

Report No. : EED32H000334-1 Page 1 of 95

TEST REPORT

Product : Wifi AP

Trade mark : N/A

Model/Type reference : MR2060

Serial Number : N/A

Report Number : EED32H000334-1

FCC ID : 2AFJD-MR2060

Date of Issue : August 13, 2015

Test Standards : 47 CFR Part 15 Subpart C (2014)

Test result : PASS

Prepared for:

XUM YI TECH CO., LTD 8F., NO. 12, LN. 270, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY 22205, TAIWAN

Prepared by:

Centre Testing International (Shenzhen) Corporation
Building C, Scientific Innovation Park, Tiegang Reservior, Xixiang, Baoan
District, Shenzhen, China

TEL: +86-755-3368 3668 FAX: +86-755-3368 3385

Tested by:

Reviewed by:

Date:

August 13, 2015

Sheek Luo Lab supervisor

Check No.: 1727861299









Page 2 of 95

2 Version

Version No.	Date	Description
00	August 13, 2015	Original















































































Page 3 of 95

3 Test Summary

Test Item	Test Requirement	Test method	Result PASS	
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203/15.247 (c)	ANSI C63.10-2013		
AC Power Line Conducted Emission	47 CFR Part 15 Subpart C Section 15.207	ANSI C63.10-2013	PASS	
Conducted Peak Output Power	47 CFR Part 15 Subpart C Section 15.247 (b)(3)	ANSI C63.10-2013	PASS	
6dB Occupied Bandwidth	47 CFR Part 15 Subpart C Section 15.247 (a)(2)	ANSI C63.10-2013	PASS PASS	
Power Spectral Density	47 CFR Part 15 Subpart C Section 15.247 (e)	ANSI C63.10-2013		
Band-edge for RF Conducted Emissions	47 CFR Part 15 Subpart C Section 15.247(d)	ANSI C63.10-2013	PASS	
RF Conducted Spurious Emissions	47 CFR Part 15 Subpart C Section 15.247(d)	ANSI C63.10-2013	PASS	
Radiated Spurious Emissions	47 CFR Part 15 Subpart C Section 15.205/15.209	ANSI C63.10-2013	PASS	
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15 Subpart C Section 15.205/15.209	ANSI C63.10-2013	PASS	

Test according to ANSI C63.4-2014 & ANSI C63.10-2013.























































4 Content

1 COV	ER PAGE				••••	1
2 VER	SION				•••••	
3 TES	T SUMMARY	•••••			•••••	3
4 CON	TENT	•••••		••••••	•••••	
5 TES	T REQUIREMENT				•••••	5
5 5 5.2	.1.1 For Conducted i .1.2 For Radiated Er .1.3 For Conducted i TEST ENVIRONMENT	est setup nissions test setup. Emissions test setu	IP			
6 GEN	ERAL INFORMATION	N		<u></u>	•••••	8
6.2 6.3 6.4 6.5 6.6 6.7 6.8 6.9	GENERAL DESCRIPTION PRODUCT SPECIFICAT DESCRIPTION OF SUP TEST LOCATION TEST FACILITY DEVIATION FROM STA ABNORMALITIES FROM OTHER INFORMATION	N OF EUT JON SUBJECTIVE TO PORT UNITS NDARDS STANDARD CONDIT REQUESTED BY THE	THIS STANDARD			
7 EQU	IPMENT LIST				•••••	12
8 RAD	IO TECHNICAL RE	QUIREMENTS SPE	ECIFICATION		••••••	14
A A A A	Appendix B) 6dB Occ Appendix C) Band-ed Appendix D) RF Cond Appendix E) Power S Appendix F) Antenna	upied Bandwidth ge for RF Conducte lucted Spurious En pectral Density Requirement	wered Emissionsnissions			
APPE	NDIX H) RESTRICTI	ED BANDS AROU	ND FUNDAMENTAL	FREQUENCY /R	ADIATED SPI	JRIOUS
			AL DETAILS			
)				











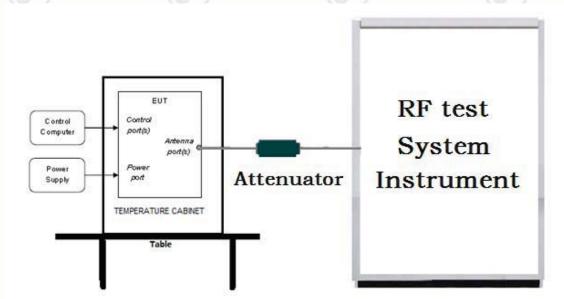




5 Test Requirement

5.1 Test setup

5.1.1 For Conducted test setup



5.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

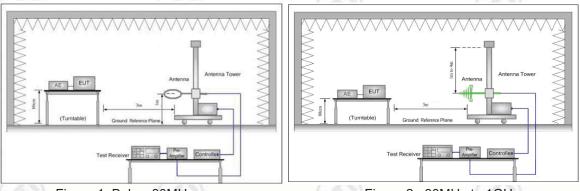


Figure 1. Below 30MHz

Figure 2. 30MHz to 1GHz

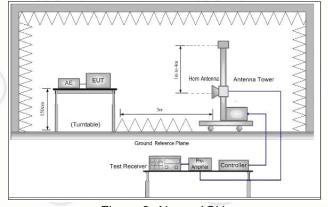


Figure 3. Above 1GHz











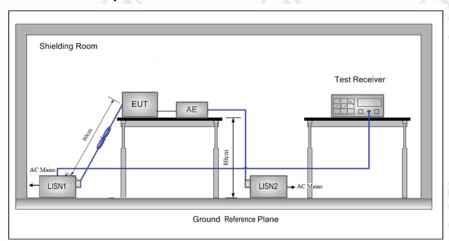






Page 6 of 95

5.1.3 For Conducted Emissions test setup Conducted Emissions setup



5.2 Test Environment

Operating Environment:		(20)	(2	(20)
Temperature:	24 °C		6	(0)
Humidity:	53 % RH			
Atmospheric Pressure:	1010mbar			

5.3 Test Condition

Test channel:

	Test Mode	Tx/Rx	RF Channel				
	rest wode	TA/INX	Low(L)	Middle(M)	High(H)		
	802.11b/g/n(HT20)	2412MHz ~2462 MHz	Channel 1	Channel 6	Channel11		
À		24 12IVID2 ~2462 IVID2	2412MHz	2437MHz	2462MHz		
	802.11n(HT40)	2422MHz ~2452 MHz	Channel 1	Channel 4	Channel7		
	00=11111(11110)		2422MHz	2437MHz	2452MHz		
	Transmitting mode:	Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.					



































Page 7 of 95

Test mode:

Pre-scan under all rate at lowest channel 1

Mode		802.11b					(8)	
Data Rate	1Mbps	2Mbps	5.5Mbps	11Mbps	9			
Ant1 (dBm) (SISO)	18.09	18.10	18.12	18.16				
Ant2 (dBm) (SISO)	18.98	19.02	19.08	19.13		(4)		(6
Mode				802.	.11g			
Data Rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
Ant1 (dBm) (SISO)	15.62	15.46	15.39	15.33	15.24	15.20	15.19	15.11
Ant2 (dBm) (SISO)	16.17	16.02	15.97	15.93	15.87	15.76	15.58	15.45
Mode				802.1	1n (HT20)			
Data Rate	6.5Mbps	13Mbps	19.5Mbps	26Mbp	s 39Mbps	52Mbps	s 58.5Mb	ps 65Mb _l
Ant1 (dBm) (SISO)	15.45	15.28	15.19	15.10	15.08	14.89	14.78	14.6
Ant2 (dBm) (SISO)	17.73	17.09	16.88	16.87	16.85	16.65	16.60	16.40
Ant1+Ant2 (dBm) (MIMO)	19.75	19.29	19.13	19.08	19.06	18.87	18.79	18.63
Mode				802.1	1n (HT40)			
Data Rate	13.5Mbps	27Mbps	40.5Mbps	54Mbp	s 81Mbps	108Mbp	s 121.5Mb	ps 135Mb
Ant1 (dBm) (SISO)	14.84	14.67	14.53	14.48	14.19	13.78	13.56	13.34
Ant2 (dBm) (SISO)	15.35	15.22	15.09	14.99	14.89	14.76	14.65	14.54
Ant1+Ant2 (dBm)	18.11	17.96	17.83	17.75	17.56	17.31	17.15	16.99

Through Pre-scan, 11Mbps of rate the power is the worst case of 802.11b; 6Mbps of rate the power is the worst case of 802.11g; 6.5Mbps of rate the power is the worst case of 802.11n(HT20); 13.5Mbps of rate the power is the worst case of 802.11n(HT40).



(MIMO)























Page 8 of 95

6 General Information

6.1 Client Information

Applicant:	XUM YI TECH CO., LTD
Address of Applicant:	8F., NO. 12, LN. 270, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY 22205, TAIWAN
Manufacturer:	XUM YI TECH CO., LTD
Address of Manufacturer:	8F., NO. 12, LN. 270, SEC. 3, BEI-SHEN RD., SHEN KENG DIST., NEW TAIPEI CITY 22205, TAIWAN

6.2 General Description of EUT

Product Name:	Wifi AP			
Model No.(EUT):	MR2060			
Trade Mark:	N/A		(41)	
EUT Supports Radios application:	Wlan 2.4GHz 802.11b/g/n(HT20&HT40)		(0)	
Power Supply:	AC 100-240V, 50/60Hz			
Sample Received Date:	Mar. 19, 2015	130		(30)
Sample tested Date:	Mar. 19, 2015 to August 13, 2015	(67)		(6)

6.3 Product Specification subjective to this standard

Operation Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz
Channel Numbers:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels IEEE 802.11n HT40: 7 Channels
Channel Separation:	5MHz
Type of Modulation:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20 and HT40): OFDM (64QAM, 16QAM, QPSK,BPSK)
Sample Type:	fixed production
Antenna Type and Gain:	Type: Integral antenna Antenna 1 gain: 0dBi Antenna 2 gain: 0dBi
Test Voltage:	AC 120V, 50Hz



































Page 9 of 95

Operation	Frequency ea	ch of channe	el(802.11b/g/n	HT20)			,	45	
Channel	Frequency	Channel	Frequency	Channel	Fred	quency	Chann	el	Frequency
1	2412MHz	4	2427MHz	7	244	2MHz	10	Y.	2457MHz
2	2417MHz	5	2432MHz	8	244	7MHz	11		2462MHz
3	2422MHz	6	2437MHz	9	245	2MHz			/5
Operation	Frequency ea	ch of channe	el(802.11n HT ₄	10)		(65))		(6)
Channe	l Frequ	iency	Channel	Frequen	су	Chan	inel	F	requency
1	2422	MHz	4	2437MH	z	7		:	2452MHz
2	2427	MHz	5	2442MH	z				
3	2432	MHz	6	2447MH	lz				

6.4 Description of Support Units

The EUT has been tested independently.

6.5 Test Location

All tests were performed at:

Centre Testing International (Shenzhen) Corporation

Building C, Scientific Innovation Park, Tiegang Reservior, Xixiang, Baoan District, Shenzhen, China Telephone: +86 (0) 755 3368 3668 Fax:+86 (0) 755 3368 3385

No tests were sub-contracted.

6.6 Test Facility

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

CNAS-Lab Code: L1910

Centre Testing International Group Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories..

A2LA-Lab Cert. No. 3061.01

Centre Testing International Group Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 565659

Centre Testing International (Shenzhen) Corporation 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 our files. Registration 565659.



















Page 10 of 95

IC-Registration No.: 7408A

The 3m Alternate Test Site of Centre Testing International Group Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408A.

IC-Registration No.: 7408B

The 10m Alternate Test Site of Centre Testing International Group Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408B.

NEMKO-Aut. No.: ELA503

Centre Testing International Group Co., Ltd. has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10.

VCCI

The Radiation 3 &10 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-4096.

Main Ports Conducted Interference Measurement of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-4563.

Telecommunication Ports Conducted Disturbance Measurement of

Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-2146.

The Radiation 3 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-758

6.7 Deviation from Standards

None.

6.8 Abnormalities from Standard ConditionsNone.

6.9 Other Information Requested by the CustomerNone.



























6.10 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty		
1	Radio Frequency	7.9 x 10 ⁻⁸		
2	DE nouse conducted	0.31dB (30MHz-1GHz)		
2	RF power, conducted	0.57dB (1GHz-18GHz)		
2	Dadiated Churique emission test	4.5dB (30MHz-1GHz)		
3	Radiated Spurious emission test	4.8dB (1GHz-12.75GHz)		
4	Conduction emission	3.6dB (9kHz to 150kHz)		
(4)	Conduction emission	3.2dB (150kHz to 30MHz)		
5	Temperature test	0.64°C		
6	Humidity test	2.8%		
7	DC power voltages	0.025%		





























































Page 12 of 95

7 Equipment List

		RF test	system		
Equipment	Manufacturer	Mode No.	Serial Number	Cal. Date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Signal Generator	Keysight	E8257D	MY53401106	04-14-2014	04-13-2015
Signal Generator	Keysight	E8257D	MY53401106	04-14-2015	04-13-2016
Communication test set test set	Agilent	N4010A	MY47230124	04-02-2014	04-01-2015
Communication test set test set	Agilent	N4010A	MY47230124	04-02-2015	04-01-2016
Spectrum Analyzer	Keysight	N9010A	MY54510339	04-01-2014	03-31-2015
Spectrum Analyzer	Keysight	N9010A	MY54510339	04-01-2015	03-31-2016
Attenuator	HuaXiang	SHX370	15040701	04-01-2014	03-31-2015
Attenuator	HuaXiang	SHX370	15040701	04-01-2015	03-31-2016
Signal Generator	Keysight	N5182B	MY53051549	03-31-2014	03-30-2015
Signal Generator	Keysight	N5182B	MY53051549	03-31-2015	03-30-2016
High-pass filter(3- 18GHz)	Sinoscite	FL3CX03WG18 NM12-0398-002		01-13-2015	01-12-2016
High-pass filter(5- 18GHz)	MICRO- TRONICS	SPA-F-63029-4		01-13-2015	01-12-2016
band rejection filter (GSM900)	Sinoscite	FL5CX01CA09C L12-0395-001	(20)	01-13-2015	01-12-2016
band rejection filter (GSM850)	Sinoscite	FL5CX01CA08C L12-0393-001	(6)	01-13-2015	01-12-2016
band rejection filter (GSM1800)	Sinoscite	FL5CX02CA04C L12-0396-002		01-13-2015	01-12-2016
band rejection filter (GSM1900)	Sinoscite	FL5CX02CA03C L12-0394-001		01-13-2015	01-12-2016
DC Power	Keysight	E3642A	MY54436035	03-31-2014	03-30-2015
DC Power	Keysight	E3642A	MY54436035	03-31-2015	03-30-2016
PC-1	Lenovo	R4960d	,m2	04-01-2014	03-31-2015
PC-1	Lenovo	R4960d	(443)	04-01-2015	03-31-2016
BT&WI-FI Automatic control	R&S	OSPB157	101374	04-01-2014	03-31-2015
BT&WI-FI Automatic control	R&S	OSPB157	101374	04-01-2015	03-31-2016
RF control unit	JS Tonscend	JS0806-2	2015860006	04-01-2014	03-31-2015
RF control unit	JS Tonscend	JS0806-2	2015860006	04-01-2015	03-31-2016
BT&WI-FI Automatic test software	JS Tonscend	JSTS1120-2		04-01-2014	03-31-2015
BT&WI-FI Automatic test software	JS Tonscend	JSTS1120-2		04-01-2015	03-31-2016















Manufacturer			3M Semi/full-anecl	noic Chamber	•	
TDK	Equipment	Manufacturer	Mode No.			Cal. Due date (mm-dd-yyyy)
TRILOG Broadband Schwarzbeck Arthenna Schwarzbeck Antenna Microwave Agilent 8449B 3008A02425 02-05-2015 02-04-2016	3M Chamber	TDK	SAC-3	(C)	06-02-2014	06-01-2015
Broadband Antenna schwarzbeck Agllent Antenna VULB9163 9163-617 07-14-2014 07-13-2015 Microwave Preampilifier Agllent 8449B 3008A02425 02-05-2015 02-04-2016 Horn Antenna ETS-LINDGREN 3117 00057410 07-08-2014 07-07-2016 Loop Antenna ETS 6502 00071730 07-23-2014 07-02-2015 Loop Antenna ETS 6502 00071730 07-23-2014 07-02-2015 Spectrum Analyzer R&S FSP40 100416 07-09-2014 07-08-2016 Receiver R&S FSP40 100416 07-09-2014 07-08-2016 Receiver R&S ESCI 100435 07-09-2014 07-08-2016 Mulid device Ontroller maturo NCD/070/10711112 01-13-2015 01-12-2016 LISN schwarzbeck NNBM8125 81251547 07-09-2014 07-08-2016 LISN schwarzbeck NNBM8125 81251546 07-09-2014 07-08-2016 LISN schwar	3M Chamber	TDK	SAC-3		06-02-2015	06-01-2016
Preamplifier	Broadband	schwarzbeck	VULB9163	9163-617	07-14-2014	07-13-2015
Horn Antenna		Agilent	8449B	3008A02425	02-05-2015	02-04-2016
Loop Antenna	Horn Antenna	ETS-LINDGREN	3117	00057410	07-08-2014	07-07-2015
Loop Antenna	Horn Antenna	ETS-LINDGREN	3117	00057410	07-08-2015	07-07-2016
Spectrum Analyzer R&S FSP40 100416 07-09-2014 07-08-2015 Spectrum Analyzer R&S FSP40 100416 07-09-2015 07-08-2016 Receiver R&S ESCI 100435 07-09-2014 07-08-2015 Receiver R&S ESCI 100435 07-09-2015 07-08-2016 Multi device Controller maturo NCD/070/10711112 01-13-2015 01-12-2016 LISN schwarzbeck NNBM8125 81251547 07-09-2014 07-08-2015 LISN schwarzbeck NNBM8125 81251547 07-09-2015 07-08-2016 LISN schwarzbeck NNBM8125 81251546 07-09-2015 07-08-2015 Signal Generator Agilent E4438C MY45095744 04-19-2014 04-18-2015 Signal Generator Keysight E8257D MY53401106 04-14-2014 04-13-2015 Signal Generator Keysight E8257D MY53401106 04-14-2015 04-13-2016 Temperature/ Humidity Indicator	Loop Antenna	ETS	6502	00071730	07-23-2014	07-22-2015
Spectrum Analyzer R&S FSP40 100416 07-09-2015 07-08-2016 Receiver R&S ESCI 100435 07-09-2014 07-08-2015 Receiver R&S ESCI 100435 07-09-2014 07-08-2016 Multi device Controller maturo NCD/070/10711112 01-13-2015 01-12-2016 LISN schwarzbeck NNBM8125 81251547 07-09-2014 07-08-2015 LISN schwarzbeck NNBM8125 81251547 07-09-2015 07-08-2016 LISN schwarzbeck NNBM8125 81251546 07-09-2014 07-08-2016 LISN schwarzbeck NNBM8125 81251546 07-09-2014 07-08-2016 LISN schwarzbeck NNBM8125 81251546 07-09-2015 07-08-2016 LISN schwarzbeck NNBM8125 81251546 07-09-2014 07-08-2016 Signal Generator Agilent E4438C MY45095744 04-19-2014 04-18-2016 Signal Generator Keysight	Loop Antenna	ETS	6502	00071730	07-23-2015	07-22-2016
Receiver R&S ESCI 100435 07-09-2014 07-08-2015 Receiver R&S ESCI 100435 07-09-2015 07-08-2016 Multi device Controller maturo NCD/070/10711112 01-13-2015 01-12-2016 LISN schwarzbeck NNBM8125 81251547 07-09-2014 07-08-2015 LISN schwarzbeck NNBM8125 81251547 07-09-2015 07-08-2016 LISN schwarzbeck NNBM8125 81251546 07-09-2014 07-08-2015 LISN schwarzbeck NNBM8125 81251546 07-09-2014 07-08-2016 LISN schwarzbeck NNBM8125 81251546 07-09-2015 07-08-2016 Signal Generator Agilent E4438C MY45095744 04-19-2014 04-18-2015 Signal Generator Keysight E8257D MY53401106 04-14-2014 04-13-2015 Signal Generator Keysight E8257D MY53401106 04-14-2014 04-13-2015 Signal Generator Keysight	Spectrum Analyzer	R&S	FSP40	100416	07-09-2014	07-08-2015
Receiver R&S ESCI 100435 07-09-2015 07-08-2016 Multi device Controller maturo NCD/070/10711112 01-13-2015 01-12-2016 LISN schwarzbeck NNBM8125 81251547 07-09-2014 07-08-2015 LISN schwarzbeck NNBM8125 81251546 07-09-2014 07-08-2016 LISN schwarzbeck NNBM8125 81251546 07-09-2014 07-08-2015 LISN schwarzbeck NNBM8125 81251546 07-09-2015 07-08-2016 Signal Generator Agilent E4438C MY45095744 04-19-2014 04-18-2016 Signal Generator Keysight E8257D MY53401106 04-14-2014 04-13-2015 Signal Generator Keysight E8257D MY53401106 04-14-2014 04-13-2016 Temperature/ Humidity Indicator TAYLOR 1451 5190 07-10-2014 07-09-2015 Communication test set Agilent E5515C GB47050533 01-13-2015 01-12-2016 Cabl	Spectrum Analyzer	R&S	FSP40	100416	07-09-2015	07-08-2016
Multi device Controller maturo NCD/070/10711112 01-13-2015 01-12-2016 LISN schwarzbeck NNBM8125 81251547 07-09-2014 07-08-2015 LISN schwarzbeck NNBM8125 81251547 07-09-2015 07-08-2016 LISN schwarzbeck NNBM8125 81251546 07-09-2014 07-08-2015 LISN schwarzbeck NNBM8125 81251546 07-09-2015 07-08-2016 Signal Generator Agilent E4438C MY45095744 04-19-2014 04-18-2015 Signal Generator Agilent E4438C MY45095744 04-19-2015 04-18-2016 Signal Generator Keysight E8257D MY53401106 04-14-2014 04-13-2016 Signal Generator Keysight E8257D MY53401106 04-14-2014 04-13-2015 Signal Generator Keysight E8257D MY53401106 04-14-2014 04-13-2015 Signal Generator Keysight E8257D MY53401106 04-14-2014 04-13-2015	Receiver	R&S	ESCI	100435	07-09-2014	07-08-2015
Controller Illation NCD/07/07/1112	Receiver	R&S	ESCI	100435	07-09-2015	07-08-2016
LISN schwarzbeck NNBM8125 81251547 07-09-2015 07-08-2016 LISN schwarzbeck NNBM8125 81251546 07-09-2014 07-08-2015 LISN schwarzbeck NNBM8125 81251546 07-09-2015 07-08-2016 Signal Generator Agilent E4438C MY45095744 04-19-2014 04-18-2015 Signal Generator Agilent E4438C MY45095744 04-19-2015 04-18-2016 Signal Generator Keysight E8257D MY53401106 04-14-2014 04-13-2015 Signal Generator Keysight E8257D MY53401106 04-14-2014 04-13-2015 Signal Generator Keysight E8257D MY53401106 04-14-2014 04-13-2015 Temperature/ Humidity Indicator TAYLOR 1451 5190 07-10-2014 07-09-2015 Temperature/ Humidity Indicator Communication test set Agilent E5515C G847050533 01-13-2015 01-12-2016 Cable line Fulai(7M) SF106 5219/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5219/6A 01-13-2015 01-12-2016 Communication test set R&S CMW500 152394 04-19-2015 04-18-2015 Communication test set R&S CMW500 152394 04-19-2015 01-12-2016 High-pass filter(5-18GHz) Sinoscite FLSCX01CA09CL1 01-13-2015 01-12-2016		maturo	NCD/070/10711112		01-13-2015	01-12-2016
LISN schwarzbeck NNBM8125 81251546 07-09-2014 07-08-2015 LISN schwarzbeck NNBM8125 81251546 07-09-2015 07-08-2016 Signal Generator Agilent E4438C MY45095744 04-19-2014 04-18-2015 Signal Generator Keysight E8257D MY53401106 04-14-2014 04-13-2015 Signal Generator Keysight E8257D MY53401106 04-14-2015 04-13-2016 Temperature/ Humidity Indicator TAYLOR 1451 5190 07-10-2014 07-09-2015 Temperature/ Humidity Indicator TAYLOR 1451 5190 07-10-2015 07-09-2016 Communication test set Agilent E5515C GB47050533 01-13-2015 01-12-2016 Cable line Fulai(7M) SF106 5219/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5219/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5216/6A 01-13-2015 01-12-2016 <	LISN	schwarzbeck	NNBM8125	81251547	07-09-2014	07-08-2015
LISN schwarzbeck NNBM8125 81251546 07-09-2015 07-08-2016 Signal Generator Agilent E4438C MY45095744 04-19-2014 04-18-2015 Signal Generator Agilent E4438C MY45095744 04-19-2015 04-18-2016 Signal Generator Keysight E8257D MY53401106 04-14-2014 04-13-2016 Temperature/ Humidity Indicator TAYLOR 1451 5190 07-10-2014 07-09-2015 Temperature/ Humidity Indicator TAYLOR 1451 5190 07-10-2015 07-09-2016 Communication test set Agilent E5515C GB47050533 01-13-2015 01-12-2016 Cable line Fulai(7M) SF106 5219/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5220/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5216/6A 01-13-2015 01-12-2016 Communication test set R&S CMW500 152394 04-19-2014 04-18-2015 <td>LISN</td> <td>schwarzbeck</td> <td>NNBM8125</td> <td>81251547</td> <td>07-09-2015</td> <td>07-08-2016</td>	LISN	schwarzbeck	NNBM8125	81251547	07-09-2015	07-08-2016
Signal Generator Agilent E4438C MY45095744 04-19-2014 04-18-2015 Signal Generator Agilent E4438C MY45095744 04-19-2015 04-18-2016 Signal Generator Keysight E8257D MY53401106 04-14-2014 04-13-2015 Signal Generator Keysight E8257D MY53401106 04-14-2015 04-13-2016 Temperature/ Humidity Indicator TAYLOR 1451 5190 07-10-2014 07-09-2015 Temperature/ Humidity Indicator TAYLOR 1451 5190 07-10-2015 07-09-2016 Communication test set Agilent E5515C GB47050533 01-13-2015 01-12-2016 Cable line Fulai(7M) SF106 5219/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5220/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5216/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5217/6A 01-13-2015 01-12-2016	LISN	schwarzbeck	NNBM8125	81251546	07-09-2014	07-08-2015
Signal Generator Agilent E4438C MY45095744 04-19-2015 04-18-2016 Signal Generator Keysight E8257D MY53401106 04-14-2014 04-13-2016 Signal Generator Keysight E8257D MY53401106 04-14-2015 04-13-2016 Temperature/ Humidity Indicator TAYLOR 1451 5190 07-10-2014 07-09-2015 Temperature/ Humidity Indicator TAYLOR 1451 5190 07-10-2015 07-09-2016 Communication test set Agilent E5515C GB47050533 01-13-2015 01-12-2016 Cable line Fulai(7M) SF106 5219/6A 01-13-2015 01-12-2016 Cable line Fulai(6M) SF106 5220/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5216/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5217/6A 01-13-2015 01-12-2016 Communication test set R&S CMW500 152394 04-19-2014 04-18-2016	LISN	schwarzbeck	NNBM8125	81251546	07-09-2015	07-08-2016
Signal Generator Keysight E8257D MY53401106 04-14-2014 04-13-2015 Signal Generator Keysight E8257D MY53401106 04-14-2015 04-13-2016 Temperature/ Humidity Indicator TAYLOR 1451 5190 07-10-2014 07-09-2015 Temperature/ Humidity Indicator TAYLOR 1451 5190 07-10-2015 07-09-2016 Communication test set Agilent E5515C GB47050533 01-13-2015 01-12-2016 Cable line Fulai(7M) SF106 5219/6A 01-13-2015 01-12-2016 Cable line Fulai(6M) SF106 5220/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5216/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5217/6A 01-13-2015 01-12-2016 Communication test set R&S CMW500 152394 04-19-2014 04-18-2015 Communication test set R&S CMW500 152394 04-19-2015 04-18-2016	Signal Generator	Agilent	E4438C	MY45095744	04-19-2014	04-18-2015
Signal Generator Keysight E8257D MY53401106 04-14-2015 04-13-2016 Temperature/ Humidity Indicator TAYLOR 1451 5190 07-10-2014 07-09-2015 Temperature/ Humidity Indicator TAYLOR 1451 5190 07-10-2015 07-09-2016 Communication test set Agilent E5515C GB47050533 01-13-2015 01-12-2016 Cable line Fulai(7M) SF106 5219/6A 01-13-2015 01-12-2016 Cable line Fulai(6M) SF106 5220/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5216/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5217/6A 01-13-2015 01-12-2016 Communication test set R&S CMW500 152394 04-19-2014 04-18-2015 Communication test set R&S CMW500 152394 04-19-2015 04-18-2016 High-pass filter(5- 18GHz) Sinoscite FL3CX03WG18NM 12-0398-002 01-13-2015 01-12-2016	Signal Generator	Agilent	E4438C	MY45095744	04-19-2015	04-18-2016
Temperature/ Humidity Indicator TAYLOR 1451 5190 07-10-2014 07-09-2015 Temperature/ Humidity Indicator TAYLOR 1451 5190 07-10-2015 07-09-2016 Communication test set Agilent E5515C GB47050533 01-13-2015 01-12-2016 Cable line Fulai(7M) SF106 5219/6A 01-13-2015 01-12-2016 Cable line Fulai(6M) SF106 5220/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5216/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5217/6A 01-13-2015 01-12-2016 Communication test set R&S CMW500 152394 04-19-2014 04-18-2015 Communication test set R&S CMW500 152394 04-19-2015 04-18-2016 High-pass filter(3- 18GHz) Sinoscite FL3CX03WG18NM 12-0398-002 01-13-2015 01-12-2016 Hoad rejection filter Sinoscite FL5CX01CA09CL1 01-13-2015 01-12-2016	Signal Generator	Keysight	E8257D	MY53401106	04-14-2014	04-13-2015
Humidity Indicator	Signal Generator	Keysight	E8257D	MY53401106	04-14-2015	04-13-2016
Humidity Indicator TAYLOR 1451 5190 07-10-2015 07-09-2016 Communication test set Agilent E5515C GB47050533 01-13-2015 01-12-2016 Cable line Fulai(7M) SF106 5219/6A 01-13-2015 01-12-2016 Cable line Fulai(6M) SF106 5220/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5216/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5217/6A 01-13-2015 01-12-2016 Communication test set R&S CMW500 152394 04-19-2014 04-18-2015 Communication test set R&S CMW500 152394 04-19-2015 04-18-2016 High-pass filter(3-18GHz) Sinoscite FL3CX03WG18NM 12-0398-002 01-13-2015 01-12-2016 Hand rejection filter Sinoscite FL5CX01CA09CL1 01-13-2015 01-12-2016		TAYLOR	1451	5190	07-10-2014	07-09-2015
test set Agrient E5515C GB47050533 01-13-2015 01-12-2016 Cable line Fulai(7M) SF106 5219/6A 01-13-2015 01-12-2016 Cable line Fulai(6M) SF106 5220/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5216/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5217/6A 01-13-2015 01-12-2016 Communication test set R&S CMW500 152394 04-19-2014 04-18-2015 Communication test set R&S CMW500 152394 04-19-2015 04-18-2016 High-pass filter(3-18GHz) Sinoscite FL3CX03WG18NM 12-0398-002 01-13-2015 01-12-2016 High-pass filter(5-18GHz) MICRO-TRONICS SPA-F-63029-4 01-13-2015 01-12-2016 Hand rejection filter Sinoscite FL5CX01CA09CL1 01-13-2015 01-13-2015 01-13-2016		TAYLOR	1451	5190	07-10-2015	07-09-2016
Cable line Fulai(6M) SF106 5220/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5216/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5217/6A 01-13-2015 01-12-2016 Communication test set R&S CMW500 152394 04-19-2014 04-18-2015 Communication test set R&S CMW500 152394 04-19-2015 04-18-2016 High-pass filter(3-18GHz) Sinoscite FL3CX03WG18NM 12-0398-002 01-13-2015 01-12-2016 High-pass filter(5-18GHz) MICRO-TRONICS SPA-F-63029-4 01-13-2015 01-12-2016 Hand rejection filter Sinoscite FL5CX01CA09CL1 01-13-2015 01-13-2016		Agilent	E5515C	GB47050533	01-13-2015	01-12-2016
Cable line Fulai(3M) SF106 5216/6A 01-13-2015 01-12-2016 Cable line Fulai(3M) SF106 5217/6A 01-13-2015 01-12-2016 Communication test set R&S CMW500 152394 04-19-2014 04-18-2015 Communication test set R&S CMW500 152394 04-19-2015 04-18-2016 High-pass filter(3-18GHz) Sinoscite FL3CX03WG18NM 12-0398-002 01-13-2015 01-12-2016 High-pass filter(5-18GHz) MICRO-TRONICS SPA-F-63029-4 01-13-2015 01-12-2016 Pand rejection filter Sinoscite FL5CX01CA09CL1 01-13-2015 01-13-2016	Cable line	Fulai(7M)	SF106	5219/6A	01-13-2015	01-12-2016
Cable line Fulai(3M) SF106 5217/6A 01-13-2015 01-12-2016 Communication test set R&S CMW500 152394 04-19-2014 04-18-2015 Communication test set R&S CMW500 152394 04-19-2015 04-18-2016 High-pass filter(3-18GHz) Sinoscite FL3CX03WG18NM 12-0398-002 01-13-2015 01-12-2016 High-pass filter(5-18GHz) MICRO-TRONICS SPA-F-63029-4 01-13-2015 01-12-2016 Pand rejection filter Sinoscite FL5CX01CA09CL1 01-13-2015 01-12-2016	Cable line	Fulai(6M)	SF106	5220/6A	01-13-2015	01-12-2016
Communication test set R&S CMW500 152394 04-19-2014 04-18-2015 Communication test set R&S CMW500 152394 04-19-2015 04-18-2016 High-pass filter(3-18GHz) Sinoscite FL3CX03WG18NM 12-0398-002 01-13-2015 01-12-2016 High-pass filter(5-18GHz) MICRO-TRONICS SPA-F-63029-4 01-13-2015 01-12-2016 band rejection filter Sinoscite FL5CX01CA09CL1 01-13-2015 01-12-2016	Cable line	Fulai(3M)	SF106	5216/6A	01-13-2015	01-12-2016
test set R&S CMW500 152394 04-19-2014 04-18-2015 Communication test set R&S CMW500 152394 04-19-2015 04-18-2016 High-pass filter(3-18GHz) Sinoscite FL3CX03WG18NM 12-0398-002 01-13-2015 01-12-2016 High-pass filter(5-18GHz) MICRO-TRONICS SPA-F-63029-4 01-13-2015 01-12-2016 hand rejection filter Sinoscite FL5CX01CA09CL1 01-13-2015 01-13-2016	Cable line	Fulai(3M)	SF106	5217/6A	01-13-2015	01-12-2016
test set R&S CMW500 152394 04-19-2015 04-18-2016 High-pass filter(3- 18GHz) Sinoscite FL3CX03WG18NM 12-0398-002 01-13-2015 01-12-2016 High-pass filter(5- 18GHz) MICRO- TRONICS SPA-F-63029-4 01-13-2015 01-12-2016 hand rejection filter Sinoscite FL5CX01CA09CL1 01-13-2015 01-13-2016		R&S	CMW500	152394	04-19-2014	04-18-2015
High-pass filter(5-18GHz) MICRO-TRONICS SPA-F-63029-4		R&S	CMW500	152394	04-19-2015	04-18-2016
18GHz) TRONICS SPA-F-63029-4 01-13-2015 01-12-2016		Sinoscite			01-13-2015	01-12-2016
	• • • • • • • • • • • • • • • • • • • •		SPA-F-63029-4		01-13-2015	01-12-2016
	band rejection filter	Sinoscite			01-13-2015	01-12-2016

Hotline: 400-6788-333 www.cti-cert.com E-mail: info@cti-cert.com Complaint call: 0755-33681700 Complaint E-mail: complaint@cti-cert.com







Page 14 of 95

band rejection filter	Sinoscite	FL5CX01CA08CL1 2-0393-001	 01-13-2015	01-12-2016
band rejection filter	Sinoscite	FL5CX02CA04CL1 2-0396-002	01-13-2015	01-12-2016
band rejection filter	Sinoscite	FL5CX02CA03CL1 2-0394-001	 01-13-2015	01-12-2016



























































































Page 15 of 95

8 Radio Technical Requirements Specification

Reference documents for testing:

No.	Identity	Document Title
1	FCC Part15C (2014)	Subpart C-Intentional Radiators
2	ANSI C63.10-2013	American National Standard for Testing Unlicesed Wireless Devices

Test Results List:

Cot Neodito Elot.	1 1	C24.1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1. 196.0
Test Requirement	Test method	Test item	Verdict	Note
Part15C Section 15.247 (b)(3)	ANSI C63.10	Conducted Peak Output Power	PASS	Appendix A)
Part15C Section 15.247 (a)(2)	ANSI C63.10	6dB Occupied Bandwidth	PASS	Appendix B)
Part15C Section 15.247(d)	ANSI C63.10	Band-edge for RF Conducted Emissions	PASS	Appendix C)
Part15C Section 15.247(d)	ANSI C63.10	RF Conducted Spurious Emissions	PASS	Appendix D)
Part15C Section 15.247 (e)	ANSI C63.10	Power Spectral Density	PASS	Appendix E)
Part15C Section 15.203/15.247 (c)	ANSI C63.10	Antenna Requirement	PASS	Appendix F)
Part15C Section 15.207	ANSI C63.10	AC Power Line Conducted Emission	PASS	Appendix G)
Part15C Section 15.205/15.209	ANSI C63.10	Restricted bands around fundamental frequency (Radiated Emission)	PASS	Appendix H)
Part15C Section 15.205/15.209	ANSI C63.10	Radiated Spurious Emissions	PASS	Appendix H)





































Appendix A) Conducted Peak Output Power Result Table

Mode	Antenna	Channel	Conducted Peak Output Power [dBm]	Verdict
11B	Ant1	LCH	17.79	PASS
11B	Ant2	LCH	18.54	PASS
11B	Ant1	MCH	18.16	PASS
11B	Ant2	MCH	19.03	PASS
11B	Ant1	НСН	18.14	PASS
11B	Ant2	HCH	19.13	PASS
11G	Ant1	LCH	15.48	PASS
11G	Ant2	LCH	15.67	PASS
11G	Ant1	MCH	15.62	PASS
11G	Ant2	MCH	16.14	PASS
11G	Ant1	HCH	15.56	PASS
11G	Ant2	нсн	16.17	PASS
11N20SISO	Ant1	LCH	15.20	PASS
11N20SISO	Ant2	LCH	15.53	PASS
11N20SISO	Ant1	MCH	15.45	PASS
11N20SISO	Ant2	МСН	17.73	PASS
11N20SISO	Ant1	HCH	15.31	PASS
11N20SISO	Ant2	HCH	15.99	PASS
11N20MIMO	Ant1+Ant2	LCH	18.38	PASS
11N20MIMO	Ant1+Ant2	MCH	19.75	PASS
11N20MIMO	Ant1+Ant2	HCH	18.67	PASS
11N40SISO	Ant1	LCH	13.39	PASS
11N40SISO	Ant2	LCH	15.14	PASS
11N40SISO	Ant1	MCH	14.78	PASS
11N40SISO	Ant2	MCH	15.31	PASS
11N40SISO	Ant1	HCH	14.84	PASS
11N40SISO	Ant2	НСН	15.35	PASS
11N40MIMO	Ant1+Ant2	LCH	17.36	PASS
11N40MIMO	Ant1+Ant2	MCH	18.06	PASS
11N40MIMO	Ant1+Ant2	HCH	18.11	PASS



















Page 17 of 95

Test Graph

Remark: Detector is Peak













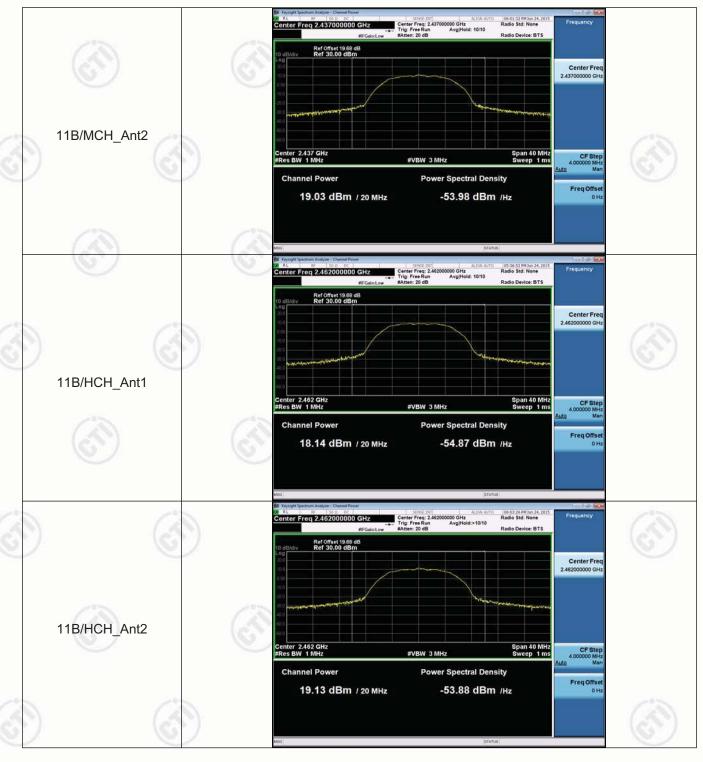








Page 18 of 95



















































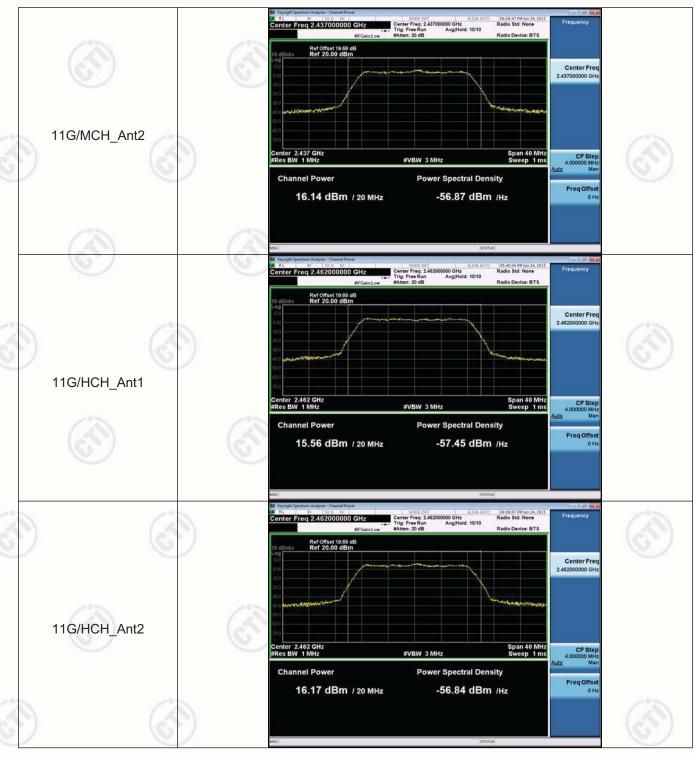






































Page 21 of 95





















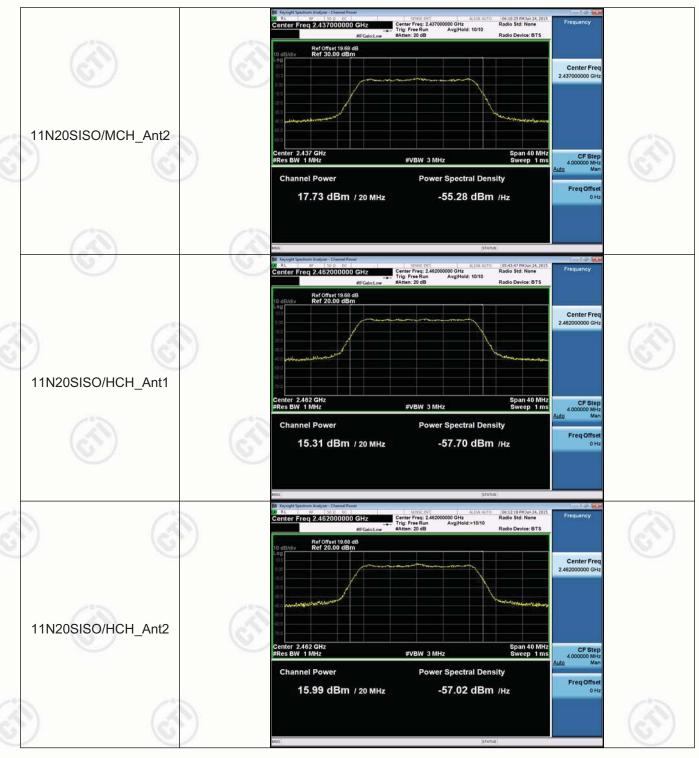






































Page 23 of 95





























Page 24 of 95



























Page 25 of 95

Appendix B) 6dB Occupied Bandwidth Result Table

Result T	able	700	2.5		
Mode	Antenna	Channel	6dB Bandwidth [MHz]	99% OBW [MHz]	Verdict
11B	Ant1	LCH	9.013	12.106	PASS
11B	Ant2	LCH	8.348	12.092	PASS
11B	Ant1	MCH	8.585	12.082	PASS
11B	Ant2	MCH	8.319	12.088	PASS
11B	Ant1	HCH	9.303	12.119	PASS
11B	Ant2	HCH	8.286	12.052	PASS
11G	Ant1	LCH	16.49	16.469	PASS
11G	Ant2	LCH	16.35	16.470	PASS
11G	Ant1	MCH	16.45	16.474	PASS
11G	Ant2	MCH	16.37	16.457	PASS
11G	Ant1	HCH	16.46	16.459	PASS
11G	Ant2	HCH	16.32	16.455	PASS
11N20SISO	Ant1	LCH	17.62	17.567	PASS
11N20SISO	Ant2	LCH	17.25	17.569	PASS
11N20SISO	Ant1	MCH	17.63	17.576	PASS
11N20SISO	Ant2	MCH	17.63	17.571	PASS
11N20SISO	Ant1	HCH	17.62	17.575	PASS
11N20SISO	Ant2	НСН	16.94	17.574	PASS
11N40SISO	Ant1	LCH	36.40	36.217	PASS
11N40SISO	Ant2	LCH	35.08	36.211	PASS
11N40SISO	Ant1	MCH	36.35	36.193	PASS
11N40SISO	Ant2	MCH	35.06	36.176	PASS
11N40SISO	Ant1	НСН	36.38	36.208	PASS
11N40SISO	Ant2	HCH	35.06	36.112	PASS





































Page 26 of 95

Test Graph

Remark: Detector is Peak





















Page 27 of 95























































































































Page 31 of 95



























Page 32 of 95





















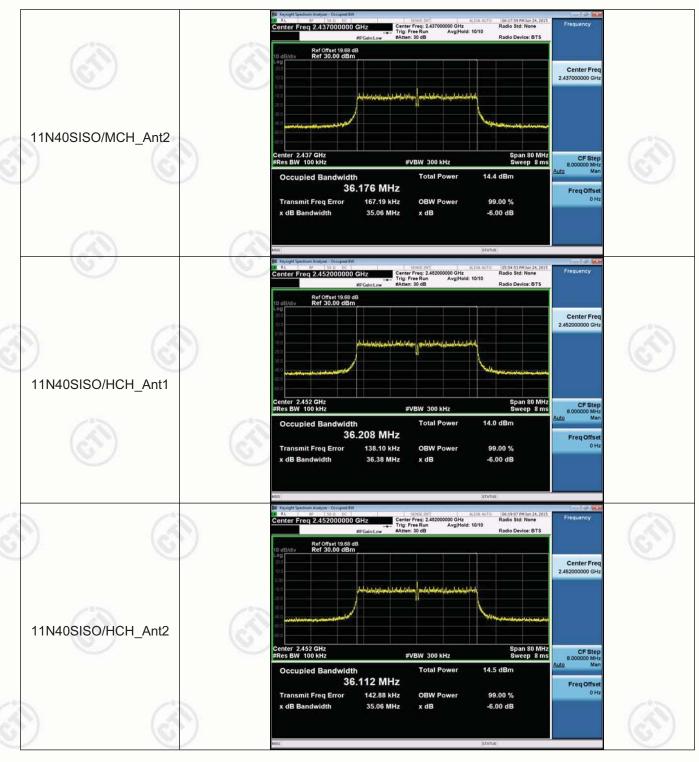








Page 33 of 95

















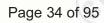












Appendix C) Band-edge for RF Conducted Emissions

Test Graph





















Page 35 of 95



























































Page 38 of 95























Report No.: EED32H000334-1





Page 39 of 95









Appendix D) RF Conducted Spurious Emissions Test Graph









Page 41 of 95





































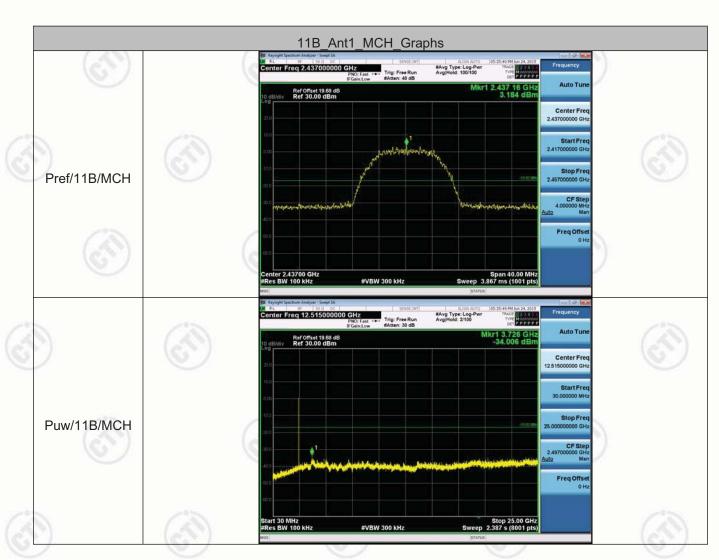
















































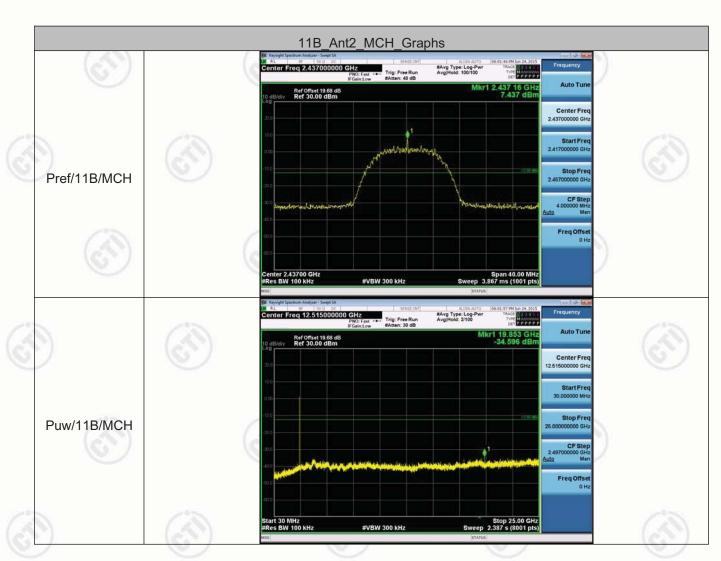








Page 43 of 95





































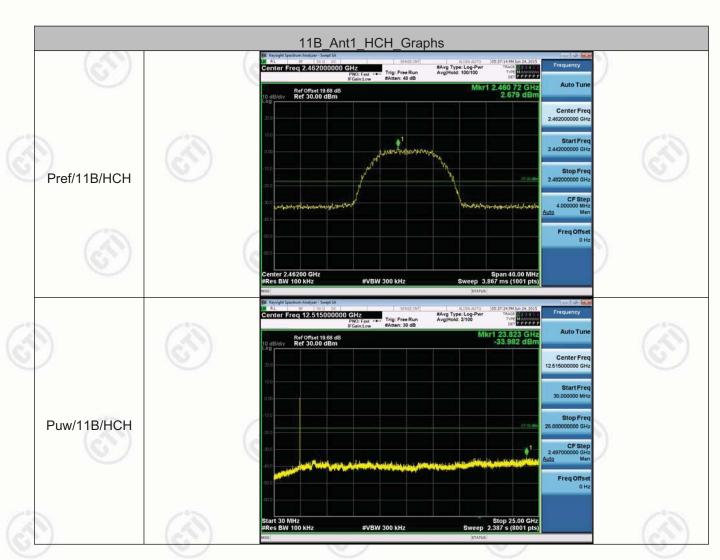




































































































Page 46 of 95















































Page 47 of 95







































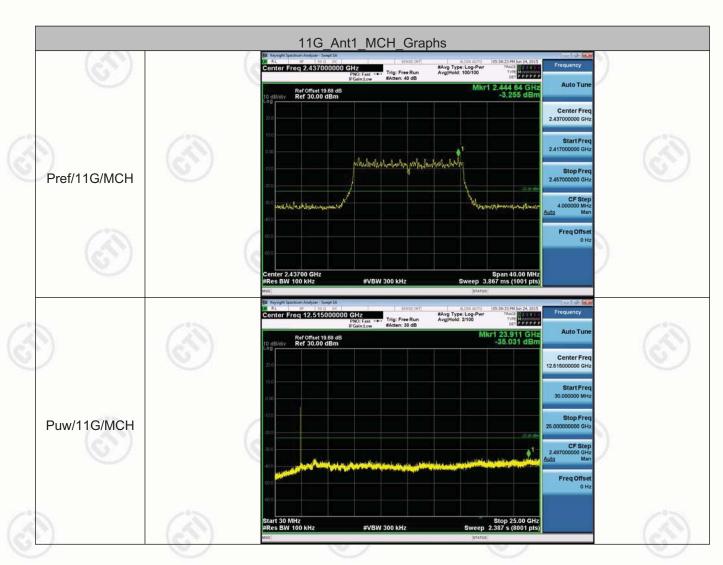






















































Page 49 of 95













































Page 50 of 95





































