REGULATORY COMPLIANCE TEST REPORT

FCC CFR 47 Part 15.407 & ISED RSS-247

Report No.: MIKO116-U2 Rev A

Company: MikroTikls SIA

Model Name: RBD53GR-5HacD2HnD-US&R11e-LTE6

REGULATORY COMPLIANCE TEST REPORT

Company Name: Mikrotikls SIA

Model Name: RBD53GR-5HacD2HnD-US&R11e-LTE6

To: FCC CFR 47 Part 15.407 & ISED RSS-247

Test Report Serial No.: MIKO116-U2 Rev A

Applicant: Mikrotikls SIA
Brivibas gatve 214i
Riga LV-1039,
Latvia

Issue Date: 28th June 2021

This Test Report is Issued Under the Authority of:

MiCOM Labs, Inc.
575 Boulder Court
Pleasanton California 94566
USA
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A2LA ACCREDITED
TESTING CERT #2381.01

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 17025:2017. The company is accredited by the American Association for Laboratory Accreditation (A2LA) www.a2la.org test laboratory number 2381.01. MiCOM Labs test schedule is available at the following URL; http://www.a2la.org/scopepdf/2381-01.pdf

Accredited Laboratory

A2LA has accredited

MICOM LABS

Pleasanton, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

Presented this 24th day of February 2020.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2381.01
Valid to November 30, 2021

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

1.2. RECOGNITION

MiCOM Labs, Inc is widely recognized for its wireless testing and certification capabilities. In addition to being recognized for Testing and Certification under Phase 2 Mutual Recognition Agreements (MRA) with Canada, Europe, United Kingdom and Japan, our international recognition includes Conformity Assessment Body (CAB) designation status under agreements with Asia Pacific (APEC) MRA Phase 1 countries giving acceptance of MiCOM Labs test reports. MiCOM Labs test reports are accepted globally.

Country	Recognition Body	Status	MRA Phase	Identification No.
USA	Federal Communications Commission (FCC)	TCB	-	US0159 Test Firm Designation#: US1084
Canada	Industry Canada (ISED)	FCB	APEC MRA 2	US0159 ISED#: 4143A
Japan	MIC (Ministry of Internal Affairs and Communication)	CAB	Japan MRA 2	RCB 210
	Japan Approvals Institute for Telecommunication Equipment (JATE)			
	VCCI	--	--	A-0012
Europe	European Commission	NB	EU MRA 2	NB 2280
United Kingdom	Department for Business, Energy & Industrial Strategy (BEIS)	AB	UK MRA 2	AB 2280
Mexico	Instituto Federal de Telecomunicaciones (IFT)	CAB	Mexico MRA 1	US0159
Australia	Australian Communications and Media Authority (ACMA)	CAB	APEC MRA 1	US0159
Hong Kong	Office of the Telecommunication Authority (OFTA)			
Korea	Ministry of Information and Communication Radio Research Laboratory (RRL)			
Singapore	Infocomm Development Authority (IDA)			
Taiwan	National Communications Commission (NCC) Bureau of Standards, Metrology and Inspection (BSMI)			
Vietnam	Ministry of Communication (MIC)			

TCB – Telecommunications Certification Bodies (TCB)
FCB – Foreign Certification Body
CAB – Conformity Assessment Body
NB – Notified Body
AB – Approved Body
MRA – Mutual Recognition Agreement
MRA PhasePhase I - recognition for product testing
Phase II – recognition for both product testing and certification

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) www.a2la.org test laboratory number 2381.02. MiCOM Labs test schedule is available at the following URL; http://www.a2la.org/scopepdf/2381-02.pdf

Accredited Product Certification Body

A2LA has accredited

MiCOM LABS

Pleasanton, CA

This product certification body is accredited in accordance with the recognized International Standard ISO/IEC 17065:2012 *Requirements for bodies certifying products, processes and services*. This product certification body also meets the A2LA R322 – *Specific Requirements – Notified Body Accreditation Requirements* and A2LA R308 - *Specific Requirements - ISO-IEC 17065 - Telecommunication Certification Body Accreditation Program*. This accreditation demonstrates technical competence for a defined scope and the operation of a management system.

Presented this 24th day of February 2020

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2381.02
Valid to November 30, 2021

For the product certification schemes to which this accreditation applies, please refer to the organization's Product Certification Scope of Accreditation.

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

2. DOCUMENT HISTORY

Document History		
Revision	Date	Comments
Draft	24th June 2021	Draft report for client review.
Rev A	28th June 2021	Initial release.
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In the above table the latest report revision will replace all earlier versions.

The scope of the test program is to perform DFS testing of the Mikrotikls SIA RBD53GR-5HacD2HnD-US&R11e-LTE6 and test the product in 802.11ac-80 mode in the frequency ranges 5250 - 5350 MHz and 5470 - 5725 MHz.

The results in this test report act as an addendum to testing already performed and reported in the following test reports issued by 3rd party Test Labs.

Tested By	Report Number	Date	Comments
Rodger Labs Inc	200115	18th June 2019	47CFR 15.247 ISED RSS-247, FCC Part 15B
Bay Area Compliance Labs (BACL)	RSZ200901003-00A1	4th January 2021	FCC Part 15.407 RF
Bay Area Compliance Labs (BACL)	RSZ200901004-00A1	28th February 2021	FCC Part 15.407 DFS

3. TEST RESULT CERTIFICATE

Manufacturer:	Mikrotikls SIA Brivibas gatve 214i Riga LV-1039 Latvia	**Tested By:**	MiCOM Labs, Inc. 575 Boulder Court Pleasanton California 94566, USA
Model:	RBD53GR-5HacD2HnD-US&R11e-LTE6	**Telephone:**	+1 925 462 0304
Type Of Equipment:	Wireless Access Point	**Fax:**	+1 925 462 0306
S/N's:	D6230C4663CF		
Test Date(s):	16th – 18th June 2021	**Website:**	www.micomlabs.com

STANDARD(S)	TEST RESULTS
FCC CFR 47 Part 15.407 & ISED RSS-247 DFS testing and test of the product in 802.11ac-80 mode in the frequency ranges 5250 - 5350 MHz and 5470 - 5725 MHz.	**EQUIPMENT COMPLIES**

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.

ACCREDITED
TESTING CERT #2381.01

Approved & Released for MiCOM Labs, Inc. by:

Graeme Grieve
Quality Manager MiCOM Labs, Inc.

Gordon Hurst
President & CEO MiCOM Labs, Inc.

4. REFERENCES AND MEASUREMENT UNCERTAINTY

4.1. Normative References

REF.	PUBLICATION	YEAR	TITLE
I	KDB 662911 D01 & D02	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
II	KDB 905462 D07 v02	22nd August 2016	Test guidance to demonstrate compliance for U-NII devices subject to DFS requirements.
III	KDB 926956 D01 v02	22nd August 2016	U-NII Device Transition Plan
IV	A2LA	5th October 2020	R105 - Requirement's When Making Reference to A2LA Accreditation Status
V	ANSI C63.10	2013	American National Standard for Testing Unlicensed Wireless Devices
VI	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
VII	CISPR 32	2015	Electromagnetic compatibility of multimedia equipment - Emission requirements
VIII	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
IX	FCC 06-96	Jun 30 2006	Memorandum Opinion and Order
X	FCC 47 CFR Part 15.407	2020	Radio Frequency Devices; Subpart E –Unlicensed National Information Infrastructure Devices
XI	ICES-003	Issue 7; October 15,2020	Information Technology Equipment (Including Digital Apparatus)
XII	M 3003	Edition 3 Nov.2012	Expression of Uncertainty and Confidence in Measurements
XIII	RSS-247 Issue 2	Feb 2017	Digital Transmission Systems (DTSs), Frequency Hopping System (FHSs) and License-Exempt Local Area Network (LE-LEN) Devices
XIV	RSS-Gen Issue 5	2018	General Requirements for Compliance of Radio Apparatus. With Amendments 1: March 2019 and 2: Feb 2021.
XV	FCC 47 CFR Part 2.1033	2020	FCC requirements and rules regarding photographs and test setup diagrams.
XVI	KDB 905462 D02 v02	April 8 2016	Compliance Measurement Procedures for Unlicensed National Information Infrastructure devices operating in the 5250 to 5350 MHz and 5470 to 5725 MHz bands incorporating Dynamic Frequency Selection.
XVII	KDB 789033 D02 V02r01	14th December, 2017	Guidelines For Compliance Testing Of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E

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 Mikrotikls SIA RBD53GR-5HacD2HnD-US&R11e-LTE6 to FCC CFR 47 Part 15.407 & ISED RSS-247. Compliance Measurement Procedures for Unlicensed National Information Infrastructure devices operating in the 5250 to 5350 MHz and 5470 to 5725 MHz bands incorporating Dynamic Frequency Selection. Radio parameter testing limited to 802.11ac-80 mode only.
Applicant:	Mikrotikls SIA Brivibas gatve 214i Riga Latvia LV-1039
Manufacturer:	Mikrotikls SIA
Laboratory performing the tests:	MiCOM Labs, Inc. 575 Boulder Court Pleasanton California 94566 USA
Test report reference number:	MIKO116-U2 Rev A
Date EUT received:	27th May 2021
Standard(s) applied:	FCC CFR 47 Part 15.407 & ISED RSS-247
Dates of test (from - to):	16 – 18th June 2021
No of Units Tested:	2
Product Family Name:	hAP ac^3
Model(s):	RBD53GR-5HacD2HnD-US&R11e-LTE6
Location for use:	Indoors
Declared Frequency Range(s):	5250 - 5350 MHz; 5470 - 5725 MHz;
Type of Modulation:	OFDM
EUT Modes of Operation Tested:	5250 - 5350 MHz: ac-80; 5470 - 5725 MHz: ac-80;
Declared Nominal Output Power:	23 dBm
Transmit/Receive Operation:	Transceiver
Rated Input Voltage and Current:	24 Vdc – 1.2 A
Operating Temperature Range:	-30 to +60°C
ITU Emission Designator:	AC-80; 76M4D1D
Equipment Dimensions:	251 x 129 x 39 mm
Weight:	0.65 Kg
Hardware Rev:	r5
Software Rev:	RouterOS 6.49beta47

5.2. Scope Of Test Program

Mikrotikls SIA RBD53GR-5HacD2HnD-US&R11e-LTE6

The scope of the test program is to perform DFS testing of the Mikrotikls SIA RBD53GR-5HacD2HnD-US&R11e-LTE6 and test the product in 802.11ac-80 mode in the frequency ranges 5250 - 5350 MHz and 5470 - 5725 MHz for compliance against the following specifications:

FCC CFR 47 Part 15 Subpart E 15.407
Compliance Measurement Procedures for Unlicensed National Information Infrastructure devices operating in the 5250 to 5350 MHz and 5470 to 5725 MHz bands incorporating Dynamic Frequency Selection.

ISED RSS-247
Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices.

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

Type (EUT/ Support)	Equipment Description	Manufacturer	Model No.	Serial No.
EUT	Access Point (Radiated)	MikroTik	RBD53GR-5HacD2HnD&R11e-LTE	D6230C793ED8
EUT	Access Point (Conducted)	MikroTik	RBD53GR-5HacD2HnD&R11e-LTE	D6230C4663CF
Support	24V AC/DC Power Supply	Shenzhen Yingyuan Electronics Co.,Ltd	SAW30-240-1200U	--
Support	Laptop	Dell	D620	--

5.4. Antenna Details

Type	Manufacturer	Model	Family	Gain (dBi)	BF Gain	Dir BW	X-Pol	Frequency Band (MHz)
integral	MikroTik	95XKAJ15.GA3	PCB	5.5	-	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	Bit Rate	Environment
Ethernet	>30m	5	No	RJ45	Packet Data	10,100,1000	End-User
USB	3m	1	Yes	USB-A	Digital	None	End-User
dc Jack		1	No	DC Jack	Analog		Power

5.6. Test Configurations

Results for the following configurations are provided in this report:

Operational Mode(s) (802.11a/b/g/n/ac)	Data Rate with Highest Power MBit/s	Channel Frequency (MHz)		
		Low	Mid	High
5250 - 5350 MHz				
ac-80	29.3	--	--	5,290.00
5470 - 5725 MHz				
ac-80	29.3	5,530.00	5,610.00	5,690.00

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

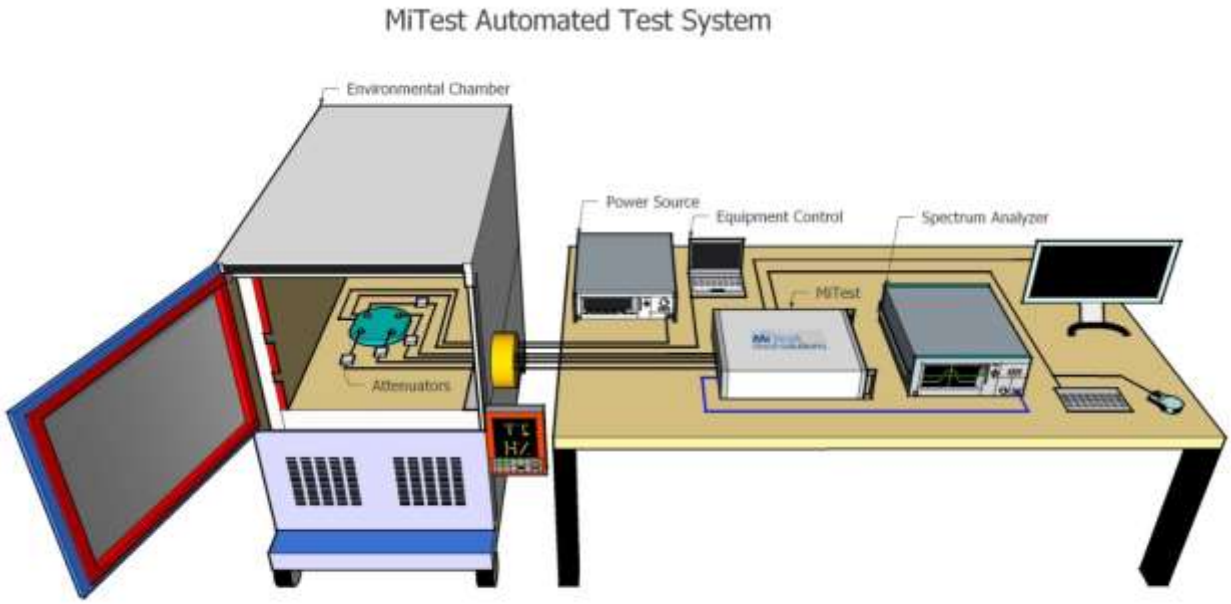
Test Header	Result	Data Link
Peak Transmit Power	Complies	View Data
26 dB & 99% Bandwidth	Complies	View Data
Power Spectral Density	Complies	View Data
Dynamic Frequency Selection (DFS)	Complies	-
Channel Availability Check	Complies	-
Initial CAC	Complies	View Data
Beginning CAC	Complies	View Data
End CAC	Complies	View Data
Channel Close / Transmission Time	Complies	View Data
Non-Occupancy Period	Complies	View Data
Probability of Detection	Complies	View Data
Detection Bandwidth	Complies	View Data
Radiated	Complies	-
TX Spurious & Restricted Band Emissions	Complies	Ref Report RSZ200901003-00A1*
Restricted Edge & Band-Edge Emissions	Complies	View Data
Digital Emissions	Complies	Ref Report RSZ200901003-00A1*
AC Wireline	Complies	Ref Report 200115 *

*Refer to Document History Section of this report.

7. TEST EQUIPMENT CONFIGURATION(S)

7.1. Conducted

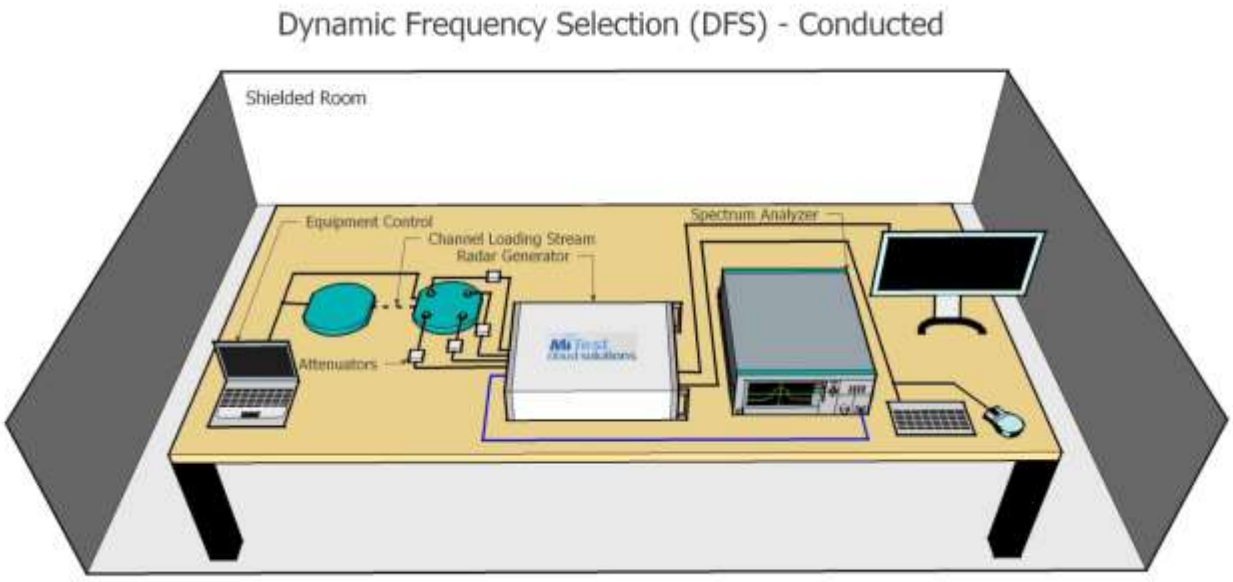
Conducted RF Emission Test Set-up(s).



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.

Asset#	Description	Manufacturer	Model#	Serial#	Calibration Due Date
#3 SA	MiTest Box to SA	Fairview Microwave	SCA1814-0101-72	#3 SA	4 Sep 2021
#3P1	EUT to MiTest box port 1	Fairview Microwave	SCA1814-0101-72	#3P1	4 Sep 2021
#3P2	EUT to MiTest box port 2	Fairview Microwave	SCA1814-0101-72	#3P2	4 Sep 2021
#3P3	EUT to MiTest box port 3	Fairview Microwave	SCA1814-0101-72	#3P3	4 Sep 2021
#3P4	EUT to MiTest box port 4	Fairview Microwave	SCA1812-0101-72	#3P4	4 Sep 2021
249	Thermocouple; Resistance Thermometer	Thermotronics	GR2105-02	9340 #2	30 Oct 2021
287	Rohde & Schwarz 40 GHz Receiver	Rhode & Schwarz	ESIB40	100201	8 Oct 2021
398	MiTest RF Conducted Test Software	MiCOM	MiTest ATS	Version 4.2.3.0	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
440	USB Wideband Power Sensor	Boonton	55006	9178	22 Sep 2021
441	USB Wideband Power Sensor	Boonton	55006	9179	20 Sep 2021
442	USB Wideband Power Sensor	Boonton	55006	9181	19 Sep 2021
445	PoE Injector	D-Link	DPE-101GL	QTAH1E2000625	Not Required
461	Spectrum Analyzer	Agilent	E4440A	MY46185537	20 Sep 2021
510	Barometer/Thermometer	Control Company	68000-49	170871375	20 Dec 2021
515	MiTest Cloud Solutions RF Test Box	MiCOM	2nd Gen with DFS	515	4 Sep 2021
534	Power Sensor 50 GHz - 70dBm to +20dBm	R&S	NRP50SN	1419.0093K02-100888-SB	26 Feb 2022
75	Environmental Chamber	Thermatron	SE-300-2-2	27946	20 Feb 2022

7.2. DFS - Conducted



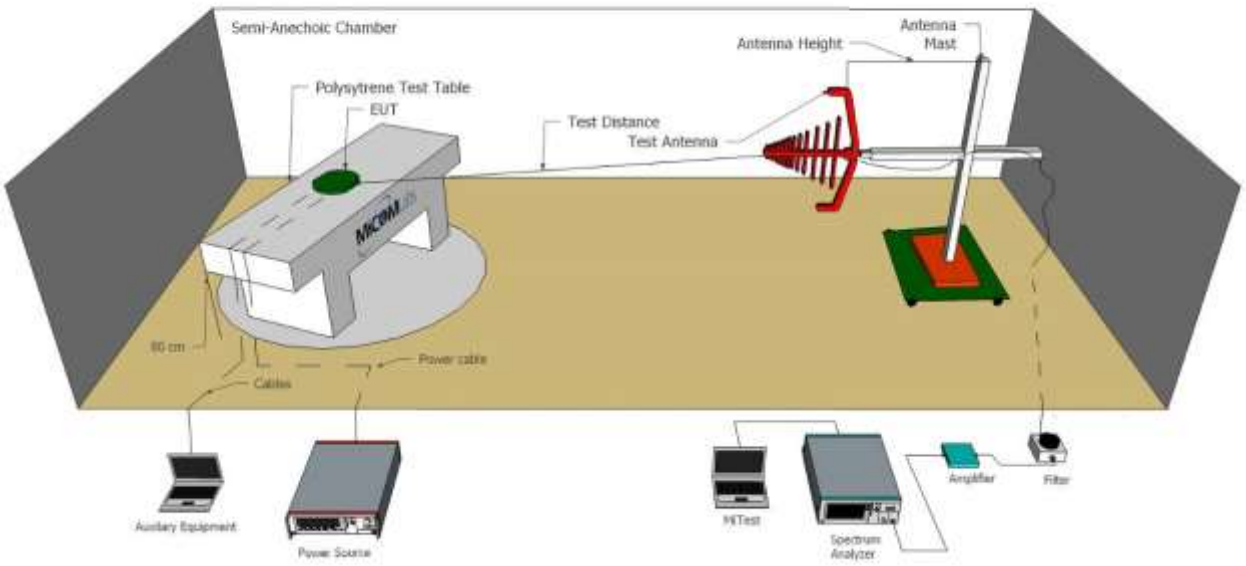
A full system calibration was performed on the test station and any resulting system losses (or gains) were taken into account in the production of all final measurement data.

Asset#	Description	Manufacturer	Model#	Serial#	Calibration Due Date
504	MiTest Cloud Solutions RF Test Box	MiCOM	2nd Gen	504	5 Sep 2021
510	Barometer/Thermometer	Control Company	68000-49	170871375	20 Dec 2021
533	MiTest DFS Test Software	MiCOM	MiTest DFS Test software Version 2.8	533	Not Required
71	Spectrum Analyser 9KHz-50GHz	HP	8565E	3425A00181	Not Required
DFS SMA#1	SMA Cable for DFS	Megaphase	SMA Cable	None	Cal when used
DFS SMA#2	SMA Cable for DFS	Megaphase	SMA Cable	None	Cal when used
DFS SMA#3	SMA Cable for DFS	Megaphase	SMA Cable	None	Cal when used
DFS SMA#4	SMA Cable for DFS	Megaphase	SMA Cable	None	Cal when used

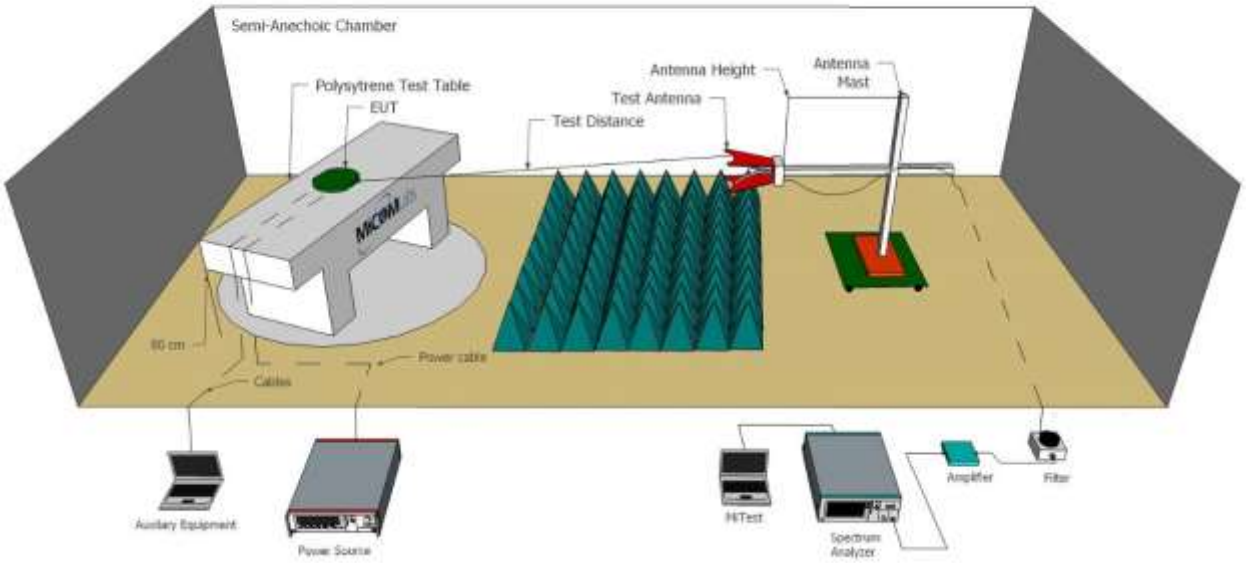
7.3. Radiated Emissions - 3m Chamber

Test Setup for Radiated Emissions for above and below 1 GHz

Radiated Emissions Below 1GHz Test Setup



Radiated Emissions Above 1GHz Test 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.

Asset#	Description	Manufacturer	Model#	Serial#	Calibration Due Date
170	Video System Controller for Semi Anechoic Chamber	Panasonic	WV-CU101	04R08507	Not Required
287	Rohde & Schwarz 40 GHz Receiver	Rhode & Schwarz	ESIB40	100201	8 Oct 2021
338	Sunol 30 to 3000 MHz Antenna	Sunol	JB3	A052907	4 Oct 2021
377	Band Rejection Filter 5150 to 5880MHz	Microtronics	BRM50716	034	4 Sep 2021
397	Amp 10 - 2500MHz	MiCOM Labs	Amp 10 - 2500 MHz	NA	9 Sep 2021
399	ETS 1-18 GHz Horn Antenna	ETS	3117	00154575	12 Sep 2021
406	Amplifier for Radiated Emissions	MiCOM Labs	40dB 1 to 18GHz Amp	0406	9 Sep 2021
410	Desktop Computer	Dell	Inspiron 620	WS38	Not Required
411	Mast/Turntable Controller	Sunol Sciences	SC98V	060199-1D	Not Required
412	USB to GPIB Interface	National Instruments	GPIB-USB HS	11B8DC2	Not Required
413	Mast Controller	Sunol Science	TWR95-4	030801-3	Not Required
415	Turntable Controller	Sunol Sciences	Turntable Controller	None	Not Required
447	MiTest Rad Emissions Test Software	MiCOM	Rad Emissions Test Software Version 1.0	447	Not Required
462	Schwarzbeck cable from Antenna to Amplifier.	Schwarzbeck	AK 9513	462	4 Sep 2021
463	Schwarzbeck cable from Amplifier to Bulkhead.	Schwarzbeck	AK 9513	463	4 Sep 2021
464	Schwarzbeck cable from Bulkhead to Receiver	Schwarzbeck	AK 9513	464	4 Sep 2021
480	Cable - Bulkhead to Amp	SRC Haverhill	157-3050360	480	4 Sep 2021
481	Cable - Bulkhead to Receiver	SRC Haverhill	151-3050787	481	4 Sep 2021
510	Barometer/Thermometer	Control Company	68000-49	170871375	20 Dec 2021
518	Cable - Amp to Antenna	SRC Haverhill	157-3051574	518	4 Sep 2021

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 MiTest. MiTest is an automated test system developed by MiCOM Labs. MiTest 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)

9. TEST RESULTS

9.1. Peak Transmit Power

Conducted Test Conditions for Maximum Conducted Output Power			
Standard:	FCC CFR 47:15.407	**Ambient Temp. (ºC):**	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 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.

Variant:	802.11ac-80	**Duty Cycle (%):**	80.0
Data Rate:	29.30 MBit/s	**Antenna Gain (dBi):**	5.50
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JK
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Conducted Output Power (dBm) Port(s)				Calculated Total Power + DCCF (+0.97 dBm)	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
MHz	a	b	c	d	Σ Port(s) dBm	MHz	dBm	dB	
5290.0	19.54	19.55			23.52	93.600	24.00	-0.48	20.00

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

The above measurements include a Duty Cycle Correction Factor (DCCF).

Equipment Configuration for Peak Transmit Power			
Variant:	802.11ac-80	**Duty Cycle (%):**	80.0
Data Rate:	29.30 MBit/s	**Antenna Gain (dBi):**	5.50
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JK
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Conducted Output Power (dBm) Port(s)				Calculated Total Power + DCCF (+0.97 dBm	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
MHz	a	b	c	d	Σ Port(s) dBm	MHz	dBm	dB	
5530.0	13.40	13.60			17.48	91.470	24.00	-6.52	20.00
5610.0	13.26	13.36			17.29	93.070	24.00	-6.71	20.00
5690.0	14.76	15.19			18.96	92.000	24.00	-5.04	20.00

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

The above measurements include a Duty Cycle Correction Factor (DCCF).

9.2. 26 dB & 99% Bandwidth

Conducted Test Conditions for 26 dB and 99% Bandwidth			
Standard:	FCC CFR 47:15.407	**Ambient Temp. (ºC):**	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.

Equipment Configuration for 26 dB & 99% Occupied Bandwidth

Variant:	802.11ac-80	**Duty Cycle (%):**	80.0
Data Rate:	29.30 MBit/s	**Antenna Gain (dBi):**	5.50
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JK
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz) Port(s)				26 dB Bandwidth (MHz)			
MHz	**a**	**b**	**c**	**d**	**Highest**	**Lowest**		
5290.0	93.600	94.400			94.400	93.600		

Test Frequency	Measured 99% Bandwidth (MHz) Port(s)				99% Bandwidth (MHz)			
MHz	**a**	**b**	**c**	**d**	**Highest**	**Lowest**		
5290.0	76.190	76.156			76.190	76.156		

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).

Equipment Configuration for 26 dB & 99% Occupied Bandwidth

Variant:	802.11ac-80	**Duty Cycle (%):**	80.0
Data Rate:	29.30 MBit/s	**Antenna Gain (dBi):**	5.50
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JK
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz) Port(s)				26 dB Bandwidth (MHz)			
MHz	**a**	**b**	**c**	**d**	**Highest**	**Lowest**		
5530.0	95.470	91.470			95.470	91.470		
5610.0	93.870	93.070			93.870	93.070		
5690.0	92.530	92.000			92.530	92.000		

Test Frequency	Measured 99% Bandwidth (MHz) Port(s)				99% Bandwidth (MHz)			
MHz	**a**	**b**	**c**	**d**	**Highest**	**Lowest**		
5530.0	76.125	76.127			76.127	76.125		
5610.0	76.157	76.079			76.157	76.079		
5690.0	76.194	76.327			76.327	76.194		

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. (ºC):**	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 0 is summed with that in 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 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.

Equipment Configuration for Power Spectral Density

Variant:	802.11ac-80	**Duty Cycle (%):**	80.0
Data Rate:	29.30 MBit/s	**Antenna Gain (dBi):**	5.50
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	
TPC:	Not Applicable	**Tested By:**	JK
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Power Spectral Density Port(s) (dBm/MHz)				Summation Peak Marker + DCCF (+0.97 dB)	Limit	Margin
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5290.0	-3.815	-5.452			-0.577	11.0	-11.6

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).

Equipment Configuration for Power Spectral Density			
Variant:	802.11ac-80	**Duty Cycle (%):**	80.0
Data Rate:	29.30 MBit/s	**Antenna Gain (dBi):**	5.50
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JK
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Power Spectral Density Port(s) (dBm/MHz)				Summation Peak Marker + DCCF (+0.97 dB)	Limit	Margin
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5530.0	-4.532	-5.150			-0.851	11.0	-11.9
5610.0	-4.892	-5.251			-1.139	11.0	-12.1
5690.0	-3.064	-3.228			0.726	11.0	-10.3

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).

9.4. Dynamic Frequency Selection (DFS)

Test Conditions for Dynamic Frequency Selection (DFS)			
Standard:	FCC 15.407	**Ambient Temp. (ºC):**	20.0 - 24.5
Test Heading:	Dynamic Frequency Selection (DFS)	**Rel. Humidity (%):**	32 - 45
Standard Section(s):	KDB 905462	**Pressure (mBars):**	999 - 1001
EUT Type:	Master	**Frequency Bands:**	5,250 – 5,350 MHz 5,470 – 5,725 MHz
Test Environment:	Conducted	**Antenna Gain used for Testing:**	5.5 dBi
Detection Threshold:	-64 dBm	**Test Radar Level: (Threshold + Gain)**	-58.5 dBm
Number of Antenna Chains:	2	**Duty Cycle Target:**	≥ 17.00%
Transmit Power:	+23 dBm	**Minimum Data Rate:**	NSS1-MCS0
Uniform Loading:	For the above frequency band(s) the manufacturer declared that the device provides an aggregate uniform loading of the spectrum across all devices by selecting an operating channel among the available channels using a random algorithm.		
Communication Method:	The requisite MPEG video file (“TestFile.mpg” available on the NTIA website at the following link http://ntiacsd.ntia.doc.gov/dfs/) is used during this video stream. iPerf is used in cases where the video stream does not provide the necessary load.		
Engineer Notes:			

Master Devices

a) The Master Device will use DFS in order to detect Radar Waveforms with received signal strength above the DFS Detection Threshold in the 5250 − 5350 MHz and 5470 − 5725 MHz bands. DFS is not required in the 5150 − 5250 MHz or 5725 – 5850 MHz bands.

b) Before initiating a network on a Channel, the Master Device will perform a Channel Availability Check for a specified time duration (Channel Availability Check Time) to ensure that there is no radar system operating on the Channel, using DFS described under subsection a) above.

c) The Master Device initiates a U-NII network by transmitting control signals that will enable other U-NII devices to Associate with the Master Device.

d) During normal operation, the Master Device will monitor the Channel (In-Service Monitoring) to ensure that there is no radar system operating on the Channel, using DFS described under a).

e) If the Master Device has detected a Radar Waveform during In-Service Monitoring as described under d), the Operating Channel of the U-NII network is no longer an Available Channel. The Master Device will instruct all associated Client Device(s) to stop transmitting on this Channel within the Channel Move Time. The transmissions during the Channel Move Time will be limited to the Channel Closing Transmission Time.

f) Once the Master Device has detected a Radar Waveform it will not utilize the Channel for the duration of the Non-Occupancy Period.

g) If the Master Device delegates the In-Service Monitoring to a Client Device, then the combination will be tested to the requirements described under d) through f) above.

9.4.1. Channel Availability Check

9.4.1.1. Initial CAC

This test verifies that the EUT does not emit pulse, control, or data signals on the test Channel until the power-up sequence has been completed and the U-NII device checks for Radar Waveforms for one minute on the test Channel. This test does not use any Radar Waveforms.

The EUT is instructed to power up at the appropriate center frequency. The spectrum analyzer is set on zero span with a 1 MHz resolution bandwidth and 300 second sweep time to monitor the RF output of the EUT during power up. The analyzer's sweep will be started the same time power is applied to the U-NII device.

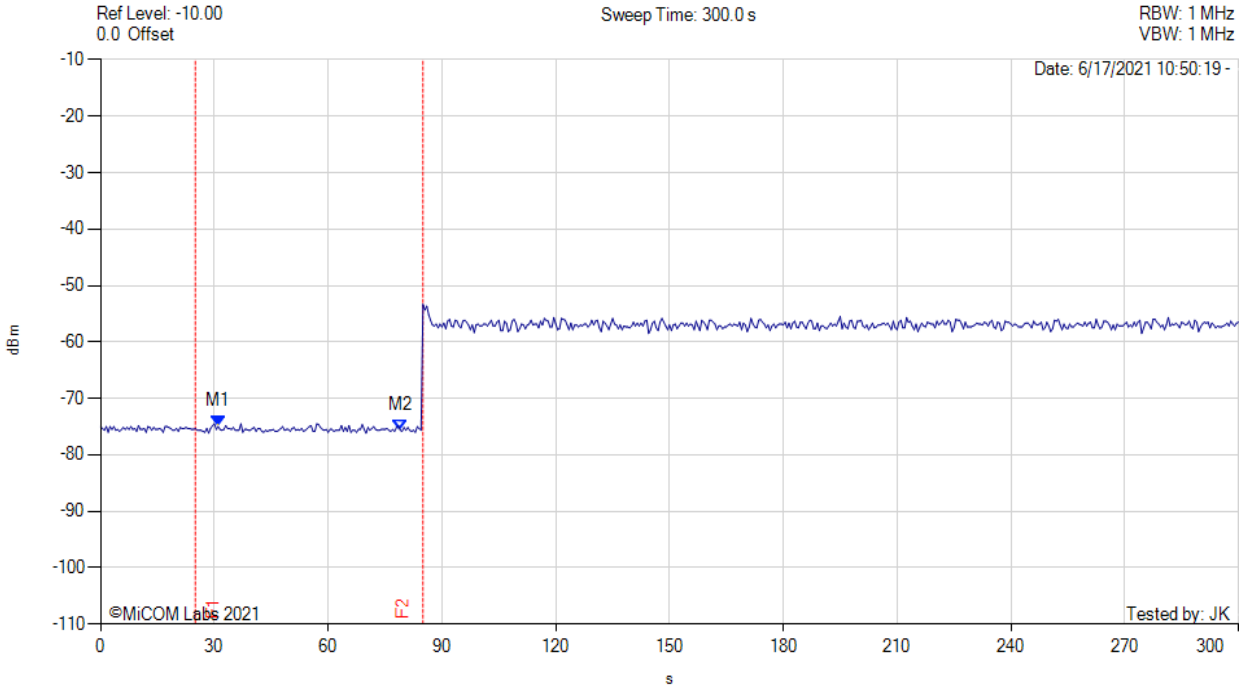
The EUT should not transmit any pulse or data transmissions until at least 1 minute after the completion of the power-on cycle.

The first red vertical line shown on the following plot denotes the instant when the EUT completes its power-up sequence i.e. T0 (as defined within the FCC's KDB 905462 D02 Section 4.1). The power-up reference T0 is determined by the time it takes for the EUT to start "beaconing" i.e. initial beacon - 60 secs = end of power-up.

The Channel Availability Check Time commences at instant T0 and will end no sooner than T0 + 60 seconds. T0 + 60 is indicated on the plot by the second vertical line.

INITIAL CAC

Variant: 802.11ac-80, Channel: 5530.00 MHz, Data Rate: NSS1-MCS0, Duty Cycle: 0.10%, Antenna Gain: 5.50 dBi



Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = POS Sweep Count = View RF Atten (dB) = 0 Trace Mode = 0	M1 : 31.000 s : -75.000 dBm M2 : 79.000 s : -75.660 dBm	Channel Frequency: 5530.00 MHz Monitored Frequency: 5500.00 MHz

9.4.1.2. Beginning CAC

The steps below define the procedure to verify successful radar detection on the selected Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold +1dB (Ref Section 9.2) occurs at the beginning of the Channel Availability Check Time.

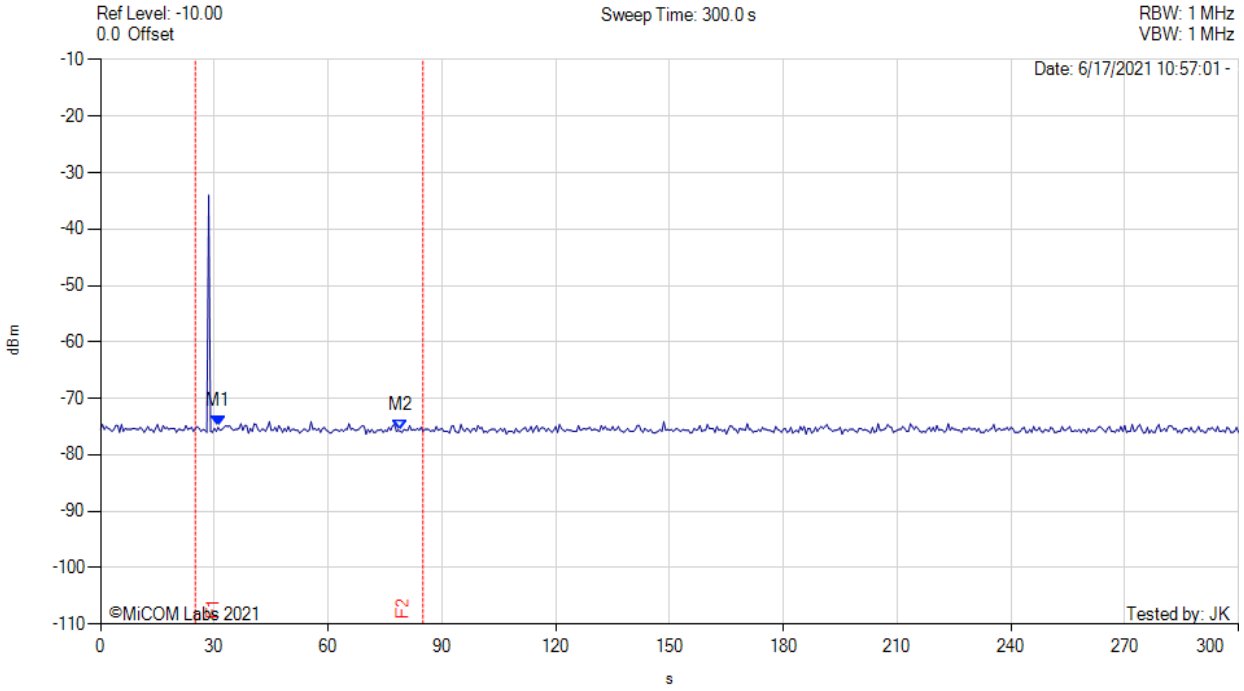
A single Burst of short pulse of radar Type 1 will commence within a 6 second window starting at T0 (first red vertical marker line on the plot).

Visual indication on the EUT of successful detection of the radar Burst is recorded and reported. Observation of emissions at the appropriate center frequency will continue for 2.5 minutes after the radar burst has been generated.

T0 + 60 is indicated on the plot by the second vertical line.

BEGINNING CAC

Variant: 802.11ac-80, Channel: 5530.00 MHz, Data Rate: NSS1-MCS0, Duty Cycle: 0.10%, Antenna Gain: 5.50 dBi



Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = POS Sweep Count = View RF Atten (dB) = 0 Trace Mode = 0	M1 : 31.000 s : -75.000 dBm M2 : 79.000 s : -75.660 dBm	Channel Frequency: 5530.00 MHz Monitored Frequency: 5500.00 MHz

9.4.1.3. End CAC

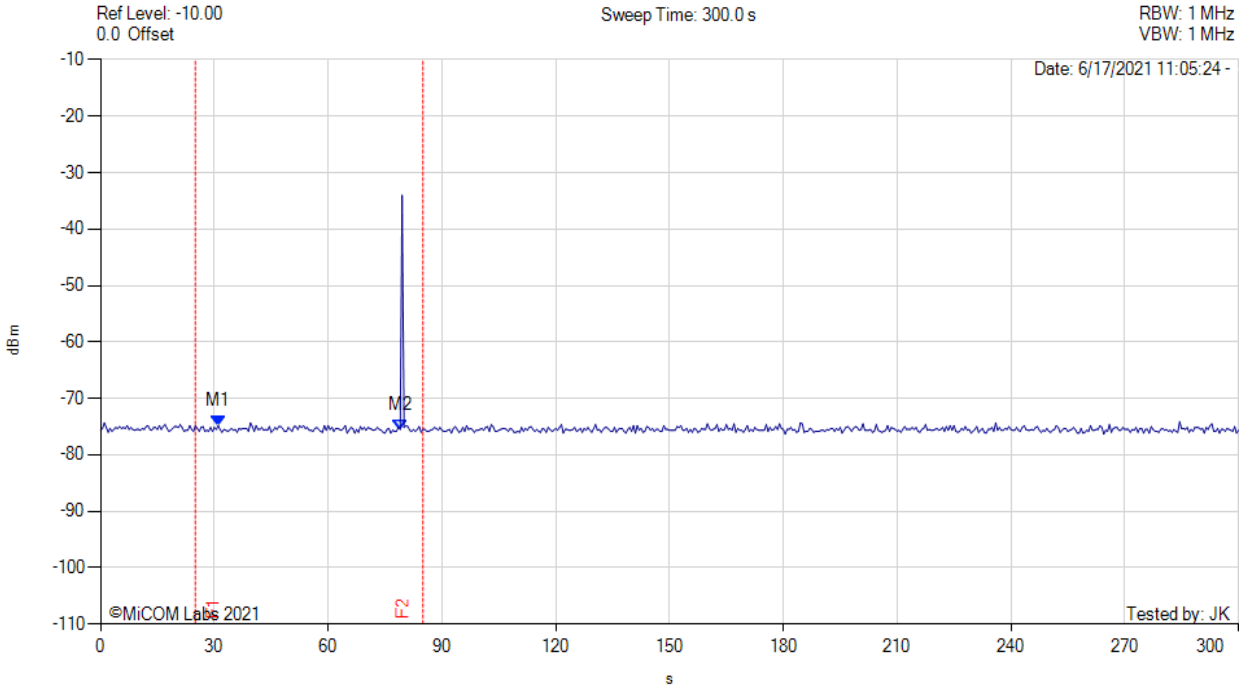
The steps below define the procedure to verify successful radar detection on the selected Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold occurs at the end of the Channel Availability Check Time.

A single Burst of short pulse of radar Type 1 will commence within a 6 second window starting at T0 + 54 seconds. The window will commence at marker 3 and end at the red time line T2 (T0 + 60 secs)

Visual indication on the EUT of successful detection of the radar Burst is recorded and reported. Observation of emissions at the appropriate center frequency will continue for 2.5 minutes after the radar burst has been generated.

END CAC

Variant: 802.11ac-80, Channel: 5530.00 MHz, Data Rate: NSS1-MCS0, Duty Cycle: 0.10%, Antenna Gain: 5.50 dBi



Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = POS Sweep Count = View RF Atten (dB) = 0 Trace Mode = 0	M1) : 31.000 s : -75.000 dBm M2 : 79.000 s : -75.660 dBm	Channel Frequency: 5530.00 MHz Monitored Frequency: 5500.00 MHz

9.4.2. Channel Close / Transmission Time

The steps below define the procedure to determine the above-mentioned parameters when a radar burst with a level of up to 10 dB above the DFS Detection threshold is injected on the Operating Channel of the EUT.

Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel for duration greater than 10 seconds. Measure and record the transmissions from the EUT during the observation time (Channel Move Time). Compare the Channel Move Time and Channel Closing Transmission Time results to the limits defined in the DFS Response requirement values table.

Channel Closing Transmission Time - Measurement
The reference radar signature was introduced to the EUT, from which a 11 second transmission record was captured, as well as 1000ms of pre-trigger data. The Reference radar type was triggered to play at the exact time allowing the end of the pulse to occur at time t=0.

The system was setup to capture data for all transmission events above a given threshold level as determined and adjusted by the test engineer. The system time stamps all captured events with respect to T0 (zero time indicating the start of the measurement sequence) starting at the end of the radar pulse indicated by the purple vertical marker line in the Plot (on the next page).

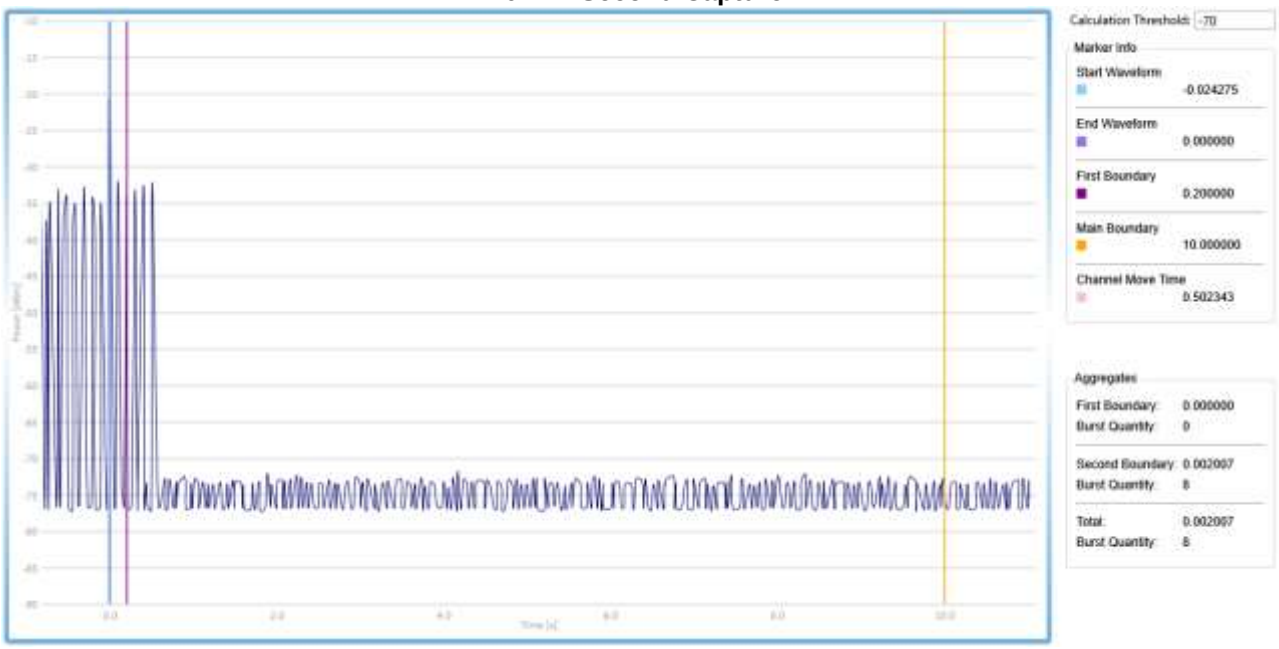
The system captured data over a 12 second period at 10 points per microsecond. The data is analyzed by counting all “bursts” that occur above the threshold limit and aggregating the time each burst is on. The data is then compressed for presentation in one 12 second segment showing all of the activity recorded over the period.

80 MHz Channel 5530 MHz; Monitored Frequency: 5500 MHz

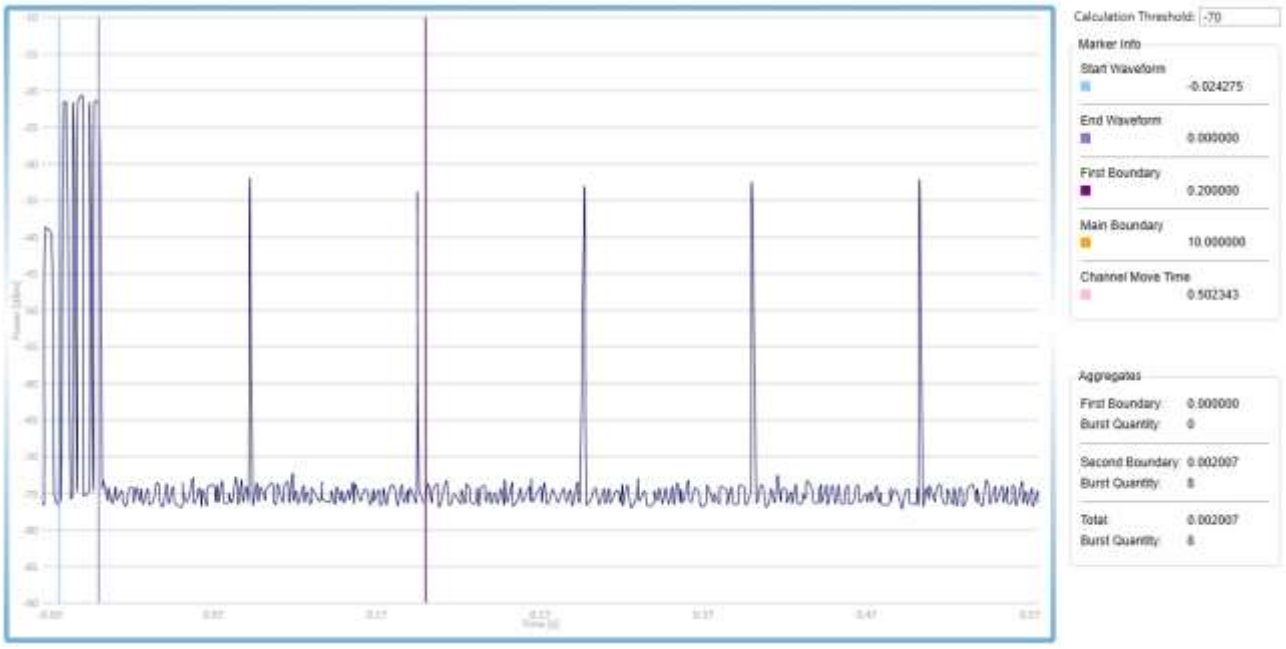
The system measures and aggregates the pulses occurring after the end of the radar pulse to determine the following parameters:

Test Heading	Time (Secs)	Limit (Secs)	Status
Channel Closing Transmission Time	0. 002007	0.260	Complies
Channel Move Time	0. 502343	10.0	Complies

Channel Move Time
0 - 12 Second Capture



Channel Closing Time
0 – 0.2 Second Capture

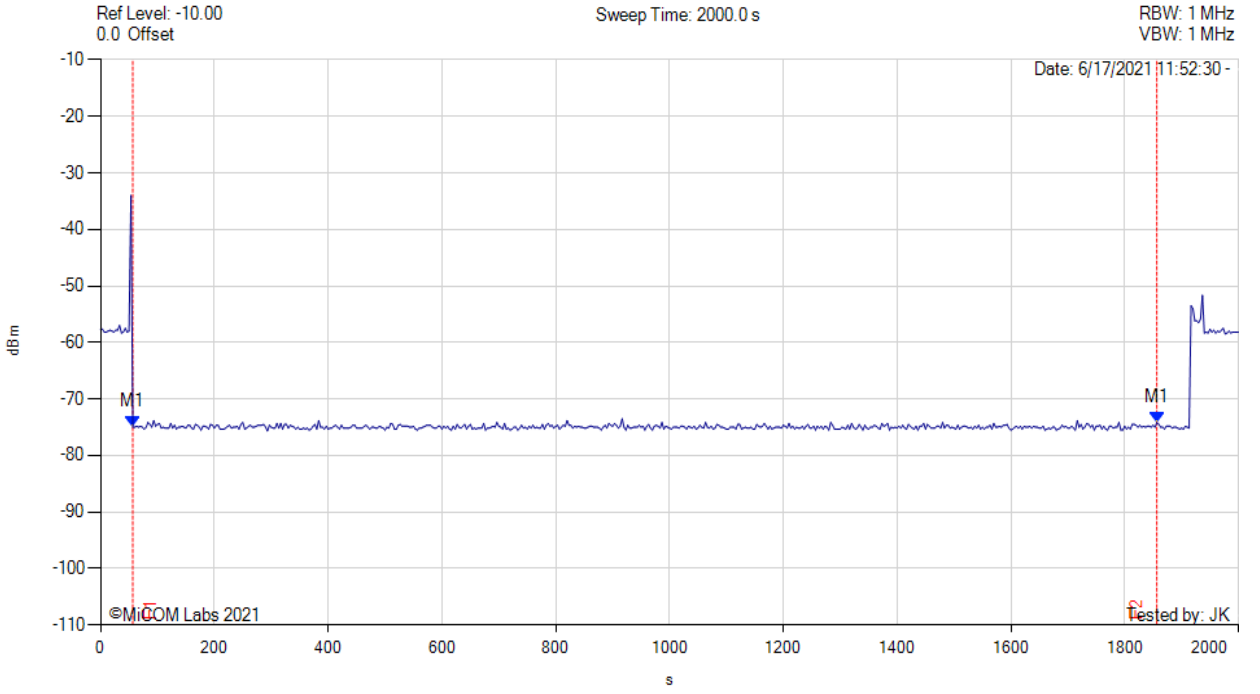


9.4.3. Non-Occupancy Period

The EUT is monitored for more than 30 minutes following the channel close/move time to verify no transmissions resume on this Channel. There should be no transmissions on the frequency of interest during the non-occupancy period.

NON-OCCUPANCY PERIOD

Variant: 802.11ac-80, Channel: 5530.00 MHz, Data Rate: NSS1-MCS0, Duty Cycle: 18.00%, Antenna Gain: 5.50 dBi



Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = POS Sweep Count = View RF Atten (dB) = 0 Trace Mode = 0	M1 : 56.667 s : -75.000 dBm M1 : 1856.667 s : -74.160 dBm	Channel Frequency: 5530.00 MHz Monitored Frequency: 5500 MHz

9.4.4. Probability of Detection

The steps below define the procedure to determine the minimum percentage of detection when a radar burst with a level equal to the DFS Detection Threshold is generated on the Operating Channel of the U-NII device.

The Radar Waveform generator sends the individual waveform for each of the radar Types 1-6. Statistical data will be gathered to determine the ability of the device to detect the radar test waveforms. The device can utilize a test mode to demonstrate when detection occurs to prevent the need to reset the device between trial runs. The percentage of successful detection is calculated by:

Total # of detections ÷ Total # of Trials × 100 = Probability of Detection

The Minimum number of trails, minimum percentage of successful detection and the average minimum percentage of successful detection are found in the Radar Test Waveforms section.

The aggregate is the average of the percentage of successful detections of Short Pulse Radar Types 1-4. For example, the following table indicates how to compute the aggregate of percentage of successful detections;

Example - Calculation of Aggregate Percentage

Radar Type	Number of Trials	Number of Successful Detections	Percentage of Successful Detections
1	35	29	82.9%
2	30	18	60.0%
3	30	27	90.0%
4	30	44	88.0%
Aggregate (82.9% + 60.0% + 90.0% +88.0%) / 4 = 80.2%			

802.11ac-80 - 5530 MHz

Statistical Performance Check					
Radar Type	**Number of Trials**	**Number of Successful Detections**	**Percentage of Successful Detections**	**Result**	**Data Link**
Radar Type 1	30	29	96.67%	Complies	View Data
Radar Type 2	30	25	83.33%	Complies	View Data
Radar Type 3	30	26	86.67%	Complies	View Data
Radar Type 4	30	22	73.33%	Complies	View Data
Aggregate (96.67% + 83.33% + 86.67% + 73.33%) / 4 = 85.00%				Complies	--
Radar Type 5	30	29	96.67%	30	View Data
Radar Type 6	30	30	100.00%	30	View Data

Equipment Configuration for Radar Type 1

Variant:	802.11ac-80	**Duty Cycle (%):**	18.00
Data Rate:	NSS1-MCS0	**Antenna Gain (dBi):**	5.50
Modulation:	OFDM	**Beam Forming Gain (Y):**	Not Applicable
Channel Frequency:	5530.00 MHz	**Tested By:**	JK
Engineering Test Notes:			

Test Measurement Results

Frequency (MHz)	Pulse Width (us)	PRI (us)	# Pulses	Injections	Detections	Detection Rate	Result
5523	1	898	59	1	1	100.00	Detected
5492	1	678	78	1	1	100.00	Detected
5566	1	718	74	1	1	100.00	Detected
5563	1	638	83	1	1	100.00	Detected
5493	1	658	81	1	1	100.00	Detected
5513	1	598	89	1	1	100.00	Detected
5555	1	798	67	1	1	100.00	Detected
5546	1	738	72	1	0	0.00	Not Detected
5551	1	578	92	1	1	100.00	Detected
5524	1	3066	18	1	1	100.00	Detected
5565	1	938	57	1	1	100.00	Detected
5524	1	758	70	1	1	100.00	Detected
5561	1	838	63	1	1	100.00	Detected
5513	1	778	68	1	1	100.00	Detected
5504	1	558	95	1	1	100.00	Detected
5542	1	538	99	1	1	100.00	Detected
5497	1	2537	21	1	1	100.00	Detected
5539	1	2106	26	1	1	100.00	Detected
5545	1	2861	19	1	1	100.00	Detected
5496	1	1953	28	1	1	100.00	Detected
5522	1	1137	47	1	1	100.00	Detected
5494	1	2986	18	1	1	100.00	Detected
5560	1	1480	36	1	1	100.00	Detected
5518	1	614	86	1	1	100.00	Detected
5504	1	1343	40	1	1	100.00	Detected
5533	1	715	74	1	1	100.00	Detected
5552	1	1267	42	1	1	100.00	Detected
5496	1	1633	33	1	1	100.00	Detected
5522	1	2041	26	1	1	100.00	Detected
5525	1	1241	43	1	1	100.00	Detected
			Aggregate:	**30**	**29**	**96.67**	**Pass**

Equipment Configuration for Radar Type 2

Variant:	802.11ac-80	**Duty Cycle (%):**	18.00
Data Rate:	NSS1-MCS0	**Antenna Gain (dBi):**	5.50
Modulation:	OFDM	**Beam Forming Gain (Y):**	Not Applicable
Channel Frequency:	5530.00 MHz	**Tested By:**	JK
Engineering Test Notes:			

Test Measurement Results

Frequency (MHz)	Pulse Width (us)	PRI (us)	# Pulses	Injections	Detections	Detection Rate	Result
5501	2.6	159	29	1	1	100.00	Detected
5540	1.9	160	23	1	1	100.00	Detected
5559	1.3	203	28	1	1	100.00	Detected
5503	4.4	194	27	1	1	100.00	Detected
5563	2.8	192	26	1	1	100.00	Detected
5518	2	179	28	1	1	100.00	Detected
5537	3.3	172	28	1	0	0.00	Not Detected
5548	1.7	168	23	1	1	100.00	Detected
5529	4.1	185	29	1	1	100.00	Detected
5501	1.6	177	27	1	1	100.00	Detected
5510	2.2	162	23	1	1	100.00	Detected
5543	3.8	225	29	1	0	0.00	Not Detected
5549	2.4	190	29	1	1	100.00	Detected
5497	4.6	226	29	1	1	100.00	Detected
5493	2.1	173	23	1	1	100.00	Detected
5565	2.4	174	27	1	1	100.00	Detected
5557	3.2	179	25	1	1	100.00	Detected
5524	3.2	197	28	1	1	100.00	Detected
5501	4.5	172	23	1	1	100.00	Detected
5498	2.1	164	29	1	1	100.00	Detected
5542	2.4	152	25	1	0	0.00	Not Detected
5544	2.1	152	27	1	0	0.00	Not Detected
5556	3.3	229	28	1	1	100.00	Detected
5558	2.2	206	29	1	1	100.00	Detected
5492	2.8	168	23	1	1	100.00	Detected
5516	3.3	190	24	1	1	100.00	Detected
5550	3.9	216	24	1	1	100.00	Detected
5540	4.6	213	28	1	0	0.00	Not Detected
5499	2.5	182	27	1	1	100.00	Detected
5516	4.6	151	27	1	1	100.00	Detected
			Aggregate:	**30**	**25**	**83.33**	**Pass**

Equipment Configuration for Radar Type 3

Variant:	802.11ac-80	**Duty Cycle (%):**	18.00
Data Rate:	NSS1-MCS0	**Antenna Gain (dBi):**	5.50
Modulation:	OFDM	**Beam Forming Gain (Y):**	Not Applicable
Channel Frequency:	5530.00 MHz	**Tested By:**	JK
Engineering Test Notes:			

Test Measurement Results

Frequency (MHz)	Pulse Width (us)	PRI (us)	# Pulses	Injections	Detections	Detection Rate	Result
5532	9.2	359	18	1	1	100.00	Detected
5535	8.9	473	18	1	0	0.00	Not Detected
5504	7.5	211	17	1	1	100.00	Detected
5495	6.3	376	16	1	1	100.00	Detected
5557	9.3	392	18	1	1	100.00	Detected
5526	9.3	482	18	1	1	100.00	Detected
5551	6.9	426	17	1	1	100.00	Detected
5560	6.4	374	16	1	1	100.00	Detected
5525	8.6	375	17	1	1	100.00	Detected
5494	8.6	389	16	1	1	100.00	Detected
5555	6	214	16	1	1	100.00	Detected
5558	6.6	410	16	1	1	100.00	Detected
5553	7.3	427	17	1	1	100.00	Detected
5512	6.3	236	18	1	1	100.00	Detected
5557	8.4	223	17	1	1	100.00	Detected
5567	7.7	480	16	1	1	100.00	Detected
5553	9.8	261	17	1	1	100.00	Detected
5528	6.2	213	16	1	1	100.00	Detected
5507	8.5	238	17	1	1	100.00	Detected
5550	8.7	224	17	1	1	100.00	Detected
5532	8.9	410	17	1	1	100.00	Detected
5518	6.4	451	17	1	1	100.00	Detected
5533	9.5	402	17	1	0	0.00	Not Detected
5535	7.2	212	17	1	0	0.00	Not Detected
5497	9.9	337	18	1	1	100.00	Detected
5565	7.3	368	18	1	1	100.00	Detected
5512	8.2	284	17	1	1	100.00	Detected
5565	8.7	485	16	1	1	100.00	Detected
5531	7.8	443	16	1	1	100.00	Detected
5547	7.4	419	18	1	0	0.00	Not Detected
			Aggregate:	**30**	**26**	**86.67**	**Pass**

Equipment Configuration for Radar Type 4

Variant:	802.11ac-80	**Duty Cycle (%):**	18.00
Data Rate:	NSS1-MCS0	**Antenna Gain (dBi):**	5.50
Modulation:	OFDM	**Beam Forming Gain (Y):**	Not Applicable
Channel Frequency:	5530.00 MHz	**Tested By:**	JK
Engineering Test Notes:			

Test Measurement Results

Frequency (MHz)	Pulse Width (us)	PRI (us)	# Pulses	Injections	Detections	Detection Rate	Result
5499	18.7	456	15	1	1	100.00	Detected
5521	16.4	391	16	1	1	100.00	Detected
5536	17.5	315	15	1	1	100.00	Detected
5509	12.4	402	13	1	1	100.00	Detected
5503	19.7	294	15	1	1	100.00	Detected
5554	12.7	321	16	1	1	100.00	Detected
5562	15.5	483	12	1	1	100.00	Detected
5529	18	405	15	1	0	0.00	Not Detected
5511	17.8	447	12	1	1	100.00	Detected
5527	19.5	306	15	1	1	100.00	Detected
5562	14.3	221	13	1	1	100.00	Detected
5513	12.5	483	13	1	1	100.00	Detected
5552	16.3	233	15	1	0	0.00	Not Detected
5494	19.5	466	16	1	1	100.00	Detected
5526	19.9	406	16	1	1	100.00	Detected
5542	15.8	329	15	1	1	100.00	Detected
5495	17	359	14	1	1	100.00	Detected
5517	16.2	427	13	1	1	100.00	Detected
5539	16.8	462	14	1	0	0.00	Not Detected
5501	12.6	374	15	1	1	100.00	Detected
5535	16.3	297	16	1	1	100.00	Detected
5543	19.3	407	13	1	0	0.00	Not Detected
5558	19.2	396	14	1	1	100.00	Detected
5512	15.3	205	13	1	1	100.00	Detected
5564	13.5	254	15	1	1	100.00	Detected
5541	15.2	203	13	1	0	0.00	Not Detected
5556	19.2	244	13	1	0	0.00	Not Detected
5497	15	438	13	1	1	100.00	Detected
5523	19.4	295	12	1	0	0.00	Not Detected
5507	15.9	240	12	1	0	0.00	Not Detected
			Aggregate:	**30**	**22**	**73.33**	**Pass**

Equipment Configuration for Radar Type 5			
Variant:	802.11ac-80	**Duty Cycle (%):**	18.00
Data Rate:	NSS1-MCS0	**Antenna Gain (dBi):**	5.50
Modulation:	OFDM	**Beam Forming Gain (Y):**	Not Applicable
Channel Frequency:	5530.00 MHz	**Tested By:**	JK
Engineering Test Notes:			

Test Measurement Results

Burst Segment	Injections	Detections	Detection Rate	Result
Type 5 #1 5560	1	1	100.00	Detected
Type 5 #2 5500	1	1	100.00	Detected
Type 5 #3 5496	1	1	100.00	Detected
Type 5 #4 5500	1	1	100.00	Detected
Type 5 #5 5530	1	1	100.00	Detected
Type 5 #6 5499	1	1	100.00	Detected
Type 5 #7 5494	1	1	100.00	Detected
Type 5 #8 5530	1	1	100.00	Detected
Type 5 #9 5530	1	1	100.00	Detected
Type 5 #10 5497	1	1	100.00	Detected
Type 5 #11 5561	1	1	100.00	Detected
Type 5 #12 5500	1	1	100.00	Detected
Type 5 #13 5530	1	1	100.00	Detected
Type 5 #14 5562	1	1	100.00	Detected
Type 5 #15 5563	1	1	100.00	Detected
Type 5 #16 5562	1	1	100.00	Detected
Type 5 #17 5496	1	1	100.00	Detected
Type 5 #18 5563	1	1	100.00	Detected
Type 5 #19 5562	1	1	100.00	Detected
Type 5 #20 5499	1	1	100.00	Detected
Type 5 #21 5497	1	1	100.00	Detected
Type 5 #22 5561	1	1	100.00	Detected
Type 5 #23 5561	1	0	0.00	Not Detected
Type 5 #24 5530	1	1	100.00	Detected
Type 5 #25 5530	1	1	100.00	Detected
Type 5 #26 5564	1	1	100.00	Detected
Type 5 #27 5530	1	1	100.00	Detected
Type 5 #28 5530	1	1	100.00	Detected
Type 5 #29 5530	1	1	100.00	Detected
Type 5 #30 5530	1	1	100.00	Detected
Aggregate:	**30**	**29**	**96.67**	**Pass**

Equipment Configuration for Radar Type 6			
Variant:	802.11ac-80	**Duty Cycle (%):**	18.00
Data Rate:	NSS1-MCS0	**Antenna Gain (dBi):**	5.50
Modulation:	OFDM	**Beam Forming Gain (Y):**	Not Applicable
Channel Frequency:	5530.00 MHz	**Tested By:**	JK
Engineering Test Notes:			

Test Measurement Results

Burst Segment	Detections	Injection #	Detection Rate	Pass/Fail
Type 6 #1	1	1	100	Detected
Type 6 #2	1	1	100	Detected
Type 6 #3	1	1	100	Detected
Type 6 #4	1	1	100	Detected
Type 6 #5	1	1	100	Detected
Type 6 #6	1	1	100	Detected
Type 6 #7	1	1	100	Detected
Type 6 #8	1	1	100	Detected
Type 6 #9	1	1	100	Detected
Type 6 #10	1	1	100	Detected
Type 6 #11	1	1	100	Detected
Type 6 #12	1	1	100	Detected
Type 6 #13	1	1	100	Detected
Type 6 #14	1	1	100	Detected
Type 6 #15	1	1	100	Detected
Type 6 #16	1	1	100	Detected
Type 6 #17	1	1	100	Detected
Type 6 #18	1	1	100	Detected
Type 6 #19	1	1	100	Detected
Type 6 #20	1	1	100	Detected
Type 6 #21	1	1	100	Detected
Type 6 #22	1	1	100	Detected
Type 6 #23	1	1	100	Detected
Type 6 #24	1	1	100	Detected
Type 6 #25	1	1	100	Detected
Type 6 #26	1	1	100	Detected
Type 6 #27	1	1	100	Detected
Type 6 #28	1	1	100	Detected
Type 6 #29	1	1	100	Detected
Type 6 #30	1	1	100	Detected
Aggregate:	**30**	**30**	**100.00**	**Pass**

9.4.5. Detection Bandwidth

To determine the equipment Detection Bandwidth for each applicable operational mode a single burst of the short pulse radar Type 0 was produced at the appropriate power level. The EUT was set up as a standalone device (no associated Client or Master, as appropriate) and no traffic. Frame based systems will be set to a talk/listen ratio reflecting the worst case (maximum) that is user configurable during this test.

To determine the actual receiver bandwidth a single radar burst is generated for a minimum of 10 trials and the response of the EUT noted. The EUT must detect at least 9 trials in order to meet the criteria.

Starting from the actual channel center frequency the radar frequency is increased in 5 MHz steps, injecting a Type 0 ten times, until the detection rate falls below 90%. At this time the span between this decrease in detection rate and the last 5 MHz step is checked with a 1 MHz step size. The highest frequency at which detection is greater than or equal to 90% is denoted as FH.

The radar frequency is decreased in 5 MHz steps, repeating the above test sequence, until the detection rate falls below 90%. The lowest frequency at which detection is greater than or equal to 90% is denoted as FL.

The U-NII Detection Bandwidth is calculated as follows:
U-NII Detection Bandwidth = FH - FL

The U-NII Detection Bandwidth must meet the U-NII Detection Bandwidth criterion specified. Otherwise, the UUT does not comply with DFS requirements. This is essential to ensure that the UUT is capable of detecting Radar Waveforms across the same frequency spectrum that contains the significant energy from the system. In the case that the U-NII Detection Bandwidth is greater than or equal to the 99% power bandwidth for the measured FH and FL, the test can be truncated and the U-NII Detection Bandwidth can be reported as the measured FH and FL.

Equipment Configuration for Detection Bandwidth

Variant:	802.11ac-80	**Duty Cycle (%):**	0.10
Data Rate:	MCS0	**Antenna Gain (dBi):**	5.50
Modulation:	OFDM	**Beam Forming Gain (Y):**	Not Applicable
Channel Frequency:	5530.00 MHz	**Tested By:**	JK
Engineering Test Notes:			

Test Measurement Results

Frequency	Injections	Detections	Result
5575 MHz	2	0	Not Detected
5571 MHz	2	0	Not Detected
5570 MHz	10	10	Detected
5565 MHz	10	10	Detected
5560 MHz	10	10	Detected
5555 MHz	10	10	Detected
5550 MHz	10	10	Detected
5545 MHz	10	10	Detected
5540 MHz	10	10	Detected
5535 MHz	10	10	Detected
5530 MHz	10	10	Detected
5525 MHz	10	10	Detected
5520 MHz	10	10	Detected
5515 MHz	10	10	Detected
5510 MHz	10	10	Detected
5505 MHz	10	10	Detected
5500 MHz	10	10	Detected
5495 MHz	10	10	Detected
5490 MHz	10	10	Detected
5489 MHz	2	0	Not Detected
5485 MHz	2	0	Not Detected
F_L = 5490 MHz	**F_H = 5570 MHz**	**F_H – F_L = 80 MHz**	**Pass**

9.5. Radiated

Radiated Test Conditions for Radiated Spurious and Band-Edge Emissions			
Standard:	FCC CFR 47:15.407	**Ambient Temp. (ºC):**	20.0 - 24.5
Test Heading:	Radiated Spurious and Band-Edge Emissions	**Rel. Humidity (%):**	32 - 45
Standard Section(s):	15.407 (b), 15.205, 15.209	**Pressure (mBars):**	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for Radiated Spurious and Band-Edge Emissions
Radiated emissions for restricted bands above 1 GHz are measured in the anechoic chamber at a 3-meter distance on every azimuth in both horizontal and vertical polarities. The emissions are recorded and maximized as a function of azimuth by rotation through 360° with a spectrum analyzer in peak hold mode. Depending on the frequency band spanned a notch filter was used to remove the fundamental frequency. The highest emissions relative to the limit are listed for each frequency spanned.
Measurements on any restricted band frequency or frequencies above 1 GHz are based on the use of measurement instrumentation employing peak and average detectors. All measurements were performed using a resolution bandwidth of 1 MHz.

Test configuration and setup for Undesirable Measurement were per the Radiated Test Set-up specified in this document.

15.407 (b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

Limits for Restricted Bands (15.205, 15.209)
Peak emission: 74 dBuV/m
Average emission: 54 dBuV/m

Field Strength Calculation
The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. All factors are included in the reported data.
FS = R + AF + CORR - FO

where:
FS = Field Strength
R = Measured Spectrum analyzer Input Amplitude

AF = Antenna Factor
CORR = Correction Factor = CL – AG + NFL
CL = Cable Loss
AG = Amplifier Gain
FO = Distance Falloff Factor
NFL = Notch Filter Loss

Example:
The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength (dBµV/m);

$$E = \frac{1000000 \times \sqrt{30P}}{3} \ \mu V/m$$

where P is the EIRP in Watts

Therefore: -27 dBm/MHz equates to 68.23 dBuV/m

Conversion between dBmV/m (or dBmV) and mV/m (or mV) are as follows:
Level (dBmV/m) = 20 * Log (level (mV/m))

40 dBmV/m = 100 mV/m
48 dBmV/m = 250 mV/m

Restricted Bands of Operation (15.205)
(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

Frequency Band			
MHz	**MHz**	**MHz**	**GHz**
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

(b) Except as provided in paragraphs (d) and (e) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

(c) Except as provided in paragraphs (d) and (e) of this section, regardless of the field strength limits specified elsewhere in this subpart, the provisions of this section apply to emissions from any intentional radiator.

(d) The following devices are exempt from the requirements of this section:

(1) Swept frequency field disturbance sensors operating between 1.705 and 37 MHz provided their emissions only sweep through the bands listed in paragraph (a) of this section, the sweep is never stopped with the fundamental emission within the bands listed in paragraph (a) of this section, and the fundamental emission is outside of the bands listed in paragraph (a) of this section more than 99% of the time the device is actively transmitting, without compensation for duty cycle.

(2) Transmitters used to detect buried electronic markers at 101.4 kHz which are employed by telephone companies.

(3) Cable locating equipment operated pursuant to §15.213.

(4) Any equipment operated under the provisions of §15.253, 15.255, and 15.256 in the frequency band 75-85 GHz, or §15.257 of this part.

(5) Biomedical telemetry devices operating under the provisions of §15.242 of this part are not subject to the restricted band 608-614 MHz but are subject to compliance within the other restricted bands.

(6) Transmitters operating under the provisions of subparts D or F of this part.

(7) Devices operated pursuant to §15.225 are exempt from complying with this section for the 13.36-13.41 MHz band only.

(8) Devices operated in the 24.075-24.175 GHz band under §15.245 are exempt from complying with the requirements of this section for the 48.15-48.35 GHz and 72.225-72.525 GHz bands only, and shall not exceed the limits specified in §15.245(b).

(9) Devices operated in the 24.0-24.25 GHz band under §15.249 are exempt from complying with the requirements of this section for the 48.0-48.5 GHz and 72.0-72.75 GHz bands only, and shall not exceed the limits specified in §15.249(a).

(e) Harmonic emissions appearing in the restricted bands above 17.7 GHz from field disturbance sensors operating under the provisions of §15.245 shall not exceed the limits specified in §15.245(b).

9.5.1. Restricted Edge & Band-Edge Emissions

RESULTS SUMMARY FOR RADIATED BAND-EDGE EMISSIONS

5470 - 5725 MHz

MikroTik 95XKAJ15.GA3		Restricted-Edge Freq	Limit 68.2dBµV/m	Limit 54.0dBµV/m	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dBµV/m	dBµV/m	
802.11ac-80	5530.00	5460.00	66.30	53.08	7

MikroTik 95XKAJ15.GA3		Band-Edge Freq	Limit 68.23dBµV/m	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dBµV/m	
802.11ac-80	5530.00	5470.00	65.79	7

5250 - 5350 MHz

MikroTik 95XKAJ15.GA3		Band-Edge Freq	Limit 68.2dBµV/m	Limit 54.0dBµV/m	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dBµV/m	dBµV/m	
802.11ac-80	5290.00	5350.00	64.86	52.70	7

Click on the links to view the data.

Equipment Configuration for Restricted Lower Band-Edge Emissions

Antenna:	MikroTik 95XKAJ15.GA3	**Variant:**	802.11ac-80
Antenna Gain (dBi):	5.50	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	
Channel Frequency (MHz):	5530.00	**Data Rate:**	29.30 MBit/s
Power Setting:	7	**Tested By:**	SB

Test Measurement Results

5350.00 - 5500.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5458.50	15.51	3.05	34.52	53.08	Max Avg	Vertical	160	-2	54.0	-0.9	Pass
#2	5459.10	28.72	3.06	34.52	66.30	Max Peak	Vertical	160	-2	68.2	-1.9	Pass
#4	5465.49	28.18	3.07	34.54	65.79	Max Avg	Vertical	160	-2	68.2	-2.4	Pass
#3	5460.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
#5	5470.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Equipment Configuration for Restricted Upper Band-Edge Emissions

Antenna:	MikroTik 95XKAJ15.GA3	**Variant:**	802.11ac-80
Antenna Gain (dBi):	5.50	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	
Channel Frequency (MHz):	5290.00	**Data Rate:**	29.30 MBit/s
Power Setting:	7	**Tested By:**	SB

Test Measurement Results

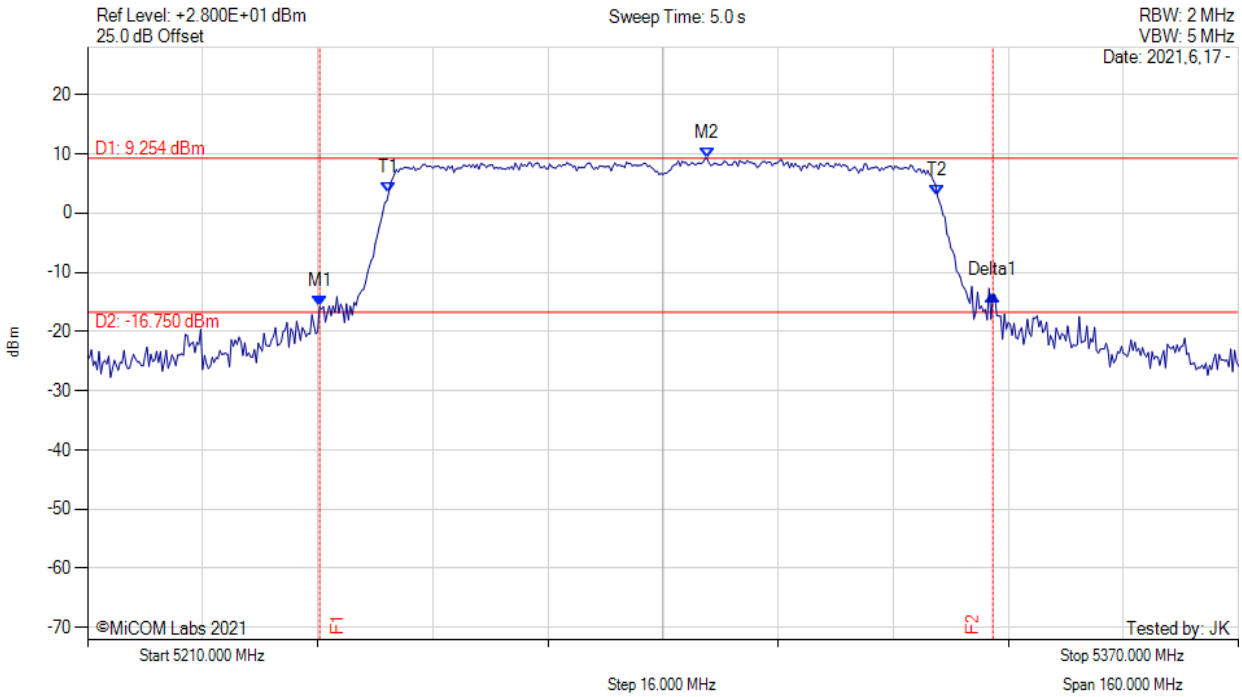
5300.00 - 5460.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#2	5351.30	27.34	3.06	34.46	64.86	Max Peak	Horizontal	160	-2	68.2	-3.4	Pass
#3	5351.92	15.18	3.06	34.46	52.70	Max Avg	Horizontal	160	-2	54.0	-1.3	Pass
#1	5350.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

A. APPENDIX - GRAPHICAL IMAGES

A.1. 26 dB & 99% Bandwidth

26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5290.00 MHz, Chain a, Temp: 20, Voltage: 24 Vdc

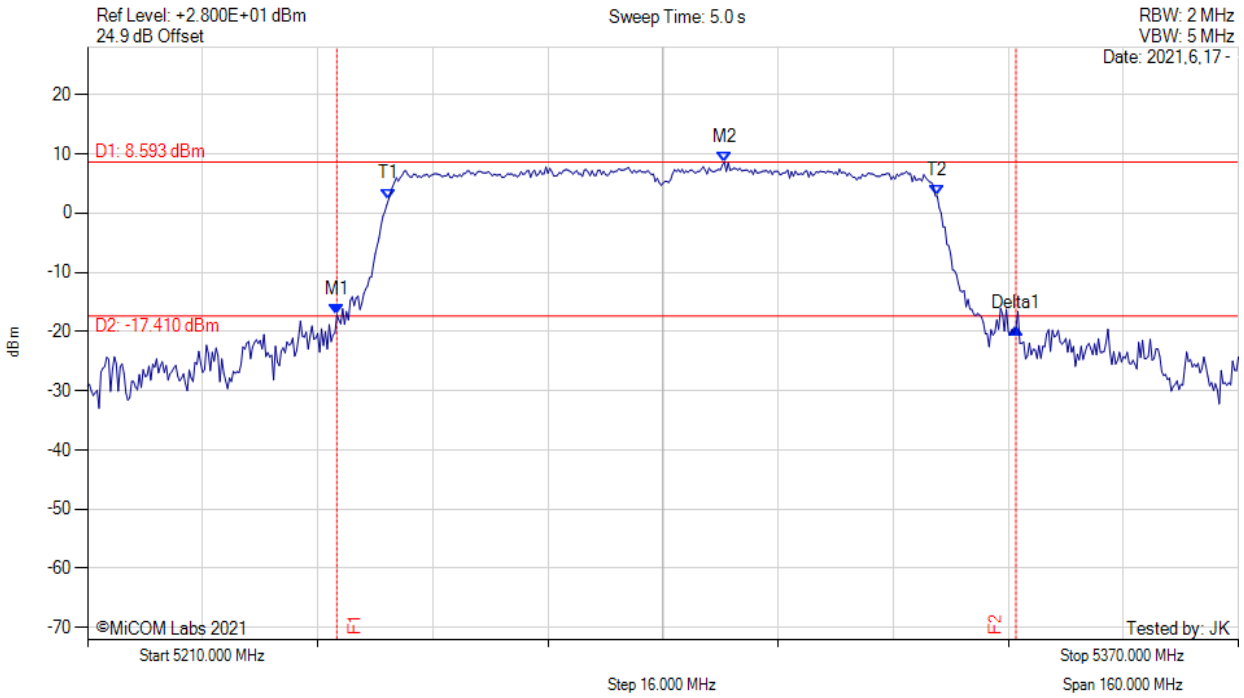


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 5242.270 MHz : -15.828 dBm M2 : 5296.130 MHz : 9.254 dBm Delta1 : 93.600 MHz : 1.962 dB T1 : 5251.867 MHz : 3.454 dBm T2 : 5328.133 MHz : 2.973 dBm OBW : 76.190 MHz	Measured 26 dB Bandwidth: 93.600 MHz Measured 99% Bandwidth: 76.190 MHz

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5290.00 MHz, Chain b, Temp: 20, Voltage: 24 Vdc

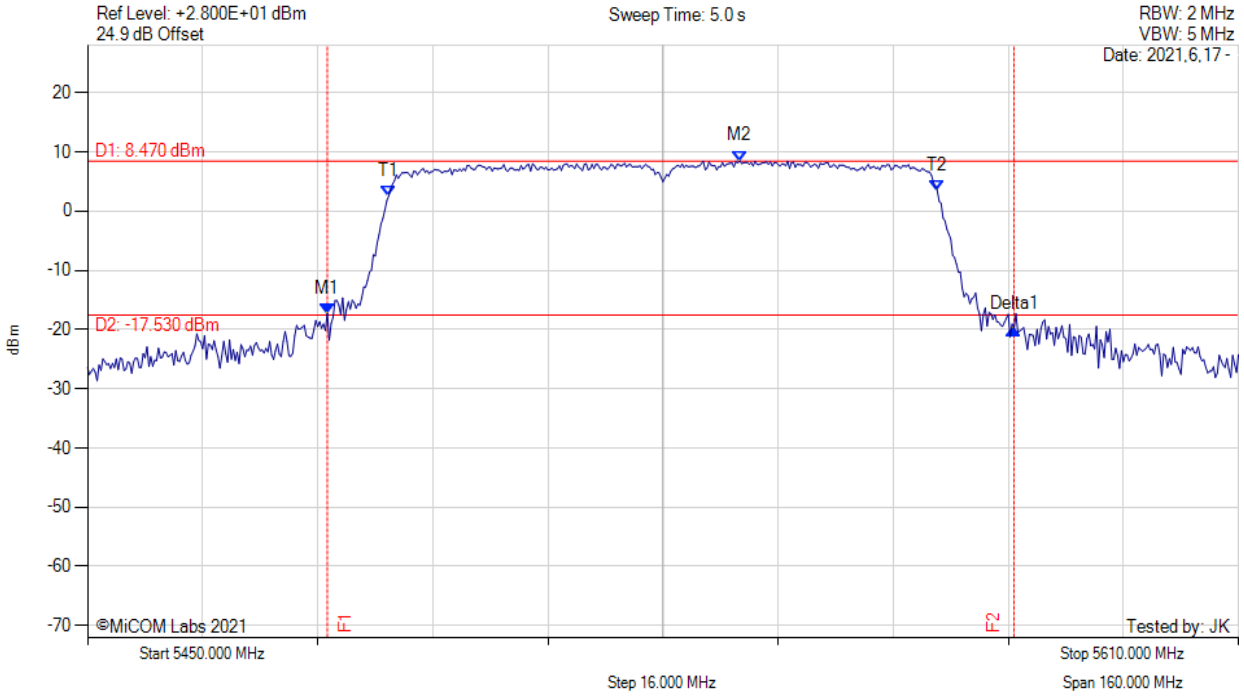


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 5244.670 MHz : -17.158 dBm M2 : 5298.530 MHz : 8.593 dBm Delta1 : 94.400 MHz : -2.217 dB T1 : 5251.867 MHz : 2.372 dBm T2 : 5328.133 MHz : 2.865 dBm OBW : 76.156 MHz	Measured 26 dB Bandwidth: 94.400 MHz Measured 99% Bandwidth: 76.156 MHz

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5530.00 MHz, Chain a, Temp: 20, Voltage: 24 Vdc

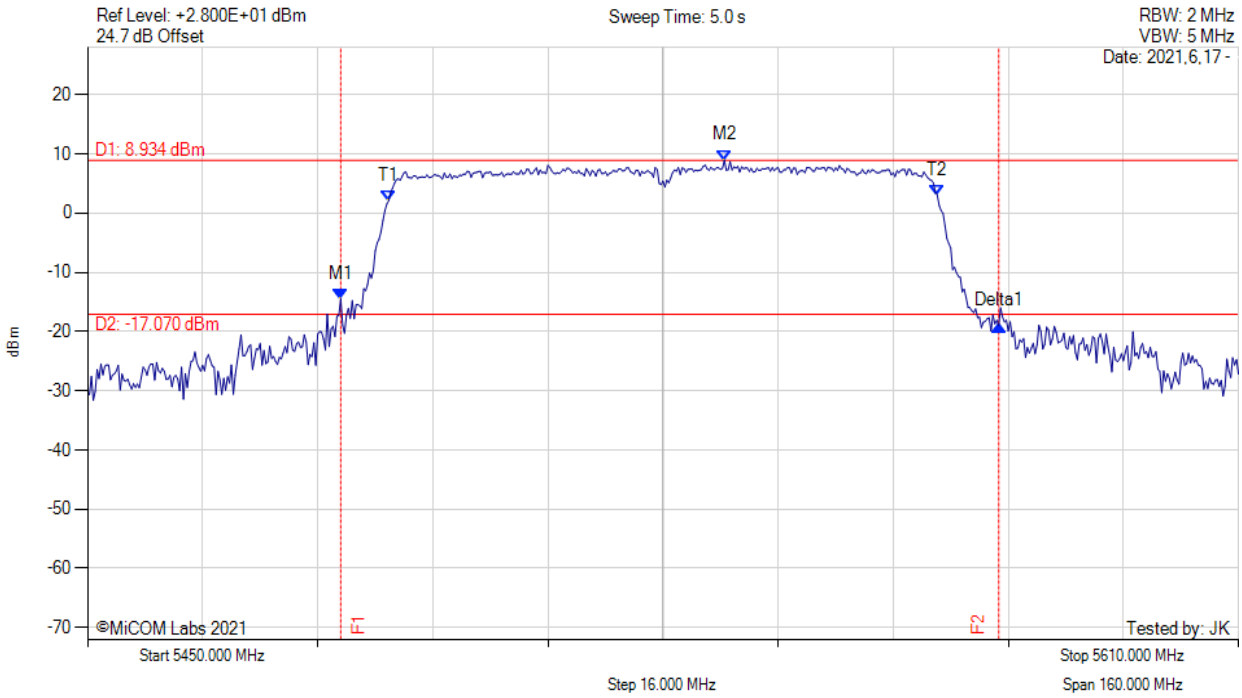


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 5483.330 MHz : -17.278 dBm M2 : 5540.670 MHz : 8.470 dBm Delta1 : 95.470 MHz : -2.579 dB T1 : 5491.867 MHz : 2.550 dBm T2 : 5568.133 MHz : 3.416 dBm OBW : 76.125 MHz	Measured 26 dB Bandwidth: 95.470 MHz Measured 99% Bandwidth: 76.125 MHz

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5530.00 MHz, Chain b, Temp: 20, Voltage: 24 Vdc

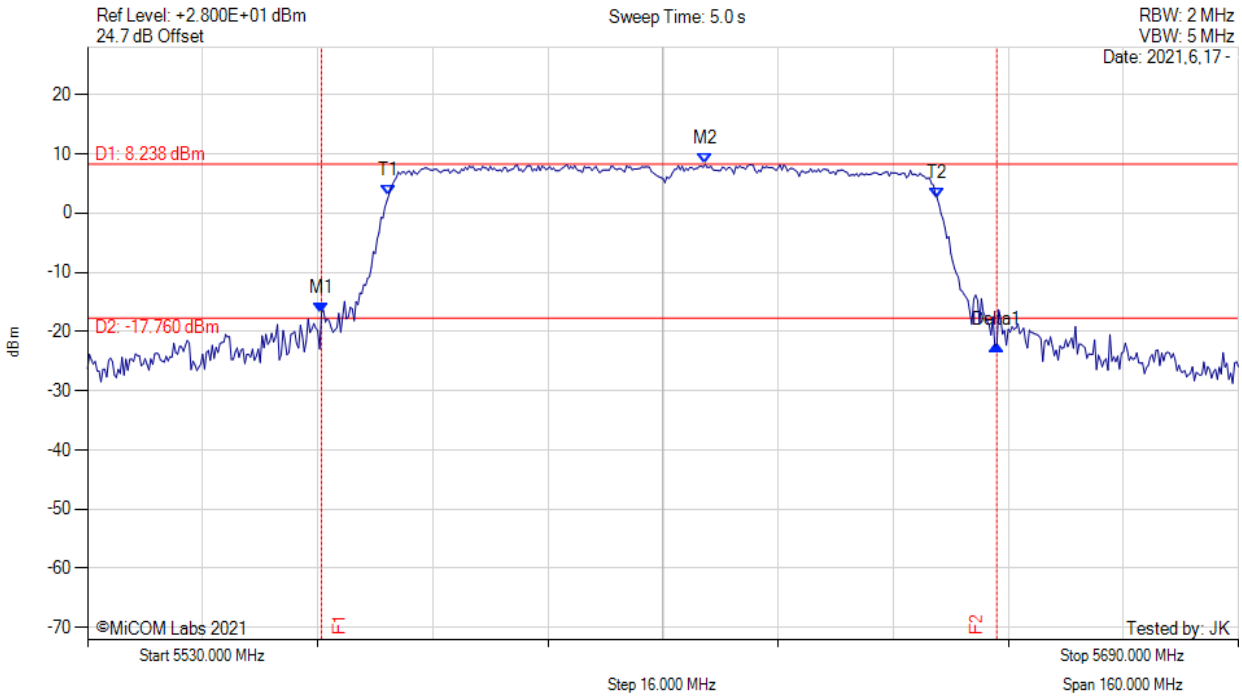


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 5485.200 MHz : -14.507 dBm M2 : 5538.530 MHz : 8.934 dBm Delta1 : 91.470 MHz : -4.501 dB T1 : 5491.867 MHz : 2.079 dBm T2 : 5568.133 MHz : 3.024 dBm OBW : 76.127 MHz	Measured 26 dB Bandwidth: 91.470 MHz Measured 99% Bandwidth: 76.127 MHz

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5610.00 MHz, Chain a, Temp: 20, Voltage: 24 Vdc

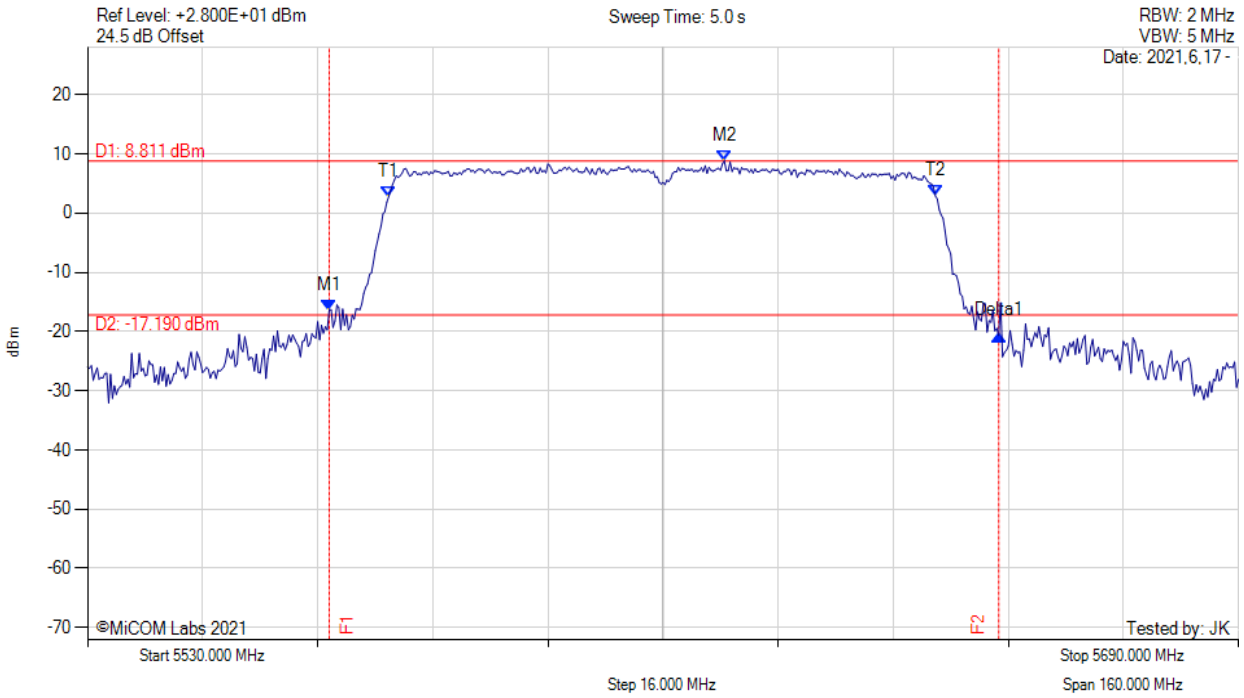


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 5562.530 MHz : -16.851 dBm M2 : 5615.870 MHz : 8.238 dBm Delta1 : 93.870 MHz : -5.368 dB T1 : 5571.867 MHz : 2.957 dBm T2 : 5648.133 MHz : 2.435 dBm OBW : 76.157 MHz	Measured 26 dB Bandwidth: 93.870 MHz Measured 99% Bandwidth: 76.157 MHz

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5610.00 MHz, Chain b, Temp: 20, Voltage: 24 Vdc

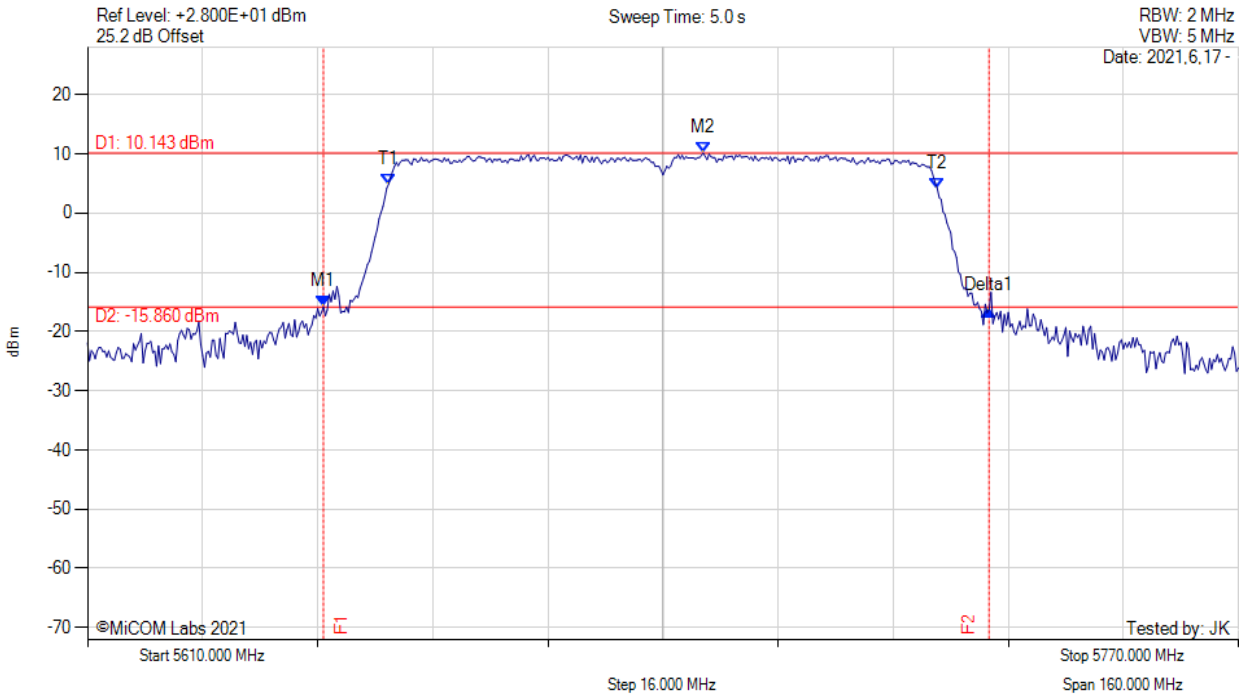


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 5563.600 MHz : -16.338 dBm M2 : 5618.530 MHz : 8.811 dBm Delta1 : 93.070 MHz : -4.339 dB T1 : 5571.867 MHz : 2.774 dBm T2 : 5647.867 MHz : 2.913 dBm OBW : 76.079 MHz	Measured 26 dB Bandwidth: 93.070 MHz Measured 99% Bandwidth: 76.079 MHz

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5690.00 MHz, Chain a, Temp: 20, Voltage: 24 Vdc

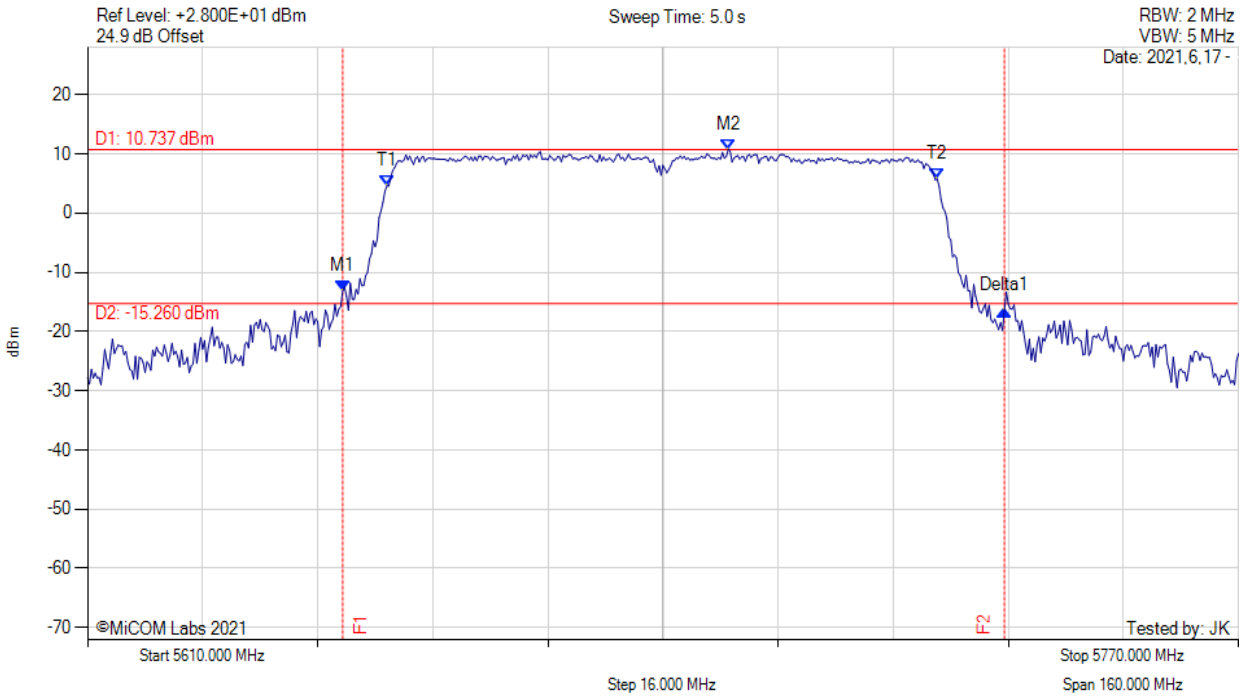


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 5642.800 MHz : -15.829 dBm M2 : 5695.600 MHz : 10.143 dBm Delta1 : 92.530 MHz : -0.551 dB T1 : 5651.867 MHz : 4.935 dBm T2 : 5728.133 MHz : 4.139 dBm OBW : 76.194 MHz	Measured 26 dB Bandwidth: 92.530 MHz Measured 99% Bandwidth: 76.194 MHz

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5690.00 MHz, Chain b, Temp: 20, Voltage: 24 Vdc



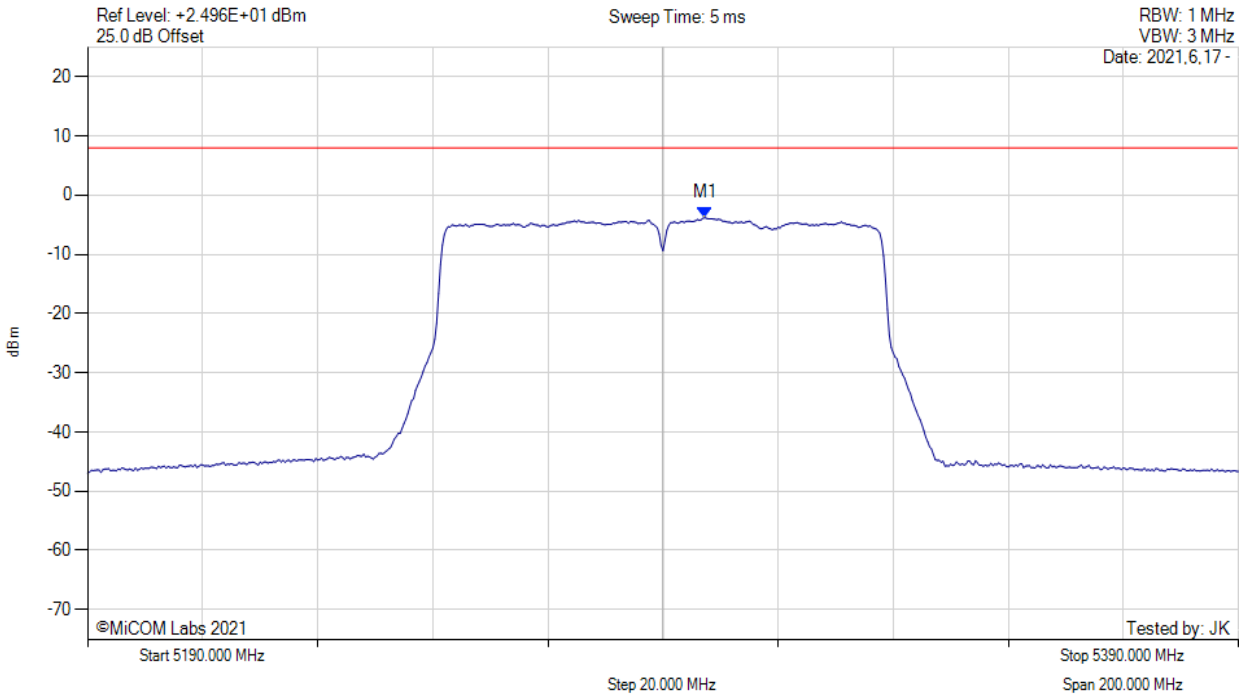
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 5645.470 MHz : -13.188 dBm M2 : 5699.070 MHz : 10.737 dBm Delta1 : 92.000 MHz : -3.170 dB T1 : 5651.600 MHz : 4.588 dBm T2 : 5728.133 MHz : 5.755 dBm OBW : 76.327 MHz	Measured 26 dB Bandwidth: 92.000 MHz Measured 99% Bandwidth: 76.327 MHz

back to matrix

A.2. Power Spectral Density

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5290.00 MHz, Chain a, Temp: 20, Voltage: 24 Vdc

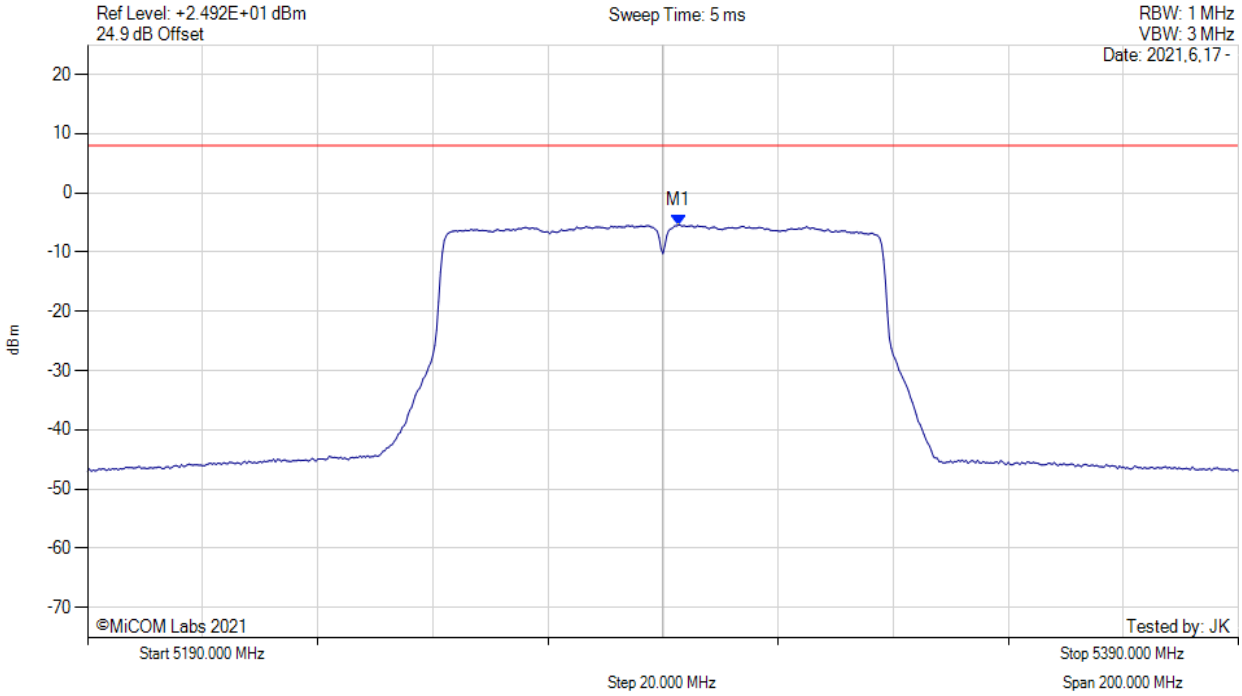


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5297.300 MHz : -3.815 dBm	Limit: ≤ 7.990 dBm

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5290.00 MHz, Chain b, Temp: 20, Voltage: 24 Vdc

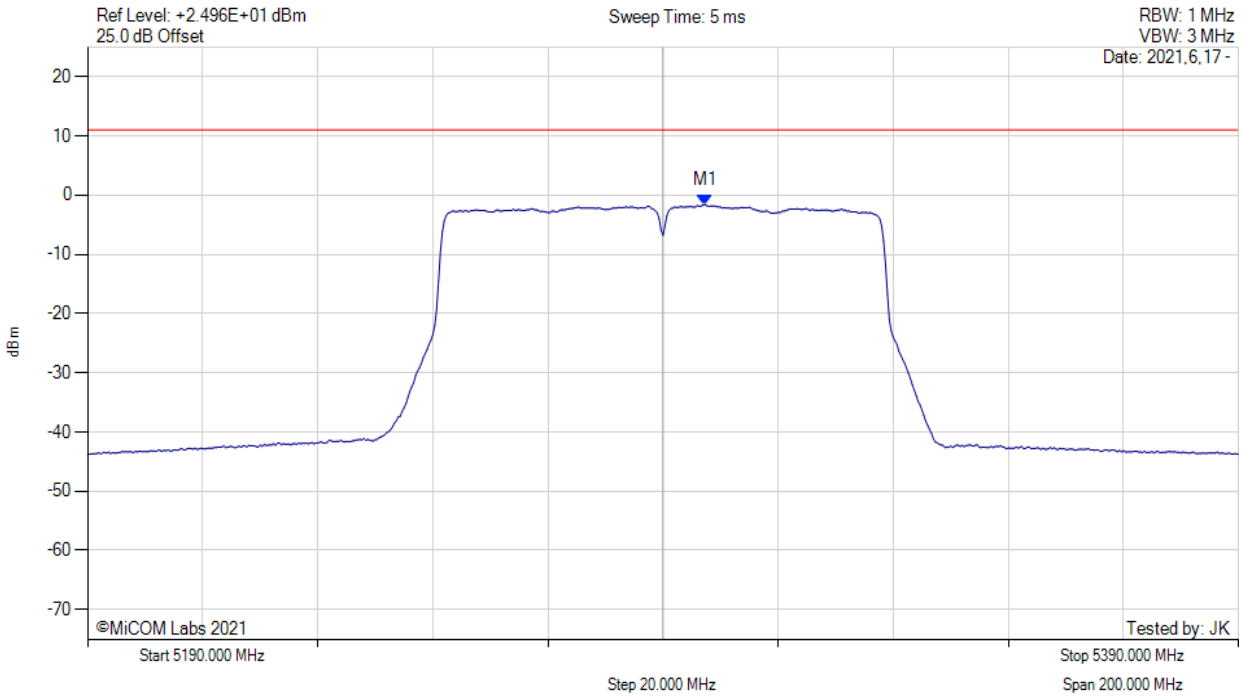


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5292.700 MHz : -5.452 dBm	Limit: ≤ 7.990 dBm

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5290.00 MHz, SUM, Temp: 20, Voltage: 24 Vdc

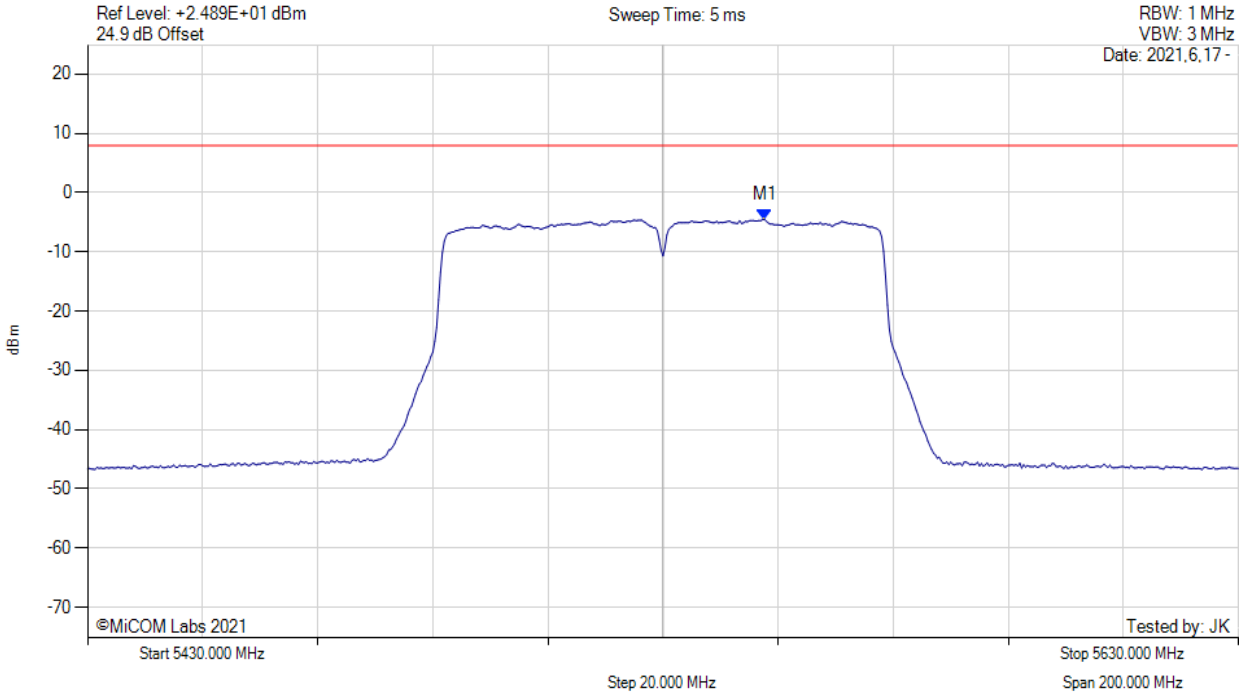


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5297.300 MHz : -1.645 dBm M1 + DCCF : 5297.300 MHz : -0.676 dBm Duty Cycle Correction Factor : +0.97 dB	Limit: ≤ 11.0 dBm Margin: -11.7 dB

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5530.00 MHz, Chain a, Temp: 20, Voltage: 24 Vdc

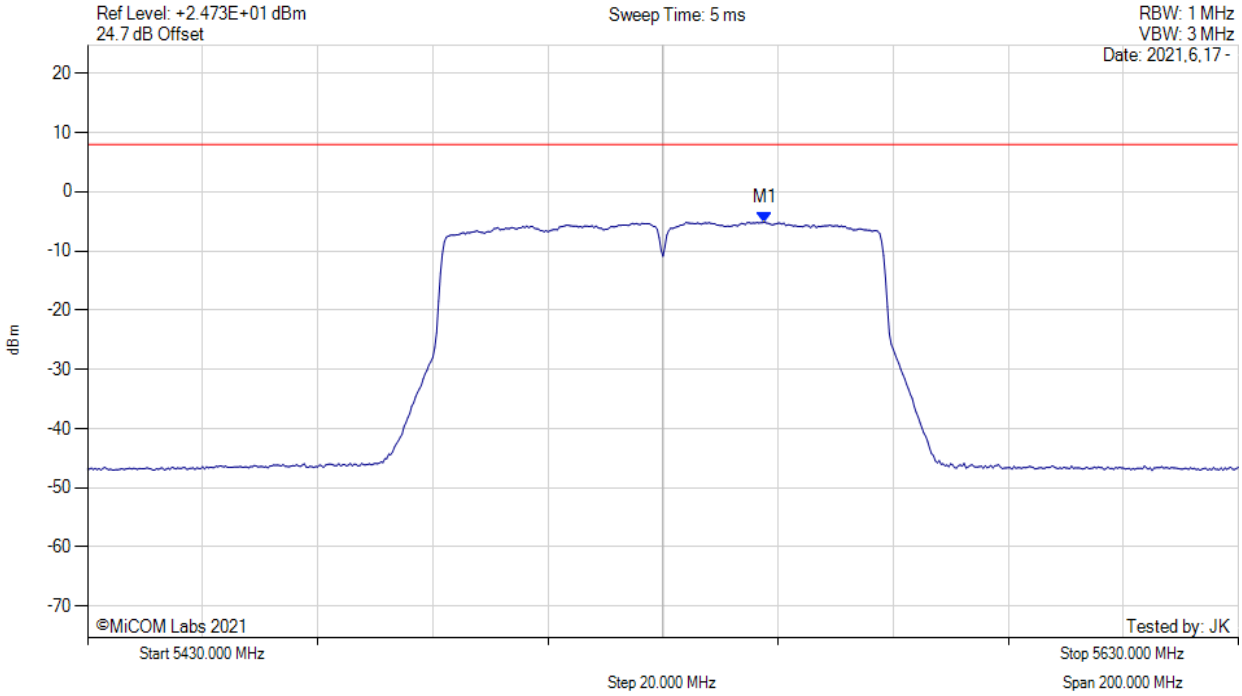


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5547.700 MHz : -4.532 dBm	Limit: ≤ 7.990 dBm

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5530.00 MHz, Chain b, Temp: 20, Voltage: 24 Vdc

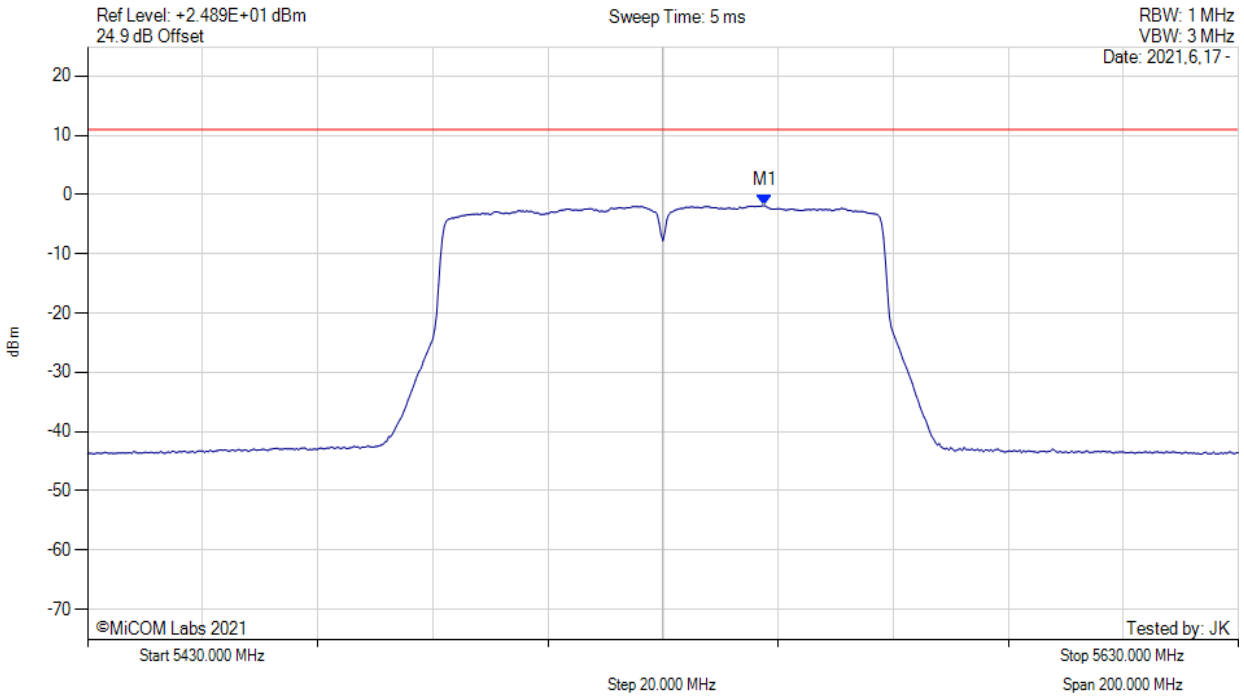


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5547.700 MHz : -5.150 dBm	Limit: ≤ 7.990 dBm

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5530.00 MHz, SUM, Temp: 20, Voltage: 24 Vdc

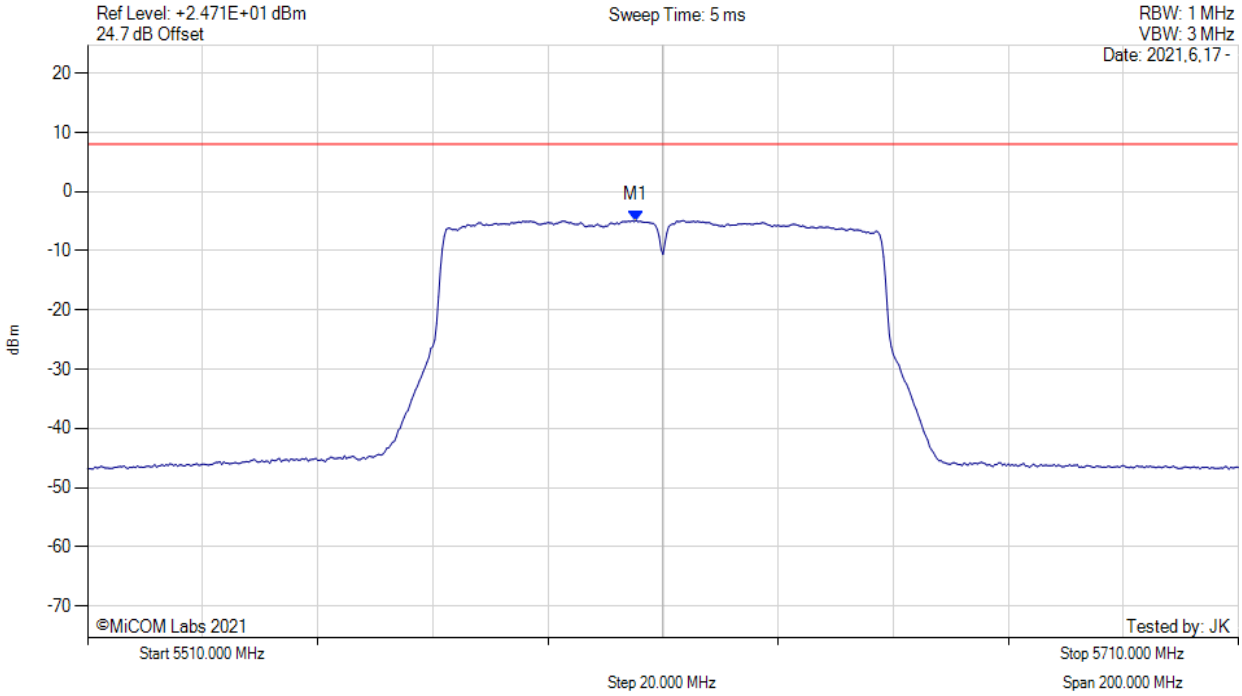


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5547.700 MHz : -1.820 dBm M1 + DCCF : 5547.700 MHz : -0.851 dBm Duty Cycle Correction Factor : +0.97 dB	Limit: ≤ 11.0 dBm Margin: -11.9 dB

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5610.00 MHz, Chain a, Temp: 20, Voltage: 24 Vdc

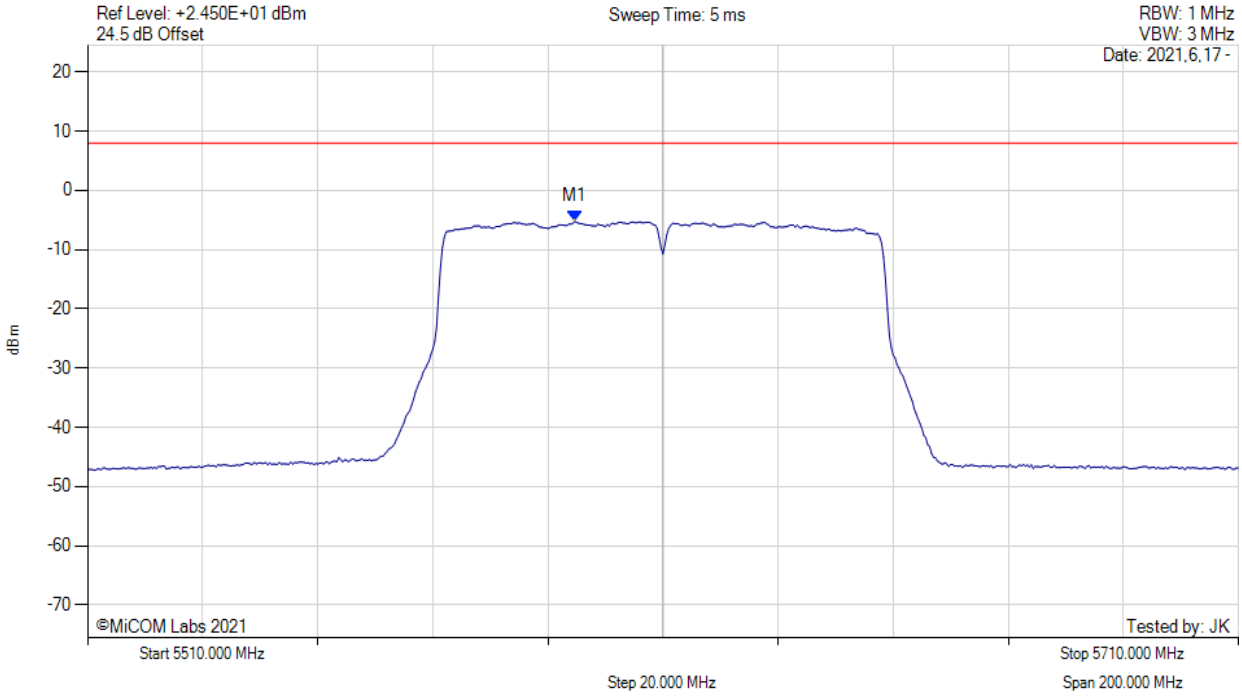


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5605.300 MHz : -4.892 dBm	Limit: ≤ 7.990 dBm

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5610.00 MHz, Chain b, Temp: 20, Voltage: 24 Vdc

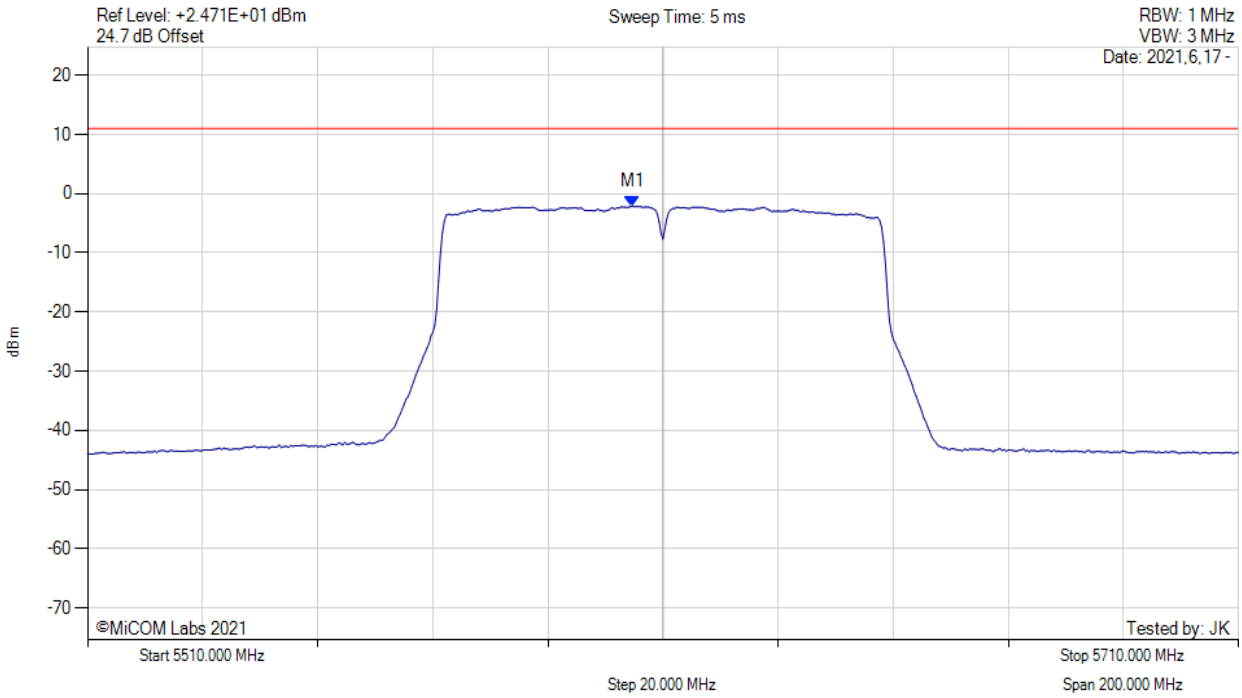


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5594.700 MHz : -5.251 dBm	Channel Frequency: 5610.00 MHz

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5610.00 MHz, SUM, Temp: 20, Voltage: 24 Vdc

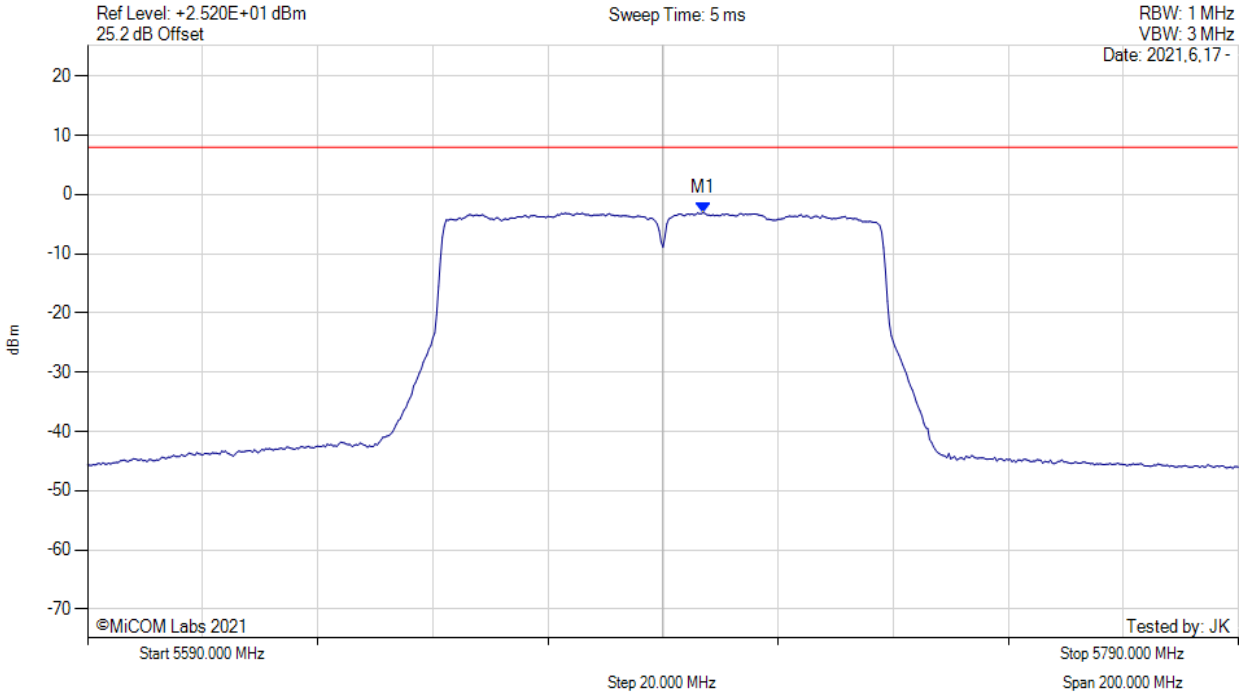


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5604.700 MHz : -2.108 dBm M1 + DCCF : 5604.700 MHz : -1.139 dBm Duty Cycle Correction Factor : +0.97 dB	Limit: ≤ 11.0 dBm Margin: -12.1 dB

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5690.00 MHz, Chain a, Temp: 20, Voltage: 24 Vdc

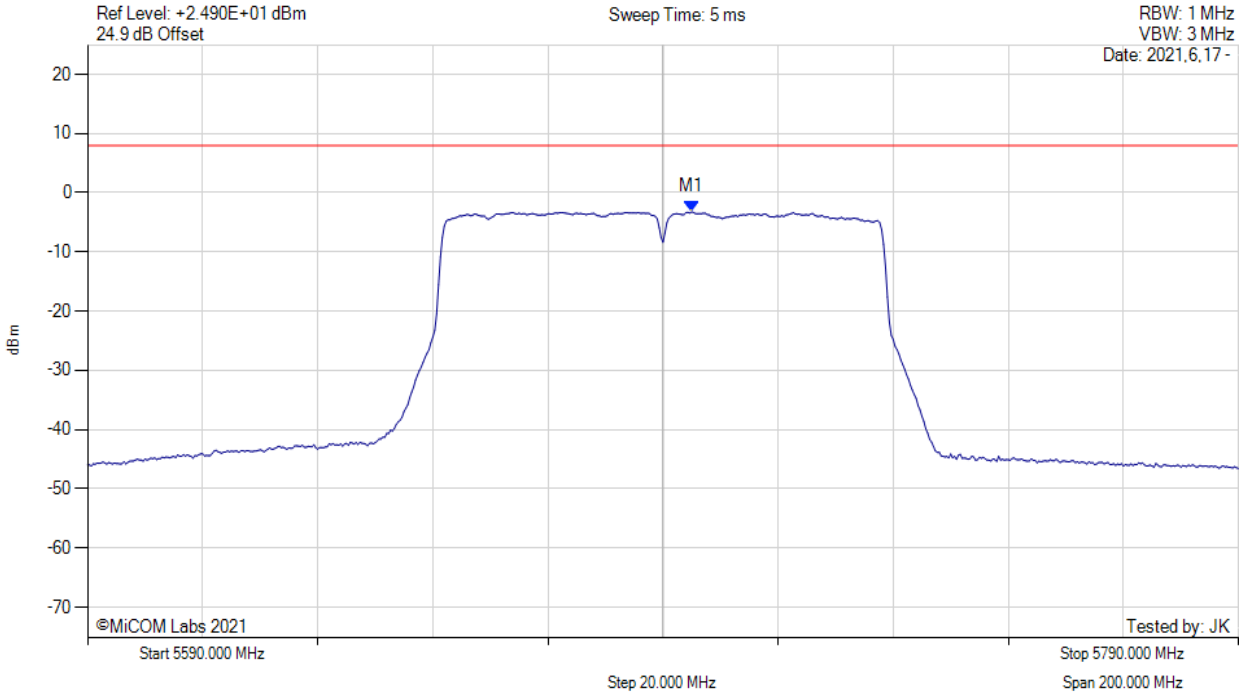


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5697.000 MHz : -3.064 dBm	Limit: ≤ 7.990 dBm

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5690.00 MHz, Chain b, Temp: 20, Voltage: 24 Vdc

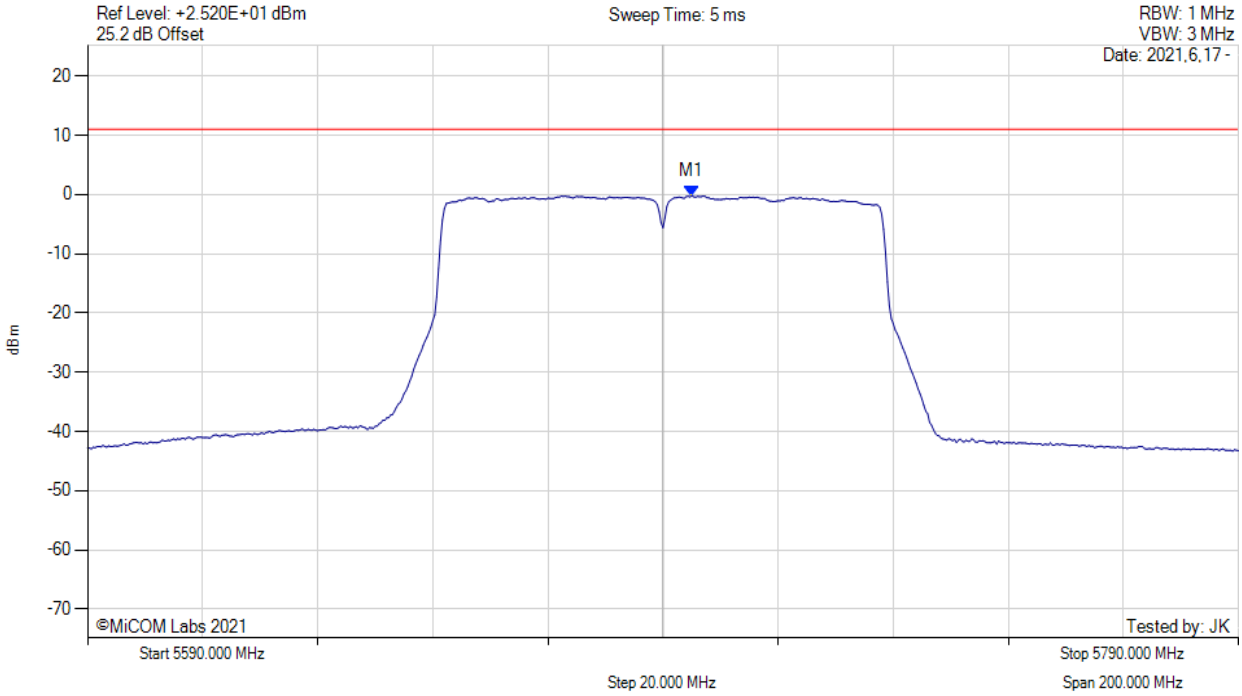


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5695.000 MHz : -3.228 dBm	Limit: ≤ 7.990 dBm

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5690.00 MHz, SUM, Temp: 20, Voltage: 24 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = +100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5695.000 MHz : -0.243 dBm M1 + DCCF : 5695.000 MHz : 0.726 dBm Duty Cycle Correction Factor : +0.97 dB	Limit: ≤ 11.0 dBm Margin: -10.3 dB

back to matrix

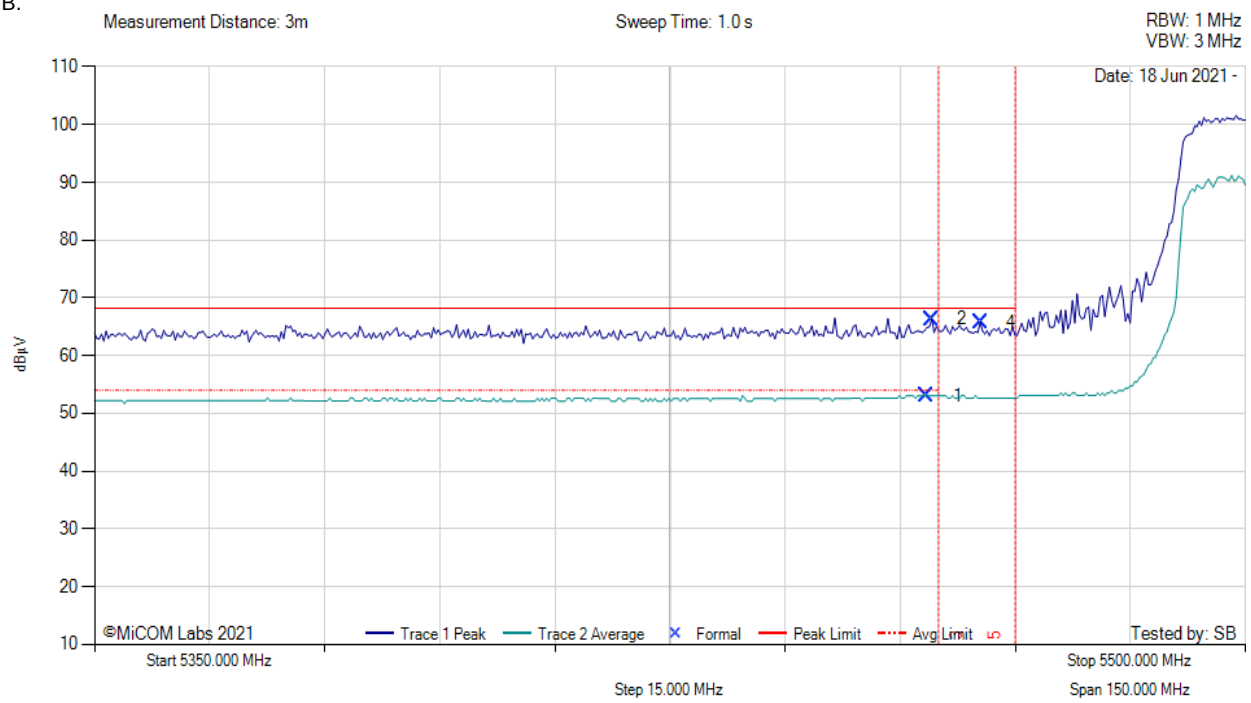
A.3. Radiated

A.3.1. Restricted Edge & Band-Edge Emissions

RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 802.11ac-80, Test Freq: 5530.00 MHz, Antenna: MikroTik 95XKAJ15.GA3, Power Setting: 7

B.

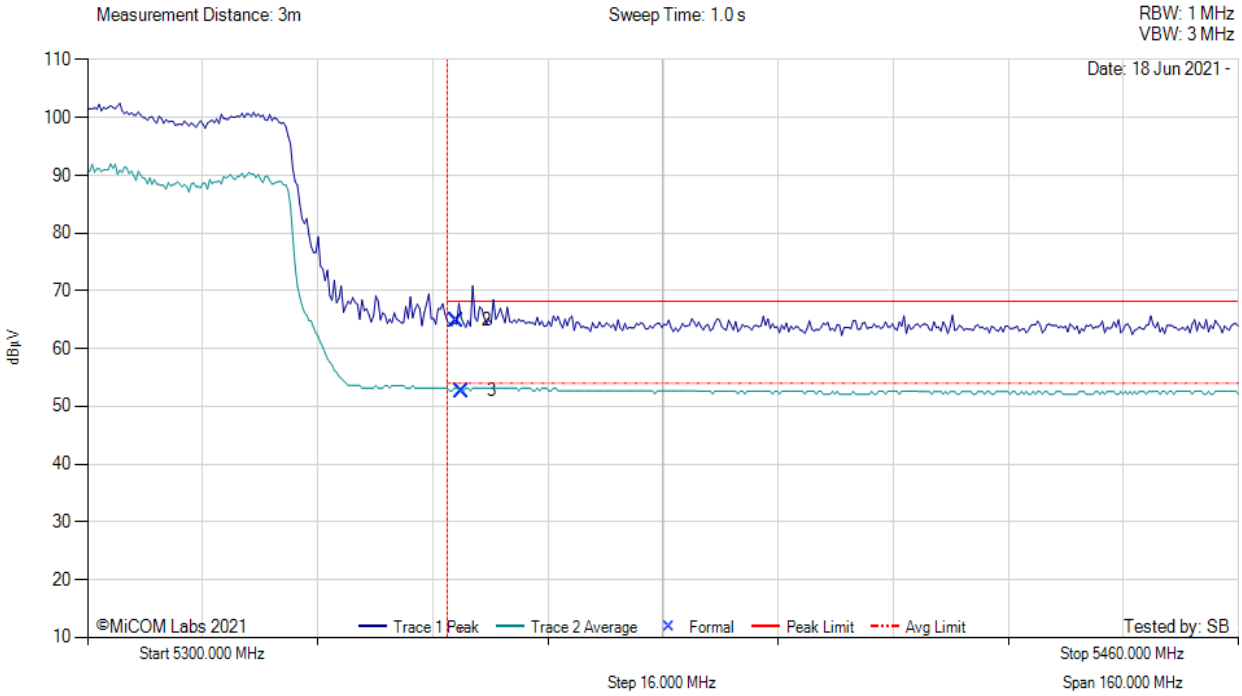


5350.00 - 5500.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	5458.50	15.51	3.05	34.52	53.08	Max Avg	Vertical	160	-2	54.0	-0.9	Pass
2	5459.10	28.72	3.06	34.52	66.30	Max Peak	Vertical	160	-2	68.2	-1.9	Pass
4	5465.49	28.18	3.07	34.54	65.79	Max Avg	Vertical	160	-2	68.2	-2.4	Pass
3	5460.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
5	5470.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

back to matrix

RESTRICTED UPPER BAND-EDGE EMISSIONS

Variant: 802.11ac-80, Test Freq: 5290.00 MHz, Antenna: MikroTik 95XKAJ15.GA3, Power Setting: 7



5300.00 - 5460.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
2	5351.30	27.34	3.06	34.46	64.86	Max Peak	Horizontal	160	-2	68.2	-3.4	Pass
3	5351.92	15.18	3.06	34.46	52.70	Max Avg	Horizontal	160	-2	54.0	-1.3	Pass
1	5350.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

back to matrix

B. APPENDIX – RADAR SIGNATURES

Type 5 #1 5560 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	1	19	576060	98	0	0	346918	923076
2	2	19	883597	75	1845	0	37484	923076
3	1	19	103259	54	0	0	819763	923076
4	1	19	276471	88	0	0	646517	923076
5	1	19	356962	71	0	0	566043	923076
6	1	19	888641	66	0	0	34369	923076
7	1	19	58497	70	0	0	864509	923076
8	2	19	269633	71	1860	0	651441	923076
9	2	19	539442	99	1009	0	382427	923076
10	3	19	203858	98	1267	1446	716211	923076
11	2	19	312270	54	1489	0	609209	923076
12	3	19	185070	99	1180	1305	735224	923076
13	2	19	101814	99	1662	0	819402	923076

Type 5 #2 5500 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	3	20	718823	74	1795	1770	368299	1090909
2	2	20	567341	58	1119	0	522333	1090909
3	3	20	789770	74	1091	1909	297917	1090909
4	3	20	393664	73	1680	1281	694065	1090909
5	2	20	895911	51	1104	0	193792	1090909
6	1	20	123962	66	0	0	966881	1090909
7	3	20	619210	74	1272	2000	468205	1090909
8	1	20	144813	65	0	0	946031	1090909
9	2	20	191487	79	1092	0	898172	1090909
10	1	20	230749	60	0	0	860100	1090909
11	1	20	782183	62	0	0	308664	1090909

Type 5 #3 5496 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	3	11	875409	97	1789	1489	44098	923076
2	1	11	166184	91	0	0	756801	923076
3	1	11	919757	92	0	0	3227	923076
4	1	11	239293	67	0	0	683716	923076
5	3	11	110393	97	1071	1619	809702	923076
6	3	11	802694	94	1429	1763	116908	923076
7	1	11	862135	92	0	0	60849	923076
8	1	11	76303	60	0	0	846713	923076
9	3	11	702547	54	1168	1392	217807	923076
10	1	11	518669	75	0	0	404332	923076
11	2	11	697257	86	1339	0	224308	923076
12	2	11	617327	65	1055	0	304564	923076
13	3	11	33848	77	1522	1245	886230	923076

Type 5 #4 5500 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	3	20	405918	86	1573	1892	190359	600000
2	1	20	188501	77	0	0	411422	600000
3	3	20	571713	94	1194	1494	25317	600000
4	1	20	573740	60	0	0	26200	600000
5	2	20	342838	98	1402	0	255564	600000
6	3	20	224147	90	1257	1722	372604	600000
7	3	20	366229	79	1622	1000	230912	600000
8	3	20	360560	87	1628	1730	235821	600000
9	2	20	67375	89	1655	0	530792	600000
10	2	20	349959	54	1256	0	248677	600000
11	1	20	183246	68	0	0	416686	600000
12	2	20	41226	66	1839	0	556803	600000
13	3	20	341897	67	1940	1863	254099	600000
14	2	20	286045	95	1343	0	312422	600000
15	3	20	219806	61	1484	1354	377173	600000
16	3	20	281489	94	1674	1753	314802	600000
17	2	20	144385	66	1543	0	453940	600000
18	1	20	540834	59	0	0	59107	600000
19	3	20	548207	83	1274	1265	49005	600000
20	2	20	444715	74	1618	0	153519	600000

Type 5 #5 5530 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	1	11	611714	53	0	0	19811	631578
2	1	11	548933	66	0	0	82579	631578
3	2	11	159807	77	1749	0	469868	631578
4	2	11	165657	58	1663	0	464142	631578
5	2	11	285531	60	1089	0	344838	631578
6	2	11	565811	70	1055	0	64572	631578
7	2	11	229060	51	1730	0	400686	631578
8	3	11	325576	52	1126	1143	303577	631578
9	2	11	232406	54	1397	0	397667	631578
10	2	11	367947	57	1365	0	262152	631578
11	2	11	428019	93	1323	0	202050	631578
12	1	11	536307	83	0	0	95188	631578
13	2	11	280849	58	1165	0	349448	631578
14	2	11	263875	91	1014	0	366507	631578
15	2	11	471476	51	1520	0	158480	631578
16	1	11	412857	55	0	0	218666	631578
17	1	11	436592	98	0	0	194888	631578
18	1	11	118586	65	0	0	512927	631578
19	2	11	251482	74	1685	0	378263	631578

Type 5 #6 5499 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	3	17	1135307	76	1550	1599	61316	1200000
2	2	17	691104	78	1866	0	506874	1200000
3	1	17	9851	78	0	0	1190071	1200000
4	2	17	51621	96	1335	0	1146852	1200000
5	3	17	328742	70	1244	1411	868393	1200000
6	3	17	473063	55	1513	1223	724036	1200000
7	1	17	153185	65	0	0	1046750	1200000
8	2	17	730800	67	1040	0	468026	1200000
9	3	17	146250	58	1982	1831	1049763	1200000
10	3	17	1050847	69	1996	1390	145560	1200000

Type 5 #7 5494 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	3	6	1227576	52	1396	1037	103168	1333333
2	1	6	1180242	100	0	0	152991	1333333
3	3	6	578459	100	1564	1294	751716	1333333
4	1	6	774628	61	0	0	558644	1333333
5	1	6	970473	57	0	0	362803	1333333
6	2	6	1197770	92	1259	0	134120	1333333
7	2	6	357953	59	1848	0	973414	1333333
8	1	6	966976	85	0	0	366272	1333333
9	2	6	1151033	53	1649	0	180545	1333333

Type 5 #8 5530 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	3	7	5127	82	1312	1016	698181	705882
2	3	7	466076	52	1670	1520	236460	705882
3	2	7	23487	54	1796	0	680491	705882
4	2	7	156567	65	1177	0	548008	705882
5	2	7	424157	85	1203	0	280352	705882
6	1	7	360413	100	0	0	345369	705882
7	1	7	137818	76	0	0	567988	705882
8	3	7	243478	94	1831	1839	458452	705882
9	2	7	281169	77	1204	0	423355	705882
10	3	7	292688	68	1067	1321	410602	705882
11	2	7	105608	78	1105	0	599013	705882
12	2	7	340252	91	1627	0	363821	705882
13	1	7	566377	73	0	0	139432	705882
14	1	7	683721	64	0	0	22097	705882
15	3	7	282405	60	1754	1033	420510	705882
16	3	7	161589	64	1980	1806	540315	705882
17	1	7	66849	83	0	0	638950	705882

Type 5 #9 5530 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	1	9	649512	60	0	0	100428	750000
2	2	9	199084	54	1194	0	549614	750000
3	3	9	495095	74	1101	1511	252071	750000
4	2	9	652756	86	1704	0	95368	750000
5	2	9	195771	50	1680	0	552449	750000
6	2	9	118019	86	1916	0	629893	750000
7	1	9	404972	59	0	0	344969	750000
8	1	9	726427	77	0	0	23496	750000
9	3	9	190751	79	1085	1057	556870	750000
10	3	9	731071	56	1155	1468	16138	750000
11	1	9	608819	78	0	0	141103	750000
12	2	9	452061	50	1532	0	296307	750000
13	1	9	447367	69	0	0	302564	750000
14	1	9	612701	83	0	0	137216	750000
15	3	9	658950	54	1119	1319	88450	750000
16	1	9	351475	90	0	0	398435	750000

Type 5 #10 5497 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	2	12	519208	96	1464	0	570045	1090909
2	3	12	704233	58	1010	1502	383990	1090909
3	1	12	472344	91	0	0	618474	1090909
4	2	12	413343	74	1304	0	676114	1090909
5	1	12	745823	83	0	0	345003	1090909
6	3	12	281932	51	1068	1542	806214	1090909
7	2	12	267982	97	1136	0	821597	1090909
8	1	12	370709	60	0	0	720140	1090909
9	1	12	892198	96	0	0	198615	1090909
10	2	12	121475	61	1005	0	968307	1090909
11	1	12	915481	92	0	0	175336	1090909

Type 5 #11 5561 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	2	17	834172	73	1830	0	86928	923076
2	1	17	66636	96	0	0	856344	923076
3	1	17	358020	61	0	0	564995	923076
4	2	17	188549	99	1110	0	733219	923076
5	3	17	881159	55	1449	1691	38612	923076
6	2	17	809923	63	1315	0	111712	923076
7	1	17	736411	81	0	0	186584	923076
8	2	17	257936	71	1888	0	663110	923076
9	1	17	483328	79	0	0	439669	923076
10	3	17	438045	99	1895	1806	481033	923076
11	3	17	276071	98	1399	1966	643346	923076
12	1	17	806788	95	0	0	116193	923076
13	1	17	259126	82	0	0	663868	923076

Type 5 #12 5500 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	1	20	172193	53	0	0	750830	923076
2	3	20	75620	63	1620	1927	843720	923076
3	1	20	776631	85	0	0	146360	923076
4	3	20	457572	97	1874	1660	461679	923076
5	1	20	343185	77	0	0	579814	923076
6	1	20	191586	79	0	0	731411	923076
7	3	20	444365	56	1577	1232	475734	923076
8	2	20	891961	90	1082	0	29853	923076
9	2	20	297400	84	1405	0	624103	923076
10	3	20	833519	71	1814	1087	86443	923076
11	3	20	460206	87	1963	1936	458710	923076
12	2	20	572507	75	1033	0	349386	923076
13	2	20	765867	62	1623	0	155462	923076

Type 5 #13 5530 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	3	15	101509	55	1817	1684	526403	631578
2	2	15	427279	87	1758	0	202367	631578
3	3	15	380542	60	1850	1269	247737	631578
4	3	15	608564	60	1588	1179	20067	631578
5	1	15	517586	58	0	0	113934	631578
6	3	15	36757	55	1475	1685	591496	631578
7	1	15	75385	51	0	0	556142	631578
8	1	15	591547	54	0	0	39977	631578
9	1	15	465276	84	0	0	166218	631578
10	2	15	561823	71	1655	0	67958	631578
11	3	15	97717	73	1749	1258	530635	631578
12	1	15	568056	78	0	0	63444	631578
13	2	15	551440	79	1628	0	78352	631578
14	1	15	516566	87	0	0	114925	631578
15	2	15	488414	66	1410	0	141622	631578
16	2	15	335895	94	1868	0	293627	631578
17	3	15	466703	54	1162	1421	162130	631578
18	1	15	496668	92	0	0	134818	631578
19	3	15	55204	85	1570	1678	572871	631578

Type 5 #14 5562 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	2	16	242939	92	1138	0	505739	750000
2	2	16	215382	99	1606	0	532814	750000
3	1	16	604364	50	0	0	145586	750000
4	1	16	407125	58	0	0	342817	750000
5	2	16	701500	63	1927	0	46447	750000
6	3	16	222709	88	1733	1649	523645	750000
7	1	16	673403	74	0	0	76523	750000
8	3	16	312199	81	1323	1282	434953	750000
9	2	16	443730	93	1194	0	304890	750000
10	2	16	679432	78	1878	0	68534	750000
11	1	16	400452	63	0	0	349485	750000
12	2	16	310606	90	1318	0	437896	750000
13	3	16	310790	80	1974	1290	435706	750000
14	3	16	641743	76	1121	1810	105098	750000
15	3	16	548585	89	1125	1058	198965	750000
16	3	16	192507	67	1271	1196	554825	750000

Type 5 #15 5563 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	1	13	1043561	65	0	0	156374	1200000
2	3	13	910082	92	1624	1563	286455	1200000
3	3	13	58450	97	1431	1067	1138761	1200000
4	1	13	570436	74	0	0	629490	1200000
5	3	13	750343	53	1337	1558	446603	1200000
6	3	13	207539	86	1512	1207	989484	1200000
7	2	13	525452	80	1618	0	672770	1200000
8	1	13	521632	99	0	0	678269	1200000
9	3	13	917462	93	1222	1560	279477	1200000
10	3	13	1093521	52	1730	1780	102813	1200000

Type 5 #16 5562 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	1	16	32489	54	0	0	599035	631578
2	3	16	282778	64	1612	1580	345416	631578
3	1	16	324001	81	0	0	307496	631578
4	2	16	72613	52	1094	0	557767	631578
5	3	16	492014	90	1861	1947	135486	631578
6	2	16	5654	51	1260	0	624562	631578
7	2	16	491065	97	1576	0	138743	631578
8	1	16	105056	76	0	0	526446	631578
9	3	16	460007	98	1767	1926	167584	631578
10	1	16	310975	73	0	0	320530	631578
11	3	16	585371	74	1906	1848	42231	631578
12	1	16	170390	57	0	0	461131	631578
13	1	16	598072	62	0	0	33444	631578
14	3	16	462261	98	1396	1034	166593	631578
15	1	16	34412	76	0	0	597090	631578
16	1	16	591278	52	0	0	40248	631578
17	2	16	52860	97	1663	0	576861	631578
18	3	16	448540	99	1521	1587	179633	631578
19	2	16	337015	72	1065	0	293354	631578

Type 5 #17 5496 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	2	11	370116	54	1434	0	961675	1333333
2	1	11	904060	60	0	0	429213	1333333
3	3	11	806979	95	1393	1536	523140	1333333
4	1	11	1306411	58	0	0	26864	1333333
5	1	11	429687	68	0	0	903578	1333333
6	3	11	188669	64	1147	1228	1142097	1333333
7	2	11	299007	73	1208	0	1032972	1333333
8	2	11	655610	79	1526	0	676039	1333333
9	3	11	600650	66	1736	1399	729350	1333333

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Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	1	13	10086	92	0	0	739822	750000
2	1	13	695768	88	0	0	54144	750000
3	1	13	533189	97	0	0	216714	750000
4	1	13	415980	68	0	0	333952	750000
5	1	13	575765	86	0	0	174149	750000
6	1	13	740052	54	0	0	9894	750000
7	2	13	169713	96	1423	0	578672	750000
8	2	13	711711	62	1831	0	36334	750000
9	2	13	436809	68	1054	0	312001	750000
10	3	13	662845	89	1949	1362	83577	750000
11	1	13	570083	60	0	0	179857	750000
12	2	13	640402	61	1266	0	108210	750000
13	1	13	601299	97	0	0	148604	750000
14	2	13	524480	54	1339	0	224073	750000
15	2	13	188293	84	1608	0	559931	750000
16	3	13	157105	66	1499	1101	590097	750000

Type 5 #19 5562 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	3	14	1311942	95	1471	1723	17912	1333333
2	3	14	338589	84	1715	1512	991265	1333333
3	3	14	1131973	74	1478	1249	198411	1333333
4	1	14	1264600	64	0	0	68669	1333333
5	2	14	185547	72	1004	0	1146638	1333333
6	3	14	932707	93	1891	1196	397260	1333333
7	3	14	148383	69	1454	1052	1182237	1333333
8	3	14	848079	84	1520	1536	481946	1333333
9	1	14	977459	63	0	0	355811	1333333

Type 5 #20 5499 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	3	17	562812	63	1039	1718	100908	666666
2	1	17	210510	91	0	0	456065	666666
3	1	17	75577	78	0	0	591011	666666
4	1	17	493373	60	0	0	173233	666666
5	2	17	133657	80	1318	0	531531	666666
6	3	17	75951	88	1848	1498	587105	666666
7	3	17	397823	66	1319	1879	265447	666666
8	1	17	552916	50	0	0	113700	666666
9	3	17	225074	72	1711	1712	437953	666666
10	3	17	545922	60	1528	1709	117327	666666
11	1	17	302315	78	0	0	364273	666666
12	2	17	290908	53	1245	0	374407	666666
13	2	17	663702	64	1695	0	1141	666666
14	3	17	122618	84	1060	1514	541222	666666
15	1	17	106972	96	0	0	559598	666666
16	2	17	45820	85	1102	0	619574	666666
17	2	17	650229	99	1249	0	14990	666666
18	1	17	365735	89	0	0	300842	666666

Type 5 #21 5497 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	1	12	93572	50	0	0	829454	923076
2	2	12	801579	50	1147	0	120250	923076
3	2	12	58044	91	1229	0	863621	923076
4	3	12	733891	83	1969	1790	185177	923076
5	2	12	755198	51	1129	0	166647	923076
6	1	12	257985	50	0	0	665041	923076
7	3	12	1993	71	1714	1519	917637	923076
8	2	12	48697	50	1001	0	873278	923076
9	2	12	155376	98	1381	0	766123	923076
10	3	12	132175	95	1593	1702	787321	923076
11	3	12	817113	70	1595	1117	103041	923076
12	2	12	585590	64	1148	0	336210	923076
13	3	12	634866	57	1948	1092	284999	923076

Type 5 #22 5561 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	1	18	655743	71	0	0	50068	705882
2	3	18	498674	94	1317	1427	204182	705882
3	2	18	46737	72	1303	0	657698	705882
4	3	18	39675	85	1387	1719	662846	705882
5	3	18	168717	61	1240	1254	534488	705882
6	1	18	653556	77	0	0	52249	705882
7	1	18	204960	64	0	0	500858	705882
8	3	18	584852	74	1960	1745	117103	705882
9	2	18	359076	91	1026	0	345598	705882
10	3	18	183603	90	1623	1184	519202	705882
11	1	18	316713	88	0	0	389081	705882
12	1	18	572440	70	0	0	133372	705882
13	2	18	552624	55	1895	0	151253	705882
14	2	18	259190	57	1729	0	444849	705882
15	2	18	81647	87	1642	0	622419	705882
16	2	18	527087	51	1197	0	177496	705882
17	1	18	245751	73	0	0	460058	705882

Type 5 #23 5561 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	2	18	523734	53	1288	0	141538	666666
2	3	18	235233	84	1458	1243	428480	666666
3	1	18	523543	57	0	0	143066	666666
4	3	18	273702	81	1945	1631	389145	666666
5	3	18	350937	86	1926	1523	312022	666666
6	2	18	411450	73	1120	0	253950	666666
7	3	18	468753	90	1864	1336	194443	666666
8	2	18	635904	70	1812	0	28810	666666
9	2	18	218298	70	1225	0	447003	666666
10	2	18	605343	54	1044	0	60171	666666
11	2	18	241237	71	1506	0	423781	666666
12	2	18	662050	81	1191	0	3263	666666
13	1	18	84113	83	0	0	582470	666666
14	2	18	609134	69	1448	0	55946	666666
15	2	18	29102	61	1482	0	635960	666666
16	1	18	583844	77	0	0	82745	666666
17	1	18	50807	100	0	0	615759	666666
18	2	18	238682	86	1435	0	426377	666666

Type 5 #24 5530 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	2	15	118975	92	1873	0	1078968	1200000
2	3	15	669432	97	1115	1746	527416	1200000
3	3	15	992681	50	1595	1462	204112	1200000
4	1	15	173219	87	0	0	1026694	1200000
5	2	15	828891	52	1169	0	369836	1200000
6	3	15	617051	51	1452	1253	580091	1200000
7	1	15	254551	90	0	0	945359	1200000
8	1	15	1120059	94	0	0	79847	1200000
9	1	15	1136614	94	0	0	63292	1200000
10	3	15	1010528	51	1417	1767	186135	1200000

Type 5 #25 5530 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	3	11	32962	96	1664	1492	713594	750000
2	2	11	629012	61	1343	0	119523	750000
3	3	11	744676	96	1803	1726	1507	750000
4	1	11	205806	61	0	0	544133	750000
5	1	11	742288	57	0	0	7655	750000
6	2	11	217335	67	1819	0	530712	750000
7	2	11	741969	81	1249	0	6620	750000
8	2	11	670693	60	1134	0	78053	750000
9	2	11	3147	60	1424	0	745309	750000
10	1	11	366136	63	0	0	383801	750000
11	1	11	354567	99	0	0	395334	750000
12	2	11	41598	56	1713	0	706577	750000
13	2	11	720186	53	1705	0	28003	750000
14	1	11	527405	91	0	0	222504	750000
15	1	11	53951	91	0	0	695958	750000
16	3	11	603613	83	1337	1590	143211	750000

Type 5 #26 5564 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	3	10	392705	66	1743	1139	204215	600000
2	1	10	378486	80	0	0	221434	600000
3	2	10	222087	59	1576	0	376219	600000
4	3	10	74625	89	1613	1137	522358	600000
5	1	10	80876	55	0	0	519069	600000
6	1	10	164766	53	0	0	435181	600000
7	2	10	294322	92	1883	0	303611	600000
8	3	10	280717	87	1080	1088	316854	600000
9	2	10	173683	88	1924	0	424217	600000
10	1	10	262772	50	0	0	337178	600000
11	3	10	123641	92	1059	1045	473979	600000
12	3	10	357563	61	1721	1004	239529	600000
13	2	10	294590	66	1698	0	303580	600000
14	2	10	445531	54	1273	0	153088	600000
15	3	10	160779	76	1668	1020	436305	600000
16	3	10	280546	87	1988	1036	316169	600000
17	2	10	197169	81	1772	0	400897	600000
18	1	10	216439	58	0	0	383503	600000
19	1	10	101019	77	0	0	498904	600000
20	2	10	417166	61	1434	0	181278	600000

Type 5 #27 5530 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	2	13	468900	69	1847	0	862448	1333333
2	3	13	957371	50	1521	1376	372915	1333333
3	1	13	165330	51	0	0	1167952	1333333
4	3	13	1309395	55	1135	1382	21256	1333333
5	3	13	1241790	93	1920	1043	88301	1333333
6	1	13	900390	55	0	0	432888	1333333
7	3	13	583804	74	1231	1460	746616	1333333
8	2	13	19523	57	1370	0	1312326	1333333
9	2	13	544007	63	1722	0	787478	1333333

Type 5 #28 5530 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	2	13	393625	79	1535	0	404682	800000
2	3	13	180731	52	1726	1414	615973	800000
3	1	13	155984	80	0	0	643936	800000
4	1	13	785962	68	0	0	13970	800000
5	1	13	241531	77	0	0	558392	800000
6	2	13	629498	60	1892	0	168490	800000
7	3	13	758507	99	1202	1015	38979	800000
8	3	13	190345	94	1406	1512	606455	800000
9	1	13	620641	67	0	0	179292	800000
10	1	13	491162	84	0	0	308754	800000
11	3	13	423955	69	1765	1968	372105	800000
12	3	13	479127	80	1280	1949	317404	800000
13	3	13	168689	63	1004	1433	628685	800000
14	3	13	679919	82	1122	1316	117397	800000
15	2	13	293498	87	1699	0	504629	800000

Type 5 #29 5530 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	1	18	311144	60	0	0	611872	923076
2	2	18	422498	98	1083	0	499299	923076
3	3	18	154535	77	1350	1044	765916	923076
4	1	18	851599	92	0	0	71385	923076
5	2	18	569381	82	1612	0	351919	923076
6	3	18	371818	92	1794	1222	547966	923076
7	1	18	398822	63	0	0	524191	923076
8	3	18	630950	61	1284	1875	288784	923076
9	1	18	61479	86	0	0	861511	923076
10	3	18	249621	70	1654	1866	669725	923076
11	3	18	663687	87	1409	1925	255794	923076
12	1	18	713726	81	0	0	209269	923076
13	1	18	50008	93	0	0	872975	923076

Type 5 #30 5530 [Back to Summary]

Burst Segment	Number of Pulses	Chirp Width MHz	t1 usec	Pulse Width (t2) usec	t3 usec	t4 usec	t5 usec	Total Segment Length usec
1	3	20	686303	98	1483	1236	60684	750000
2	1	20	408934	93	0	0	340973	750000
3	1	20	361752	97	0	0	388151	750000
4	3	20	711250	74	1861	1550	35117	750000
5	3	20	133830	84	1474	1525	612919	750000
6	3	20	30657	63	1494	1553	716107	750000
7	1	20	571520	62	0	0	178418	750000
8	1	20	215246	58	0	0	534696	750000
9	2	20	444821	73	1818	0	303215	750000
10	1	20	275243	92	0	0	474665	750000
11	1	20	289308	70	0	0	460622	750000
12	3	20	533248	51	1305	1481	213813	750000
13	1	20	265341	52	0	0	484607	750000
14	1	20	544963	51	0	0	204986	750000
15	3	20	57428	59	1927	1224	689244	750000
16	3	20	697124	76	1462	1849	49337	750000

Type 6 #1 [Back to Summary]									
#01-5490	#02-5676	#03-5438	#04-5320	#05-5341	#06-5562	#07-5483	#08-5353	#09-5722	#10-5383
#11-5390	#12-5470	#13-5345	#14-5365	#15-5442	#16-5296	#17-5525	#18-5644	#19-5468	#20-5495
#21-5279	#22-5335	#23-5461	#24-5664	#25-5593	#26-5370	#27-5463	#28-5338	#29-5527	#30-5471
#31-5660	#32-5261	#33-5451	#34-5693	#35-5511	#36-5309	#37-5704	#38-5294	#39-5647	#40-5484
#41-5362	#42-5520	#43-5337	#44-5563	#45-5692	#46-5358	#47-5666	#48-5585	#49-5306	#50-5422
#51-5386	#52-5625	#53-5480	#54-5623	#55-5384	#56-5407	#57-5473	#58-5507	#59-5455	#60-5698
#61-5350	#62-5397	#63-5560	#64-5514	#65-5448	#66-5377	#67-5267	#68-5380	#69-5589	#70-5381
#71-5316	#72-5485	#73-5721	#74-5712	#75-5382	#76-5500	#77-5723	#78-5628	#79-5695	#80-5492
#81-5428	#82-5605	#83-5277	#84-5347	#85-5329	#86-5282	#87-5522	#88-5558	#89-5568	#90-5351
#91-5576	#92-5456	#93-5574	#94-5674	#95-5378	#96-5689	#97-5682	#98-5561	#99-5357	#100-5571

Type 6 #2 [Back to Summary]									
#01-5337	#02-5537	#03-5724	#04-5654	#05-5352	#06-5631	#07-5626	#08-5487	#09-5491	#10-5614
#11-5405	#12-5565	#13-5526	#14-5695	#15-5517	#16-5468	#17-5361	#18-5452	#19-5419	#20-5410
#21-5590	#22-5439	#23-5543	#24-5480	#25-5534	#26-5591	#27-5634	#28-5294	#29-5583	#30-5408
#31-5529	#32-5411	#33-5514	#34-5375	#35-5391	#36-5616	#37-5604	#38-5345	#39-5722	#40-5424
#41-5376	#42-5270	#43-5306	#44-5671	#45-5670	#46-5251	#47-5650	#48-5595	#49-5399	#50-5630
#51-5575	#52-5475	#53-5381	#54-5673	#55-5700	#56-5618	#57-5718	#58-5486	#59-5362	#60-5481
#61-5723	#62-5576	#63-5628	#64-5322	#65-5328	#66-5713	#67-5295	#68-5393	#69-5546	#70-5629
#71-5588	#72-5261	#73-5451	#74-5716	#75-5279	#76-5562	#77-5377	#78-5596	#79-5531	#80-5525
#81-5665	#82-5284	#83-5613	#84-5678	#85-5553	#86-5300	#87-5276	#88-5564	#89-5401	#90-5495
#91-5619	#92-5355	#93-5704	#94-5477	#95-5423	#96-5516	#97-5359	#98-5702	#99-5578	#100-5676

Type 6 #3 [Back to Summary]									
#01-5677	#02-5501	#03-5296	#04-5498	#05-5285	#06-5565	#07-5271	#08-5392	#09-5640	#10-5381
#11-5486	#12-5370	#13-5680	#14-5561	#15-5545	#16-5688	#17-5689	#18-5673	#19-5491	#20-5281
#21-5687	#22-5450	#23-5717	#24-5298	#25-5259	#26-5480	#27-5282	#28-5695	#29-5540	#30-5477
#31-5449	#32-5403	#33-5264	#34-5585	#35-5581	#36-5414	#37-5715	#38-5367	#39-5639	#40-5721
#41-5283	#42-5609	#43-5652	#44-5275	#45-5266	#46-5500	#47-5408	#48-5396	#49-5663	#50-5464
#51-5560	#52-5416	#53-5460	#54-5552	#55-5713	#56-5472	#57-5511	#58-5724	#59-5487	#60-5528
#61-5532	#62-5306	#63-5576	#64-5406	#65-5649	#66-5333	#67-5354	#68-5343	#69-5702	#70-5378
#71-5693	#72-5569	#73-5287	#74-5496	#75-5250	#76-5328	#77-5521	#78-5685	#79-5286	#80-5483
#81-5326	#82-5608	#83-5278	#84-5330	#85-5637	#86-5292	#87-5661	#88-5436	#89-5595	#90-5359
#91-5625	#92-5712	#93-5602	#94-5365	#95-5437	#96-5701	#97-5291	#98-5499	#99-5349	#100-5651

Type 6 #4 [Back to Summary]									
#01-5394	#02-5313	#03-5417	#04-5537	#05-5494	#06-5718	#07-5381	#08-5688	#09-5553	#10-5638
#11-5677	#12-5542	#13-5693	#14-5253	#15-5453	#16-5647	#17-5274	#18-5499	#19-5489	#20-5616
#21-5389	#22-5642	#23-5471	#24-5596	#25-5473	#26-5706	#27-5686	#28-5640	#29-5308	#30-5270
#31-5290	#32-5273	#33-5592	#34-5349	#35-5341	#36-5260	#37-5443	#38-5464	#39-5557	#40-5649
#41-5625	#42-5702	#43-5605	#44-5678	#45-5401	#46-5335	#47-5275	#48-5598	#49-5631	#50-5511
#51-5676	#52-5507	#53-5256	#54-5449	#55-5514	#56-5472	#57-5562	#58-5540	#59-5312	#60-5510
#61-5282	#62-5458	#63-5624	#64-5529	#65-5594	#66-5656	#67-5671	#68-5587	#69-5633	#70-5435
#71-5446	#72-5528	#73-5666	#74-5563	#75-5714	#76-5406	#77-5287	#78-5512	#79-5436	#80-5383
#81-5683	#82-5334	#83-5259	#84-5518	#85-5318	#86-5497	#87-5267	#88-5388	#89-5556	#90-5585
#91-5415	#92-5621	#93-5399	#94-5297	#95-5615	#96-5411	#97-5326	#98-5329	#99-5336	#100-5468

Type 6 #5 [Back to Summary]									
#01-5387	#02-5403	#03-5689	#04-5442	#05-5308	#06-5396	#07-5568	#08-5415	#09-5466	#10-5351
#11-5443	#12-5295	#13-5347	#14-5646	#15-5555	#16-5668	#17-5457	#18-5356	#19-5470	#20-5343
#21-5639	#22-5533	#23-5284	#24-5296	#25-5271	#26-5558	#27-5380	#28-5626	#29-5674	#30-5550
#31-5338	#32-5684	#33-5438	#34-5700	#35-5252	#36-5532	#37-5373	#38-5544	#39-5468	#40-5645
#41-5661	#42-5580	#43-5654	#44-5458	#45-5401	#46-5375	#47-5527	#48-5488	#49-5469	#50-5678
#51-5688	#52-5695	#53-5587	#54-5713	#55-5557	#56-5582	#57-5364	#58-5638	#59-5418	#60-5480
#61-5265	#62-5666	#63-5465	#64-5635	#65-5262	#66-5484	#67-5585	#68-5370	#69-5640	#70-5273
#71-5543	#72-5631	#73-5614	#74-5541	#75-5406	#76-5310	#77-5600	#78-5552	#79-5618	#80-5619
#81-5277	#82-5615	#83-5407	#84-5721	#85-5583	#86-5365	#87-5340	#88-5446	#89-5388	#90-5392
#91-5413	#92-5452	#93-5368	#94-5710	#95-5624	#96-5718	#97-5354	#98-5263	#99-5441	#100-5642

Type 6 #6 [Back to Summary]									
#01-5514	#02-5402	#03-5566	#04-5442	#05-5379	#06-5299	#07-5325	#08-5289	#09-5555	#10-5498
#11-5706	#12-5538	#13-5271	#14-5523	#15-5452	#16-5372	#17-5510	#18-5471	#19-5303	#20-5621
#21-5387	#22-5388	#23-5709	#24-5500	#25-5588	#26-5342	#27-5516	#28-5636	#29-5646	#30-5416
#31-5676	#32-5590	#33-5360	#34-5702	#35-5355	#36-5602	#37-5302	#38-5691	#39-5592	#40-5539
#41-5293	#42-5306	#43-5622	#44-5619	#45-5415	#46-5601	#47-5432	#48-5575	#49-5506	#50-5502
#51-5457	#52-5616	#53-5686	#54-5549	#55-5503	#56-5375	#57-5417	#58-5316	#59-5583	#60-5284
#61-5511	#62-5414	#63-5369	#64-5389	#65-5548	#66-5365	#67-5427	#68-5290	#69-5418	#70-5580
#71-5318	#72-5545	#73-5611	#74-5487	#75-5576	#76-5330	#77-5489	#78-5338	#79-5333	#80-5710
#81-5642	#82-5665	#83-5374	#84-5391	#85-5683	#86-5308	#87-5631	#88-5537	#89-5448	#90-5704
#91-5433	#92-5713	#93-5354	#94-5554	#95-5272	#96-5606	#97-5661	#98-5479	#99-5320	#100-5291

Type 6 #7 [Back to Summary]									
#01-5425	#02-5388	#03-5411	#04-5657	#05-5437	#06-5641	#07-5259	#08-5449	#09-5702	#10-5426
#11-5612	#12-5327	#13-5709	#14-5598	#15-5376	#16-5572	#17-5292	#18-5708	#19-5432	#20-5488
#21-5469	#22-5613	#23-5569	#24-5436	#25-5392	#26-5332	#27-5434	#28-5302	#29-5466	#30-5694
#31-5395	#32-5258	#33-5268	#34-5288	#35-5535	#36-5500	#37-5505	#38-5446	#39-5676	#40-5290
#41-5301	#42-5429	#43-5562	#44-5272	#45-5343	#46-5354	#47-5251	#48-5492	#49-5427	#50-5433
#51-5565	#52-5675	#53-5304	#54-5564	#55-5556	#56-5542	#57-5547	#58-5699	#59-5516	#60-5355
#61-5463	#62-5681	#63-5711	#64-5256	#65-5280	#66-5607	#67-5315	#68-5669	#69-5321	#70-5610
#71-5328	#72-5580	#73-5283	#74-5394	#75-5444	#76-5294	#77-5310	#78-5553	#79-5352	#80-5297
#81-5340	#82-5673	#83-5609	#84-5286	#85-5391	#86-5458	#87-5685	#88-5443	#89-5473	#90-5720
#91-5677	#92-5531	#93-5654	#94-5579	#95-5560	#96-5350	#97-5453	#98-5557	#99-5718	#100-5471

Type 6 #8 [Back to Summary]									
#01-5292	#02-5306	#03-5418	#04-5542	#05-5355	#06-5709	#07-5643	#08-5632	#09-5374	#10-5513
#11-5483	#12-5719	#13-5603	#14-5467	#15-5269	#16-5508	#17-5327	#18-5674	#19-5594	#20-5556
#21-5644	#22-5601	#23-5457	#24-5321	#25-5654	#26-5520	#27-5642	#28-5430	#29-5557	#30-5341
#31-5570	#32-5472	#33-5553	#34-5608	#35-5250	#36-5277	#37-5503	#38-5313	#39-5657	#40-5399
#41-5526	#42-5300	#43-5309	#44-5675	#45-5484	#46-5685	#47-5647	#48-5434	#49-5550	#50-5297
#51-5266	#52-5491	#53-5683	#54-5409	#55-5540	#56-5412	#57-5569	#58-5346	#59-5612	#60-5558
#61-5317	#62-5456	#63-5326	#64-5281	#65-5668	#66-5258	#67-5413	#68-5721	#69-5465	#70-5717
#71-5252	#72-5264	#73-5273	#74-5444	#75-5282	#76-5593	#77-5543	#78-5512	#79-5564	#80-5696
#81-5599	#82-5453	#83-5605	#84-5506	#85-5332	#86-5335	#87-5517	#88-5393	#89-5320	#90-5565
#91-5431	#92-5411	#93-5426	#94-5353	#95-5342	#96-5323	#97-5702	#98-5279	#99-5256	#100-5480

Type 6 #9 [Back to Summary]									
#01-5520	#02-5651	#03-5694	#04-5559	#05-5296	#06-5253	#07-5472	#08-5486	#09-5382	#10-5673
#11-5594	#12-5306	#13-5507	#14-5640	#15-5683	#16-5583	#17-5579	#18-5536	#19-5680	#20-5586
#21-5459	#22-5269	#23-5653	#24-5629	#25-5531	#26-5561	#27-5556	#28-5646	#29-5357	#30-5687
#31-5614	#32-5509	#33-5499	#34-5331	#35-5419	#36-5671	#37-5479	#38-5292	#39-5455	#40-5320
#41-5576	#42-5280	#43-5260	#44-5366	#45-5693	#46-5375	#47-5625	#48-5504	#49-5387	#50-5469
#51-5453	#52-5408	#53-5321	#54-5391	#55-5263	#56-5498	#57-5722	#58-5313	#59-5275	#60-5452
#61-5415	#62-5549	#63-5376	#64-5422	#65-5307	#66-5330	#67-5525	#68-5426	#69-5466	#70-5259
#71-5349	#72-5541	#73-5327	#74-5611	#75-5257	#76-5435	#77-5261	#78-5542	#79-5667	#80-5411
#81-5662	#82-5304	#83-5513	#84-5612	#85-5477	#86-5456	#87-5444	#88-5365	#89-5324	#90-5652
#91-5679	#92-5427	#93-5273	#94-5256	#95-5632	#96-5285	#97-5630	#98-5568	#99-5316	#100-5616

Type 6 #10 [Back to Summary]									
#01-5578	#02-5453	#03-5293	#04-5378	#05-5377	#06-5648	#07-5336	#08-5439	#09-5386	#10-5555
#11-5494	#12-5435	#13-5371	#14-5592	#15-5522	#16-5363	#17-5289	#18-5496	#19-5674	#20-5577
#21-5611	#22-5409	#23-5352	#24-5544	#25-5308	#26-5650	#27-5519	#28-5317	#29-5705	#30-5702
#31-5531	#32-5420	#33-5476	#34-5300	#35-5559	#36-5459	#37-5257	#38-5382	#39-5484	#40-5556
#41-5367	#42-5256	#43-5706	#44-5493	#45-5407	#46-5492	#47-5302	#48-5408	#49-5464	#50-5520
#51-5715	#52-5387	#53-5620	#54-5462	#55-5253	#56-5423	#57-5347	#58-5480	#59-5319	#60-5458
#61-5381	#62-5268	#63-5466	#64-5412	#65-5274	#66-5324	#67-5685	#68-5321	#69-5283	#70-5314
#71-5359	#72-5640	#73-5262	#74-5376	#75-5470	#76-5610	#77-5437	#78-5598	#79-5394	#80-5554
#81-5605	#82-5365	#83-5593	#84-5447	#85-5714	#86-5402	#87-5540	#88-5266	#89-5299	#90-5395
#91-5361	#92-5521	#93-5313	#94-5278	#95-5433	#96-5354	#97-5538	#98-5564	#99-5483	#100-5338

Type 6 #11 [Back to Summary]									
#01-5531	#02-5707	#03-5371	#04-5398	#05-5409	#06-5327	#07-5374	#08-5496	#09-5252	#10-5377
#11-5716	#12-5486	#13-5339	#14-5503	#15-5586	#16-5268	#17-5414	#18-5271	#19-5423	#20-5606
#21-5522	#22-5668	#23-5272	#24-5623	#25-5679	#26-5575	#27-5574	#28-5709	#29-5672	#30-5356
#31-5329	#32-5605	#33-5372	#34-5302	#35-5262	#36-5614	#37-5714	#38-5438	#39-5282	#40-5635
#41-5274	#42-5287	#43-5263	#44-5647	#45-5400	#46-5597	#47-5424	#48-5537	#49-5422	#50-5407
#51-5663	#52-5504	#53-5382	#54-5588	#55-5542	#56-5587	#57-5687	#58-5476	#59-5448	#60-5558
#61-5480	#62-5389	#63-5547	#64-5622	#65-5299	#66-5361	#67-5363	#68-5291	#69-5490	#70-5696
#71-5280	#72-5700	#73-5717	#74-5511	#75-5581	#76-5484	#77-5654	#78-5347	#79-5475	#80-5332
#81-5411	#82-5293	#83-5545	#84-5521	#85-5425	#86-5555	#87-5477	#88-5510	#89-5489	#90-5401
#91-5652	#92-5492	#93-5715	#94-5447	#95-5405	#96-5611	#97-5462	#98-5365	#99-5604	#100-5285

Type 6 #12 [Back to Summary]									
#01-5484	#02-5379	#03-5297	#04-5446	#05-5375	#06-5688	#07-5512	#08-5595	#09-5256	#10-5306
#11-5658	#12-5589	#13-5723	#14-5363	#15-5403	#16-5441	#17-5570	#18-5276	#19-5455	#20-5470
#21-5611	#22-5581	#23-5526	#24-5338	#25-5294	#26-5515	#27-5710	#28-5521	#29-5353	#30-5698
#31-5272	#32-5539	#33-5472	#34-5443	#35-5572	#36-5278	#37-5715	#38-5347	#39-5396	#40-5456
#41-5292	#42-5610	#43-5503	#44-5431	#45-5468	#46-5314	#47-5494	#48-5606	#49-5293	#50-5690
#51-5287	#52-5435	#53-5642	#54-5385	#55-5400	#56-5632	#57-5582	#58-5682	#59-5402	#60-5588
#61-5702	#62-5716	#63-5493	#64-5282	#65-5281	#66-5371	#67-5368	#68-5533	#69-5522	#70-5376
#71-5451	#72-5477	#73-5612	#74-5722	#75-5426	#76-5252	#77-5330	#78-5344	#79-5601	#80-5705
#81-5271	#82-5359	#83-5482	#84-5391	#85-5661	#86-5564	#87-5626	#88-5337	#89-5300	#90-5666
#91-5425	#92-5284	#93-5671	#94-5538	#95-5481	#96-5305	#97-5367	#98-5475	#99-5406	#100-5348

Type 6 #13 [Back to Summary]									
#01-5669	#02-5686	#03-5334	#04-5642	#05-5490	#06-5538	#07-5552	#08-5639	#09-5681	#10-5393
#11-5547	#12-5482	#13-5335	#14-5415	#15-5563	#16-5593	#17-5486	#18-5352	#19-5344	#20-5442
#21-5470	#22-5278	#23-5481	#24-5576	#25-5677	#26-5414	#27-5524	#28-5320	#29-5497	#30-5374
#31-5613	#32-5586	#33-5668	#34-5501	#35-5287	#36-5308	#37-5271	#38-5559	#39-5622	#40-5370
#41-5258	#42-5707	#43-5382	#44-5626	#45-5366	#46-5661	#47-5671	#48-5504	#49-5695	#50-5605
#51-5533	#52-5261	#53-5372	#54-5680	#55-5596	#56-5637	#57-5449	#58-5478	#59-5693	#60-5322
#61-5264	#62-5474	#63-5394	#64-5553	#65-5507	#66-5691	#67-5539	#68-5558	#69-5377	#70-5499
#71-5571	#72-5654	#73-5451	#74-5702	#75-5429	#76-5485	#77-5620	#78-5581	#79-5450	#80-5265
#81-5462	#82-5272	#83-5351	#84-5614	#85-5562	#86-5600	#87-5454	#88-5716	#89-5628	#90-5367
#91-5580	#92-5510	#93-5589	#94-5540	#95-5350	#96-5496	#97-5556	#98-5544	#99-5360	#100-5397

Type 6 #14 [Back to Summary]									
#01-5370	#02-5360	#03-5377	#04-5442	#05-5284	#06-5607	#07-5529	#08-5400	#09-5495	#10-5355
#11-5266	#12-5596	#13-5276	#14-5677	#15-5579	#16-5718	#17-5376	#18-5506	#19-5715	#20-5632
#21-5477	#22-5552	#23-5656	#24-5254	#25-5644	#26-5308	#27-5315	#28-5636	#29-5591	#30-5657
#31-5654	#32-5322	#33-5465	#34-5305	#35-5618	#36-5362	#37-5617	#38-5638	#39-5575	#40-5685
#41-5325	#42-5314	#43-5470	#44-5520	#45-5358	#46-5712	#47-5486	#48-5639	#49-5692	#50-5366
#51-5384	#52-5304	#53-5557	#54-5459	#55-5649	#56-5539	#57-5429	#58-5374	#59-5519	#60-5702
#61-5538	#62-5612	#63-5527	#64-5559	#65-5424	#66-5670	#67-5380	#68-5695	#69-5302	#70-5464
#71-5345	#72-5456	#73-5648	#74-5280	#75-5555	#76-5413	#77-5331	#78-5388	#79-5619	#80-5658
#81-5542	#82-5401	#83-5669	#84-5476	#85-5522	#86-5593	#87-5483	#88-5255	#89-5382	#90-5326
#91-5659	#92-5496	#93-5365	#94-5599	#95-5394	#96-5432	#97-5505	#98-5630	#99-5342	#100-5414

Type 6 #15 [Back to Summary]									
#01-5585	#02-5517	#03-5582	#04-5473	#05-5265	#06-5645	#07-5380	#08-5528	#09-5628	#10-5485
#11-5458	#12-5295	#13-5474	#14-5592	#15-5405	#16-5391	#17-5673	#18-5303	#19-5285	#20-5554
#21-5433	#22-5371	#23-5566	#24-5705	#25-5536	#26-5576	#27-5341	#28-5298	#29-5617	#30-5375
#31-5634	#32-5422	#33-5287	#34-5459	#35-5320	#36-5276	#37-5542	#38-5445	#39-5463	#40-5610
#41-5468	#42-5685	#43-5352	#44-5622	#45-5594	#46-5613	#47-5271	#48-5502	#49-5443	#50-5724
#51-5487	#52-5451	#53-5600	#54-5518	#55-5704	#56-5461	#57-5679	#58-5604	#59-5664	#60-5411
#61-5550	#62-5331	#63-5641	#64-5500	#65-5578	#66-5286	#67-5256	#68-5266	#69-5521	#70-5377
#71-5577	#72-5477	#73-5565	#74-5399	#75-5336	#76-5476	#77-5269	#78-5674	#79-5362	#80-5654
#81-5552	#82-5567	#83-5580	#84-5621	#85-5620	#86-5421	#87-5546	#88-5493	#89-5478	#90-5584
#91-5323	#92-5667	#93-5504	#94-5297	#95-5307	#96-5381	#97-5294	#98-5575	#99-5289	#100-5551

Type 6 #16 [Back to Summary]									
#01-5604	#02-5256	#03-5705	#04-5316	#05-5397	#06-5258	#07-5612	#08-5445	#09-5431	#10-5479
#11-5444	#12-5257	#13-5491	#14-5265	#15-5589	#16-5710	#17-5482	#18-5275	#19-5611	#20-5403
#21-5465	#22-5489	#23-5515	#24-5665	#25-5307	#26-5641	#27-5695	#28-5523	#29-5349	#30-5678
#31-5430	#32-5417	#33-5633	#34-5538	#35-5297	#36-5548	#37-5585	#38-5512	#39-5469	#40-5609
#41-5541	#42-5355	#43-5317	#44-5251	#45-5387	#46-5321	#47-5423	#48-5497	#49-5434	#50-5323
#51-5630	#52-5274	#53-5692	#54-5614	#55-5342	#56-5370	#57-5472	#58-5292	#59-5263	#60-5486
#61-5289	#62-5347	#63-5353	#64-5484	#65-5300	#66-5279	#67-5358	#68-5679	#69-5693	#70-5298
#71-5381	#72-5696	#73-5535	#74-5250	#75-5591	#76-5366	#77-5427	#78-5519	#79-5536	#80-5714
#81-5473	#82-5458	#83-5343	#84-5283	#85-5308	#86-5416	#87-5460	#88-5277	#89-5455	#90-5656
#91-5335	#92-5558	#93-5513	#94-5715	#95-5579	#96-5454	#97-5261	#98-5572	#99-5682	#100-5373

Type 6 #17 [Back to Summary]									
#01-5694	#02-5470	#03-5525	#04-5389	#05-5670	#06-5657	#07-5467	#08-5690	#09-5273	#10-5707
#11-5669	#12-5681	#13-5486	#14-5274	#15-5263	#16-5556	#17-5254	#18-5320	#19-5425	#20-5607
#21-5546	#22-5328	#23-5478	#24-5291	#25-5688	#26-5551	#27-5440	#28-5537	#29-5402	#30-5387
#31-5349	#32-5583	#33-5553	#34-5412	#35-5268	#36-5720	#37-5648	#38-5668	#39-5333	#40-5367
#41-5662	#42-5485	#43-5723	#44-5463	#45-5704	#46-5368	#47-5307	#48-5476	#49-5698	#50-5265
#51-5443	#52-5658	#53-5385	#54-5323	#55-5539	#56-5614	#57-5715	#58-5488	#59-5424	#60-5366
#61-5465	#62-5647	#63-5534	#64-5605	#65-5602	#66-5339	#67-5379	#68-5324	#69-5256	#70-5271
#71-5627	#72-5308	#73-5710	#74-5310	#75-5663	#76-5313	#77-5332	#78-5264	#79-5311	#80-5571
#81-5499	#82-5685	#83-5563	#84-5394	#85-5664	#86-5413	#87-5448	#88-5483	#89-5594	#90-5377
#91-5252	#92-5419	#93-5501	#94-5686	#95-5621	#96-5261	#97-5671	#98-5365	#99-5580	#100-5612

Type 6 #18 [Back to Summary]									
#01-5712	#02-5705	#03-5470	#04-5679	#05-5357	#06-5386	#07-5676	#08-5326	#09-5379	#10-5479
#11-5539	#12-5701	#13-5428	#14-5578	#15-5596	#16-5500	#17-5339	#18-5398	#19-5662	#20-5447
#21-5616	#22-5623	#23-5451	#24-5603	#25-5264	#26-5465	#27-5533	#28-5272	#29-5407	#30-5655
#31-5360	#32-5688	#33-5404	#34-5415	#35-5582	#36-5513	#37-5468	#38-5607	#39-5280	#40-5531
#41-5454	#42-5364	#43-5347	#44-5367	#45-5560	#46-5274	#47-5711	#48-5641	#49-5337	#50-5373
#51-5643	#52-5524	#53-5423	#54-5383	#55-5723	#56-5332	#57-5504	#58-5589	#59-5664	#60-5614
#61-5573	#62-5653	#63-5640	#64-5443	#65-5361	#66-5570	#67-5545	#68-5260	#69-5719	#70-5327
#71-5282	#72-5458	#73-5366	#74-5382	#75-5717	#76-5498	#77-5521	#78-5325	#79-5294	#80-5713
#81-5482	#82-5617	#83-5652	#84-5284	#85-5262	#86-5561	#87-5514	#88-5270	#89-5418	#90-5495
#91-5258	#92-5601	#93-5667	#94-5390	#95-5680	#96-5523	#97-5446	#98-5628	#99-5252	#100-5707

Type 6 #19 [Back to Summary]									
#01-5452	#02-5698	#03-5647	#04-5258	#05-5341	#06-5435	#07-5406	#08-5290	#09-5391	#10-5476
#11-5540	#12-5421	#13-5546	#14-5675	#15-5384	#16-5684	#17-5724	#18-5609	#19-5432	#20-5527
#21-5308	#22-5526	#23-5570	#24-5472	#25-5321	#26-5402	#27-5516	#28-5704	#29-5427	#30-5444
#31-5300	#32-5619	#33-5329	#34-5310	#35-5513	#36-5508	#37-5694	#38-5646	#39-5666	#40-5555
#41-5404	#42-5477	#43-5604	#44-5668	#45-5682	#46-5565	#47-5306	#48-5716	#49-5253	#50-5720
#51-5522	#52-5563	#53-5445	#54-5449	#55-5645	#56-5648	#57-5373	#58-5420	#59-5657	#60-5659
#61-5637	#62-5422	#63-5584	#64-5670	#65-5414	#66-5636	#67-5336	#68-5481	#69-5405	#70-5597
#71-5712	#72-5323	#73-5662	#74-5596	#75-5364	#76-5552	#77-5639	#78-5616	#79-5505	#80-5475
#81-5339	#82-5518	#83-5699	#84-5424	#85-5634	#86-5457	#87-5411	#88-5594	#89-5375	#90-5579
#91-5368	#92-5512	#93-5710	#94-5255	#95-5626	#96-5702	#97-5605	#98-5652	#99-5489	#100-5283

Type 6 #20 [Back to Summary]									
#01-5474	#02-5551	#03-5554	#04-5375	#05-5257	#06-5447	#07-5623	#08-5569	#09-5330	#10-5342
#11-5254	#12-5480	#13-5638	#14-5428	#15-5570	#16-5370	#17-5452	#18-5406	#19-5279	#20-5686
#21-5476	#22-5463	#23-5348	#24-5555	#25-5477	#26-5443	#27-5339	#28-5663	#29-5696	#30-5391
#31-5671	#32-5714	#33-5377	#34-5479	#35-5259	#36-5522	#37-5695	#38-5578	#39-5423	#40-5446
#41-5567	#42-5582	#43-5524	#44-5293	#45-5586	#46-5627	#47-5611	#48-5532	#49-5410	#50-5513
#51-5503	#52-5456	#53-5632	#54-5539	#55-5541	#56-5264	#57-5449	#58-5251	#59-5630	#60-5538
#61-5353	#62-5688	#63-5602	#64-5666	#65-5392	#66-5268	#67-5350	#68-5407	#69-5418	#70-5299
#71-5398	#72-5606	#73-5708	#74-5559	#75-5365	#76-5622	#77-5665	#78-5304	#79-5698	#80-5576
#81-5560	#82-5529	#83-5495	#84-5426	#85-5616	#86-5460	#87-5329	#88-5565	#89-5661	#90-5720
#91-5313	#92-5693	#93-5673	#94-5610	#95-5335	#96-5603	#97-5705	#98-5583	#99-5621	#100-5561

Type 6 #21 [Back to Summary]									
#01-5522	#02-5448	#03-5361	#04-5365	#05-5363	#06-5626	#07-5477	#08-5321	#09-5420	#10-5646
#11-5323	#12-5399	#13-5280	#14-5302	#15-5703	#16-5551	#17-5441	#18-5421	#19-5299	#20-5661
#21-5655	#22-5516	#23-5478	#24-5428	#25-5707	#26-5435	#27-5654	#28-5344	#29-5469	#30-5494
#31-5640	#32-5329	#33-5408	#34-5380	#35-5300	#36-5362	#37-5425	#38-5384	#39-5315	#40-5714
#41-5710	#42-5261	#43-5397	#44-5265	#45-5645	#46-5642	#47-5663	#48-5617	#49-5630	#50-5521
#51-5417	#52-5540	#53-5537	#54-5687	#55-5633	#56-5257	#57-5697	#58-5660	#59-5383	#60-5653
#61-5694	#62-5381	#63-5579	#64-5650	#65-5253	#66-5719	#67-5715	#68-5618	#69-5250	#70-5585
#71-5376	#72-5307	#73-5350	#74-5312	#75-5672	#76-5634	#77-5371	#78-5463	#79-5506	#80-5313
#81-5498	#82-5284	#83-5443	#84-5673	#85-5328	#86-5356	#87-5524	#88-5452	#89-5473	#90-5292
#91-5393	#92-5491	#93-5724	#94-5392	#95-5268	#96-5577	#97-5412	#98-5472	#99-5263	#100-5648

Type 6 #22 [Back to Summary]									
#01-5653	#02-5283	#03-5618	#04-5292	#05-5390	#06-5358	#07-5436	#08-5473	#09-5263	#10-5719
#11-5613	#12-5490	#13-5406	#14-5320	#15-5411	#16-5663	#17-5670	#18-5632	#19-5576	#20-5622
#21-5448	#22-5519	#23-5409	#24-5683	#25-5454	#26-5614	#27-5307	#28-5690	#29-5295	#30-5345
#31-5487	#32-5628	#33-5447	#34-5575	#35-5382	#36-5464	#37-5387	#38-5394	#39-5535	#40-5694
#41-5645	#42-5298	#43-5432	#44-5476	#45-5403	#46-5623	#47-5329	#48-5655	#49-5704	#50-5328
#51-5633	#52-5500	#53-5606	#54-5361	#55-5455	#56-5380	#57-5594	#58-5662	#59-5560	#60-5498
#61-5297	#62-5471	#63-5426	#64-5643	#65-5484	#66-5710	#67-5287	#68-5550	#69-5660	#70-5673
#71-5522	#72-5525	#73-5344	#74-5603	#75-5703	#76-5395	#77-5333	#78-5659	#79-5527	#80-5552
#81-5534	#82-5372	#83-5712	#84-5689	#85-5431	#86-5713	#87-5264	#88-5330	#89-5368	#90-5250
#91-5583	#92-5450	#93-5553	#94-5282	#95-5639	#96-5422	#97-5590	#98-5511	#99-5716	#100-5416

Type 6 #23 [Back to Summary]									
#01-5581	#02-5502	#03-5718	#04-5281	#05-5531	#06-5358	#07-5399	#08-5251	#09-5386	#10-5305
#11-5298	#12-5663	#13-5385	#14-5259	#15-5685	#16-5645	#17-5485	#18-5464	#19-5458	#20-5497
#21-5693	#22-5681	#23-5429	#24-5658	#25-5333	#26-5321	#27-5695	#28-5313	#29-5690	#30-5528
#31-5529	#32-5549	#33-5668	#34-5360	#35-5698	#36-5284	#37-5387	#38-5675	#39-5410	#40-5329
#41-5563	#42-5265	#43-5669	#44-5320	#45-5673	#46-5644	#47-5319	#48-5546	#49-5330	#50-5722
#51-5657	#52-5388	#53-5308	#54-5471	#55-5452	#56-5618	#57-5327	#58-5309	#59-5670	#60-5463
#61-5394	#62-5343	#63-5285	#64-5582	#65-5504	#66-5478	#67-5715	#68-5274	#69-5287	#70-5642
#71-5513	#72-5533	#73-5306	#74-5383	#75-5650	#76-5676	#77-5258	#78-5366	#79-5707	#80-5414
#81-5252	#82-5406	#83-5709	#84-5691	#85-5585	#86-5402	#87-5492	#88-5453	#89-5624	#90-5331
#91-5680	#92-5335	#93-5256	#94-5661	#95-5653	#96-5479	#97-5704	#98-5349	#99-5543	#100-5455

Type 6 #24 [Back to Summary]									
#01-5659	#02-5292	#03-5511	#04-5400	#05-5461	#06-5385	#07-5328	#08-5653	#09-5539	#10-5499
#11-5615	#12-5690	#13-5324	#14-5518	#15-5458	#16-5716	#17-5352	#18-5313	#19-5720	#20-5357
#21-5708	#22-5516	#23-5369	#24-5685	#25-5688	#26-5433	#27-5525	#28-5358	#29-5439	#30-5430
#31-5696	#32-5639	#33-5543	#34-5503	#35-5471	#36-5680	#37-5607	#38-5559	#39-5480	#40-5447
#41-5311	#42-5562	#43-5634	#44-5379	#45-5428	#46-5721	#47-5250	#48-5460	#49-5459	#50-5669
#51-5368	#52-5636	#53-5340	#54-5432	#55-5467	#56-5390	#57-5646	#58-5549	#59-5429	#60-5274
#61-5585	#62-5693	#63-5464	#64-5350	#65-5528	#66-5695	#67-5393	#68-5546	#69-5291	#70-5500
#71-5348	#72-5519	#73-5560	#74-5520	#75-5286	#76-5395	#77-5603	#78-5710	#79-5502	#80-5691
#81-5425	#82-5307	#83-5619	#84-5489	#85-5303	#86-5302	#87-5552	#88-5351	#89-5282	#90-5326
#91-5280	#92-5310	#93-5375	#94-5455	#95-5593	#96-5343	#97-5345	#98-5536	#99-5584	#100-5465

Type 6 #25 [Back to Summary]									
#01-5573	#02-5429	#03-5415	#04-5686	#05-5567	#06-5580	#07-5331	#08-5549	#09-5393	#10-5317
#11-5514	#12-5663	#13-5293	#14-5465	#15-5568	#16-5522	#17-5322	#18-5698	#19-5296	#20-5469
#21-5397	#22-5289	#23-5507	#24-5692	#25-5464	#26-5291	#27-5392	#28-5352	#29-5653	#30-5669
#31-5301	#32-5324	#33-5380	#34-5290	#35-5373	#36-5253	#37-5623	#38-5661	#39-5647	#40-5456
#41-5701	#42-5722	#43-5684	#44-5693	#45-5538	#46-5348	#47-5267	#48-5630	#49-5610	#50-5319
#51-5272	#52-5378	#53-5486	#54-5365	#55-5315	#56-5533	#57-5644	#58-5451	#59-5474	#60-5527
#61-5438	#62-5708	#63-5619	#64-5450	#65-5268	#66-5444	#67-5536	#68-5251	#69-5349	#70-5565
#71-5626	#72-5390	#73-5302	#74-5570	#75-5497	#76-5405	#77-5334	#78-5543	#79-5408	#80-5372
#81-5274	#82-5490	#83-5468	#84-5591	#85-5648	#86-5651	#87-5564	#88-5266	#89-5705	#90-5563
#91-5336	#92-5426	#93-5445	#94-5377	#95-5269	#96-5717	#97-5355	#98-5492	#99-5675	#100-5351

Type 6 #26 [Back to Summary]									
#01-5537	#02-5266	#03-5539	#04-5299	#05-5416	#06-5612	#07-5327	#08-5643	#09-5591	#10-5639
#11-5452	#12-5359	#13-5296	#14-5352	#15-5502	#16-5677	#17-5494	#18-5286	#19-5529	#20-5344
#21-5605	#22-5516	#23-5274	#24-5506	#25-5482	#26-5454	#27-5672	#28-5652	#29-5551	#30-5501
#31-5302	#32-5571	#33-5590	#34-5308	#35-5558	#36-5257	#37-5673	#38-5413	#39-5420	#40-5285
#41-5576	#42-5648	#43-5400	#44-5317	#45-5364	#46-5699	#47-5378	#48-5342	#49-5599	#50-5320
#51-5473	#52-5315	#53-5685	#54-5583	#55-5467	#56-5270	#57-5717	#58-5283	#59-5542	#60-5689
#61-5666	#62-5404	#63-5347	#64-5341	#65-5589	#66-5611	#67-5493	#68-5715	#69-5519	#70-5491
#71-5254	#72-5334	#73-5594	#74-5492	#75-5496	#76-5684	#77-5370	#78-5687	#79-5397	#80-5512
#81-5331	#82-5580	#83-5305	#84-5479	#85-5280	#86-5711	#87-5616	#88-5258	#89-5564	#90-5535
#91-5265	#92-5638	#93-5602	#94-5456	#95-5351	#96-5425	#97-5554	#98-5316	#99-5449	#100-5475

Type 6 #27 [Back to Summary]									
#01-5453	#02-5385	#03-5546	#04-5351	#05-5311	#06-5393	#07-5449	#08-5439	#09-5335	#10-5512
#11-5633	#12-5280	#13-5614	#14-5277	#15-5610	#16-5337	#17-5349	#18-5588	#19-5308	#20-5604
#21-5721	#22-5488	#23-5404	#24-5708	#25-5480	#26-5343	#27-5459	#28-5384	#29-5402	#30-5323
#31-5381	#32-5301	#33-5491	#34-5646	#35-5307	#36-5669	#37-5283	#38-5677	#39-5425	#40-5616
#41-5519	#42-5429	#43-5650	#44-5303	#45-5630	#46-5709	#47-5272	#48-5572	#49-5575	#50-5257
#51-5327	#52-5692	#53-5253	#54-5574	#55-5485	#56-5693	#57-5707	#58-5561	#59-5598	#60-5694
#61-5660	#62-5317	#63-5289	#64-5262	#65-5383	#66-5578	#67-5524	#68-5691	#69-5695	#70-5663
#71-5302	#72-5401	#73-5421	#74-5424	#75-5344	#76-5547	#77-5560	#78-5354	#79-5333	#80-5498
#81-5320	#82-5609	#83-5534	#84-5396	#85-5724	#86-5419	#87-5297	#88-5636	#89-5418	#90-5347
#91-5681	#92-5455	#93-5330	#94-5460	#95-5674	#96-5457	#97-5390	#98-5635	#99-5648	#100-5298

Type 6 #28 [Back to Summary]									
#01-5436	#02-5305	#03-5601	#04-5633	#05-5682	#06-5652	#07-5523	#08-5557	#09-5483	#10-5658
#11-5378	#12-5609	#13-5479	#14-5353	#15-5626	#16-5300	#17-5504	#18-5622	#19-5261	#20-5692
#21-5529	#22-5607	#23-5528	#24-5600	#25-5708	#26-5575	#27-5318	#28-5691	#29-5462	#30-5611
#31-5408	#32-5650	#33-5417	#34-5278	#35-5307	#36-5260	#37-5257	#38-5624	#39-5430	#40-5324
#41-5610	#42-5460	#43-5398	#44-5477	#45-5686	#46-5323	#47-5689	#48-5698	#49-5543	#50-5620
#51-5667	#52-5482	#53-5619	#54-5683	#55-5489	#56-5545	#57-5494	#58-5721	#59-5647	#60-5349
#61-5573	#62-5551	#63-5338	#64-5587	#65-5487	#66-5444	#67-5431	#68-5445	#69-5294	#70-5608
#71-5291	#72-5596	#73-5432	#74-5663	#75-5327	#76-5315	#77-5453	#78-5299	#79-5642	#80-5632
#81-5605	#82-5347	#83-5388	#84-5561	#85-5670	#86-5648	#87-5274	#88-5455	#89-5505	#90-5472
#91-5478	#92-5262	#93-5702	#94-5332	#95-5457	#96-5303	#97-5371	#98-5524	#99-5711	#100-5474

Type 6 #29 [Back to Summary]									
#01-5608	#02-5485	#03-5649	#04-5657	#05-5579	#06-5312	#07-5296	#08-5686	#09-5604	#10-5425
#11-5341	#12-5447	#13-5327	#14-5265	#15-5462	#16-5486	#17-5414	#18-5498	#19-5652	#20-5569
#21-5426	#22-5703	#23-5668	#24-5540	#25-5377	#26-5281	#27-5630	#28-5358	#29-5449	#30-5273
#31-5670	#32-5654	#33-5317	#34-5410	#35-5276	#36-5380	#37-5424	#38-5465	#39-5714	#40-5605
#41-5600	#42-5316	#43-5578	#44-5334	#45-5390	#46-5289	#47-5660	#48-5684	#49-5591	#50-5706
#51-5612	#52-5596	#53-5598	#54-5388	#55-5304	#56-5628	#57-5538	#58-5357	#59-5524	#60-5545
#61-5405	#62-5663	#63-5484	#64-5576	#65-5481	#66-5409	#67-5378	#68-5639	#69-5716	#70-5331
#71-5308	#72-5679	#73-5507	#74-5292	#75-5692	#76-5361	#77-5371	#78-5580	#79-5402	#80-5340
#81-5348	#82-5674	#83-5491	#84-5469	#85-5386	#86-5315	#87-5298	#88-5650	#89-5359	#90-5372
#91-5557	#92-5314	#93-5659	#94-5420	#95-5454	#96-5666	#97-5551	#98-5722	#99-5568	#100-5702

Type 6 #30 [Back to Summary]									
#01-5632	#02-5268	#03-5693	#04-5510	#05-5644	#06-5659	#07-5343	#08-5557	#09-5421	#10-5668
#11-5506	#12-5683	#13-5679	#14-5434	#15-5449	#16-5456	#17-5419	#18-5269	#19-5446	#20-5412
#21-5358	#22-5453	#23-5533	#24-5593	#25-5496	#26-5719	#27-5270	#28-5341	#29-5569	#30-5277
#31-5532	#32-5373	#33-5259	#34-5424	#35-5432	#36-5328	#37-5705	#38-5702	#39-5549	#40-5452
#41-5698	#42-5469	#43-5482	#44-5409	#45-5586	#46-5602	#47-5359	#48-5474	#49-5686	#50-5716
#51-5493	#52-5536	#53-5524	#54-5401	#55-5591	#56-5426	#57-5461	#58-5345	#59-5264	#60-5648
#61-5638	#62-5724	#63-5713	#64-5390	#65-5381	#66-5379	#67-5669	#68-5505	#69-5253	#70-5367
#71-5479	#72-5442	#73-5443	#74-5721	#75-5439	#76-5616	#77-5692	#78-5362	#79-5257	#80-5617
#81-5606	#82-5522	#83-5375	#84-5575	#85-5509	#86-5720	#87-5573	#88-5576	#89-5555	#90-5251
#91-5590	#92-5604	#93-5682	#94-5620	#95-5530	#96-5695	#97-5471	#98-5325	#99-5281	#100-5445

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