



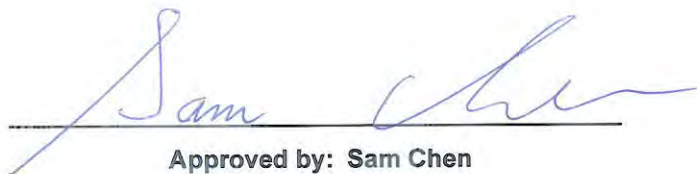
FCC RADIO TEST REPORT

FCC ID : U4P-CGNM2252
Equipment : Wireless Cable Gateway
Brand Name : hitron
Model Name : CGNM-2252 & CGNM-3552
Applicant : Hitron TECHNOLOGIES
No.1-8, LISING 1ST RD., HSINCHU SCIENCE PARK,
HSINCHU 300, Taiwan
Manufacturer : Hitron TECHNOLOGIES
No.1-8, LISING 1ST RD., HSINCHU SCIENCE PARK,
HSINCHU 300, Taiwan
Standard : 47 CFR FCC Part 15.247

The product was received on Mar. 23, 2016, and testing was started from Apr. 10, 2018 and completed on May 02, 2018. We, SPORTON INTERTIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERTIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.


Approved by: Sam Chen

SPORTON INTERTIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



Table of Contents

History of this test report.....3

Summary of Test Result.....4

1 General Description5

1.1 Information.....5

1.2 Testing Applied Standards8

1.3 Testing Location Information8

1.4 Measurement Uncertainty8

2 Test Configuration of EUT9

2.1 The Worst Case Measurement Configuration9

2.2 EUT Operation during Test10

2.3 Accessories10

2.4 Support Equipment.....10

2.5 Test Setup Diagram11

3 Transmitter Test Result13

3.1 AC Power-line Conducted Emissions13

3.2 Emissions in Restricted Frequency Bands.....15

4 Test Equipment and Calibration Data18

Appendix A. Test Results of AC Power-line Conducted Emissions

Appendix B. Test Results of Emissions in Restricted Frequency Bands

Photographs of EUT v01



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.247(d)	Emissions in Restricted Frequency Bands	PASS	-

Reviewed by: **Sam Chen**

Report Producer: **Cindy Peng**



1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
2400-2483.5	b, g, n (HT20)	2412-2462	1-11 [11]
2400-2483.5	n (HT40)	2422-2452	3-9 [7]

Band	Mode	BWch (MHz)	Nant
2.4G	11b	20	3
2.4G	11g	20	3
2.4G	HT20	20	3
2.4G	HT40	40	3

Note:

- ♦ 2.4G is the 2.4GHz Band (2.4-2.4835GHz).
- ♦ 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- ♦ 11g, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ BWch is the nominal channel bandwidth.
- ♦ Nss-Min is the minimum number of spatial streams.
- ♦ Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.



1.1.2 Antenna Information

Ant.	Chain	Port	Brand	Model Name	Type	Connector	Gain (dBi)		
							2.4GHz	5GHz	
								Band 1	Band 4
1	1	1	Airgain	N2420GS-T-PK1-G65U	PIFA	I-PEX	6.25	-	-
2	2	2	Airgain	N2420GS-T-PK1-G100U	PIFA	I-PEX	3.45	-	-
3	3	3	Airgain	N2420GS-T-PK1-G160UR2	PIFA	I-PEX	4.93	-	-
4	4	1	Airgain	N5x20BS-T-PK1-G150U	PIFA	I-PEX	-	3.09	3.09
5	5	2	Airgain	N5x20B-T-PK1-B85U	PIFA	I-PEX	-	4.21	4.21
6	6	3	Airgain	N5x20BS-T-PK1-G40U	PIFA	I-PEX	-	3.80	3.80

Note: The EUT has six antennas.

For 2.4GHz function:

For IEEE 802.11b/g/n mode:

Chain 1, Chain 2 and Chain 3 can be used as transmitting/receiving antenna.

Chain 1, Chain 2 and Chain 3 could transmit/receive simultaneously.

For 5GHz function:

For IEEE 802.11a/n/ac mode:

Chain 4, Chain 5 and Chain 6 can be used as transmitting/receiving antenna.

Chain 4, Chain 5 and Chain 6 could transmit/receive simultaneously.

1.1.3 EUT Operational Condition

EUT Power Type	From power adapter		
Beamforming Function	<input type="checkbox"/> With beamforming	<input checked="" type="checkbox"/> Without beamforming	
Function	<input checked="" type="checkbox"/> Point-to-multipoint	<input type="checkbox"/> Point-to-point	
Test Software Version	ART2-GUI		



1.1.4 Table for Multiple Listing

1. The model names in the following table are all refer to the identical product.

Model Name	Description
CGNM-2252	All the models are identical, the different model names served as marketing strategy.
CGNM-3552	

From the above models, model: CGNM-2252 was selected as representative model for the test and its data was recorded in this report.

2. The EUT has two sources of power amplifier for 5GHz only. Please refer to the following table for detail information.

Power Amplifier	Brand Name	Model Name
Main source	SKYWORKS	SE5003L1-R
Second source	Qorvo	RFPA5542B

1.1.5 Table for Class II Change

This product is an extension of original one reported under Sporton project number: FR642211AA Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
1. Adding the second source of power amplifier for 5GHz only (Brand Name: Qorvo, Model Name: RFPA5542B).	Emissions in Restricted Frequency Bands below 1GHz test.
2. Adding the adapter 2 (Brand Name: MOSO, Model Name: MSA-C2500IS12.0-30D-US).	1. AC Power-line Conducted Emissions test. 2. Emissions in Restricted Frequency Bands below 1GHz test.
3. Updating test rule of 5GHz band 4 to "15.407 (b)(4)(i) of New Rules (ET Docket No. 13-49; FCC 16-24)" from "Old Rules".	There's no influence in this test report.
4. Changing applicant's company and manufacturer's company to "Hitron TECHNOLOGIES" from "Hitron Technologies Inc."	It does not affect the test.
5. Changing applicant address and Manufacturer Address to "No.1-8, LISING 1ST RD., HSINCHU SCIENCE PARK, HSINCHU 300, Taiwan" from "No.1-8, Li-Hsin 1st Rd. Hsinchu Science Park, Hsinchu 300, Taiwan".	



1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR FCC Part 15
- ♦ ANSI C63.10-2013
- ♦ FCC KDB 558074 D01 v04
- ♦ FCC KDB 662911 D01 v02r01

1.3 Testing Location Information

Testing Location		
<input type="checkbox"/>	HWAYA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-318-0055
<input checked="" type="checkbox"/>	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
Radiated	03CH01-CB	Eddie Weng, Ekko Hsieh	22°C / 54%	Apr. 10, 2018~Apr. 30, 2018
AC Conduction	CO01-CB	Howard Liu	23°C / 58%	May 02, 2018

Test site Designation No. TW0006 with FCC.
Test site registered number IC 4086D with Industry Canada.

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%



2 Test Configuration of EUT

2.1 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	CTX
1	2.4GHz WLAN function - Main source of Power Amplifier + Adapter 2
2	5GHz WLAN function - Main source of Power Amplifier + Adapter 2
3	2.4GHz WLAN function - Second source of Power Amplifier + Adapter 1
4	5GHz WLAN function - Second source of Power Amplifier + Adapter 1
5	2.4GHz WLAN function - Second source of Power Amplifier + Adapter 2
6	5GHz WLAN function - Second source of Power Amplifier + Adapter 2

For operating mode 3 is the worst case and it was record in this test report.

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emissions in Restricted Frequency Bands
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	CTX
1	2.4GHz WLAN function - Main source of Power Amplifier + Adapter 2
2	5GHz WLAN function - Main source of Power Amplifier + Adapter 2
3	2.4GHz WLAN function - Second source of Power Amplifier + Adapter 1
4	5GHz WLAN function - Second source of Power Amplifier + Adapter 1
5	2.4GHz WLAN function - Second source of Power Amplifier + Adapter 2
6	5GHz WLAN function - Second source of Power Amplifier + Adapter 2

For operating mode 4 is the worst case and it was record in this test report.

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	2.4GHz WLAN + 5GHz WLAN

Refer to Sporton Test Report No.: FA642211-01 for Co-location RF Exposure Evaluation.



Note:
♦ The EUT can only use Y axis position.

2.2 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.3 Accessories

Table with 5 columns: No., Equipment Name, Brand Name, Model Name, Rating. Rows include Adapter 1 (AtechOEM), Adapter 2 (MOSO), and Pedestal*1.

2.4 Support Equipment

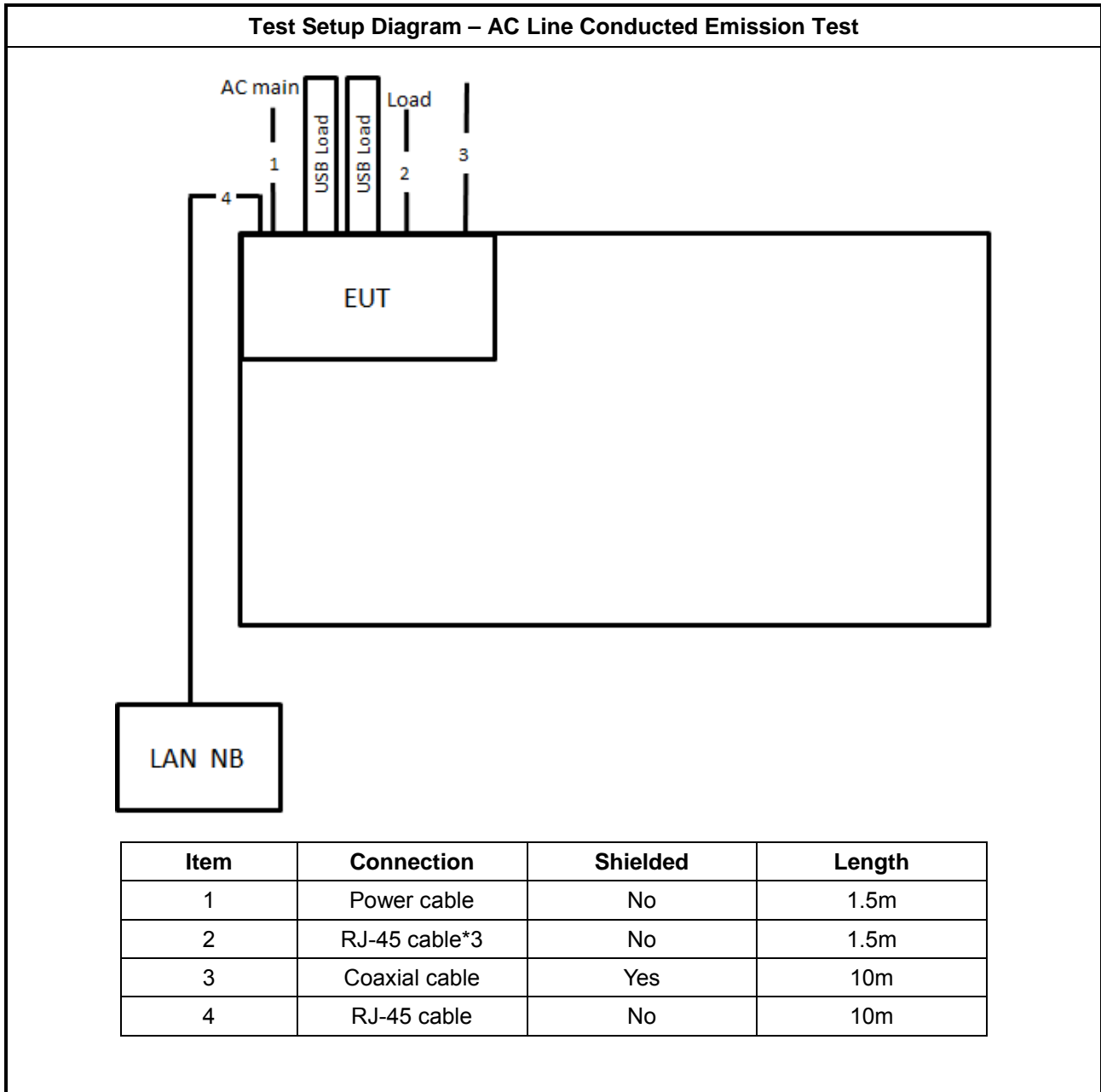
For Test Site No: CO01-CB

Table with 5 columns: No., Equipment, Brand Name, Model Name, FCC ID. Rows include NB (DELL), and two Flash disk3.0 (ADATA).

For Test Site No: 03CH01-CB

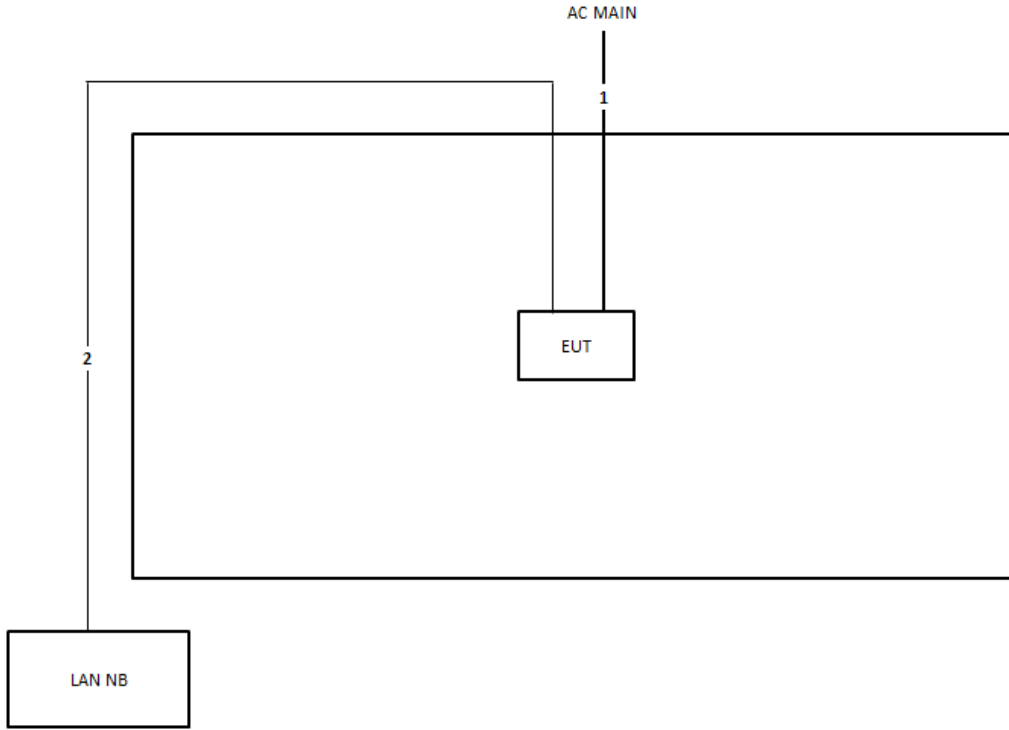
Table with 5 columns: No., Equipment, Brand Name, Model Name, FCC ID. Row includes NB (DELL).

2.5 Test Setup Diagram





Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	RJ-45 cable	No	10m



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: * Decreases with the logarithm of the frequency.

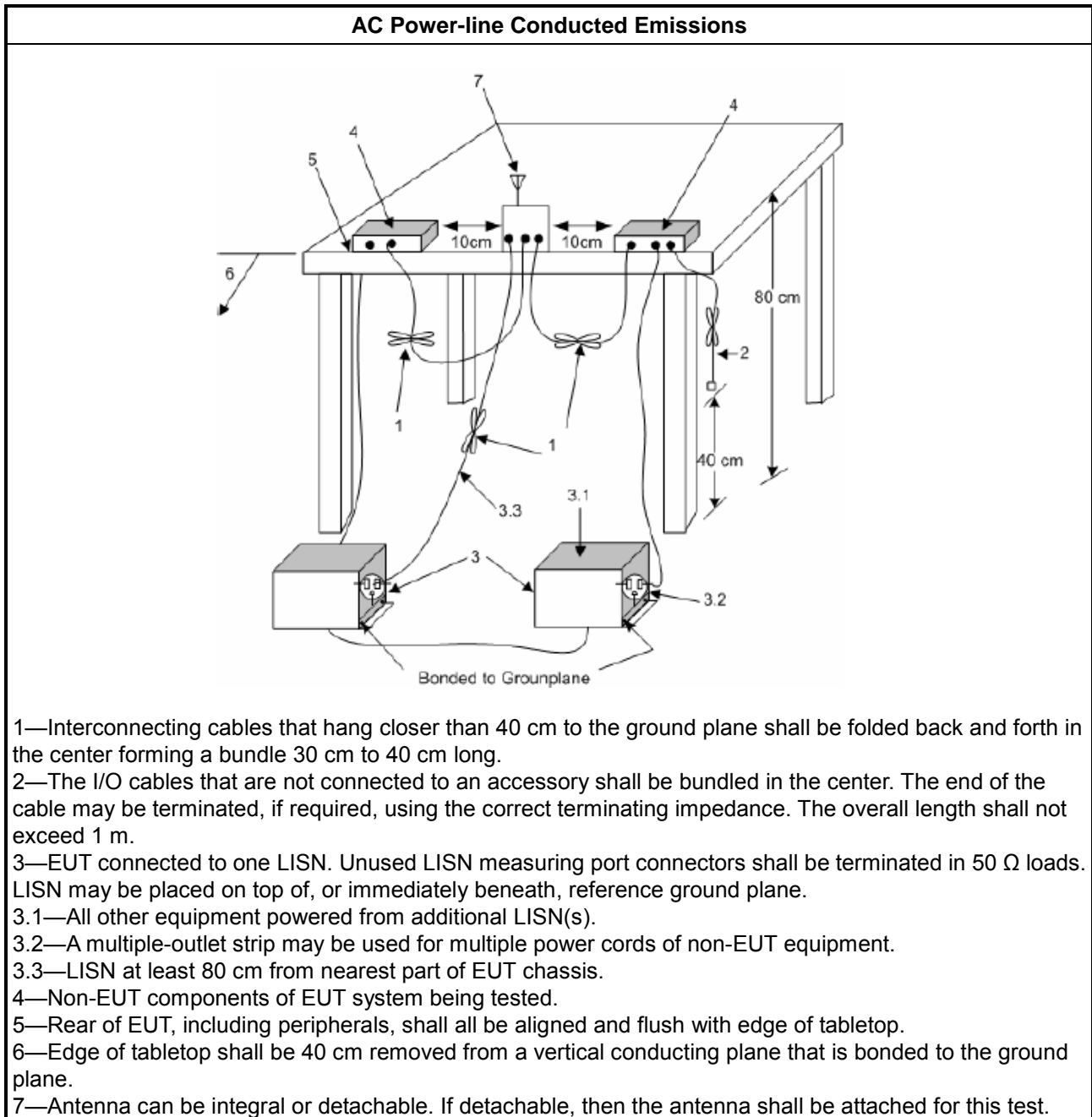
3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
<input checked="" type="checkbox"/> Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup



3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A



3.2 Emissions in Restricted Frequency Bands

3.2.1 Emissions in Restricted Frequency Bands Limit

Restricted Band Emissions Limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

3.2.2 Measuring Instruments

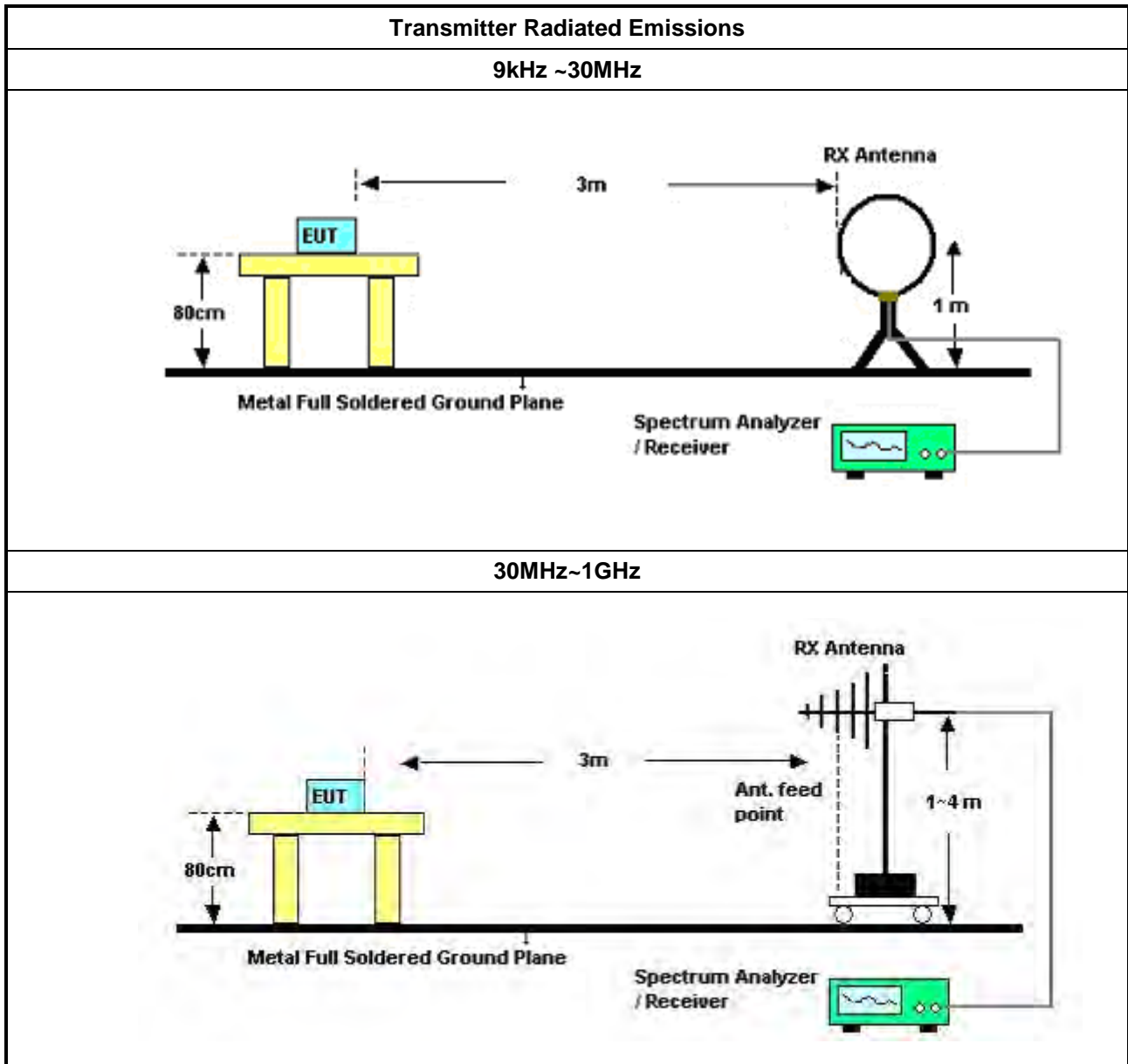
Refer a test equipment and calibration data table in this test report.



3.2.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> ▪ The average emission levels shall be measured in [duty cycle \geq 98 or duty factor]. 	
<ul style="list-style-type: none"> ▪ Refer as ANSI C63.10, clause 6.9.2.2 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band. 	
<ul style="list-style-type: none"> ▪ For the transmitter unwanted emissions shall be measured using following options below: 	
	<ul style="list-style-type: none"> ▪ Refer as FCC KDB 558074, clause 12 for unwanted emissions into restricted bands.
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 12.2.5.1 Option 1 (trace averaging for duty cycle \geq 98%)
	<input type="checkbox"/> Refer as FCC KDB 558074, clause 12.2.5.2 Option 2 (trace averaging + duty factor).
	<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 12.2.5.3 Option 3 (Reduced VBW \geq 1/T).
	<input type="checkbox"/> Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW \geq 1/T, where T is pulse time.
	<input type="checkbox"/> Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
	<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 12.2.4 measurement procedure peak limit.
<ul style="list-style-type: none"> ▪ For the transmitter band-edge emissions shall be measured using following options below: 	
	<ul style="list-style-type: none"> ▪ Refer as FCC KDB 558074 clause 13.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.
	<ul style="list-style-type: none"> ▪ Refer as FCC KDB 558074, clause 13.2 (ANSI C63.10, clause 6.9.3) for marker-delta method for band-edge measurements.
	<ul style="list-style-type: none"> ▪ Refer as FCC KDB 558074, clause 13.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).
<ul style="list-style-type: none"> ▪ For conducted and cabinet radiation measurement, refer as FCC KDB 558074, clause 12.2.2. 	
	<ul style="list-style-type: none"> ▪ For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB
	<ul style="list-style-type: none"> ▪ For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.

3.2.4 Test Setup



3.2.5 Transmitter Radiated Unwanted Emissions (Below 30MHz)

All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10 harmonic or 40 GHz, whichever is appropriate.

3.2.6 Test Result of Transmitter Radiated Unwanted Emissions

Refer as Appendix B



4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 31, 2018	Jan. 30, 2019	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 20, 2017	Dec. 19, 2018	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 29, 2017	Dec. 28, 2018	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	May 23, 2017	May 22, 2018	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2018	Mar. 15, 2019	Radiation (03CH01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 30, 2017	Aug. 29, 2018	Radiation (03CH01-CB)
Pre-Amplifier	EMCI	EMC330N	980332	20MHz ~ 3GHz	May 02, 2017	May 01, 2018	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 23, 2017	Nov. 22, 2018	Radiation (03CH01-CB)
EMI Test	R&S	ESCS	100355	9kHz ~ 2.75GHz	May 06, 2017	May 05, 2018	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~ 1 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)

Note: Calibration Interval of instruments listed above is one year.

N.C.R. means Non-Calibration required.



AC Power-line Conducted Emissions Result

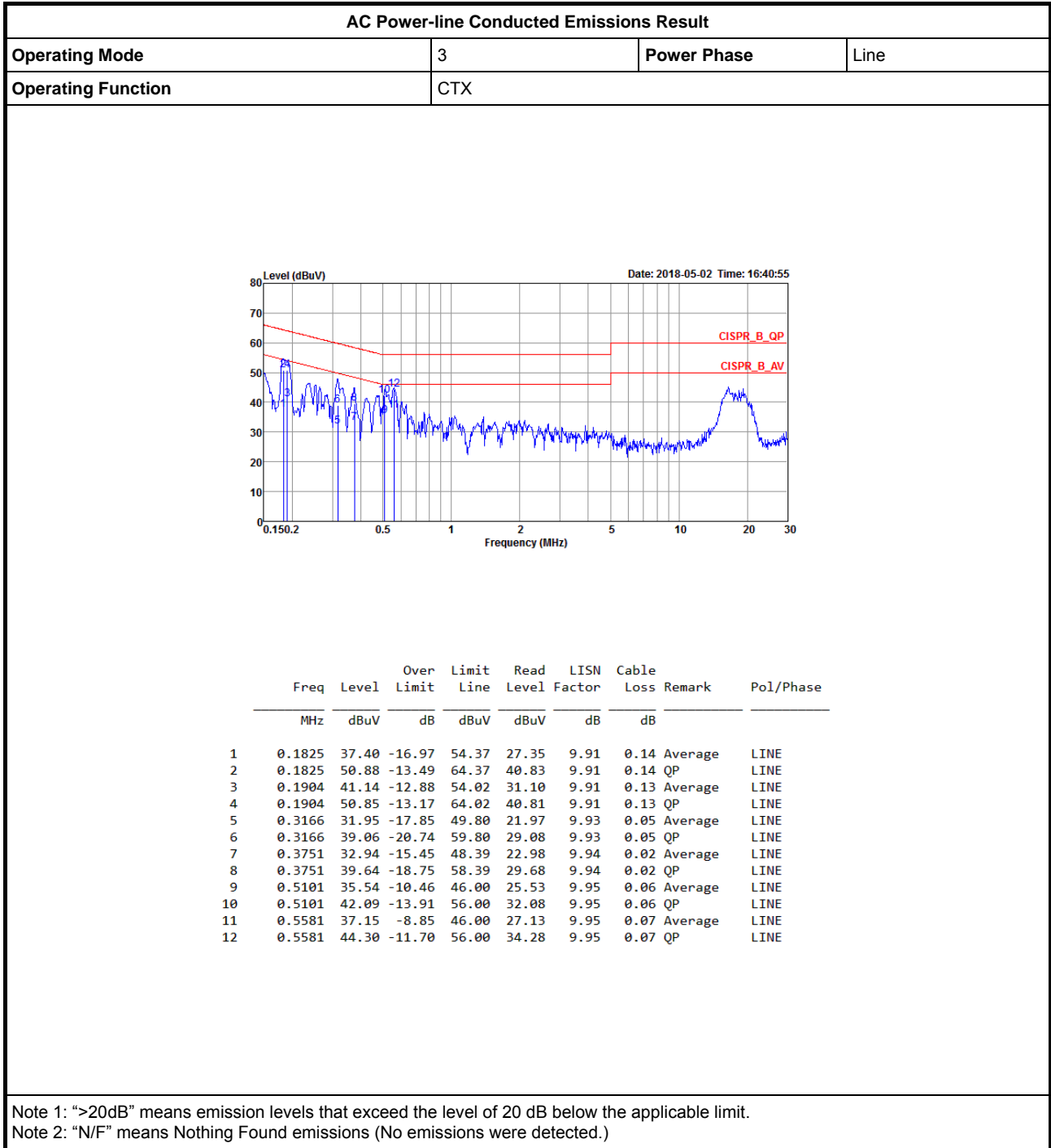
Appendix A

AC Power-line Conducted Emissions Result																																																																																																																																															
Operating Mode	3	Power Phase	Neutral																																																																																																																																												
Operating Function	CTX																																																																																																																																														
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: center;"> <p>The graph displays the AC power-line conducted emissions. The y-axis represents Level in dBuV (0 to 80), and the x-axis represents Frequency in MHz (0.1502 to 30). Two red lines indicate the CISPR limits: CISPR_B_QP (Quasi-Peak) and CISPR_B_AV (Average). The test results are shown as a blue line with peaks at various frequencies, most of which are well below the limits.</p> </div> <div style="text-align: right;"> <p>Date: 2018-05-02 Time: 16:43:54</p> </div> </div>																																																																																																																																															
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Freq</th> <th>Level</th> <th>Over Limit</th> <th>Limit Line</th> <th>Read Level</th> <th>LISN Factor</th> <th>Cable Loss</th> <th>Remark</th> <th>Pol/Phase</th> </tr> <tr> <th></th> <th>MHz</th> <th>dBuV</th> <th>dB</th> <th>dBuV</th> <th>dBuV</th> <th>dB</th> <th>dB</th> <th></th> <th></th> </tr> </thead> <tbody> <tr><td>1</td><td>0.1500</td><td>35.60</td><td>-20.40</td><td>56.00</td><td>25.34</td><td>10.10</td><td>0.16</td><td>Average</td><td>NEUTRAL</td></tr> <tr><td>2</td><td>0.1500</td><td>49.35</td><td>-16.65</td><td>66.00</td><td>39.09</td><td>10.10</td><td>0.16</td><td>QP</td><td>NEUTRAL</td></tr> <tr><td>3</td><td>0.1864</td><td>43.64</td><td>-10.56</td><td>54.20</td><td>33.49</td><td>10.01</td><td>0.14</td><td>Average</td><td>NEUTRAL</td></tr> <tr><td>4</td><td>0.1864</td><td>52.74</td><td>-11.46</td><td>64.20</td><td>42.59</td><td>10.01</td><td>0.14</td><td>QP</td><td>NEUTRAL</td></tr> <tr><td>5</td><td>0.2468</td><td>31.36</td><td>-20.50</td><td>51.86</td><td>21.19</td><td>10.08</td><td>0.09</td><td>Average</td><td>NEUTRAL</td></tr> <tr><td>6</td><td>0.2468</td><td>40.24</td><td>-21.62</td><td>61.86</td><td>30.07</td><td>10.08</td><td>0.09</td><td>QP</td><td>NEUTRAL</td></tr> <tr><td>7</td><td>0.3268</td><td>37.74</td><td>-11.79</td><td>49.53</td><td>27.51</td><td>10.19</td><td>0.04</td><td>Average</td><td>NEUTRAL</td></tr> <tr><td>8</td><td>0.3268</td><td>44.13</td><td>-15.40</td><td>59.53</td><td>33.90</td><td>10.19</td><td>0.04</td><td>QP</td><td>NEUTRAL</td></tr> <tr><td>9</td><td>0.3997</td><td>29.89</td><td>-17.97</td><td>47.86</td><td>19.62</td><td>10.26</td><td>0.01</td><td>Average</td><td>NEUTRAL</td></tr> <tr><td>10</td><td>0.3997</td><td>36.79</td><td>-21.07</td><td>57.86</td><td>26.52</td><td>10.26</td><td>0.01</td><td>QP</td><td>NEUTRAL</td></tr> <tr style="border: 2px solid black;"><td>11</td><td>0.5552</td><td>38.06</td><td>-7.94</td><td>46.00</td><td>27.78</td><td>10.21</td><td>0.07</td><td>Average</td><td>NEUTRAL</td></tr> <tr><td>12</td><td>0.5552</td><td>44.26</td><td>-11.74</td><td>56.00</td><td>33.98</td><td>10.21</td><td>0.07</td><td>QP</td><td>NEUTRAL</td></tr> </tbody> </table>					Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase		MHz	dBuV	dB	dBuV	dBuV	dB	dB			1	0.1500	35.60	-20.40	56.00	25.34	10.10	0.16	Average	NEUTRAL	2	0.1500	49.35	-16.65	66.00	39.09	10.10	0.16	QP	NEUTRAL	3	0.1864	43.64	-10.56	54.20	33.49	10.01	0.14	Average	NEUTRAL	4	0.1864	52.74	-11.46	64.20	42.59	10.01	0.14	QP	NEUTRAL	5	0.2468	31.36	-20.50	51.86	21.19	10.08	0.09	Average	NEUTRAL	6	0.2468	40.24	-21.62	61.86	30.07	10.08	0.09	QP	NEUTRAL	7	0.3268	37.74	-11.79	49.53	27.51	10.19	0.04	Average	NEUTRAL	8	0.3268	44.13	-15.40	59.53	33.90	10.19	0.04	QP	NEUTRAL	9	0.3997	29.89	-17.97	47.86	19.62	10.26	0.01	Average	NEUTRAL	10	0.3997	36.79	-21.07	57.86	26.52	10.26	0.01	QP	NEUTRAL	11	0.5552	38.06	-7.94	46.00	27.78	10.21	0.07	Average	NEUTRAL	12	0.5552	44.26	-11.74	56.00	33.98	10.21	0.07	QP	NEUTRAL
	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase																																																																																																																																						
	MHz	dBuV	dB	dBuV	dBuV	dB	dB																																																																																																																																								
1	0.1500	35.60	-20.40	56.00	25.34	10.10	0.16	Average	NEUTRAL																																																																																																																																						
2	0.1500	49.35	-16.65	66.00	39.09	10.10	0.16	QP	NEUTRAL																																																																																																																																						
3	0.1864	43.64	-10.56	54.20	33.49	10.01	0.14	Average	NEUTRAL																																																																																																																																						
4	0.1864	52.74	-11.46	64.20	42.59	10.01	0.14	QP	NEUTRAL																																																																																																																																						
5	0.2468	31.36	-20.50	51.86	21.19	10.08	0.09	Average	NEUTRAL																																																																																																																																						
6	0.2468	40.24	-21.62	61.86	30.07	10.08	0.09	QP	NEUTRAL																																																																																																																																						
7	0.3268	37.74	-11.79	49.53	27.51	10.19	0.04	Average	NEUTRAL																																																																																																																																						
8	0.3268	44.13	-15.40	59.53	33.90	10.19	0.04	QP	NEUTRAL																																																																																																																																						
9	0.3997	29.89	-17.97	47.86	19.62	10.26	0.01	Average	NEUTRAL																																																																																																																																						
10	0.3997	36.79	-21.07	57.86	26.52	10.26	0.01	QP	NEUTRAL																																																																																																																																						
11	0.5552	38.06	-7.94	46.00	27.78	10.21	0.07	Average	NEUTRAL																																																																																																																																						
12	0.5552	44.26	-11.74	56.00	33.98	10.21	0.07	QP	NEUTRAL																																																																																																																																						
<p>Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit. Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)</p>																																																																																																																																															



AC Power-line Conducted Emissions Result

Appendix A





RSE below 1GHz Result

RSE below 1GHz Result																																																																																																									
Operating Mode	4	Polarization	Horizontal																																																																																																						
Operating Function	CTX																																																																																																								
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: center;"> <p style="font-size: small;">Date: 2018-04-26 Time: 12:30:00</p> </div> </div>																																																																																																									
<table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th></th> <th>Freq</th> <th>Level</th> <th>Limit</th> <th>Over</th> <th>Read</th> <th>CableAntenna</th> <th>Preamp</th> <th>A/Pos</th> <th>T/Pos</th> <th>Remark</th> <th>Pol/Phase</th> </tr> <tr> <th></th> <th>MHz</th> <th>dBuV/m</th> <th>dBuV/m</th> <th>dB</th> <th>dBuV</th> <th>dB</th> <th>dB/m</th> <th>dB</th> <th>cm</th> <th>deg</th> <th></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>125.06</td> <td>36.59</td> <td>43.50</td> <td>-6.91</td> <td>49.19</td> <td>1.15</td> <td>18.60</td> <td>32.35</td> <td>300</td> <td>247</td> <td>Peak</td> <td>HORIZONTAL</td> </tr> <tr> <td>2</td> <td>214.30</td> <td>32.00</td> <td>43.50</td> <td>-11.50</td> <td>45.81</td> <td>2.08</td> <td>16.40</td> <td>32.29</td> <td>125</td> <td>265</td> <td>Peak</td> <td>HORIZONTAL</td> </tr> <tr> <td>3</td> <td>375.32</td> <td>35.55</td> <td>46.00</td> <td>-10.45</td> <td>43.73</td> <td>2.22</td> <td>21.88</td> <td>32.28</td> <td>100</td> <td>206</td> <td>Peak</td> <td>HORIZONTAL</td> </tr> <tr> <td>4</td> <td>625.58</td> <td>42.81</td> <td>46.00</td> <td>-3.19</td> <td>47.22</td> <td>2.76</td> <td>25.21</td> <td>32.38</td> <td>125</td> <td>282</td> <td>QP</td> <td>HORIZONTAL</td> </tr> <tr> <td>5</td> <td>875.84</td> <td>39.31</td> <td>46.00</td> <td>-6.69</td> <td>39.92</td> <td>3.60</td> <td>27.50</td> <td>31.71</td> <td>100</td> <td>261</td> <td>Peak</td> <td>HORIZONTAL</td> </tr> <tr> <td>6</td> <td>897.18</td> <td>40.98</td> <td>46.00</td> <td>-5.02</td> <td>40.31</td> <td>4.62</td> <td>27.68</td> <td>31.63</td> <td>100</td> <td>220</td> <td>QP</td> <td>HORIZONTAL</td> </tr> </tbody> </table>					Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		1	125.06	36.59	43.50	-6.91	49.19	1.15	18.60	32.35	300	247	Peak	HORIZONTAL	2	214.30	32.00	43.50	-11.50	45.81	2.08	16.40	32.29	125	265	Peak	HORIZONTAL	3	375.32	35.55	46.00	-10.45	43.73	2.22	21.88	32.28	100	206	Peak	HORIZONTAL	4	625.58	42.81	46.00	-3.19	47.22	2.76	25.21	32.38	125	282	QP	HORIZONTAL	5	875.84	39.31	46.00	-6.69	39.92	3.60	27.50	31.71	100	261	Peak	HORIZONTAL	6	897.18	40.98	46.00	-5.02	40.31	4.62	27.68	31.63	100	220	QP	HORIZONTAL
	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase																																																																																														
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg																																																																																															
1	125.06	36.59	43.50	-6.91	49.19	1.15	18.60	32.35	300	247	Peak	HORIZONTAL																																																																																													
2	214.30	32.00	43.50	-11.50	45.81	2.08	16.40	32.29	125	265	Peak	HORIZONTAL																																																																																													
3	375.32	35.55	46.00	-10.45	43.73	2.22	21.88	32.28	100	206	Peak	HORIZONTAL																																																																																													
4	625.58	42.81	46.00	-3.19	47.22	2.76	25.21	32.38	125	282	QP	HORIZONTAL																																																																																													
5	875.84	39.31	46.00	-6.69	39.92	3.60	27.50	31.71	100	261	Peak	HORIZONTAL																																																																																													
6	897.18	40.98	46.00	-5.02	40.31	4.62	27.68	31.63	100	220	QP	HORIZONTAL																																																																																													
<p>Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit. Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)</p>																																																																																																									



RSE below 1GHz Result

RSE below 1GHz Result																																																																																																			
Operating Mode	4	Polarization	Vertical																																																																																																
Operating Function	CTX																																																																																																		
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: center;"> <p style="font-size: small;">Date: 2018-04-26 Time: 12:25:06</p> </div> </div> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th></th> <th>Freq</th> <th>Level</th> <th>Limit</th> <th>Over</th> <th>Read</th> <th>CableAntenna</th> <th>Preamp</th> <th>A/Pos</th> <th>T/Pos</th> <th>Remark</th> <th>Pol/Phase</th> </tr> <tr> <th></th> <th>MHz</th> <th>dBuV/m</th> <th>dBuV/m</th> <th>dB</th> <th>dBuV</th> <th>dB</th> <th>dB/m</th> <th>dB</th> <th>cm</th> <th>deg</th> <th></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>44.55</td> <td>39.69</td> <td>40.00</td> <td>-0.31</td> <td>53.50</td> <td>1.36</td> <td>17.25</td> <td>32.42</td> <td>100</td> <td>290 QP</td> <td>VERTICAL</td> </tr> <tr> <td>2</td> <td>50.37</td> <td>36.93</td> <td>40.00</td> <td>-3.07</td> <td>53.20</td> <td>1.43</td> <td>14.72</td> <td>32.42</td> <td>100</td> <td>0 Peak</td> <td>VERTICAL</td> </tr> <tr> <td>3</td> <td>63.95</td> <td>32.41</td> <td>40.00</td> <td>-7.59</td> <td>51.05</td> <td>1.16</td> <td>12.60</td> <td>32.40</td> <td>200</td> <td>155 Peak</td> <td>VERTICAL</td> </tr> <tr> <td>4</td> <td>375.32</td> <td>35.61</td> <td>46.00</td> <td>-10.39</td> <td>43.79</td> <td>2.22</td> <td>21.88</td> <td>32.28</td> <td>150</td> <td>287 Peak</td> <td>VERTICAL</td> </tr> <tr> <td>5</td> <td>625.58</td> <td>42.52</td> <td>46.00</td> <td>-3.48</td> <td>46.93</td> <td>2.76</td> <td>25.21</td> <td>32.38</td> <td>100</td> <td>223 Peak</td> <td>VERTICAL</td> </tr> <tr> <td>6</td> <td>875.84</td> <td>37.81</td> <td>46.00</td> <td>-8.19</td> <td>38.42</td> <td>3.60</td> <td>27.50</td> <td>31.71</td> <td>125</td> <td>274 Peak</td> <td>VERTICAL</td> </tr> </tbody> </table>					Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		1	44.55	39.69	40.00	-0.31	53.50	1.36	17.25	32.42	100	290 QP	VERTICAL	2	50.37	36.93	40.00	-3.07	53.20	1.43	14.72	32.42	100	0 Peak	VERTICAL	3	63.95	32.41	40.00	-7.59	51.05	1.16	12.60	32.40	200	155 Peak	VERTICAL	4	375.32	35.61	46.00	-10.39	43.79	2.22	21.88	32.28	150	287 Peak	VERTICAL	5	625.58	42.52	46.00	-3.48	46.93	2.76	25.21	32.38	100	223 Peak	VERTICAL	6	875.84	37.81	46.00	-8.19	38.42	3.60	27.50	31.71	125	274 Peak	VERTICAL
	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase																																																																																								
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg																																																																																									
1	44.55	39.69	40.00	-0.31	53.50	1.36	17.25	32.42	100	290 QP	VERTICAL																																																																																								
2	50.37	36.93	40.00	-3.07	53.20	1.43	14.72	32.42	100	0 Peak	VERTICAL																																																																																								
3	63.95	32.41	40.00	-7.59	51.05	1.16	12.60	32.40	200	155 Peak	VERTICAL																																																																																								
4	375.32	35.61	46.00	-10.39	43.79	2.22	21.88	32.28	150	287 Peak	VERTICAL																																																																																								
5	625.58	42.52	46.00	-3.48	46.93	2.76	25.21	32.38	100	223 Peak	VERTICAL																																																																																								
6	875.84	37.81	46.00	-8.19	38.42	3.60	27.50	31.71	125	274 Peak	VERTICAL																																																																																								
<p>Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit. Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)</p>																																																																																																			