





# FCC EMI TEST REPORT

Filing Type		Certification			
FCC ID	;	J9C-QC64MA			
Equipment		QC64MA 802.11ad/ay module			
Brand Name		Qualcomm Technologies	Qualcomm Technologies, Inc.		
Model Name	:	QC64MA			
Applicant		Qualcomm Technologies, Inc.			
		5775 Morehouse Drive, United States 92121	San Diego , California,		
Manufacturer	;	Qualcomm Technologies	s, Inc.		
		5775 Morehouse Drive, United States 92121	San Diego , California,		
Standard		: 47 CFR FCC Rules and Regulations Part 15 Subpart B Class B Digital Device			

The product was received on Apr. 08, 2019, and testing was started from Apr. 12, 2019 and completed on May 07, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2014 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 report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

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Approved by: Sin Chang

SPORTON INTERNATIONAL 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 Description of Equipment under Test	5
2. Test Configuration of Equipment under Test	6
3. General Information of Test	11
4. Test of Conducted Emission	12
5. Test of Radiated Emission	14
6. List of Measuring Equipment Used	19
7. Uncertainty of Test Site	20
Appendix A. Test Results of AC Power Port Conducted Emission	
Appendix B. Test Results of Radiated Emission	
Appendix C. Test Photos	
Photographs of EUT V01	



### History of this test report

Report No.	Version	Description	Issued Date
FC931421	01	Initial issue of report	May 23, 2019





### **Summary of Test Result**

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
4	15.107	AC Power Port Conducted Emission	PASS	Under limit 19.44 dB at 0.537 MHz
5	15.109	Radiated Emission below 1GHz	PASS	Under limit 6.46 dB at 65.89 MHz
5	15.109	Radiated Emission above 1GHz	PASS	Under limit 6.80 dB at 7289.96 MHz

#### **Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

#### **Comments and Explanations:**

The test configuration, test mode and test software were written in this test report are declared by the manufacturer.

#### **Reviewed by: Sin Chang**

**Report Producer: Wendy Pan** 



### **1. General Description of Equipment under Test**

Product Detail				
quipment Name QC64MA 802.11ad/ay module				
Model Name	QC64MA			
Brand Name	Qualcomm Technologies, Inc.			
Power Supply	From host system			
Accessories	N/A			

#### 1.1. Feature of Equipment under Test

- 1. The EUT's highest operating frequency is 64.8GHz.
- 2. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

#### 1.2. Modification of EUT

Please refer to the technical specifications of EUT.



### 2. Test Configuration of Equipment under Test

#### 2.1. Test Mode

The following table is a list of the test modes shown in this test report.

Conducted Emissions			
Test Mode Description			
1	Normal Link - AP mode		

Radiated Emissions				
The EUT was performed at X axis, Y axis and Z axis position and the worst case was found at Z axis. So the measurement will follow this same test configuration.				
Test Mode Description				
1	Normal Link - EUT in Z axis AP mode			

Note: The EUT has two mode one is AP mode and other is STA mode, only the AP mode was tested and recorded in this test report that is designated by the manufacturer.



#### 2.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Support Unit	Brand	Model	FCC ID
Α	PC	GIGABYTE	GB-BSi3H-6100	N/A
В	NB	HP	8470w	N/A
С	Device	Qualcomm	QC64MA	N/A
D	PC	GIGABYTE	GB-BKi5HA-7200	N/A
Е	Fixture	Qualcomm	25-YB407-P1	N/A
F	Fixture	Qualcomm	25-YB407-P1	N/A
G	Keyboard	iCooky	SK068	N/A
Н	Mouse	Logitech	M-U0026	N/A
Ι	Printer	EPSON	LQ-300+	N/A
J	Modem	ACEEX	DM1414	N/A
К	LCD Monitor	SAMSUNG	LS19MJEKBZ/XTW	N/A

#### For Conducted Emissions test:

#### For Radiated Emissions test:

No.	Support Unit	Brand	Model	FCC ID
А	PC	GIGABYTE	GB-BSi3H-6100	N/A
В	Notebook	HP	8470w	N/A
С	Device	Qualcomm	QC64MA	N/A
D	PC	GIGABYTE	GB-BKi5HA-7200	N/A
Е	Fixture	Qualcomm	25-YB407-P1	N/A
F	Fixture	Qualcomm	25-YB407-P1	N/A
G	Keyboard	iCooky	SK068	N/A
Н	Mouse	Logitech	M-U0026	N/A
Ι	Printer	EPSON	LQ-300+	N/A
J	Modem	ACEEX	DM1414	N/A
K	LCD Monitor	SAMSUNG	LS19MJEKBZ/XTW	N/A



#### 2.3. EUT Operation Condition

During the test, the following programs under Win 10 were executed:

The remote notebook executed "ping.exe" to link with the EUT to maintain the connection by 60GHz.

The remote notebook executed "SSH Secure Shell Client" to traffic packet data and sent instruction to 60GHz device.

An executive program, EMCTEST.EXE under Linux, which generates a complete line of continuously repeating "H " pattern was used as the test software.

The program was executed as follows :

- a. Turn on the power of all equipment.
- b. The PC sends "H" messages to the monitor, and the monitor displays "H " patterns on the screen.
- c. The PC sends "H " messages to the printer, then the printer prints them on the paper.
- d. The PC sends "H " messages to the modem.

Repeat the steps from b to d.



#### 2.4. Connection Diagram of Test System

2.4.1. AC Power Line Conduction Emissions Test Configuration



Item	Connection	Shielded	Length
1	Power Cable	No	2.9m
2	Cable	Yes	0.4m
3	RJ-45 Cable	No	10m
4	RJ-45 Cable	No	10m
5	Cable	No	0.4m
6	VGA Cable	Yes	1.8m
7	USB Cable	Yes	1.8m
8	USB Cable	Yes	1.8m
9	USB Cable	Yes	1.8m
10	RS-232 to USB Cable	Yes	2.6m



#### 2.4.2. Radiation Emissions Test Configuration



Item	Connection	Shielded	Length
1	Power Cable	No	2.9m
2	Cable	Yes	0.15m
3	RJ-45 Cable	No	10m
4	RJ-45 Cable	No	10m
5	Cable	No	0.4m
6	VGA Cable	Yes	1.8m
7	USB Cable	Yes	1.8m
8	USB Cable	Yes	1.8m
9	USB Cable	Yes	1.8m
10	RS-232 to USB Cable	Yes	2.6m



### 3. General Information of Test

#### 3.1. Test Facility

				E	IM	
JHU BEI	ADD	:	No.8, Lane 724, Bo-a	i St., Jh	ube	ei City, HsinChu County 302, Taiwan, R.O.C.
	TEL	:	886-3-656-9065	FAX	:	886-3-656-9085

#### 3.2. Test Environment

	Test Site	Test	Test Environment				
lest Items	No.	Engineer	Temp (°C)	Humidity (%)	Pressure (kPa)	lest Date	Remark
AC Power Port Conducted Emission	CO01-CB	Ryo Fan	23.7~24	61~61.2	-	Apr. 12, 2019	Mode 1
Radiated Emission below 1GHz	03CH01-CB	Cola Fan	22~24	54~56	-	May 07, 2019	Mode 1
Radiated Emission above 1GHz	03CH01-CB	Cola Fan	22~24	54~56	-	Apr. 16, 2019	Mode 1

#### 3.3. Test Voltage

Power Type	Test Voltage		
AC Power Supply	120 V / 60 Hz		

#### 3.4. Standard for Methods of Measurement

ANSI C63.4-2014

#### 3.5. Frequency Range Investigated

Test Items	Frequency Range		
Conducted emission test	150 kHz to 30 MHz		
Radiated emission test	30 MHz to 40,000 MHz		

#### 3.6. Test Distance

Test Items	Test Distance
Radiated emission test below 1 GHz (30 MHz to 1,000 MHz)	3 m
Radiated emission test above 1 GHz (1,000 MHz to 18,000 MHz)	3 m
Radiated emission test above 1 GHz (18,000 MHz to 40,000 MHz)	1 m



### 4. Test of Conducted Emission

#### 4.1. Limit

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)	
0.15~0.5	66~56	56~46	
0.5~5	56	46	
5~30	60	50	

#### 4.2. Description of Major Test Instruments

Test Receiver	Setting	
Start Frequency	0.15 MHz	
Stop Frequency	30 MHz	
IF Bandwidth	9 kHz	

#### 4.3. Test Procedures

- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- c. All the support units are connect to the other LISN.
- d. The LISN provides 50  $\Omega$  coupling impedance for the measuring instrument.
- e. The FCC states that a 50  $\Omega$ , 50 uH LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 150 kHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

#### 4.4. Measurement Results Calculation

The measured Level is calculated using:

- a. Corrected Reading (dBuV) = LISN Factor + Cable Loss + Read Level = Level
- b. Margin = Limit + (Read Level + LISN Factor + Cable Loss)





### 4.5. Typical Test Setup Layout of Conducted Emission

#### 4.6. Test Result of AC Power Ports

Refer as Appendix A



### 5. Test of Radiated Emission

#### 5.1. Limit

#### Radiated Emission below 1 GHz test at 3 m:

Frequency (MHz)	QP (dBuV/m)		
30~88	40		
88~216	43.5		
216~960	46		
Above 960	54		

#### Radiated Emission 1~18 GHz test at 3 m:

Frequency (MHz)	PK (dBuV/m)	AV (dBuV/m)
1,000 to 18,000	74	54

#### Radiated Emission 18~40 GHz test at 1 m:

Frequency (MHz)	PK (dBuV/m)	AV (dBuV/m)
18,000 to 40,000	83.54	63.54

#### 5.2. Description of Major Test Instruments

#### 5.2.1. 30 MHz ~ 1,000 MHz

Receiver Parameter	Setting
Start Frequency	30 MHz
Stop Frequency	1000 MHz
RBW	120 kHz for QP

#### 5.2.2. Above 1 GHz

Spectrum Parameter	Setting
Start Frequency	1000 MHz
Stop Frequency	5th harmonic of the highest frequency or 40 GHz, whichever is lower.
RBW / VBW	1 MHz / 3 MHz for Peak ; 1 MHz / 1 Hz for Average



#### 5.3. Test Procedures

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 3m (below 1GHz) / 3m (1GHz-18GHz) / 1m (18GHz-40GHz) meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
- h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

#### 5.4. Measurement Results Calculation

The measured Level is calculated using:

- a. Corrected Reading: Antenna Factor + Cable Loss + Read Level Preamp Factor = Level
- b. Margin = Limit + (Read Level + Antenna Factor + Cable Loss Preamp Factor)



#### 5.5. Typical Test Setup Layout of Radiated Emission

<Below 1 GHz>:



<Above 1 GHz>:

1,000~18,000 MHz



TEL : 886-3-656-9065 FAX : 886-3-656-9085 Report Template No.: CB Ver1.0 Page Number: 16 of 20Issued Date: May 23, 2019Report Version: 01



#### 18,000~40,000 MHz





#### 5.6. Test Result of Radiated Emission below 1 GHz

Refer as Appendix B

#### 5.7. Test Result of Radiated Emission above 1 GHz

Refer as Appendix B



### 6. List of Measuring Equipment Used

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 28, 2019	Jan. 29, 2020	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-1 6-2	04083	150kHz ~ 100MHz	Dec. 24, 2018	Dec. 23, 2019	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Jan. 11, 2019	Jan. 10, 2020	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	150kHz ~ 30MHz	May 22, 2018	May 21, 2019	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 27, 2018	Aug. 26, 2019	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 13, 2018	Nov. 12, 2019	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jun. 28, 2018	Jun. 27, 2019	Radiation (03CH01-CB)
Pre-Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	May 23, 2018	May 22, 2019	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 08, 2019	Jan. 07, 2020	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 04, 2018	Jul. 03, 2019	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Jan. 31, 2019	Jan. 30, 2020	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESCS	100359	9kHz ~ 2.75GHz	Jul. 03, 2018	Jul. 02, 2019	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~ 1 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH01-CB)

\* Calibration Interval of instruments listed above is one year.

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



### 7. Uncertainty of Test Site

Test Items	Uncertainty	Remark
Conducted Emissions	2.0 dB	Confidence levels of 95%
Radiated Emissions below 1GHz	3.6 dB	Confidence levels of 95%
Radiated Emissions 1GHz ~ 18GHz	3.7 dB	Confidence levels of 95%
Radiated Emissions 18GHz ~ 40GHz	3.5 dB	Confidence levels of 95%







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уре	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	AF	CL	AT			
уре	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	AF (dB)	CL (dB)	AT (dB)			
ype P	Freq (Hz) 163.5k	Level (dBuV) 35.52	Limit (dBuV) 65.27	Margin (dB) -29.75	Factor (dB) 9,99	Condition Neutral	Comment	Raw (dBuV) 25.53	AF (dB) 0.04	CL (dB) 0.16	AT (dB) 9.79			
ype P V	Freq (Hz) 163.5k 163.5k	Level (dBuV) 35.52 19.90	Limit (dBuV) 65.27 55.27	Margin (dB) -29.75 -35.37	Factor (dB) 9.99 9.99	Condition Neutral Neutral	Comment	Raw (dBuV) 25.53 9.91	AF (dB) 0.04 0.04	CL (dB) 0.16 0.16	AT (dB) 9.79 9.79			
ype P V P	Freq (Hz) 163.5k 163.5k 244.5k	Level (dBuV) 35.52 19.90 26.33	Limit (dBuV) 65.27 55.27 61.95	Margin (dB) -29.75 -35.37 -35.62	Factor (dB) 9.99 9.99 9.97	Condition Neutral Neutral Neutral	Comment - -	Raw (dBuV) 25.53 9.91 16.36	AF (dB) 0.04 0.04 0.04	CL (dB) 0.16 0.16 0.13	AT (dB) 9.79 9.79 9.80 9.80			
ype P V P V	Freq (Hz) 163.5k 163.5k 244.5k 244.5k 224.5k	Level (dBuV) 35.52 19.90 26.33 15.90 24.35	Limit (dBuV) 65.27 55.27 61.95 51.95 55.00	Margin (dB) -29.75 -35.37 -35.62 -36.05 31.65	Factor (dB) 9.99 9.99 9.97 9.97 10.01	Condition Neutral Neutral Neutral Neutral	Comment - - -	Raw (dBuV) 25.53 9.91 16.36 5.93 24.24	AF (dB) 0.04 0.04 0.04 0.04	CL (dB) 0.16 0.16 0.13 0.13	AT (dB) 9.79 9.80 9.80 9.80			
ype P V P V P V	Freq (Hz) 163.5k 163.5k 244.5k 244.5k 237k	Level (dBuV) 35.52 19.90 26.33 15.90 34.35 26.56	Limit (dBuV) 65.27 55.27 61.95 51.95 56.00 45.00	Margin (dB) -29.75 -35.37 -35.62 -36.05 -21.65 -19.44	Factor (dB) 9.99 9.99 9.97 9.97 10.01 10.01	Condition Neutral Neutral Neutral Neutral Neutral	Comment - - - - "Worst"	Raw (dBuV) 25.53 9.91 16.36 5.93 24.34 16.55	AF (dB) 0.04 0.04 0.04 0.04 0.05 0.05	CL (dB) 0.16 0.16 0.13 0.13 0.15 0.15	AT (dB) 9.79 9.80 9.80 9.81 9.81			
ype P V P V V P V V P V	Freq (Hz) 163.5k 163.5k 244.5k 244.5k 537k 537k 2.139M	Level (dBuV) 35.52 19.90 26.33 15.90 34.35 26.56 19.69	Limit (dBuV) 65.27 55.27 61.95 51.95 56.00 46.00	Margin (dB) -29.75 -35.37 -35.62 -36.05 -21.65 -19.44 -36.31	Factor (dB) 9.99 9.97 9.97 10.01 10.01 10.12	Condition Neutral Neutral Neutral Neutral Neutral Neutral Neutral	Comment	Raw (dBuV) 25.53 9.91 16.36 5.93 24.34 16.55 9.57	AF (dB) 0.04 0.04 0.04 0.04 0.05 0.05 0.07	CL (dB) 0.16 0.13 0.13 0.13 0.15 0.22	AT (dB) 9.79 9.80 9.80 9.81 9.81 9.81 9.83			
ype P V P V P V V P V V V V V	Freq (Hz) 163.5k 163.5k 244.5k 244.5k 537k 2.139M 2.139M	Level (dBuV) 35.52 19.90 26.33 15.90 34.35 26.56 19.69 11.73	Limit (dBuV) 65.27 55.27 61.95 51.95 56.00 46.00 46.00	Margin (dB) -29.75 -35.37 -35.62 -36.05 -21.65 -19.44 -36.31 -34.27	Factor (dB) 9.99 9.97 9.97 10.01 10.01 10.12	Condition Neutral Neutral Neutral Neutral Neutral Neutral Neutral Neutral	Comment	Raw (dBuV) 25.53 9.91 16.36 5.93 24.34 16.55 9.57 1.61	AF (dB) 0.04 0.04 0.04 0.04 0.05 0.05 0.05 0.07	CL (dB) 0.16 0.13 0.13 0.15 0.22 0.22	AT (dB) 9.79 9.80 9.80 9.81 9.81 9.83 9.83			
ype P V P V P V V P V V P V V P	Freq (Hz) 163.5k 163.5k 244.5k 244.5k 537k 2.139M 2.139M 6.662M	Level (dBuV) 35.52 19.90 26.33 15.90 34.35 26.56 19.69 11.73 16.14	Limit (dBuV) 65.27 55.27 61.95 51.95 56.00 46.00 56.00 46.00 60.00	Margin (dB) -29.75 -35.37 -35.62 -36.05 -21.65 -19.44 -36.31 -36.31 -34.27 -43.86	Factor   (dB)   9.99   9.97   9.97   10.01   10.12   10.12   10.16	Condition Neutral Neutral Neutral Neutral Neutral Neutral Neutral Neutral Neutral	Comment	Raw (dBuV) 25.53 9.91 16.36 5.93 24.34 16.55 9.57 1.61 5.98	AF (dB) 0.04 0.04 0.04 0.05 0.05 0.07 0.07 0.07	CL (dB) 0.16 0.13 0.13 0.15 0.15 0.22 0.22 0.14	AT (dB) 9.79 9.80 9.80 9.81 9.81 9.81 9.83 9.83 9.87			
ype P V P V P V V P V V P V V V V	Freq (Hz) 163.5k 163.5k 244.5k 244.5k 537k 2.139M 2.139M 6.662M 6.662M	Level (dBuV) 35.52 19.90 26.33 15.90 34.35 26.56 19.69 11.73 16.14 8.60	Limit (dBuV) 65.27 55.27 61.95 51.95 56.00 46.00 56.00 46.00 60.00 50.00	Margin (dB) -29.75 -35.37 -35.62 -36.05 -21.65 -19.44 -36.31 -34.27 -43.86 -41.40	Factor   (dB)   9.99   9.97   9.97   10.01   10.12   10.12   10.16	Condition Neutral Neutral Neutral Neutral Neutral Neutral Neutral Neutral Neutral Neutral	Comment	Raw (dBuV) 25.53 9.91 16.36 5.93 24.34 16.55 9.57 1.61 5.98 -1.56	AF (dB) 0.04 0.04 0.04 0.05 0.05 0.07 0.07 0.07 0.15	CL (dB) 0.16 0.13 0.13 0.15 0.25 0.22 0.14 0.14	AT (dB) 9.79 9.80 9.80 9.81 9.81 9.81 9.83 9.83 9.83 9.87			
ype P V P V V P V V P V V P	Freq (Hz) 163.5k 163.5k 244.5k 244.5k 537k 2.139M 2.139M 6.662M 6.662M 13.443M	Level (dBuV) 35.52 19.90 26.33 15.90 34.35 26.56 19.69 11.73 16.14 8.60 10.43	Limit (dBuV) 65.27 55.27 61.95 55.00 46.00 56.00 46.00 60.00 50.00 60.00	Margin (dB) -29.75 -35.37 -35.62 -36.05 -21.65 -19.44 -36.31 -36.31 -34.27 -43.86 -41.40 -49.57	Factor (dB) 9,99 9,97 9,97 10.01 10.01 10.12 10.12 10.16 10.16 10.34	Condition Neutral Neutral Neutral Neutral Neutral Neutral Neutral Neutral Neutral Neutral	Comment	Raw (dBuV) 25.53 9.91 16.36 5.93 24.34 16.55 9.57 1.61 5.98 -1.56 0.09	AF (dB) 0.04 0.04 0.04 0.05 0.05 0.07 0.07 0.15 0.15 0.22	CL (dB) 0.16 0.13 0.13 0.15 0.22 0.22 0.14 0.14 0.20	AT (dB) 9.79 9.80 9.80 9.81 9.81 9.81 9.83 9.83 9.83 9.87 9.87 9.87 9.92			- -   - -   - -   - -   - -   - -   - -   - -   - -   - -   - -   - -   - -   - -   - -

#### Neutral





	Enor	Laval	Limit	Over	Read	CableA	ntenna	Preamp	A/Pos	T/Pos	Domank	
	rreq	rever	LTHE	LIMIC	rever	LOSS	Factor	Factor			Reliark	POI/Plidse
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	43.58	32.34	40.00	-7.66	47.56	0.65	16.55	32.42	100	37	QP	VERTICAL
2	56.19	31.11	40.00	-8.89	50.24	0.77	12.51	32.41	125	233	QP	VERTICAL
3	65.89	33.54	40.00	-6.46	53.06	0.84	12.04	32.40	100	182	Peak	VERTICAL
4	87.23	29.56	40.00	-10.44	46.87	0.97	14.10	32.38	125	227	Peak	VERTICAL
5	113.42	30.58	43.50	-12.92	43.72	1.10	18.12	32.36	125	186	Peak	VERTICAL
6	138.64	28.50	43.50	-15.00	42.41	1.22	17.21	32.34	100	71	Peak	VERTICAL





#### Limit Over Read CableAntenna Preamp A/Pos T/Pos Freq Level Remark Pol/Phase Line Limit Level Loss Factor Factor MHz dBuV/m dBuV/m dB dBuV dB dB/m dB deg cm 43.58 28.90 40.00 -11.10 44.12 319 Peak HORIZONTAL 1 0.65 16.55 32.42 150 2 67.83 27.12 40.00 -12.88 46.60 0.85 12.07 32.40 200 283 Peak HORIZONTAL 3 88.20 25.02 43.50 -18.48 42.02 0.99 14.39 32.38 200 164 Peak HORIZONTAL 125.06 29.27 43.50 -14.23 42.38 180 Peak HORIZONTAL 4 1.15 18.09 32.35 200 1.18 17.94 32.34 5 130.88 29.83 43.50 -13.67 43.05 200 180 Peak HORTZONTAL 6 138.64 30.91 43.50 -12.59 44.82 1.22 17.21 32.34 200 189 Peak HORIZONTAL

### SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory Page No. : 2 of 2

#### Horizontal 30 MHz to 1,000 MHz





	Freq	Level	Limit Line	Over Limit	Read Level	CableA Loss	ntenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	7289.96	47.20	54.00	-6.80	39.58	6.46	36.47	35.31	122	190	Average	VERTICAL
2	7290.07	54.68	74.00	-19.32	47.06	6.46	36.47	35.31	122	190	Peak	VERTICAL





	Freq	Level	Limit Line	Over Limit	Read Level	Cable/ Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1 2	7289.92 7289.94	51.53 42.99	74.00 54.00	-22.47 -11.01	43.91 35.37	6.46 6.46	36.47 36.47	35.31 35.31	103 103	182 182	Peak Average	HORIZONTAL HORIZONTAL

#### SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory Page No. : 2 of 2