TEST REPORT

Part 15C

Equipment under test	Flat Panel Digital X-ray Detector
Model name	EVS 3643
FCC ID	RNH-EVS3643
Trade mark	DRTECH
Applicant	DRTECH Corporation
Manufacturer	DRTECH Corporation
Date of test(s)	2015.02.23 ~ 2015.02.26
Date of issue	2015.02.27

Issued to

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Test and report completed by :	**Report approval by :**
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Revision history

Revision	Date of issue	Test report No.	Description
-	2015.02.27	KES-RF-15T0019	Initial

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1. General information

1.1. EUT description

Equipment under test	Flat Panel Digital X-ray Detector
Model name	EVS 3643
Serial number	N/A
Frequency range	2 412 ㎒ ~ 2 462 ㎒(802.11b/g/n_HT20), 2 422 ㎒ ~ 2 452 ㎒(802.11n_HT40) 5 745 ㎒ ~ 5 825 ㎒(802.11a/n_HT20), 5 755 ㎒ ~ 5 795 ㎒(802.11n_HT40) 5 180 ㎒ ~ 5 240 ㎒(802.11a/n_HT20), 5 190 ㎒ ~ 5 230 ㎒(802.11n_HT40)
Modulation technique	CCK(DBPSK, DQPSK), OFDM (BPSK, QPSK, 16QAM, 64QAM)
Number of channels	2 412 ㎒ ~ 2 462 ㎒(802.11b/g/n_HT20) : 11 ch 2 422 ㎒ ~ 2 452 ㎒(802.11n_HT40) : 7 ch 5 745 ㎒ ~ 5 825 ㎒(802.11a/n_HT20) : 5 ch 5 755 ㎒ ~ 5 795 ㎒(802.11n_HT40) : 2 ch 5 180 ㎒ ~ 5 240 ㎒(802.11a/n_HT20) : 4 ch 5 190 ㎒ ~ 5 230 ㎒(802.11n_HT40) : 2 ch
Antenna type	PCB antenna(I-PEX)
Power source	12 V dc // 2 A
Note	- Contains transmitter Module. (FCC ID : RYK-WUBR508N) - Contains transmitter Module does not use DFS band. - Duty cycle is > 98%

1.2. Test frequency

	Low channel	**Middle channel**	**High channel**	**Mode**
Frequency (㎒)	2 412	2 432	2 462	802.11b/g/n_HT20
	2 422	2 437	2 452	802.11n_HT40
	5 745	5 785	5 825	802.11a/n_HT20
	5 755	-	5 795	802.11n_HT40

1.3. Information about derivative model

N/A

1.4. Device modifications

N/A

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1.5. Test facility

C-3701, Simin-daero 365-40, Dongan-gu, Anyang-si, Gyeonggi-do,431-716, Korea
473-29, Gayeo-ro, Yeoju-si, Gyeonggi-do, Korea

The open area test site is constructed in conformance with the requirements ANSI C63.4-2003/2009.

1.6. Laboratory accreditations and listings

Country	Agency	Scope of accreditation	Certificate No.
USA	FCC	3 & 10 meter Open Area Test Sites and one conducted site to perform FCC Part 15/18 measurements.	343818
KOREA	KC	EMI (10 meter Open Area Test Site and two conducted sites) Radio (3 & 10 meter Open Area Test Sites and one conducted site)	KR0100
CANADA	IC	3 & 10 meter Open Area Test Sites and one conducted site	4769B-1

1.7. Directional antenna gain for MIMO (correlated)

Model : RDiD-DRTECH-DUAL-1404

ANT1 Gain (dBi)	ANT2 Gain (dBi)	Total Gain (dBi)	Note
-4.13	-5.81	-1.88	For 2.4 ㎓
0.31	-0.41	2.60	For 5.7 ㎓

-Ant Gain = G_{ANT} + 10 log(N)

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2.1 Summary of tests

FCC Part Sections	Parameter	Test results
15.205 15.209	Radiated spurious emission	Pass

Test procedures;
The measurement procedures described in the American National Standard for Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9 ㎑ to 40 ㎓ (ANSI C63.4-2003/2009), the guidance provided in KDB 558074 D01 v03r02, KDB 662911 D01 v02r01 were used in the measurement of the EUT.

2.2 Worst-Case and Mode

The worst-case data rates are determined to be as follows for each mode, based on the investigations
by measuring the average power, peak power across all the data rates.
all tests were made with following data rates:

802.11b mode : 11 Mbps.
802.11g mode : 54 Mbps.
802.11a mode : 6 Mbps.
802.11n HT20 mode : MCS8.
802.11n HT40 mode : MCS8.

The EUT antenna has been tested in X, Y and Z axis.
The worst case position is X-axis(below 1㎓), X-axis(above 1㎓). Each axis were recorded in this report.

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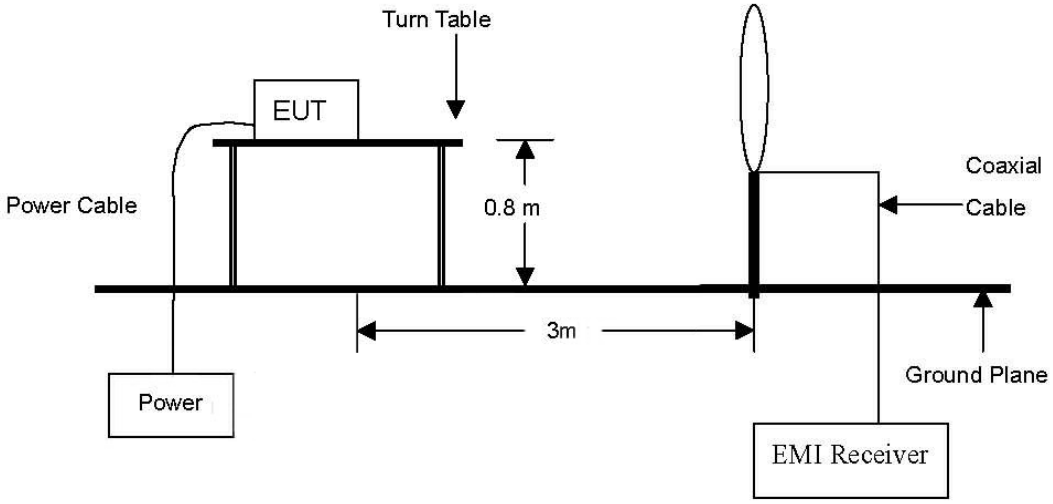
3. Test results

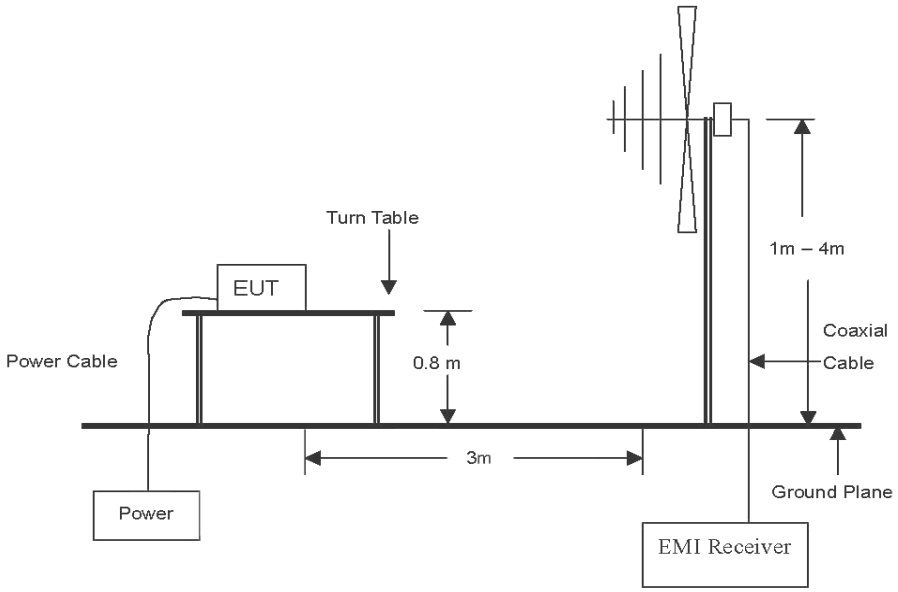
3.1 Radiated spurious emissions

Test setup

The diagram below shows the test setup that is utilized to make the measurements for emission from 9 ㎑ to 30 ㎒ Emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 30 ㎒ to 1 ㎓ emissions.



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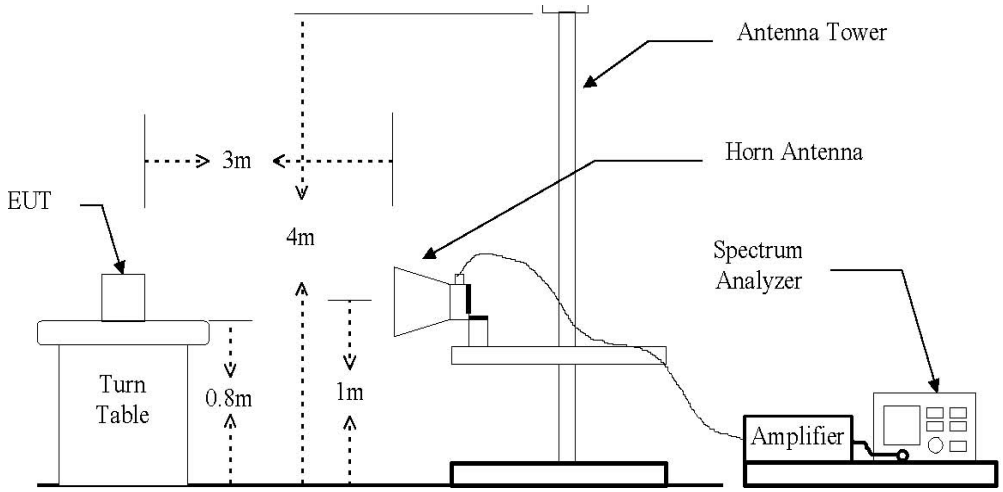
The diagram below shows the test setup that is utilized to make the measurements for emission from 1 ㎓ to 40 ㎓ emissions.



Test procedure

Radiated emissions from the EUT were measured according to the dictates in section 12.0 of KDB 558074 D01 v03r02 and ANSI C63.4-2003/2009

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter anechoic chamber test site or open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
2. During performing radiated emission below 1㎓, the EUT was set 3 meters away from the interference receiving antenna, which was mounted on the top of a variable height antenna tower. During performing radiated emission above 1 ㎓, the EUT was set 3 meter away from the interference receiving antenna.
3. The antenna is a broadband antenna, and its height is varied from 1 meter to 4 meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test receiver system was set to peak detect function and specified bandwidth with maximum hold mode.
6. If the emission level of the EUT in peak mode was 10 ㏈lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have10 ㏈ margin would be retested one by one using peak,quasi-peak or average method as specified and then reported in a data sheet

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Note.
All data rates and modes were investigated for radiated spurious emissions. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

The spectrum analyzer is set to:
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer 200 ㎐ for Quasi-peak detection (QP) at frequency below 9 ㎑~ 150 ㎑.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer 9 ㎑ for Quasi-peak detection (QP) at frequency below 150 ㎑~ 30 ㎒.
3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer 120 ㎑ for Peak detection (PK) or Quasi-peak detection (QP) at frequency below 1 ㎓.
4. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 ㎒ and video bandwidth is 3 ㎒ for Peak detection at frequency above 1 ㎓.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1 ㎒ and the video bandwidth is 3 ㎒ for Average detection (AV) at frequency above 1 ㎓. (Detect mode: RMS(power), Averaging 100)

To get a maximum emission level from the EUT, the EUT is manipulated through three orthogonal planes.

Limit
According to 15.209(a), for an intentional radiator devices, the general required of field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values：

Frequency (㎒)	Distance (Meters)	Radiated (㎶/m)
0.009 ~ 0.490	300	2 400 / F(㎑)
0.490 ~ 1.705	30	24 000 / F(㎑)
1.705 ~ 30.0	30	30
30 ~ 88	3	100**
88 ~ 216	3	150**
216 ~ 960	3	200**
Above 960	3	500

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

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Test results (Below 30 ㎒)

The frequency spectrum from 9 ㎑ to 30 ㎒ was investigated. Emission levels are not reported much lower than the limits by over 20 ㏈.

Radiated emissions		Ant.	Correction factors			Total	Limit	
Frequency (㎒)	Reading (㏈㎶)	Pol.	Ant. factor (㏈/m)	Cable loss (㏈)	F_d (㏈)	Actual (㏈㎶/m)	Limit (㏈㎶/m)	Margin (㏈)
Not detected for below 30 ㎒								

Note.

1. All spurious emission at channels are almost the same below 30 ㎒, so that 802.11b 2432 ㎒ and 802.11a 5785 ㎒ were chosen at representative in final test.
2. Actual = Reading + Ant. factor + Cable loss + F_d
3. $F_d = 40\log(D_m / D_s)$

   Where:

   F_d = Distance factor in ㏈

   D_m = Measurement distance in meters

   D_s = Specification distance in meters

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Test results (Below 1 000 ㎒)

The frequency spectrum from 30 ㎒ to 1 000 ㎒ was investigated. Emission levels are not reported much lower than the limits by over 20 ㏈.

802.11b / 2432 ㎒

Radiated emissions		Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (㏈㎶)	Pol.	Ant. factor (㏈/m)	Cable loss (㏈)	Actual (㏈㎶/m)	Limit (㏈㎶/m)	Margin (㏈)
46.384	16.200	H	13.570	1.530	31.300	40.000	8.700
163.587	16.100	H	13.050	3.040	32.190	43.500	11.310
249.987	21.600	V	11.750	3.870	37.220	46.000	8.780

802.11a / 5785 ㎒

Radiated emissions		Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (㏈㎶)	Pol.	Ant. factor (㏈/m)	Cable loss (㏈)	Actual (㏈㎶/m)	Limit (㏈㎶/m)	Margin (㏈)
44.268	16.600	H	13.490	1.480	31.570	40.000	8.430
431.304	17.800	H	16.260	5.380	39.440	46.000	6.560
524.979	18.300	V	18.210	6.070	42.580	46.000	3.420

Note.

1. All spurious emission at channels are almost the same below 1 000 ㎒, so that 802.11b 2432 ㎒ and 802.11a 5785 ㎒ were chosen at representative in final test.
2. Actual = Reading + Ant. factor + Cable loss
3. Detector mode: Quasi peak

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Test results (Above 1 000 ㎒)

The frequency spectrum from 1 ㎓ to 25 ㎓ and 40 ㎓ was investigated. No Emissions were found above 20 dB below the limit.

802.11b / 2412 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
2 389.81	44.56	PK	H	3.58	-	48.14	74.00	25.86
2 388.08	40.44	PK	V	3.57	-	44.01	74.00	29.99
4 824.00	33.52	PK	H	13.68	-	47.20	74.00	26.80
4 824.00	34.04	PK	V	13.68	-	47.72	74.00	26.28

802.11b / 2437 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
4 874.00	32.67	PK	H	14.01	-	46.68	74.00	27.32
4 874.00	32.33	PK	V	14.01	-	46.34	74.00	27.66

802.11b / 2462 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
2 498.06	38.27	PK	H	4.27	-	42.54	74.00	31.46
2 489.78	40.50	PK	V	4.21	-	44.71	74.00	29.29
4 924.00	33.42	PK	H	14.34	-	47.76	74.00	26.24
4 924.00	33.51	PK	V	14.34	-	47.85	74.00	26.15

Note.

1. Measuring frequencies from 1 ㎓ to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1 000 ㎒ were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Actual = Reading + AFCL(Ant. factor – Amp. gain + Cable loss) + DCF(Duty cycle Correction Factor)
5. DCF(Duty cycle Correction Factor) = 10log(1/Duty cycle)

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802.11g / 2412 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
2 389.67	45.73	PK	H	3.58	-	49.31	74.00	24.69
2 389.67	40.66	PK	V	3.58	-	44.24	74.00	29.76
4 824.00	34.54	PK	H	13.68	-	48.22	74.00	25.78
4 824.00	34.66	PK	V	13.68	-	48.34	74.00	25.66

802.11g / 2437 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
4 874.00	34.82	PK	H	14.01	-	48.83	74.00	25.17
4 874.00	33.02	PK	V	14.01	-	47.03	74.00	26.97

802.11g / 2462 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
2 487.75	38.69	PK	H	4.20	-	42.89	74.00	31.11
2 496.90	39.17	PK	V	4.26	-	43.43	74.00	30.57
4 924.00	32.74	PK	H	14.34	-	47.08	74.00	26.92
4 924.00	34.35	PK	V	14.34	-	48.69	74.00	25.31

Note.

1. Measuring frequencies from 1 ㎓ to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1 000 ㎒ were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Actual = Reading + AFCL(Ant. factor – Amp. gain + Cable loss) + DCF(Duty cycle Correction Factor)
5. DCF(Duty cycle Correction Factor) = 10log(1/Duty cycle)

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802.11n_HT20 / 2412 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
2 389.67	46.31	PK	H	3.58	-	49.89	74.00	24.11
2 389.81	44.70	PK	V	3.58	-	48.28	74.00	25.72
4 824.00	34.12	PK	H	13.68	-	47.80	74.00	26.20
4 824.00	33.08	PK	V	13.68	-	46.76	74.00	27.24

802.11n_HT20 / 2437 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
4 874.00	35.12	PK	H	14.01	-	49.13	74.00	24.87
4 874.00	34.53	PK	V	14.01	-	48.54	74.00	25.46

802.11n_HT20 / 2462 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
2 494.12	38.16	PK	H	4.24	-	42.40	74.00	31.60
2 498.87	39.18	PK	V	4.27	-	43.45	74.00	30.55
4 924.00	33.47	PK	H	14.34	-	47.81	74.00	26.19
4 924.00	33.94	PK	V	14.34	-	48.28	74.00	25.72

Note.

1. Measuring frequencies from 1 ㎓ to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1 000 ㎒ were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Actual = Reading + AFCL(Ant. factor – Amp. gain + Cable loss) + DCF(Duty cycle Correction Factor)
5. DCF(Duty cycle Correction Factor) = 10log(1/Duty cycle)

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802.11n_HT40 / 2422 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
2 388.51	39.70	PK	H	3.58	-	43.28	74.00	30.72
2 388.94	45.94	PK	V	3.58	-	49.52	74.00	24.48
4 844.00	32.16	PK	H	13.81	-	45.97	74.00	28.03
4 844.00	33.42	PK	V	13.81	-	47.23	74.00	26.77

802.11n_HT40 / 2437 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
4 874.00	33.53	PK	H	14.01	-	47.54	74.00	26.46
4 874.00	32.27	PK	V	14.01	-	46.28	74.00	27.72

802.11n_HT40 / 2452 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
2 490.36	39.61	PK	H	4.22	-	43.83	74.00	30.17
2 489.37	44.25	PK	V	4.21	-	48.46	74.00	25.54
4 904.00	34.71	PK	H	14.21	-	48.92	74.00	25.08
4 904.00	34.26	PK	V	14.21	-	48.47	74.00	25.53

Note.

1. Measuring frequencies from 1 ㎓ to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1 000 ㎒ were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Actual = Reading + AFCL(Ant. factor – Amp. gain + Cable loss) + DCF(Duty cycle Correction Factor)
5. DCF(Duty cycle Correction Factor) = 10log(1/Duty cycle)

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802.11a / 5745 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
11 490.00	29.12	PK	H	35.75	-	64.87	74.00	9.13
11 490.00	16.75	AV	V	35.75	-	52.50	54.00	1.50
11 490.00	29.72	PK	H	35.75	-	65.47	74.00	8.53
11 490.00	16.54	AV	V	35.75	-	52.29	54.00	1.71

802.11a / 5785 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
11 570.00	30.82	PK	H	36.10	-	66.92	74.00	7.08
11 570.00	16.77	AV	V	36.10	-	52.87	54.00	1.13
11 570.00	29.00	PK	H	36.10	-	65.10	74.00	8.90
11 570.00	16.85	AV	V	36.10	-	52.95	54.00	1.05

802.11a / 5825 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
11 650.00	29.41	PK	H	36.45	-	65.86	74.00	8.14
11 650.00	16.49	AV	V	36.45	-	52.94	54.00	1.06
11 650.00	30.10	PK	H	36.45	-	66.55	74.00	7.45
11 650.00	16.81	AV	V	36.45	-	53.26	54.00	0.74

Note.

1. Measuring frequencies from 1 ㎓ to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1 000 ㎒ were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Actual = Reading + AFCL(Ant. factor – Amp. gain + Cable loss) + DCF(Duty cycle Correction Factor)+Distance
5. DCF(Duty cycle Correction Factor) = 10log(1/Duty cycle)

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802.11n_HT20 / 5745 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
11 490.00	29.22	PK	H	35.75	-	64.97	74.00	9.03
11 490.00	16.83	AV	V	35.75	-	52.58	54.00	1.42
11 490.00	29.94	PK	H	35.75	-	65.69	74.00	8.31
11 490.00	16.42	AV	V	35.75	-	52.17	54.00	1.83

802.11n_HT20 / 5785 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
11 570.00	29.08	PK	H	36.10	-	65.18	74.00	8.82
11 570.00	16.33	AV	V	36.10	-	52.43	54.00	1.57
11 570.00	29.09	PK	H	36.10	-	65.19	74.00	8.81
11 570.00	16.64	AV	V	36.10	-	52.74	54.00	1.26

802.11n_HT20 / 5825 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
11 650.00	30.11	PK	H	36.45	-	66.56	74.00	7.44
11 650.00	16.58	AV	V	36.45	-	53.03	54.00	0.97
11 650.00	29.46	PK	H	36.45	-	65.91	74.00	8.09
11 650.00	16.80	AV	V	36.45	-	53.25	54.00	0.75

Note.

1. Measuring frequencies from 1 ㎓ to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1 000 ㎒ were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Actual = Reading + AFCL(Ant. factor – Amp. gain + Cable loss) + DCF(Duty cycle Correction Factor)+Distance
5. DCF(Duty cycle Correction Factor) = 10log(1/Duty cycle)

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802.11n_HT40 / 5755 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
11 510.00	29.99	PK	H	35.84	-	65.83	74.00	8.17
11 510.00	16.74	AV	V	35.84	-	52.58	54.00	1.42
11 510.00	29.54	PK	H	35.84	-	65.38	74.00	8.62
11 510.00	16.74	AV	V	35.84	-	52.58	54.00	1.42

802.11n_HT40 / 5795 ㎒

Radiated emissions			Ant.	Correction factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detector mode	Pol.	AFCL (dB)	DCF (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
11 590.00	29.41	PK	H	36.19	-	65.60	74.00	8.40
11 590.00	16.70	AV	V	36.19	-	52.89	54.00	1.11
11 590.00	29.51	PK	H	36.19	-	65.70	74.00	8.30
11 590.00	16.38	AV	V	36.19	-	52.57	54.00	1.43

Note.

1. Measuring frequencies from 1 ㎓ to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1 000 ㎒ were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Actual = Reading + AFCL(Ant. factor – Amp. gain + Cable loss) + DCF(Duty cycle Correction Factor)+Distance
5. DCF(Duty cycle Correction Factor) = 10log(1/Duty cycle)

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Appendix A. Measurement equipment

Equipment	Manufacturer	Model	Serial No.	Calibration interval	Calibration due.
Spectrum analyzer	R&S	FSV30	101389	1 year	2015.04.30
Spectrum analyzer	Agilent	N9010A	MY51440103	1 year	2016.01.26
Power Meter	Anritsu	ML2495A	1438001	1 year	2015.09.24
Pulse Power Sensor	Anritsu	MA2411B	1339205	1 year	2015.10.03
Vector signal generator	R&S	SMBV100A	1407.6004K02	1 year	2015.07.24
8360B Series Swept Signal Generator	HP	83630B	3844A00786	1 year	2015.04.30
Loop antenna	R&S	HFH2-Z2.335.4711.52	826532	2 years	2015.04.25
Trilog-broadband antenna	Schwarzbeck	VULB 9168	9168-385	2 years	2015.05.09
Horn antenna	A.H.	SAS-571	414	2 years	2017.02.09
Horn antenna	Schwarzbeck	BBHA 9170	BBHA9170551	2 years	2015.09.04
Preamplifier	HP	8447F	2805A02570	1 year	2015.04.30
Preamplifier	HP	8449B	3008A00538	1 years	2015.07.23
Preamplifier	Schwarzbeck	BBV 9721	9721-003	1 years	2015.09.04
Attenuator	HP	8494B	2630A12857	1 year	2015.04.30
EMI Test Receiver	R & S	ESVS10	826008/014	1 year	2015.04.04
EMI Receiver/Signal Analyzer	Narda S.T.S / PMM	PMM 9010F	020WW31006	1 year	2015.04.04
HIGH PASS FILTER	WAINWRIGHT INSTRUMENT	WHNX6.0/26.5G-6SS	1	1 year	2015.07.23
HIGH PASS FILTER	WAINWRIGHT INSTRUMENT	WHJS3000-10TT	1	1 year	2015.07.23
LOW PASS FILTER	WEINSCHEL	WLK1.0/18G-10TT	1	1 year	2015.07.23

Peripheral devices

Device	Manufacturer	Model No.	Serial No.
Notebook	HP	Compaq 6530b	CNU8313PMW
Adapter	Acbel Electronic(Dong Guan) Co., Ltd.	PPP009A	WBGTA0BLB1SDPK

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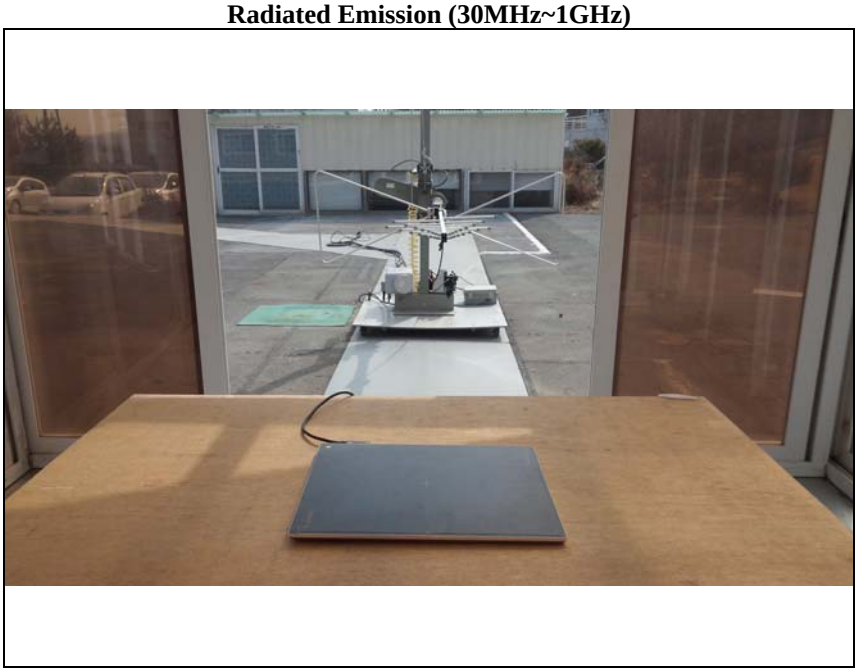
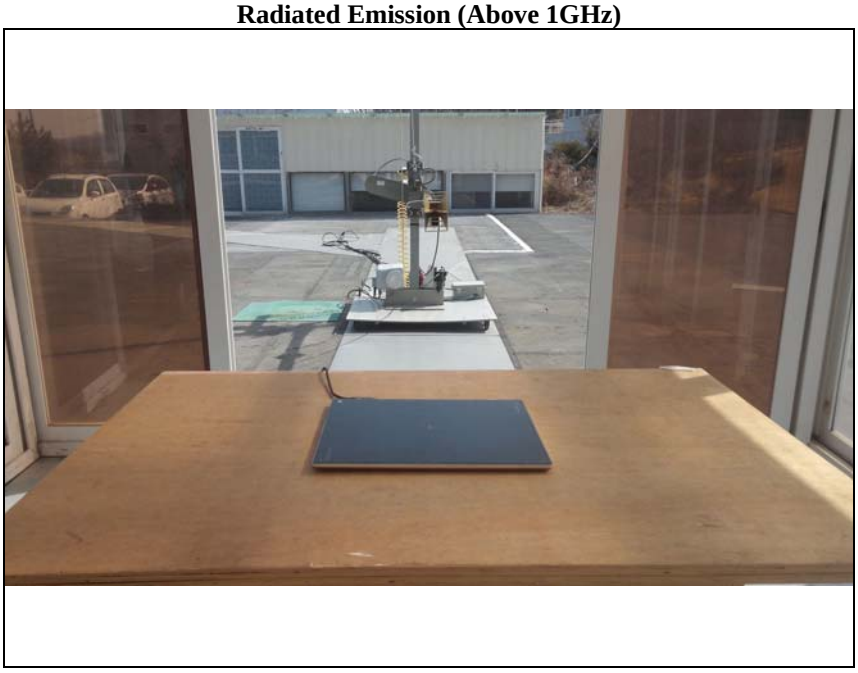
Appendix B. Test setup photo

Radiated Emission (30MHz~1GHz)



Radiated Emission (Above 1GHz)



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