

CCIS Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Report No.: CCIS13110047903

FCC REPORT

Applicant: MOX GROUP LIMITED

RM2508-2509, T-Share International Building A, Taoyuan Road **Address of Applicant:**

Nanshan, Shenzhen, China

Equipment Under Test (EUT)

Product Name: Mobile Phone

Model No.: M8

FCC ID: 2ABBS-M8

Applicable standards: FCC CFR Title 47 Part 15 Subpart B

Date of sample receipt: 13 Nov., 2013

Date of Test: 14 Nov., to 26 Nov., 2013

Date of report issued: 27 Nov., 2013

Pass * Test Result:

Authorized Signature:



Bruce Zhang Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

^{*} In the configuration tested, the EUT complied with the standards specified above.



2 Version

Version No.	Date	Description
00	27 Nov., 2013	Original

Prepared by: Date: 27 Nov., 2013

Report Clerk

Reviewed by: Date: 27 Nov., 2013

Project Engineer

Project No.: CCIS131100479RF



3 Contents

			age
1	(COVER PAGE	1
2	,	VERSION	2
3		CONTENTS	:
4		TEST SUMMARY	
5	(GENERAL INFORMATION	5
		CLIENT INFORMATION	
	5.2 5.3		
	5.4	DESCRIPTION OF SUPPORT UNITS	<i>6</i>
	5.5 5.6 5.7	2.0 0.0.1 0.0.1 1.100	6
6		TEST RESULTS AND MEASUREMENT DATA	
	6.1	CONDUCTED EMISSION	8
		RADIATED EMISSION	
7	-	TEST SETUP PHOTO	17
8	ı	EUT CONSTRUCTIONAL DETAILS	19

Telephone: +86 (0) 755 23118282 Fax: +86 (0) 755 23116366



4 Test Summary

Test Item	Section in CFR 47	Result		
Conducted Emission	Part15.107	Pass		
Radiated Emission	Part15.109	Pass		

Pass: The EUT complies with the essential requirements in the standard.

Telephone: +86 (0) 755 23118282 Fax: +86 (0) 755 23116366



5 General Information

5.1 Client Information

Applicant:	MOX GROUP LIMITED		
Address of Applicant:	RM2508-2509, T-Share International Building A, Taoyuan Road Nanshan, Shenzhen, China		
Manufacturer:	MOX GROUP LIMITED		
Address of Manufacturer:	RM2508-2509, T-Share International Building A, Taoyuan Road Nanshan, Shenzhen, China		

5.2 General Description of E.U.T.

Product Name:	Mobile Phone
Model No.:	M8
AC adapter:	Input:100-240V AC,50/60Hz 0.15A
	Output:5V DC MAX500mA
Power supply:	Rechargeable Li-ion Battery DC3.7V/500mAh

5.3 Test Mode

Operating mode	Detail description	
PC mode	Keep the EUT in data exchange with PC(worst case)	
Playing mode	Keep the EUT in playing mode	
FM mode	Keep the EUT in FM mode	
Recording mode	Keep the EUT in recording mode	

The sample was placed 0.8m above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

Telephone: +86 (0) 755 23118282 Fax: +86 (0) 755 23116366



Project No.: CCIS131100479RF

5.4 Description of Support Units

Manufacturer	acturer Description Model		Serial Number	FCC ID/DoC
DELL PC		OPTIPLEX745	OPTIPLEX745 N/A	
DELL MONITOR		E178FPC N/A		DoC
DELL KEYBOARD		SK-8115	N/A	DoC
DELL	MOUSE	MOC5UO	N/A	DoC
HP Printer		CB495A	05257893	DoC

5.5 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

● FCC - Registration No.: 817957

Shenzhen Zhongjian Nanfang Testing Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in out files. Registration 817957, February 27, 2012.

● IC - Registration No.: 10106A-1

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

CNAS - Registration No.: CNAS L6048

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

5.6 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Address: No.B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,

Bao'an District, Shenzhen, Guangdong, China

Tel: 0755-23118282 Fax: 0755-23116366

Shenzhen Zhongjian Nanfang Testing Co., Ltd. No.B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road, Bao'an District, Shenzhen, Guangdong, China

Telephone: +86 (0) 755 23118282 Fax: +86 (0) 755 23116366 Page 6 of 19



5.7 Test Instruments list

Radia	ated Emission:					
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	June 09 2013	June 08 2014
2	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	CCIS0005	May 25 2013	May 24 2014
3	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	CCIS0006	May 25 2013	May 24 2014
4	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
5	Coaxial Cable	CCIS	N/A	CCIS0016	Apr. 01 2013	Mar. 31 2014
6	Coaxial Cable	CCIS	N/A	CCIS0017	Apr. 01 2013	Mar. 31 2014
7	Coaxial cable	CCIS	N/A	CCIS0018	Apr. 01 2013	Mar. 31 2014
8	Coaxial Cable	CCIS	N/A	CCIS0019	Apr. 01 2013	Mar. 31 2014
9	Coaxial Cable CCIS		N/A	CCIS0087	Apr. 01 2013	Mar. 31 2014
10	Amplifier(10kHz- 1.3GHz)	HP	8447D	CCIS0003	Apr. 01 2013	Mar. 31 2014
11	Amplifier(1GHz- 18GHz)	Amplifier(1GHz- Compliance Direction		CCIS0011	June 09 2013	June 08 2014
12	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	Apr. 01 2013	Mar. 31 2014
13	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 30 2013	Mar. 29 2014
14	Printer	HP	HP LaserJet P1007	N/A	N/A	N/A
15	Positioning Controller	UC	UC3000	CCIS0015	N/A	N/A
16	Spectrum analyzer 9k-30GHz	Rohde & Schwarz	FSP	CCIS0023	May. 25 2013	May. 24 2014
17	EMI Test Receiver	Rohde & Schwarz	ESPI	CCIS0022	Apr 01 2013	Mar. 31 2014
18	Loop antenna	Laplace instrument	RF300	EMC0701	Aug. 12 2013	Aug. 11 2014
19	Universal radio communication tester	Rhode & Schwarz	CMU200	CCIS0069	May. 25 2013	May. 24 2014
20	Signal Analyzer	Rohde & Schwarz	FSIQ3	CCIS0088	May. 25 2013	May. 24 2014

Cond	Conducted Emission:							
Item	Test Equipment	st Equipment Manufacturer		Inventory	Cal.Date	Cal.Due date		
item	Toot Equipment	Manarastars	Model No.	No.	(mm-dd-yy)	(mm-dd-yy)		
1	Shielding Room	ZhongShuo Electron	11.0(L)x4.0(W)x3.0(H)	CCIS0061	June 09 2013	June 08 2014		
2	2 EMI Test Receiver Rohde & Schwarz		ESCI	CCIS0002	May 25 2013	May. 24 2014		
3	LISN	CHASE	MN2050D	CCIS0074	Apr. 01 2013	Mar. 31 2014		
4	4 Coaxial Cable CCIS		N/A	CCIS0086	Apr. 01 2013	Mar. 31 2014		



6 Test results and Measurement Data

6.1 Conducted Emission

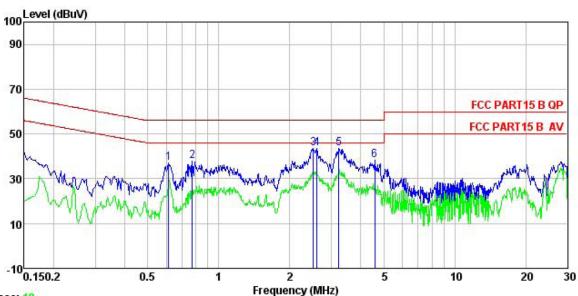
Test Requirement:	FCC Part15 B Section 15.107						
Test Method:	ANSI C63.4:2003						
Test Frequency Range:	150kHz to 30MHz	150kHz to 30MHz					
Class / Severity:	Class B	Class B					
Receiver setup:	RBW=9kHz, VBW=30kHz						
Limit:		dBμV)					
	Frequency range (MHz)	Quasi-peak	Average				
	0.15-0.5	66 to 56*	56 to 46*				
	0.5-5	56	46				
	0.5-30	60	50				
Test setup: Test procedure	Reference Plane LISN 40cm 80cm 80cm Equipment E.U.T Test table/Insulation plane Remark E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m 1. The E.U.T and simulators are	Filter AC pow	ower through a line				
	impedance stabilization netwo impedance for the measuring 2. The peripheral devices are also that provides a 500hm/50uH of (Please refers to the block diated as the sides of A.C. line are chorder to find the maximum emo	equipment. so connected to the main coupling impedance with segram of the test setup an ecked for maximum condission, the relative position	power through a LISN 500hm termination. and photographs). ducted interference. In ons of equipment and all				
Test environment:	Temp.: 23 °C Humid	d.: 56% Pre	ss.: 1 01kPa				
Measurement Record:			Uncertainty: 3.28dB				
Test Instruments:	Refer to section 5.7 for details						
Test mode:	Refer to section 5.3 for details						
Test results:	Pass						

Telephone: +86 (0) 755 23118282 Fax: +86 (0) 755 23116366



Measurement data:

Line:



Trace: 19

: CCIS Conducted Test Site : FCC PART15 B QP LISN LINE Site Condition

: 479RF Job NO. Model

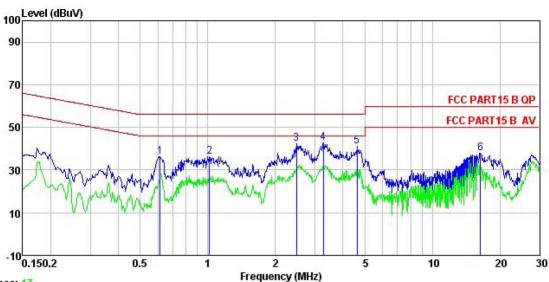
Test Mode : Downloading mode Power Rating : AC 120V/60Hz Environment : Temp: 23 C Huni:56% Atmos:101KPa

est	Engineer: Frea	Read	LISN Factor	Cable Loss		Limit Line	Over Limit	Remark
	MHz	dBu∀	dB		dBu∇	dBu∜		
1	0.614	26.00	10.21	0.77	36.98	56.00	-19.02	QP
2	0.771	26.76	10.19	0.79	37.74	56.00	-18.26	QP
2	2.513	32.19	10.28	0.94	43.41	56.00	-12.59	QP
4	2.608	32.28	10.28	0.94	43.50	56.00	-12.50	QP
4 5 6	3.224	32.32	10.29	0.90	43.51	56.00	-12.49	QP
6	4.574	27.24	10.29	0.88	38.41	56.00	-17.59	QP

Project No.: CCIS131100479RF



Neutral:



Trace: 17

: CCIS Conducted Test Site : FCC PART15 B QP LISN NEUTRAL

Site Condition Job NO. Model 479RF

mode: : M8
Test Mode : Downloading mode
Power Rating : AC 120V/60Hz
Environment : Temp: 23 'C Huni:56% Atmos:101KPa
Test Engineer: aaron

est	Engineer:		LISN	Cable		Limit	Over		
	Freq		Factor						
	MHz	dBu∀	₫B	₫B	dBu∀	dBu∀	dB		
1	0.614	25.36	10.21	0.77	36.34	56.00	-19.66	QP	
2	1.016	25.29	10.20	0.86	36.35	56.00	-19.65	QP	
3	2.487	31.17	10.27	0.95	42.39	56.00	-13.61	QP	
4 5	3.276	31.68	10.28	0.90	42.86	56.00	-13.14	QP	
5	4.622	29.97	10.28	0.88	41.13	56.00	-14.87	QP	
6	16.398	26.93	10.26	0.91	38.10	60.00	-21.90	QP	

Notes:

- 1. The following Quasi-Peak and Average measurements were performed on the EUT
- 2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

Project No.: CCIS131100479RF



6.2 Radiated Emission

0.2 Radiated Lillission								
Test Requirement:	FCC Part15 B Section 15.109							
Test Method:	ANSI C63.4:2003							
Test Frequency Range:	30MHz to 6000MHz							
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)							
Receiver setup:	Frequency	Detector	RBW	VBW	Remark			
	30MHz-1GHz	Quasi-peak	120 kHz	300KHz	Quasi-peak Value			
	Above 1GHz	Peak	1MHz 3MHz		Peak Value			
	Above Toriz	Peak	1MHz 10Hz		Average Value			
Limit:	Freque	ency	Limit (dBuV/	m @3m)	Remark			
	30MHz-8	8MHz	40.0)	Quasi-peak Value			
	88MHz-2	16MHz	43.5	5	Quasi-peak Value			
	216MHz-9	60MHz	46.0)	Quasi-peak Value			
	960MHz-	-1GHz	54.0)	Quasi-peak Value			
	A b a v a d	ICII-	54.0)	Average Value			
	Above 1	IGHZ	74.0)	Peak Value			
Test setup:	Ground Plane — Above 1GHz		S _I	Antenna Tower Search Antenna RF Test Receiver Antenna Tower Antenna Tower Antenna Tower Amplifier				

Telephone: +86 (0) 755 23118282 Fax: +86 (0) 755 23116366



Test Procedure:	The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.						
	2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.						
	3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.						
	4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.						
	The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.						
	6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.						
Test environment:	Temp.: 25 °C Humid.: 55% Press.: 1 01kPa						
Measurement Record:	Uncertainty: 4.88dB						
Test Instruments:	Refer to section 5.7 for details						
Test mode:	Refer to section 5.3 for details						
Test results:	Passed						

Telephone: +86 (0) 755 23118282 Fax: +86 (0) 755 23116366

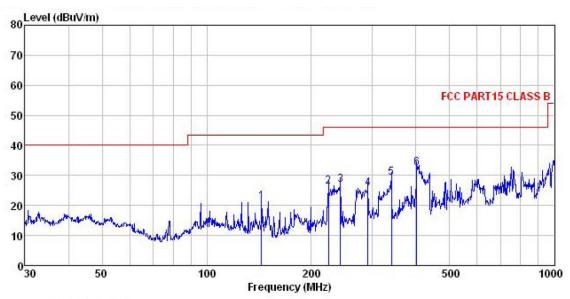


Project No.: CCIS131100479RF

Measurement Data

Below 1GHz

Horizontal:



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M1G) HORIZONTAL
EUT : mobile phone
Model : M8
Test mode : PC MODE
Power Rating : AC120/60Hz
Environment : Temp:25.5°C Huni:55%
Test Engineer: agron

Test Engineer: aaron REMARK :

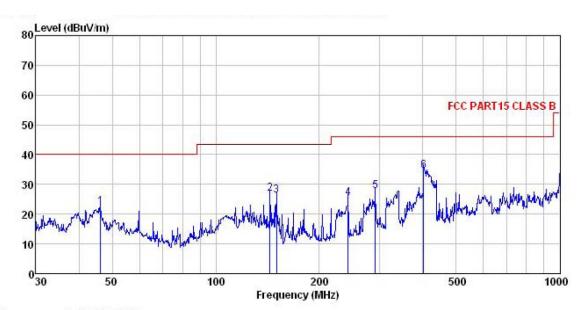
EMAKK									
	Freq		Antenna Factor						
-	MHz	dBu₹	$\overline{-dB}/\overline{m}$	āĒ	<u>d</u> B	$\overline{dBuV/m}$	dBuV/m	āB	
1	143.830	39.94	8.22	2.44	29.32	21.28	43.50	-22.22	QP
2	223.733	41.76	11.36	2.84	29.71	26.25	46.00	-19.75	QP
3	242.525	41.65	12.08	2.82	29.63	26.92	46.00	-19.08	QP
4	291.036	39.41	12.89	2.92	29.46	25.76	46.00	-20.24	QP
5	339.589	41.58	14.12	3.07	29.63	29.14	46.00	-16.86	QP
6	401.839	44.23	15.10	3.08	29.92	32.49	46.00	-13.51	QP

Telephone: +86 (0) 755 23118282 Fax: +86 (0) 755 23116366 Page 13 of 19



Project No.: CCIS131100479RF

Vertical:



Site Condition EUT : 3m chamber : FCC PART15 CLASS B 3m VULB9163(30M1G) VERTICAL

EUT : mobile phone

Model : M8

Test mode : PC MODE

Power Rating : AC120/60Hz

Environment : Temp: 25.5°C Huni: 55%

Test Engineer: aaron REMARK

Homath	
QP	
E 44728	t Remark 4 QP 4 QP 7 QP 2 QP 8 QP 4 QP

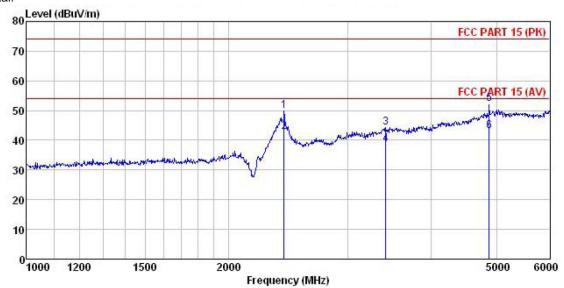
Telephone: +86 (0) 755 23118282 Fax: +86 (0) 755 23116366 Page 14 of 19



Project No.: CCIS131100479RF

Above 1GHz

Horizontal:



Site

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL : 479RF : Mobile Phone

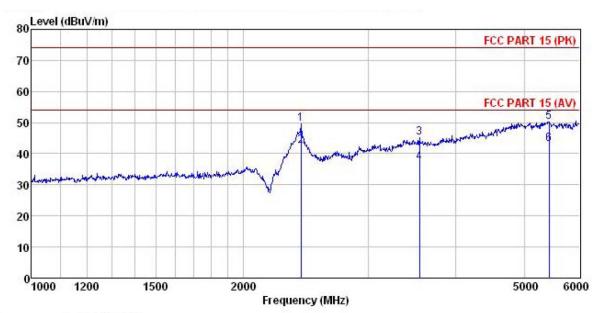
Condition
Job No.
EUT
Model Model : M8 Test mode : PC mode Power Rating : AC 120V/60Hz

Environment : Temp:25°C Huni:55% Atmos:101Kpa Test Engineer: aaron Remark :

CHIGIT									
	Freq		Antenna Factor				Limit Line	Over Limit	Remark
-	MHz	dBu₹	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2414.629	49.28	27.54	5.68	32.53	49.97	74.00	-24.03	Peak
2	2414.629	42.23	27.54	5.68	32.53	42.92	54.00	-11.08	Average
3	3418.313	48.42	28.53	6.41	38.96	44.40	74.00	-29.60	Peak
4	3418.313	42.80	28.53	6.41	38.96	38.78	54.00	-15.22	Average
5	4874.002	51.84	31.57	8.98	40.15	52.24	74.00	-21.76	Peak
6	4874.002	42.56	31.57	8.98	40.15	42.96	54.00	-11.04	Average



Vertical:



Site

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL Condition

479RF Job No. EUT : Mobile Phone Model : M8

Test mode : PC mode Power Rating : AC 120V/60Hz Environment : Temp:25°C Huni:55% Atmos:101Kpa

Test Engineer: aaron

Remark

Freq						Limit Line	Over Limit	Remark
MHz	dBu₹	dB/m	₫B	dB	dBuV/m	dBuV/m	B	
2410.306	48.96	27.54	5.68	32.53	49.65	74.00	-24.35	Peak
2410.306	41.78	27.54	5.68	32.53	42.47	54.00	-11.53	Average
3549.384	49.79	29.08	6.18	39.96	45.09	74.00	-28.91	Peak
3549.384	41.76	29.08	6.18	39.96	37.06	54.00	-16.94	Average
5427.187	49.45	31.91	9.15	40.21	50.30	74.00	-23.70	Peak
5427.187	42.33	31.91	9.15	40.21	43.18	54.00	-10.82	Average
	Freq MHz 2410.306 2410.306 3549.384 3549.384 5427.187	Read. Freq Level MHz dBuV 2410.306 48.96 2410.306 41.78 3549.384 49.79 3549.384 41.76 5427.187 49.45	ReadAntenna Level Factor MHz dBuV dB/m 2410.306 48.96 27.54 2410.306 41.78 27.54 3549.384 49.79 29.08 3549.384 41.76 29.08 5427.187 49.45 31.91	ReadAntenna Cable Freq Level Factor Loss MHz dBuV dB/m dB 2410.306 48.96 27.54 5.68 2410.306 41.78 27.54 5.68 3549.384 49.79 29.08 6.18 3549.384 41.76 29.08 6.18 5427.187 49.45 31.91 9.15	ReadAntenna Cable Preamp Loss Factor MHz dBuV dB/m dB dB 2410.306 48.96 27.54 5.68 32.53 2410.306 41.78 27.54 5.68 32.53 3549.384 49.79 29.08 6.18 39.96 3549.384 41.76 29.08 6.18 39.96 5427.187 49.45 31.91 9.15 40.21	ReadAntenna Cable Preamp Freq Level Factor Loss Factor Level MHz dBuV dB/m dB dB dBuV/m 2410.306 48.96 27.54 5.68 32.53 49.65 2410.306 41.78 27.54 5.68 32.53 42.47 3549.384 49.79 29.08 6.18 39.96 45.09 3549.384 41.76 29.08 6.18 39.96 37.06 5427.187 49.45 31.91 9.15 40.21 50.30	ReadAntenna Cable Preamp Limit Freq Level Factor Loss Factor Level Line MHz dBuV dB/m dB dB dBuV/m dBuV/m 2410.306 48.96 27.54 5.68 32.53 49.65 74.00 2410.306 41.78 27.54 5.68 32.53 42.47 54.00 3549.384 49.79 29.08 6.18 39.96 45.09 74.00 3549.384 41.76 29.08 6.18 39.96 37.06 54.00 5427.187 49.45 31.91 9.15 40.21 50.30 74.00	ReadAntenna Cable Preamp Limit Over Level Factor Loss Factor Level Line Limit MHz dBuV dB/m dB dB dBuV/m dBuV/m dB 2410.306 48.96 27.54 5.68 32.53 49.65 74.00 -24.35 2410.306 41.78 27.54 5.68 32.53 42.47 54.00 -11.53 3549.384 49.79 29.08 6.18 39.96 45.09 74.00 -28.91 3549.384 41.76 29.08 6.18 39.96 37.06 54.00 -16.94 5427.187 49.45 31.91 9.15 40.21 50.30 74.00 -23.70

Project No.: CCIS131100479RF

Page 16 of 19