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# RF Test Report

*FCC Rule Part(s):*

**FCC Part 15 Subpart C (§15. 225)**

- **Applicant** : Duali Inc.  
#505, Samsung Technopark, 471, Woncheon-dong, Yungtong-gu,  
Suwon-City, 443-824, Korea
- **Manufacturer** : Duali Inc.
- **FCC Classification** : Low Power Communications Device Transmitter(DXX)
- **FCCID** : SWUDE620
- **Device name** : RF Card Reader
- **Model name** : DE-620
- **Tested date** : June 03 ~ 11, 2009
- **Data of issue** : June 17, 2009

Tested by: *Engineer*

Reviewed by: *Manager*

Byung -Gee, HAN

Won-Jung, Lee

*This report contains the result of tests performed by **DIGITAL EMC CO., LTD.**  
Quality control in **DIGITAL EMC., LTD.** is implemented as per ISO/IEC 17025*

***The Test results relate only to the tested sample. It is not allowed to copy this report even partly without the allowance of DIGITAL EMC CO., LTD.***

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## 1. Equipment information

### SWUDE620

#### 1.1 Equipment details

Equipment type	RF Card Reader
Model name	DE-620
Serial number	Identical prototype
Frequency band	13.56MHz
Channel	1
Modulation type	ASK
Supplied tag	A-type, B-type, Felica, Mifare
Power type	USB Cable( DC 5.0V)
Antenna type	Loop Antenna



## 2. Information about test items

### SWUDE620

#### 2.1 Tested environment

Temperature (°C)	:	15~35 (°C)
Relative humidity content	:	20 ~75 %
Air pressure	:	86 ~ 103 kPa
Details of power supply	:	DC 5.0 V

#### 2.2 Tested frequency

Frequency	TX	RX
Lowest frequency	13.56MHz	13.56MHz
Middle frequency	-	-
Highest frequency	-	-

#### 2.3 Tested system details

Type	Model No.	Serial No.	Manufacturer	Note
Mouse	GOM3000VE	NA	GP Electronics	-
Monitor	9227-AB1	NA	Lenovo	-
Computer	DM-V60	971K9NCP100324M	Samsung	-
Keyboard	SEM-DT35US	NA	Dongguan Samsung Electro-Mechanics	-
Printer	SRP-770	SRP77008060035	BIXOLON	-

#### 2.4 EMI Suppression Device(s)/Modifications

EMI suppression device(s) added and/or modifications made during testing

→ None

### 3. Test Report

#### 3.1 Summary of tests

FCC Part Section(S)	Parameter	Test Limit	Test Condition	Status (note 1)
<b>Transmitter requirements</b>				
2.1049	20 dB Bandwidth	N/A	Radiated	<b>C</b>
15.225 (a)	In-Band Emissions	15.848 $\mu V/m$ @ 30m 15.553 – 13.567 MHz		<b>C</b>
15.225 (b)	In-Band Emissions	334 $\mu V/m$ @ 30m 13.410 – 13.553 MHz 13.567 – 13.710 MHz		<b>C</b>
15.225 (c)	In-Band Emissions	106 $\mu V/m$ @ 30m 13.110 – 13.410 MHz 13.710 – 14.010 MHz		<b>C</b>
15.225 (d) 15.205 15.209	Out-of Band Emissions	Emissions outside of the specified band (13.110-14.010 MHz) must meet the radiated limits detailed in 15.209		<b>C</b>
15.225 (e)	Frequency Stability Tolerance	$\pm 0.001\%$ of operating frequency	Conducted	<b>C</b>
15.207	AC Conducted Emissions	EN 55022	AC Line Conducted	<b>C</b>
<p>Note 1: <b>C</b>=Comply    <b>NC</b>=Not Comply    <b>NT</b>=Not Tested    <b>NA</b>=Not Applicable</p> <p>Note 2: The JBP (Computing device peripheral) portion of this device was tested and approved by FCC DOC procedure.</p> <p>Note 3: All test items were tested using 4 tags. The worst case data was reported.</p>				

The sample was tested according to the following specification:  
FCC Part 15.225; ANSI C-63.4-2003

## 3.2 Transmitter requirements

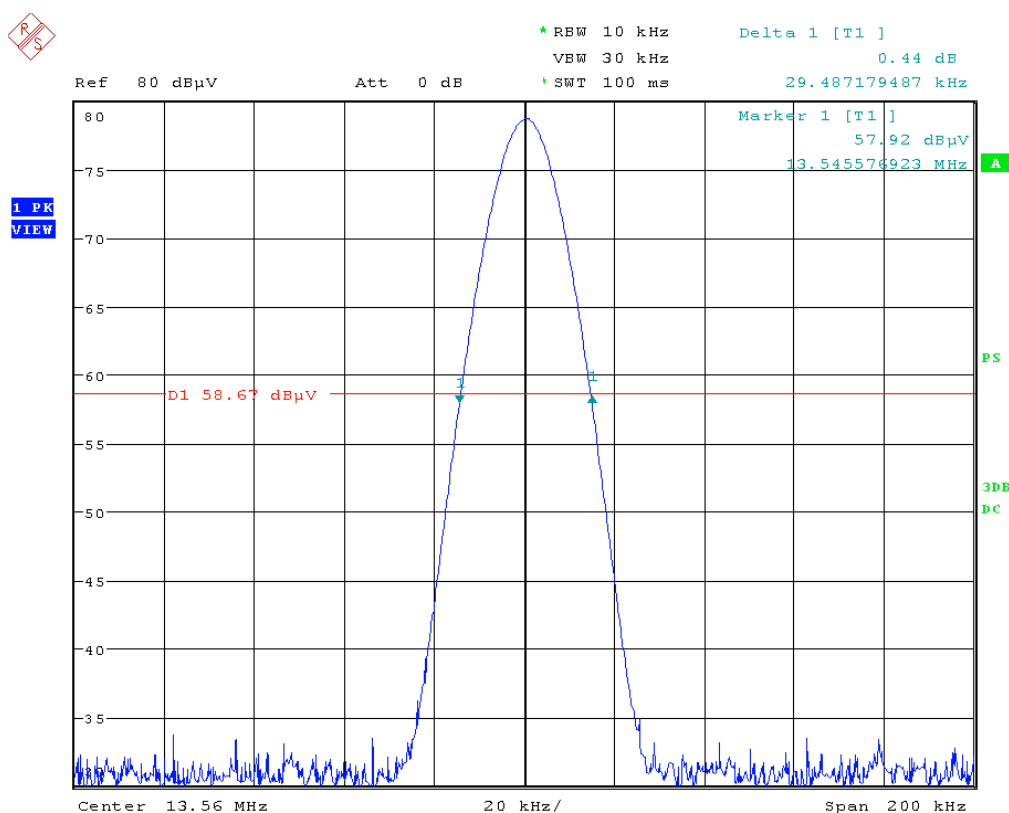
### 3.2.1 20dB Bandwidth Measurement (§2.1049)

#### - Procedure

The 20dB Bandwidth is measured with a spectrum analyzer connected via a receive antenna placed near the EUT while the EUT is operating in transmission mode.

#### - Measurement Data: **Comply**

Tested Frequency(MHz)	Test Results(KHz)
13.56	29.487



#### - Minimum Standard

None

### 3.2.2 In-Band Radiated Spurious Emission (§15.225(a), (b), (c))

#### - Procedure

The EUT was placed on a 0.8m high wooden table inside a shielded enclosure. An antenna was placed near the EUT and measurements of frequencies and amplitudes of field strengths were recorded for reference during final measurements. For final radiated testing, measurements were performed in OATS. Measurements were performed with the EUT oriented in 3 orthogonal axis and rotated 360 degrees to determine worst-case orientation for maximum emissions.

#### - Measurement Data: **Comply**

Frequency Band [MHz]	Frequency [MHz]	ANT Pol	Reading [dBuV]	T.F [dB/m]	Field Strength @ 3m [dBuV/m]	Field Strength @ 30m [dBuV/m]	Limit [dBuV/m]	Margin [dB]
13.110 ~ 13.410	13.348	V	33.24	-12.21	21.03	-18.97	40.51	59.48
13.410 ~ 13.553	13.553	V	72.52	-12.22	60.30	20.30	50.47	30.17
13.553 ~ 13.567	13.560	V	78.91	-12.23	66.68	26.68	84.00	57.32
13.567 ~ 13.710	13.567	V	73.59	-12.24	61.35	21.35	50.47	29.12
13.710 ~ 14.010	13.914	V	33.95	-12.27	21.68	-18.32	40.51	58.83

**Note 1.** This test item was performed using a loop antenna.

**Note 2.** This test item was performed at 3m and the data were extrapolated to the specified measurement distance of 30m using the square of an inverse linear distance extrapolation factor (40 dB/decade) as specified in §15.31(f)2.

▪ Extrapolation Factor =  $20 \log_{10}(30/3)^2 = 40\text{dB}$

**Note 3.** All data were recorded using a spectrum analyzer employing a peak detector.

PK results were meet Quasi-peak limit. So Quasi-peak measurements were omitted.

**Note 4.** Sample Calculation.

Margin = Limit – Field Strength @ 30m      /      Field Strength @ 30m = Field Strength @ 3m – 40

Field Strength @ 3m = Reading + T.F      /      T.F = AF + CL – AG

Where, T.F = Total Factor,      AF = Antenna Factor,      CL = Cable Loss,      AG = Amplifier Gain

#### - Minimum Standard

Frequency Band [MHz]	Limit	
	[uV/m]	[dBuV/m]
13.553-13.567	15,848	84.00
13.410-13.553 13.567-13.710	334	50.47
13.110-13.410 13.710-14.010	106	40.51

### 3.2.3 Radiated Spurious Emission Measurements, Out-of-Band (§15.225(d) / §15.205 and 209)

#### - Procedure

The EUT was tested from 9kHz up to the 1GHz excluding the band 13.110-14.010MHz. All measurements were recorded with spectrum analyzer employing a peak detector for emissions below 30MHz. Above 30MHz a Quasi-peak detector was used. All out-of-band emissions must not exceed the limits §15.209. A loop antenna was used for searching for emissions below 30MHz.

- **Measurement Data:** **Comply** (refer to the next page)

#### - Minimum Standard

- **FCC Part 15.205 (a):** Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	MHz	GHz	GHz
0.009 ~ 0.110	8.41425 ~ 8.41475	108 ~ 121.94	1300 ~ 1427	3.6 ~ 4.4	14.47 ~ 14.5
0.495 ~ 0.505	12.29 ~ 12.293	123 ~ 138	1435 ~ 1626.5	4.5 ~ 5.15	15.35 ~ 16.2
2.1735 ~ 2.1905	12.51975 ~ 12.52025	149.9 ~ 150.05	1645.5 ~ 1646.5	5.35 ~ 5.46	17.7 ~ 21.4
4.125 ~ 4.128	12.57675 ~ 12.57725	156.52475 ~ 156.52525	1660 ~ 1710	7.25 ~ 7.75	22.01 ~ 23.12
4.17725 ~ 4.17775	13.36 ~ 13.41	156.7 ~ 156.9	1718.8 ~ 1722.2	8.025 ~ 8.5	23.6 ~ 24.0
4.20725 ~ 4.20775	16.42 ~ 16.423	162.0125 ~ 167.17	2200 ~ 2300	9.0 ~ 9.2	31.2 ~ 31.8
6.215 ~ 6.218	16.69475 ~ 16.69525	167.72 ~ 173.2	2310 ~ 2390	9.3 ~ 9.5	36.43 ~ 36.5
6.26775 ~ 6.26825	16.80425 ~ 16.80475	240 ~ 285	2483.5 ~ 2500	10.6 ~ 12.7	Above 38.6
6.31175 ~ 6.31225	25.5 ~ 25.67	322 ~ 335.4	2655 ~ 2900	13.25 ~ 13.4	
8.291 ~ 8.294	37.5 ~ 38.25	399.90 ~ 410	3260 ~ 3267		
8.362 ~ 8.366	73 ~ 74.6	608 ~ 614	3332 ~ 3339		
8.37625 ~ 8.38675	74.8 ~ 75.2	960 ~ 1240	3345.8 ~ 3358		

- **FCC Part 15.205(b):**

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

- **FCC Part 15.209(a):**

Frequency [MHz]	Field Strength [uV/m]	Measurement Distance [Meters]
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30	30	30
30 ~ 88	100 **	3
88 ~ 216	150 **	3
216 ~ 960	200 **	3
Above 960	200	3

\*\* Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88MHz, 174-216MHz or 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

- **FCC Part 15.209(b):**

In the emission table above, the tighter limit applies at the band edges.



**- Measurement Data:**

Tested Frequency : 13.56MHz  
Measurement Distance : 3 Meters

Frequency [MHz]	ANT Pol	Reading [dBuV]	T.F [dB/m]	Distance factor	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
40.680	V	36.10	-8.50	N/A	27.60	40.00	12.40
67.840	H	38.70	-15.10	N/A	23.60	40.00	16.40
96.110	H	38.00	-10.90	N/A	27.10	43.50	16.40
144.000	H	37.80	-9.90	N/A	27.90	43.50	15.60
216.960	H	39.58	-9.20	N/A	30.38	46.00	15.62
233.865	H	47.70	-8.40	N/A	39.30	46.00	6.70
237.170	V	36.20	-8.20	N/A	28.00	46.00	18.00
271.200	H	39.80	-7.40	N/A	32.40	46.00	13.60
288.000	H	40.20	-7.00	N/A	33.20	46.00	12.80
304.940	V	37.90	-6.60	N/A	31.30	46.00	14.70
336.000	H	36.60	-6.20	N/A	30.40	46.00	15.60
383.990	H	32.90	-5.30	N/A	27.60	46.00	18.40
440.480	H	40.50	-4.50	N/A	36.00	46.00	10.00
480.000	H	36.70	-4.10	N/A	32.60	46.00	13.40
759.380	H	32.90	-0.50	N/A	32.40	46.00	13.60

**Note 1.** All measurements were recorded using a spectrum analyzer employing a peak detector for below 30MHz and a Quasi-peak detector for above 30MHz.

**Note 2.** Both Vertical and Horizontal polarities of the receiver antenna were evaluated with the worst case emissions being reported.

**Note 3.** The worst-case emissions are reported.

**Note 4.** No other spurious and harmonic were detected at level greater than 20dB below limit.

**Note 5.** Sample calculation

$$\text{Margin} = \text{Limit} - \text{Field Strength} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$

$$\text{Distance factor} = 20\log(\text{Measurement distance} / \text{The measured distance})$$

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain

### 3.2.4 Frequency Stability (§15.225(e))

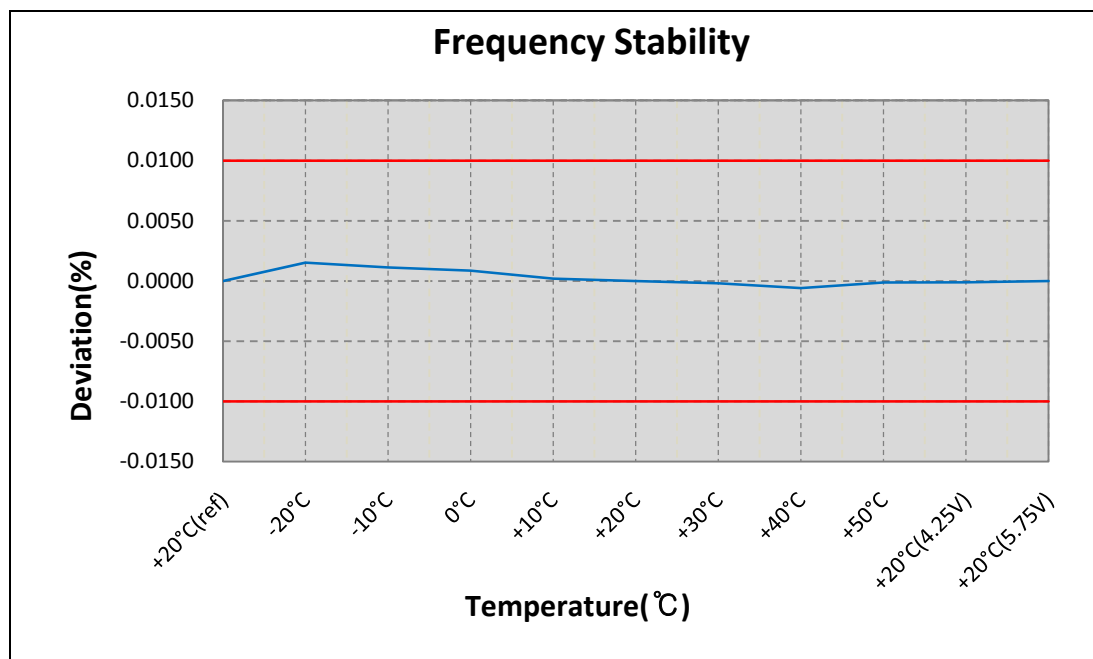
#### - Procedure

Part 15.225 requires that devices operating in the 13.553 – 13.567 MHz shall maintain the carrier frequency within 0.01% of the operating frequency over the temperature variation of -20 degrees to + 50 degrees C at normal supply voltage.

#### - Measurement Data: **Comply**

Operating Frequency : 13560000 Hz  
Reference Voltage : 5.0 V DC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100%	5	+20(ref)	13,560,272	272	0.002006
100%		-20	13,560,479	479	0.003532
100%		-10	13,560,424	424	0.003127
100%		0	13,560,389	389	0.002869
100%		+10	13,560,299	299	0.002205
100%		+20	13,560,272	272	0.002006
100%		+30	13,560,246	257	0.001895
100%		+40	13,560,193	246	0.001814
100%		+50	13,560,255	193	0.001423
85%	4.250	+20	13,560,258	255	0.001880
115%	5.750	+20	13,560,272	258	0.001903



#### - Minimum Standard

The frequency tolerance of the carrier signal shall be maintained within  $\pm 0.01\%$  of the operating frequency.

### 3.2.5 AC Line Conducted Emissions (§15.207/EN 55022)

#### - Procedure

The conducted emissions are measured in the shielded room with a spectrum analyzer in peak hold. While the measurement, EUT had its hopping function disabled at the middle channels in line with Section 15.21(m). Emissions closest to the limit are measured in the quasi-peak and average detector mode with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation and Exerciser operation. The highest emissions relative to the limit are listed.

- **Measurement Data:** **Comply** (Refer to the next page.)

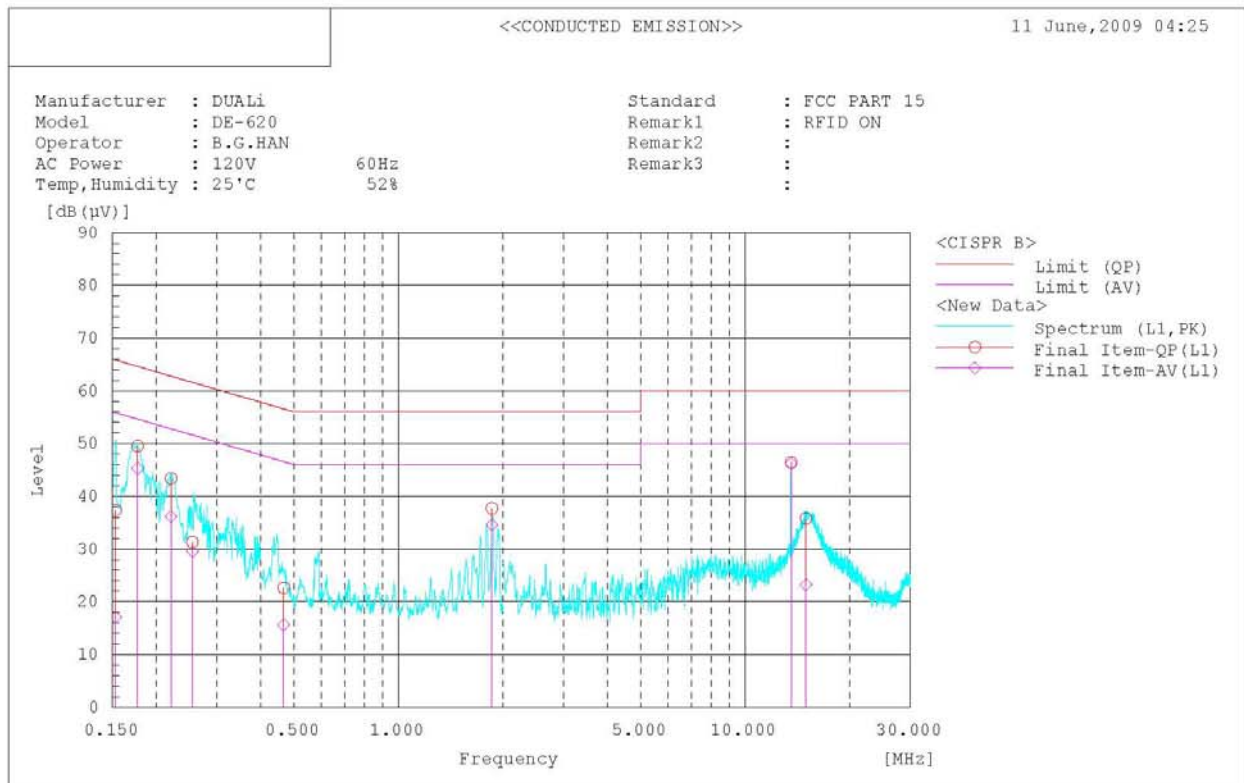
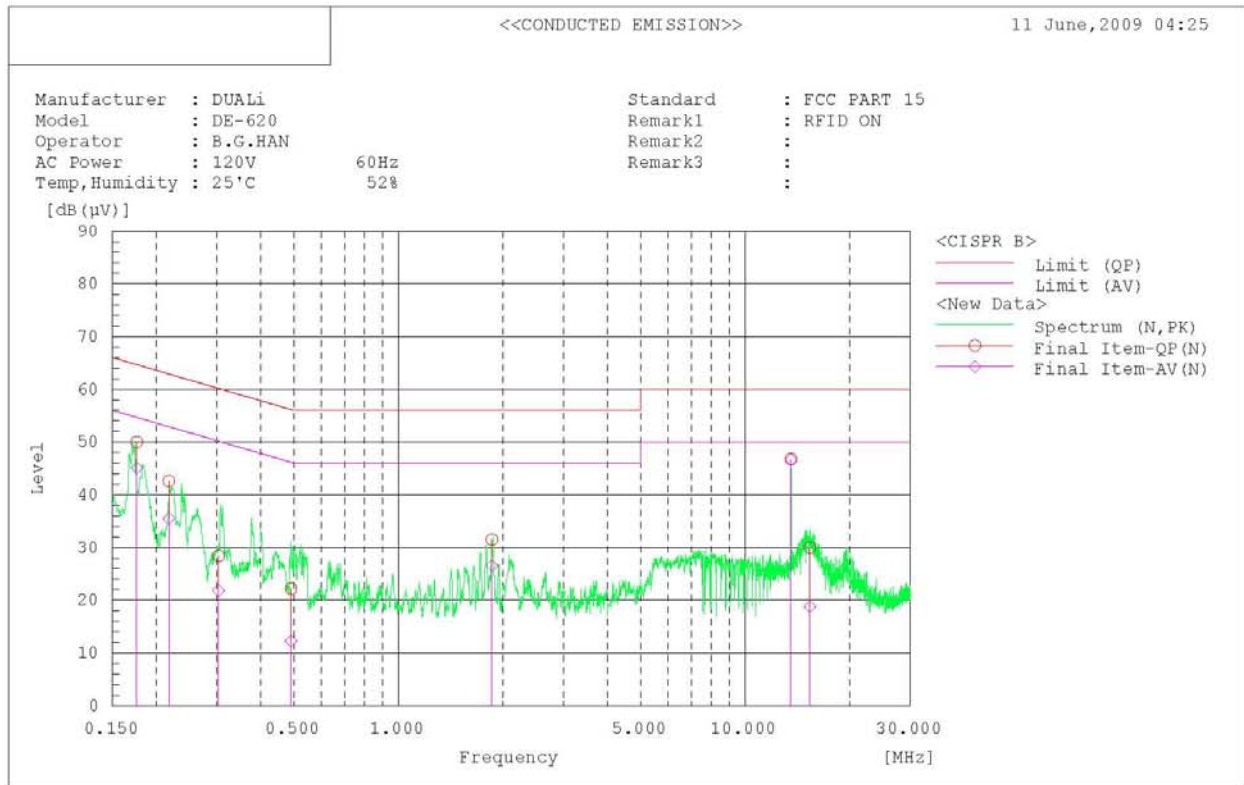
#### - Minimum Standard: FCC Part 15.207(a)/EN 55022

Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 ~ 0.5	66 to 56 *	56 to 46 *
0.5 ~ 5	56	46
5 ~ 30	60	50

\* Decreases with the logarithm of the frequency

- Measurement Data:

Conducted Emission Graph



# - Measurement Data:

## Conducted Emission List

<<CONDUCTED EMISSION>>

11 June, 2009 04:25

Standard	: FCC PART 15
Manufacturer	: DUALi
Model	: DE-620
Operator	: B.G.HAN
AC Power	: 120V 60Hz
Temp, Humidity	: 25°C 52%
Remark1	: RFID ON
Remark2	:
Remark3	:
	:

\*\*\*\*\*

Final Result

--- N Phase ---

No.	Frequency	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Remark
	[MHz]	[dB (μV)]	[dB (μV)]	[dB]	[dB (μV)]	[dB (μV)]	[dB (μV)]	[dB (μV)]	[dB]	[dB]	
1	0.176	49.9	45.0	0.1	50.0	45.1	64.7	54.7	14.7	9.6	
2	0.218	42.5	35.4	0.1	42.6	35.5	62.9	52.9	20.3	17.4	
3	0.303	28.3	21.8	0.1	28.4	21.9	60.2	50.2	31.8	28.3	
4	1.861	31.3	26.4	0.2	31.5	26.6	56.0	46.0	24.5	19.4	
5	13.559	46.1	46.0	0.7	46.8	46.7	60.0	50.0	13.2	3.3	
6	15.366	29.3	18.1	0.7	30.0	18.8	60.0	50.0	30.0	31.2	
7	0.490	22.1	12.2	0.1	22.2	12.3	56.2	46.2	34.0	33.9	

--- L1 Phase ---

No.	Frequency	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Remark
	[MHz]	[dB (μV)]	[dB (μV)]	[dB]	[dB (μV)]	[dB (μV)]	[dB (μV)]	[dB (μV)]	[dB]	[dB]	
1	0.153	37.3	17.0	0.1	37.4	17.1	65.8	55.8	28.4	38.7	
2	0.177	49.4	45.2	0.1	49.5	45.3	64.6	54.6	15.1	9.3	
3	0.221	43.3	36.1	0.1	43.4	36.2	62.8	52.8	19.4	16.6	
4	0.255	31.2	29.4	0.1	31.3	29.5	61.6	51.6	30.3	22.1	
5	1.862	37.5	34.4	0.2	37.7	34.6	56.0	46.0	18.3	11.4	
6	13.571	45.8	45.6	0.6	46.4	46.2	60.0	50.0	13.6	3.8	
7	14.979	35.2	22.6	0.6	35.8	23.2	60.0	50.0	24.2	26.8	
8	0.467	22.5	15.5	0.1	22.6	15.6	56.6	46.6	34.0	31.0	

# **APPENDIX**

## **TEST EQUIPMENT FOR TESTS**

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment.

	Type	Manufacturer	Model	Cal.Due.Date (dd/mm/yy)	Next.Due.Date (dd/mm/yy)	S/N
<input checked="" type="checkbox"/>	Spectrum Analyzer	Agilent	E4440A	06/11/08	06/11/09	MY45304199
<input type="checkbox"/>	Spectrum Analyzer	Rohde Schwarz	FSQ26	02/02/09	02/02/10	200347
<input type="checkbox"/>	Spectrum Analyzer(RE)	H.P	8563E	13/10/08	13/10/09	3551A04634
<input type="checkbox"/>	Power Meter	H.P	EMP-442A	10/07/08	10/07/09	GB37170413
<input type="checkbox"/>	Power Sensor	H.P	8481A	14/07/08	14/07/09	3318A96332
<input type="checkbox"/>	Power Divider	Agilent	11636B	04/12/08	04/12/09	56471
<input type="checkbox"/>	Power Splitter	Anritsu	K241B	14/10/08	14/10/09	020611
<input type="checkbox"/>	Frequency Counter	H.P	5342A	16/09/08	16/09/09	2119A04450
<input checked="" type="checkbox"/>	TEMP & HUMIDITY Chamber	JISCO	KR-100/J-RHC2	10/10/08	10/10/09	30604493/021031
<input checked="" type="checkbox"/>	Digital Multimeter	H.P	34401A	13/03/09	13/03/10	3146A13475
<input type="checkbox"/>	Multifunction Synthesizer	HP	8904A	06/10/08	06/10/09	3633A08404
<input type="checkbox"/>	Signal Generator	Rohde Schwarz	SMR20	13/03/09	13/03/10	101251
<input type="checkbox"/>	Signal Generator	H.P	ESG-3000A	09/07/08	09/07/09	US37230529
<input type="checkbox"/>	Vector Signal Generator	Rohde Schwarz	SMJ100A	02/02/09	02/02/10	100148
<input type="checkbox"/>	Audio Analyzer	H.P	8903B	09/07/08	09/07/09	3011A09448
<input type="checkbox"/>	Modulation Analyzer	H.P	8901B	18/07/08	18/07/09	3028A03029
<input type="checkbox"/>	8960 Series 10 Wireless Comms. Test Set	Agilent	E5515C	31/07/08	31/07/09	GB43461134
<input type="checkbox"/>	Universal Radio communication Tester	Rohde Schwarz	CMU 200	19/05/09	19/05/10	106760
<input type="checkbox"/>	Thermo hygrometer	BODYCOM	BJ5478	06/02/09	06/02/10	090205-3
<input type="checkbox"/>	Thermo hygrometer	BODYCOM	BJ5478	06/02/09	06/02/10	090205-2
<input type="checkbox"/>	Thermo hygrometer	BODYCOM	BJ5478	06/02/09	06/02/10	090205-4
<input type="checkbox"/>	AC Power supply	DAEKWANG	5KVA	13/03/09	13/03/10	20060321-1
<input checked="" type="checkbox"/>	DC Power Supply	HP	6622A	13/03/09	13/03/10	3448A03760
<input type="checkbox"/>	DC Power Supply	HP	6633A	13/03/09	13/03/10	3524A06634
<input type="checkbox"/>	BAND Reject Filter	Microwave Circuits	N0308372	06/10/08	06/10/09	3125-01DC0352
<input type="checkbox"/>	BAND Reject Filter	Wainwright	WRCG1750	06/10/08	06/10/09	2
<input type="checkbox"/>	High-Pass Filter	ANRITSU	MP526D	06/10/08	06/10/09	MP27756
<input type="checkbox"/>	High-pass filter	Wainwright	WHKX2.1	N/A	N/A	1
<input type="checkbox"/>	High-Pass Filter	Wainwright	WHKX3.0	N/A	N/A	9
<input type="checkbox"/>	Tunable Notch Filter	Wainwright	WRCT800.0 /960.0-0.2/40-8SSK	N/A	N/A	10
<input type="checkbox"/>	Tunable Notch Filter	Wainwright	WRCD1700.0 /2000.0-0.2/40-10SSK	N/A	N/A	27
<input type="checkbox"/>	Tunable Notch Filter	Wainwright	WRCT1900.0 /2200.0-5/40-10SSK	N/A	N/A	7
<input type="checkbox"/>	HORN ANT	ETS	3115	13/06/08	Calibrating	6419
<input type="checkbox"/>	HORN ANT	ETS	3115	10/09/08	10/09/09	21097
<input type="checkbox"/>	HORN ANT	A.H.Systems	SAS-574	10/06/09	10/06/10	154
<input type="checkbox"/>	HORN ANT	A.H.Systems	SAS-574	10/06/09	10/06/10	155
<input type="checkbox"/>	Dipole Antenna	Schwarzbeck	VHA9103	25/11/08	25/11/09	2116
<input type="checkbox"/>	Dipole Antenna	Schwarzbeck	VHA9103	25/11/08	25/11/09	2117
<input type="checkbox"/>	Dipole Antenna	Schwarzbeck	UHA9105	25/11/08	25/11/09	2261
<input type="checkbox"/>	Dipole Antenna	Schwarzbeck	UHA9105	25/11/08	25/11/09	2262

	Type	Manufacturer	Model	Cal.Due.Date (dd/mm/yy)	Next.Due.Date (dd/mm/yy)	S/N
<input type="checkbox"/>	Coaxial Fixed Attenuators	Agilent	8491B	01/08/08	01/08/09	MY39260700
<input type="checkbox"/>	Coaxial Fixed Attenuators	Agilent	8491B	15/07/08	15/07/09	MY39260699
<input type="checkbox"/>	Attenuator (10dB)	WEINSCHL	23-10-34	01/10/08	01/10/09	BP4386
<input type="checkbox"/>	Attenuator (10dB)	WEINSCHL	23-10-34	19/01/09	19/01/10	BP4387
<input type="checkbox"/>	Attenuator (20dB)	WEINSCHL	86-20-11	06/10/08	06/10/09	432
<input type="checkbox"/>	Attenuator (10dB)	WEINSCHL	86-10-11	06/10/08	06/10/09	446
<input type="checkbox"/>	Attenuator (10dB)	WEINSCHL	86-10-11	06/10/08	06/10/09	408
<input type="checkbox"/>	Attenuator (40dB)	WEINSCHL	57-40-33	01/10/08	01/10/09	NN837
<input type="checkbox"/>	Attenuator (30dB)	JFW	50FH-030-300	13/03/09	13/03/10	060320-1
<input type="checkbox"/>	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0088CAN	11/07/08	11/07/09	788
<input type="checkbox"/>	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0185CAN	11/07/08	11/07/09	790
<input type="checkbox"/>	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0215CAN	11/07/08	11/07/09	112
<input type="checkbox"/>	Amplifier (30dB)	Agilent	8449B	13/10/08	13/10/09	3008A01590
<input type="checkbox"/>	Amplifier	EMPOWER	BBS3Q7ELU	02/02/09	02/02/10	1020
<input type="checkbox"/>	RF Power Amplifier	OPHIRRF	5069F	09/07/08	09/07/09	1006
<input checked="" type="checkbox"/>	EMI TEST RECEIVER	R&S	ESU	02/02/09	02/02/10	100014
<input checked="" type="checkbox"/>	BILOG ANTENNA	SCHAFFNER	CBL6112D	30/09/08	30/09/09	22609
<input checked="" type="checkbox"/>	Amplifier (22dB)	H.P	8447E	05/02/09	05/02/10	2945A02865
<input type="checkbox"/>	EMI TEST RECEIVER	R&S	ESCI	12/05/09	12/05/10	100364
<input type="checkbox"/>	LOG-PERIODIC ANT.	Schwarzbeck	UHLP9108A	30/05/09	30/05/10	590
<input type="checkbox"/>	BICONICAL ANT.	Schwarzbeck	VHA 9103	02/06/09	02/06/10	2233
<input type="checkbox"/>	LOG-PERIODIC ANT.	Schwarzbeck	UHLP9108-A1	30/09/08	30/09/09	1098
<input type="checkbox"/>	BICONICAL ANT.	Schwarzbeck	VHA 9103	30/09/08	30/09/09	91031946
<input checked="" type="checkbox"/>	Loop Antenna	ETS	6502	13/10/08	13/10/09	3471
<input type="checkbox"/>	Low Noise Pre Amplifier	TSJ	MLA-100K01-B01-2	13/03/09	13/03/10	1252741
<input type="checkbox"/>	Amplifier (25dB)	Agilent	8447D	12/05/09	12/05/10	2944A10144
<input type="checkbox"/>	Amplifier (25dB)	Agilent	8447D	18/08/08	18/08/09	2648A04922
<input type="checkbox"/>	Spectrum Analyzer(CE)	H.P	8591E	26/04/09	26/04/10	3649A05889
<input type="checkbox"/>	LISN	Kyoritsu	KNW-407	04/08/08	04/08/09	8-317-8
<input type="checkbox"/>	LISN	Kyoritsu	KNW-242	11/09/08	11/09/09	8-654-15
<input type="checkbox"/>	CVCf	NF Electronic	4420	N/A	N/A	304935/337980
<input type="checkbox"/>	DC BLOCK	Hyuplip	KEL-007	N/A	N/A	7-1581-5
<input type="checkbox"/>	50 ohm Terminator	HME	CT-01	22/01/09	22/01/10	N/A
<input type="checkbox"/>	RFI/FIELD Intensity Meter	Kyoritsu	KNM-2402	11/09/08	11/09/09	4N-170-3