Company: Aruba Networks

Test of: APIN0324, APIN0325 Wireless Access Point

To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)

Report No.: ARUB198-U3a Conducted Rev A

CONDUCTED TEST REPORT





Test of: Aruba Networks APIN0324, APIN0325 Wireless Access Point

to

To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)

Test Report Serial No.: ARUB198-U3a Conducted Rev A

Note: this report is one of a set of three reports that together address the requirements for FCC 15.407

Report Number	Test Report Type
ARUB198-U3a	Conducted Test Report
ARUB198-U3b	Radiated Test Report
ARUB198-U3c	DFS Test Report

This report supersedes: NONE

Applicant:	Aruba Networks 1344 Crossman Ave. Sunnyvale, California 94089-1113 USA
Product Function:	Transmission of voice and data traffic

Issue Date: 21st July 2015

This Test Report is Issued Under the Authority of:

MiCOM Labs, Inc. 575 Boulder Court Pleasanton California 94566 USA Phone: +1 (925) 462-0304 Fax: +1 (925) 462-0306 www.micomlabs.com



MiCOM Labs is an ISO 17025 Accredited Testing Laboratory



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1. ACCREDITATION, LISTINGS & RECOGNITION

1.1. TESTING ACCREDITATION

MiCOM Labs, Inc. is an accredited Electrical testing laboratory per the international standard ISO/IEC 17025:2005. The company is accredited by the American Association for Laboratory Accreditation (A2LA) <u>www.a2la.org</u> test laboratory number 2381.01. MiCOM Labs test schedule is available at the following URL; <u>http://www.a2la.org/scopepdf/2381-01.pdf</u>





1.2. RECOGNITION

MiCOM Labs, Inc has widely recognized wireless testing capabilities. Our international recognition includes Conformity Assessment Body designation by APEC MRA countries. MiCOM Labs test reports are accepted globally.

Country	Recognition Body	Status	Phase	Identification No.
USA	Federal Communications Commission (FCC)	ТСВ	-	US0159 Listing #: 102167
Canada	Industry Canada (IC)	FCB	APEC MRA 2	US0159 Listing #: 4143A-2 4143A-3
Japan	MIC (Ministry of Internal Affairs and Communication)	CAB	APEC MRA 2	RCB 210
	VCCI			A-0012
Europe	European Commission	NB	EU MRA	NB 2280
Australia	Australian Communications and Media Authority (ACMA)	CAB	APEC MRA 1	
Hong Kong	Office of the Telecommunication Authority (OFTA)	CAB	APEC MRA 1	
Korea	Ministry of Information and Communication Radio Research Laboratory (RRL)	САВ	APEC MRA 1	
Singapore	Infocomm Development Authority (IDA)	CAB	APEC MRA 1	US0159
Taiwan	National Communications Commission (NCC) Bureau of Standards, Metrology and Inspection (BSMI)	САВ	APEC MRA 1	
Vietnam	Ministry of Communication (MIC)	CAB	APEC MRA 1	

EU MRA – European Union Mutual Recognition Agreement.

NB – Notified Body

APEC MRA – Asia Pacific Economic Community Mutual Recognition Agreement. Recognition

agreement under which test lab is accredited to regulatory standards of the APEC member countries. Phase I - recognition for product testing

Phase II – recognition for both product testing and certification



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1.3. PRODUCT CERTIFICATION

MiCOM Labs, Inc. is an accredited Product Certification Body per the international standard ISO/IEC 17065:2012. The company is accredited by the American Association for Laboratory Accreditation (A2LA) <u>www.a2la.org</u> test laboratory number 2381.02. MiCOM Labs test schedule is available at the following URL; <u>http://www.a2la.org/scopepdf/2381-02.pdf</u>



United States of America – Telecommunication Certification Body (TCB) Industry Canada – Certification Body, CAB Identifier – US0159 Europe – Notified Body (NB), NB Identifier - 2280 Japan – Recognized Certification Body (RCB), RCB Identifier - 210



2. DOCUMENT HISTORY

Document History				
Revision	Date	Comments		
Draft	26 th June 2015			
Draft #2	10 th July 2015			
Rev A	21 st July 2015	Initial Release		

In the above table the latest report revision will replace all earlier versions.



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3. TEST RESULT CERTIFICATE

Manufacturer:	Aruba Networks
	1344 Crossman Ave.
	Sunnyvale California 94089-1113
	004

Model: APIN0324, APIN0325

Type Of Equipment: Wireless Access Point

S/N's: DD0000489 (Model No.: APIN0324)

Test Date(s): 11th – 12th June 2015

Tested By: MiCOM Labs, Inc. 575 Boulder Court Pleasanton California 94566 USA

Telephone: +1 925 462 0304 Fax: +1 925 462 0306

TEST RESULTS

EQUIPMENT COMPLIES

Website: www.micomlabs.com

STANDARD(S)

FCC CFR 47 Part 15 Subpart E 15.407 (Conducted RF Data Only)

MiCOM Labs, Inc. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.

Notes:

1. This document reports conditions under which testing was conducted and the results of testing performed.

2. Details of test methods used have been recorded and kept on file by the laboratory.

3. Test results apply only to the item(s) tested.

Approved & Released for MiCOM Labs, Inc. by:

Graeme Grieve Quality Manager MiCOM Labs, Inc.



Gordon Hurst President & CEO MiCOM Labs, Inc.

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4. REFERENCES AND MEASUREMENT UNCERTAINTY

4.1. Normative References

REF.	PUBLICATION	YEAR	TITLE
I	KDB 662911	Oct 31 2013	Guidance for measurement of output emission of devices that employ single transmitter with multiple outputs or systems with multiple transmitters operating simultaneously in the same frequency band
П	KDB 905462 D07 v01	10th June 2015	Test guidance to demonstrate compliance for U-NII devices subject to DFS requirements.
- 111	KDB 926956 DO1 v01r02	17th October 2014	U-NII Device Transition Plan
IV	KDB 789033 D02 v01	6th June 2014	General UNII Test Procedures New Rules V01
V	A2LA	June 2015	R105 - Requirement's When Making Reference to A2LA Accreditation Status
VI	ANSI C63.10	2013	American National Standard for Testing Unlicensed Wireless Devices
VII	ANSI C63.4	2014	American National Standards for Methods of Measurement of Radio-Noise Emissions from Low- Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
VIII	CISPR 22	2008	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement
іх	ETSI TR 100 028	2001-12	Parts 1 and 2 Electromagnetic compatibility and Radio Spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics
Х	FCC 06-96	Jun 3 2006	Memorandum Opinion and Order
XI	FCC 47 CFR Part 15.407	2014	Radio Frequency Devices; Subpart E – Unlicensed National Information Infrastructure Devices
XII	ICES-003	Issue 5 2012	Spectrum Management and Telecommunications; Interference-Causing Equipment Standard. Information Technology Equipment (ITE) – Limits and methods of measurement.
ХШ	M 3003	Edition 3 Nov. 2012	Expression of Uncertainty and Confidence in Measurements
XIV	RSS-247, Issue 1	May 2015	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices
XV	RSS-Gen, Issue 4	Nov 2014	General Requirements and Information for the Certification of Radiocommunication Equipment
XVI	KDB 644545 D03 v01	August 14th 2014	Guidance for IEEE 802.11ac New Rules
XVII	FCC 47 CFR Part 2.1033	2014	FCC requirements and rules regarding photographs and test setup diagrams.



4.2. Test and Uncertainty Procedure

Conducted and radiated emission measurements were conducted in accordance with American National Standards Institute ANSI C63.4, listed in the Normative References section of this report.

Measurement uncertainty figures are calculated in accordance with ETSI TR 100 028 Parts 1 and 2.

Measurement uncertainties stated are based on a standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95 % in accordance with UKAS document M 3003 listed in the Normative References section of this report.



5. PRODUCT DETAILS AND TEST CONFIGURATIONS

5.1. Technical Details

Details	Description
Purpose:	Test of the Aruba Networks APIN0324, APIN0325 to FCC CFR 47
	Part 15 Subpart E new 15.407.
	Radio Frequency Devices; Subpart E – Unlicensed National
	Information Infrastructure Devices
Applicant:	Aruba Networks
	1344 Crossman Ave.
Manufacturar	Sunnyvale California 94089-1113 USA
	As Applicant MiCOM Labor Inc
	575 Boulder Court
	Pleasanton California 94566 USA
Test report reference number:	ARUB198-U3a
Date EUT received:	21 st April 2015
Standard(s) applied:	ECC CER 47 Part 15 Subpart E 15 407 RSS-247
Dates of test (from - to):	$10^{\text{th}} - 21^{\text{st}}$ June 2015
No of Units Tested:	1
Type of Equipment:	802.11 a/b/g/n/ac Wireless Access Point 4x4 Spacial Multiplexing
51	MIMO Configuration
Product Family Name:	Wireless Access Point
Model(s):	APIN0324, APIN0325
Location for use:	Indoor
Declared Frequency Range(s):	5250 - 5350; 5470 – 5725 MHz;
Primary function of equipment:	Transmission of voice and data traffic
Secondary function of equipment:	None Provided
Type of Modulation:	OFDM
EUT Modes of Operation:	802.11a; 802.11ac-80; 802.11n HT-20; 802.11n HT-40;
Declared Nominal Output Power (Ave):	+23 dBm
Transmit/Receive Operation:	Transceiver - Half Duplex
Rated Input Voltage and Current:	AC/ DC adaptor (adaptor NOT sold with unit) 12Vdc
Operating Temperature Range:	Declared Range 0°C to 40°C
ITU Emission Designator:	802.11a: 16M4D1D
	802.11ac-80: 75M9D1D
	802.11n HT-20: 17M7D1D
Equipment Dimensioner	802.11n H1-40: 36M2D1D
	AF INVOZ4. 20411111 X 20411111 X 3011111 / 8.0 X 8.0 X 2.2 (WXDXH) APINI0325: 204mm x 204mm x 35mm / 8.0" x 8.0" x 1.4" ($M/vDyH$)
Weight:	APIN0324: 0.8 kg
l weight.	APIN0325: 0.8 kg
Hardware Rev:	3.0
Software Rev:	3.0



5.2. Scope Of Test Program

Aruba Networks APIN0324, APIN0325

The scope of the test program was to test the Aruba Networks APIN0324, APIN0325, 802.11 a/b/g/n/ac Wireless Access Point 4x4 Spacial Multiplexing MIMO Configuration configurations in the frequency ranges 5250 - 5350 MHz; 5470 - 5725 MHz (DFS Bands) for compliance against the following specification:

FCC CFR 47 Part 15 Subpart E 15.407

Radio Frequency Devices; Subpart E – Unlicensed National Information Infrastructure Devices



Aruba Networks APIN0324 (External Antenna)

APIN0324 - Top View

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Aruba APIN0325 - Top view



5.3. Equipment Model(s) and Serial Number(s)

Туре	Description	Manufacturer	Model	Serial no.	Delivery Date
EUT	Conducted Unit	Aruba Networks	APIN0324	DD0000489	21 st April 2015
Support Equipment	Laptop Computer with EUT RF Software	DELL	Latitude E5440	7057172342	21 st April 2015

5.4. Antenna Details

Туре	Manufacturer	Model	Family	Gain (dBi)	BF Gain	Dir BW	X-Pol	Frequency Band (MHz)
integral	Aruba Networks	APIN0325	Metal Sheet	5.5	3.5	360	-	5150 - 5250 5250 - 5350 5470 - 5725 5725 - 5850
external	Aruba Networks	AP-ANT- 1W	ΟΜΝΙ	5.8	6.0	360	-	5150 - 5250 5250 - 5350 5470 - 5725 5725 - 5850
external	Aruba Networks	AP-ANT- 13B	Downtilt OMNI	3.3	6.0	360	-	5150 - 5250 5250 - 5350 5470 - 5725 5725 - 5850
external	Aruba Networks	AP-ANT- 19	OMNI	6.0	6.0	360	-	5150 - 5250 5250 - 5350 5470 - 5725 5725 - 5850
external	Aruba Networks	AP-ANT- 20W	OMNI	2.0	6.0	360	-	5150 - 5250 5250 - 5350 5470 - 5725 5725 - 5850
external	Aruba Networks	AP-ANT- 40	Downtilt OMNI	5.0	3.0	360	-	5150 - 5250 5250 - 5350 5470 - 5725 5725 - 5850
external	Aruba Networks	AP-ANT- 45	Multipolarized	5.0	3.0	360	-	5150 - 5250 5250 - 5350 5470 - 5725 5725 - 5850
external	Aruba Networks	AP-ANT- 48	Multipolarized	8.5	3.0	360	-	5150 - 5250 5250 - 5350 5470 - 5725 5725 - 5850
BF Gain - Beamforming Gain Dir BW - Directional BeamWidth X-Pol - Cross Polarization								



5.5. Cabling and I/O Ports

Port Type	Max Cable Length	# Of Ports	Screened	Conn Type	Data Type
Ethernet	100m	2	N	RJ-45	Packet Data
RS232	0.5m	1	N	RJ-45	Digital

5.6. Test Configurations

Results for the following configurations are provided in this report:

Operational Mode(s)	Data Rate with Highest Power	Channel Frequency (MHz)			
(802.11a/b/g/n/ac)	MBit/s	Low	Mid	High	
		5250 - 5350 MHz			
802.11a	6	5,260.00	5,300.00	5,320.00	
802.11ac-80	29.3			5,290.00	
802.11n HT-20	6.5	5,260.00	5,300.00	5,320.00	
802.11n HT-40	13.5	5,270.00		5,310.00	
		5470 - 5725 MHz			
802.11a	6	5,500.00	5,580.00	5,720.00	
802.11ac-80	29.3	5,530.00	5,610.00	5,690.00	
802.11n HT-20	6.5	5,500.00	5,580.00	5,720.00	
802.11n HT-40	13.5	5,510.00	5,550.00	5,710.00	

5.7. Equipment Modifications

The following modifications were required to bring the equipment into compliance:

1. NONE

5.8. Deviations from the Test Standard

The following deviations from the test standard were required in order to complete the test program:

1. NONE



6. TEST SUMMARY

List of Measurements	-	
Test Header	Result	Data Link
(a) Peak Transmit Power	Complies	View Data
(a) 26 dB & 99% Bandwidth	Complies	View Data
(a)(5) Power Spectral Density	Complies	View Data
(h)(1) Transmit Power Control (TPC)	Not Tested	-



7. TEST EQUIPMENT CONFIGURATION(S)

7.1. Conducted

Conducted RF Emission Test Set-up

The following tests were performed using the conducted test set-up shown in the diagram below.

Peak Transmit Power, report section 9.1 2. 26 dB & 99% Bandwidth, report section 9.2

3. Power Spectral Density, report section 9.3



Conducted Test Measurement Setup

A full system calibration was performed on the test station and any resulting system losses (or gains) were taken into account in the production of all final measurement data.



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Asset#	Description	Manufacturer	Model#	Serial#	Calibration Due Date
158	Barometer/Thermometer	Control Company	4196	E2846	04 Dec 2015
193	Receiver 20 Hz to 7 GHz	Rhode & Schwarz	ESI 7	838496/007	14 Jan 2016
249	Resistance Thermometer	Thermotronics	GR2105-02	9340 #2	30 Oct 2015
287	Rohde & Schwarz 40 GHz Receiver	Rhode & Schwarz	ESIB40	100201	31 Jul 2015
361	Desktop for RF#1, Labview Software installed	Dell	Vostro 220	WS RF#1	Not Required
378	Rohde & Schwarz 40 GHz Receiver with Generator	Rhode & Schwarz	ESIB40	100107/040	17 Jul 2015
380	4x4 RF Switch Box	MiCOM Labs	MiTest RF Switch Box	MIC001	30 Jun 2015
390	USB Power Head 50MHz - 24GHz -60 to +20dBm	Agilent	U2002A	MY50000103	17 Oct 2015
398	Test Software	MiCOM	MiTest ATS	Version 1.9	Not Required
405	DC Power Supply 0-60V	Agilent	6654A	MY4001826	Cal when used
408	USB to GPIB interface	National Instruments	GPIB-USB HS	14C0DE9	Not Required
436	USB Wideband Power Sensor	Boonton	55006	8731	31 Jul 2015
437	USB Wideband Power Sensor	Boonton	55006	8759	31 Jul 2015
445	PoE Injector	D-Link	DPE-101GL	QTAH1E2000625	Not Required
75	Environmental Chamber	Thermatron	SE-300-2-2	27946	28 Nov 2015
RF#1 GPIB#1	GPIB cable to Power Supply	HP	GPIB	None	Not Required
RF#1 SMA#1	EUT to Mitest box port 1	Flexco	SMA Cable port1	None	30 Jun 2015
RF#1 SMA#2	EUT to Mitest box port 2	Flexco	SMA Cable port2	None	30 Jun 2015
RF#1 SMA#3	EUT to Mitest box port 3	Flexco	SMA Cable port3	None	30 Jun 2015
RF#1 SMA#4	EUT to Mitest box port 4	Flexco	SMA Cable port4	None	30 Jun 2015
RF#1 SMA#SA	Mitest box to SA	Flexco	SMA Cable SA	None	30 Jun 2015
RF#1 USB#1	USB Cable to Mitest Box	Dynex	USB Cable	None	Not Required

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8. MEASUREMENT AND PRESENTATION OF TEST DATA

The measurement and graphical data presented in this test report was generated automatically using state-of-the-art technology creating an easy to read report structure. Numerical measurement data is separated from supporting graphical data (plots) through hyperlinks. Numerical measurement data can be reviewed without scrolling through numerous graphical pages to arrive at the next data matrix.

Plots have been relegated into the Appendix 'Graphical Data'.

Test and report automation was performed by <u>MiTest</u>. <u>MiTest</u> is an automated test system developed by MiCOM Labs. <u>MiTest</u> is the first cloud based modular test system enabling end-to-end automation of regulatory compliance testing for conducted RF testing.





The MiCOM Labs "MiTest" Automated Test System" (Patent Pending)

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9. TEST RESULTS

9.1. Peak Transmit Power

Conducted Test Conditions for Maximum Conducted Output Power							
Standard:	FCC CFR 47:15.407	Ambient Temp. (°C):	24.0 - 27.5				
Test Heading:	Maximum Conducted Output Power	Rel. Humidity (%):	32 - 45				
Standard Section(s):	15.407 (a)	Pressure (mBars):	999 - 1001				
Reference Document(s):	See Normative References						

Test Procedure for Maximum Conducted Output Power Measurement

Method PM (Measurement using an RF average power meter). KDB 789033 defines a methodology using an average wideband power meter. Measurements were made while the EUT was operating in a continuous transmission mode (100% duty cycle) at the appropriate center frequency. All operational modes and frequency bands were measured independently and the resultant calculated. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured and reported separately. A summation (Σ) of each antenna port output power is provided which includes any offset due to Duty Cycle Correction Factor (DCCF). Testing was performed under ambient conditions at nominal voltage.

Test configuration and setup used for the measurement was per the Conducted Test Set-up section specified in this document. Supporting Information

Calculated Power = $A + G + Y + 10 \log (1/x) dBm$

A = Total Power $[10*Log10 (10^{a/10} + 10^{b/10} + 10^{c/10} + 10^{d/10})]$

G = Antenna Gain

Y = Beamforming Gain

x = Duty Cycle (average power measurements only)

Limits Maximum Conducted Output Power

Operating Frequency Band 5150-5250 MHz

15. 407 (a)(1)

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.



(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Operating Frequency Band 5250-5350 and 5470 – 5725 MHz

15. 407 (a)(2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Operating Frequency Band 5725 - 5850 MHz

15. 407 (a)(3)

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.



Operating Frequency Band 5250 - 5350 and 5470 - 5725 MHz

15. 407 (a)(2)

Maximum Conducted Power

Mode	Frequency Range	Maximum 26 dB Bandwidth	11 + 10 Log (B)	Maximum Power
	(MHz)	(MHz)	(dBm)	Limit
				(dBm)
а		19.170	23.83	+23.83
HT-20		20.000	24.01	+24.00
HT-40	5250 – 5350	43.830	27.42	+24.00
ac-80		90.000	30.54	+24.00
а		19.170	23.83	+23.83
HT-20		20.330	24.08	+24.00
HT-40	5470 – 5725	41.500	27.18	+24.00
ac-80		91.300	30.60	+24.00

Maximum Transmit (Conducted) Power Limits

Maximum Limit 5250 - 5350 and 5470 - 5725 MHz: +24 dBm (+30 dBm/EIRP, 6 dBi antenna)

EUT: Indoor wireless router Antenna gain for both frequency bands: 4.7 dBi

Beamforming Gain

5250 - 5350 and 5470 - 5725 MHz: 3.00 dB

Maximum conducted power = +24 - (4.7 + 3.0 - 6) = +22.30 dBm



Equipment Configuration for Peak Transmit Power

Variant:	802.11a	Duty Cycle (%):	96.0
Data Rate:	6.00 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test Measurement Results										
Test	Measure	d Conducted	Output Pow	er (dBm)	Calculated	Maximum 26 dB	Lingth	Manain		
Frequency	Port(s)				+ DCCF	Bandwidth	Limit	wargin	EUT Power	
MHz	а	b	С	d	Σ Port(s) dBm	MHz	dBm	dBm	Setting	
5260.0	13.45	12.93	12.87	12.62	19.18	19.000	22.13	-2.95	13.50	
5300.0	13.63	13.24	13.02	12.79	19.38	19.080	22.13	-2.75	13.50	
5320.0	13.09	12.49	12.49	12.66	18.89	18.920	22.13	-3.24	13.00	

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK				
Measurement Uncertainty:	±2.81 dB				

Variant:	802.11ac-80	Duty Cycle (%):	91.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Conducted Output Power (dBm) Port(s)				Calculated Total Power + DCCF	Maximum 26 dB Bandwidth	Limit	Margin	EUT Power
MHz	а	b	с	d	Σ Port(s) dBm	MHz	dBm	dBm	Setting
5290.0	15.99	15.64	15.51	15.65	22.13	93.300	22.30	-0.17	16.00

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK				
Measurement Uncertainty:					

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Peak Transmit Power

Variant:	802.11n HT-20	Duty Cycle (%):	98.0
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test Measurement Results									
Test Frequency	Measured Conducted Output Power (dBm) Port(s)			Calculated Total Power + DCCF	Maximum 26 dB Bandwidth	Limit	Margin	EUT Power	
MHz	а	b	с	d	Σ Port(s) dBm	MHz	dBm	dBm	Setting
5260.0	13.60	13.00	12.93	12.90	19.23	20.000	22.30	-3.07	13.50
5300.0	13.85	13.31	13.26	13.01	19.48	19.920	22.30	-2.82	13.50
5320.0	13.25	12.67	12.62	12.88	18.97	19.920	22.30	-3.33	13.00

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK				
Measurement Uncertainty:	±2.81 dB				

Equipment Configuration for Peak Transmit Power

Variant:	802.11n HT-40	Duty Cycle (%):	96.0
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test Measurement Results									
Test Frequency	Measured Conducted Output Power (dBm)			Calculated	Calculated Maximum 26 dB				
		Por	t(s)		+ DCCF Bandwidth Limit Margin			wargin	EUT Power
MHz	а	b	С	d	Σ Port(s) dBm	MHz	dBm	dBm	Setting
5270.0	15.93	15.85	15.57	15.76	21.98	40.830	22.30	-0.32	16.00
5310.0	15.73	15.41	15.17	15.28	21.60	43.830	22.30	-0.70	15.50

Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Peak Transmit Power

Variant:	802.11a	Duty Cycle (%):	96.0
Data Rate:	6.00 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test Measurement Results									
Test	Measured Conducted Output Power (dBm)				Calculated	Maximum 26 dB	Lineld		
Frequency		Por	t(s)		+ DCCF	Bandwidth	Limit	wargin	EUT Power
MHz	а	b	с	d	Σ Port(s) dBm	MHz	dBm	dBm	Setting
5500.0	13.77	12.74	12.66	12.92	19.24	19.170	22.13	-2.89	13.50
5580.0	14.07	12.78	12.71	13.24	19.43	19.000	22.13	-2.70	13.50
5720.0	13.80	12.67	12.30	13.08	19.20	19.000	22.13	-2.93	13.50

Traceability to Industry Recognized Test Methodologies						
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK					
Measurement Uncertainty:	±2.81 dB					

Equipment Configuration for Peak Transmit Power

Variant:	802.11ac-80	Duty Cycle (%):	91.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test Measurement Results									
Test	Measured Conducted Output Power (dBm)				Calculated	Maximum 26 dB			
Frequency		Por	t(s)		+ DCCF	Bandwidth	Limit	Margin	EUT Power
MHz	а	b	с	d	Σ Port(s) dBm	MHz	dBm	dBm	Setting
5530.0	16.13	14.92	14.86	15.41	21.79	91.300	22.30	-0.51	16.00
5610.0	16.56	15.28	15.01	16.12	22.22	90.700	22.30	-0.08	16.00
5690.0	16.52	15.03	15.06	16.04	22.14	88.000	22.30	-0.16	16.00

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK				
Measurement Uncertainty:	±2.81 dB				

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Peak Transmit Power

Variant:	802.11n HT-20	Duty Cycle (%):	98.0
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test Measurement Results									
Test	Measured Conducted Output Power (dBm)				Calculated	Maximum 26 dB			
Frequency		Por	t(s)		+ DCCF	Bandwidth	Limit	Margin	EUT Power
MHz	а	b	с	d	Σ Port(s) dBm	MHz	dBm	dBm	Setting
5500.0	13.67	12.78	12.71	12.99	19.16	20.330	22.30	-3.14	13.50
5580.0	13.99	12.82	12.62	13.25	19.31	19.920	22.30	-2.99	13.50
5720.0	13.74	12.72	12.35	13.06	19.11	19.830	22.30	-3.19	13.50

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK				
Measurement Uncertainty:	±2.81 dB				

Equipment Configuration for Peak Transmit Power

Variant:	802.11n HT-40	Duty Cycle (%):	96.0
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test Measu	Test Measurement Results								
Test	Measure	d Conducted	Output Pow	er (dBm)	Calculated	Maximum 26 dB			
Frequency		Por	t(s)		+ DCCF	Bandwidth	Limit	Margin	EUT Power
MHz	а	b	с	d	Σ Port(s) dBm	MHz	dBm	dBm	Setting
5510.0	16.34	15.30	15.13	15.63	21.82	43.000	22.30	-0.48	16.00
5550.0	16.56	15.13	15.19	15.77	21.90	41.330	22.30	-0.40	16.00
5710.0	16.39	15.36	14.87	15.83	21.85	41.500	22.30	-0.45	16.00

Traceability to Industry Recognized Test Methodologies				
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK			
Measurement Uncertainty:	±2.81 dB			

DCCF - Duty Cycle Correction Factor

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



9.2. 26 dB & 99% Bandwidth

Conducted Test Conditions for 26 dB and 99% Bandwidth					
Standard:	FCC CFR 47:15.407	Ambient Temp. (°C):	24.0 - 27.5		
Test Heading:	26 dB and 99 % Bandwidth	Rel. Humidity (%):	32 - 45		
Standard Section(s):	15.407 (a)	Pressure (mBars):	999 - 1001		
Reference Document(s):	See Normative References				

Test Procedure for 26 dB and 99% Bandwidth Measurement

The bandwidth at 26 dB and 99 % is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency. The Resolution Bandwidth was set to approximately 1% of the emission bandwidth.

Testing was performed under ambient conditions at nominal voltage. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured and reported.

Test configuration and setup used for the measurement was per the Conducted Test Set-up section specified in this document.



Variant:	802.11a	Duty Cycle (%):	96.0
Data Rate:	6.00 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test	Test Measured 26 dB Bandwidth (MHz)				- 26 dB Bandwidth (MHz)		
Frequency	Port(s)						
MHz	а	b	с	d	Highest	Lowest	
5260.0	<u>19.000</u>	<u>18.420</u>	<u>18.670</u>	<u>18.830</u>	19.000	18.420	
5300.0	<u>19.080</u>	<u>18.830</u>	<u>18.750</u>	<u>18.830</u>	19.080	18.750	
5320.0	<u>18.920</u>	<u>18.670</u>	<u>18.830</u>	<u>18.830</u>	18.920	18.670	

Test Frequency	Measured 99% Bandwidth (MHz) Port(s)			99% Bandv	vidth (MHz)		
MHz	а	b	С	d	Highest	Lowest	
5260.0	<u>16.365</u>	<u>16.243</u>	<u>16.337</u>	<u>16.348</u>	16.365	16.243	
5300.0	<u>16.376</u>	<u>16.335</u>	<u>16.372</u>	<u>16.395</u>	16.395	16.335	
5320.0	<u>16.360</u>	<u>16.336</u>	<u>16.371</u>	<u>16.403</u>	16.403	16.336	

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK				
Measurement Uncertainty:	±2.81 dB				

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	802.11ac-80	Duty Cycle (%):	91.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test Measure	est Measurement Results							
Test	Me	asured 26 dB	Bandwidth (M	26 dB Bond	width (MH=)			
Frequency		Por	t(s)		20 UB Ballu			
MHz	а	b	С	d	Highest	Lowest		
5290.0	<u>86.300</u>	<u>90.300</u>	<u>90.000</u>	<u>82.000</u>	90.300	82.000		
Test	Measured 99% Bandwidth (MHz)			00% Bond	width (MU-)			
Frequency	Port(s)			55% Dallu				
MHz	а	b	С	d	Highest	Lowest		
5290.0	<u>75.901</u>	75.897	75.689	<u>75.413</u>	75.901	75.413		

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK				
Measurement Uncertainty:	±2.81 dB				

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	802.11n HT-20	Duty Cycle (%):	98.0
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test	Measured 26 dB Bandwidth (MHz) Port(s)				26 dB Bandwidth (MHz)		
Frequency							
MHz	а	b	с	d	Highest	Lowest	
5260.0	<u>19.830</u>	<u>19.330</u>	<u>20.000</u>	<u>19.580</u>	20.000	19.330	
5300.0	<u>19.750</u>	<u>19.750</u>	<u>19.920</u>	<u>19.920</u>	19.920	19.750	
5320.0	<u>19.920</u>	<u>19.830</u>	<u>19.830</u>	<u>19.920</u>	19.920	19.830	

Test	M	easured 99% E	Bandwidth (MF	lz)	99% Bandwidth (MHz)		
Frequency	Port(s)				55 / Bandwidth (M12)		
MHz	а	b	c	d	Highest	Lowest	
5260.0	<u>17.555</u>	<u>17.455</u>	<u>17.535</u>	<u>17.545</u>	17.555	17.455	
5300.0	<u>17.574</u>	<u>17.513</u>	<u>17.575</u>	<u>17.603</u>	17.603	17.513	
5320.0	<u>17.559</u>	<u>17.535</u>	17.564	<u>17.621</u>	17.621	17.535	

Traceability to Industry Recognized Test Methodologies				
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK			
Measurement Uncertainty:	±2.81 dB			

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	802.11n HT-40	Duty Cycle (%):	96.0
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test Measurement Results								
Test	Measured 26 dB Bandwidth (MHz)				- 26 dB Bandwidth (MHz)			
Frequency	Port(s)							
MHz	а	b	с	d	Highest	Lowest		
5270.0	<u>40.830</u>	<u>40.670</u>	<u>39.330</u>	<u>39.170</u>	40.830	39.170		
5310.0	<u>43.830</u>	<u>39.830</u>	<u>39.330</u>	<u>39.170</u>	43.830	39.170		

Test	M	easured 99% E	Bandwidth (MH	lz)	99% Bandwidth (MHz)		
Frequency	Port(s)			55 % Banuv			
MHz	а	b	c	d	Highest	Lowest	
5270.0	<u>36.162</u>	<u>36.217</u>	<u>36.133</u>	<u>35.944</u>	36.217	35.944	
5310.0	<u>36.163</u>	<u>36.217</u>	<u>36.084</u>	<u>35.941</u>	36.217	35.941	

Traceability to Industry Recognized Test Methodologies				
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK			
Measurement Uncertainty:	±2.81 dB			

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	802.11a	Duty Cycle (%):	96.0
Data Rate:	6.00 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)			
Frequency	Port(s)							
MHz	а	b	с	d	Highest	Lowest		
5500.0	<u>18.750</u>	<u>19.170</u>	<u>18.920</u>	<u>18.920</u>	19.170	18.750		
5580.0	<u>18.580</u>	<u>19.000</u>	<u>18.750</u>	<u>18.580</u>	19.000	18.580		
5720.0	<u>19.000</u>	<u>18.670</u>	<u>18.670</u>	<u>18.580</u>	19.000	18.580		

Test Frequency	Measured 99% Bandwidth (MHz) Port(s)				99% Bandy	vidth (MHz)	
MHz	а	b	С	d	Highest	Lowest	
5500.0	<u>16.353</u>	<u>16.399</u>	<u>16.402</u>	<u>16.431</u>	16.431	16.353	
5580.0	<u>16.344</u>	<u>16.453</u>	<u>16.423</u>	<u>16.365</u>	16.453	16.344	
5720.0	<u>16.370</u>	<u>16.415</u>	<u>16.411</u>	<u>16.326</u>	16.415	16.326	

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK				
Measurement Uncertainty:	±2.81 dB				

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	802.11ac-80	Duty Cycle (%):	91.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)		
Frequency	Port(s)						
MHz	а	b	с	d	Highest	Lowest	
5530.0	<u>91.300</u>	<u>90.300</u>	<u>85.000</u>	<u>84.300</u>	91.300	84.300	
5610.0	<u>90.700</u>	<u>89.000</u>	<u>84.700</u>	<u>83.700</u>	90.700	83.700	
5690.0	<u>88.000</u>	<u>87.000</u>	<u>84.300</u>	<u>85.300</u>	88.000	84.300	

Test	M	easured 99% E	Bandwidth (MF	łz)	99% Bandwidth (MHz)		
Frequency	Port(s)			55 % Danuv			
MHz	а	b	С	d	Highest	Lowest	
5530.0	<u>76.088</u>	<u>75.747</u>	<u>75.531</u>	<u>75.703</u>	76.088	75.531	
5610.0	<u>75.976</u>	<u>75.599</u>	<u>75.494</u>	<u>75.603</u>	75.976	75.494	
5690.0	75.854	<u>75.581</u>	75.406	75.683	75.854	75.406	

Traceability to Industry Recognized Test Methodologies				
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK			
Measurement Uncertainty:	±2.81 dB			

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	802.11n HT-20	Duty Cycle (%):	98.0
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)		
Frequency	Port(s)						
MHz	а	b	С	d	Highest	Lowest	
5500.0	<u>19.830</u>	<u>19.920</u>	<u>20.330</u>	<u>20.000</u>	20.330	19.830	
5580.0	<u>19.750</u>	<u>19.920</u>	<u>19.920</u>	<u>19.750</u>	19.920	19.750	
5720.0	<u>19.830</u>	<u>19.830</u>	<u>19.830</u>	<u>19.500</u>	19.830	19.500	

Test	M	easured 99% E	Bandwidth (M⊦	lz)	99% Bandy	vidth (MHz)	
Frequency	Port(s)			55 /8 Danuv			
MHz	а	b	С	d	Highest	Lowest	
5500.0	<u>17.557</u>	<u>17.583</u>	<u>17.601</u>	<u>17.625</u>	17.625	17.557	
5580.0	<u>17.542</u>	<u>17.635</u>	<u>17.613</u>	<u>17.552</u>	17.635	17.542	
5720.0	<u>17.570</u>	17.604	<u>17.595</u>	<u>17.496</u>	17.604	17.496	

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	802.11n HT-40	Duty Cycle (%):	96.0
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)		
Frequency	Port(s)						
MHz	а	b	с	d	Highest	Lowest	
5510.0	<u>43.000</u>	<u>39.330</u>	<u>41.170</u>	<u>39.170</u>	43.000	39.170	
5550.0	<u>41.330</u>	<u>40.170</u>	<u>39.330</u>	<u>40.000</u>	41.330	39.330	
5710.0	<u>41.500</u>	<u>39.670</u>	<u>40.000</u>	<u>40.500</u>	41.500	39.670	

Test	Measured 99% Bandwidth (MHz)				99% Bandy	vidth (MHz)	
Frequency	Port(s)			55 % Danuv			
MHz	а	b	С	d	Highest	Lowest	
5510.0	<u>36.214</u>	<u>36.067</u>	<u>36.006</u>	<u>35.920</u>	36.214	35.920	
5550.0	<u>36.187</u>	<u>35.952</u>	<u>36.023</u>	<u>36.086</u>	36.187	35.952	
5710.0	<u>36.269</u>	<u>36.119</u>	<u>35.959</u>	<u>36.161</u>	36.269	35.959	

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).



9.3. Power Spectral Density

Conducted Test Conditions for Power Spectral Density			
Standard:	FCC CFR 47:15.407	Ambient Temp. (°C):	24.0 - 27.5
Test Heading:	Power Spectral Density	Rel. Humidity (%):	32 - 45
Standard Section(s):	15.407 (a)	Pressure (mBars):	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for Power Spectral Density

The in-band power spectral density was measured using the test technique specified in KDB 789033. A 1 MHz measurement bandwidth was implemented for the analyzer sweep. Once the sweep is complete the analyzer trace data is downloaded and used for post processing purposes.

Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured separately. The Peak Power Spectral Density is the highest level found across the emission bandwidth. With multiple antenna port measurements the numerical analyzer data from each port is summed (å) and a link to this additional graphic is provided.

Test configuration and setup used for the measurement was per the Conducted Test Set-up section specified in this document.

Measure and sum the spectra across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The individual spectra are then summed mathematically in linear power units. Unlike in-band power measurements, in which the sum involves a single measured value (output power) from each output, measurements for compliance with PSD limits involve summing entire spectra across corresponding frequency bins on the various outputs. Consistency is maintained for any device with multiple transmitter outputs to be certain the individual outputs are all aligned with the same span and same number of points. In this instance, the linear power spectrum value within the first spectral bin of output 1, and the first spectral bin of output 2, and so on up to the Nth output to obtain the true value for the first frequency bin of the summed spectrum. The summed spectrum value for each frequency bin is computed in this fashion. These summed spectral values were post processed and the resulting numerical and graphical data presented.

NOTE: It may be observed that spectrum in some plots break the limit line however this in itself does NOT constitute a failure. In all cases a spectrum summation plot is provided in order to prove compliance. A failure occurs only after the summation of all spectrum plots have been summed and are found to be greater than the limit line.

Supporting Information Calculated Power = A + 10 log (1/x) dBm A = Total Power Spectral Density [$10*Log10 (10^{a/10} + 10^{b/10} + 10^{c/10} + 10^{d/10})$] x = Duty Cycle

Limits Power Spectral Density

Operating Frequency Band 5150-5250 MHz

15.407 (a)(1)

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Operating Frequency Band 5250-5350 and 5470 - 5725 MHz

15. 407 (a)(2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Operating Frequency Band 5725 – 5850 MHz

15.407 (a)(3)

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.



Variant:	802.11a	Duty Cycle (%):	96.0
Data Rate:	6.00 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test Measurement Results

Test	Test Measured Power Spectral Density					Linait	Morein
Frequency		Port(s) (d	Bm/MHz)		DCCF (+0.18 dB)	Limit	wargin
MHz	а	b	с	d	dBm/MHz	dBm/MHz	dB
5260.0	<u>3.094</u>	<u>3.203</u>	<u>2.967</u>	<u>3.080</u>	<u>9.114</u>	9.3	-0.2
5300.0	<u>3.109</u>	<u>3.604</u>	<u>3.152</u>	<u>2.827</u>	<u>9.253</u>	9.3	-0.1
5320.0	<u>2.806</u>	<u>3.227</u>	<u>2.670</u>	<u>2.881</u>	<u>8.947</u>	9.3	-0.4

Traceability to Industry Recognized Test Methodologies

	<u> </u>		
		Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
		Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	802.11ac-80	Duty Cycle (%):	91.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test Measurement Results

Test	Ν	leasured Power	Spectral Densit	Amplitude	Linait	Manaia	
Frequency		Port(s) (dBm/MHz)				DCCF (+0.41 dB)	wargin
MHz	а	b	С	d	dBm/MHz	dBm/MHz	dB
5290.0	<u>-1.123</u>	<u>-0.611</u>	<u>-0.710</u>	<u>-0.489</u>	<u>5.534</u>	9.3	-3.8

 Work Instruction:
 WI-03 MEASURING RF SPECTRUM MASK

 Measurement Uncertainty:
 ±2.81 dB

DCCF - Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	802.11n HT-20	Duty Cycle (%):	98.0
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test Measurement Results

Test Frequency	N	leasured Power Port(s) (d	Spectral Densit Bm/MHz)	Amplitude Summation + DCCF (+0.09 dB)	Limit	Margin	
MHz	а	b	с	d	dBm/MHz	dBm/MHz	dB
5260.0	<u>3.036</u>	<u>3.106</u>	<u>2.953</u>	<u>2.949</u>	<u>8.959</u>	9.3	-0.4
5300.0	<u>3.159</u>	<u>3.629</u>	<u>3.171</u>	<u>2.718</u>	<u>9.186</u>	9.3	-0.1
5320.0	<u>2.676</u>	<u>3.061</u>	<u>2.569</u>	<u>2.714</u>	<u>8.742</u>	9.3	-0.6

Traceability to Industry Recognized Test Methodologies

-	-	-	-	
			Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
			Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	802.11n HT-40	Duty Cycle (%):	96.0
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Power Spectral Density Port(s) (dBm/MHz)				Amplitude Summation + DCCF (+0.18 dB)	Limit	Margin
MHz	а	b	с	d	dBm/MHz	dBm/MHz	dB
5270.0	<u>2.291</u>	<u>3.012</u>	<u>2.417</u>	<u>2.553</u>	<u>8.612</u>	9.3	-0.7
5310.0	<u>2.047</u>	<u>2.523</u>	<u>1.864</u>	<u>2.333</u>	<u>8.189</u>	9.3	-1.1

Traceability to Industry Recognized Test Methodologies				
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK			
Measurement Uncertainty:	±2.81 dB			

DCCF - Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	802.11a	Duty Cycle (%):	96.0
Data Rate:	6 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test Measurement Results

Test Frequency	N	leasured Power Port(s) (d	Spectral Densit Bm/MHz)	Amplitude Summation + DCCF (+0.18 dB)	Limit	Margin	
MHz	а	b	С	d	dBm/MHz	dBm/MHz	dB
5500.0	<u>3.549</u>	<u>3.073</u>	<u>2.547</u>	<u>2.798</u>	<u>8.946</u>	9.3	-0.4
5580.0	<u>3.838</u>	<u>2.612</u>	<u>2.694</u>	<u>3.504</u>	<u>9.187</u>	9.3	-0.1
5720.0	<u>3.057</u>	<u>2.798</u>	<u>2.747</u>	<u>2.861</u>	<u>8.888</u>	9.3	-0.4

Traceability to Industry Recognized Test Methodologies

	· ·		
		Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
		Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	802.11ac-80	Duty Cycle (%):	91.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test Measurement Results

Test	N	leasured Power	Spectral Densit	Amplitude	Linait	Morein	
Frequency	Port(s) (dBm/MHz)				DCCF (+0.41 dB)	Limit	Margin
MHz	а	b	с	d	dBm/MHz	dBm/MHz	dB
5530.0	<u>-0.969</u>	<u>-1.310</u>	<u>-1.305</u>	<u>-0.507</u>	<u>4.861</u>	9.3	-4.5
5610.0	<u>-0.816</u>	<u>-1.495</u>	<u>-1.385</u>	<u>-0.154</u>	<u>5.037</u>	9.3	-4.3
5690.0	<u>-0.704</u>	<u>-0.951</u>	<u>-1.150</u>	<u>-0.756</u>	<u>5.129</u>	9.3	-4.2

Traceability to Industry Recognized Test Methodologies

	<u> </u>	<u> </u>	<u> </u>	
			Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
			Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	802.11n HT-20	Duty Cycle (%):	98.0
Data Rate:	6.5 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test Measurement Results

Test Frequency	N	leasured Power Port(s) (d	Spectral Densit Bm/MHz)	Amplitude Summation + DCCF (+0.09 dB)	Limit	Margin	
MHz	а	b	С	d	dBm/MHz	dBm/MHz	dB
5500.0	<u>3.478</u>	<u>3.109</u>	<u>2.480</u>	<u>2.817</u>	<u>8.816</u>	9.3	-0.5
5580.0	<u>3.844</u>	<u>2.701</u>	2.700	3.496	<u>9.078</u>	9.3	-0.2
5720.0	<u>3.167</u>	<u>2.845</u>	<u>2.745</u>	<u>2.934</u>	<u>8.762</u>	9.3	-0.6

Traceability to Industry Recognized Test Methodologies

	<u> </u>		
		Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
		Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	802.11n HT-40	Duty Cycle (%):	96.0
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	4.70
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	3.00
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:			

Test Measurement Results

Test	N	leasured Power	Spectral Densit	Amplitude	Linald	Manuin	
Frequency	Port(s) (dBm/MHz)				DCCF (+0.18 dB)	Limit	Margin
MHz	а	b	с	d	dBm/MHz	dBm/MHz	dB
5510.0	<u>2.766</u>	<u>2.288</u>	<u>1.774</u>	<u>2.668</u>	<u>8.300</u>	9.3	-1.0
5550.0	<u>2.885</u>	<u>2.161</u>	<u>1.819</u>	<u>2.648</u>	<u>8.397</u>	9.3	-0.9
5710.0	<u>2.229</u>	<u>2.078</u>	<u>1.870</u>	<u>2.530</u>	<u>8.130</u>	9.3	-1.2

Traceability to Industry Recognized Test Methodologies

	· ·		
		Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
		Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).



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A. APPENDIX - GRAPHICAL IMAGES

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MiCOM Labs, 575 Boulder Court, Pleasanton, California 94566 USA, Phone: +1 (925) 462 0304, Fax: +1 (925) 462 0306, www.micomlabs.com



A.1. 26 dB & 99% Bandwidth



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS	M1 : 5250.500 MHz : -20.767 dBm	Measured 26 dB Bandwidth: 19.000 MHz
Sweep Count = 0	M2 : 5257.500 MHz : 4.494 dBm	Measured 99% Bandwidth: 16.365 MHz
RF Atten (dB) = 20	Delta1 : 19.000 MHz : -0.489 dB	
Trace Mode = MAXH	T1 : 5251.833 MHz : -0.094 dBm	
	T2 : 5268.167 MHz : 0.029 dBm	
	OBW : 16.365 MHz	

back to matrix





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS	M1 : 5250.750 MHz : -20.827 dBm	Measured 26 dB Bandwidth: 18.420 MHz
Sweep Count = 0	M2 : 5261.250 MHz : 4.690 dBm	Measured 99% Bandwidth: 16.243 MHz
RF Atten (dB) = 20	Delta1 : 18.420 MHz : 0.469 dB	
Trace Mode = MAXH	T1 : 5251.833 MHz : -2.224 dBm	
	T2:5268.167 MHz:-2.093 dBm	
	OBW : 16.243 MHz	





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS	M1 : 5250.580 MHz : -21.216 dBm	Measured 26 dB Bandwidth: 18.670 MHz
Sweep Count = 0	M2 : 5261.250 MHz : 4.328 dBm	Measured 99% Bandwidth: 16.337 MHz
RF Atten (dB) = 20	Delta1 : 18.670 MHz : 0.091 dB	
Trace Mode = MAXH	T1 : 5251.833 MHz : -0.784 dBm	
	T2:5268.167 MHz:-1.098 dBm	
	OBW : 16.337 MHz	





Analyser Setup	Marker:Frequency:Amplitude	Test Results	
Detector = POS	M1 : 5250.580 MHz : -21.277 dBm	Measured 26 dB Bandwidth: 18.830 MHz	
Sweep Count = 0	M2 : 5257.500 MHz : 4.375 dBm	Measured 99% Bandwidth: 16.348 MHz	
RF Atten (dB) = 20	Delta1 : 18.830 MHz : -1.003 dB		
Trace Mode = MAXH	T1 : 5251.833 MHz : -0.431 dBm		
	T2 : 5268.167 MHz : -0.953 dBm		
	OBW : 16.348 MHz		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS	M1 : 5290.420 MHz : -18.366 dBm	Measured 26 dB Bandwidth: 19.080 MHz
Sweep Count = 0	M2 : 5297.500 MHz : 6.987 dBm	Measured 99% Bandwidth: 16.376 MHz
RF Atten (dB) = 20	Delta1 : 19.080 MHz : 0.026 dB	
Trace Mode = MAXH	T1 : 5291.833 MHz : 2.261 dBm	
	T2 : 5308.167 MHz : 2.528 dBm	
	OBW : 16.376 MHz	





Analyser Setup	Marker:Frequency:Amplitude	Test Results	
Detector = POS	M1 : 5290.580 MHz : -17.776 dBm	Measured 26 dB Bandwidth: 18.830 MHz	
Sweep Count = 0	M2 : 5297.500 MHz : 7.739 dBm	Measured 99% Bandwidth: 16.335 MHz	
RF Atten (dB) = 20	Delta1 : 18.830 MHz : -1.695 dB		
Trace Mode = MAXH	T1 : 5291.750 MHz : 1.018 dBm		
	T2 : 5308.167 MHz : 1.276 dBm		
	OBW : 16.335 MHz		





Analysel Setup	Marker.Frequency.Amplitude	Test Results
Detector = POS	M1 : 5290.670 MHz : -16.779 dBm	Measured 26 dB Bandwidth: 18.750 MHz
Sweep Count = 0	M2 : 5296.250 MHz : 7.086 dBm	Measured 99% Bandwidth: 16.372 MHz
RF Atten (dB) = 20	Delta1 : 18.750 MHz : -2.015 dB	
Trace Mode = MAXH	T1 : 5291.833 MHz : 2.971 dBm	
	T2:5308.167 MHz:2.258 dBm	
	OBW : 16.372 MHz	





Analysel Setup	Marker.Frequency.Amplitude	Test Results
Detector = POS	M1 : 5290.500 MHz : -18.112 dBm	Measured 26 dB Bandwidth: 18.830 MHz
Sweep Count = 0	M2 : 5293.750 MHz : 7.091 dBm	Measured 99% Bandwidth: 16.395 MHz
RF Atten (dB) = 20	Delta1 : 18.830 MHz : 1.246 dB	
Trace Mode = MAXH	T1 : 5291.750 MHz : 1.076 dBm	
	T2:5308.167 MHz:2.897 dBm	
	OBW : 16.395 MHz	





Analyser Setup	warker: Frequency: Amplitude	Test Results
Detector = POS	M1 : 5310.500 MHz : -18.280 dBm	Measured 26 dB Bandwidth: 18.920 MHz
Sweep Count = 0	M2 : 5317.500 MHz : 7.272 dBm	Measured 99% Bandwidth: 16.360 MHz
RF Atten (dB) = 20	Delta1 : 18.920 MHz : 0.628 dB	
Trace Mode = MAXH	T1 : 5311.833 MHz : 2.776 dBm	
	T2:5328.167 MHz:2.808 dBm	
	OBW : 16.360 MHz	





Analyser Setup	warker: Frequency: Amplitude	Test Results	
Detector = POS	M1 : 5310.580 MHz : -17.751 dBm	Measured 26 dB Bandwidth: 18.670 MHz	
Sweep Count = 0	M2 : 5316.250 MHz : 7.734 dBm	Measured 99% Bandwidth: 16.336 MHz	
RF Atten (dB) = 20	Delta1 : 18.670 MHz : -0.134 dB		
Trace Mode = MAXH	T1 : 5311.833 MHz : 2.582 dBm		
	T2 : 5328.167 MHz : 1.595 dBm		
	OBW : 16.336 MHz		





Analyser Setup	Marker:Frequency:Amplitude	lest Results	
Detector = POS	M1 : 5310.500 MHz : -17.779 dBm	Measured 26 dB Bandwidth: 18.830 MHz	
Sweep Count = 0	M2 : 5315.000 MHz : 7.180 dBm	Measured 99% Bandwidth: 16.371 MHz	
RF Atten (dB) = 20	Delta1 : 18.830 MHz : -0.187 dB		
Trace Mode = MAXH	T1 : 5311.750 MHz : 0.584 dBm		
	T2 : 5328.167 MHz : 2.246 dBm		
	OBW : 16.371 MHz		





Analyser Setup	Marker:Frequency:Amplitude	lest Results
Detector = POS	M1 : 5310.500 MHz : -18.679 dBm	Measured 26 dB Bandwidth: 18.830 MHz
Sweep Count = 0	M2 : 5315.000 MHz : 7.135 dBm	Measured 99% Bandwidth: 16.403 MHz
RF Atten (dB) = 20	Delta1 : 18.830 MHz : 1.712 dB	
Trace Mode = MAXH	T1 : 5311.750 MHz : 0.859 dBm	
	T2:5328.167 MHz:3.352 dBm	
	OBW : 16.403 MHz	

















Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS	M1 : 5249.300 MHz : -12.422 dBm	Measured 26 dB Bandwidth: 82.000 MHz
Sweep Count = 0	M2 : 5319.700 MHz : 11.129 dBm	Measured 99% Bandwidth: 75.413 MHz
RF Atten (dB) = 20	Delta1 : 82.000 MHz : -0.714 dB	
Trace Mode = MAXH	T1 : 5252.333 MHz : 4.895 dBm	
	T2 : 5328.000 MHz : 4.969 dBm	
	OBW : 75.413 MHz	





Analyser Setup	warker.Frequency.Amplitude	Test Results
Detector = POS	M1 : 5250.000 MHz : -18.942 dBm	Measured 26 dB Bandwidth: 19.830 MHz
Sweep Count = 0	M2 : 5257.500 MHz : 6.864 dBm	Measured 99% Bandwidth: 17.555 MHz
RF Atten (dB) = 20	Delta1 : 19.830 MHz : 0.812 dB	
Trace Mode = MAXH	T1 : 5251.250 MHz : 1.754 dBm	
	T2 : 5268.833 MHz : 1.016 dBm	
	OBW : 17.555 MHz	





Analysei Setup	Marker. requercy. Amplitude	Test Results
Detector = POS	M1 : 5250.330 MHz : -17.989 dBm	Measured 26 dB Bandwidth: 19.330 MHz
Sweep Count = 0	M2 : 5258.750 MHz : 7.192 dBm	Measured 99% Bandwidth: 17.455 MHz
RF Atten (dB) = 20	Delta1 : 19.330 MHz : 1.097 dB	
Trace Mode = MAXH	T1 : 5251.250 MHz : 0.237 dBm	
	T2 : 5268.750 MHz : 0.404 dBm	
	OBW : 17.455 MHz	





Analyser Setup	warker.Frequency.Ampiltude	Test Results
Detector = POS	M1 : 5249.830 MHz : -18.922 dBm	Measured 26 dB Bandwidth: 20.000 MHz
Sweep Count = 0	M2 : 5258.750 MHz : 7.057 dBm	Measured 99% Bandwidth: 17.535 MHz
RF Atten (dB) = 20	Delta1 : 20.000 MHz : 0.687 dB	
Trace Mode = MAXH	T1 : 5251.250 MHz : 1.209 dBm	
	T2 : 5268.750 MHz : 1.354 dBm	
	OBW : 17.535 MHz	









Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS	M1 : 5290.080 MHz : -19.589 dBm	Measured 26 dB Bandwidth: 19.750 MHz
Sweep Count = 0	M2 : 5297.500 MHz : 6.353 dBm	Measured 99% Bandwidth: 17.574 MHz
RF Atten (dB) = 20	Delta1 : 19.750 MHz : 0.982 dB	
Trace Mode = MAXH	T1 : 5291.250 MHz : 2.173 dBm	
	T2 : 5308.833 MHz : 1.118 dBm	
	OBW : 17.574 MHz	





Analyser Setup	warker: Frequency: Amplitude	Test Results	
Detector = POS	M1 : 5290.000 MHz : -18.733 dBm	Measured 26 dB Bandwidth: 19.750 MHz	
Sweep Count = 0	M2 : 5298.750 MHz : 6.645 dBm	Measured 99% Bandwidth: 17.513 MHz	
RF Atten (dB) = 20	Delta1 : 19.750 MHz : 0.407 dB		
Trace Mode = MAXH	T1 : 5291.250 MHz : 1.235 dBm		
	T2 : 5308.750 MHz : 0.776 dBm		
	OBW : 17.513 MHz		





Analyser betup	marker.ir requericy.Ampiltude	rest Results
Detector = POS	M1 : 5289.920 MHz : -19.377 dBm	Measured 26 dB Bandwidth: 19.920 MHz
Sweep Count = 0	M2 : 5297.500 MHz : 6.541 dBm	Measured 99% Bandwidth: 17.575 MHz
RF Atten (dB) = 20	Delta1 : 19.920 MHz : 0.967 dB	
Trace Mode = MAXH	T1 : 5291.167 MHz : 0.210 dBm	
	T2 : 5308.833 MHz : 0.685 dBm	
	OBW : 17.575 MHz	





Analyser Setup	warker: Frequency: Amplitude	Test Results	
Detector = POS	M1 : 5290.000 MHz : -19.518 dBm	Measured 26 dB Bandwidth: 19.920 MHz	
Sweep Count = 0	M2 : 5305.000 MHz : 6.071 dBm	Measured 99% Bandwidth: 17.603 MHz	
RF Atten (dB) = 20	Delta1 : 19.920 MHz : 1.083 dB		
Trace Mode = MAXH	T1 : 5291.167 MHz : 0.983 dBm		
	T2 : 5308.833 MHz : 1.163 dBm		
	OBW : 17.603 MHz		





Analyser Setup	Marker:Frequency:Amplitude	lest Results	
Detector = POS	M1 : 5310.000 MHz : -18.659 dBm	Measured 26 dB Bandwidth: 19.920 MHz	
Sweep Count = 0	M2 : 5322.500 MHz : 6.571 dBm	Measured 99% Bandwidth: 17.559 MHz	
RF Atten (dB) = 20	Delta1 : 19.920 MHz : -0.044 dB		
Trace Mode = MAXH	T1 : 5311.167 MHz : 0.427 dBm		
	T2:5328.833 MHz:0.755 dBm		
	OBW : 17.559 MHz		
		1	





Analyser Setup	warker: Frequency: Amplitude	Test Results	
Detector = POS	M1 : 5310.000 MHz : -19.185 dBm	Measured 26 dB Bandwidth: 19.830 MHz	
Sweep Count = 0	M2 : 5318.670 MHz : 6.442 dBm	Measured 99% Bandwidth: 17.535 MHz	
RF Atten (dB) = 20	Delta1 : 19.830 MHz : 0.658 dB		
Trace Mode = MAXH	T1 : 5311.167 MHz : 0.412 dBm		
	T2 : 5328.750 MHz : 0.954 dBm		
	OBW : 17.535 MHz		




Analyser Setup	warker: Frequency: Amplitude	Test Results	
Detector = POS	M1 : 5310.000 MHz : -19.357 dBm	Measured 26 dB Bandwidth: 19.830 MHz	
Sweep Count = 0	M2 : 5317.500 MHz : 6.184 dBm	Measured 99% Bandwidth: 17.564 MHz	
RF Atten (dB) = 20	Delta1 : 19.830 MHz : 1.222 dB		
Trace Mode = MAXH	T1 : 5311.167 MHz : 0.960 dBm		
	T2 : 5328.750 MHz : 1.503 dBm		
	OBW : 17.564 MHz		





Detector = POS	MT : 5310.000 MHZ : -19.195 dBm	Measured 26 dB Bandwidth: 19.920 MHz
Sweep Count = 0	M2 : 5312.500 MHz : 6.486 dBm	Measured 99% Bandwidth: 17.621 MHz
RF Atten (dB) = 20	Delta1 : 19.920 MHz : -0.589 dB	
Trace Mode = MAXH	T1 : 5311.167 MHz : 1.647 dBm	
	T2 : 5328.833 MHz : 1.198 dBm	
	OBW : 17.621 MHz	





















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OBW : 36.217 MHz













Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS	M1 : 5490.580 MHz : -17.934 dBm	Measured 26 dB Bandwidth: 18.750 MHz
Sweep Count = 0	M2 : 5502.500 MHz : 7.496 dBm	Measured 99% Bandwidth: 16.353 MHz
RF Atten (dB) = 20	Delta1 : 18.750 MHz : 0.143 dB	
Trace Mode = MAXH	T1 : 5491.833 MHz : 2.475 dBm	
	T2 : 5508.167 MHz : 2.670 dBm	
	OBW : 16.353 MHz	





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS	M1 : 5490.420 MHz : -18.845 dBm	Measured 26 dB Bandwidth: 19.170 MHz
Sweep Count = 0	M2 : 5495.000 MHz : 7.044 dBm	Measured 99% Bandwidth: 16.399 MHz
RF Atten (dB) = 20	Delta1 : 19.170 MHz : -1.380 dB	
Trace Mode = MAXH	T1 : 5491.750 MHz : 1.064 dBm	
	T2 : 5508.167 MHz : 1.659 dBm	
	OBW : 16.399 MHz	





Analyser Setup	Marker:Frequency:Amplitude	lest Results	
Detector = POS	M1 : 5490.500 MHz : -19.419 dBm	Measured 26 dB Bandwidth: 18.920 MHz	
Sweep Count = 0	M2 : 5492.500 MHz : 6.326 dBm	Measured 99% Bandwidth: 16.402 MHz	
RF Atten (dB) = 20	Delta1 : 18.920 MHz : 0.749 dB		
Trace Mode = MAXH	T1 : 5491.750 MHz : 0.293 dBm		
	T2 : 5508.167 MHz : 2.283 dBm		
	OBW : 16.402 MHz		





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Analyser octup	marterir requerey.Ampiltade	rootricourto	
Detector = POS	M1 : 5570.420 MHz : -18.566 dBm	Measured 26 dB Bandwidth: 19.000 MHz	
Sweep Count = 0	M2 : 5587.500 MHz : 6.824 dBm	Measured 99% Bandwidth: 16.453 MHz	
RF Atten (dB) = 20	Delta1 : 19.000 MHz : 0.761 dB		
Trace Mode = MAXH	T1 : 5571.750 MHz : 1.410 dBm		
	T2 : 5588.250 MHz : 0.231 dBm		
	OBW : 16.453 MHz		









Analyser Setup	warker: Frequency: Amplitude	Test Results
Detector = POS	M1 : 5570.750 MHz : -17.788 dBm	Measured 26 dB Bandwidth: 18.580 MHz
Sweep Count = 0	M2 : 5585.000 MHz : 7.860 dBm	Measured 99% Bandwidth: 16.365 MHz
RF Atten (dB) = 20	Delta1 : 18.580 MHz : 0.739 dB	
Trace Mode = MAXH	T1 : 5571.833 MHz : 2.231 dBm	
	T2 : 5588.250 MHz : 0.749 dBm	
	OBW : 16.365 MHz	





Analyser Setup	Marker:Frequency:Amplitude	Test Results	
Detector = POS	M1 : 5710.580 MHz : -18.216 dBm	Measured 26 dB Bandwidth: 19.000 MHz	
Sweep Count = 0	M2 : 5722.500 MHz : 6.934 dBm	Measured 99% Bandwidth: 16.370 MHz	
RF Atten (dB) = 20	Delta1 : 19.000 MHz : -1.736 dB		
Trace Mode = MAXH	T1 : 5711.833 MHz : 1.893 dBm		
	T2 : 5728.167 MHz : 2.365 dBm		
	OBW : 16.370 MHz		





Analysel Setup	warker.Frequency.Amplitude	Test Results	
Detector = POS	M1 : 5710.750 MHz : -18.194 dBm	Measured 26 dB Bandwidth: 18.670 MHz	
Sweep Count = 0	M2 : 5725.000 MHz : 6.905 dBm	Measured 99% Bandwidth: 16.415 MHz	
RF Atten (dB) = 20	Delta1 : 18.670 MHz : 0.264 dB		
Trace Mode = MAXH	T1 : 5711.833 MHz : 1.384 dBm		
	T2 : 5728.250 MHz : -0.415 dBm		
	OBW : 16.415 MHz		





Analyser Setup	Marker:Frequency:Amplitude	lest Results	
Detector = POS	M1 : 5710.670 MHz : -19.072 dBm	Measured 26 dB Bandwidth: 18.670 MHz	
Sweep Count = 0	M2 : 5725.000 MHz : 6.692 dBm	Measured 99% Bandwidth: 16.411 MHz	
RF Atten (dB) = 20	Delta1 : 18.670 MHz : 2.275 dB		
Trace Mode = MAXH	T1 : 5711.833 MHz : 0.566 dBm		
	T2:5728.250 MHz:-0.330 dBm		
	OBW : 16.411 MHz		





Analyser Setup	warker:Frequency:Amplitude	Test Results
Detector = POS	M1 : 5710.670 MHz : -18.494 dBm	Measured 26 dB Bandwidth: 18.580 MHz
Sweep Count = 0	M2 : 5725.000 MHz : 6.834 dBm	Measured 99% Bandwidth: 16.326 MHz
RF Atten (dB) = 20	Delta1 : 18.580 MHz : 0.823 dB	
Trace Mode = MAXH	T1 : 5711.833 MHz : 1.186 dBm	
	T2:5728.167 MHz:1.987 dBm	
	OBW : 16.326 MHz	









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OBW : 75.747 MHz





















Analyser Setup	warker:Frequency:Amplitude	Test Results	
Detector = POS	M1 : 5569.300 MHz : -14.951 dBm	Measured 26 dB Bandwidth: 84.700 MHz	
Sweep Count = 0	M2 : 5620.000 MHz : 9.057 dBm	Measured 99% Bandwidth: 75.494 MHz	
RF Atten (dB) = 20	Delta1 : 84.700 MHz : -3.919 dB		
Trace Mode = MAXH	T1 : 5572.000 MHz : 3.438 dBm		
	T2 : 5647.667 MHz : 4.679 dBm		
	OBW : 75.494 MHz		

























Analyser Setup	warker.Frequency.Amplitude	Test Results	
Detector = POS	M1 : 5490.000 MHz : -18.811 dBm	Measured 26 dB Bandwidth: 19.830 MHz	
Sweep Count = 0	M2 : 5502.500 MHz : 7.045 dBm	Measured 99% Bandwidth: 17.557 MHz	
RF Atten (dB) = 20	Delta1 : 19.830 MHz : 1.661 dB		
Trace Mode = MAXH	T1 : 5491.167 MHz : 1.492 dBm		
	T2 : 5508.750 MHz : 2.498 dBm		
	OBW : 17.557 MHz		





Analyser Setup	warker: Frequency: Amplitude	Test Results	
Detector = POS	M1 : 5490.000 MHz : -18.608 dBm	Measured 26 dB Bandwidth: 19.920 MHz	
Sweep Count = 0	M2 : 5495.000 MHz : 6.898 dBm	Measured 99% Bandwidth: 17.583 MHz	
RF Atten (dB) = 20	Delta1 : 19.920 MHz : -0.423 dB		
Trace Mode = MAXH	T1 : 5491.167 MHz : 1.176 dBm		
	T2 : 5508.750 MHz : 1.898 dBm		
	OBW : 17.583 MHz		




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Analyser Setup	warker:Frequency:Amplitude	lest Results
Detector = POS	M1 : 5570.080 MHz : -18.327 dBm	Measured 26 dB Bandwidth: 19.750 MHz
Sweep Count = 0	M2 : 5578.750 MHz : 7.654 dBm	Measured 99% Bandwidth: 17.542 MHz
RF Atten (dB) = 20	Delta1 : 19.750 MHz : 1.208 dB	
Trace Mode = MAXH	T1 : 5571.250 MHz : 2.559 dBm	
	T2 : 5588.750 MHz : 2.633 dBm	
	OBW : 17.542 MHz	





Analysei Setup	marker.r requercy.Amplitude	restitesuits	
Detector = POS	M1 : 5570.080 MHz : -18.507 dBm	Measured 26 dB Bandwidth: 19.920 MHz	
Sweep Count = 0	M2 : 5572.500 MHz : 6.647 dBm	Measured 99% Bandwidth: 17.635 MHz	
RF Atten (dB) = 20	Delta1 : 19.920 MHz : 0.077 dB		
Trace Mode = MAXH	T1 : 5571.167 MHz : 1.657 dBm		
	T2 : 5588.833 MHz : 1.499 dBm		
	OBW : 17.635 MHz		





Analyser Octup	marker.ir requericy.Ampiltude	rest Results	
Detector = POS	M1 : 5570.080 MHz : -18.936 dBm	Measured 26 dB Bandwidth: 19.920 MHz	
Sweep Count = 0	M2 : 5585.000 MHz : 6.336 dBm	Measured 99% Bandwidth: 17.613 MHz	
RF Atten (dB) = 20	Delta1 : 19.920 MHz : -0.592 dB		
Trace Mode = MAXH	T1 : 5571.167 MHz : 1.055 dBm		
	T2 : 5588.833 MHz : 1.219 dBm		
	OBW : 17.613 MHz		





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OBW : 17.552 MHz





Analyser Setup	warker:Frequency:Amplitude	lest Results
Detector = POS	M1 : 5710.080 MHz : -18.731 dBm	Measured 26 dB Bandwidth: 19.830 MHz
Sweep Count = 0	M2 : 5722.500 MHz : 6.801 dBm	Measured 99% Bandwidth: 17.570 MHz
RF Atten (dB) = 20	Delta1 : 19.830 MHz : 0.561 dB	
Trace Mode = MAXH	T1 : 5711.250 MHz : 1.506 dBm	
	T2:5728.833 MHz:1.188 dBm	
	OBW : 17.570 MHz	





Analyser Octup	marker.rrequency.Ampitude	rest Results	
Detector = POS	M1 : 5710.170 MHz : -18.205 dBm	Measured 26 dB Bandwidth: 19.830 MHz	
Sweep Count = 0	M2 : 5725.000 MHz : 6.542 dBm	Measured 99% Bandwidth: 17.604 MHz	
RF Atten (dB) = 20	Delta1 : 19.830 MHz : -1.233 dB		
Trace Mode = MAXH	T1 : 5711.250 MHz : 1.135 dBm		
	T2 : 5728.833 MHz : 1.205 dBm		
	OBW : 17.604 MHz		





Analysel Setup	Marker.Frequency.Amplitude	Test Results
Detector = POS	M1 : 5710.080 MHz : -19.667 dBm	Measured 26 dB Bandwidth: 19.830 MHz
Sweep Count = 0	M2 : 5724.920 MHz : 6.115 dBm	Measured 99% Bandwidth: 17.595 MHz
RF Atten (dB) = 20	Delta1 : 19.830 MHz : 1.502 dB	
Trace Mode = MAXH	T1 : 5711.250 MHz : 1.014 dBm	
	T2:5728.833 MHz:0.470 dBm	
	OBW : 17.595 MHz	





Analysei Setup	Marker. requercy. Amplitude	restitesuits
Detector = POS	M1 : 5710.250 MHz : -18.151 dBm	Measured 26 dB Bandwidth: 19.500 MHz
Sweep Count = 0	M2 : 5722.500 MHz : 6.967 dBm	Measured 99% Bandwidth: 17.496 MHz
RF Atten (dB) = 20	Delta1 : 19.500 MHz : 0.084 dB	
Trace Mode = MAXH	T1 : 5711.250 MHz : 1.008 dBm	
	T2 : 5728.750 MHz : 1.379 dBm	
	OBW : 17.496 MHz	





































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A.2. Power Spectral Density



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5256.580 MHz : 3.094 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		

back to matrix





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5261.250 MHz : 3.203 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5258.830 MHz : 2.967 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5257.500 MHz : 3.080 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5257.400 MHz : 8.937 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5257.400 MHz : 9.114 dBm	Margin: -0.2 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.18 dB	
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5296.750 MHz : 3.109 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5296.500 MHz : 3.604 dBm	Channel Frequency: 5300.00 MHz
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5297.250 MHz : 3.152 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5294.670 MHz : 2.827 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5296.800 MHz : 9.076 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5296.800 MHz : 9.253 dBm	Margin: -0.1 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.18 dB	
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5318.000 MHz : 2.806 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5317.830 MHz : 3.227 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5315.920 MHz : 2.670 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5314.920 MHz : 2.881 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		




Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5316.800 MHz : 8.770 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5316.800 MHz : 8.947 dBm	Margin: -0.4 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.18 dB	
Trace Mode = VIEW		





DOWER SPECTRA	

Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5323.700 MHz : -1.123 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





POWER SPECTRA	I DENSITY

Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5287.000 MHz : -0.611 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5324.700 MHz : -0.710 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		

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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5321.300 MHz : -0.489 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





POWER S	PECTRAL	DENSITY

Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5323.700 MHz : 5.124 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5323.700 MHz : 5.534 dBm	Margin: -3.8 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.41 dB	
Trace Mode = VIEW		

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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5257.170 MHz : 3.036 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5258.670 MHz : 3.106 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5258.580 MHz : 2.953 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5257.420 MHz : 2.949 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5257.600 MHz : 8.871 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5257.600 MHz : 8.959 dBm	Margin: -0.4 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.09 dB	
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5297.580 MHz : 3.159 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5297.170 MHz : 3.629 dBm	Channel Frequency: 5300.00 MHz
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5297.420 MHz : 3.171 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5293.920 MHz : 2.718 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5296.400 MHz : 9.098 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5296.400 MHz : 9.186 dBm	Margin: -0.1 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.09 dB	
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5317.250 MHz : 2.676 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5317.580 MHz : 3.061 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5317.000 MHz : 2.569 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5314.170 MHz : 2.714 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5317.300 MHz : 8.654 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5317.300 MHz : 8.742 dBm	Margin: -0.6 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.09 dB	
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5265.170 MHz : 2.291 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5267.500 MHz : 3.012 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5266.500 MHz : 2.417 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5281.670 MHz : 2.553 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5265.500 MHz : 8.435 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5265.500 MHz : 8.612 dBm	Margin: -0.7 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.18 dB	
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5307.830 MHz : 2.047 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5306.330 MHz : 2.523 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5306.000 MHz : 1.864 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5321.000 MHz : 2.333 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5305.200 MHz : 8.012 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5305.200 MHz : 8.189 dBm	Margin: -1.1 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.18 dB	
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5501.830 MHz : 3.549 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5496.250 MHz : 3.073 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5494.330 MHz : 2.547 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5506.080 MHz : 2.798 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5496.300 MHz : 8.769 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5496.300 MHz : 8.946 dBm	Margin: -0.4 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.18 dB	
Trace Mode = VIEW		




POWER SPECTRAL DENSITY

Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5577.750 MHz : 3.838 dBm	Limit: ≤ 3.280 dBm
RF Atten (dB) = 20		
Trace Mode = VIEW		

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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5587.500 MHz : 2.612 dBm	Channel Frequency: 5580.00 MHz
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5586.330 MHz : 2.694 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5584.170 MHz : 3.504 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5584.200 MHz : 9.010 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5584.200 MHz : 9.187 dBm	Margin: -0.1 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.18 dB	
Trace Mode = VIEW		





POWER SPECTRAL DENSITY

Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +100	M1 : 5724.170 MHz : 3.057 dBm	Limit: ≤ 3.280 dBm
RF Atten (dB) = 20 Trace Mode = VIEW		

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ODECTDAL	DENGITY

Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5725.330 MHz : 2.798 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5725.170 MHz : 2.747 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5722.170 MHz : 2.861 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5724.800 MHz : 8.711 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5724.800 MHz : 8.888 dBm	Margin: -0.4 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.18 dB	
Trace Mode = VIEW		





	SDECTRAL	DENSITY
FOWER	SPECIKAL	DENSIT

Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5567.000 MHz : -0.969 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5560.300 MHz : -1.310 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





POWER SPECTRAL	DENSITY

Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5558.300 MHz : -1.305 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





POWER SPECTRAL	DENSITY

Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5497.300 MHz : -0.507 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5538.700 MHz : 4.451 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5538.700 MHz : 4.861 dBm	Margin: -4.5 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.41 dB	
Trace Mode = VIEW		





CDECTDAL	DENICITY

Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5632.300 MHz : -0.816 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5639.300 MHz : -1.495 dBm	Channel Frequency: 5610.00 MHz
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5636.000 MHz : -1.385 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





	Sweep Count = +100 RF Atten (dB) = 20		
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5636.000 MHz : 4.627 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5636.000 MHz : 5.037 dBm	Margin: -4.3 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.41 dB	
Trace Mode = VIEW		





SDECTON	DENGITY

Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5727.000 MHz : -0.704 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





DOWED SDECTDA	I DENGITY

Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5718.300 MHz : -0.951 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analysei oetup	marker.rrequency.Ampitude	Test Results
Detector = AVER	M1 : 5717.000 MHz : -1.150 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





POWER SPECTRAL	DENSITY

Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5673.700 MHz : -0.756 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5718.300 MHz : 4.719 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5718.300 MHz : 5.129 dBm	Margin: -4.2 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.41 dB	
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5502.080 MHz : 3.478 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5495.670 MHz : 3.109 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5494.420 MHz : 2.480 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5505.580 MHz : 2.817 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5497.300 MHz : 8.728 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5497.300 MHz : 8.816 dBm	Margin: -0.5 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.09 dB	
Trace Mode = VIEW		



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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5582.580 MHz : 3.844 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		

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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5587.250 MHz : 2.701 dBm	Channel Frequency: 5580.00 MHz
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5587.170 MHz : 2.700 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5582.750 MHz : 3.496 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5585.800 MHz : 8.990 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5585.800 MHz : 9.078 dBm	Margin: -0.2 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.09 dB	
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5721.830 MHz : 3.167 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		




Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5726.170 MHz : 2.845 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5725.920 MHz : 2.745 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5722.830 MHz : 2.934 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5724.100 MHz : 8.674 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5724.100 MHz : 8.762 dBm	Margin: -0.6 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.09 dB	
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5507.830 MHz : 2.766 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5503.830 MHz : 2.288 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5504.000 MHz : 1.774 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5500.830 MHz : 2.668 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5503.000 MHz : 8.123 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5503.000 MHz : 8.300 dBm	Margin: -1.0 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.18 dB	
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5552.500 MHz : 2.885 dBm	Limit: ≤ 3.280 dBm
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5560.000 MHz : 2.161 dBm	Channel Frequency: 5550.00 MHz
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5558.330 MHz : 1.819 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5556.500 MHz : 2.648 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5556.500 MHz : 8.220 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5556.500 MHz : 8.397 dBm	Margin: -0.9 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.18 dB	
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5713.170 MHz : 2.229 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5716.000 MHz : 2.078 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5717.170 MHz : 1.870 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5712.830 MHz : 2.530 dBm	Limit: ≤ 3.280 dBm
Sweep Count = +100		
RF Atten (dB) = 20		
Trace Mode = VIEW		





Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER	M1 : 5715.300 MHz : 7.953 dBm	Limit: ≤ 9.3 dBm
Sweep Count = +100	M1 + DCCF : 5715.300 MHz : 8.130 dBm	Margin: -1.2 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.18 dB	
Trace Mode = VIEW		

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