA280, IPA280-01P1802	Distance:		Air Pressure:	hpa
M/N:	NA				
Note:	RFID+Adapter				

No.	Mk.	Freq. MHz	Reading Level dBuV	Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.3050	35.78	0.12	35.90	60.11	-24.21	peak	
2		1.1800	41.72	0.12	41.84	56.00	-14.16	peak	
3	*	2.1800	43.04	0.13	43.17	56.00	-12.83	peak	
4		3.2400	39.30	0.15	39.45	56.00	-16.55	QP	
5		3.7200	39.70	0.16	39.86	56.00	-16.14	QP	
6		10.0800	40.86	0.20	41.06	60.00	-18.94	peak	

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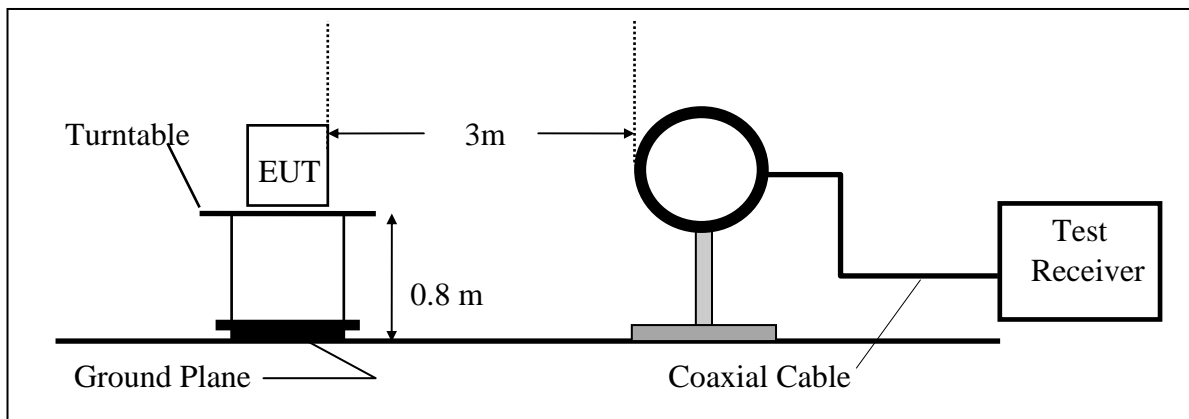
6 Radiated Emission Test

6.1 Measurement Procedure

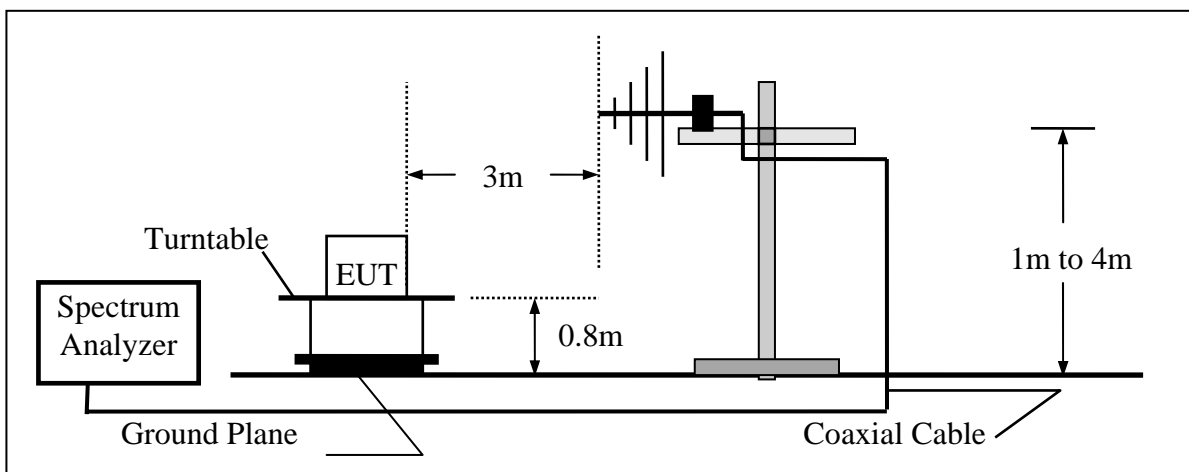
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured were complete.

6.2 Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency Below 1000MHz



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6.3 Measurement Equipment Used:

966 Chamber					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	R&S	FSP 40	100034	03/30/2011	03/29/2012
Bilog Antenna	SCHWAZBECK	VULB9160	3136	11/19/2011	11/18/2012
Loop antenna	MESSTEC	FLA30	03/10086	06/05/2011	06/04/2013
Pre-Amplifier	Agilent	8447D	1937A02834	11/28/2011	11/27/2012
Pre-Amplifier	Agilent	8449B	3008A01973	01/05/2012	01/04/2013
Turn Table	HD	DT420	N/A	N.C.R	N.C.R
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R
Controller	HD	HD100	N/A	N.C.R	N.C.R
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-10M	10m	01/05/2012	01/04/2013
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	01/05/2012	01/04/2013
3m Site	SGS	966 chamber	N/A	09/06/2011	09/05/2012

6.4 Field Strength Calculation

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

$$FS = RA + AF + CL - AG$$

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

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6.5 Measurement Result

Operation Band	:RFID (Config 1)	Test Date	:2011-11-14
Fundamental Frequency	:13.56	Temp./Humi.	:27 deg_C / 66 RH
Operation Mode	:TX	Engineer	:Jay
EUT Pol.	:E2 PLAN	Measurement Antenna Pol.	:VERTICAL

Actual FS(dB μ V/m) = SPA. Reading level(dB μ V) + Factor(dB)

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

“---“ : denotes Noise Floor.

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dB μ V	Factor dB	Actual FS dB μ V/m	Limit @3m dB μ V/m	Safe Margin dB
13.56	F	Peak	50.67	6.22	56.89	124.00	-67.11
10.48	S	Peak	34.11	6.48	40.59	69.50	-28.91
14.92	S	Peak	37.42	6.04	43.46	69.50	-26.04
17.32	S	Peak	36.85	5.59	42.44	69.50	-27.06
18.46	S	Peak	37.59	5.54	43.13	69.50	-26.37
20.16	S	Peak	38.01	5.89	43.90	69.50	-25.60
21.58	S	Peak	37.36	5.64	43.00	69.50	-26.50
40.68	H	Peak	28.95	-13.35	15.60	40.00	-24.40
61.04	S	Peak	29.52	-14.90	14.62	40.00	-25.38
122.04	H	Peak	32.52	-13.93	18.59	43.50	-24.91
143.49	S	Peak	30.67	-12.20	18.47	43.50	-25.03
168.71	S	Peak	29.31	-12.43	16.88	43.50	-26.62
247.28	S	Peak	29.95	-13.37	16.58	46.00	-29.42

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Operation Band	:RFID (Config 1)	Test Date	:2011-11-14
Fundamental Frequency	:13.56	Temp./Humi.	:27 deg_C / 66 RH
Operation Mode	:TX	Engineer	:Jay
EUT Pol.	:E2 PLAN	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

“---“ : denotes Noise Floor.

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Safe Margin dB
13.56	F	Peak	54.71	6.22	60.93	124.00	-63.07
10.36	S	Peak	40.78	6.49	47.27	69.50	-22.23
14.92	S	Peak	42.29	6.04	48.33	69.50	-21.17
16.66	S	Peak	39.17	5.68	44.85	69.50	-24.65
18.42	S	Peak	38.99	5.54	44.53	69.50	-24.97
21.24	S	Peak	40.22	5.86	46.08	69.50	-23.42
22.02	S	Peak	40.30	5.59	45.89	69.50	-23.61
40.68	H	Peak	36.77	-13.35	23.42	40.00	-16.58
67.80	H	Peak	35.14	-16.04	19.10	40.00	-20.90
221.09	S	Peak	40.61	-14.41	26.20	46.00	-19.80
298.69	S	Peak	38.51	-11.98	26.53	46.00	-19.47
324.88	S	Peak	39.19	-11.42	27.77	46.00	-18.23
705.12	S	Peak	32.68	-5.03	27.65	46.00	-18.35

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Operation Band	:RFID (Config 1)	Test Date	:2011-11-14
Fundamental Frequency	:13.56	Temp./Humi.	:27 deg_C / 66 RH
Operation Mode	:RX	Engineer	:Marcus
EUT Pol.	:E2 PLAN	Measurement Antenna Pol.	:VERTICAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

“---“ : denotes Noise Floor.

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Safe Margin dB
60.58	S	Peak	29.55	-14.85	14.70	40.00	-25.30
144.99	S	Peak	29.21	-12.17	17.04	43.50	-26.46
303.03	S	Peak	25.11	-11.75	13.36	46.00	-32.64
362.22	S	Peak	27.02	-10.68	16.34	46.00	-29.66
621.51	S	Peak	26.62	-6.15	20.47	46.00	-25.53
798.20	S	Peak	27.54	-3.59	23.95	46.00	-22.05

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Operation Band	: RFID (Config 1)	Test Date	:2011-11-14
Fundamental Frequency	: 13.56	Temp./Humi.	:27 deg_C / 66 RH
Operation Mode	: RX	Engineer	:Marcus
EUT Pol.	: E2 PLAN	Measurement Antenna Pol.	:HORIZONTAL

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

“---“ : denotes Noise Floor.

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Safe Margin dB
168.55	S	Peak	27.55	-12.38	15.17	43.50	-28.33
336.41	S	Peak	30.25	-11.13	19.12	46.00	-26.88
417.26	S	Peak	29.63	-9.98	19.65	46.00	-26.35
580.22	S	Peak	28.54	-7.37	21.17	46.00	-24.83
712.21	S	Peak	28.98	-4.86	24.12	46.00	-21.88
865.91	S	Peak	28.22	-2.50	25.72	46.00	-20.28

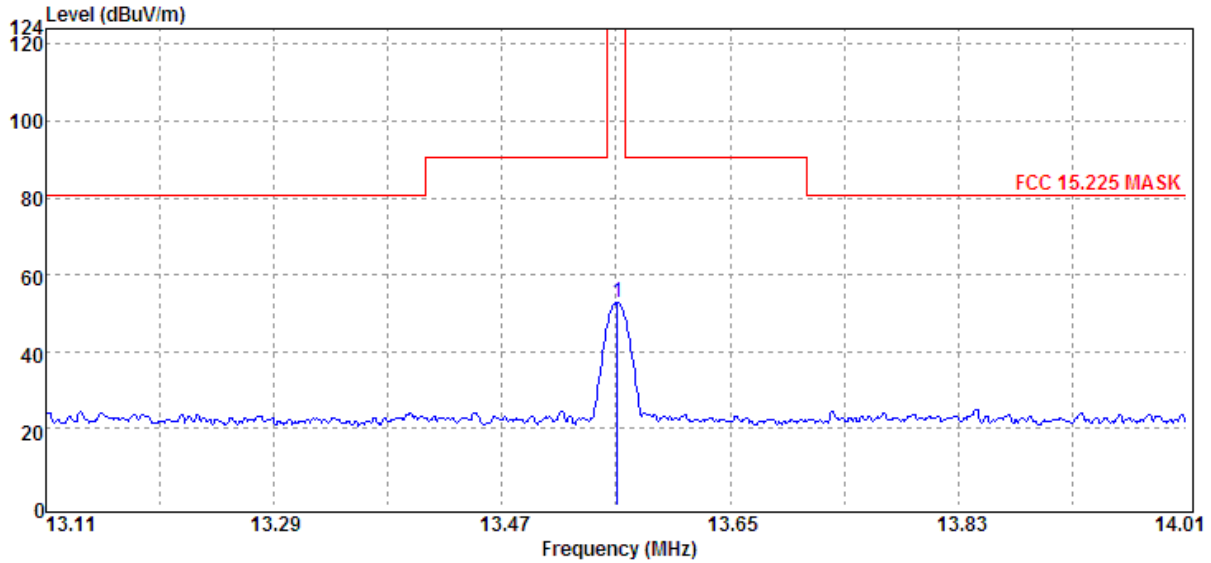
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Radiated Mask

Operation Band	:RFID (Config 1)	Test Date	:2011-12-21
Fundamental Frequency	:13.56	Temp./Humi.	:27 deg_C / 66 RH
Operation Mode	:TX MAIN	Engineer	:Marcus
EUT Pol.	:E2 PLAN	Measurement Antenna Pol.	:VERTICAL



Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

“---“ : denotes Noise Floor.

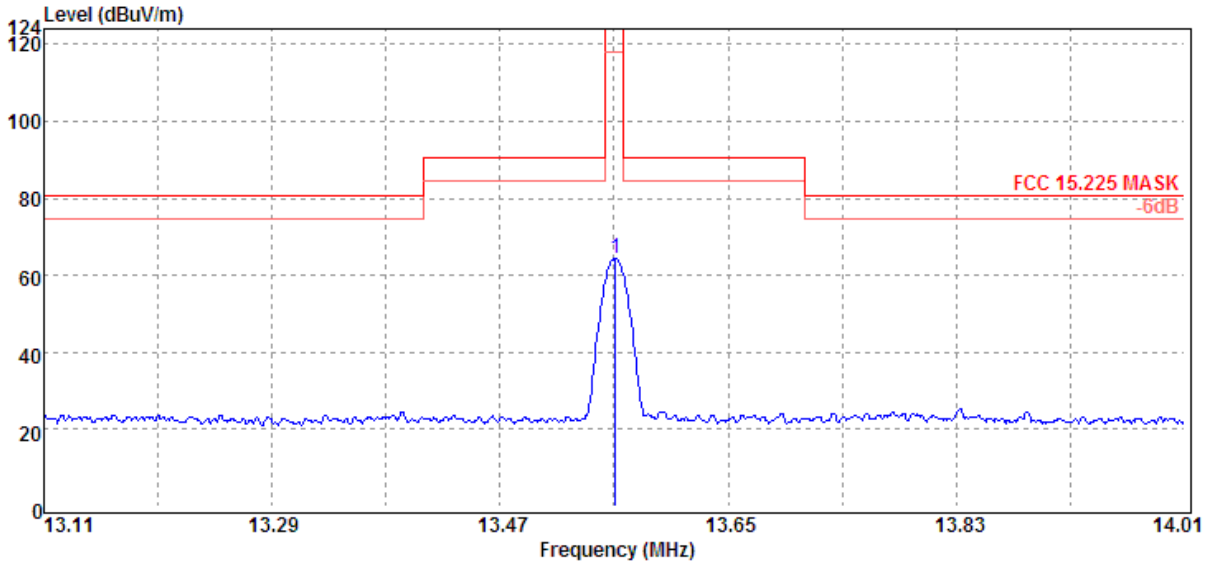
Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Safe Margin dB
13.56	F	Peak	46.41	6.27	52.68	124.00	-71.32

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Radiated Mask

Operation Band	:RFID (Config 1)	Test Date	:2011-12-21
Fundamental Frequency	:13.56	Temp./Humi.	:27 deg_C / 66 RH
Operation Mode	:TX MAIN	Engineer	:Marcus
EUT Pol.	:E2 PLAN	Measurement Antenna Pol.	:HORIZONTAL



Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.
 “E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.
 “---“ : denotes Noise Floor.

Freq. MHz	Note F/H/E/S	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Safe Margin dB
13.56	F	Peak	58.02	6.27	64.29	124.00	-59.71

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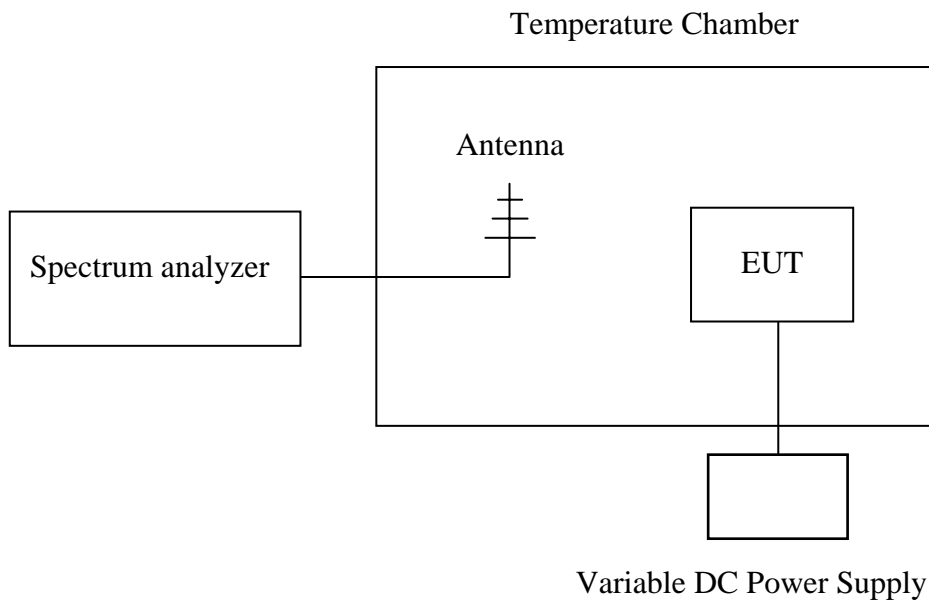
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7 Frequency Tolerance

7.1 Measurement Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set EUT as normal operation
3. Set SPA Center Frequency = fundamental frequency, RBW, VBW= 1K, Span =30K.
4. Set SPA Max hold. Mark peak, -26dB.

7.2 Test SET-UP (Block Diagram of Configuration)



7.3 Measurement Equipment Used:

Same as 6.2 Radiated Emission Measurement.

7.4 Measurement Results

Refer to attached data chart.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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A. Temperature Variation

Power Supply	Environment	Frequency	Delta (Hz)	Limit (KHz)
V	Temperature (°C)	(MHz)		
3.6	5	13.560450	-33.00	+/- 1.356
3.6	10	13.560467	-50.00	+/- 1.356
3.6	20	13.560417	0.00	+/- 1.356
3.6	30	13.560450	-33.00	+/- 1.356
3.6	45	13.560434	-17.00	+/- 1.356

B. Supply Voltage Variation

Power Supply	Environment	Frequency	Delta (Hz)	Limit (KHz)
V	Temperature (°C)	(MHz)		
4.2	20	13.560551	-134.00	+/- 1.356
3.6	20	13.560417	0.00	+/- 1.356
3.5	20	13.560313	104.00	+/- 1.356

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8. 99% OCCUPIED BANDWIDTH MEASUREMENT

8.1 Test Set-up:

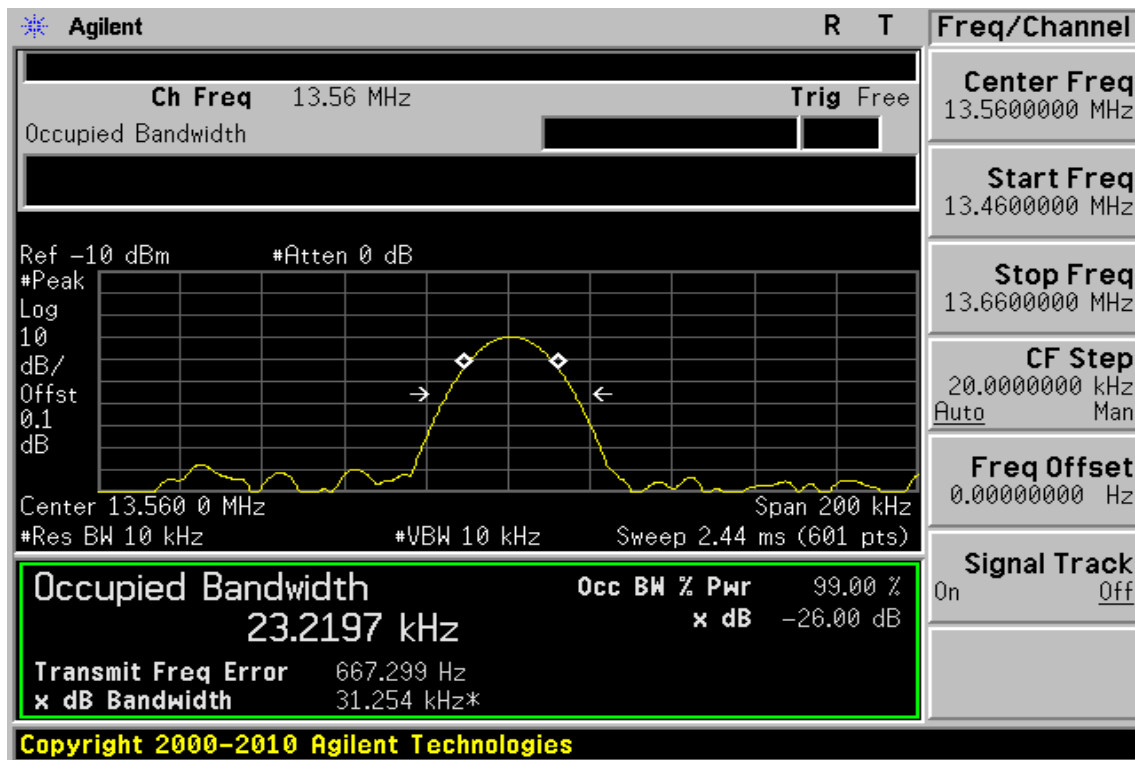
Refer to section 6.2 in this report

8.2 Measurement Procedure:

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW (10KHz) was set to about 1% of emission BW, VBW= 3 times RBW(10KHz), -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.

8.3 Measurement Equipment Used:

Refer to section 6.3 in this report



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