

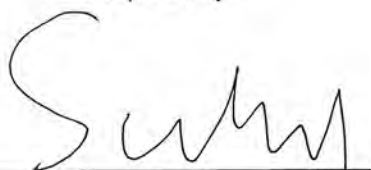
FCC RADIO TEST REPORT

The device described below is tested by Dongguan Nore Testing Center Co., Ltd. to determine the maximum emission levels emanating from the device, the severe levels which the device can endure and E.U.T.'s performance criterion. The test results, data evaluation, test procedures, and equipment of configurations shown in this report were made in accordance with the procedures in ANSI C63.10(2013).

Applicant : EXPRESS LUCK INDUSTRIAL (SHENZHEN) LIMITED
Address : Floor1, Workshop1, NO.88, SOUTH BAOTONG ROAD, XIKENG COMMUNITY, YUANSAN STREET, LONGGANG DISTRICT, SHENZHEN, CHINA
Manufacturer/Factory : EXPRESS LUCK INDUSTRIAL (SHENZHEN) LIMITED
Address : Floor1, Workshop1, NO.88, SOUTH BAOTONG ROAD, XIKENG COMMUNITY, YUANSAN STREET, LONGGANG DISTRICT, SHENZHEN, CHINA
E.U.T. : WIFI Bluetooth module
Brand Name : Caixun
Model No. : SKI.WB7638U.1_MT7668BU
FCC ID : 2AWY6-MT7668BU
Measurement Standard : 47 CFR FCC PART 15 Subpart E (section 407)
KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02
Date of Receiver : July 11, 2020
Date of Test : July 15, 2020 to August 10, 2020
Date of Report : August 10, 2020

This Test Report is Issued Under the Authority of :

Prepared by



Sundiy Jiang / Engineer

Approved & Authorized Signer



Joni Fan / Authorized Signatory

This test report is for the customer shown above and their specific product only. This report applies to above tested sample only and shall not be reproduced in part without written approval of Dongguan Nore Testing Center Co., Ltd.

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Revision History

Report Number	Description	Issued Date
NTC2007103FV00	Initial Issue	2020-08-10

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test

Product Name : WIFI Bluetooth module

Main Model Number : SKI.WB7638U.1_MT7668BU

Additional Model Number : N/A

Brand Name : Caixun

Power Supply : DC 3.3V (By PCB board)

Test voltage : AC 120V/60Hz

Hardware Version : V1.0

Software Version : V1.0

Serial Number : N/A

Note : This product contains multiple wireless features, and this report applies only to 5G RLAN technology.

Technical parameters (For 5G RLAN function)

Frequency Range : 5180-5240MHz, 5260-5320MHz, 5500-5700MHz, 5745-5825MHz

Modulation : IEEE 802.11a: OFDM (BPSK/QPSK/16QAM/64-QAM)
IEEE 802.11n/ac: OFDM (BPSK/QPSK/16QAM/ 64-QAM/ 256-QAM)

Number of Channel : See Appendix I for a list of channels and test channels

Antenna Type : FPC antenna

Number of Antenna : 2

Antenna Gain : 2.3dBi

Appendix I - Channel List and Test Channel

U-NII-1 Band					
20MHz System		40MHz System		80MHz System	
IEEE 802.11a/n(HT20)/ac(VHT20)		IEEE 802.11n(HT40)/ac(VHT40)		IEEE 802.11 ac (VHT80)	
Channel	Frequency MHz	Channel	Frequency MHz	Channel	Frequency MHz
36	5180	38	5190	42	5210
40	5200	46	5230	-	-
44	5220	-	-	-	-
48	5240	-	-	-	-
U-NII-2A Band					
52	5260	54	5270	58	5290
56	5280	62	5310	-	-
60	5300	-	-	-	-
64	5320	-	-	-	-
U-NII-2C Band					
100	5500	102	5510	106	5530
104	5520	110	5550	122	5610
108	5540	118	5590	-	-
112	5560	126	5630	-	-
116	5580	134	5670	-	-
120	5600	-	-	-	-
124	5620	-	-	-	-
128	5640	-	-	-	-
132	5660	-	-	-	-
136	5680	-	-	-	-
140	5700	-	-	-	-
U-NII-3 Band					
149	5745	151	5755	155	155
153	5765	159	5795	-	-
157	5785	-	-	-	-
161	5805	-	-	-	-
165	5825	-	-	-	-

Note: According to section 15.31(m), regards to the operating frequency range over 10MHz, the lowest, middle, and the highest frequency of channel were selected to perform the test. The selected frequency see below:

U-NII-1 Band					
20MHz System		40MHz System		80MHz System	
Channel	Frequency MHz	Channel	Frequency MHz	Channel	Frequency MHz
36	5180	38	5190	42	5210
40	5200	46	5230	-	-
48	5240	-	-	-	-
U-NII-2A Band					
52	5260	54	5270	58	5290
60	5300	62	5310	-	-
64	5320	-	-	-	-
U-NII-2C Band					
100	5500	102	5510	122	5610
120	5600	134	5670	-	-
140	5700	-	-	-	-
U-NII-3 Band					
149	5745	151	5755	155	5775
157	5785	159	5795	-	-
165	5825	-	-	-	-
Test SW Version				Signalling	

1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: 2AWY6-MT7668BU filing to comply with Section 15.407 of the FCC Part 15 subpart E Rule.

1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.10 (2013). Radiated emission measurement was performed in semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters. All other measurements were made in accordance with the procedures in 47 CFR part 2.KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02 for DFS test.

1.4 Equipment Modifications

Not available for this EUT intended for grant.

1.5 Deviations and Abnormalities from Standard Conditions

No additions, deviations and exclusions from the standard.

1.6 Support Device

Notebook	:	Manufacturer: Lenovo Model: TP00067A P/N: SL10G10768 S/N: PF-0DS3YC 15/12
Adapter (For notebook)	:	Manufacturer: Lenovo Model: ADLX65NLC3A I/P: AC 100-240V 50-60Hz, 1.8A O/P: DC 20V 3.25A
TV (Terminal Product)	:	Provided by the manufacturer Manufacturer: Express Luck Model: LE-50N3
Master Router	:	Manufacturer: LINKSYS Model: WRT3200ACM FCC ID: Q87-WRT3200ACM S/N: 1981060a621419
Adapter (For Router)	:	Manufacturer: I.T.E. Power Model: MU42-3120300-A1 I/P: AC 100-240V 50-60Hz, 1.5A O/P: DC 12V 3A

1.7 Test Facility and Location

Site Description

EMC Lab : Listed by CNAS, August 13, 2018
The certificate is valid until August 13, 2024
The Laboratory has been assessed and proved to be in compliance with CNAS/CL01
The Certificate Registration Number is L5795.

Listed by A2LA, November 01, 2017
The certificate is valid until December 31, 2021
The Laboratory has been assessed and proved to be in compliance with ISO17025
The Certificate Registration Number is 4429.01

Listed by FCC, November 06, 2017
The Designation Number is CN1214
Test Firm Registration Number: 907417

Listed by Industry Canada, June 08, 2017
The Certificate Registration Number is 46405-9743A

Name of Firm : Dongguan Nore Testing Center Co., Ltd.
(Dongguan NTC Co., Ltd.)

Site Location : Building D, Gaosheng Science and Technology Park, Hongtu Road,
Nancheng District, Dongguan City, Guangdong Province, China

1.8 Summary of Test Results

FCC Rules	Description Of Test	Uncertainty	Result
§15.207 (a)	AC Power Conducted Emission	±2.52dB	Compliance
§15.407(a)	Max. Conducted Output Power	±0.84dB	Compliance
§15.407(a)	26dB Spectrum Bandwidth and 99% Occupied Bandwidth	±1.79%	Compliance
§15.407(e)	6dB Bandwidth	±1.79%	Compliance
§15.407(a)	Power Spectral Density	±1.70dB	Compliance
§15.407(b) §15.205	Radiated Emissions	±4.68dB	Compliance
§15.407(b)	Band Edge Emissions	±1.06dB	Compliance
§15.407(g)	Frequency Stability	±8.42 x10 ⁻⁸	Compliance
§15.203	Antenna Requirement	---	Compliance
For Dynamic Frequency Selection			
Channel Availability Check Time			N/A ₁
U-NII Detection Bandwidth			N/A ₁
Channel Closing Transmission Time			Compliance
Channel Move Time			Compliance
DFS Detection Threshold			N/A ₁
Non- Occupancy Period			N/A ₁
Note: The EUT is slave equipment, N/A in this whole report not applicable.			

2. System Test Configuration

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 Description of test modes

The EUT has been tested under continuous operating condition. Test program used to control the EUT staying in continuous transmitting mode. The Lowest, middle and highest channel were chosen for testing, and modulation type OFDM, OFDM-BPSK, QPSK, 16QAM, 256QAM and all data rate were tested. But only the worst case data is shown in this report.

2.3 EUT Exercise

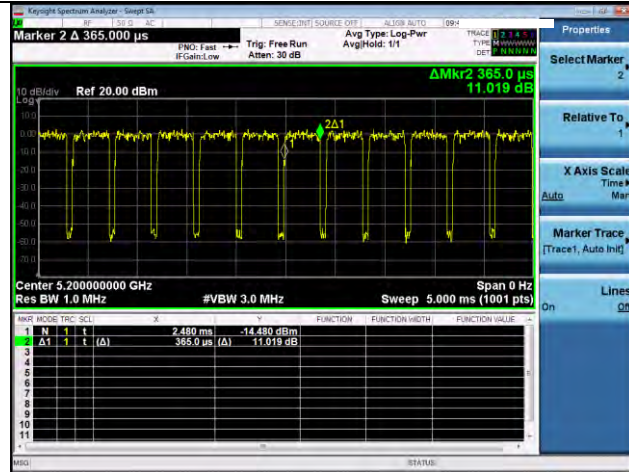
The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements.

2.4 Duty cycle

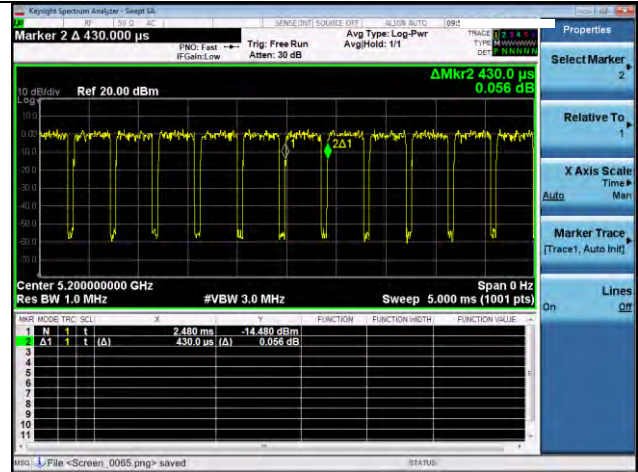
Operation Band (MHz)	Mode	Ton (ms)	Ton+off (ms)	Duty Cycle (%)	1/T minimum VBW (kHz)	Duty Cycle Factor (dB)
U-NII-1	802.11a	0.365	0.430	84.88%	2.74	0.71
	802.11n(HT20)	0.825	1.585	52.05%	1.21	2.84
	802.11n(HT40)	0.630	1.735	36.31%	1.59	4.40
	802.11ac(VHT20)	0.825	1.585	52.05%	1.21	2.84
	802.11ac(VHT40)	0.700	1.740	40.23%	1.43	3.95
	802.11ac(VHT80)	0.600	1.905	31.50%	1.67	5.02
U-NII-2A	802.11a	0.360	0.425	84.71%	2.78	0.72
	802.11n(HT20)	0.800	1.580	50.63%	1.25	2.96
	802.11n(HT40)	0.700	1.755	39.89%	1.43	3.99
	802.11ac(VHT20)	0.825	1.665	49.55%	1.21	3.05
	802.11ac(VHT40)	0.700	1.830	38.25%	1.43	4.17
	802.11ac(VHT80)	0.600	1.975	30.38%	1.67	5.17
U-NII-2C	802.11a	0.364	0.428	85.05%	2.75	0.70
	802.11n(HT20)	0.825	1.560	52.88%	1.21	2.77
	802.11n(HT40)	0.600	1.640	36.59%	1.67	4.37
	802.11ac(VHT20)	0.825	1.665	49.55%	1.21	3.05
	802.11ac(VHT40)	0.735	1.750	42.00%	1.36	3.77
	802.11ac(VHT80)	0.525	1.735	30.26%	1.90	5.19
U-NII-3	802.11a	0.364	0.426	85.45%	2.75	0.68
	802.11n(HT20)	0.825	1.635	50.46%	1.21	2.97
	802.11n(HT40)	0.700	1.845	37.94%	1.43	4.21
	802.11ac(VHT20)	0.850	1.585	53.63%	1.18	2.71
	802.11ac(VHT40)	0.735	1.835	40.05%	1.36	3.97
	802.11ac(VHT80)	0.600	1.830	32.79%	1.67	4.84
Remark: Duty Cycle= (Ton/ Ton+off)*100% Duty Cycle factor=10*log(1/ Duty cycle)						

U-NII-1 Band IEEE 802.11a

Ton

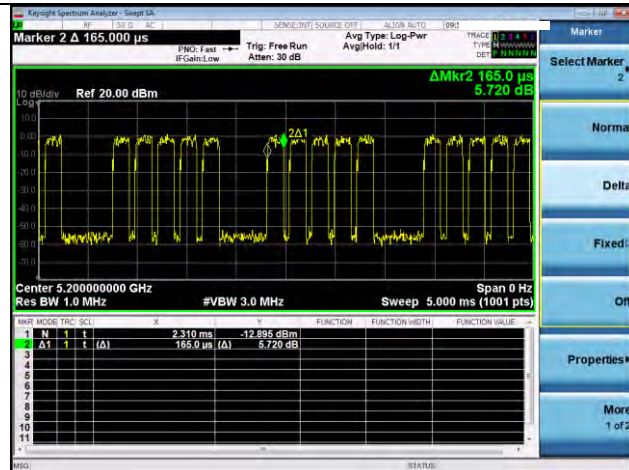


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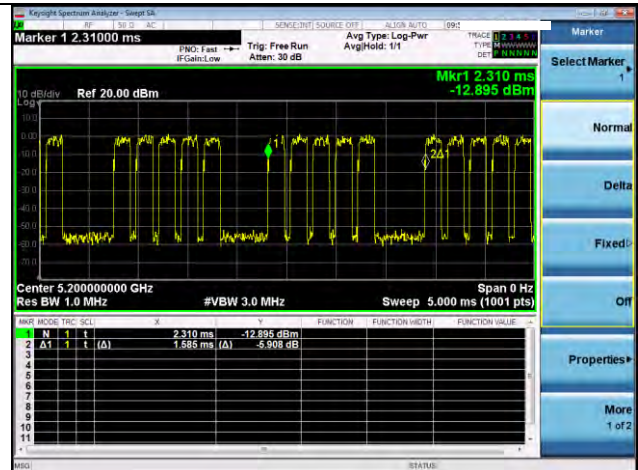


IEEE 802.11n(HT20)

Ton

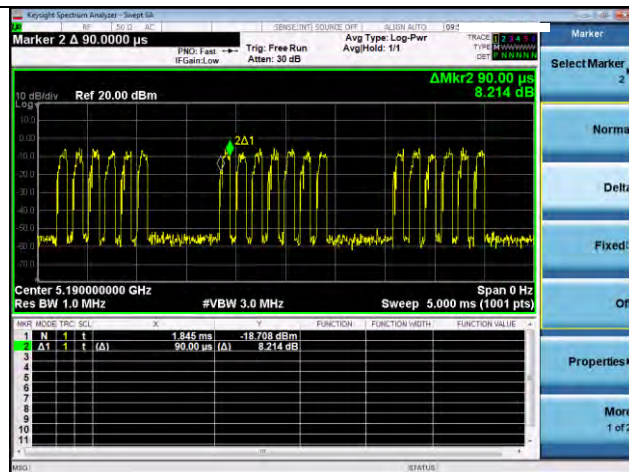


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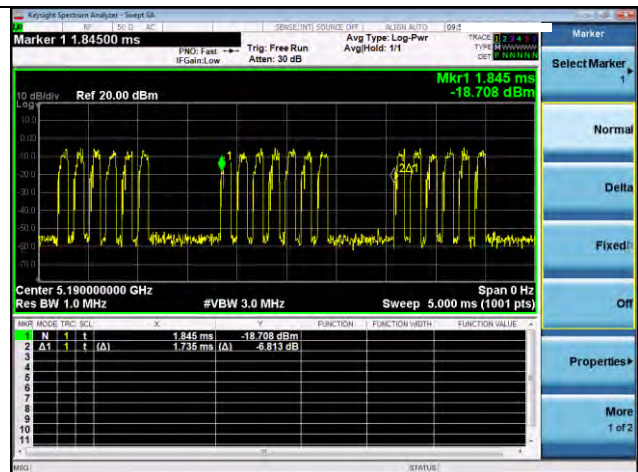


802.11n(HT40)

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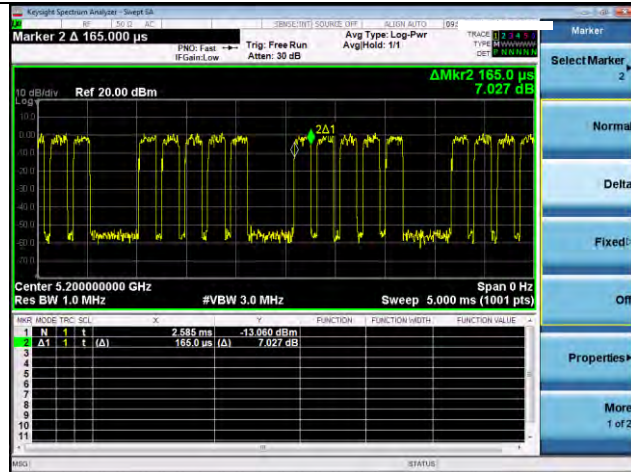


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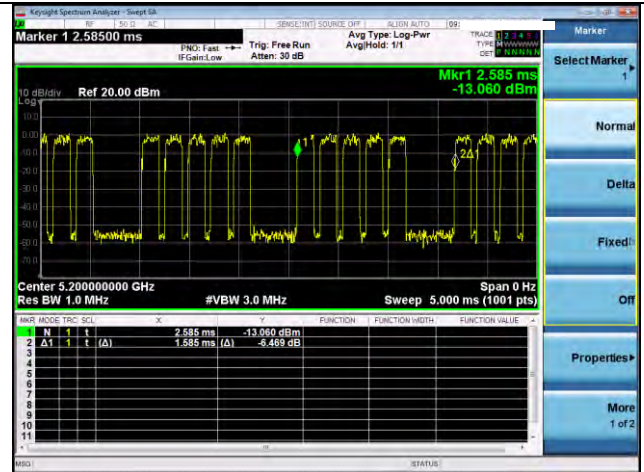


IEEE 802.11ac(VHT20)

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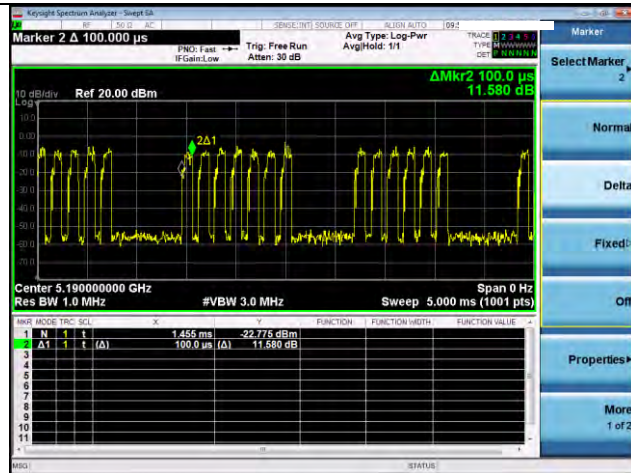


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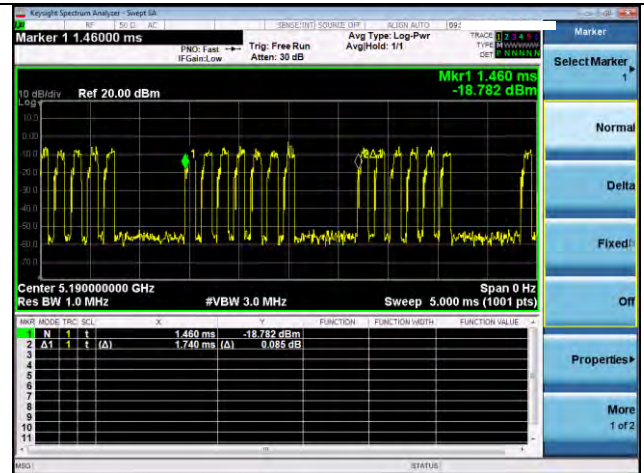


IEEE 802.11ac(VHT40)

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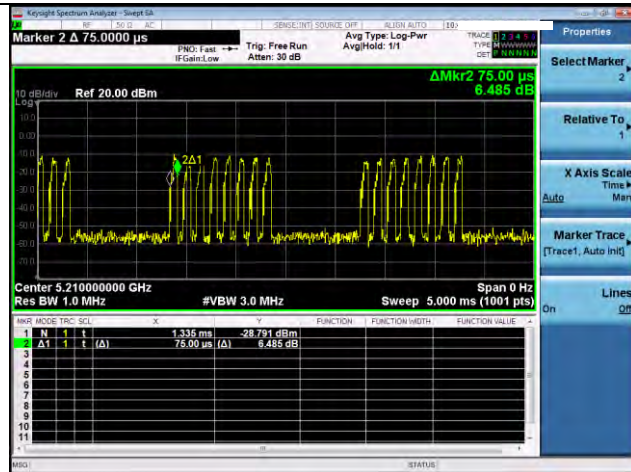


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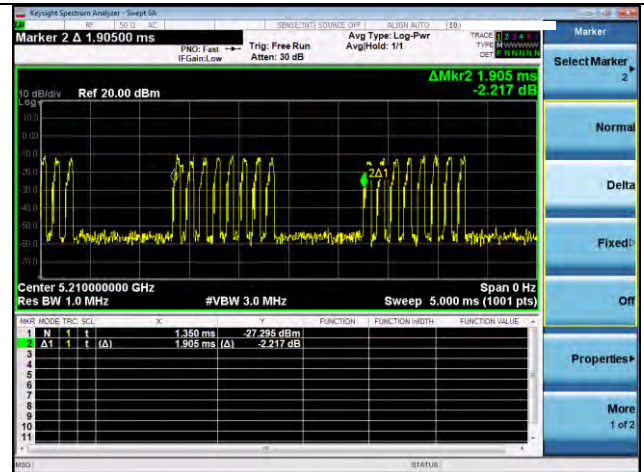


IEEE 802.11ac(VHT80)

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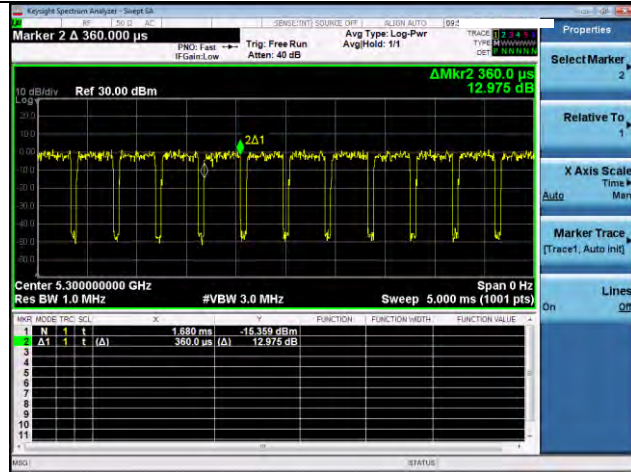


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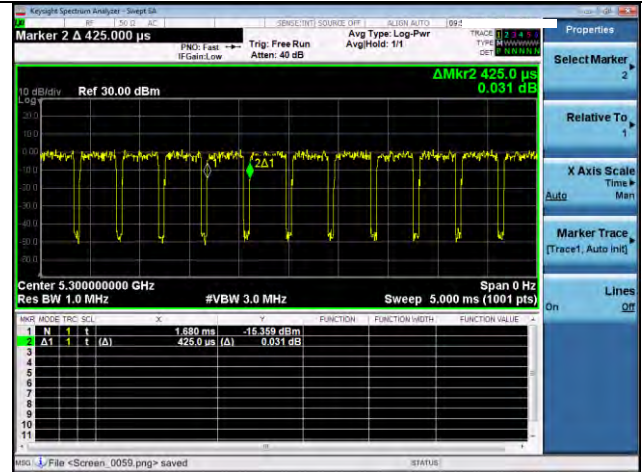


U-NII-2A Band IEEE 802.11a

Ton

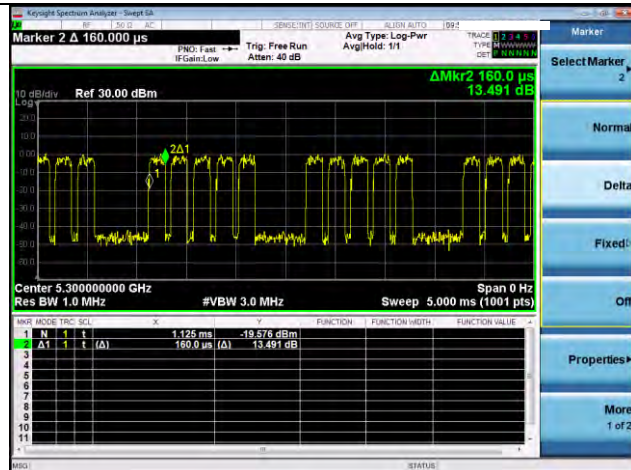


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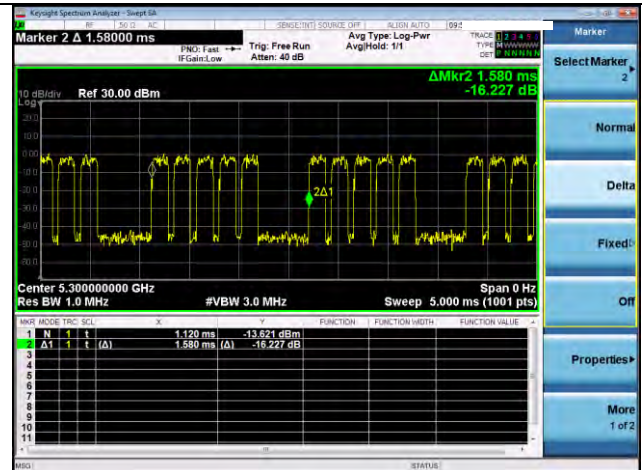


IEEE 802.11n(HT20)

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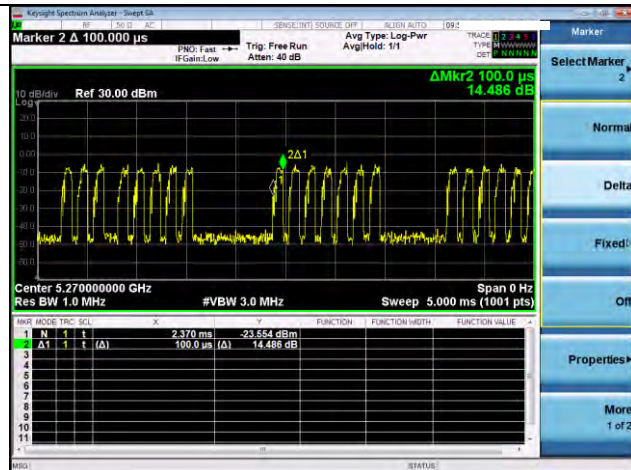


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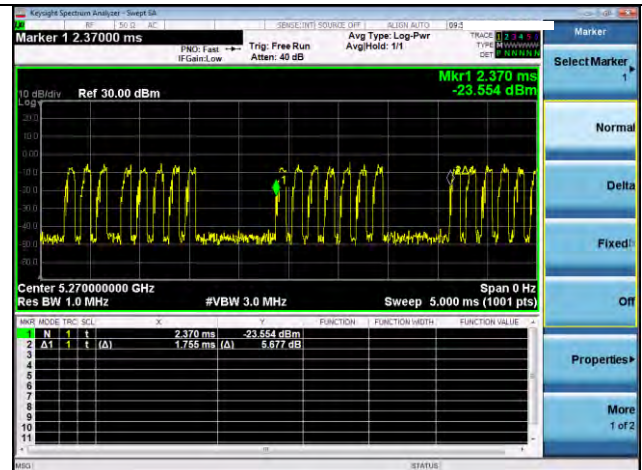


802.11n(HT40)

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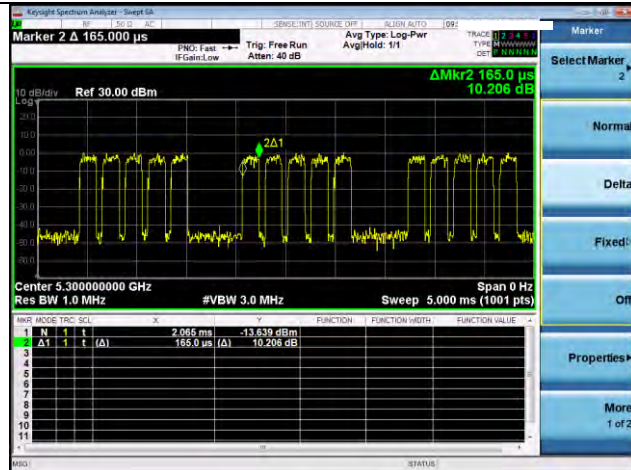


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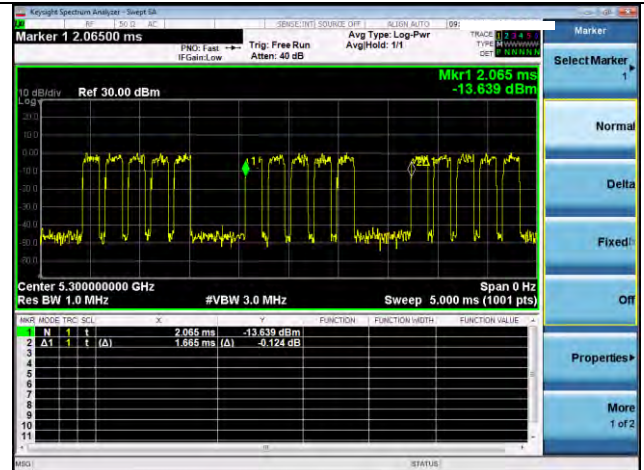


IEEE 802.11ac(VHT20)

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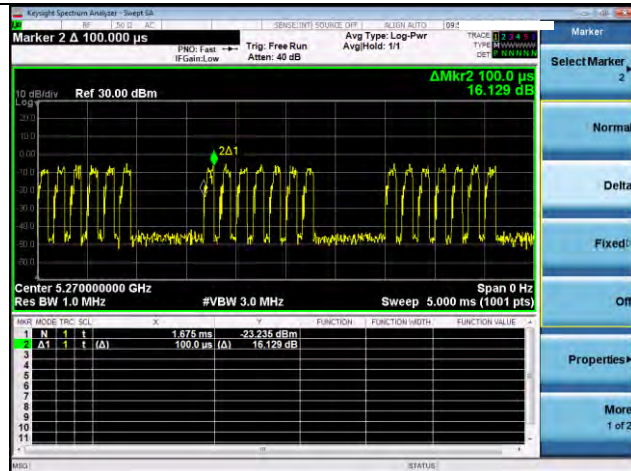


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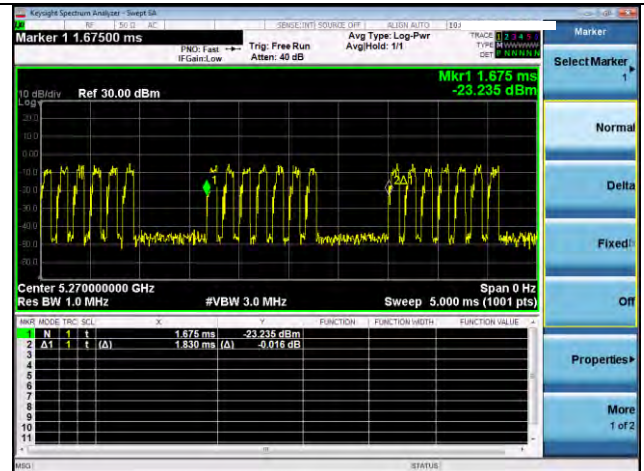


IEEE 802.11ac(VHT40)

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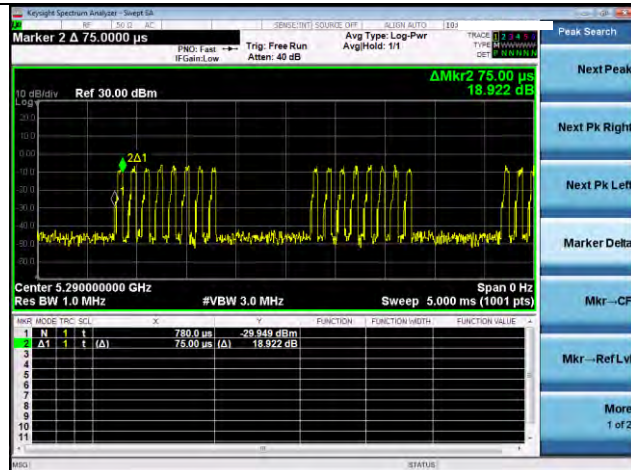


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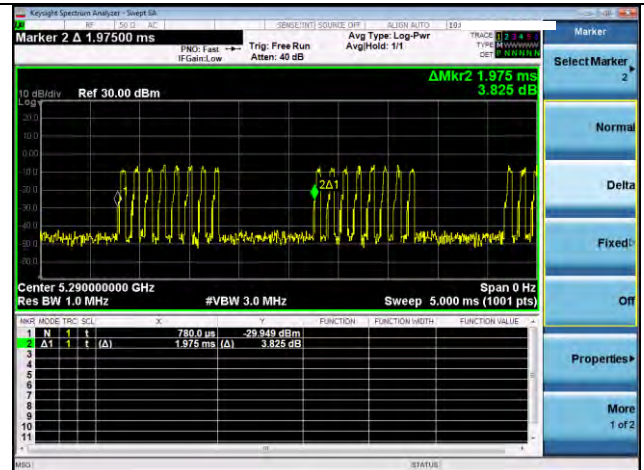


IEEE 802.11ac(VHT80)

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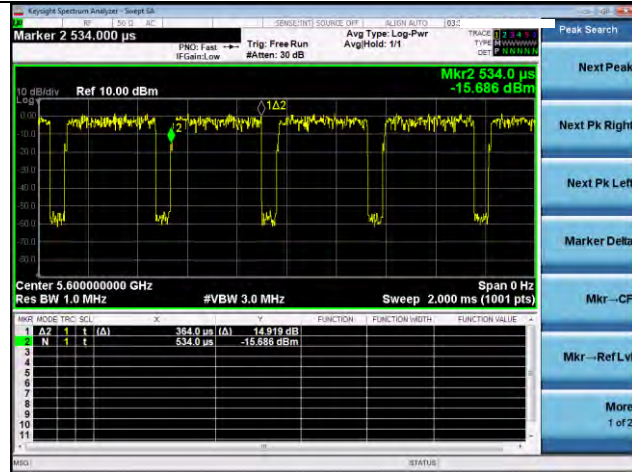


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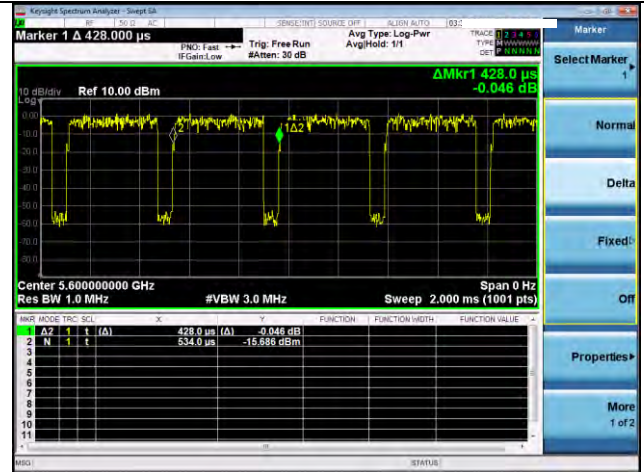


U-NII-2C Band IEEE 802.11a

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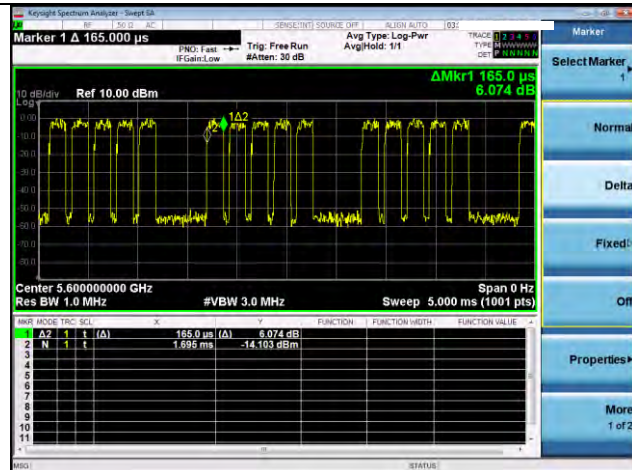


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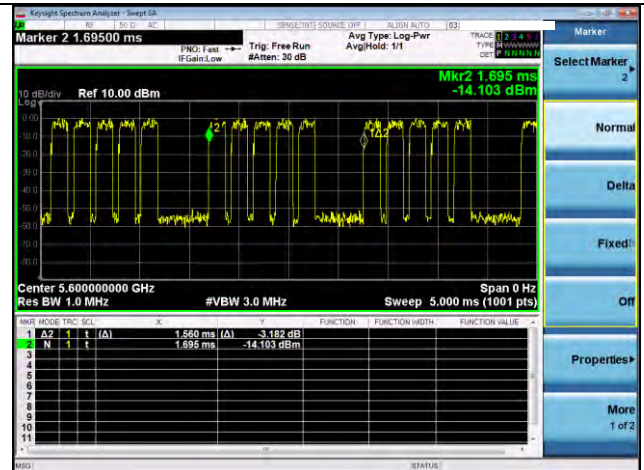


IEEE 802.11n(HT20)

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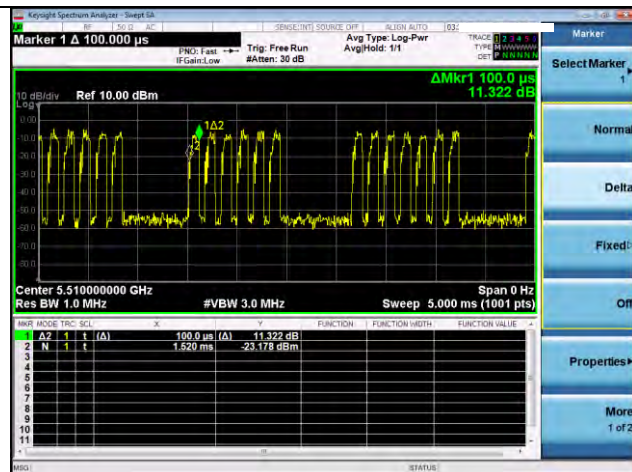


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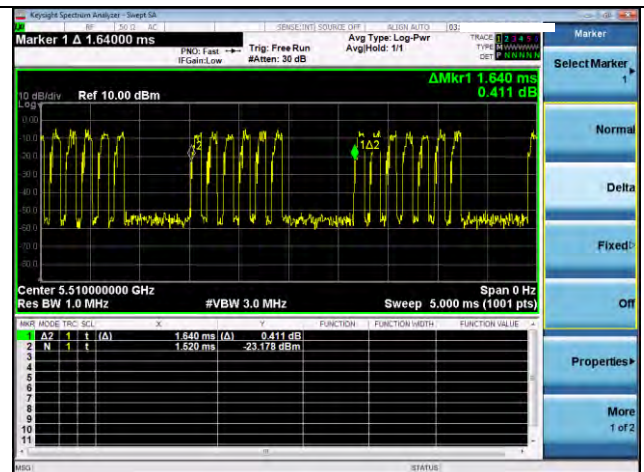


802.11n(HT40)

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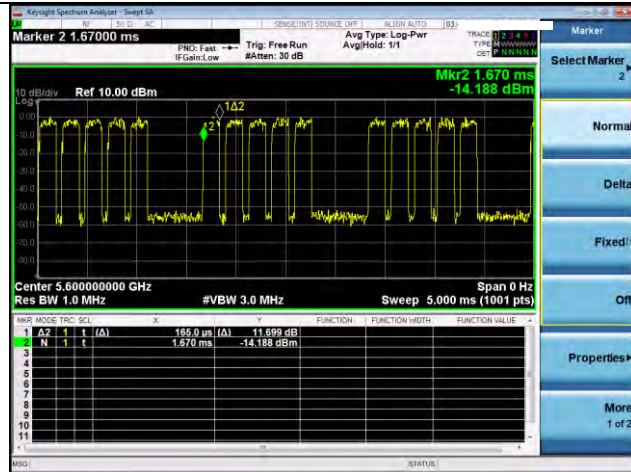


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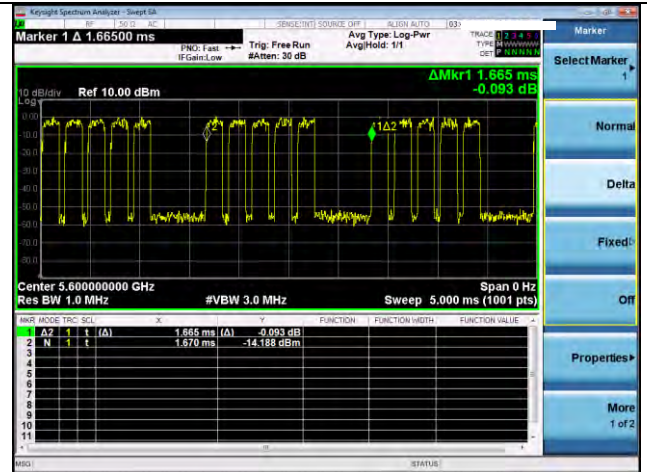


IEEE 802.11ac(VHT20)

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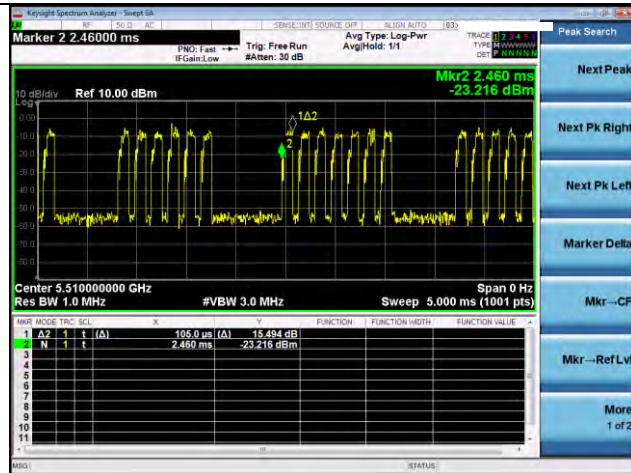


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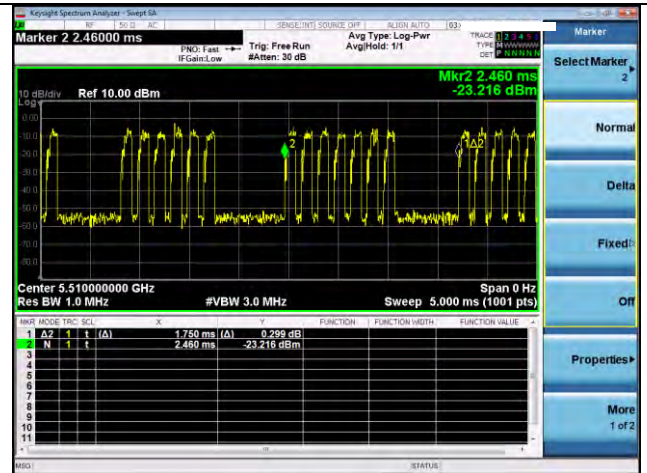


IEEE 802.11ac(VHT40)

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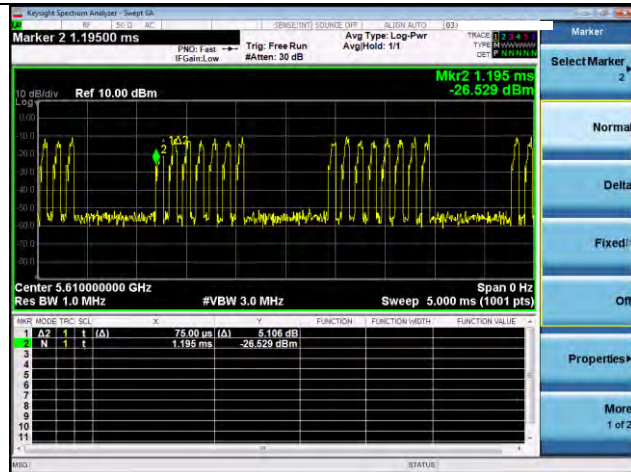


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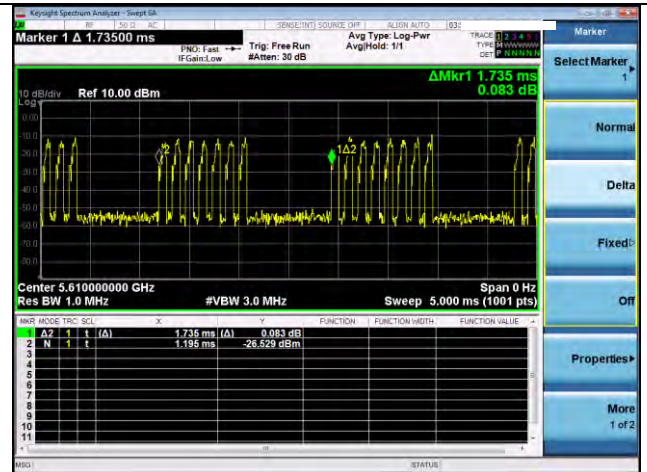


IEEE 802.11ac(VHT80)

Ton

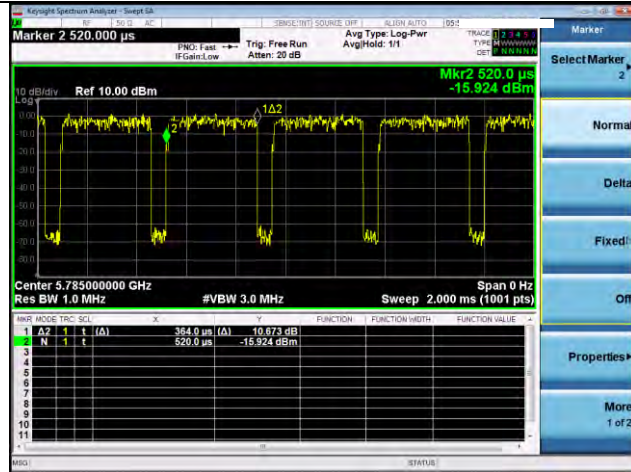


Ton+off

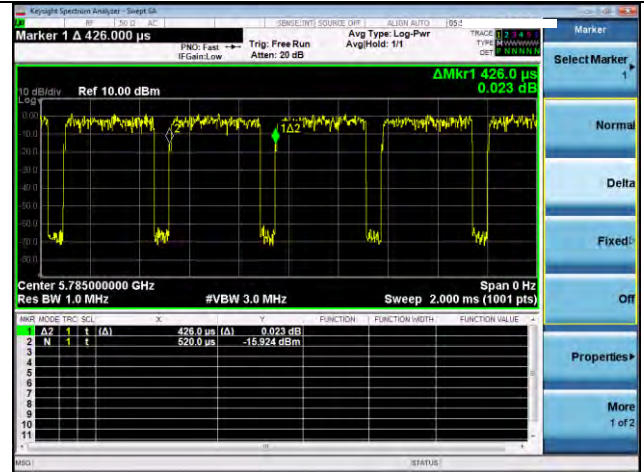


U-NII-3 Band IEEE 802.11a

Ton

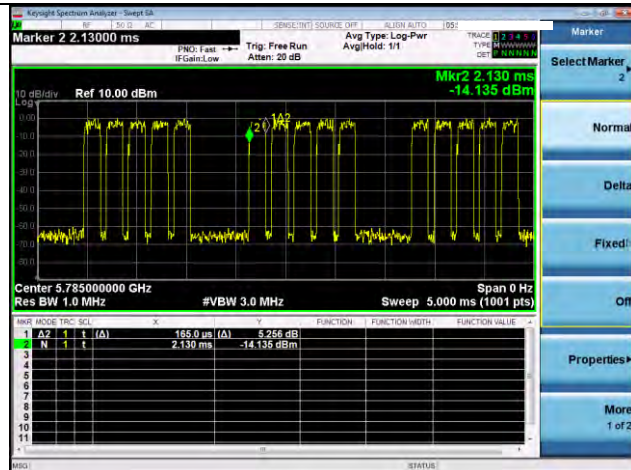


Ton+off

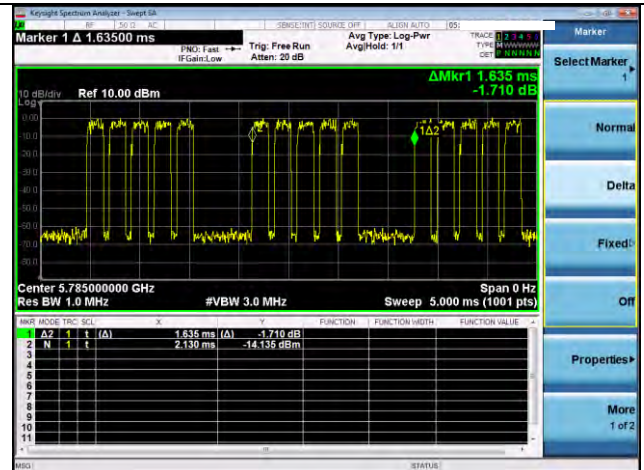


IEEE 802.11n(HT20)

Ton

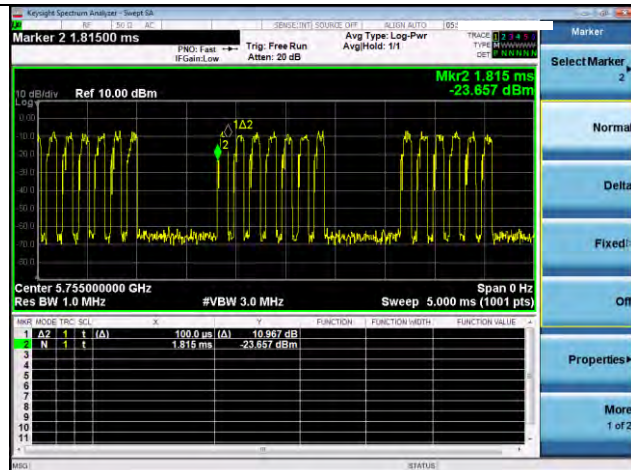


Ton+off

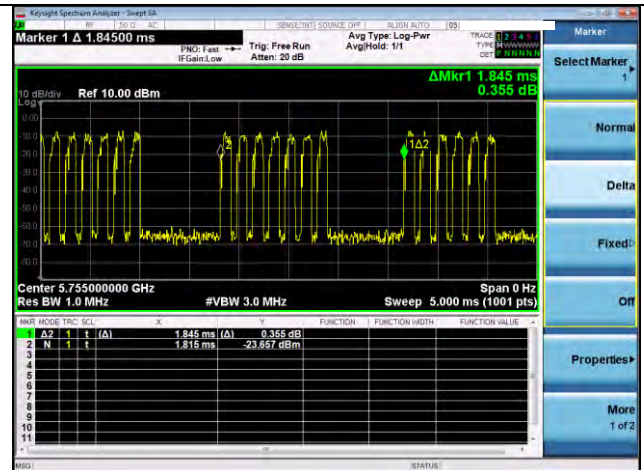


802.11n(HT40)

Ton

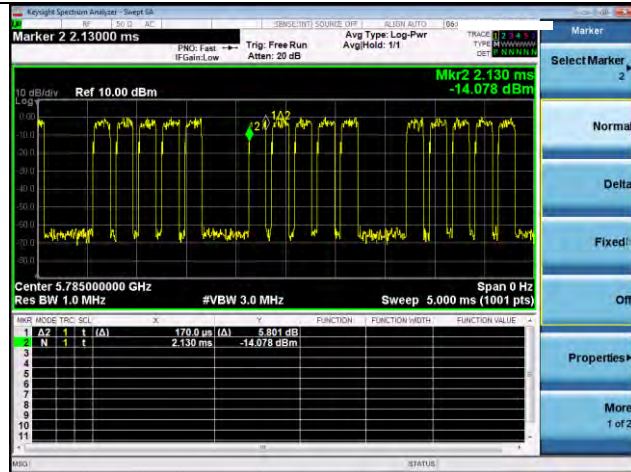


Ton+off

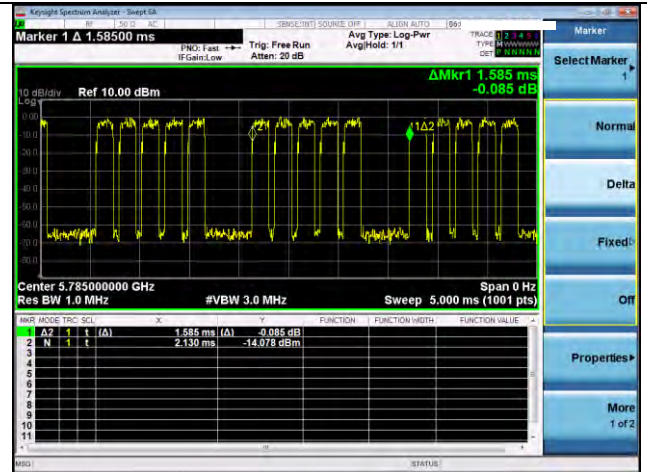


IEEE 802.11ac(VHT20)

Ton

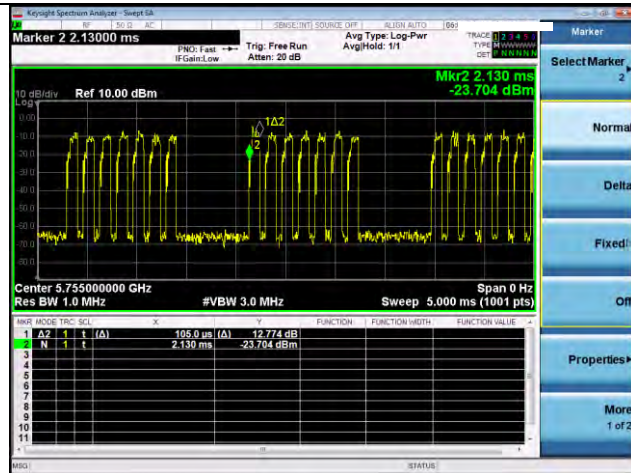


Ton+off

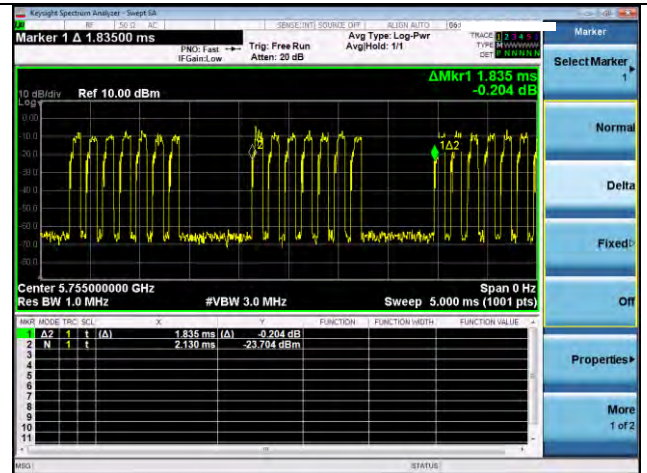


IEEE 802.11ac(VHT40)

Ton

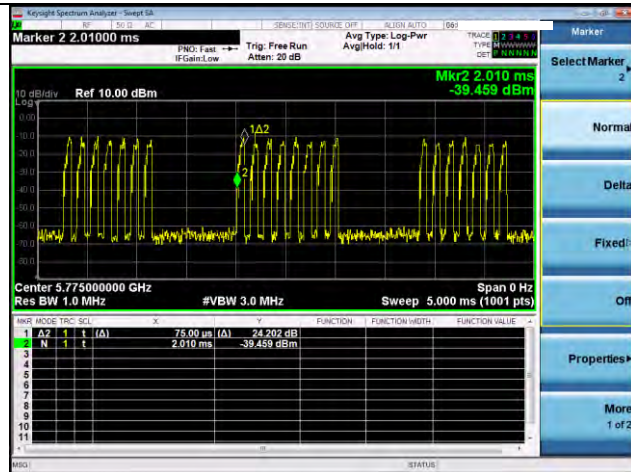


Ton+off

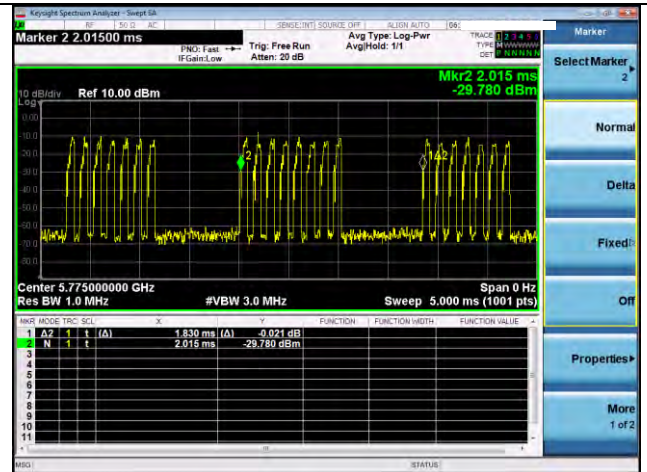


IEEE 802.11ac(VHT80)

Ton

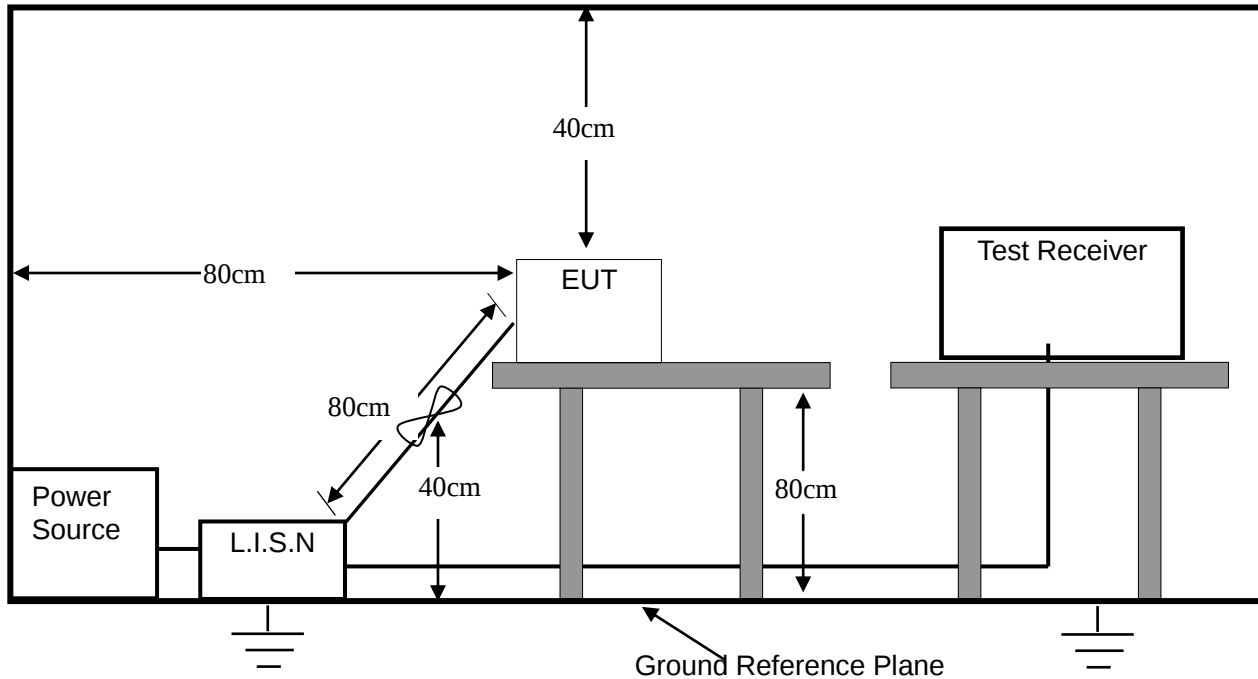


Ton+off



3. Conducted Emissions Test

3.1 Test SET-UP (Block Diagram of Configuration)



3.2 Test Condition

Test Requirement: FCC Part 15.207

Frequency Range: 150KHz ~ 30MHz

Detector: RBW 9KHz, VBW 30KHz

Operation Mode: TX (U-NII-1Band), TX (U-NII-2A Band2), TX (U-NII-2C Band), TX (U-NII-3 Band)

3.3 Measurement Results

For U-NII-1 Band

Please refer to following plots of the worst case: 802.11n(HT20) low channel.

For U-NII-2A Band

Please refer to following plots of the worst case: 802.11n(HT20) low channel.

For U-NII-2C Band

Please refer to following plots of the worst case: 802.11ac(VHT40) low channel.

For U-NII-3 Band

Please refer to following plots of the worst case: 802.11n(HT40) High channel.