

# EMC TEST REPORT

Test item : Radio Scanner  
Model No. : WS1095  
Order No. : DTNC1501-00296  
Date of receipt : 2015-01-21  
Test duration : 2015-01-28 ~ 2015-02-11  
Date of Issue : 2015-03-05  
Applicant : The Whistler Group, Inc.  
168 Ayer Road, Littleton, MA 01460, USA  
Test laboratory : DT&C Co., Ltd.  
42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 449-935

Test specification : ANSI C 63.4:2009  
FCC Part 15 Subpart B  
(Scanning receiver)

Test environment : Temperature : (16 ~ 18) °C,  
Humidity : 37 % R.H.

Test result : ☒ Comply ☐ Not Comply

The test results presented in this test report are limited only to the sample supplied by applicant and the use of this test report is inhibited other than its purpose.  
This test report shall not be reproduced except in full, without the written approval of Dt&C Co., Ltd.

Tested by:

  
\_\_\_\_\_  
Engineer  
DaeHwa Eun

Reviewed by:

  
\_\_\_\_\_  
Technical Manager  
YoungKyu Shin

**PRESIDENT OF DT&C Co., Ltd.**

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## 1. General Remarks

This report contains the result of tests performed by:

**Dt&C Co., Ltd.**

Address : 42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 449-935

<http://www.dtnet.net>

Tel: +82-31-321-2664 Fax: +82-31-321-1664

## 2. Test Laboratory

Dt&C Co., Ltd. has been accredited / filed / authorized by the agencies listed in the following table;

Certificate	Nation	Agency	Code	Mark
Accreditation	Korea	KOLAS	393	ISO/IEC 17025
Site Filing	USA	FCC	KR0034 101842 678747, 596748, 804488, 165783	Accredited  2.948 Listed
	Canada	IC	5740A-1 5740A-2	Registered
	Japan	VCCI	C-1427 R-1364, R-3385, R-4076, R-4180, T-1442, G-338, G754, G-815	Registered
Certification	Korea	KC	KR0034	Designation
	Germany	TUV	CARAT 13 11 86721 001	ISO/IEC 17025

Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the "General requirements for the competent of calibration and testing laboratory".

### 3. General Information of EUT

Kind of Equipment	Radio Scanner
Model No.	WS1095
Add Model No	None
Serial No	None
FCC ID	HSXSC11
Supplied Power for Test	AC 120 V, 60 Hz
Applicant	The Whistler Group, Inc. 168 Ayer Road, Littleton, MA 01460, USA
Manufacturer	RDX, Inc 307 Daeryung Techno Twon 3, 115 Gasan Digital 2-ro, Guemcheon-gu, Seoul, Korea
Factory	Radix Telecom Phils., Industries Inc. P-IMES Bldg.2. Block 16, Phase IV Peza Rosario Cavite, Philippines

**Related Submittal(s) / Grant(s)**

**Original submittal only.**

## 4. Test Summary

### 4.1 Applied standards and test results

Test Items	Applied Standards	Results
Conducted Disturbance	ANSI C63.4:2009	C
Radiated Disturbance	ANSI C63.4:2009	C
Antenna Power Conduction	ANSI C63.4:2009	C
C=Comply N/C=Not Comply N/T=Not Tested N/A=Not Applicable		

The data in this test report are traceable to the national or international standards.

### 4.2 Test environment and conditions

Test Items	Test date (YYYY-MM-DD)	Temp (°C)	Humidity (% R.H.)
Conducted Disturbance	2015-02-11	16	37
Radiated Disturbance	2015-01-28	16	37
Antenna Power Conduction	2015-02-04	18	37

### 4.3 Test result Summary

#### (1) Conducted Emission

Frequency [MHz]	Phase	Result [dBμV]	Detector	Limit [dBμV]	Margin [dB]
23.12900	N	22.4	Average	50.0	27.6

#### (2) Radiated Emission

Frequency [MHz]	Pol.	Result [dB(μV/m)]	Detector	Limit [dB(μV/m)]	Margin [dB]
432.000	H	37.7	Quasi-Peak	46.0	8.3

## 5. Test Set-up and operation mode

### 5.1 Principle of Configuration Selection

**Emission** : The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

### 5.2 Test Operation Mode

- The EUT was set to constantly scan all bands. (MODE 1)
- The EUT was set to connect PC/IF cable to the notebook PC for receiving data and status. (MODE 2)

### 5.3 Support Equipment Used

Unit	Model No.	Serial No.	Manufacturer	CABLE				Back shell	FCC ID
				Connect type	Length (m)	shield	With Ferrite		
Notebook	110-4103TU	5CD2090V98	HP	POWER USB	1.8 0.5	Non-shield Shield	X	Plastic	DOC
Notebook Adaptor	HSTNN-CA18	F13761206288812	HP	POWER POWER	1.8 1.8	Non-shield Non-shield	O(NOTE)	Plastic	DOC
Adaptor	48-138-0600	N/A	Radioshack	POWER	2.0	Non-shield	O(NOTE)	Plastic	DOC
Headset	COV-903	N/A	COSY	STEREO	2.0	Non-shield	X	Plastic	DOC

\* NOTE) The cable with ferrite core is provided by manufacturer.

## 6. Test Results : Emission

### 6.1 Conducted Disturbance

#### 6.1.1 Measurement Procedure

In the range of 0.15 MHz to 30 MHz, the conducted disturbance was measured and set-up was made accordance with **ANSI C63.4**.

If the EUT is table top equipment, it was placed on a wooden table with a height of 0.8 m above the reference ground plane and 0.4 m from the conducting wall of the shielded room.

Also if the EUT is floor-standing equipment, it was placed on a non-conducted support with a height up to 0.15 m above the reference ground plane.

Connect the EUT's power source lines to the PC power through the LISN. All the other peripherals are connected to the 2<sup>nd</sup> LISN, if any.

Unused measuring port of the LISN was resistively terminated by 50 ohm terminator.

The measuring port of the LISN for EUT was connected to spectrum analyzer.

Using conducted emission test software, the emissions were scanned with peak detector mode.

After scanning over the frequency range, suspected emissions were selected to perform final measurement. When performing final measurement, the receiver was used which has Quasi-Peak detector and Average detector.

By varying the configuration of the test sample and the cable routing it was attempted to maximize the emission.

For further description of the configuration refer to the picture of the test set-up.

#### 6.1.2 Limit for Conducted Disturbance

(1) Conducted disturbance at mains ports.

Frequency range (MHz)	Limits dB(μV)			
	Quasi-peak		Average	
	Class A	Class B	Class A	Class B
0.15 to 0.50	79	66 to 56	66	56 to 46
0.50 to 5	73	56	60	46
5 to 30		60		50
Note 1 The lower limit shall apply at the transition frequencies.				
Note 2 The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

Note) 1. Emission Level = Reading Value + Correction Factor.

2. Correction Factor = Cable Loss + Insertion Loss of LISN

3. Margin = Limit - Emission level

## Test Result

### MODE 1

### Results of Conducted Emission

DTNC

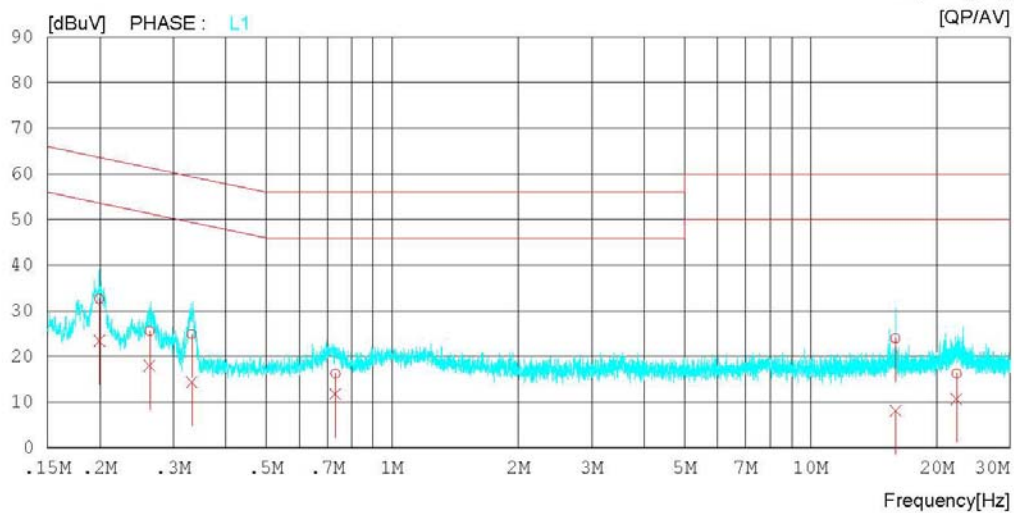
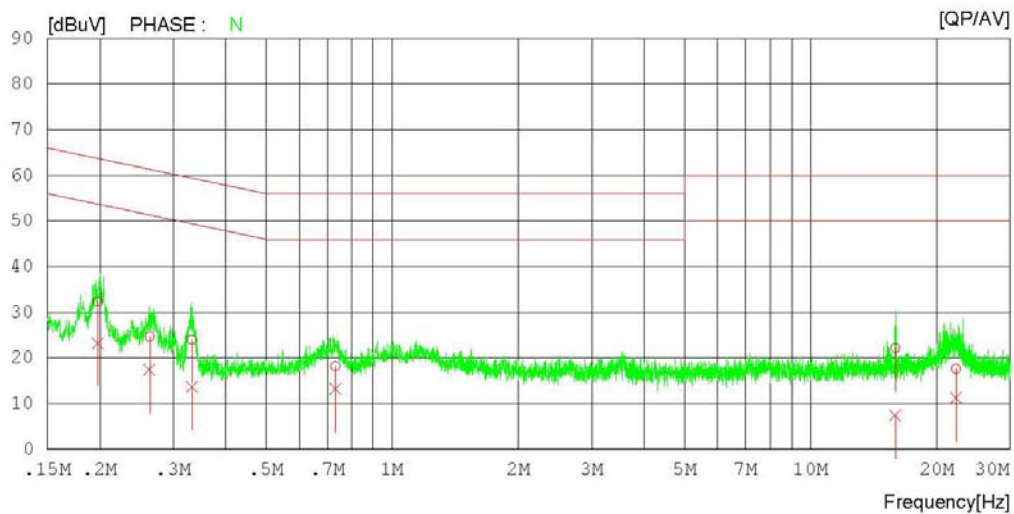
Date : 2015-02-11

Order No. : DTNC1501-00296  
Model No. :  
Serial No. :  
Test Condition :

Reference No. :  
Power Supply : 120 V 60 Hz  
Temp/Humi. : 16 °C 37 % R.H.  
Operator :

Memo :

LIMIT : CISPR22\_B QP  
CISPR22\_B AV





## Results of Conducted Emission

DTNC

Date : 2015-02-11

Order No. : DTNC1501-00296  
Model No. :  
Serial No. :  
Test Condition :

Reference No. :  
Power Supply : 120 V 60 Hz  
Temp/Humi. : 16 °C 37 % R.H.  
Operator :

Memo :

LIMIT : CISPR22\_B QP  
CISPR22\_B AV

NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.19791	22.5	13.4	9.9	32.4	23.3	63.7	53.7	31.3	30.4	N
2	0.26320	14.7	7.6	9.9	24.6	17.5	61.3	51.3	36.7	33.8	N
3	0.33191	14.0	3.7	10.0	24.0	13.7	59.4	49.4	35.4	35.7	N
4	0.73098	8.1	3.2	10.1	18.2	13.3	56.0	46.0	37.8	32.7	N
5	15.93900	11.7	-3.1	10.5	22.2	7.4	60.0	50.0	37.8	42.6	N
6	22.26120	6.9	0.6	10.7	17.6	11.3	60.0	50.0	42.4	38.7	N
7	0.19959	22.5	13.4	10.0	32.5	23.4	63.6	53.6	31.1	30.2	L1
8	0.26303	15.5	8.0	10.0	25.5	18.0	61.3	51.3	35.8	33.3	L1
9	0.33169	14.8	4.3	10.0	24.8	14.3	59.4	49.4	34.6	35.1	L1
10	0.73150	6.2	1.7	10.0	16.2	11.7	56.0	46.0	39.8	34.3	L1
11	15.97700	13.1	-2.8	10.8	23.9	8.0	60.0	50.0	36.1	42.0	L1
12	22.33600	5.2	-0.3	11.0	16.2	10.7	60.0	50.0	43.8	39.3	L1

## MODE 2

### Results of Conducted Emission

DTNC

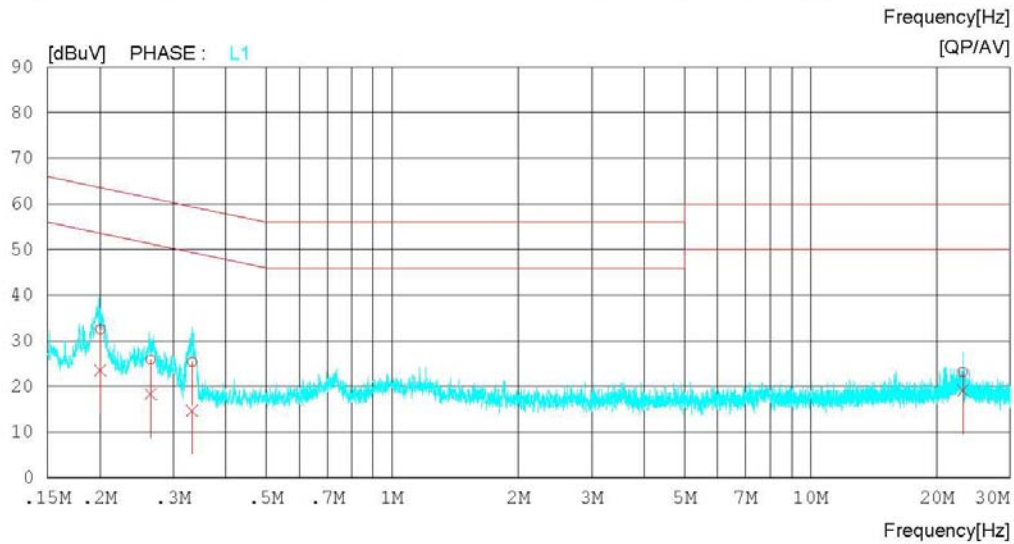
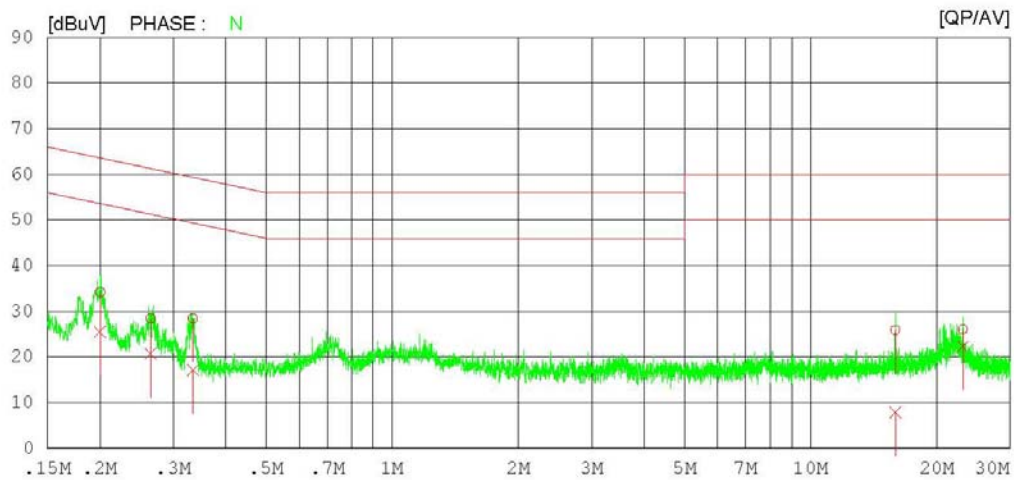
Date : 2015-02-11

Order No. : DTNC1501-00296  
Model No. :  
Serial No. :  
Test Condition : 2

Reference No. :  
Power Supply : 120 V 60 Hz  
Temp/Humi. : 16 °C 37 % R.H.  
Operator :

Memo :

LIMIT : CISPR22\_B QP  
CISPR22\_B AV



## Results of Conducted Emission

DTNC

Date : 2015-02-11

Order No. : DTNC1501-00296  
Model No. :  
Serial No. :  
Test Condition : 2

Reference No. :  
Power Supply : 120 V 60 Hz  
Temp/Humi. : 16 °C 37 % R.H.  
Operator :

Memo :

LIMIT : CISPR22\_B QP  
CISPR22\_B AV

NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.20063	24.3	15.6	9.9	34.2	25.5	63.6	53.6	29.4	28.1	N
2	0.26450	18.6	10.8	9.9	28.5	20.7	61.3	51.3	32.8	30.6	N
3	0.33392	18.4	7.1	10.0	28.4	17.1	59.4	49.4	31.0	32.3	N
4	15.93520	15.4	-2.6	10.5	25.9	7.9	60.0	50.0	34.1	42.1	N
5	23.12900	15.3	11.7	10.7	26.0	22.4	60.0	50.0	34.0	27.6	N
6	0.20063	22.5	13.6	10.0	32.5	23.6	63.6	53.6	31.1	30.0	L1
7	0.26467	15.9	8.3	10.0	25.9	18.3	61.3	51.3	35.4	33.0	L1
8	0.33235	15.3	4.6	10.0	25.3	14.6	59.4	49.4	34.1	34.8	L1
9	23.13180	12.2	8.1	11.0	23.2	19.1	60.0	50.0	36.8	30.9	L1

## 6.2 Radiated Disturbance

### 6.2.1 Measurement Procedure

The radiated disturbance was measured and set-up was made accordance with **ANSI C63.4**.

If the EUT is tabletop equipment, it was placed on a wooden table with a height of 0.8 m above the reference ground plane and 3 m or 10 m away from the interference receiving antenna in the **10m semi-anechoic chamber**.

Also if the EUT is floor-standing equipment, it was placed on a non-conducted support with a height up to 0.15 m above the reference ground plane.

Rotate the EUT from (0 - 360)° and position the receiving antenna at heights from (1 - 4) m above the reference ground plane continuously to determine associated with higher emission levels and record them.

The measurement was made in both the vertical and horizontal polarization, and the maximum value is presented in the report.

For below 1 GHz frequency range, Quasi-Peak detector with 120 kHz RBW was used.

Peak detector with 1 MHz RBW and 1 MHz VBW were used for above 1 GHz frequency range, also used linear average detector with defined in CISPR 16-1-1.

For further description of the configuration refer to the picture of the test set-up.

## 6.2.2 Limit for Radiated Disturbance

- The test frequency range of Radiated Disturbance measurements are listed below.

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 108	1 000
108 – 500	2 000
500 – 1 000	5 000
Above 1 000	5 <sup>th</sup> harmonic of the highest frequency or 40 GHz, whichever is lower

### (1) Limit for Radiated Emission below 1 000 MHz

Frequency range (MHz)	Class A Equipment (10 m distance)	Class B Equipment (3 m distance)
	Quasi-peak (dBμV/m)	Quasi-peak (dBμV/m)
30 to 88	39.1	40
88 to 216	43.5	43.5
216 to 960	46.4	46
960 to 1 000	49.5	54

Note 1 The lower limit shall apply at the transition frequency.

Note 2 Additional provisions may be required for cases where interference occurs.

Note 3 According to 15.109(g), as an alternative to the radiated emission limit shown above, digital devices may be shown to comply with the standards(CISPR), Pub. 22 shown as below.

Frequency range (MHz)	Class A Equipment (10 m distance)	Class B Equipment (10 m distance)
	Quasi-peak (dBμV/m)	Quasi-peak (dBμV/m)
30 to 230	40	30
230 to 1 000	47	37

### (2) Limits for Radiated Emission above 1 000 MHz at a measuring distance of 3 m

Frequency (GHz)	Class A Equipment		Class B Equipment	
	Peak (dBμV/m)	Average (dBμV/m)	Peak (dBμV/m)	Average (dBμV/m)
1 to 40	80	60	74	54

Note)1. Emission Level = Reading Value + loss - gain + Ant Factor

2. Margin = Limit - Emission level

3. Loss = Cable loss, Gain = Amp gain, Ant Factor = Antenna Factor

## Test Result

< 30 MHz ~ 1 GHz \_ MODE 1 >

### RADIATED EMISSION

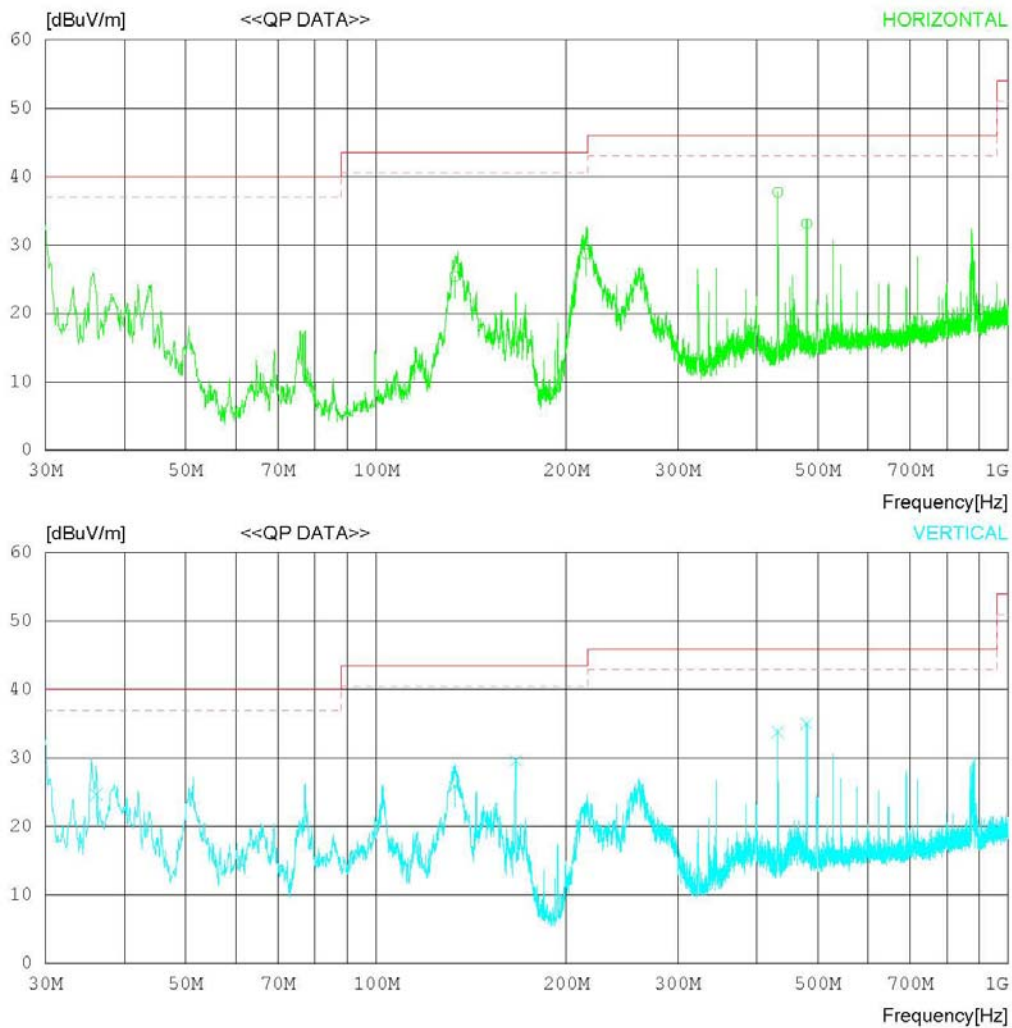
Date : 2015-01-28

Order No. : DTNC1501-00296  
Model No. : WS1095  
Serial No. :  
Test Condition :

Reference No. :  
Power Supply : 120 V 60 Hz  
Temp/Humi : 16 °C 37 % R.H.  
Operator :

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m)  
MARGIN: 3 dB



## RADIATED EMISSION

Date : 2015-01-28

Order No. : DTNC1501-00296  
Model No. : WS1095  
Serial No. :  
Test Condition :

Reference No. :  
Power Supply : 120 V 60 Hz  
Temp/Humi : 16 °C 37 % R.H.  
Operator :

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m)  
MARGIN: 3 dB

No.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	133.156	39.0	11.4	1.6	26.6	25.4	43.5	18.1	200	332
2	215.213	43.2	10.2	1.8	26.5	28.7	43.5	14.8	100	92
3	432.000	45.1	16.4	2.5	26.3	37.7	46.0	8.3	100	119
4	480.000	39.5	17.2	2.7	26.3	33.1	46.0	12.9	201	77
----- Vertical -----										
5	36.128	34.8	15.5	1.0	26.6	24.7	40.0	15.3	199	1
6	133.269	39.5	11.4	1.6	26.6	25.9	43.5	17.6	100	355
7	166.511	44.7	9.7	1.8	26.6	29.6	43.5	13.9	100	52
8	432.009	41.2	16.4	2.5	26.3	33.8	46.0	12.2	100	123
9	479.946	41.4	17.2	2.7	26.3	35.0	46.0	11.0	100	136

< (1 ~ 6) GHz \_ Peak \_ MODE 1 >

## RADIATED EMISSION

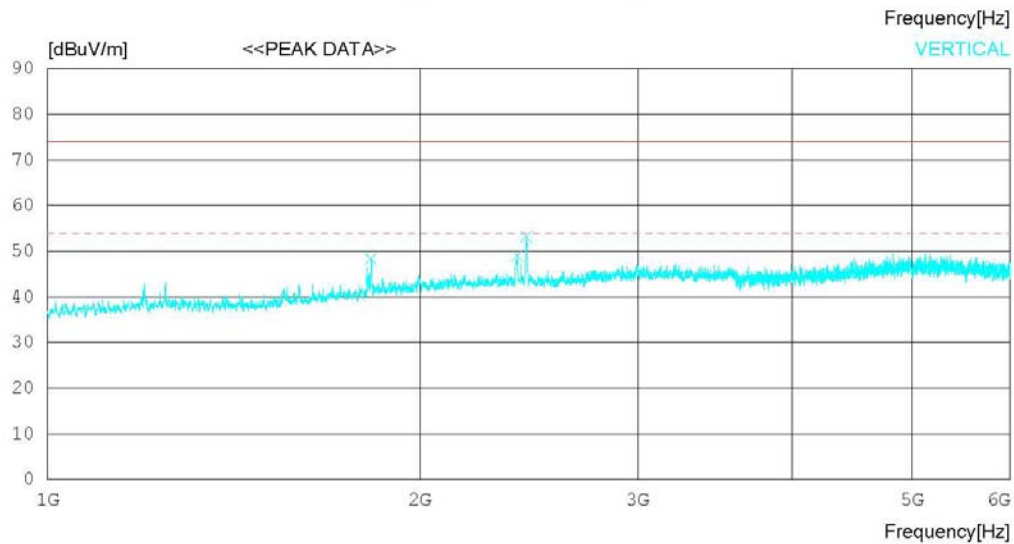
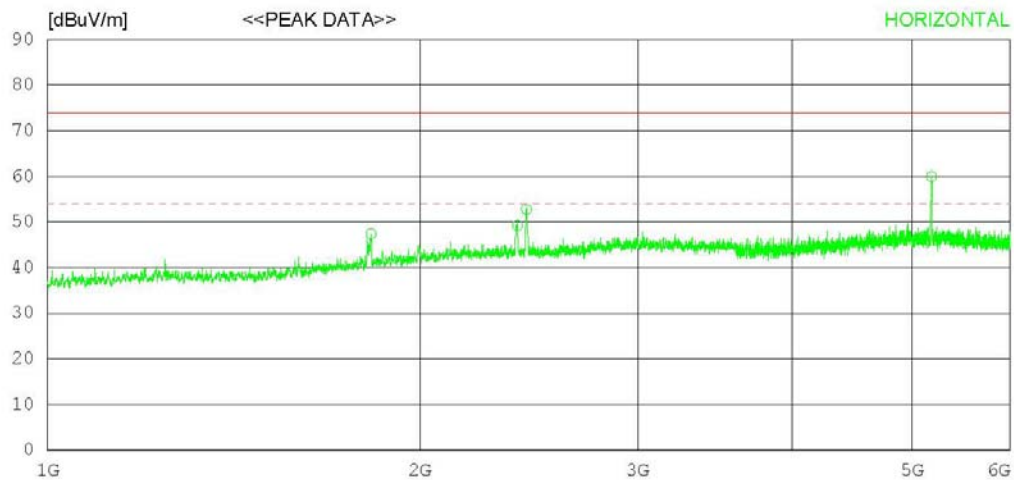
Date : 2015-01-28

Order No. : DTNC1501-00296  
Model No. : WS1095  
Serial No. :  
Test Condition :

Reference No. :  
Power Supply : 120 V 60 Hz  
Temp/Humi : 16 °C 37 % R.H.  
Operator :

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Peak)  
FCC Part15 Subpart.B Class B (3m) - 18G(Avg)





## RADIATED EMISSION

Date : 2015-01-28

Order No. : DTNC1501-00296  
Model No. : WS1095  
Serial No. :  
Test Condition :

Reference No. :  
Power Supply : 120 V 60 Hz  
Temp/Humi : 16 °C 37 % R.H.  
Operator :

Memo :

LIMIT : FCC Part15 Subpart B Class B (3m) - 18G(Peak)  
FCC Part15 Subpart B Class B (3m) - 18G(Avg)

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	1825.625	57.1	30.7	5.7	46.1	47.4	74.0	26.6	100	1
2	2397.500	57.0	32.2	6.6	46.6	49.2	74.0	24.8	100	1
3	2438.125	60.5	32.2	6.7	46.6	52.8	74.0	21.2	100	358
4	5183.125	64.5	34.9	8.5	47.9	60.0	74.0	14	100	122
----- Vertical -----										
5	1826.250	58.1	30.7	5.7	46.1	48.4	74.0	25.6	100	177
6	2397.500	56.8	32.2	6.6	46.6	49.0	74.0	25	100	358
7	2438.125	61.0	32.2	6.7	46.6	53.3	74.0	20.7	100	358

< (1 ~ 6) GHz \_ Average \_ MODE 1 >

## RADIATED EMISSION

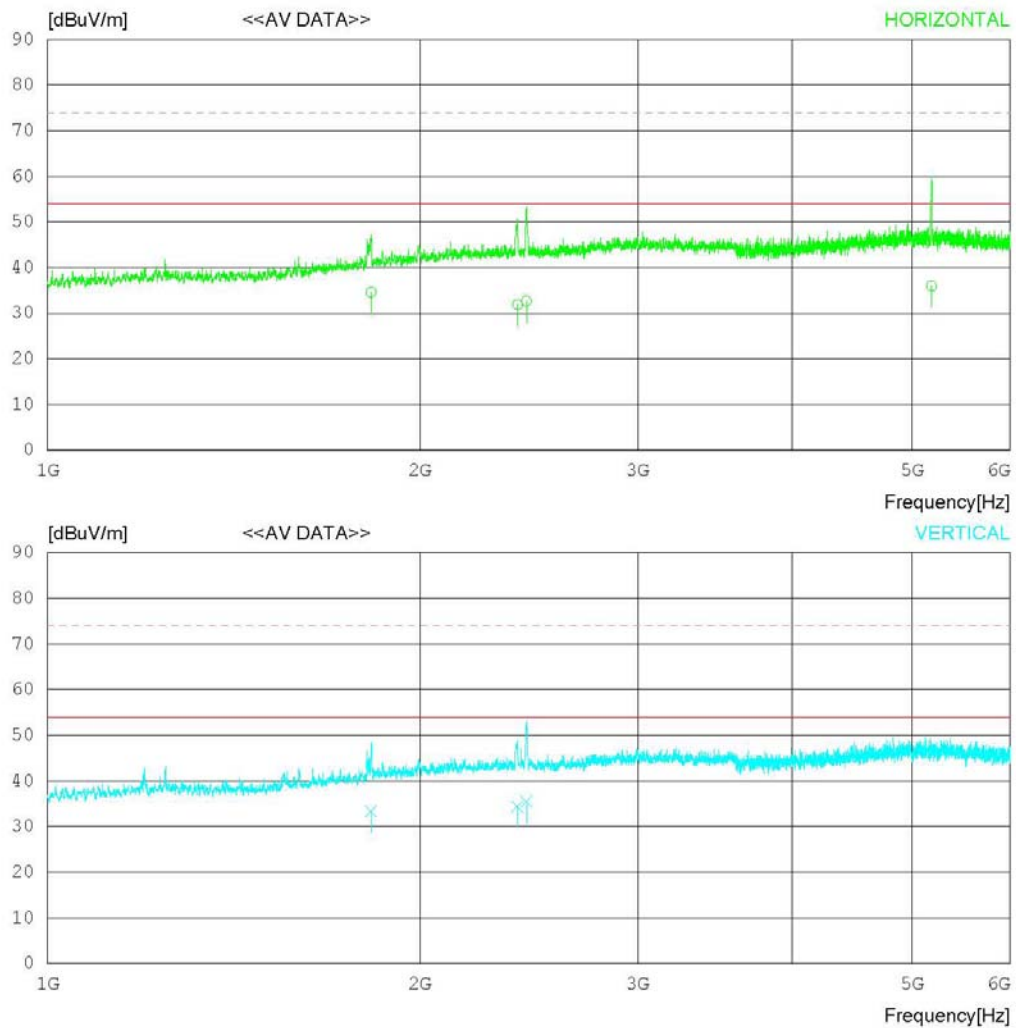
Date : 2015-01-28

Order No. : DTNC1501-00296  
Model No. : WS1095  
Serial No. :  
Test Condition :

Reference No. :  
Power Supply : 120 V 60 Hz  
Temp/Humi : 16 °C 37 % R.H.  
Operator :

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Avg)  
FCC Part15 Subpart.B Class B (3m) - 18G(Peak)



## RADIATED EMISSION

Date : 2015-01-28

Order No. : DTNC1501-00296  
Model No. : WS1095  
Serial No. :  
Test Condition :

Reference No. :  
Power Supply : 120 V 60 Hz  
Temp/Humi : 16 °C 37 % R.H.  
Operator :

Memo :

LIMIT : FCC Part15 Subpart B Class B (3m) - 18G(Avg)  
FCC Part15 Subpart B Class B (3m) - 18G(Peak)

No.	FREQ [MHz]	READING AV [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	1825.625	44.3	30.7	5.7	46.1	34.6	54.0	19.4	100	294
2	2398.050	39.7	32.2	6.6	46.6	31.9	54.0	22.1	100	202
3	2438.125	40.4	32.2	6.7	46.6	32.7	54.0	21.3	100	125
4	5183.125	40.5	34.9	8.5	47.9	36.0	54.0	18.0	100	122
----- Vertical -----										
5	1826.250	43.1	30.7	5.7	46.1	33.4	54.0	20.6	100	177
6	2397.500	42.2	32.2	6.6	46.6	34.4	54.0	19.6	100	222
7	2439.270	43.2	32.2	6.7	46.6	35.5	54.0	18.5	100	112

< 30 MHz ~ 1 GHz \_ MODE 2 >

## RADIATED EMISSION

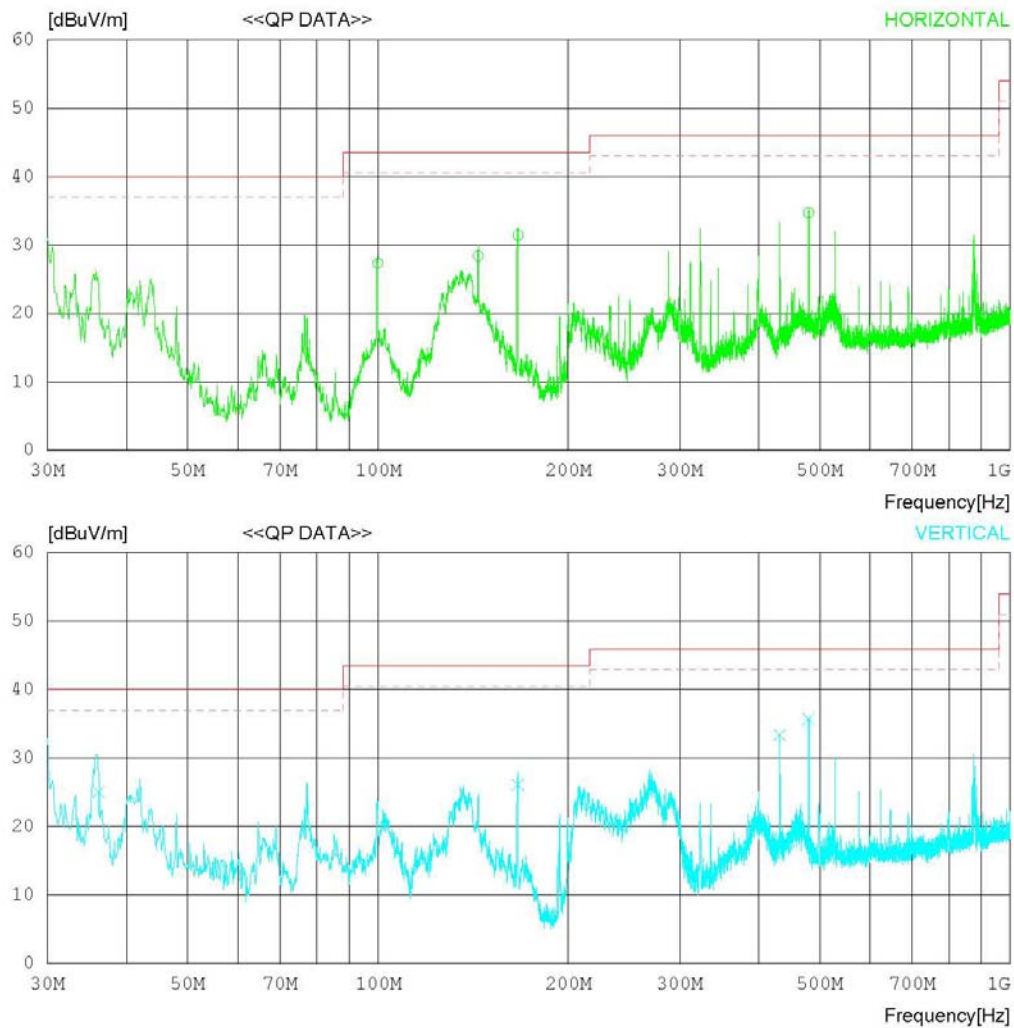
Date : 2015-01-28

Order No. : DTNC1501-00296  
Model No. : WS1095  
Serial No. :  
Test Condition :

Reference No. :  
Power Supply : 120 V 60 Hz  
Temp/Humi : 16 °C 37 % R.H.  
Operator :

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m)  
MARGIN: 3 dB



## RADIATED EMISSION

Date : 2015-01-28

Order No. : DTNC1501-00296  
Model No. : WS1095  
Serial No. :  
Test Condition :

Reference No. :  
Power Supply : 120 V 60 Hz  
Temp/Humi : 16 °C 37 % R.H.  
Operator :

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m)  
MARGIN: 3 dB

No.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	99.909	42.0	10.6	1.5	26.8	27.3	43.5	16.2	211	200
2	144.004	42.6	10.8	1.6	26.6	28.4	43.5	15.1	300	0
3	166.517	46.5	9.7	1.8	26.6	31.4	43.5	12.1	211	0
4	480.004	41.1	17.2	2.7	26.3	34.7	46.0	11.3	200	102
----- Vertical -----										
5	36.146	35.2	15.5	1.0	26.6	25.1	40.0	14.9	100	16
6	166.517	41.2	9.7	1.8	26.6	26.1	43.5	17.4	100	218
7	432.010	40.8	16.4	2.5	26.3	33.4	46.0	12.6	100	139
8	480.008	42.1	17.2	2.7	26.3	35.7	46.0	10.3	100	122

< (1 ~ 6) GHz \_ Peak \_ MODE 2 >

## RADIATED EMISSION

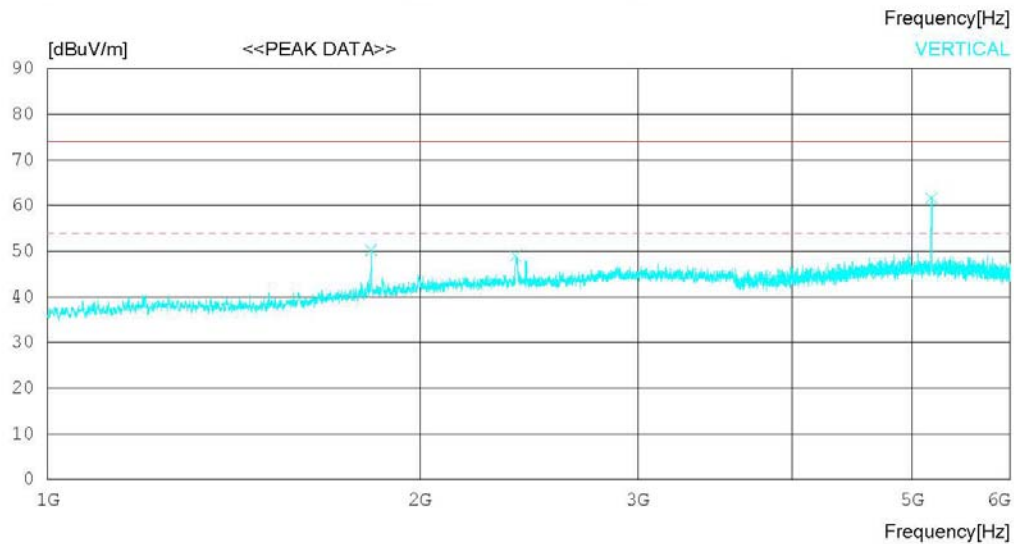
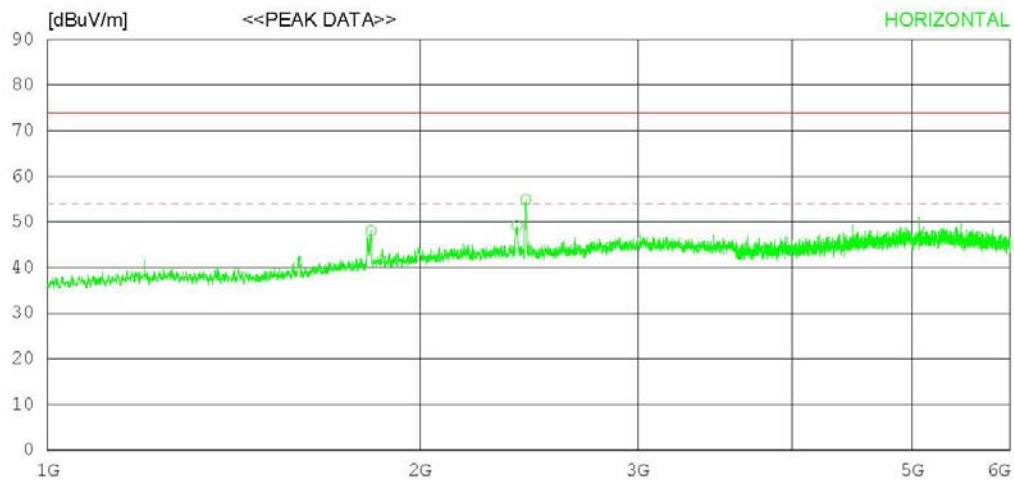
Date : 2015-01-28

Order No. : DTNC1501-00296  
Model No. : WS1095  
Serial No. :  
Test Condition :

Reference No. :  
Power Supply : 120 V 60 Hz  
Temp/Humi : 16 °C 37 % R.H.  
Operator :

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Peak)  
FCC Part15 Subpart.B Class B (3m) - 18G(Avg)



## RADIATED EMISSION

Date : 2015-01-28

Order No. : DTNC1501-00296  
Model No. : WS1095  
Serial No. :  
Test Condition :

Reference No. :  
Power Supply : 120 V 60 Hz  
Temp/Humi : 16 °C 37 % R.H.  
Operator :

Memo :

LIMIT : FCC Part15 Subpart B Class B (3m) - 18G(Peak)  
FCC Part15 Subpart B Class B (3m) - 18G(Avg)

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	1826.250	57.8	30.7	5.7	46.1	48.1	74.0	25.9	100	9
2	2395.625	56.9	32.2	6.6	46.6	49.1	74.0	24.9	100	75
3	2436.250	62.6	32.2	6.7	46.6	54.9	74.0	19.1	100	358
----- Vertical -----										
4	1825.625	60.0	30.7	5.7	46.1	50.3	74.0	23.7	100	1
5	2389.375	56.8	32.2	6.6	46.6	49.0	74.0	25	100	1
6	5184.375	66.2	34.9	8.5	47.9	61.7	74.0	12.3	100	61

< (1 ~ 6) GHz \_ Average \_ MODE 2 >

## RADIATED EMISSION

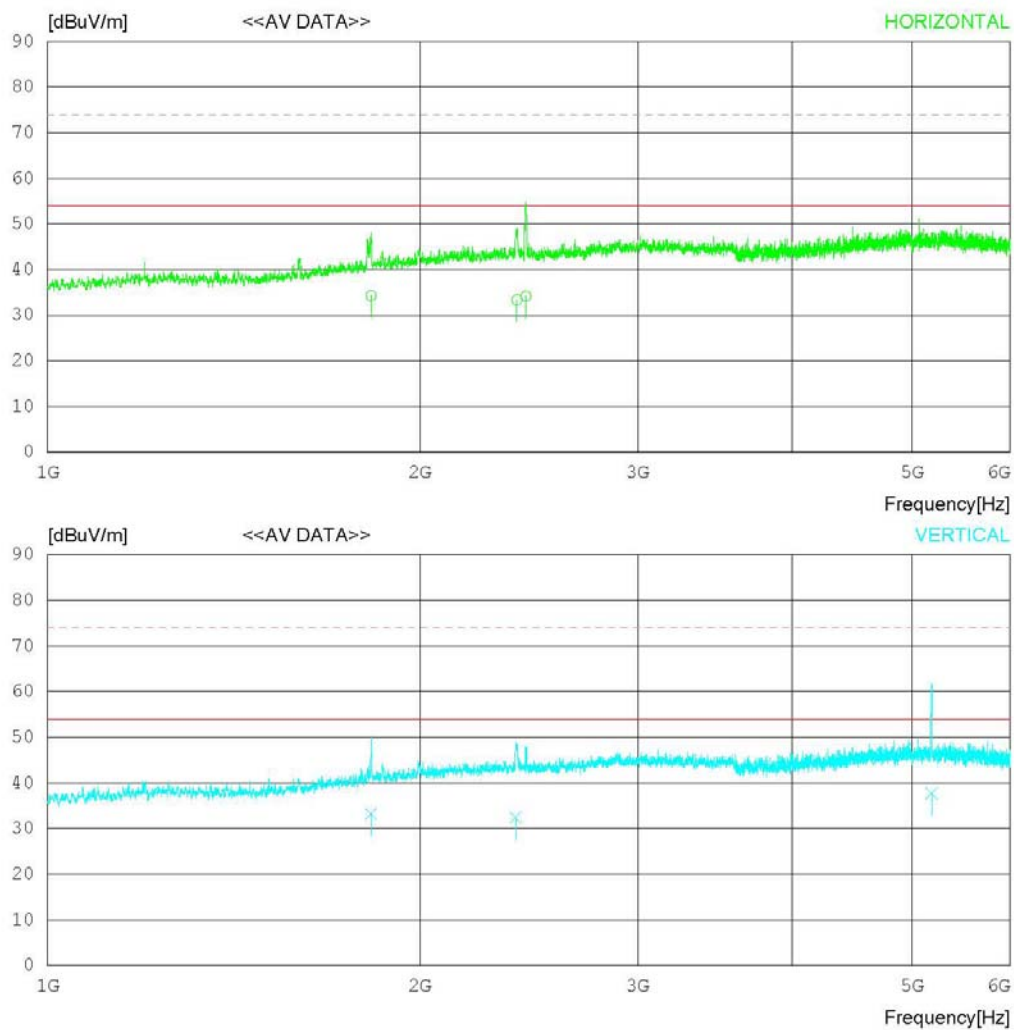
Date : 2015-01-28

Order No. : DTNC1501-00296  
Model No. : WS1095  
Serial No. :  
Test Condition :

Reference No. :  
Power Supply : 120 V 60 Hz  
Temp/Humi : 16 °C 37 % R.H.  
Operator :

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Avg)  
FCC Part15 Subpart.B Class B (3m) - 18G(Peak)





## RADIATED EMISSION

Date : 2015-01-28

Order No. :	DTNC1501-00296	Reference No. :	:
Model No. :	WS1095	Power Supply :	120 V 60 Hz
Serial No. :		Temp/Humi :	16 °C 37 % R.H.
Test Condition :		Operator :	

Memo :

LIMIT : FCC Part15 Subpart B Class B (3m) - 18G(Avg)  
FCC Part15 Subpart B Class B (3m) - 18G(Peak)

No.	FREQ [MHz]	READING AV [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	1826.250	44.0	30.7	5.7	46.1	34.3	54.0	19.7	100	65
2	2395.625	41.2	32.2	6.6	46.6	33.4	54.0	20.6	100	195
3	2436.250	41.9	32.2	6.7	46.6	34.2	54.0	19.8	100	160
----- Vertical -----										
4	1825.625	42.9	30.7	5.7	46.1	33.2	54.0	20.8	100	64
5	2389.375	40.2	32.2	6.6	46.6	32.4	54.0	21.6	100	179
6	5184.375	42.2	34.9	8.5	47.9	37.7	54.0	16.3	100	165

## 6.3 Antenna Power Conduction

### 6.3.1 Measurement Procedure

Power on the receive antenna terminals was to be determined by measurement of the voltage present at these terminals.

Antenna conducted power measurements was performed with the EUT antenna terminals connected directly to measuring instrument using a impedance-Matching network to connect the measurement Instrument to the antenna terminals of the EUT.

The losses in decibels in impedance-matching network and cables was added to the measured values in dB $\mu$ V.

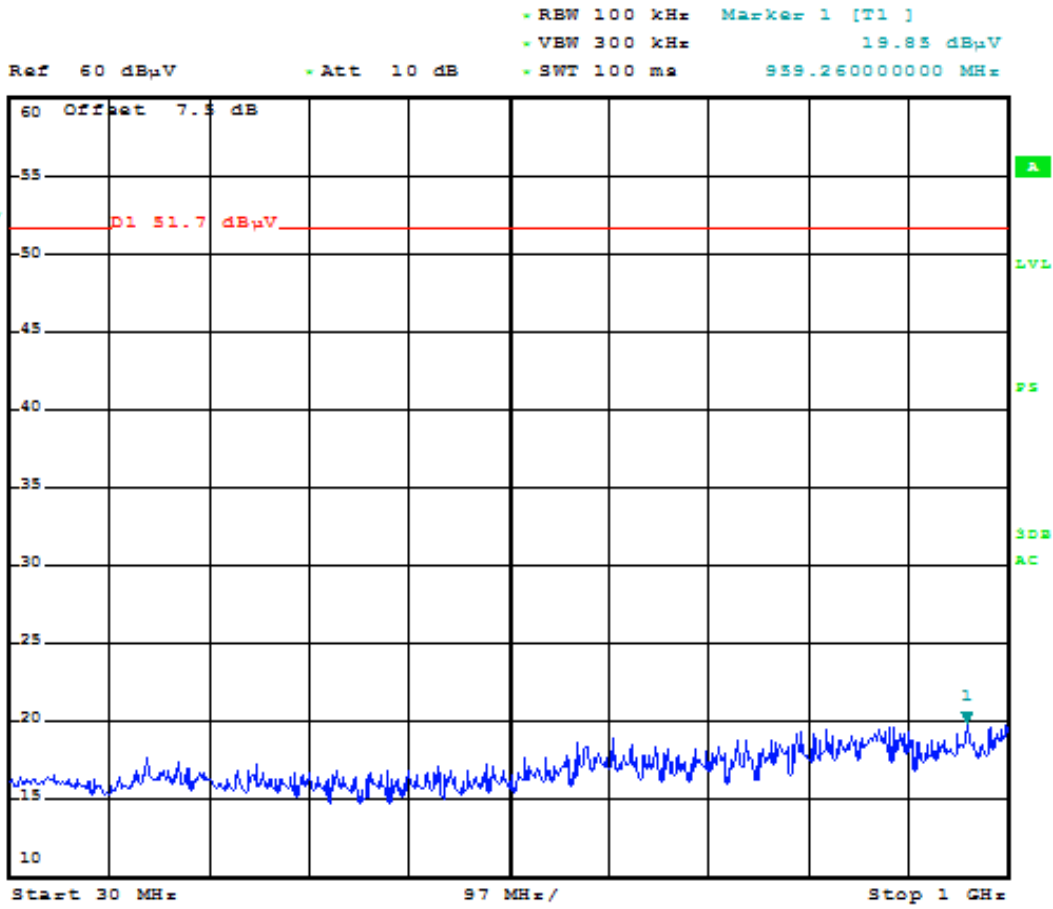
The measurements were repeated with the receiver tuned to a frequency until all of frequencies had been successively measured.

Power in the receive antenna terminals in the ratio of  $V^2 / R$ , where V is the loss-corrected voltage measured at the antenna terminals, and R is the impedance of the measuring instrument.

### 6.3.2 Limit for Antenna Power Conduction

- Limit : **2nW(51.7 dB $\mu$ V)**

## Test Result



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## Appendix 1

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### List of Test and Measurement Instruments

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment is identified by the Test Laboratory.

### 1. Conducted Disturbance

Name of Instrument	Model No.	Manufacturer	Serial No.	Cal. Date	Next Cal. Date
<input checked="" type="checkbox"/> MEASUREMENT SOFTWARE	EMI-C VER. 2.00.0143	TSJ	N/A	N/A	N/A
<input type="checkbox"/> SPECTRUM ANALYZER	8591E	H/P	3649A05889	N/A	N/A
<input type="checkbox"/> ARTIFICIAL MAINS NETWORK	PMM L2-16B	NARDA S.T.S. / PMM	000WX20305	2014.06.26	2015.06.26
<input type="checkbox"/> LISN	KNW-407	KYORITSU	8-317-8	2015.01.07	2016.01.07
<input type="checkbox"/> 50 OHM TERMINATOR	CT-01	TME	N/A	2015.01.06	2016.01.06
<input checked="" type="checkbox"/> EMI TEST RECEIVER	ESC17	ROHDE & SCHWARZ	100910	2015.02.25	2016.02.25
<input checked="" type="checkbox"/> LISN	ESH2-Z5	ROHDE & SCHWARZ	828739/006	2014.09.11	2015.09.11
<input checked="" type="checkbox"/> PULSE LIMITER	ESH3-Z2	ROHDE & SCHWARZ	101334	2015.01.07	2016.01.07
<input checked="" type="checkbox"/> 50 OHM TERMINATOR	CT-01	TME	N/A	2015.01.06	2016.01.06

### 2. Radiated Disturbance

Name of Instrument	Model No.	Manufacturer	Serial No.	Cal. Date	Next Cal. Date
<input checked="" type="checkbox"/> MEASUREMENT SOFTWARE	EMI-R VER. 2.00.0121	TSJ	N/A	N/A	N/A
<input checked="" type="checkbox"/> EMI TEST RECEIVER	ESU 8	ROHDE & SCHWARZ	100348	2014.10.21	2015.10.21
<input checked="" type="checkbox"/> BILOG ANTENNA	CBL6112B	SCHAFFNER	2737	2014.12.10	2016.12.10
<input checked="" type="checkbox"/> LOW NOISE PRE AMPLIFIER	MLA-100K01-B01-26	TSJ	1252741	2015.02.25	2016.02.25
<input checked="" type="checkbox"/> HORN ANTENNA	3117	ETS-LINDGREN	00143291	2015.02.09	2017.02.09
<input checked="" type="checkbox"/> PREAMPLIFIER	MLA-0106-B03-36	TSJ	1784347	2015.02.09	2017.02.09
<input type="checkbox"/> EMI TEST RECEIVER	ESCI	ROHDE & SCHWARZ	100364	2015.02.25	2016.02.25
<input type="checkbox"/> AMPLIFIER	MLA-100K01-B01-26	TSJ	1252741	2015.02.25	2016.02.25

### 3. Antenna Power Conduction

Name of Instrument	Model No.	Manufacturer	Serial No.	Cal. Date	Next Cal. Date
<input checked="" type="checkbox"/> EMI TEST RECEIVER	ESC17	ROHDE & SCHWARZ	100910	2015.02.25	2016.02.25

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**Appendix 2**

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**Report Revision History**

Revision Date	Description	Revised By	Revision Reviewed By
None	Original	N/A	N/A