FCC Radio Test Report

FCC ID: WD66PDL7

This report concerns (check one) : ■ **Original Grant** □ **Class II Change**

Issued Date : Aug. 12, 2008
Project No. : R0805018
Equipment : Barcode Printer(Thermal Transfer Printer)
Model Name : EZ-6xxxPyyy; BP-6xxxPyyy (x=0-9,y=0-9,a-z or blank)

Applicant : Godex International Co., Ltd.
4F, No. 168, Lian-Cheng Road,
Chung-Ho City, Taipei Hsien 235 Taiwan

Tested by:
Neutron Engineering Inc. EMC Laboratory
Date of Test:
May 22, 2008 ~ Aug. 06, 2008

Testing Engineer : Rush Kao
(Rush Kao)

Technical Manager : Jeff Yang
(Jeff Yang)

Authorized Signatory : Andy Chiu
(Andy Chiu)

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NVLAP Lab Code: 200145-0 ilac-MRA TAF Testing Laboratory 0659

Declaration

Neutron represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C**., or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

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Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

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1. CERTIFICATION

Equipment :	Barcode Printer(Thermal Transfer Printer)
Brand Name :	GODEX
Model Name :	EZ-6xxxPyyy; BP-6xxxPyyy (x=0-9,y=0-9,a-z or blank)
Applicant :	Godex International Co., Ltd.
Data of Test :	May 22, 2008 ~ Aug. 06, 2008
Standards :	FCC Part15, Subpart C
	ANCI C63.4 : 2003

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCP-1-R0805018) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP and TAF according to the ISO-17025 quality assessment standard and technical standard(s).

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards: (Antenna to EUT distance is **3** m)

FCC Part15, Subpart C		
Standard	Test Item	Remark
15.207	Conducted Emission	PASS
15.35 / 15.205 / 15.209 / 15.225	Radiated Emission	PASS
15.225(e)	Frequency Stability	PASS
15.203	Antenna Requirement	PASS

NOTE:

(1) ” N/A” denotes test is not applicable in this Test Report.

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **C01/OS01** at the location of No.132-1, Lane 329, Sec. 2, Palain Road, Shijr City, Taipei, Taiwan.

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ± **U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95**%。

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U，(dB)	NOTE
C01	ANSI	150 KHz ~ 30MHz	1.94	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U，(dB)	NOTE
OS-01	ANSI	30MHz ~ 200MHz	V	3.82	
		30MHz ~ 200MHz	H	3.60	
		200MHz ~ 1,000MHz	V	3.86	
		200MHz ~ 1,000MHz	H	3.94	
OS-02	ANSI	30MHz ~ 200MHz	V	2.48	
		30MHz ~ 200MHz	H	2.16	
		200MHz ~ 1,000MHz	V	2.50	
		200MHz ~ 1,000MHz	H	2.66	

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

<table>
<tr><td>Equipment</td><td>Barcode Printer(Thermal Transfer Printer)</td></tr>
<tr><td>Brand Name</td><td>GODEX</td></tr>
<tr><td>Model Name</td><td>EZ-6xxxPyyy; BP-6xxxPyyy (x=0-9,y=0-9,a-z or blank)</td></tr>
<tr><td>OEM Brand/Model Name</td><td>
<table>
<tr><th>OEM Brand</th><th>OEM Model</th></tr>
<tr><td>SYSTEM WAVE</td><td>KSW-60x(x=0-9)</td></tr>
<tr><td>Intermec</td><td>PD6x(x=0-9)</td></tr>
<tr><td>THARO</td><td>H-6xx(x=0-9)</td></tr>
<tr><td>ZMARK</td><td>GNPG803</td></tr>
<tr><td>GRAPHIC PRODUCTS</td><td>DuraLabel 7000</td></tr>
</table>
</td></tr>
<tr><td>Model Difference</td><td>For marking Purpose only, no technical differenced.</td></tr>
<tr><td>Product Description</td><td>The EUT is a Barcode Printer(Thermal Transfer Printer).
<table>
<tr><td>A. Operation Frequency</td><td>13.56 MHz</td></tr>
<tr><td>B. Modulation Type</td><td>AM</td></tr>
<tr><td>C. Antenna Designation</td><td>LOOP Antenna</td></tr>
</table>
Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.</td></tr>
<tr><td>Power Source</td><td></td></tr>
<tr><td>Power Rating</td><td></td></tr>
<tr><td>Connecting I/O Port(s)</td><td>Please refer to the User's Manual</td></tr>
<tr><td>Products Covered</td><td>N/A</td></tr>
<tr><td>EUT Modification(s)</td><td>N/A</td></tr>
</table>

Note:

1. For a more detailed features description, please refer to the manufacturer’s specifications or the User's Manual.

3.2 DESCRIPTION OF TEST MODES

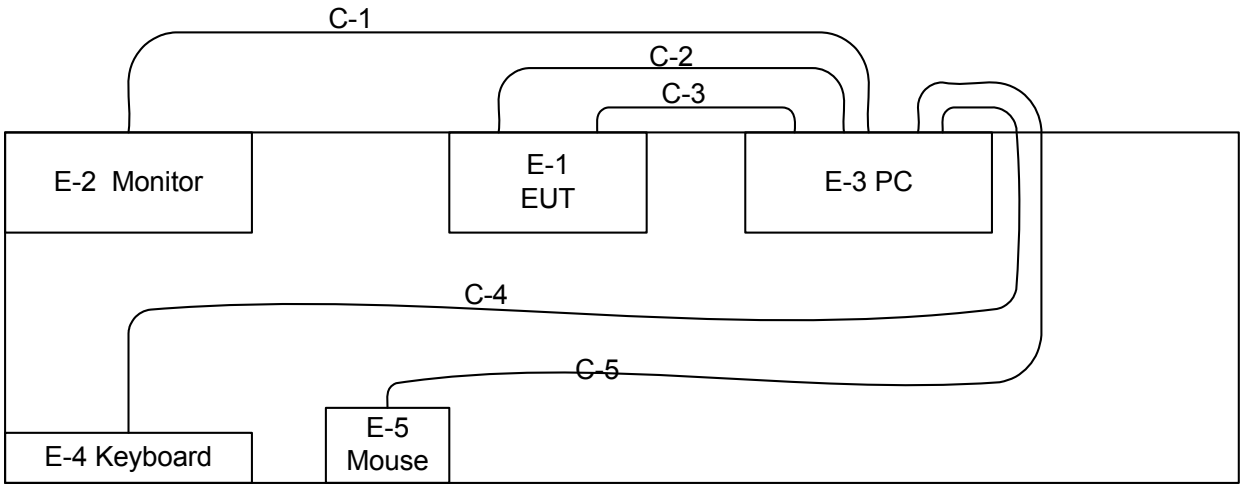
To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Test Mode	Description
Mode 1	TX-13.56MHz

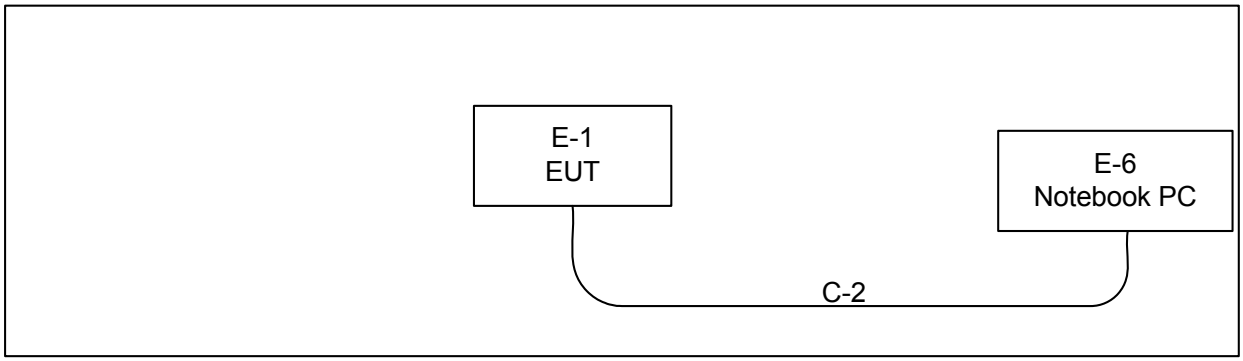
For Conducted / Radiated Test	
Final Test Mode	Description
Mode 1	TX-13.56MHz

3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

For CONDUCTED



For RADIATED



C-1 D-SUB Cable
C-2 RS232 Cable
C-3 USB Cable
C-4 PS/2 Cable
C-5 PS/2 Cable

3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	Barcode Printer(Thermal Transfer Printer)	GODEX	EZ-6xxxPyyy	WD66PDL7	N/A	EUT
E-2	19" LCD Monitor	Samsung	SyncMaster 193P	DOC	DI19H4JXC05517A	
E-3	PC	DELL	MVT01	DOC	4GCTR18	
E-4	PS/2 K/B	Logitech	Y-SJ17(ACK260A)	DOC	SYU44664880	
E-5	PS/2 Mouse	Logitech	M-SBF69	DOC	HCA44601156	
E-6	Notebook PC	DELL	D600	DOC	7T390 A03	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	YES	YES	1.8M	
C-2	YES	NO	1.7M	
C-3	YES	NO	1.7M	
C-4	YES	NO	1.5M	
C-5	YES	NO	1.7M	

Note:

(1) The support equipment was authorized by Declaration of Conformity.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 POWER LINE CONDUCTED EMISSION (FREQUENCY RANGE 150KHZ-30MHZ)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

4.1.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Test Cable	N/A	C01	N/A	Oct. 10, 2008
2	LISN (SR03)	EMCO	3816/2	00042991	Jan. 29, 2009
3	Pulse Limiter	Electro-Metrics	EM-7600	112647	Oct. 10, 2008
4	50Ω Terminator	N/A	N/A	N/A	May 13, 2009
5	LISN	Rolf Heine	NNB-2/16Z	98053	Dec. 30, 2008
6	EMI Test Receiver	R&S	ESCI	100082	Feb. 23, 2009

Remark: ” N/A” denotes No Model Name , Serial No. or No Calibration specified.

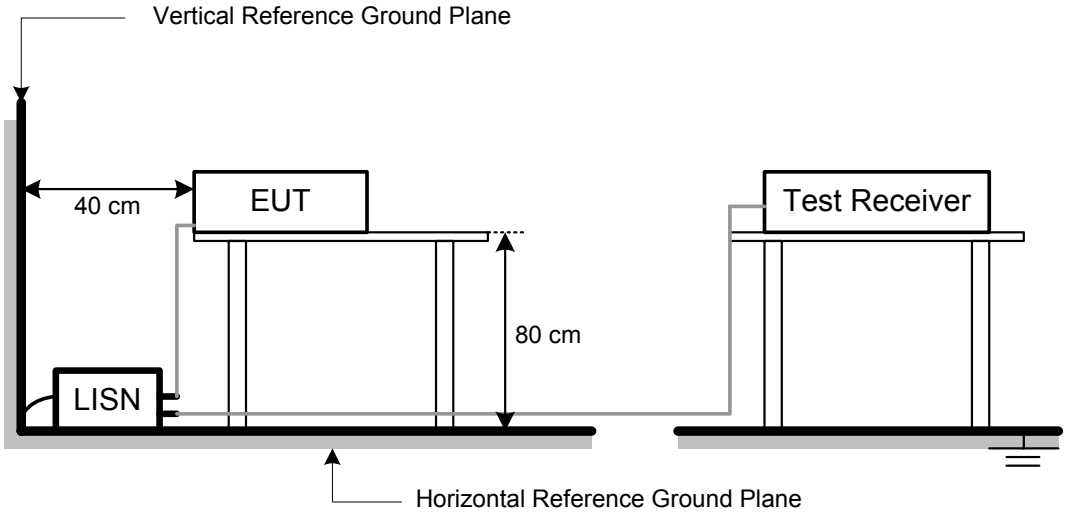
4.1.3 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



4.1.6 EUT OPERATING CONDITIONS

The EUT exercise program (EMC.exe) used during radiated and/or conducted emission measurement was designed to exercise the various system components in a manner similar to a typical use. The program contained on a PC hard disk and is auto-starting on power-up. Once loaded, the program sequentially exercises each system component in turn. The sequence used is:

1. Read (write) from (to) mass storage device (Disk).
2. Send "H" pattern to video port device (Monitor).
3. Send barcode pattern to USB or RS232 port device (EUT).
4. Send " H " pattern to serial port device (Modem).
5. The EUT has been programmed to continuously transmit during test.
6. Repeated from 2 to 5 continuously.

As the keyboard and mouse are strictly input devices, no data is transmitted to (from) them during test. They are, however, continuously scanned for data input activity.

4.1.7 TEST RESULTS

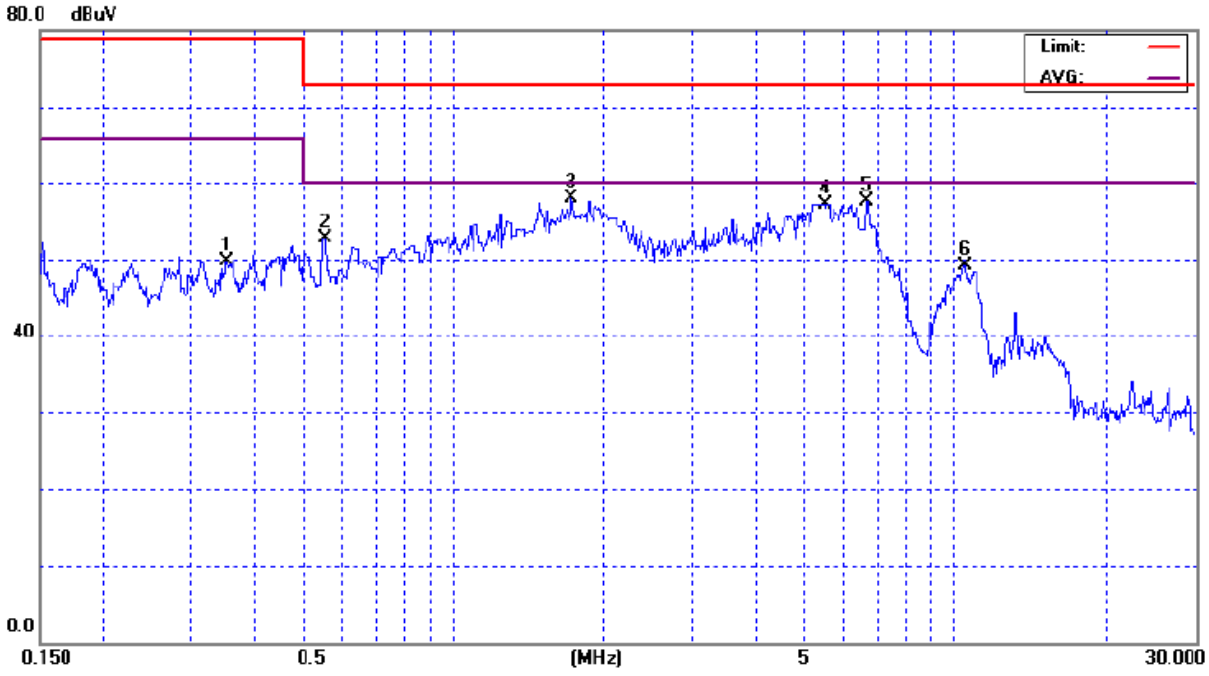
E.U.T :	Barcode Printer(Thermal Transfer Printer)	Model Name :	EZ-6xxxPyyy
Temperature :	27°C	Relative Humidity :	55%
Pressure :	1011 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX-13.56MHz		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.35	Line	49.72	*	79.00	66.00	-29.28	(QP)
0.55	Line	52.66	*	73.00	60.00	-20.34	(QP)
1.73	Line	57.98	*	73.00	60.00	-15.02	(QP)
5.51	Line	57.19	*	73.00	60.00	-15.81	(QP)
6.70	Line	57.45	*	73.00	60.00	-15.55	(QP)
10.50	Line	49.04	*	73.00	60.00	-23.96	(QP)

Remark

(1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz；SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz。Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz。

(2) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform。In this case, a " * " marked in AVG Mode column of Interference Voltage Measured。



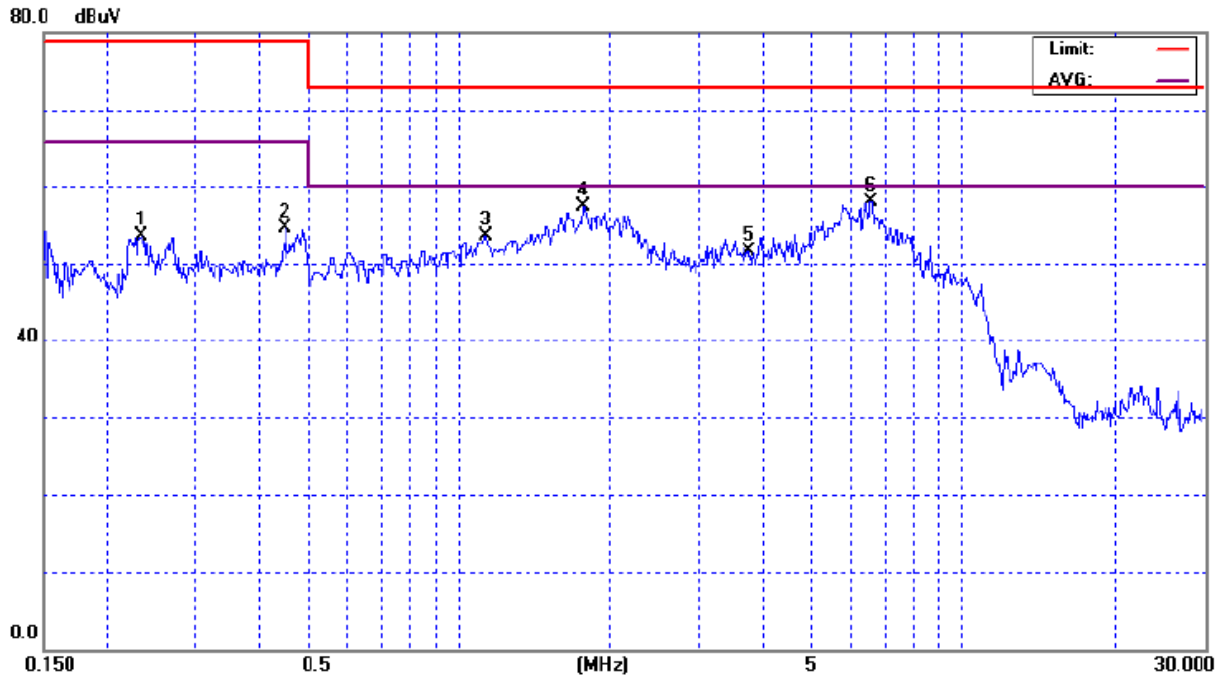
E.U.T :	Barcode Printer(Thermal Transfer Printer)	Model Name :	EZ-6xxxPyyy
Temperature :	27 °C	Relative Humidity :	55%
Pressure :	1011 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX-13.56MHz		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.23	Neutral	53.41	*	79.00	66.00	-25.59	(QP)
0.45	Neutral	54.46	*	79.00	66.00	-24.54	(QP)
1.13	Neutral	53.54	*	73.00	60.00	-19.46	(QP)
1.77	Neutral	57.31	*	73.00	60.00	-15.69	(QP)
3.74	Neutral	51.54	*	73.00	60.00	-21.46	(QP)
6.59	Neutral	57.98	*	73.00	60.00	-15.02	(QP)

Remark

(1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz；SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz。Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz 。

(2) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform。In this case, a " * " marked in AVG Mode column of Interference Voltage Measured。



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS (Frequency Range 30MHz-1000MHz)

FCC Part 15.209				
Frequency (MHz)	Field Strength Limitation		Field Strength Limitation at 3m Measurement Dist	
	(uV/m)	Dist	(uV/m)	(dBuV/m)
0.009 – 0.490	2400 / F(KHz)	300m	10000 * 2400/F(KHz)	20log 2400/F(KHz) + 80
0.490 – 1.705	24000 / F(KHz)	30m	100 * 24000/F(KHz)	20log 24000/F(KHz) + 40
1.705 – 30.00	30	30m	100* 30	20log 30 + 40
30.0 – 88.0	100	3m	100	20log 100
88.0 – 216.0	150	3m	150	20log 150
216.0 – 960.0	200	3m	200	20log 200
Above 960.0	500	3m	500	20log 500
FCC Part 15.225(a)/(b)/(c)				
Frequency (MHz)	Field Strength Limitation		Field Strength Limitation at 3m Measurement Dist	
	(uV/m)	Dist	(uV/m)	(dBuV/m)
13.553 – 13.567	15,848	30 m	15,848*100	124
13.567 – 13.710	334	30 m	334*100	90.5
13.110 – 13.410 13.710 – 14.010	106	30 m	106*100	80.5

Notes:

(1) The tighter limit shall apply at the boundary between two frequency range.

(2) Limitation expressed in dBuV/m is calculated by 20log Emission Level (uV/m).

(3) If measurement is made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula of $L_{d1} = L_{d2} * (d_2/d_1)^2$.
Example:
F.S Limit at 30m distance is 30uV/m , then F.S Limitation at 3m distance is adjusted as $L_{d1} = L_1 = 30uV/m * (10)^2 = 100 * 30$ uV/m

4.2.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Log-Bicon Antenna	Schwarzbeck	VULB 9160	3176	Jul. 01, 2009
2	Test Cable	N/A	10M_OS01	N/A	Oct. 10, 2008
3	Test Cable	N/A	OS01-1/-2	N/A	Oct. 10, 2008
4	Pre-Amplifier	Anritsu	MH648A(OS 01)	M09961	Oct. 10, 2008
5	Antenna Mast	Chance Most	CMTB-1.5	N/A	N/A
6	Turn Table	Chance Most	CMTB-1.5	N/A	N/A
7	Spectrum Analyzer	ADVAN TEST	R3132	81700025	Mar. 30. 2009
8	Loop Ant	EMCO	6502	00042960	Jan. 12, 2009

Remark: ” N/A” denotes No Model Name / Serial No. and No Calibration specified.

4.2.3 TEST PROCEDURE

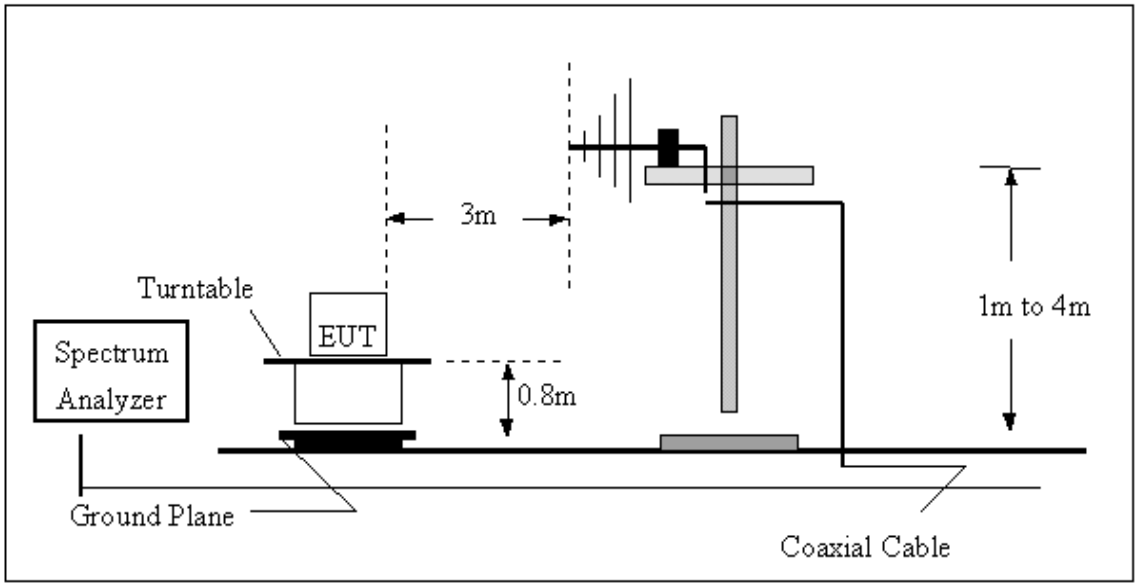
a. The measuring distance of at 10 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m or 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting radiated emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.4 DEVIATION FROM TEST STANDARD

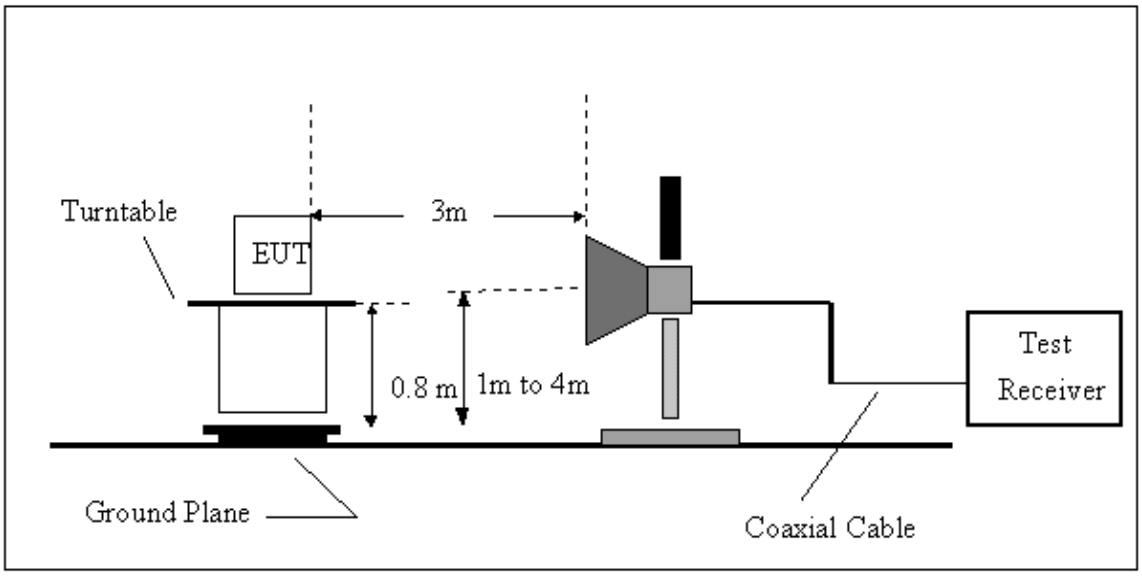
No deviation

4.2.5 TEST SETUP

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



(B) Radiated Emission Test Set-UP Frequency Over 1 GHz



4.2.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.6** Unless otherwise a special operating condition is specified in the follows during the testing.

4.2.7 TEST RESULTS- FCC PART 15.209

E.U.T :	Barcode Printer(Thermal Transfer Printer)	Model Name :	EZ-6xxxPyyy
Temperature :	24°C	Relative Humidity :	55%
Pressure :	1012 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX-13.56MHz		

Freq. (MHz)	Ant.Pol. H/V	DetectorMode (PK/AV)	Reading (dBuV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBuV/m)	Limit-3m (dBuV/m)	Safe Margins (dBuV/m)	Note
40.69	V	Peak	43.50	- 4.74	38.76	40.00	- 1.24	(QP)
122.05	V	Peak	33.20	- 3.99	29.21	43.50	- 14.29	
135.61	V	Peak	40.20	- 2.94	37.26	43.50	- 6.24	
143.78	V	Peak	43.00	- 2.51	40.49	43.50	- 3.01	
162.73	V	Peak	34.72	- 1.86	32.86	43.50	- 10.64	
216.97	V	Peak	34.75	- 3.58	31.17	46.00	- 14.83	
271.21	V	Peak	34.27	- 1.97	32.30	46.00	- 13.70	
284.78	V	Peak	38.17	- 1.33	36.84	46.00	- 9.16	
287.56	V	Peak	35.62	- 1.22	34.40	46.00	- 11.60	
298.34	V	Peak	34.90	- 0.68	34.22	46.00	- 11.78	
300.77	V	Peak	31.42	- 0.59	30.83	46.00	- 15.17	
311.50	V	Peak	35.32	- 0.36	34.96	46.00	- 11.04	
311.90	V	Peak	37.12	- 0.35	36.77	46.00	- 9.23	
318.74	V	Peak	31.40	- 0.20	31.20	46.00	- 14.80	
324.57	V	Peak	34.90	- 0.07	34.83	46.00	- 11.17	
339.02	V	Peak	37.15	0.24	37.39	46.00	- 8.61	
352.58	V	Peak	39.37	0.70	40.07	46.00	- 5.93	
379.70	V	Peak	38.02	3.08	41.10	46.00	- 4.90	
393.26	V	Peak	36.45	4.28	40.73	46.00	- 5.27	
406.82	V	Peak	36.90	4.73	41.63	46.00	- 4.37	
420.39	V	Peak	32.45	4.45	36.90	46.00	- 9.10	
501.75	V	Peak	31.87	4.81	36.68	46.00	- 9.32	
515.31	V	Peak	34.47	5.03	39.50	46.00	- 6.50	
528.87	V	Peak	35.10	5.25	40.35	46.00	- 5.65	
637.36	V	Peak	31.60	7.20	38.80	46.00	- 7.20	
772.98	V	Peak	26.10	10.00	36.10	46.00	- 9.90	
812.31	V	Peak	25.20	10.53	35.73	46.00	- 10.27	
840.03	V	Peak	23.90	10.81	34.71	46.00	- 11.29	
882.64	V	Peak	22.80	11.90	34.70	46.00	- 11.30	

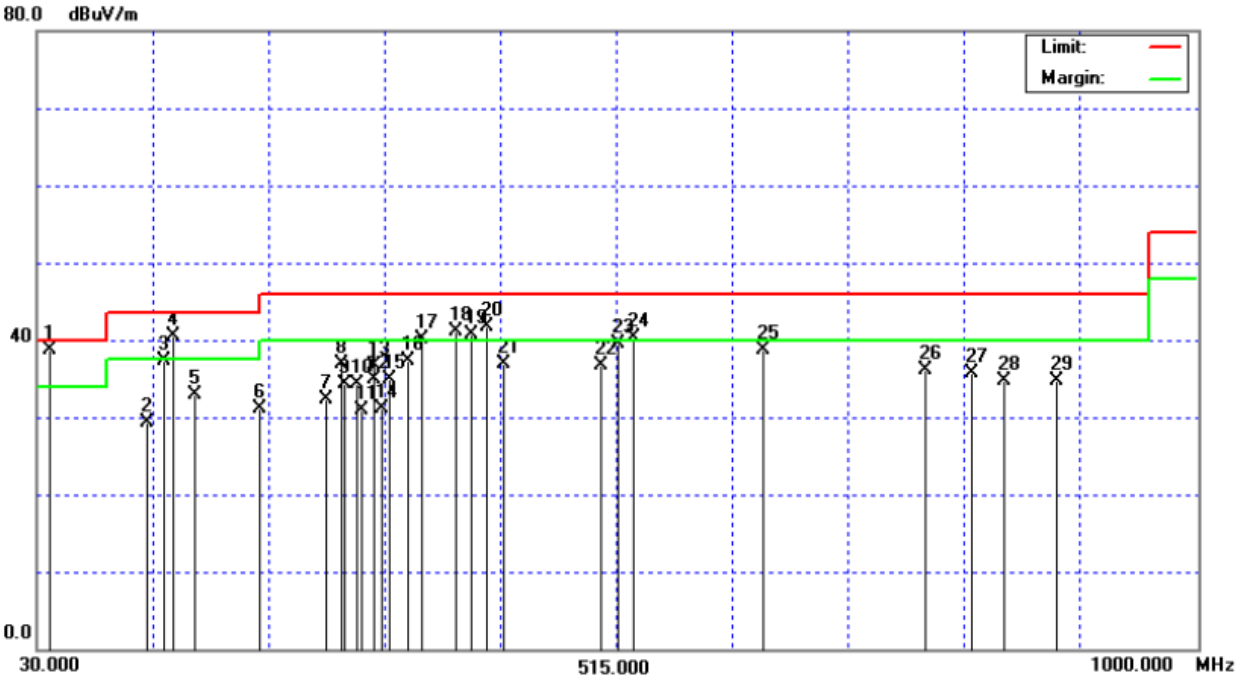
Remark：

(1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz；SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz。

(2) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measure-ment didn't perform。

(3) Measuring frequency range from 30MHz to 1000MHz。

(4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table。



E.U.T :	Barcode Printer(Thermal Transfer Printer)	Model Name :	EZ-6xxxPyyy
Temperature :	24°C	Relative Humidity :	55%
Pressure :	1012 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX-13.56MHz		

Freq. (MHz)	Ant.Pol. H/V	DetectorMode (PK/AV)	Reading (dBuV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBuV/m)	Limit-3m (dBuV/m)	Safe Margins (dBuV/m)	Note
40.68	H	Peak	41.15	- 4.74	36.41	40.00	- 3.59	
135.61	H	Peak	35.47	- 2.94	32.53	43.50	- 10.97	
149.15	H	Peak	32.37	- 2.00	30.37	43.50	- 13.13	
162.72	H	Peak	34.95	- 1.86	33.09	43.50	- 10.41	
216.96	H	Peak	34.30	- 3.58	30.72	46.00	- 15.28	
244.10	H	Peak	37.27	- 2.83	34.44	46.00	- 11.56	
267.00	H	Peak	30.50	- 2.20	28.30	46.00	- 17.70	
271.22	H	Peak	43.20	- 1.96	41.24	46.00	- 4.76	(QP)
278.00	H	Peak	30.97	- 1.62	29.35	46.00	- 16.65	
284.78	H	Peak	44.70	- 1.33	43.37	46.00	- 2.63	(QP)
298.35	H	Peak	42.17	- 0.68	41.49	46.00	- 4.51	
352.58	H	Peak	41.57	0.70	42.27	46.00	- 3.73	
366.14	H	Peak	41.50	1.89	43.39	46.00	- 2.61	(QP)
379.70	H	Peak	39.30	3.08	42.38	46.00	- 3.62	
393.27	H	Peak	36.92	4.28	41.20	46.00	- 4.80	
718.89	H	Peak	32.70	9.08	41.78	46.00	- 4.22	
786.19	H	Peak	26.35	10.19	36.54	46.00	- 9.46	
786.19	H	Peak	25.52	10.28	35.80	46.00	- 10.20	
814.72	H	Peak	32.60	10.55	43.15	46.00	- 2.85	(QP)

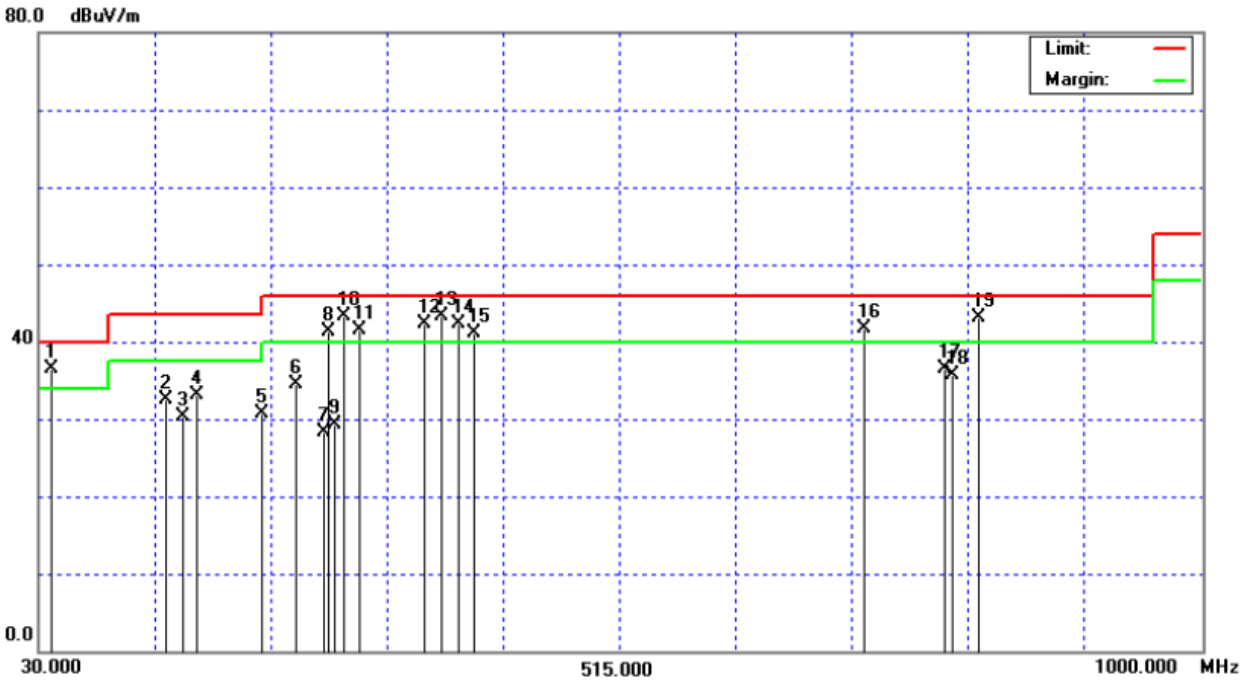
Remark：

(1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz；SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz。

(2) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measure-ment didn't perform。

(3) Measuring frequency range from 30MHz to 1000MHz。

(4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table。


80.0 dBuV/m
Limit:
Margin:
40
0.0
30.000
515.000
1000.000 MHz
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

4.2.8 TEST RESULTS- FCC PART 15.225

E.U.T :	Barcode Printer(Thermal Transfer Printer)	Model Name :	EZ-6xxxPyyy
Temperature :	25°C	Relative Humidity :	60%
Pressure :	1003 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX-13.56MHz		

Freq. (MHz)	DetectorMode (PK/AV)	Reading (dBuV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBuV/m)	Limit-3m (dBuV/m)	Safe Margins (dBuV/m)	Note
13.56	Peak	56.05	11.13	67.18	124.00	- 56.82	(QP)
27.12	Peak	40.90	- 22.15	18.75	69.00	- 50.25	(QP)

Remark：

(1) Spectrum Setting:
9 KHz – 150 KHz, RBW= 1 KHz, VBW=1 KHz, Sweep time = 200 ms.
150 K Hz – 30 MHz, RBW= 9 KHz, VBW=9 KHz, Sweep time = 200 ms.
30 MHz – 1000 MHz, RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.

(2) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measure-ment didn‘t perform。

(3) The Log-Bicon Antenna will use to test frequency range from 30MHz to 1000MHz and the Loop Antenna will use to test frequency below 30MHz.

(4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table。


127.0 dBuV/m
Limit:
67
1
7.0
13.106
13.20
13.28
13.37
13.46
13.55
13.64
13.73
13.82
14.00
MHz


130.0 dBuV/m
Limit:
70
1
10.0
10.000
12.00
14.00
16.00
18.00
20.00
22.00
24.00
26.00
30.00
MHz

4.3 FREQUENCY STABILITY MEASUREMENT

4.3.1 FREQUENCY STABILITY LIMITS

FCC Part 15.225(e)
the frequency tolerance of the carrier signal shall be maintained within +/-0.01% of the operating frequency over a temperature variation of –20 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.

4.3.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Aug. 16, 2008

Remark: ” N/A” denotes No Model No. / Serial No. and No Calibration specified.

4.3.3 TEST PROCEDURE

a. The equipment under test was connected to an external AC power supply and the RF output was connected to a frequency counter via feed through attenuators. The EUT was placed inside the temperature chamber.
After the temperature stabilized for approximately 20 minutes, the frequency of the output signal was recorded from the counter.
b. At room temperature (25±5°C), an external variable DC power supply was connected to the EUT. The frequency of the transmitter was measured for 115%, 100% and 85% of the nominal operating input voltage.
c. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.6** Unless otherwise a special operating condition is specified in the follows during the testing.

4.3.6 TEST RESULTS

E.U.T :	Barcode Printer(Thermal Transfer Printer)	Model Name :	EZ-6xxxPyyy
Temperature :	26°C	Relative Humidity :	60%
Pressure :	1003 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX-13.56MHz		

Temperature vs. Frequency Stability	
(℃)	**13.560000**
-20	13.560760
-10	13.560760
0	13.560720
10	13.560680
20	13.560640
30	13.560640
40	13.560600
50	13.560560
Max. Deviation (MHz)	**0.000760**
Max. Deviation (ppm)	**56.05**
(℃)	**13.560000**

Voltage vs. Frequency Stability	
Voltage	**Measurement Frequency (MHz)**
(V)	**13.560000**
138	13.560640
120	13.560620
102	13.560640
Max. Deviation (MHz)	**0.000640**
Max. Deviation (ppm)	**47.20**

5. EUT TEST PHOTO

Conducted Measurement Photos

Radiated Measurement Photos