

EMC TEST REPORT

Test item : Desktop/Mobile Digital Trunking Scanner
Model No. : WS1095
Order No. : DTNC1509-04768
Date of receipt : 2015-09-23
Test duration : 2015-09-30 ~ 2015-10-12
Date of Issue : 2015-10-15
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 : (21 ~ 22) °C,
Humidity : (49 ~ 59) % 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.
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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	Desktop/Mobile Digital Trunking Scanner
Model No.	WS1095
Add Model No	WS1098
Serial No	None
FCC ID	HSXSC11
Supplied Power for Test	DC 13.8 V, 600 mA
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)

Refer to Appendix 3 (Changed Part List)

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	2015-09-30	22	49
Radiated Disturbance	2015-10-01	21	59
Antenna Power Conduction	2015-10-12	21	51

4.3 Test result Summary

(1) Conducted Emission

Frequency [MHz]	Phase	Result [dBμV]	Detector	Limit [dBμV]	Margin [dB]
0.49778	N	27.9	Average	46.0	18.1

(2) Radiated Emission

Frequency [MHz]	Pol.	Result [dB(μV/m)]	Detector	Limit [dB(μV/m)]	Margin [dB]
941.984	H	39.1	Average	46.0	6.9

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

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

5.3 Support Equipment Used

Unit	Model No.	Serial No.	Manufacturer	CABLE				Back shell	FCC ID
				Connect type	Length (m)	shield	With Ferrite		
Notebook PC	4230S	CNU20935GG	HP	POWER USB	1.8 0.5	Non-shield Shield	X	Plastic Plastic	DOC
Notebook PC Adaptor	Series PPP009L-E	WBGST0A1R1T2TC	LITE-ON TECHNOLOGY	POWER POWER	1.8 1.8	Non-shield Non-shield	X	Plastic Plastic	DOC
Headset	COV-903	N/A	COSY	STEREO	2.0	Non-shield	X	Plastic	DOC
Adaptor	48-138-0600	N/A	Radioshack	POWER	2.0	Non-shield	X	Plastic	DOC

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 2nd 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

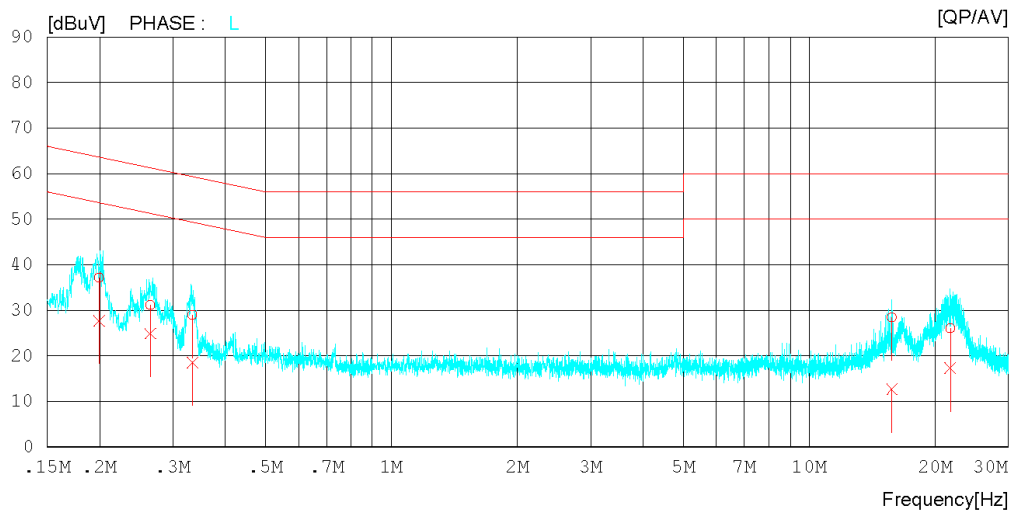
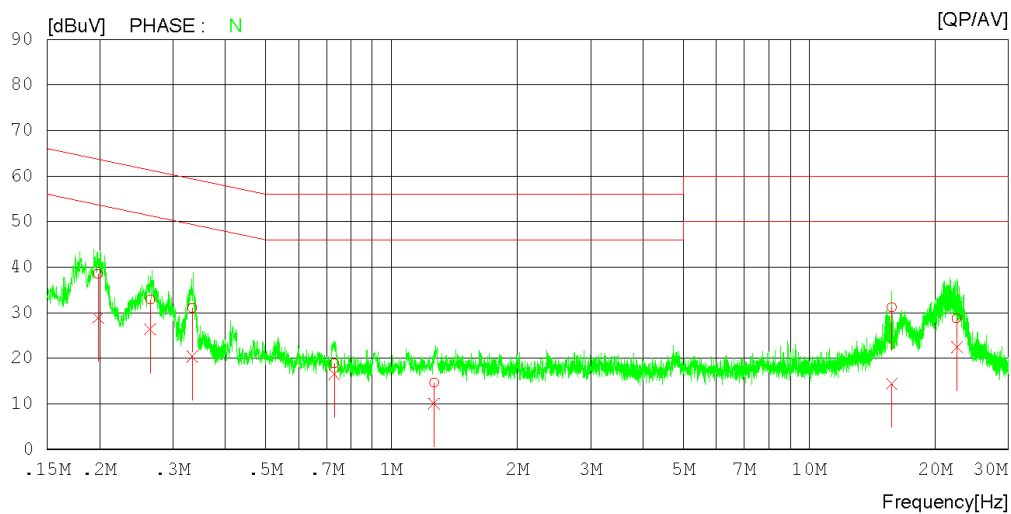
Date : 2015-09-30

Order No. : DTNC1509-04768
Model No. : WS1095
Serial No. :
Test Condition : 1

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi. : 22 °C 49 % R.H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV



Results of Conducted Emission

DTNC

Date : 2015-09-30

Order No. : DTNC1509-04768
Model No. : WS1095
Serial No. :
Test Condition : 1

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi. : 22 °C 49 % 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	0.19865	28.4	18.8	10.1	38.5	28.9	63.7	53.7	25.2	24.8	N
2	0.26468	22.7	16.2	10.1	32.8	26.3	61.3	51.3	28.5	25.0	N
3	0.33379	20.9	10.3	10.1	31.0	20.4	59.4	49.4	28.4	29.0	N
4	0.73000	8.7	6.4	10.1	18.8	16.5	56.0	46.0	37.2	29.5	N
5	1.26580	4.4	-0.2	10.2	14.6	10.0	56.0	46.0	41.4	36.0	N
6	15.77640	20.6	3.8	10.6	31.2	14.4	60.0	50.0	28.8	35.6	N
7	22.56880	17.9	11.6	10.8	28.7	22.4	60.0	50.0	31.3	27.6	N
8	0.19958	27.0	17.6	10.1	37.1	27.7	63.6	53.6	26.5	25.9	L
9	0.26450	21.1	14.8	10.1	31.2	24.9	61.3	51.3	30.1	26.4	L
10	0.33402	18.9	8.5	10.1	29.0	18.6	59.4	49.4	30.4	30.8	L
11	15.77880	17.6	1.8	10.8	28.4	12.6	60.0	50.0	31.6	37.4	L
12	21.77000	15.1	6.3	10.9	26.0	17.2	60.0	50.0	34.0	32.8	L

MODE 2

Results of Conducted Emission

DTNC

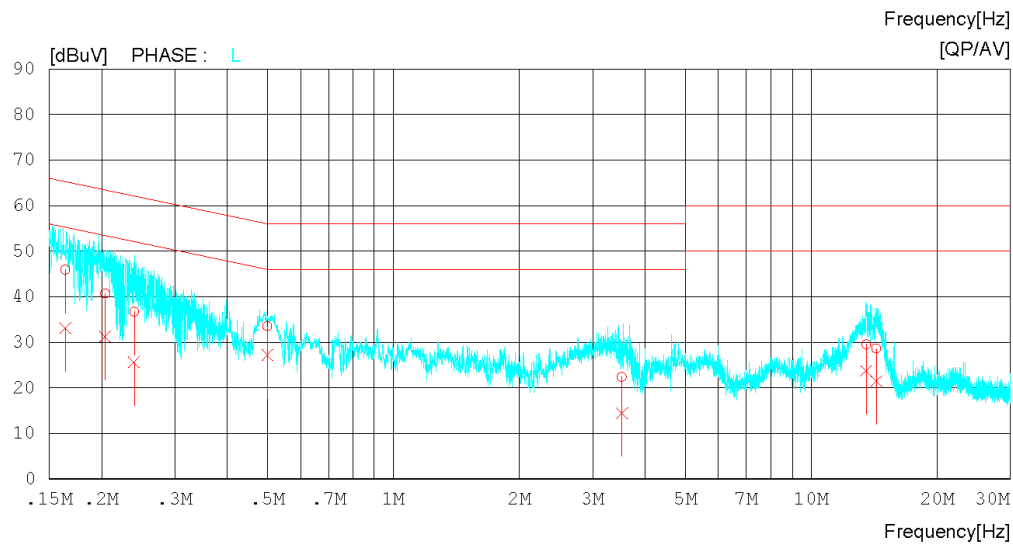
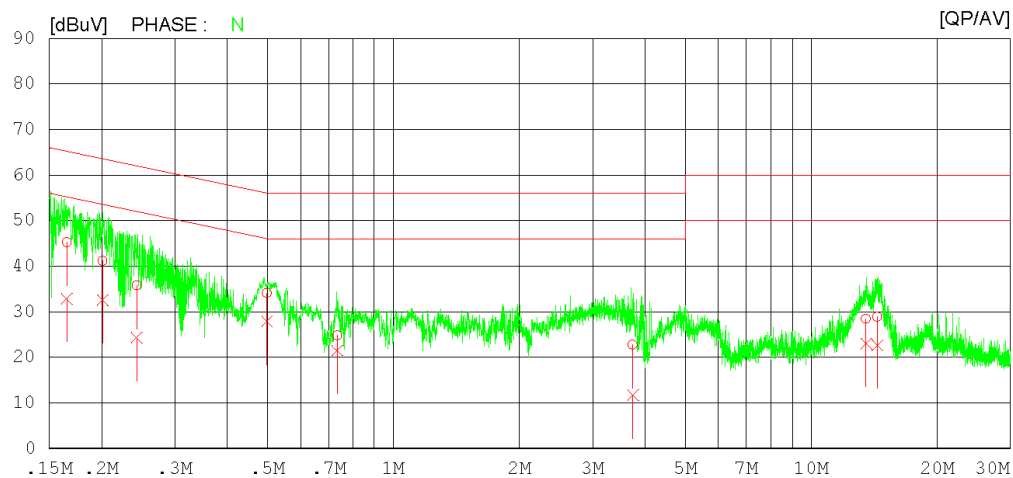
Date : 2015-09-30

Order No. : DTNC1509-04768
Model No. : WS1095
Serial No. :
Test Condition : 2

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi. : 22 °C 49 % R.H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV



Results of Conducted Emission

DTNC

Date : 2015-09-30

Order No. : DTNC1509-04768
Model No. : WS1095
Serial No. :
Test Condition : 2

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi. : 22 °C 49 % 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	0.16504	35.1	22.8	10.1	45.2	32.9	65.2	55.2	20.0	22.3	N
2	0.20130	31.1	22.5	10.1	41.2	32.6	63.6	53.6	22.4	21.0	N
3	0.24282	25.7	14.1	10.1	35.8	24.2	62.0	52.0	26.2	27.8	N
4	0.49778	24.0	17.8	10.1	34.1	27.9	56.0	46.0	21.9	18.1	N
5	0.73335	14.6	11.4	10.1	24.7	21.5	56.0	46.0	31.3	24.5	N
6	3.74280	12.5	1.5	10.2	22.7	11.7	56.0	46.0	33.3	34.3	N
7	13.54200	17.8	12.4	10.6	28.4	23.0	60.0	50.0	31.6	27.0	N
8	14.41040	18.3	12.0	10.6	28.9	22.6	60.0	50.0	31.1	27.4	N
9	0.16410	35.7	22.9	10.1	45.8	33.0	65.3	55.3	19.5	22.3	L
10	0.20403	30.6	21.1	10.1	40.7	31.2	63.4	53.4	22.7	22.2	L
11	0.23950	26.6	15.5	10.1	36.7	25.6	62.1	52.1	25.4	26.5	L
12	0.49929	23.3	17.1	10.1	33.4	27.2	56.0	46.0	22.6	18.8	L
13	3.52720	12.1	4.2	10.2	22.3	14.4	56.0	46.0	33.7	31.6	L
14	13.55320	18.7	12.9	10.8	29.5	23.7	60.0	50.0	30.5	26.3	L
15	14.33880	17.7	10.6	10.8	28.5	21.4	60.0	50.0	31.5	28.6	L

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 th 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

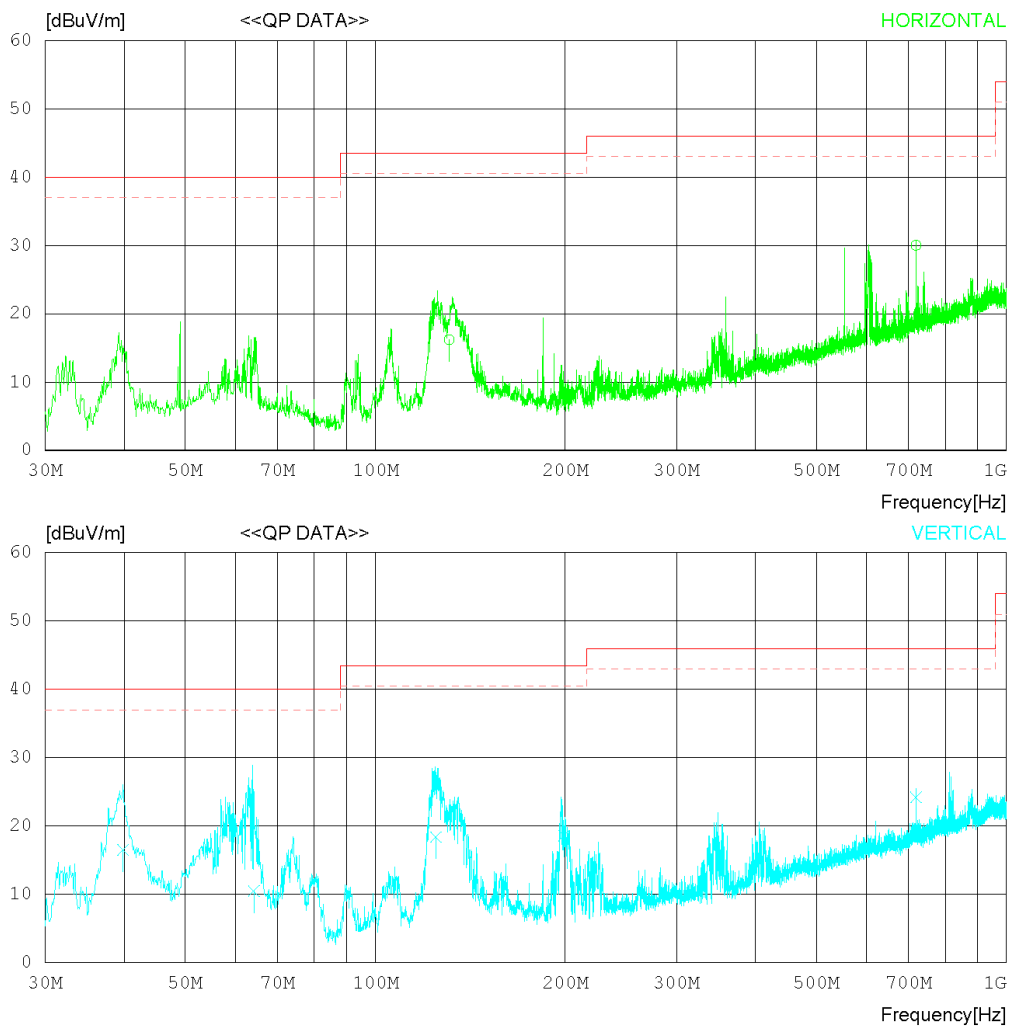
Date : 2015-10-01

Order No. : DTNC1509-04768
Model No. : WS1095
Serial No. :
Test Condition : 1

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 21 °C 59 % R.H.
Operator :

Memo :

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



RADIATED EMISSION

Date : 2015-10-01

Order No. : DTNC1509-04768
Model No. : WS1095
Serial No. :
Test Condition : 1

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 21 °C 59 % 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	130.871	29.7	12.1	1.0	26.6	16.2	43.5	27.3	200	71
2	718.854	32.1	21.3	2.7	26.1	30.0	46.0	16.0	100	20
----- Vertical -----										
3	39.821	32.5	10.2	0.4	26.6	16.5	40.0	23.5	100	15
4	64.215	25.3	11.1	0.7	26.6	10.5	40.0	29.5	100	341
5	124.613	32.3	11.7	1.0	26.6	18.4	43.5	25.1	100	233
6	198.930	34.1	9.8	1.2	26.5	18.6	43.5	24.9	100	154
7	718.761	26.3	21.3	2.7	26.1	24.2	46.0	21.8	100	358

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

RADIATED EMISSION

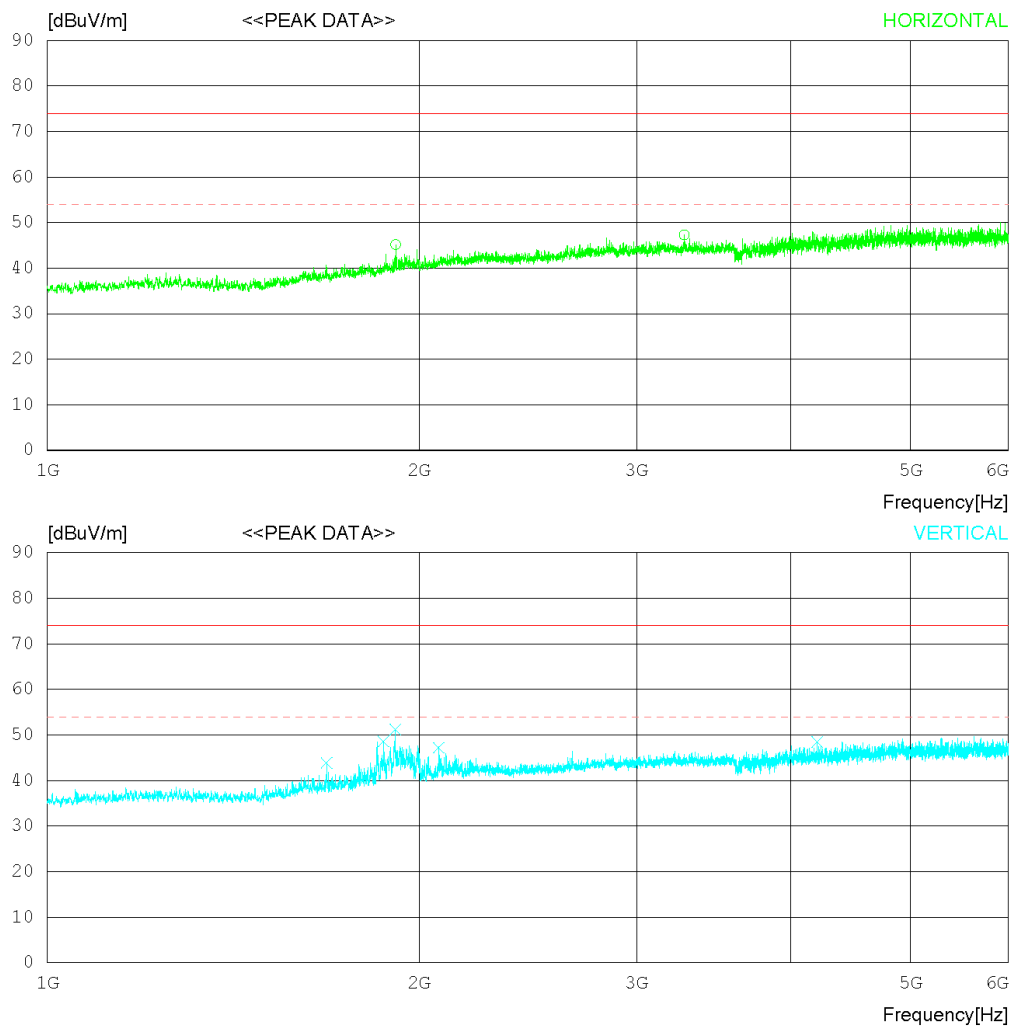
Date : 2015-10-01

Order No. : DTNC1509-04768
Model No. : WS1095
Serial No. :
Test Condition : 1

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 21 °C 59 % 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 : 2015-10-01

Order No. : DTNC1509-04768	Reference No. :
Model No. : WS1095	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 21 'C 59 % R.H.
Test Condition : 1	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	1914.375	57.2	31.3	4.7	48.0	45.2	74.0	28.8	100	358
2	3278.125	55.9	33.2	6.1	47.9	47.3	74.0	26.7	100	358
----- Vertical -----										
3	1683.125	57.4	29.7	4.3	47.5	43.9	74.0	30.1	100	111
4	1871.250	60.9	31.0	4.5	47.8	48.6	74.0	25.4	100	330
5	1913.125	63.2	31.3	4.6	47.9	51.2	74.0	22.8	100	1
6	2075.000	58.5	32.0	4.7	48.0	47.2	74.0	26.8	100	180
7	4201.250	55.3	33.8	6.7	47.3	48.5	74.0	25.5	100	282

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

RADIATED EMISSION

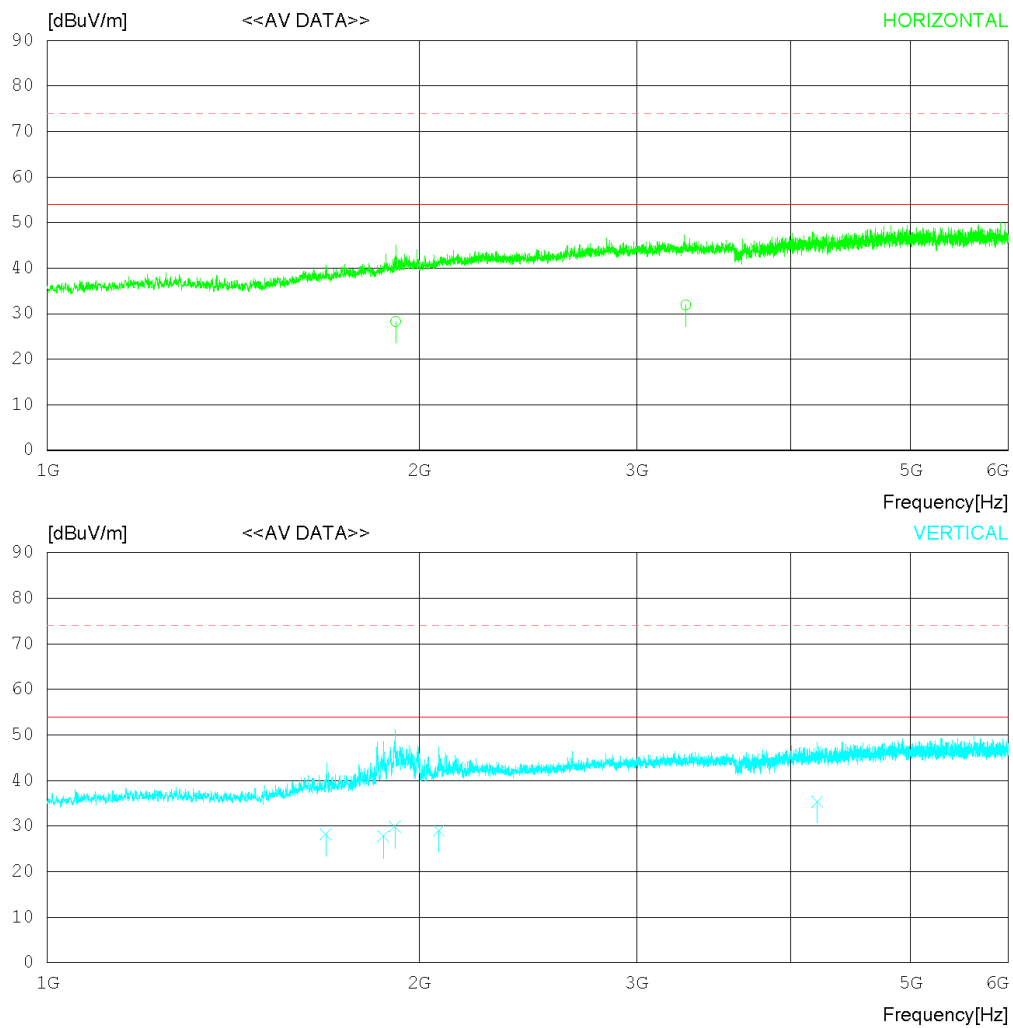
Date : 2015-10-01

Order No. : DTNC1509-04768
Model No. : WS1095
Serial No. :
Test Condition : 1

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 21 °C 59 % 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 : 2015-10-01

Order No. : DTNC1509-04768	Reference No. :
Model No. : WS1095	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 21 °C 59 % R.H.
Test Condition : 1	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	1914.375	40.3	31.3	4.7	48.0	28.3	54.0	25.7	100	358
2	3287.998	40.5	33.2	6.1	47.9	31.9	54.0	22.1	100	230
----- Vertical -----										
3	1680.183	41.7	29.7	4.3	47.5	28.2	54.0	25.8	100	111
4	1871.250	40.0	31.0	4.6	47.9	27.7	54.0	26.3	100	107
5	1912.035	42.0	31.3	4.6	48.0	29.9	54.0	24.1	100	164
6	2075.750	40.0	32.0	4.9	47.9	29.0	54.0	25.0	100	177
7	4201.250	42.2	33.8	6.7	47.3	35.4	54.0	18.6	100	291

< 30 MHz ~ 1 GHz _ MODE 2 >

RADIATED EMISSION

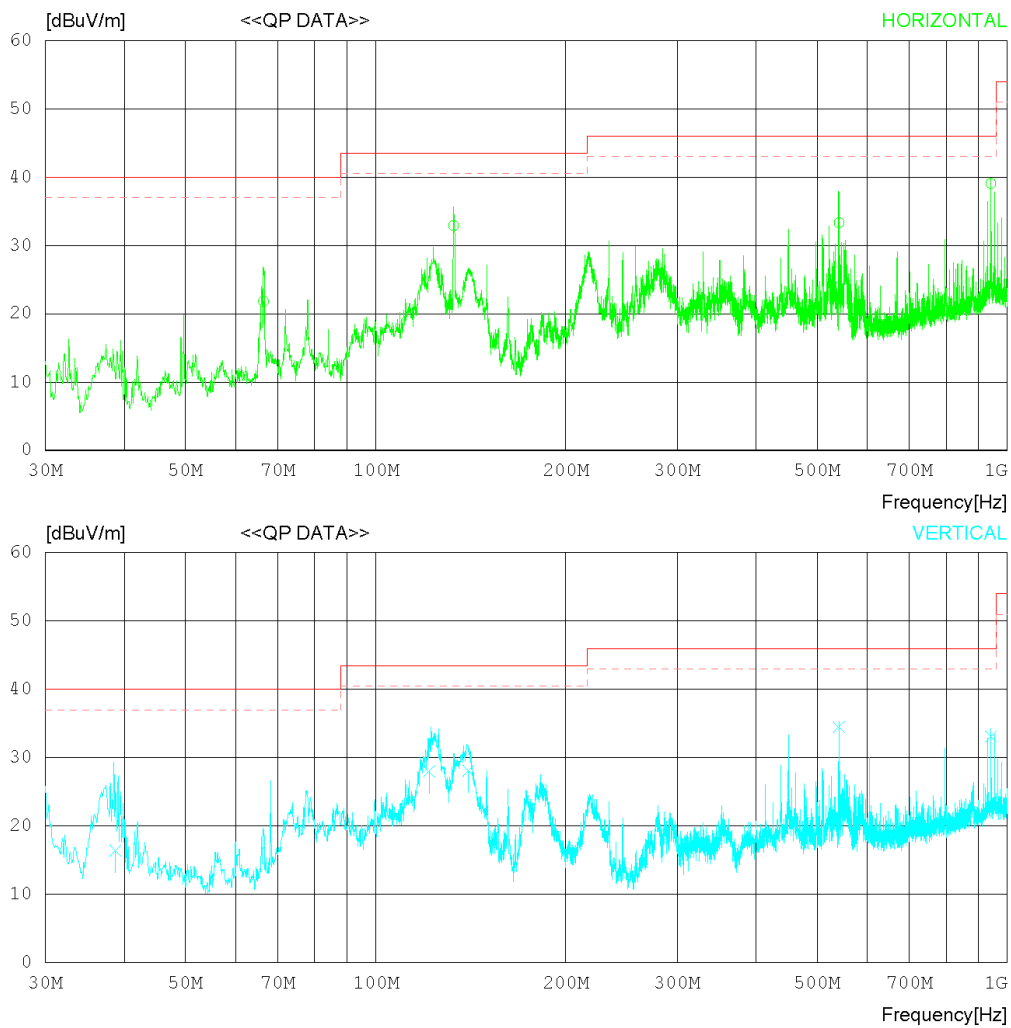
Date : 2015-10-01

Order No. : DTNC1509-04768
Model No. : WS1095
Serial No. :
Test Condition : 2

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 21 °C 59 % R.H.
Operator :

Memo :

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



RADIATED EMISSION

Date : 2015-10-01

Order No. : DTNC1509-04768
Model No. : WS1095
Serial No. :
Test Condition : 2

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 21 'C 59 % 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	66.428	36.9	10.8	0.7	26.6	21.8	40.0	18.2	301	358
2	132.818	46.3	12.2	1.0	26.6	32.9	43.5	10.6	158	45
3	541.461	38.8	18.5	2.2	26.2	33.3	46.0	12.7	301	0
4	941.984	37.9	24.2	3.7	26.7	39.1	46.0	6.9	100	311
----- Vertical -----										
5	38.700	32.6	10.0	0.4	26.6	16.4	40.0	23.6	100	157
6	121.496	42.1	11.5	1.0	26.6	28.0	43.5	15.5	100	297
7	140.189	40.9	12.6	1.1	26.5	28.1	43.5	15.4	100	31
8	541.156	40.0	18.5	2.2	26.2	34.5	46.0	11.5	100	0
9	941.984	31.9	24.2	3.7	26.7	33.1	46.0	12.9	100	338

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

RADIATED EMISSION

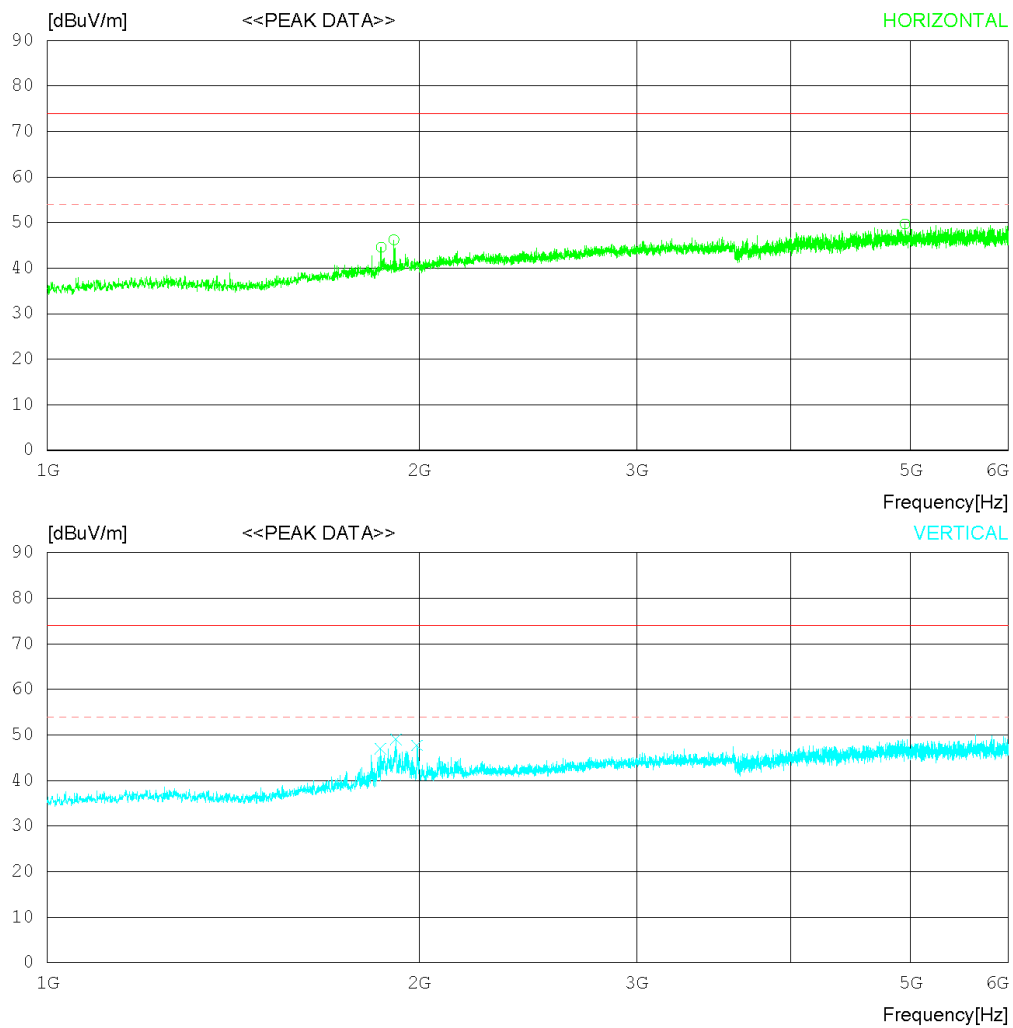
Date : 2015-10-01

Order No. : DTNC1509-04768
Model No. : WS1095
Serial No. :
Test Condition : 2

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 21 °C 59 % 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 : 2015-10-01

Order No. : DTNC1509-04768	Reference No. :
Model No. : WS1095	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 21 °C 59 % R.H.
Test Condition : 2	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	1863.750	56.9	31.0	4.6	47.9	44.6	74.0	29.4	100	1
2	1908.125	58.3	31.3	4.6	48.0	46.2	74.0	27.8	100	1
3	4948.125	55.2	34.5	7.3	47.3	49.7	74.0	24.3	100	52
----- Vertical -----										
4	1861.250	59.3	31.0	4.6	47.9	47.0	74.0	27	100	358
5	1915.000	61.0	31.3	4.7	48.0	49.0	74.0	25	100	358
6	1993.125	59.2	31.9	4.7	48.1	47.7	74.0	26.3	100	162

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

RADIATED EMISSION

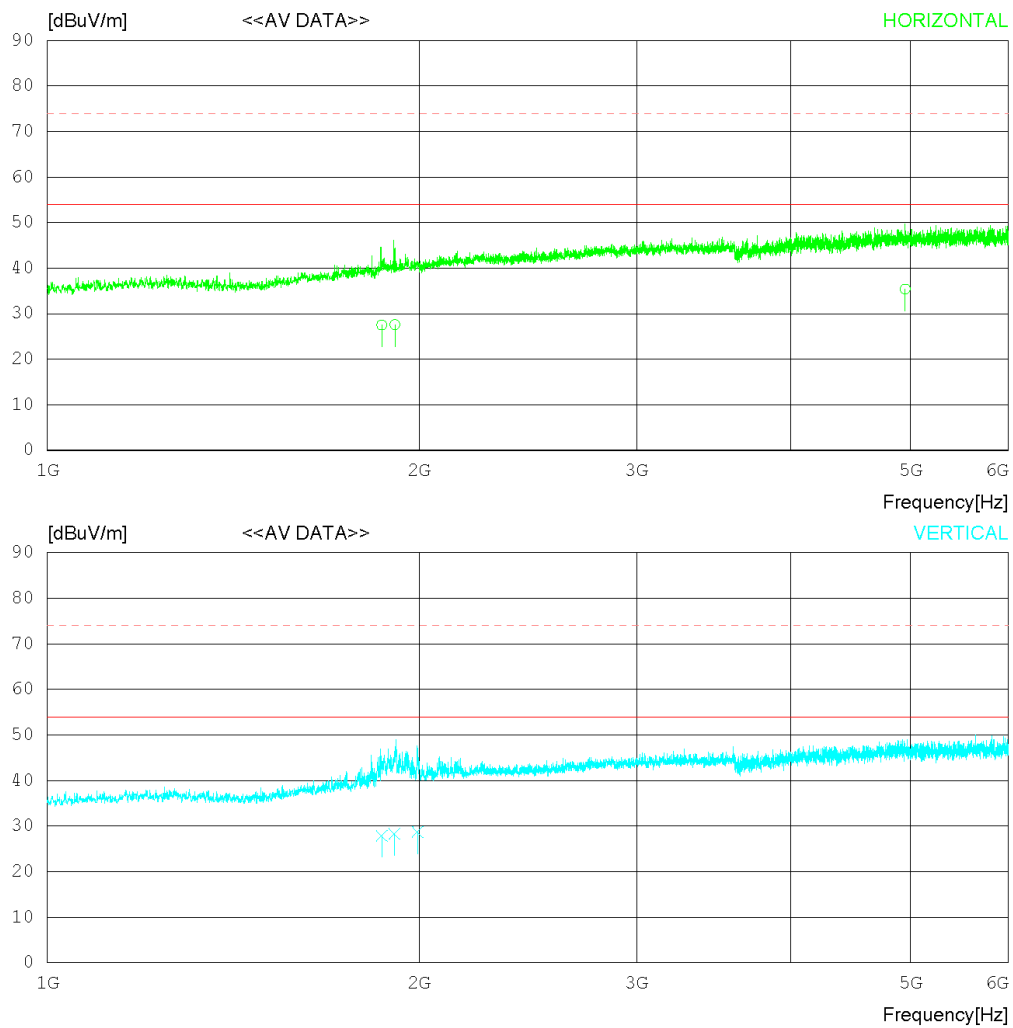
Date : 2015-10-01

Order No. : DTNC1509-04768
Model No. : WS1095
Serial No. :
Test Condition : 2

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 21 °C 59 % 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 : 2015-10-01

Order No. : DTNC1509-04768	Reference No. :
Model No. : WS1095	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 21 °C 59 % R.H.
Test Condition : 2	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	1865.113	39.8	31.0	4.6	47.9	27.5	54.0	26.5	100	223
2	1911.373	39.7	31.3	4.6	48.0	27.6	54.0	26.4	100	230
3	4950.154	40.9	34.5	7.3	47.3	35.4	54.0	18.6	100	222
----- Vertical -----										
4	1865.113	40.2	31.0	4.6	47.9	27.9	54.0	26.1	100	168
5	1909.172	40.4	31.3	4.6	48.0	28.3	54.0	25.7	100	339
6	1994.056	40.2	31.9	4.7	48.1	28.7	54.0	25.3	100	194

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 μ V.

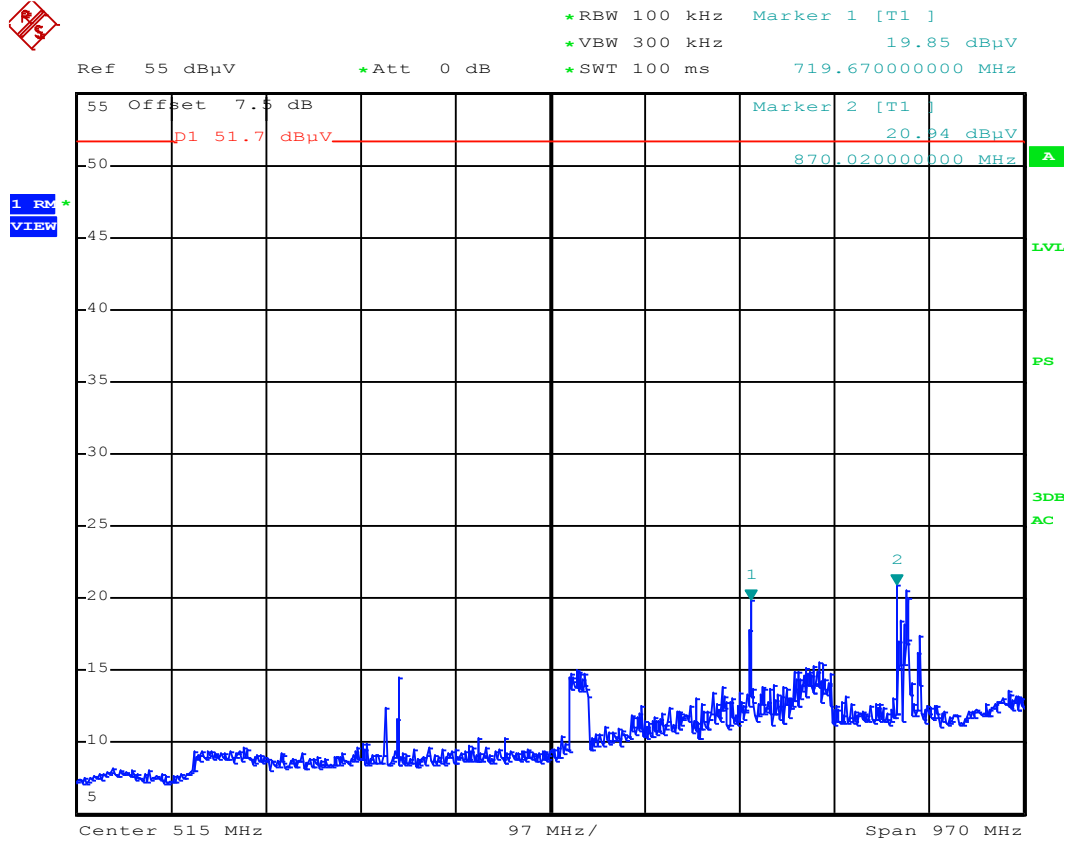
The measurements were repeated with the receiver tuned to a frequency until all of frequencies had been successively measured.

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 μ V)**

Test Result



Appendix 1

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
☒ MEASUREMENT SOFTWARE	EMI-C VER. 2.00.0143	TSJ	N/A	N/A	N/A
☐ SPECTRUM ANALYZER	8591E	H/P	3649A05889	N/A	N/A
☐ ARTIFICIAL MAINS NETWORK	PMM L2-16B	NARDA S.T.S. / PMM	000WX20305	2015.06.26	2016.06.26
☐ LISN	KNW-407	KYORITSU	8-317-8	2015.01.07	2016.01.07
☐ 50 OHM TERMINATOR	CT-01	TME	N/A	2015.01.06	2016.01.06
☒ EMI TEST RECEIVER	ESC17	ROHDE & SCHWARZ	100910	2015.02.25	2016.02.25
☒ LISN	ESH2-Z5	ROHDE & SCHWARZ	828739/006	2015.09.10	2016.09.10
☒ PULSE LIMITER	ESH3-Z2	ROHDE & SCHWARZ	101334	2015.01.07	2016.01.07
☐ 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
☒ MEASUREMENT SOFTWARE	EMI-R VER. 2.00.0121	TSJ	N/A	N/A	N/A
☒ EMI TEST RECEIVER	ESU	ROHDE & SCHWARZ	100538	2015.02.06	2016.02.06
☒ TRILOG BROADBAND TEST-ANTENNA	VULB9160	SCHWARZBECK	9160-3362	2014.07.31	2016.07.31
☒ LOW NOISE PRE AMPLIFIER	MLA-100K01-B01-26	TSJ	1252741	2015.02.25	2016.02.25
☒ HORN ANTENNA	3117	ETS-LINDGREN	00152093	2014.01.30	2016.01.30
☒ PREAMPLIFIER	MLA-100M18-B01-42	TSJ	1872271	2015.05.26	2016.05.26
☐ EMI TEST RECEIVER	ESCI	ROHDE & SCHWARZ	100364	2015.02.25	2016.02.25
☐ 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
☒ EMI TEST RECEIVER	ESCI	ROHDE & SCHWARZ	100364	2015.02.25	2016.02.25
☐ SPLITTER	ZFRSC-42	MINI CIRCUITS	SF624000603	2015.06.26	2016.06.26

Appendix 2

Report Revision History

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

Appendix 3

Changed Part List

Section	PRO-668/WS1080				WS1088				Remarks
	Ref.no	Description		Part No.	Ref.no	Description		Part No.	
REMOTE MAIN TOP ASS'Y					C649	CAP CHIP (0402) 47pF 50V +/-5%		GRM1555C1H470J(A01D/Z01D)	ADD
					C650	CAP CHIP (0402) 47pF 50V +/-5%		GRM1555C1H470J(A01D/Z01D)	ADD
					C651	CAP CHIP (0402) 47pF 50V +/-5%		GRM1555C1H470J(A01D/Z01D)	ADD
					C652	CAP CHIP (0402) 47pF 50V +/-5%		GRM1555C1H470J(A01D/Z01D)	ADD
					R637	RES CHIP (0402) 1K ohm 1/16W +/-5%		MCR01MZPJ102	ADD
					R638	RES CHIP (0402) 1K ohm 1/16W +/-5%		MCR01MZPJ102	ADD
					R646	RES CHIP (0402) 1K ohm 1/16W +/-5%		MCR01MZPJ102	ADD
					R647	RES CHIP (0402) 1K ohm 1/16W +/-5%		MCR01MZPJ102	ADD
					R668	RES CHIP (0603) 680 ohm 1/10W +/-5%		MCR03EZPJ681	
REMOTE MAIN BOTTOM ASS'Y	SW601	CHIP TACT SWITCH	SMD TACT SWITCH	SKRBACE010	LED611	CHIP LED (RANK GB3-H84)		LS-SP190DBW91-5	ADD
	SW602	CHIP TACT SWITCH	SMD TACT SWITCH	SKRBACE010					DELETE
	SW603	CHIP TACT SWITCH	SMD TACT SWITCH	SKRBACE010					DELETE
	SW604	CHIP TACT SWITCH	SMD TACT SWITCH	SKRBACE010					DELETE
	SW605	CHIP TACT SWITCH	SMD TACT SWITCH	SKRBACE010					DELETE
	SW606	CHIP TACT SWITCH	SMD TACT SWITCH	SKRBACE010					DELETE
	SW607	CHIP TACT SWITCH	SMD TACT SWITCH	SKRBACE010					DELETE
	SW608	CHIP TACT SWITCH	SMD TACT SWITCH	SKRBACE010					DELETE
	SW609	CHIP TACT SWITCH	SMD TACT SWITCH	SKRBACE010					DELETE
	SW610	CHIP TACT SWITCH	SMD TACT SWITCH	SKRBACE010					DELETE
									DELETE