



SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR250100029108

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TEST REPORT

Application No.: SZCR2501000291WM
Applicant: vivo Mobile Communication Co., Ltd.
Address of Applicant: No.1, vivo Road, Chang'an, Dongguan, Guangdong, China
Manufacturer: vivo Mobile Communication Co., Ltd.
Address of Manufacturer: No.1, vivo Road, Chang'an, Dongguan, Guangdong, China
Equipment Under Test (EUT):
EUT Name: Mobile phone
Model No.: V2440
Trade Mark: vivo
FCC ID: 2AUCY-V2440A
Standard(s): 47 CFR Part 15, Subpart E 15.407
Date of Receipt: 2024-12-30 (for report SZCR241200494508)
2025-01-20 (for report SZCR250100029108)
Date of Test: 2025-01-09 to 2025-02-06 (for report SZCR241200494508)
2025-02-11 to 2025-02-12 (for report SZCR250100029108)
Date of Issue: 2025-02-17

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

Kenx Xu

Keny Xu
EMC Laboratory Manager



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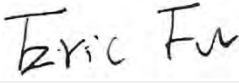
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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2025-02-17		Original

Authorized for issue by:				
				
		Sherlock Fang/Project Engineer		
				
		Eric Fu/Reviewer		



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2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 15, Subpart E 15.407	N/A	47 CFR Part 15, Subpart C 15.203	Pass
Transmission in the Absence of Data		N/A	47 CFR Part 15, Subpart E 15.407 (c)	Pass

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart E 15.407	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207 & Subpart E 15.407 b(9)	Pass
Maximum Conducted output power		ANSI C63.10 (2013) Section 12.3	47 CFR Part 15, Subpart E 15.407 (a)	Pass
Radiated Emissions (Below 1GHz)		ANSI C63.10 (2013) Section 6.4,6.5	47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)	Pass
Radiated Emissions (Above 1GHz)		ANSI C63.10 (2013) Section 6.6	47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)	Pass
Radiated Emissions which fall in the restricted bands		ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)	Pass
Channel Move Time		KDB 905462 D02 Section 7.8.3	KDB 905462 D02 Section 5.1	Pass
Duty Cycle		ANSI C63.10 (2013) Section 12.2	ANSI C63.10 (2013) Section 12.2	Pass
99% Bandwidth		ANSI C63.10 (2013) Section 12.4.2	ANSI C63.10 (2013) Section 12.4.2	Pass
26dB Emission bandwidth		ANSI C63.10 (2013) Section 12.4.1	47 CFR Part 15, Subpart E 15.407 (a)	Pass
Minimum 6 dB bandwidth (5.725-5.85 GHz band)		ANSI C63.10 (2013) Section 6.9.2	47 CFR Part 15, Subpart E 15.407 (e)	Pass
Peak Power spectrum density		ANSI C63.10 (2013) Section 12.5	47 CFR Part 15, Subpart E 15.407 (a)	Pass
Frequency Stability		ANSI C63.10 (2013) Section 6.8	47 CFR Part 15, Subpart E 15.407 (g)	N/A
Non-occupancy period		KDB 905462 D02 Section 7.8.3	KDB 905462 D02 Section 5.1	Pass
Channel Closing Transmission Time		KDB 905462 D02 Section 7.8.3	KDB 905462 D02 Section 5.1	Pass



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3 Re-use of Measured Data

3.1 Introduction Section

This application re-uses data collected on a similar device. The subject device of this application (Model: V2440, FCC ID: 2AUCY-V2440A) is electrically identical to the reference device (Model: V2440, FCC ID: 2AUCY-V2440) for the portions of the circuitry corresponding to the data being re-used. Based on their similarity, the FCC Part 15E (equipment class: NII) reuse the original model's result and do spot-check, following the FCC KDB 484596 D01 Referencing Test Data v02r02.

This test report (Report No.: SZCR250100029108 issue on 2025/02/17) is based on the original test report (Report No.: SZCR241200494508 issue on 2025/02/07).

According to the declaration from the applicant, The main difference between FCC ID: 2AUCY-V2440 and FCC ID: 2AUCY-V2440A is as below:

- Remove NFC.

The applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID: 2AUCY-V2440A .



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3.2 Spot Check Verification Data Section

In this report only Radiated Spurious Emission were performed based on the worst case of the original report with report number SZCR241200494508 issue on 2025/02/07 and other test data in this report are based on the previous report with report number SZCR241200494508 issue on 2025/02/07. In this filing to demonstrate the test data from original model remains representative for the variant model.

Spot-check measurements, while being always compliant with the applicable rule part(s) for the test under consideration, show a deviation d_{dB} from the reference data no larger than 3 dB:

$$d_{dB} = |V_{dB} - R_{dB}| \leq 3 \text{ dB} \quad (1)$$

V_{dB} , the variant spot-check level

R_{dB} , the corresponding measurement level for the reference model

An alternative to the limit of eq. (1) is available, and is based on considering how far the reference data R_{dB} is from the compliance threshold C_{dB} (also expressed in dB), for the particular test under consideration. In this case, if $M_{dB} = |C_{dB} - R_{dB}|$ is the margin in dB from the compliance limit, a spot check may be considered acceptable when the deviation d_{dB} from the reference data satisfies the following condition:

$$d_{dB} = |V_{dB} - R_{dB}| \leq (3 + M_{dB} / 20) \text{ dB}, \text{ for } 0 \leq M_{dB} \leq 60 \text{ dB} \quad (2)$$

where “|” is the absolute value of the measured quantity.

When using the option in eq. (2), d_{dB} increases linearly from 3 dB to 6 dB.

Summary for power and RSE spot check for each rule entry and technology is listed as below:

Test Item		Reference FCC ID: 2AUCY-V2440	Variant FCC ID: 2AUCY-V2440A	Deviation (dB)	Limit (dB)
		(dBuV/m)	(dBuV/m)		
Radiated Spurious Emission	WIFI 5G (U-NII-1,U-NII-2A, U-NII-2C)	50.97	49.53	1.44	3
	WIFI 5.8G (U-NII-3)	52.03	49.25	2.78	3

Conclusion:

Radiated Spurious Emission test against the variant model based on the worst-case condition from the original model was performed in this filing and the verification test results similar to the original FCC ID.

All tests meet FCC technical limits. Detail sport check test result can be found in the variant model report.

The same DFS detection mechanism/software is used in the variant. Hence, there is no spot check data for DFS hand-shaking mechanism.



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5 General Information

5.1 Details of E.U.T.

EUT Description:	Mobile phone	
Model No.:	V2440	
Trade Mark:	vivo	
Hardware Version:	MP_0.1	
Software Version:	PD2447EF_EX_A_15.0.2.10.W30	
Power Supply:	DC 3.91V from internal rechargeable battery which can be charged by AC/DC adapter	
WLAN Mode Supported:	802.11a:	20 MHz channel bandwidth
	802.11n:	20 MHz / 40 MHz channel bandwidth
	802.11ac:	20 MHz / 40 MHz / 80 MHz channel bandwidth
Operation Frequency:	5150MHz to 5250MHz 5250MHz to 5350MHz 5470MHz to 5725MHz 5725MHz to 5850MHz	
Modulation Type:	802.11a:	OFDM (BPSK, QPSK, 16QAM, 64QAM)
	802.11n:	OFDM (BPSK, QPSK, 16QAM, 64QAM)
	802.11ac:	OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Channel Spacing:	20MHz:	802.11a/n(HT20)/ac(VHT20)
	40MHz:	802.11n(HT40)/ac(VHT40)
	80MHz:	802.11ac(VHT80)
Antenna Type:	PIFA Antenna	
Antenna Gain:	5150MHz to 5250MHz: 0.94dBi(Ant22); 5250MHz to 5350MHz: -0.24dBi(Ant22); 5470MHz to 5725MHz: 0.94dBi(Ant22); 5725MHz to 5850MHz:0.47dBi(Ant22);	
	Note: The antenna gain are derived from the gain information report provided by the manufacturer.	
Smart System:	☒ SISO	802.11a/n/ac
	☐ MIMO	CDD: 802.11a/n/ac: Tx & Rx
		STBC: 802.11n/ac: Tx & Rx
		TXBF: 802.11n/ac: Tx & Rx
	☐ Diversity	802.11a: Tx & Rx
TPC Function:	☐ Support, ☒ Not Support	



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DFS Function:	☐ Master	
	☐ Slave with radar detection	☒ Slave without radar detection
RF Cable:	4900MHz ~ 5250MHz(1.6dB)	5250MHz ~ 5350MHz(1.7dB)
	5470MHz ~ 5725MHz(1.8dB)	5725MHz ~ 5850MHz (2dB)
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5.2 Environment Parameter

Environment Parameter	1020 mbar Selected Values During Tests	
Relative Humidity	35.3-50.8 % RH Ambient	
Value	Temperature(°C)	Voltage(V)
NTNV	20.7~24.5	3.91
Note: NV:Normal Voltage LV:Low Extreme Test Voltage HV:High Extreme Test Voltage NT:Normal Temperature LT:Low Extreme Test Temperature HT:High Extreme Test Temperature		

5.3 Description of Support Units

Description	Manufacturer	Model No.	FCC ID
Router	NETGEAR	R7800	PY315100319



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5.4 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at AC Power Line (150kHz-30MHz)	$\pm 3.1\text{dB}$
Maximum Conducted output power	$\pm 0.75\text{dB}$
Radiated Emissions (Below 1GHz)	$\pm 6.0\text{dB}$ for 3m; $\pm 5.0\text{dB}$ for 10m
Radiated Emissions (Above 1GHz)	$\pm 4.6\text{dB}$ (1-18GHz); $\pm 4.8\text{dB}$ (18-40GHz)
Radiated Emissions which fall in the restricted bands	$\pm 6.0\text{dB}$ (below 1GHz); $\pm 4.6\text{dB}$ (above 1GHz);
Duty Cycle	$\pm 0.37\%$
99% Bandwidth	$\pm 3\%$
26dB Emission bandwidth	$\pm 3\%$
Minimum 6 dB bandwidth (5.725-5.85 GHz band)	$\pm 3\%$
Peak Power spectrum density	$\pm 2.84\text{dB}$
Remark: The U_{lab} (lab Uncertainty) is less than $U_{\text{CISPR/ETSI}}$ (CISPR/ETSI Uncertainty), so the test results – compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit; – non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.	



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5.5 Test Location

All tests were performed at:

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No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

5.6 Test Facility

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

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC –Designation Number: CN1336

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.

• Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

5.7 Deviation from Standards

None

5.8 Abnormalities from Standard Conditions

None



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6 Equipment List

Conducted Emissions at AC Power Line (150kHz-30MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2022-05-14	2025-05-13
EMI Test Receiver	Rohde&Schwarz	ESR	SZ-WRG-M-047	2025-01-08	2026-01-07
Matching Pad	N/A	N/A	SEM021-23	2024-03-20	2025-03-19
Matching Pad	N/A	N/A	SEM021-24	2024-03-20	2025-03-19
Measurement Software	AUDIX	e3 V8.2014-6-27a	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM024-01	2024-07-06	2025-07-05
LISN	Rohde&Schwarz	ENV216	SEM007-01	2024-08-15	2025-08-14
LISN	ETS-LINDGREN	3816/2	SEM007-02	2024-03-14	2025-03-13

Maximum Conducted output power					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Power Sensor	TST PASS	TSPS2023R	SEM009-26	2024-03-27	2025-03-26
Power Sensor	KEYSIGHT	U2021XA	SEM009-16	2024-03-14	2025-03-13
DC Power Supply	Chroma	62012P-80-60	SEM011-11	2024-08-14	2025-08-13
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-19	2024-03-14	2025-03-13
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2024-09-14	2025-09-13
Measurement Software	TST PASS	TST PASS V2.0	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-01	2024-07-06	2025-07-05
Attenuator	Huber+Suhner	6620_SMA-50-1	SEM021-09	2024-03-27	2025-03-26
Programmable Temperature & Humidity Chamber	Votsch Industrietechnik GmbH	VT 4002	SEM002-15	2024-03-19	2025-03-18

Radiated Emissions (Below 1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Loop Antenna	ETS-Lindgren	6502	SEM003-08	2023-11-20	2025-11-19
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2023-06-19	2026-06-18
MXE EMI Receiver	Agilent Technologies	N9038A	SEM004-15	2024-08-14	2025-08-13
BiConiLog Antenna	ETS-LINDGREN	3142C	SEM003-01	2023-09-16	2025-09-15
Pre-Amplifier	Agilent Technologies	8447D	SEM005-01	2024-03-14	2025-03-13
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2024-07-06	2025-07-05



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Radiated Emissions (Above 1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Signal & Spectrum Analyzer	Rohde & Schwarz	FSV	SZ-WRG-M-048	2025-01-07	2026-01-06
Low Noise Amplifier 1G-18GHz	Tonscend	TAP01018050	SZ-WRG-M-051	2025-01-07	2026-01-06
Low Noise Amplifier 18G-40GHz	Tonscend	TAP18040048	SZ-WRG-M-052	2025-01-08	2026-01-07
Double Ridge Horn Antenna 1GHz-18GHz	SCHWARZBECK	BBHA 9120 D	SZ-WRG-M-055	2023-12-21	2025-12-20
SHF-EHF Horn 15GHz-40GHz	SCHWARZBECK	BBHA 9170	SZ-WRG-M-056	2023-12-25	2025-12-24
RSE Test Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Chamber	CRTSGSSAC966	N/A	SZ-WRG-C-063	2025-01-06	2028-01-05
Humidity and Temperature Indicator	deli	8838	SEM002-46	2024-07-24	2025-07-23

Radiated Emissions which fall in the restricted bands					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Signal & Spectrum Analyzer	Rohde & Schwarz	FSV	SZ-WRG-M-048	2025-01-07	2026-01-06
Low Noise Amplifier 30M-8GHz	Tonscend	TAP30M8G30	SZ-WRG-M-050	2025-01-07	2026-01-06
Double Ridge Horn Antenna 1GHz-18GHz	SCHWARZBECK	BBHA 9120 D	SZ-WRG-M-055	2023-12-21	2025-12-20
SHF-EHF Horn 15GHz-40GHz	SCHWARZBECK	BBHA 9170	SZ-WRG-M-056	2023-12-25	2025-12-24
RSE Test Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Chamber	CRTSGSSAC966	N/A	SZ-WRG-C-063	2025-01-06	2028-01-05
Humidity and Temperature Indicator	deli	8838	SEM002-46	2024-07-24	2025-07-23



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Channel Move Time					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Manual Step Attenuator	KEYSIGHT	8494B	SEM021-05	2024-03-27	2025-03-26
Manual Step Attenuator	KEYSIGHT	8496B	SEM021-06	2024-03-27	2025-03-26
Measurement Software	KEYSIGHT	Signal Studio for DFS Radar Profiles V2.2.0.0	N/A	N/A	N/A
Measurement Software	Agilent	ISMonitor10	N/A	N/A	N/A
MXG Vector Signal Generator	Agilent	N5182A	SEM006-21	2024-03-27	2025-03-26
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-22	2024-03-14	2025-03-13

RF Conducted Test					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
DC Power Supply	Chroma	62012P-80-60	SEM011-11	2024-08-14	2025-08-13
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-19	2024-03-14	2025-03-13
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2024-09-14	2025-09-13
Measurement Software	TST PASS	TST PASS V2.0	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-01	2024-07-06	2025-07-05
Attenuator	Huber+Suhner	6620_SMA-50-1	SEM021-09	2024-03-27	2025-03-26
Programmable Temperature & Humidity Chamber	Votsch Industrietechnik GmbH	VT 4002	SEM002-15	2024-03-19	2025-03-18
Manual Step Attenuator	KEYSIGHT	8494B	SEM021-05	2024-03-27	2025-03-26
Manual Step Attenuator	KEYSIGHT	8496B	SEM021-06	2024-03-27	2025-03-26
MXG Vector Signal Generator	Agilent	N5182A	SEM006-21	2024-03-27	2025-03-26
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-22	2024-03-14	2025-03-13

General used equipment					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	deli	8838	SEM002-32	2024-07-24	2025-07-23
Humidity/ Temperature Indicator	deli	8838	SEM002-33	2024-07-24	2025-07-23
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2024-03-18	2025-03-17



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For report SZCR250100029108:

Radiated Emissions (Above 1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Signal & Spectrum Analyzer	Rohde & Schwarz	FSV	SZ-WRG-M-048	2025-01-07	2026-01-06
Low Noise Amplifier 1G-18GHz	Tonscend	TAP01018050	SZ-WRG-M-051	2025-01-07	2026-01-06
Low Noise Amplifier 18G-40GHz	Tonscend	TAP18040048	SZ-WRG-M-052	2025-01-08	2026-01-07
Double Ridge Horn Antenna 1GHz-18GHz	SCHWARZBECK	BBHA 9120 D	SZ-WRG-M-055	2023-12-21	2025-12-20
SHF-EHF Horn 15GHz-40GHz	SCHWARZBECK	BBHA 9170	SZ-WRG-M-056	2023-12-25	2025-12-24
RSE Test Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Chamber	CRTSGSSAC966	N/A	SZ-WRG-C-063	2025-01-06	2028-01-05
Humidity and Temperature Indicator	deli	8838	SEM002-46	2024-07-24	2025-07-23

General used equipment					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	deli	8838	SEM002-32	2024-07-24	2025-07-23
Humidity/ Temperature Indicator	deli	8838	SEM002-33	2024-07-24	2025-07-23
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2024-03-18	2025-03-17



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7 Radio Spectrum Technical Requirement

7.1 Antenna Requirement

7.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

7.1.2 Conclusion

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is a PIFA Antenna, and the connection port is integrated inside the product, and the antenna cannot be replaced.

5150MHz to 5250MHz: 0.94dBi(Ant22); *

5250MHz to 5350MHz: -0.24dBi(Ant22);*

5470MHz to 5725MHz: 0.94dBi(Ant22);*

5725MHz to 5850MHz:0.47dBi(Ant22); *

**Note:*

The antenna gain are derived from the gain information report provided by the manufacturer.

Remark:

As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.



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7.2 Transmission in the Absence of Data

7.2.1 Test Requirement:

47 CFR Part 15, Subpart E 15.407 (c)

7.2.2 Conclusion

Standard Requirement:

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signalling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals.

Applicants shall include in their application for equipment authorization a description of how this requirement is met.

EUT Details:

WIFI chip support automatically discontinue transmission in case of either absence of information to transmit or operational failure, if the chip detect absence of information to transmit or operational failure, it will be automatically shut off.



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8 Radio Spectrum Matter Test Results

8.1 Conducted Emissions at AC Power Line (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207 & Subpart E 15.407 b(9)

Test Method: ANSI C63.10 (2013) Section 6.2

Limit:

Frequency of emission(MHz)	Conducted limit(dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
*Decreases with the logarithm of the frequency.		

8.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23.5 °C

Humidity: 45.5 % RH

Atmospheric Pressure: 1020 mbar

8.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	14	Charge + TX mode (U-NII-1) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Pre-scan	15	Charge + TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Pre-scan	16	Charge + TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Pre-scan	17	Charge + TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.



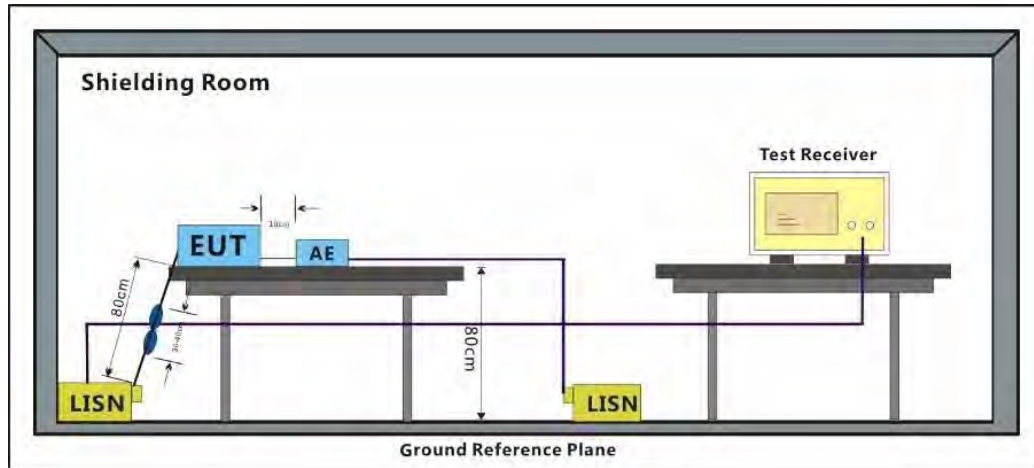
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8.1.3 Test Setup Diagram



8.1.4 Measurement Procedure and Data

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50μH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

Remark: Level=Read Level+ Cable Loss+ LISN Factor



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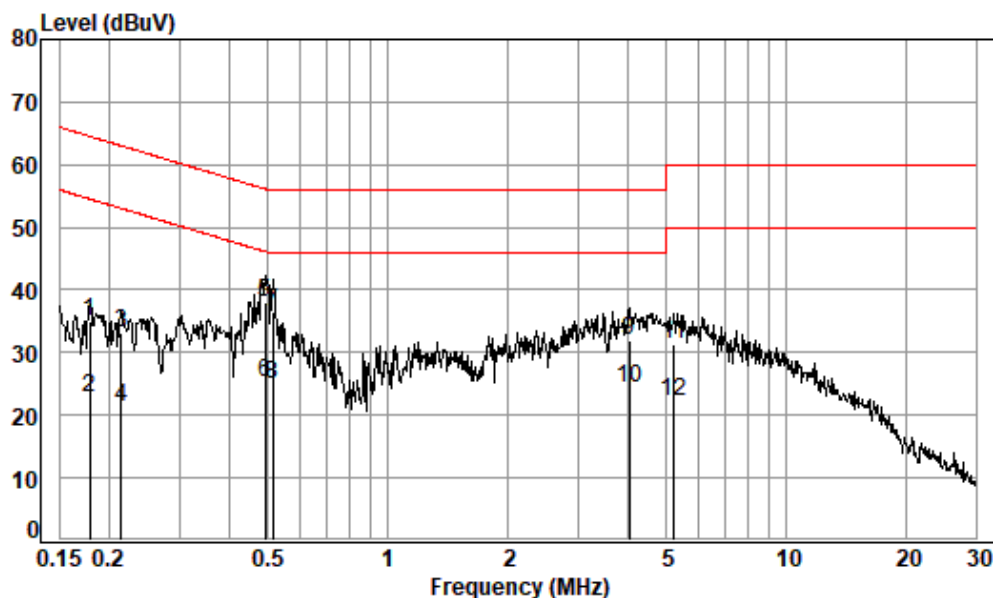
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Test Mode: 14; Line: Live line



Site : Shielding Room
Condition: Line
Job No. : 04945WM
Test mode: 14

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1787	0.06	10.15	24.66	34.87	64.55	-29.68	QP
2	0.1787	0.06	10.15	12.51	22.72	54.55	-31.83	Average
3	0.2151	0.06	10.07	23.16	33.29	63.01	-29.72	QP
4	0.2151	0.06	10.07	11.21	21.34	53.01	-31.67	Average
5 *	0.4915	0.08	9.55	28.46	38.09	56.14	-18.05	QP
6 *	0.4915	0.08	9.55	15.68	25.31	46.14	-20.83	Average
7	0.5155	0.08	9.55	26.86	36.49	56.00	-19.51	QP
8	0.5155	0.08	9.55	15.19	24.82	46.00	-21.18	Average
9	4.0275	0.12	9.66	22.24	32.02	56.00	-23.98	QP
10	4.0275	0.12	9.66	14.55	24.33	46.00	-21.67	Average
11	5.2213	0.12	9.66	21.48	31.26	60.00	-28.74	QP
12	5.2213	0.12	9.66	12.34	22.12	50.00	-27.88	Average



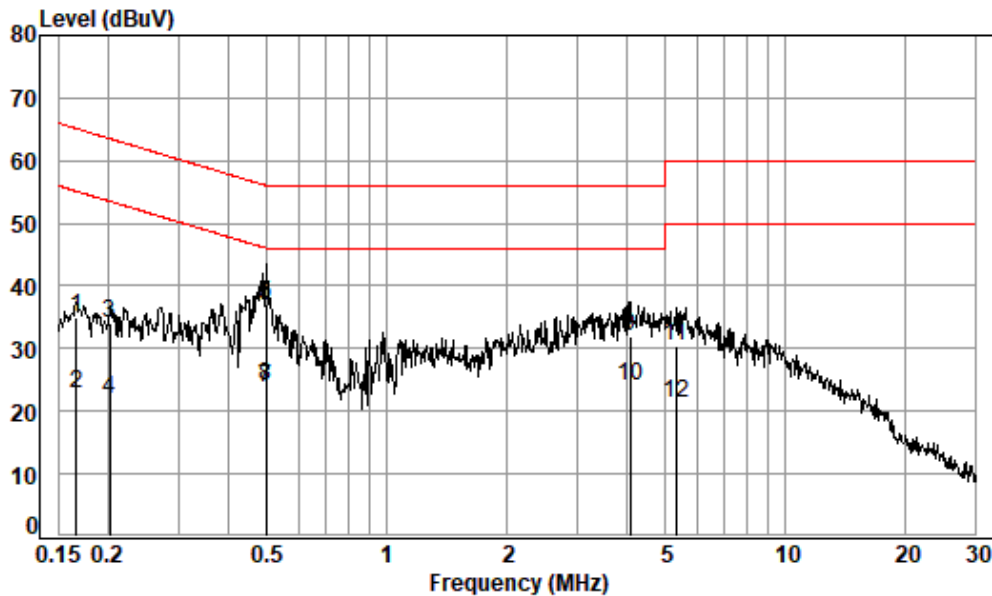
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Test Mode: 14; Line: Neutral Line



Site : Shielding Room
Condition: Neutral
Job No. : 04945WM
Test mode: 14

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1668	0.06	10.12	24.81	34.99	65.12	-30.13	QP
2	0.1668	0.06	10.12	12.78	22.96	55.12	-32.16	Average
3	0.2018	0.06	10.07	24.08	34.21	63.54	-29.33	QP
4	0.2018	0.06	10.07	11.85	21.98	53.54	-31.56	Average
5 *	0.4994	0.08	9.71	27.37	37.16	56.01	-18.85	QP
6	0.4994	0.08	9.71	27.13	36.92	56.01	-19.09	QP
7	0.4994	0.08	9.71	13.80	23.59	46.01	-22.42	Average
8 *	0.4994	0.08	9.71	14.21	24.00	46.01	-22.01	Average
9	4.0704	0.12	9.55	22.27	31.94	56.00	-24.06	QP
10	4.0704	0.12	9.55	14.24	23.91	46.00	-22.09	Average
11	5.3050	0.13	9.58	20.64	30.35	60.00	-29.65	QP
12	5.3050	0.13	9.58	11.55	21.26	50.00	-28.74	Average



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8.2 Maximum Conducted output power

Test Requirement 47 CFR Part 15, Subpart E 15.407 (a)

Test Method: ANSI C63.10 (2013) Section 12.3

Limit:

Frequency band(MHz)	Limit
5150-5250	≤1W(30dBm) for master device
	≤250mW(24dBm) for client device
5250-5350	≤250mW(24dBm) or 11dBm+10logB*
5470-5725	≤250mW(24dBm) or 11dBm+10logB*
5725-5850	≤1W(30dBm)
Remark:	* Where B is the 26dB emission bandwidth in MHz. The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

8.2.1 E.U.T. Operation

Operating Environment:

Temperature: 21.3 °C

Humidity: 35.3 % RH

Atmospheric Pressure: 1020 mbar

8.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	09	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	10	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	11	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	12	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.



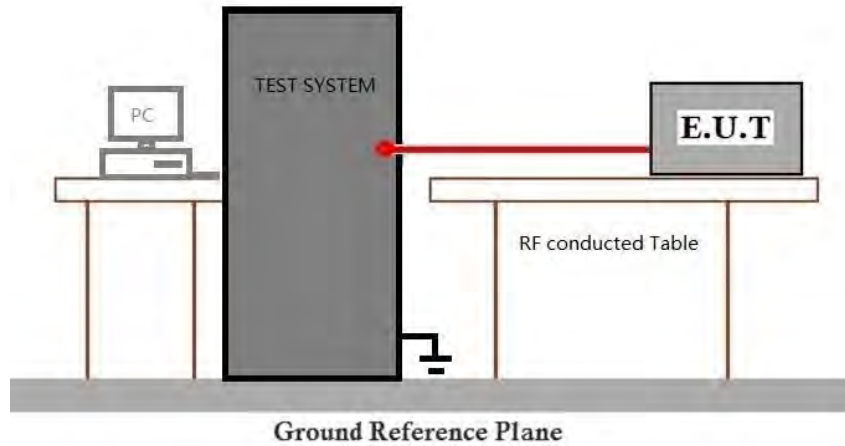
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8.2.3 Test Setup Diagram



8.2.4 Measurement Procedure and Data

Note: Since the verify power the same operating range bandwidth and smaller power can be covered by the higher power.

Please Refer to Appendix for Details



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8.3 Radiated Emissions (Below 1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)

Test Method: ANSI C63.10 (2013) Section 6.4,6.5

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
960-1000	500	3

8.3.1 E.U.T. Operation

Operating Environment:

Temperature: 21.2 °C

Humidity: 46.6 % RH

Atmospheric Pressure: 1020 mbar

8.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	14	Charge + TX mode (U-NII-1) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Pre-scan	15	Charge + TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Pre-scan	16	Charge + TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Pre-scan	17	Charge + TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.



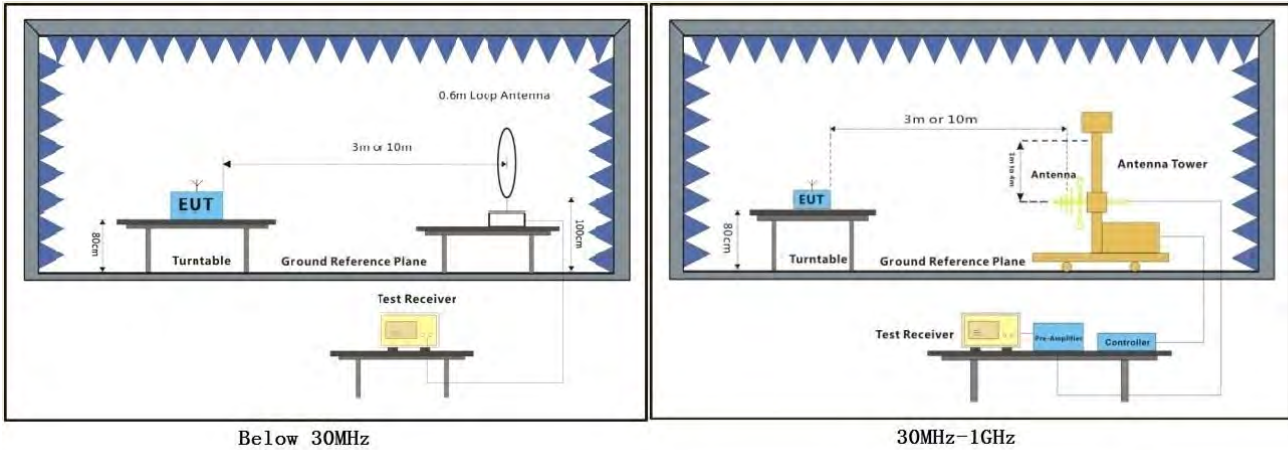
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8.3.3 Test Setup Diagram



Below 30MHz

30MHz-1GHz



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8.3.4 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
2. For emission below 1GHz, through the pre-scan found the worst case is the lowest channel of 802.11a. Only the worst case is recorded in the report.
3. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
4. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.



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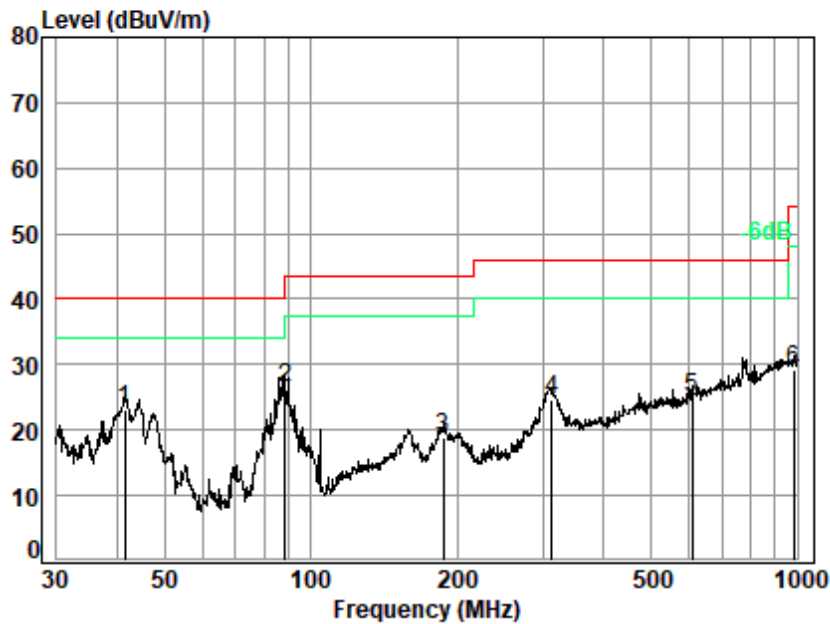
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Test Mode: 14; Polarity: Horizontal



Site : chamber

Condition: 3m HORIZONTAL

Job No. : 04945WM

Test Mode: 14

		Ant	Cable	Preamp	Read	Limit	Over	
	Freq	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB
1	q	41.422	15.69	0.79	27.76	34.45	23.17	40.00 -16.83 QP
2		88.652	11.57	1.15	27.62	41.31	26.41	43.50 -17.09 QP
3		187.096	14.30	1.71	27.22	30.14	18.93	43.50 -24.57 QP
4		313.276	18.40	2.26	26.80	30.67	24.53	46.00 -21.47 QP
5		607.787	24.61	3.27	27.95	24.89	24.82	46.00 -21.18 QP
6		982.620	28.02	4.34	26.17	23.16	29.35	54.00 -24.65 QP



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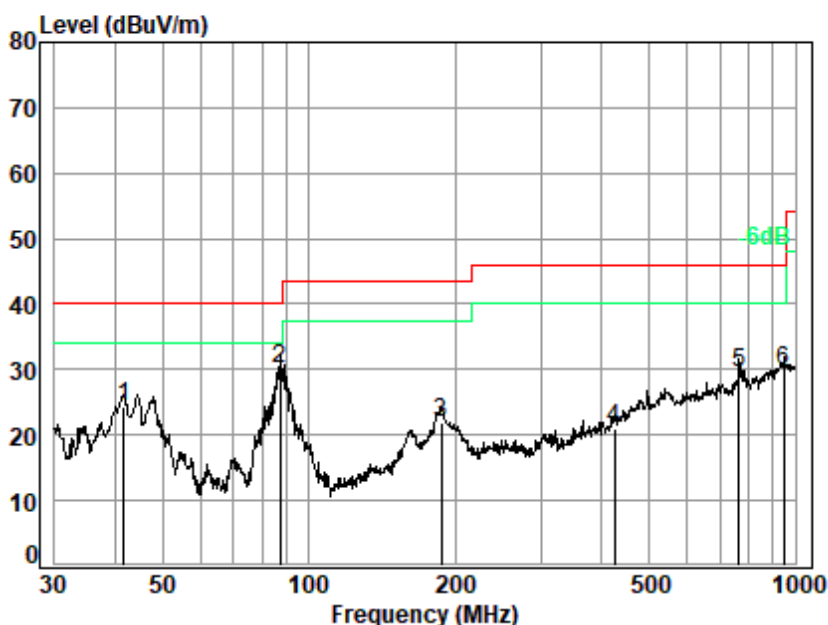
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Test Mode: 14; Polarity: Vertical



Site : chamber
Condition: 3m VERTICAL
Job No. : 04945WM
Test Mode: 14

	Ant	Cable	Preamp	Read		Limit	Over	
	Freq	Factor	Loss	Factor	Level	Level	Line	Limit
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB
1	41.713	15.55	0.80	27.76	35.72	24.31	40.00	-15.69 QP
2 q	87.112	11.33	1.14	27.63	45.34	30.18	40.00	-9.82 QP
3	187.096	14.30	1.71	27.22	33.18	21.97	43.50	-21.53 QP
4	425.028	20.73	2.67	27.26	24.98	21.12	46.00	-24.88 QP
5	766.057	26.59	3.76	27.56	26.75	29.54	46.00	-16.46 QP
6	945.440	28.26	4.24	26.44	23.89	29.95	46.00	-16.05 QP



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8.4 Radiated Emissions (Above 1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)

Test Method: ANSI C63.10 (2013) Section 6.6

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

*(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:

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

8.4.1 E.U.T. Operation

Operating Environment:

Temperature: 24.5 °C

Humidity: 50.8 % RH

Atmospheric Pressure: 1020 mbar



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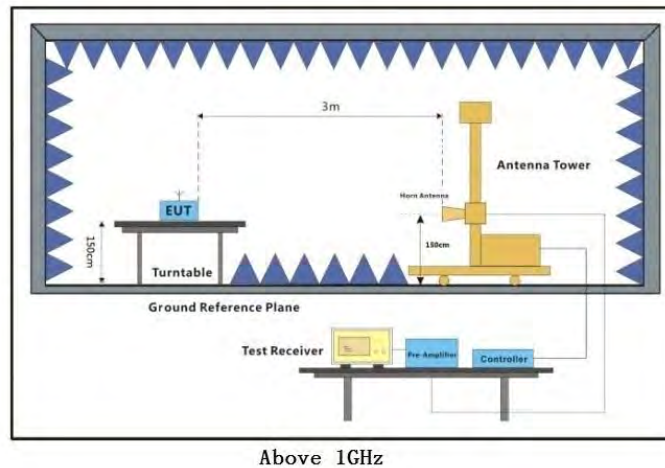
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8.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	14	Charge + TX mode (U-NII-1) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	15	Charge + TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	16	Charge + TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	17	Charge + TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.

8.4.3 Test Setup Diagram



Above 1GHz



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8.4.4 Measurement Procedure and Data

- a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.
4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.
5. For devices with multiple operating modes, measurements on the middle channel is used to determine the worst-case mode(s). Only the worst case mode with the highest output power and the mode with the highest output power spectral density for each modulation family (e.g., OFDM and direct sequence spread spectrum) is recorded in the test report.
6. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.
7. For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.



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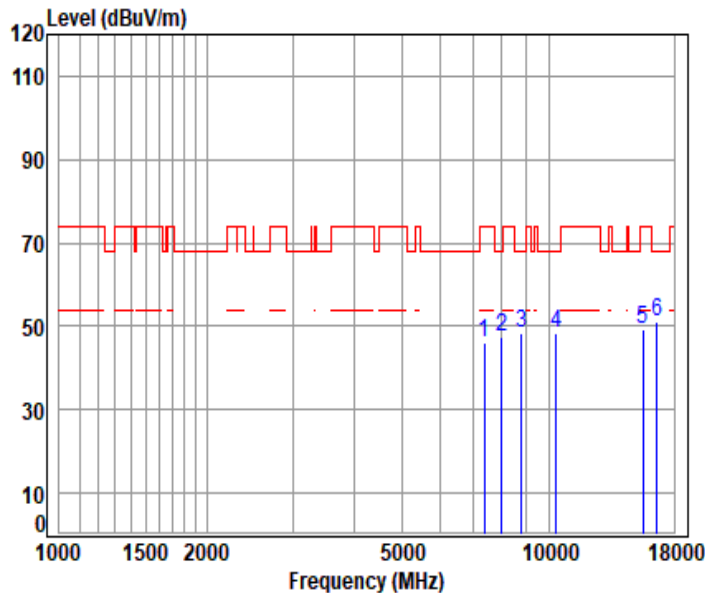
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11a_TX_CH_36_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5180 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preampl	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	7382.582	11.50	36.73	56.39	54.35	46.19	74.00	-27.81 peak
2	7993.045	11.56	37.79	55.91	54.09	47.53	68.20	-20.67 peak
3	8787.224	12.23	38.50	55.19	52.87	48.41	68.20	-19.79 peak
4	10360.000	13.60	39.00	53.88	49.87	48.59	68.20	-19.61 peak
5	15540.000	17.00	38.56	54.14	48.00	49.42	74.00	-24.58 peak
6	pp16591.430	17.66	39.17	54.18	48.28	50.93	68.20	-17.27 peak



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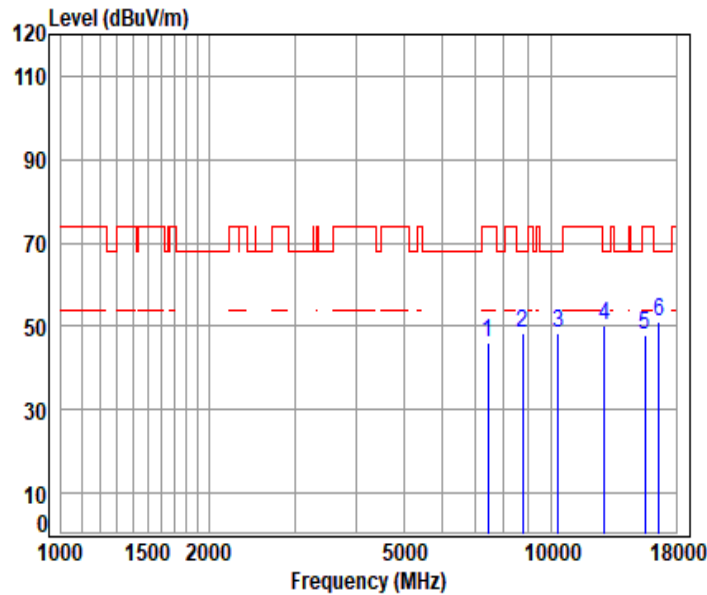
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11a_TX_CH_36_Vertical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5180 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preampl	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7427.838	11.42	36.76	56.36	54.06	45.88	74.00 -28.12 peak
2	8742.585	12.16	38.51	55.23	52.87	48.31	68.20 -19.89 peak
3	10360.000	13.60	39.00	53.88	49.62	48.34	68.20 -19.86 peak
4	12848.480	15.60	40.35	54.39	48.46	50.02	68.20 -18.18 Peak
5	15540.000	17.00	38.56	54.14	46.57	47.99	74.00 -26.01 peak
6	pp16591.430	17.66	39.17	54.18	48.31	50.96	68.20 -17.24 peak



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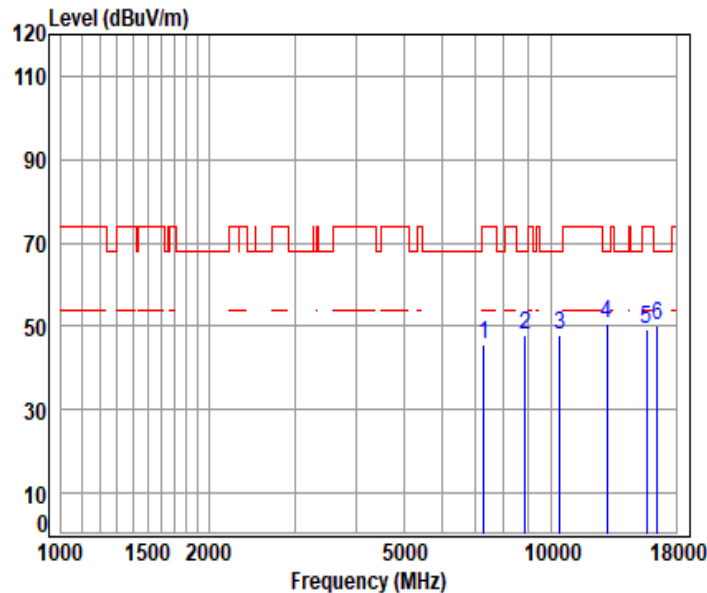
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11a_TX_CH_44_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5220 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	7300.327	11.51	36.70	56.46	54.02	45.77	74.00	-28.23 peak
2	8850.100	12.23	38.50	55.13	52.13	47.73	68.20	-20.47 peak
3	10440.000	13.63	39.04	53.84	49.17	48.00	68.20	-20.20 peak
4	pp13006.480	15.87	40.30	54.50	48.96	50.63	68.20	-17.57 Peak
5	15660.000	17.23	38.56	54.10	47.75	49.44	74.00	-24.56 peak
6	16507.140	17.73	38.92	54.15	47.64	50.14	68.20	-18.06 peak



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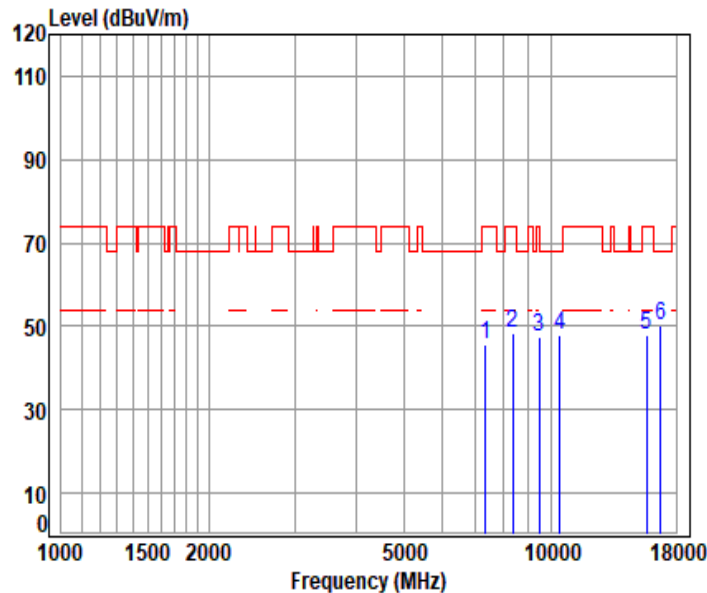
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11a_TX_CH_44_Veritical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5220 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7345.079	11.51	36.79	56.42	53.67	45.55	74.00 -28.45 peak
2	8350.908	11.69	38.70	55.58	53.36	48.17	74.00 -25.83 peak
3	9455.871	12.45	38.81	54.59	50.95	47.62	74.00 -26.38 peak
4	10440.000	13.63	39.04	53.84	48.87	47.70	68.20 -20.50 peak
5	15660.000	17.23	38.56	54.10	46.12	47.81	74.00 -26.19 peak
6	pp16744.220	17.53	39.49	54.22	47.27	50.07	68.20 -18.13 peak



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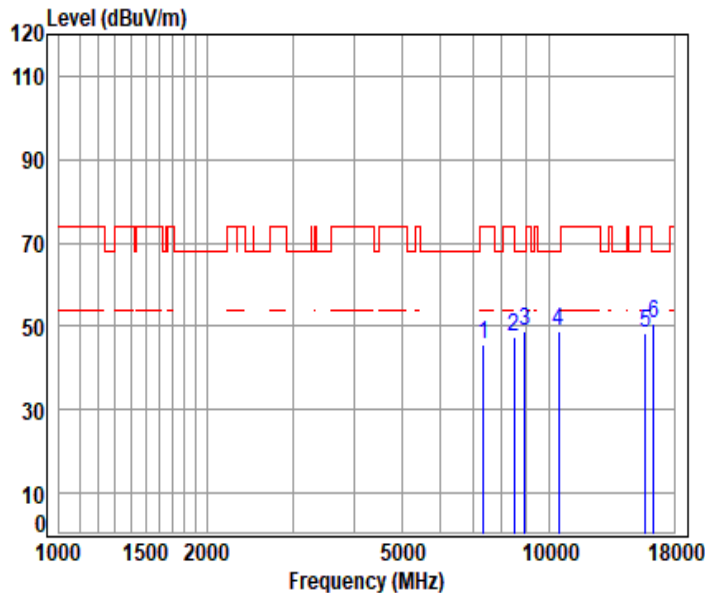
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11a_TX_CH_48_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5240 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preampl	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7352.564	11.50	36.79	56.42	53.86	45.73	74.00 -28.27 peak
2	8488.119	12.23	38.32	55.46	52.27	47.36	74.00 -26.64 peak
3	8922.510	12.20	38.55	55.07	53.00	48.68	68.20 -19.52 peak
4	10480.000	13.64	39.08	53.81	49.91	48.82	68.20 -19.38 peak
5	15720.000	17.22	38.58	54.08	46.78	48.50	74.00 -25.50 peak
6	pp16373.180	17.18	38.75	54.11	48.61	50.43	68.20 -17.77 peak



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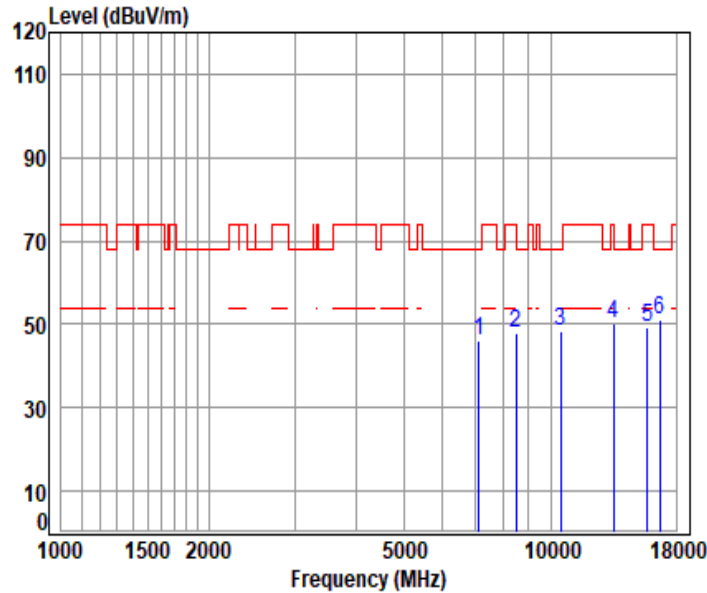
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11a_TX_CH_48_Veritical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5240 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preampl	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7124.029	11.88	36.45	56.60	54.38	46.11	68.20 -22.09 peak
2	8496.769	12.29	38.31	55.45	52.55	47.70	74.00 -26.30 peak
3	10480.000	13.64	39.08	53.81	49.42	48.33	68.20 -19.87 peak
4	13410.060	15.90	40.28	54.46	48.68	50.40	68.20 -17.80 Peak
5	15720.000	17.22	38.58	54.08	47.43	49.15	74.00 -24.85 peak
6	pp16659.160	17.61	39.32	54.20	48.24	50.97	68.20 -17.23 peak



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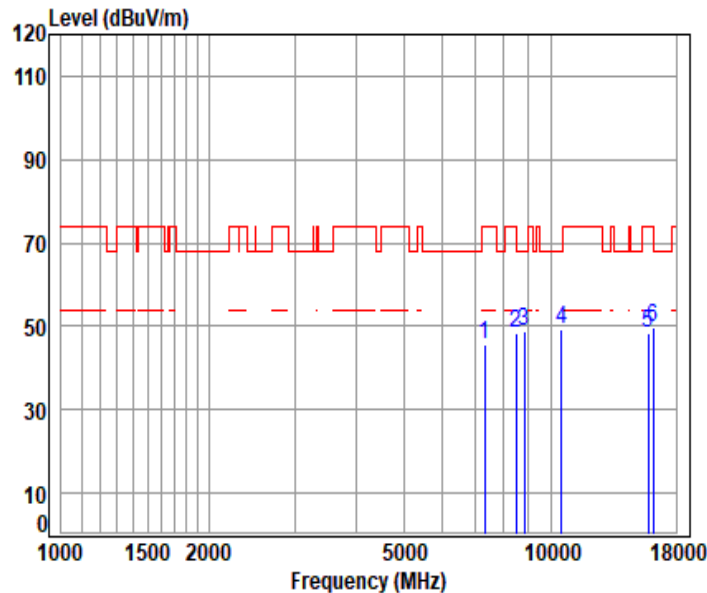
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11a_TX_CH_52_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5260 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preampl	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7322.668	11.51	36.75	56.44	54.01	45.83	74.00 -28.17 peak
2	8488.119	12.23	38.32	55.46	53.36	48.45	74.00 -25.55 peak
3	8823.098	12.24	38.50	55.16	53.27	48.85	68.20 -19.35 peak
4	pp10520.000	13.63	39.14	53.79	50.27	49.25	68.20 -18.95 peak
5	15780.000	17.08	38.52	54.07	46.93	48.46	74.00 -25.54 peak
6	16174.270	17.17	38.50	54.05	48.07	49.69	74.00 -24.31 peak



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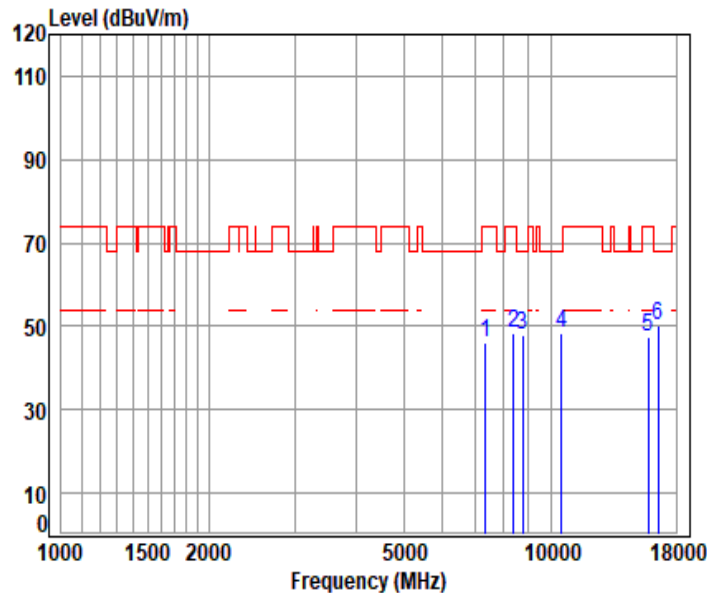
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11a_TX_CH_52_Vertical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5260 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7345.079	11.51	36.79	56.42	53.98	45.86	74.00 -28.14 peak
2	8385.002	11.65	38.63	55.55	53.47	48.20	74.00 -25.80 peak
3	8751.494	12.17	38.50	55.22	52.66	48.11	68.20 -20.09 peak
4	10520.000	13.63	39.14	53.79	49.42	48.40	68.20 -19.80 peak
5	15780.000	17.08	38.52	54.07	46.13	47.66	74.00 -26.34 peak
6	pp16557.660	17.69	39.07	54.17	47.79	50.38	68.20 -17.82 peak



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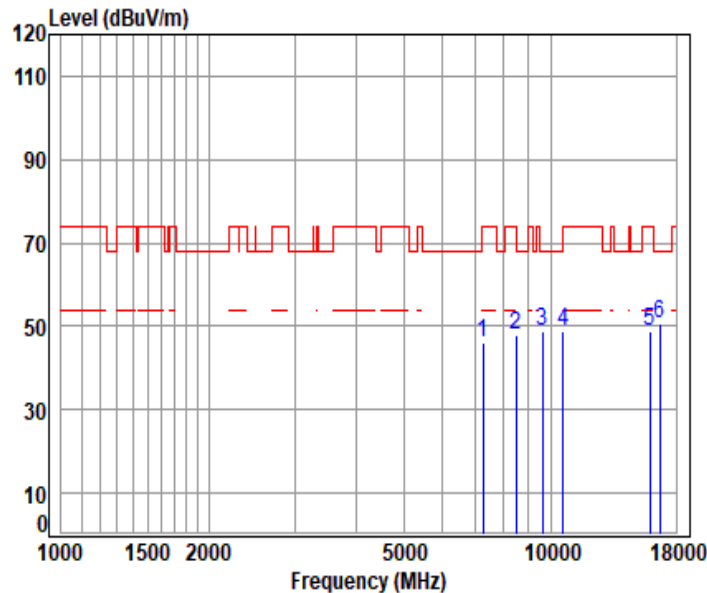
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11a_TX_CH_60_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5300 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preampl	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	7263.242	11.51	36.63	56.49	54.46	46.11	74.00	-27.89 peak
2	8496.769	12.29	38.31	55.45	52.86	48.01	74.00	-25.99 peak
3	9621.031	12.49	38.76	54.44	51.96	48.77	68.20	-19.43 peak
4	10600.000	13.59	39.30	53.74	49.65	48.80	68.20	-19.40 peak
5	15900.000	17.28	38.70	54.03	46.81	48.76	74.00	-25.24 peak
6	pp16710.150	17.58	39.42	54.21	47.85	50.64	68.20	-17.56 peak



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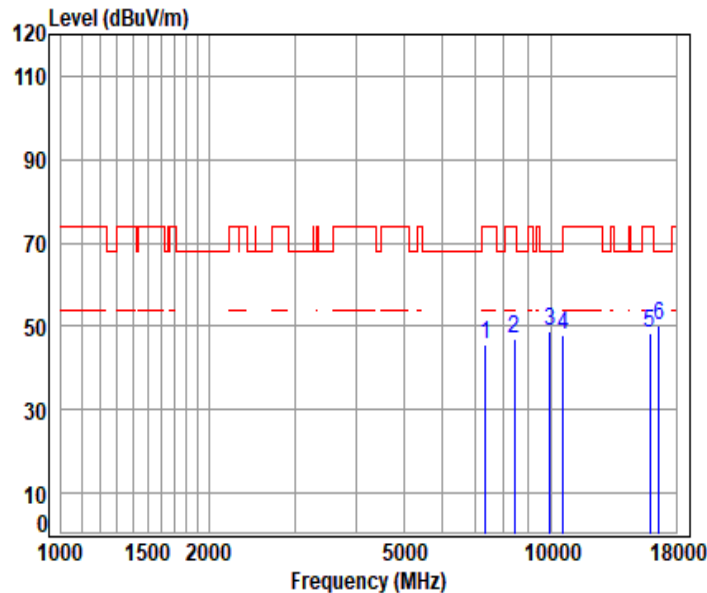
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11a_TX_CH_60_Vertical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5300 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preampl	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	7337.601	11.51	36.78	56.43	53.62	45.48	74.00	-28.52 peak
2	8427.813	11.82	38.49	55.51	52.28	47.08	74.00	-26.92 peak
3	9960.058	12.93	38.90	54.14	51.12	48.81	68.20	-19.39 peak
4	10600.000	13.59	39.30	53.74	48.56	47.71	68.20	-20.49 peak
5	15900.000	17.28	38.70	54.03	46.54	48.49	74.00	-25.51 peak
6	pp16642.210	17.62	39.28	54.19	47.49	50.20	68.20	-18.00 peak



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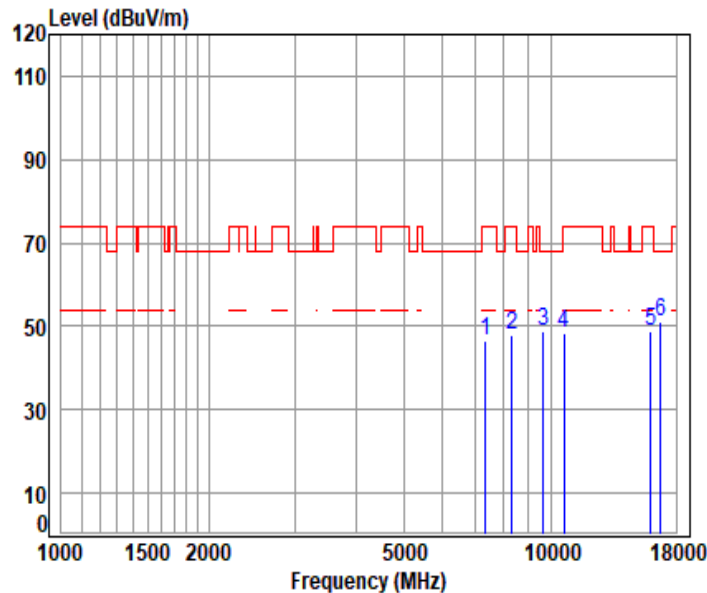
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11a_TX_CH_64_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5320 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7352.564	11.50	36.79	56.42	54.61	46.48	74.00 -27.52 peak
2	8333.913	11.72	38.44	55.60	53.35	47.91	74.00 -26.09 peak
3	9650.476	12.57	38.70	54.41	52.05	48.91	68.20 -19.29 peak
4	10640.000	13.77	39.34	53.72	49.06	48.45	74.00 -25.55 peak
5	15960.000	17.20	38.64	54.01	46.96	48.79	74.00 -25.21 peak
6	pp16761.290	17.51	39.52	54.23	48.08	50.88	68.20 -17.32 peak



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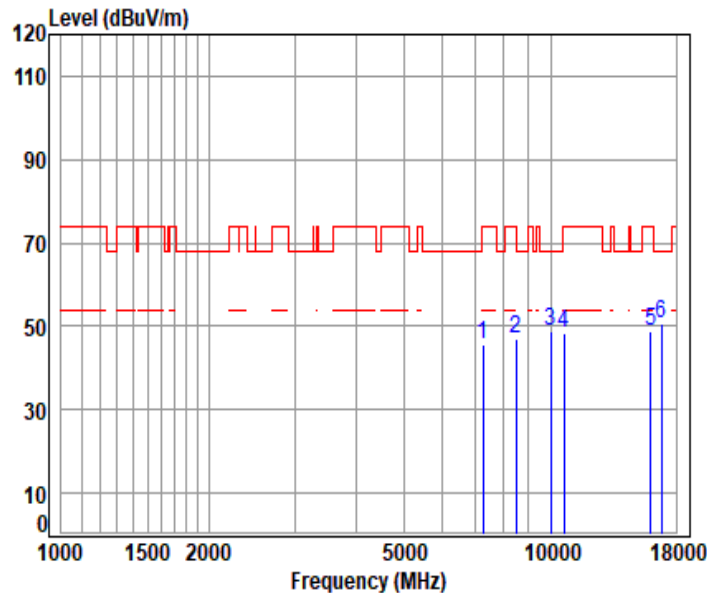
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11a_TX_CH_64_Vertical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5320 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preampl	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7263.242	11.51	36.63	56.49	54.13	45.78	74.00 -28.22 peak
2	8488.119	12.23	38.32	55.46	51.92	47.01	74.00 -26.99 peak
3	9980.368	12.97	38.90	54.12	51.06	48.81	68.20 -19.39 peak
4	10640.000	13.77	39.34	53.72	48.79	48.18	74.00 -25.82 peak
5	15960.000	17.20	38.64	54.01	47.14	48.97	74.00 -25.03 peak
6	pp16812.580	17.55	39.60	54.24	47.57	50.48	68.20 -17.72 peak



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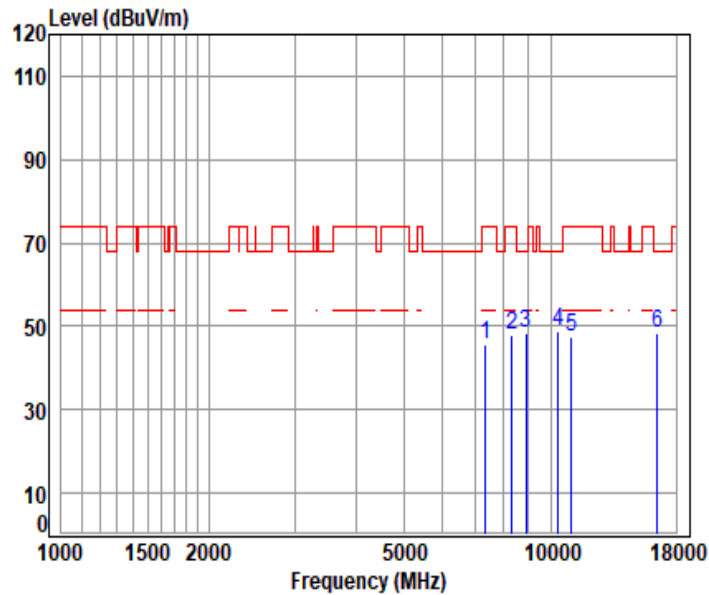
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11a_TX_CH_100_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5500 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7352.564	11.50	36.79	56.42	53.96	45.83	74.00 -28.17 peak
2	8308.486	11.75	38.04	55.62	53.62	47.79	74.00 -26.21 peak
3	8877.185	12.23	38.55	55.11	52.87	48.54	68.20 -19.66 peak
4	pp10353.130	13.60	39.00	53.89	50.06	48.77	68.20 -19.43 peak
5	11000.000	14.17	39.40	53.50	47.55	47.62	74.00 -26.38 peak
6	16500.000	17.74	38.90	54.15	45.94	48.43	68.20 -19.77 peak



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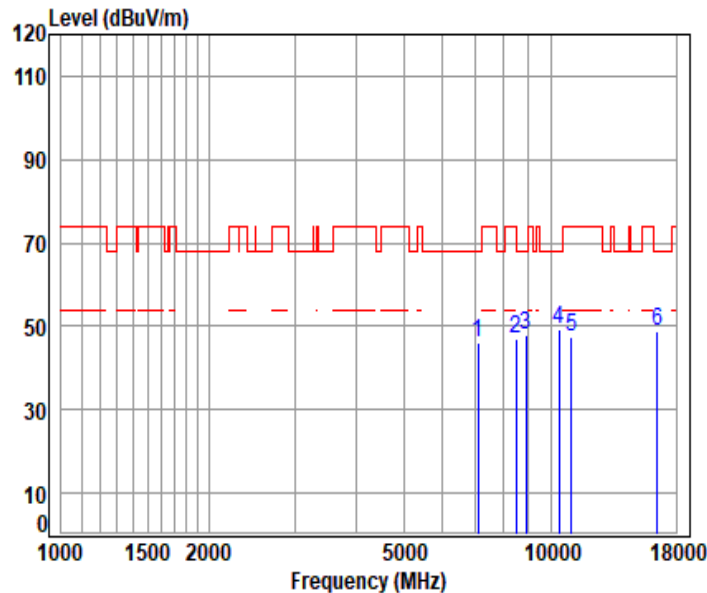
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11a_TX_CH_100_Vertical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5500 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preampl	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7109.531	11.95	36.42	56.61	54.24	46.00	68.20 -22.20 peak
2	8496.769	12.29	38.31	55.45	51.88	47.03	74.00 -26.97 peak
3	8904.353	12.22	38.59	55.09	52.13	47.85	68.20 -20.35 peak
4	pp10374.240	13.61	39.00	53.88	50.48	49.21	68.20 -18.99 peak
5	11000.000	14.17	39.40	53.50	47.28	47.35	74.00 -26.65 peak
6	16500.000	17.74	38.90	54.15	46.24	48.73	68.20 -19.47 peak



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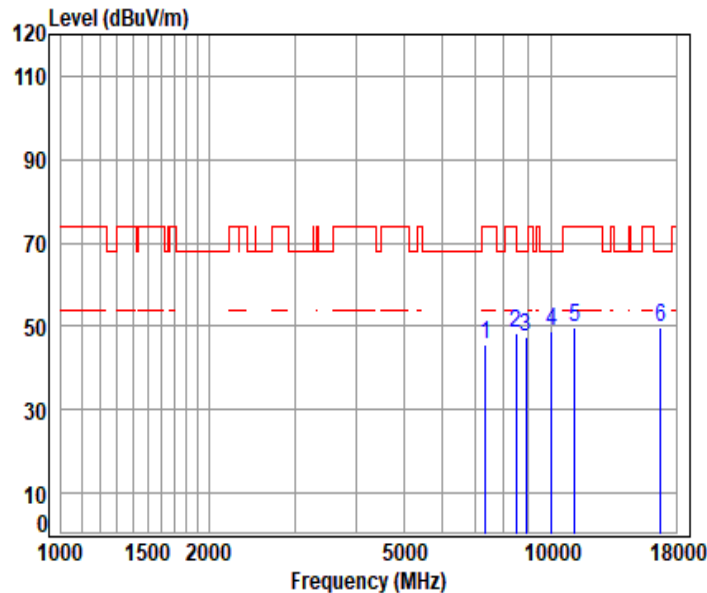
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SZEMC-TRF-01 Rev. A/1

Report No.: SZCR250100029108

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11a_TX_CH_116_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5580 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	7345.079	11.51	36.79	56.42	53.85	45.73	74.00	-28.27 peak
2	8470.845	12.11	38.36	55.48	53.17	48.16	74.00	-25.84 peak
3	8895.287	12.22	38.59	55.09	51.95	47.67	68.20	-20.53 peak
4	10010.910	13.04	38.92	54.09	51.03	48.90	68.20	-19.30 peak
5	11160.000	14.72	39.56	53.55	48.91	49.64	74.00	-24.36 peak
6	pp16740.000	17.54	39.48	54.22	46.78	49.58	68.20	-18.62 peak



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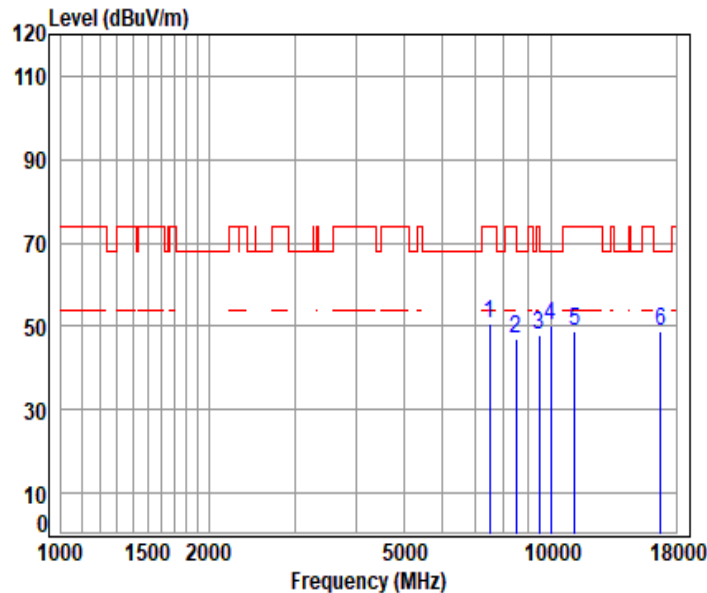
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11a_TX_CH_116_Vertical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5580 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preampl	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7480.987	11.28	36.80	56.32	58.70	50.46	74.00 -23.54 peak
2	8496.769	12.29	38.31	55.45	51.94	47.09	74.00 -26.91 peak
3	9465.507	12.47	38.83	54.58	51.00	47.72	74.00 -26.28 peak
4 pp	9990.539	12.99	38.90	54.11	52.53	50.31	68.20 -17.89 peak
5	11160.000	14.72	39.56	53.55	48.29	49.02	74.00 -24.98 peak
6	16740.000	17.54	39.48	54.22	45.81	48.61	68.20 -19.59 peak



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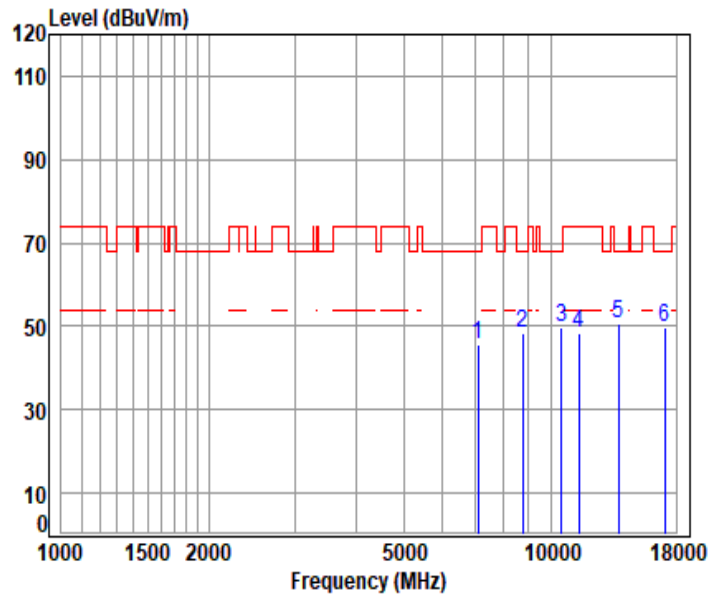
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11a_TX_CH_140_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5700 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7102.293	11.98	36.40	56.62	53.93	45.69	68.20 -22.51 peak
2	8751.494	12.17	38.50	55.22	52.97	48.42	68.20 -19.78 peak
3	10501.820	13.64	39.10	53.80	50.98	49.92	68.20 -18.28 peak
4	11400.000	14.21	39.70	53.62	47.95	48.24	74.00 -25.76 peak
5	pp13727.930	16.28	39.97	54.43	48.88	50.70	68.20 -17.50 Peak
6	17100.000	18.47	39.80	54.32	45.72	49.67	68.20 -18.53 peak



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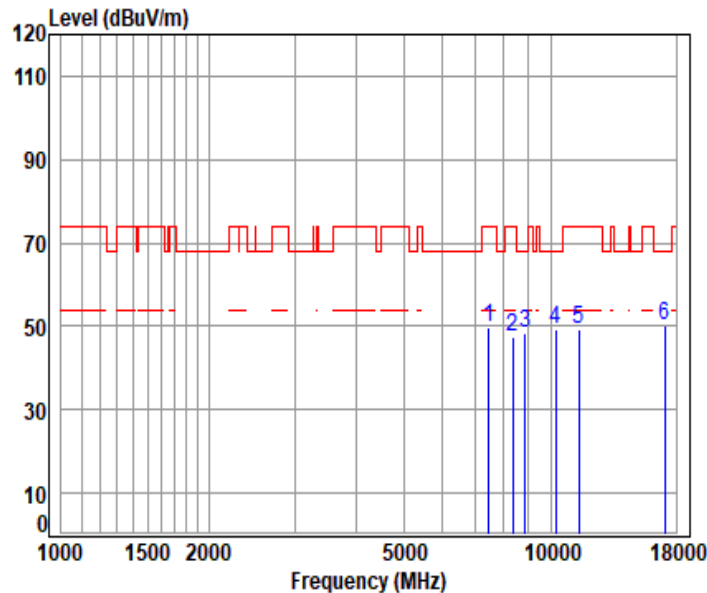
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SZEMC-TRF-01 Rev. A/1

Report No.: SZCR250100029108

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11a_TX_CH_140_Vertical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5700 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7473.371	11.30	36.80	56.32	57.94	49.72	74.00 -24.28 peak
2	8359.419	11.68	38.68	55.58	52.79	47.57	74.00 -26.43 peak
3	8850.100	12.23	38.50	55.13	52.84	48.44	68.20 -19.76 peak
4	10206.540	13.12	39.09	53.98	50.86	49.09	68.20 -19.11 peak
5	11400.000	14.21	39.70	53.62	48.89	49.18	74.00 -24.82 peak
6	pp17100.000	18.47	39.80	54.32	46.30	50.25	68.20 -17.95 peak



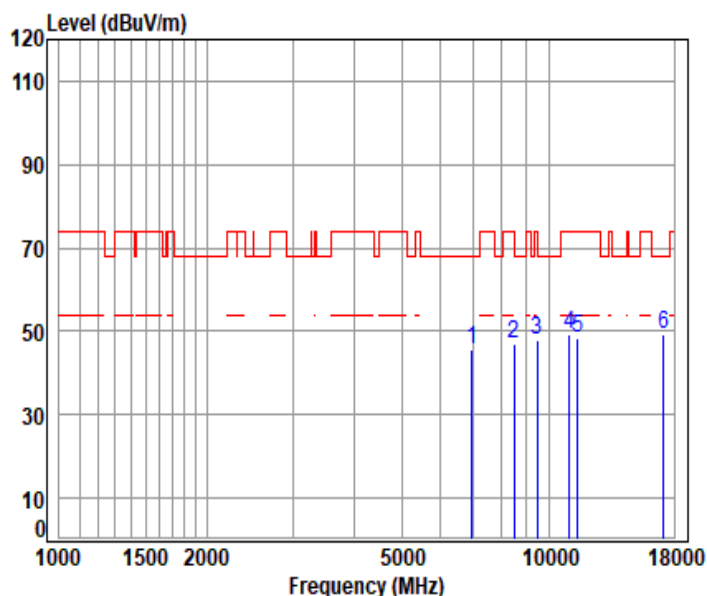
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11a_Straddle_TX_CH_144_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5720 TX RSE

: 5G Wi-Fi 11a

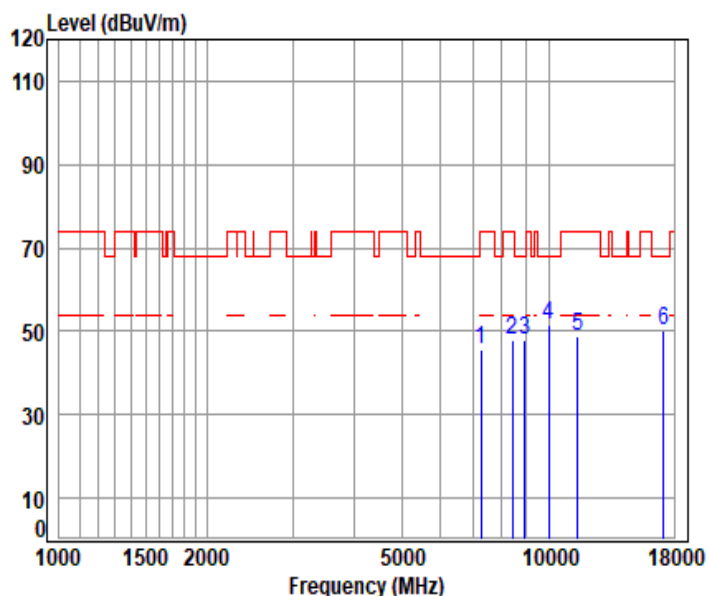
	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	6951.989	11.37	36.10	56.71	54.72	45.48	68.20 -22.72 peak
2	8488.119	12.23	38.32	55.46	52.06	47.15	74.00 -26.85 peak
3	9446.244	12.42	38.80	54.60	51.20	47.82	74.00 -26.18 peak
4	10994.380	14.16	39.39	53.50	49.15	49.20	74.00 -24.80 peak
5	11440.000	14.55	39.66	53.63	47.68	48.26	74.00 -25.74 peak
6	pp17160.000	18.08	39.86	54.33	45.83	49.44	68.20 -18.76 peak



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11a_Straddle_TX_CH_144_Vertical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5720 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7270.644	11.51	36.64	56.48	53.94	45.61	74.00 -28.39 peak
2	8436.402	11.88	38.45	55.51	53.05	47.87	74.00 -26.13 peak
3	8940.705	12.19	38.52	55.05	52.39	48.05	68.20 -20.15 peak
4	pp10000.720	13.01	38.90	54.10	53.69	51.50	68.20 -16.70 peak
5	11440.000	14.55	39.66	53.63	48.12	48.70	74.00 -25.30 peak
6	17160.000	18.08	39.86	54.33	46.73	50.34	68.20 -17.86 peak



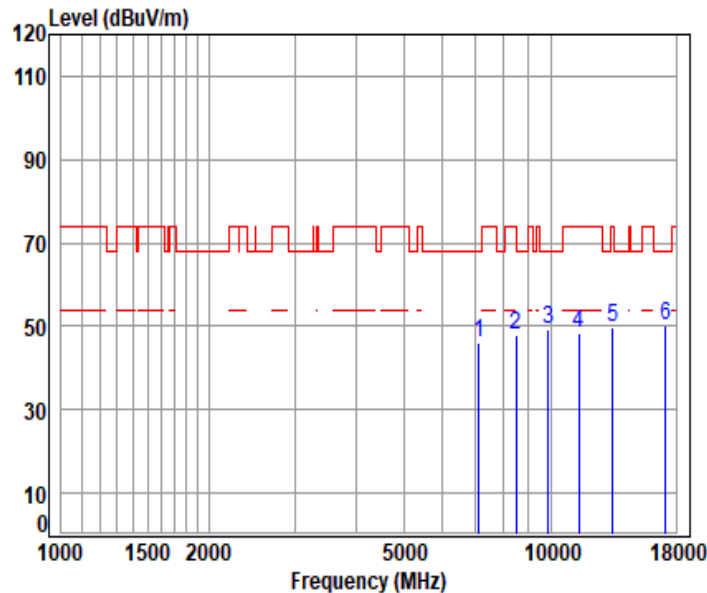
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11n_40M_Straddle_TX_CH_142_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5710 TX RSE

: 5G Wi-Fi 11n40

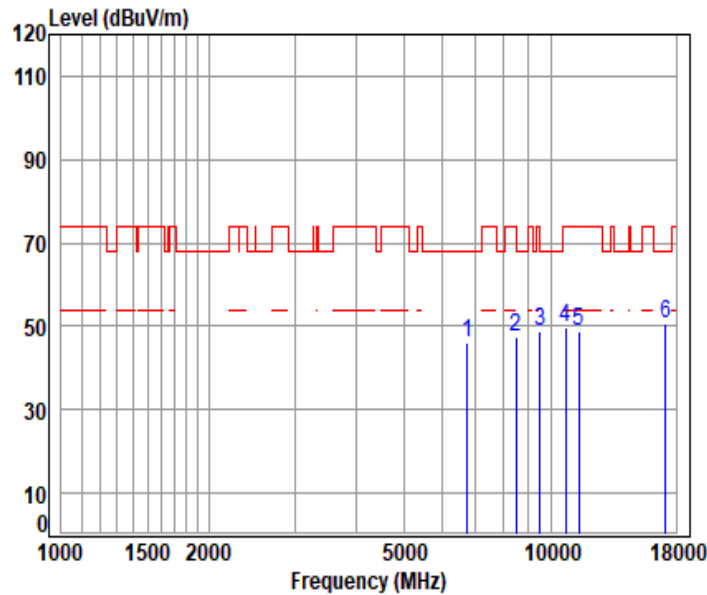
	Cable	Ant	Preampl	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7131.289	11.84	36.46	56.59	54.59	46.30	68.20 -21.90 peak
2	8496.769	12.29	38.31	55.45	52.77	47.92	74.00 -26.08 peak
3	9859.122	12.92	38.00	54.23	52.67	49.36	68.20 -18.84 peak
4	11420.000	14.38	39.68	53.63	48.15	48.58	74.00 -25.42 peak
5	13355.530	16.19	40.30	54.46	47.68	49.71	74.00 -24.29 Peak
6	pp17130.000	18.27	39.83	54.33	46.49	50.26	68.20 -17.94 peak



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11n_40M_Straddle_TX_CH_142_Vertical



Condition: 3m VERTICAL

Job No : 04945WM

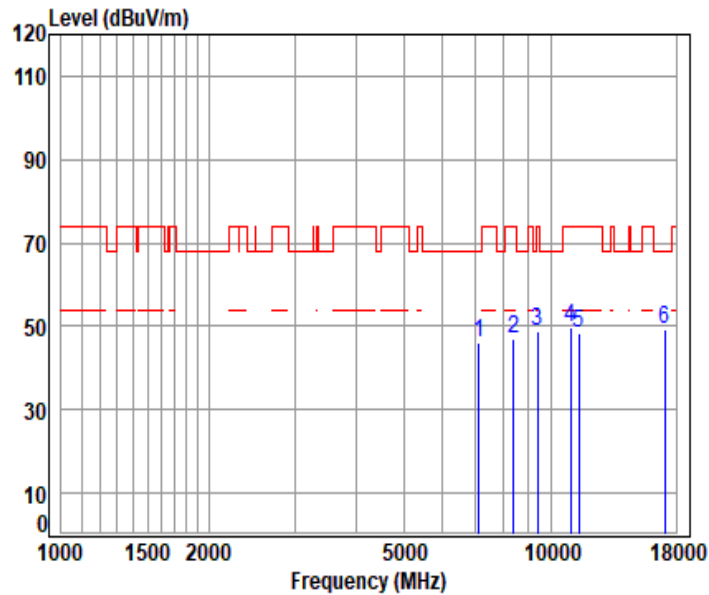
Mode : 5710 TX RSE

: 5G Wi-Fi 11n40

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	6749.641	11.39	35.70	56.75	55.85	46.19	68.20	-22.01 peak
2	8470.845	12.11	38.36	55.48	52.67	47.66	74.00	-26.34 peak
3	9504.150	12.55	38.89	54.55	51.86	48.75	68.20	-19.45 peak
4	10707.040	14.01	39.39	53.68	50.02	49.74	74.00	-24.26 peak
5	11420.000	14.38	39.68	53.63	48.30	48.73	74.00	-25.27 peak
6	pp17130.000	18.27	39.83	54.33	46.72	50.49	68.20	-17.71 peak



11ac_80M_Straddle_TX_CH_138_Horizontal



Condition: 3m VERTICAL

Job No : 04945WM

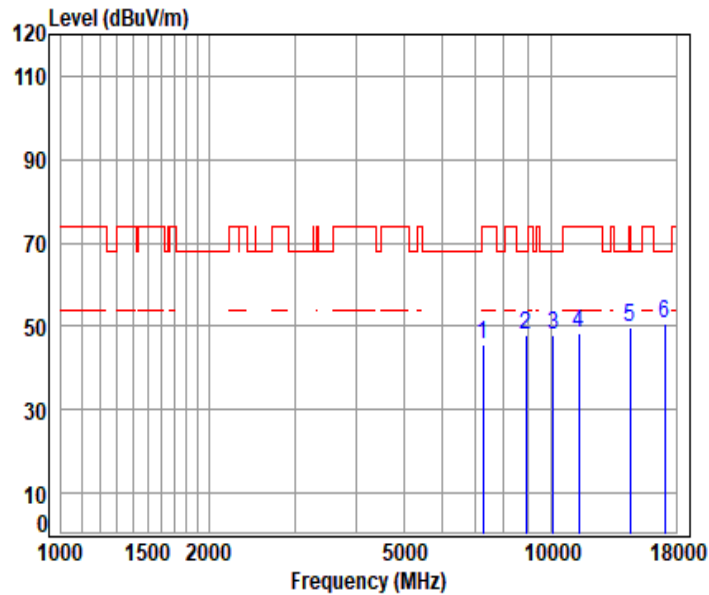
Mode : 5690 TX RSE

: 5G Wi-Fi 11ac80

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7116.776	11.91	36.43	56.61	54.44	46.17	68.20 -22.03 peak
2	8393.547	11.64	38.61	55.55	52.18	46.88	74.00 -27.12 peak
3	9379.132	12.27	38.80	54.66	52.32	48.73	74.00 -25.27 peak
4	10972.000	14.11	39.37	53.52	49.99	49.95	74.00 -24.05 peak
5	11380.000	14.30	39.70	53.61	47.98	48.37	74.00 -25.63 peak
6	pp17070.000	18.35	39.77	54.31	45.38	49.19	68.20 -19.01 peak



11ac_80M_Straddle_TX_CH_138_Vertical



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5690 TX RSE

: 5G Wi-Fi 11ac80

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7278.053	11.51	36.66	56.48	53.74	45.43	74.00 -28.57 peak
2	8877.185	12.23	38.55	55.11	52.22	47.89	68.20 -20.31 peak
3	10123.710	13.23	39.10	54.03	49.50	47.80	68.20 -20.40 Peak
4	11380.000	14.30	39.70	53.61	47.85	48.24	74.00 -25.76 peak
5	14518.930	16.92	39.46	54.35	47.66	49.69	68.20 -18.51 Peak
6	pp17070.000	18.35	39.77	54.31	46.63	50.44	68.20 -17.76 peak



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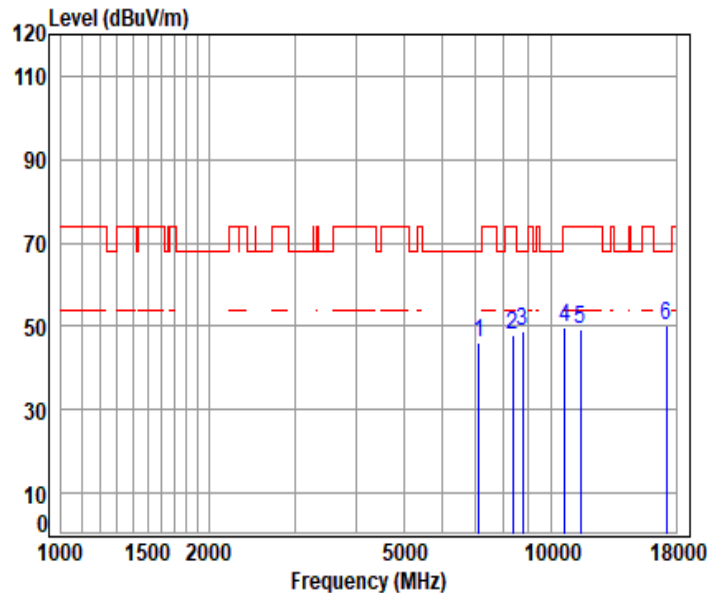
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11a_TX_CH_149_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5745 TX RSE

: 5.8G Wi-Fi 11a

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	7124.029	11.88	36.45	56.60	54.14	45.87	68.20	-22.33 peak
2	8342.406	11.70	38.58	55.59	53.00	47.69	74.00	-26.31 peak
3	8769.341	12.20	38.50	55.21	53.32	48.81	68.20	-19.39 peak
4	10674.370	13.92	39.37	53.70	49.95	49.54	74.00	-24.46 peak
5	11490.000	14.97	39.61	53.65	48.38	49.31	74.00	-24.69 peak
6	pp17235.000	17.83	40.01	54.35	46.78	50.27	68.20	-17.93 peak



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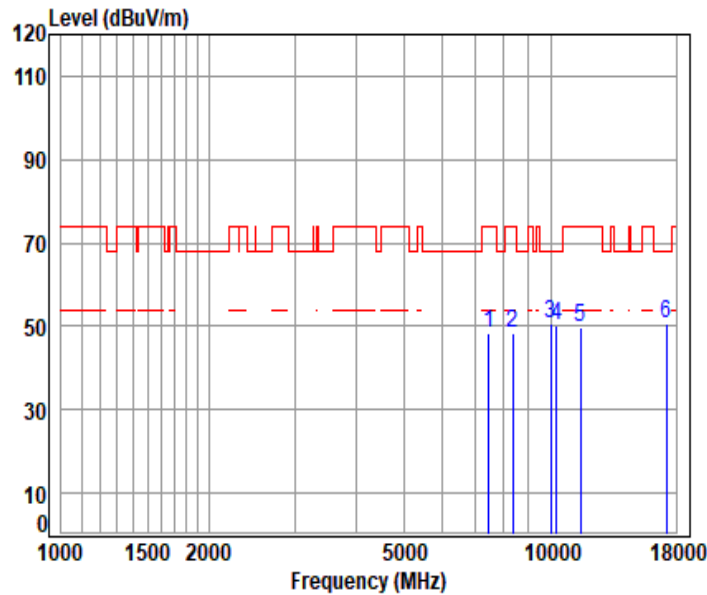
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11a_TX_CH_149_Vertical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5745 TX RSE

: 5.8G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7473.371	11.30	36.80	56.32	56.59	48.37	74.00 -25.63 peak
2	8359.419	11.68	38.68	55.58	53.75	48.53	74.00 -25.47 peak
3 pp	9970.208	12.95	38.90	54.13	53.10	50.82	68.20 -17.38 peak
4	10248.210	13.33	39.05	53.95	51.96	50.39	68.20 -17.81 peak
5	11490.000	14.97	39.61	53.65	48.77	49.70	74.00 -24.30 peak
6	17235.000	17.83	40.01	54.35	47.18	50.67	68.20 -17.53 peak



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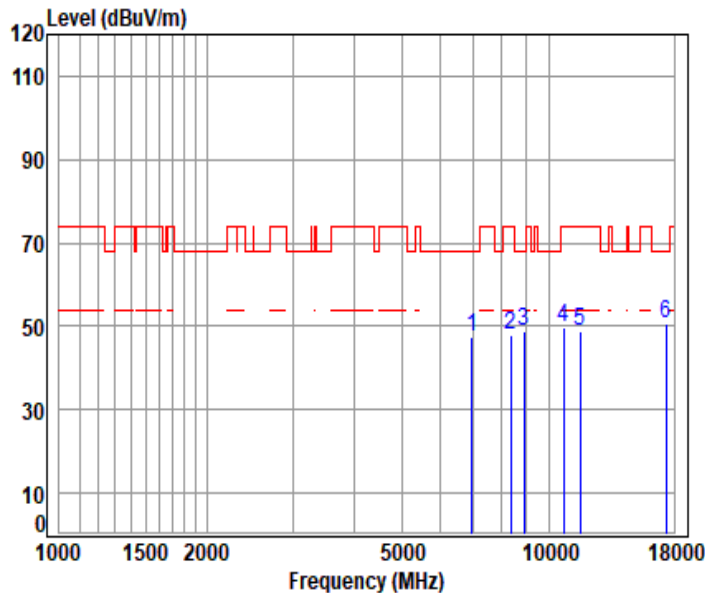
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11a_TX_CH_157_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5785 TX RSE

: 5.8G Wi-Fi 11a

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	6959.073	11.37	36.12	56.71	56.85	47.63	68.20	-20.57 peak
2	8350.908	11.69	38.70	55.58	53.16	47.97	74.00	-26.03 peak
3	8877.185	12.23	38.55	55.11	53.04	48.71	68.20	-19.49 peak
4	10707.040	14.01	39.39	53.68	49.88	49.60	74.00	-24.40 peak
5	11570.000	14.78	39.60	53.67	48.30	49.01	74.00	-24.99 peak
6	pp17355.000	18.00	40.31	54.37	46.51	50.45	68.20	-17.75 peak



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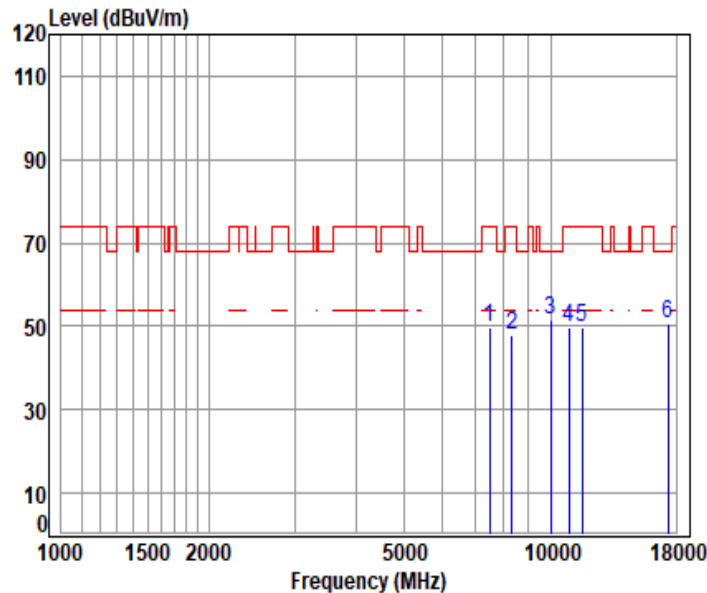
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11a_TX_CH_157_Vertical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5785 TX RSE

: 5.8G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7496.243	11.24	36.80	56.30	57.93	49.67	74.00 -24.33 peak
2	8333.913	11.72	38.44	55.60	53.17	47.73	74.00 -26.27 peak
3	pp 9980.368	12.97	38.90	54.12	53.71	51.46	68.20 -16.74 peak
4	10882.960	13.91	39.30	53.57	50.12	49.76	74.00 -24.24 peak
5	11570.000	14.78	39.60	53.67	49.16	49.87	74.00 -24.13 peak
6	17355.000	18.00	40.31	54.37	46.75	50.69	68.20 -17.51 peak



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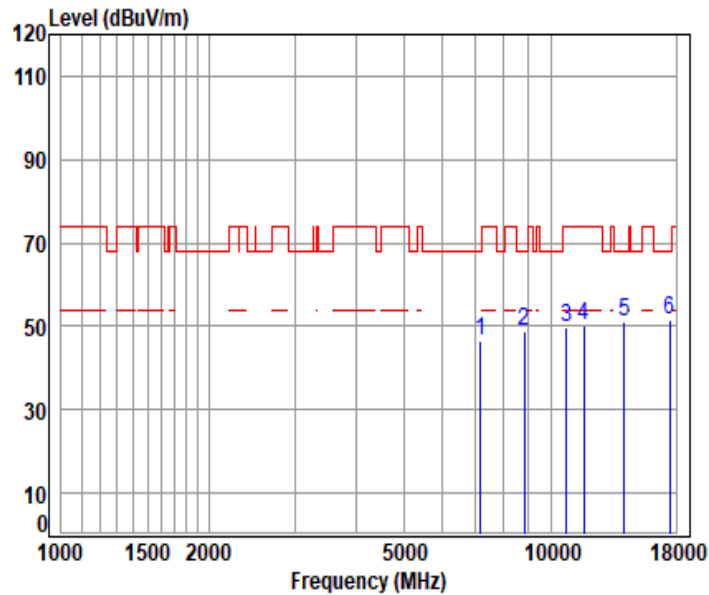
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11a_TX_CH_165_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5825 TX RSE

: 5.8G Wi-Fi 11a

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	7167.700	11.67	36.54	56.57	55.01	46.65	68.20	-21.55 peak
2	8832.090	12.24	38.50	55.15	53.45	49.04	68.20	-19.16 peak
3	10750.750	13.86	39.35	53.65	49.99	49.55	74.00	-24.45 peak
4	11650.000	14.69	39.55	53.69	49.45	50.00	74.00	-24.00 peak
5	14125.080	16.41	39.87	54.39	49.02	50.91	68.20	-17.29 Peak
6	pp17475.000	18.35	40.78	54.40	46.71	51.44	68.20	-16.76 peak



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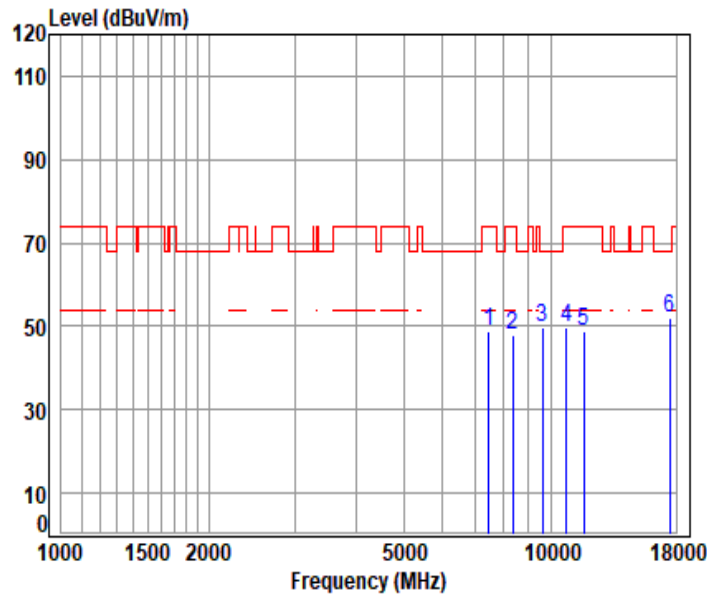
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11a_TX_CH_165_Vertical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5825 TX RSE

: 5.8G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7473.371	11.30	36.80	56.32	57.23	49.01	74.00 -24.99 peak
2	8359.419	11.68	38.68	55.58	53.17	47.95	74.00 -26.05 peak
3	9611.236	12.46	38.78	54.45	52.77	49.56	68.20 -18.64 peak
4	10739.810	13.90	39.36	53.66	50.09	49.69	74.00 -24.31 peak
5	11650.000	14.69	39.55	53.69	48.36	48.91	74.00 -25.09 peak
6	pp17475.000	18.35	40.78	54.40	47.30	52.03	68.20 -16.17 peak



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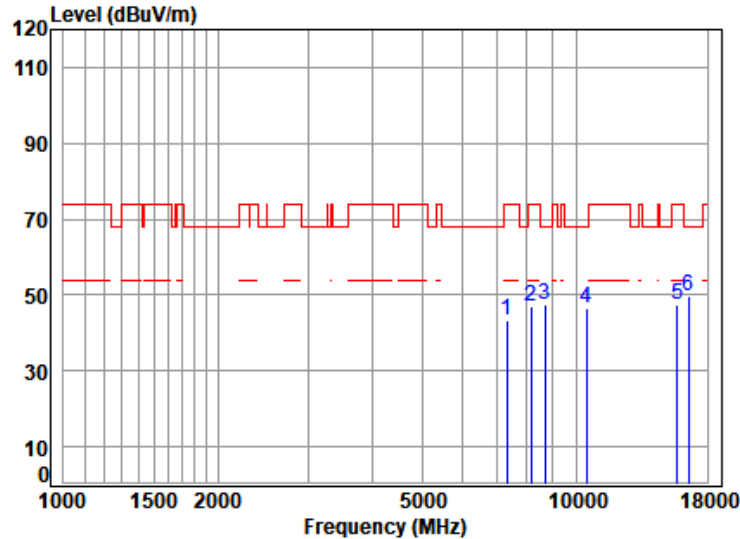
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New test data for report No.: SZCR250100029108

11a_TX_CH_48_Horizontal



Condition: 3m HORIZONTAL

Job No : 00291WM

Mode : 5240 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7322.668	11.51	36.75	56.44	51.75	43.57	74.00 -30.43 Peak
2	8149.240	11.51	37.90	55.77	53.45	47.09	74.00 -26.91 peak
3	8671.635	12.05	38.49	55.30	52.03	47.27	68.20 -20.93 peak
4	10480.000	13.64	39.08	53.81	47.86	46.77	68.20 -21.43 peak
5	15720.000	17.22	38.58	54.08	45.87	47.59	74.00 -26.41 peak
6	pp16540.810	17.70	39.02	54.16	46.97	49.53	68.20 -18.67 peak



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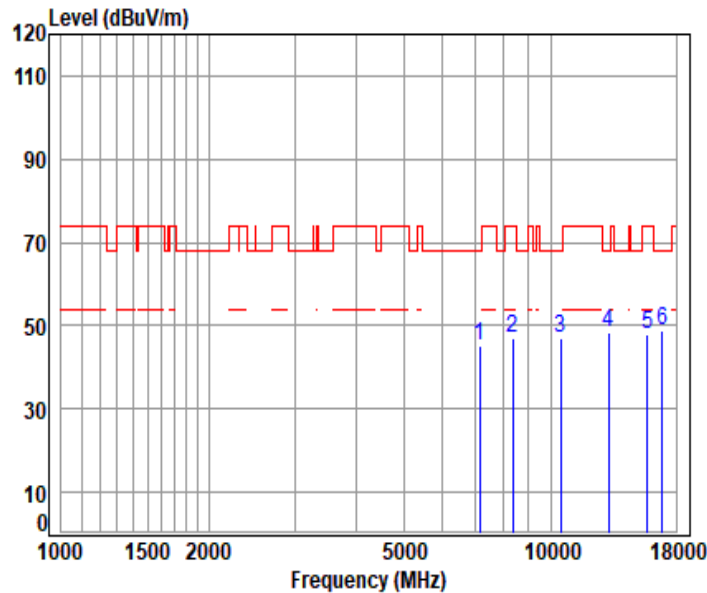
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11a_TX_CH_48_Veritical



Condition: 3m VERTICAL

Job No : 00291WM

Mode : 5240 TX RSE

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	7153.113	11.74	36.51	56.58	53.56	45.23	68.20 -22.97 peak
2	8342.406	11.70	38.58	55.59	52.33	47.02	74.00 -26.98 peak
3	10480.000	13.64	39.08	53.81	47.95	46.86	68.20 -21.34 peak
4	13126.260	15.60	40.27	54.49	46.86	48.24	68.20 -19.96 Peak
5	15720.000	17.22	38.58	54.08	46.17	47.89	74.00 -26.11 peak
6	pp16881.220	18.04	39.60	54.26	45.60	48.98	68.20 -19.22 peak



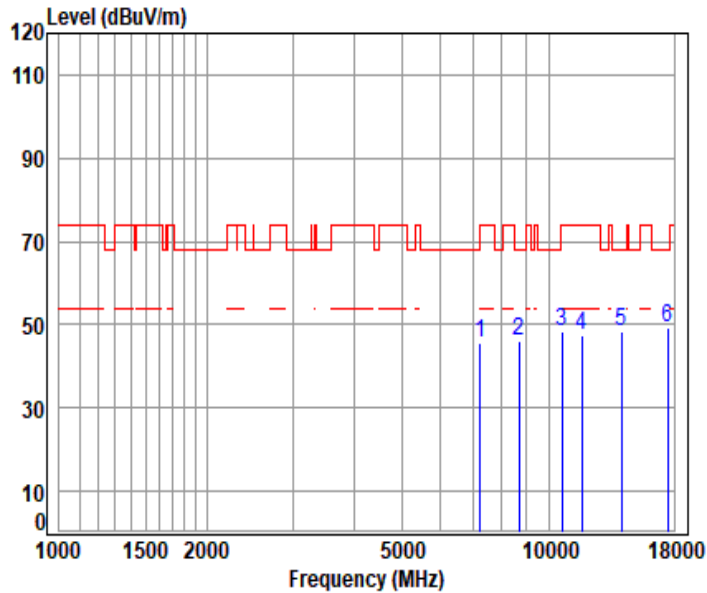
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11a_TX_CH_165_Horizontal



Condition: 3m HORIZONTAL

Job No : 00291WM

Mode : 5825 TX RSE

: 5.8G Wi-Fi 11a

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	7241.082	11.52	36.60	56.51	53.84	45.45	68.20	-22.75	peak
2	8671.635	12.05	38.49	55.30	50.98	46.22	68.20	-21.98	Peak
3	10630.970	13.73	39.33	53.72	49.13	48.47	74.00	-25.53	peak
4	11650.000	14.69	39.55	53.69	46.76	47.31	74.00	-26.69	peak
5	14053.330	16.53	39.90	54.39	46.16	48.20	68.20	-20.00	Peak
6	pp17475.000	18.35	40.78	54.40	44.38	49.11	68.20	-19.09	peak



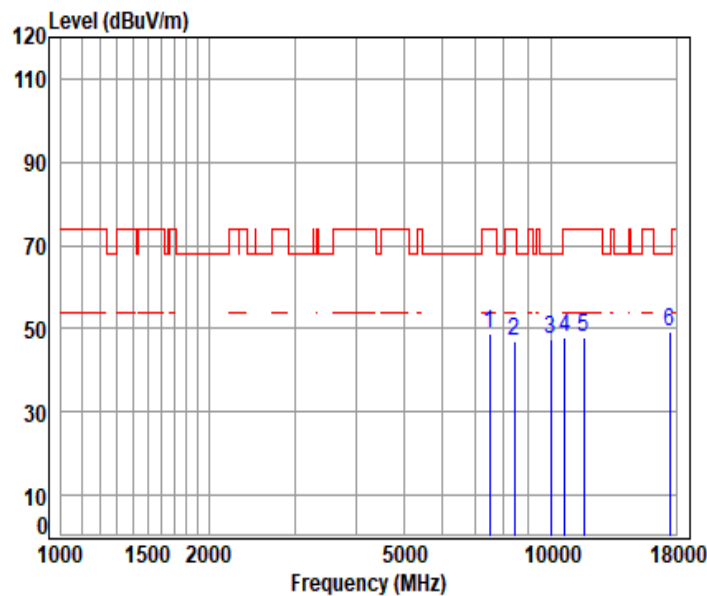
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11a_TX_CH_165_Vertical



Condition: 3m VERTICAL

Job No : 00291WM

Mode : 5825 TX RSE

: 5.8G Wi-Fi 11a

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	7496.243	11.24	36.80	56.30	57.08	48.82	74.00	-25.18 Peak
2	8419.234	11.76	38.52	55.52	52.03	46.79	74.00	-27.21 peak
3	10000.720	13.01	38.90	54.10	49.65	47.46	68.20	-20.74 peak
4	10663.500	13.88	39.36	53.70	48.14	47.68	74.00	-26.32 Peak
5	11650.000	14.69	39.55	53.69	47.59	48.14	74.00	-25.86 peak
6	pp17475.000	18.35	40.78	54.40	44.52	49.25	68.20	-18.95 peak



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8.5 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)

Test Method: ANSI C63.10 (2013) Section 6.10.5

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

*(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:

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

8.5.1 E.U.T. Operation

Operating Environment:

Temperature: 24.5 °C

Humidity: 50.8 % RH

Atmospheric Pressure: 1020 mbar



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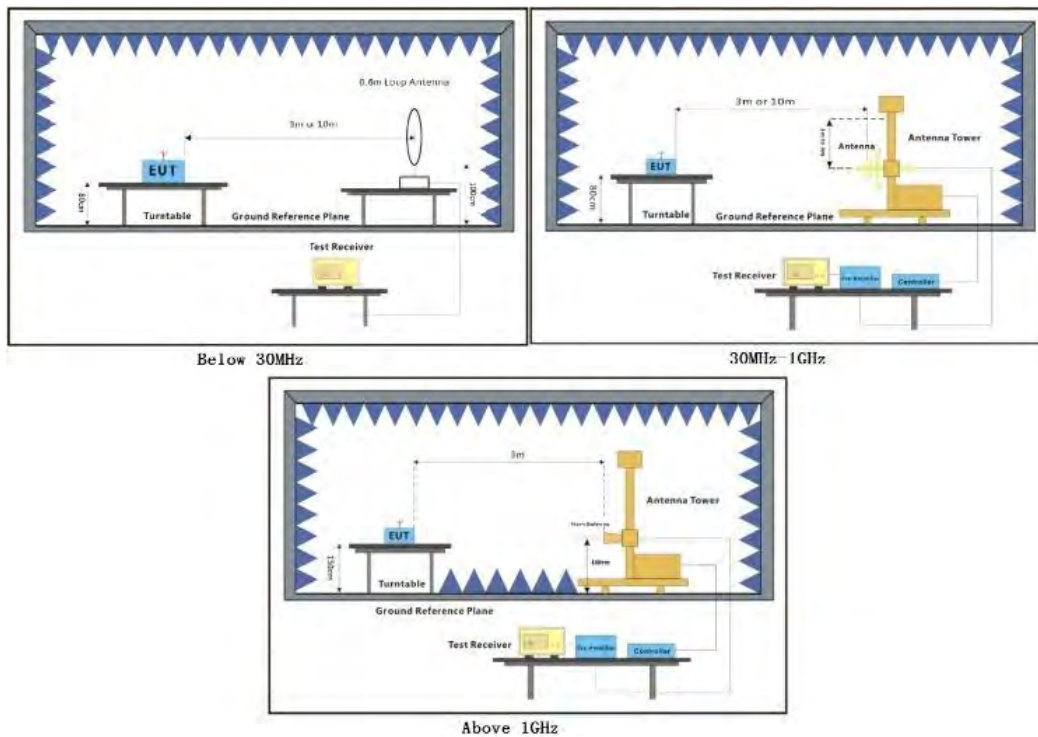
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8.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	14	Charge + TX mode (U-NII-1) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	15	Charge + TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	16	Charge + TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	17	Charge + TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types and being charged. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.

8.5.3 Test Setup Diagram



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8.5.4 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.

Remark 3. For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.



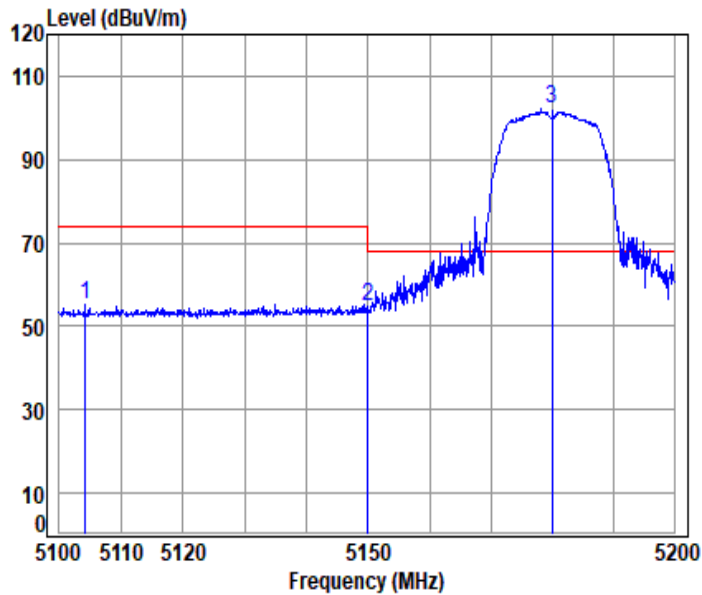
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11a_TX_CH_36_Horizontal-Peak



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5180 Band edge

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5104.161	9.97	32.31	30.86	43.88	55.30	74.00 -18.70 peak
2	5149.980	10.14	32.40	30.84	42.99	54.69	74.00 -19.31 peak
3 pp	5180.000	10.25	32.46	30.83	90.13	102.01	68.20 33.81 peak



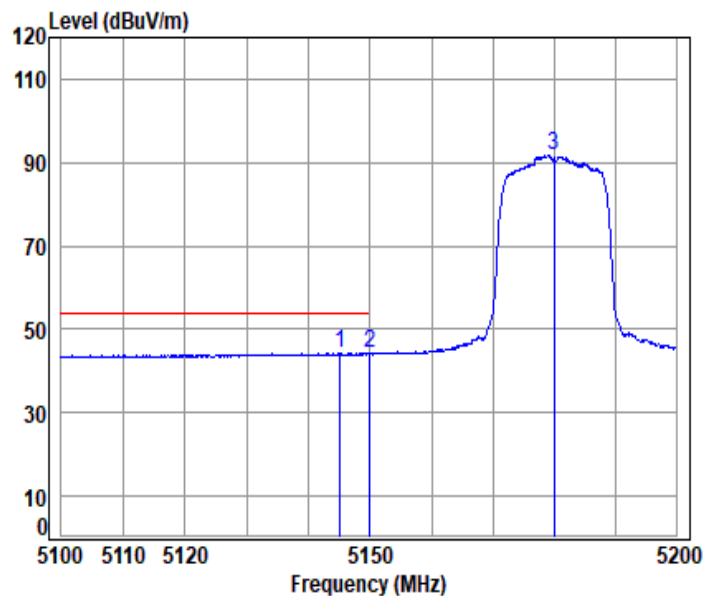
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11a_TX_CH_36_Horizontal-Avg



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5180 Band edge

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5145.060	10.12	32.39	30.84	32.57	44.24	54.00 -9.76 Average
2	pp 5149.980	10.14	32.40	30.84	32.71	44.41	54.00 -9.59 Average
3	5180.000	10.25	32.46	30.83	79.81	91.69	----- Average



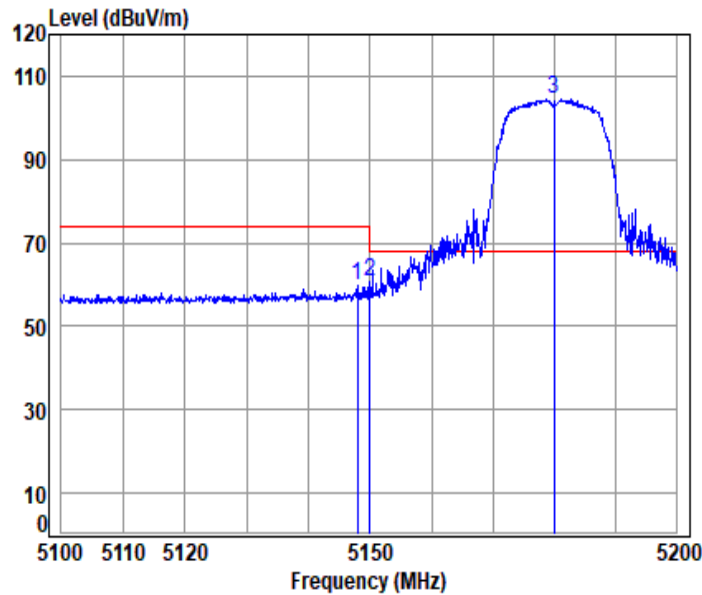
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11a_TX_CH_36_Verical-Peak



Condition: 3m VERTICAL

Job No : 04945WM

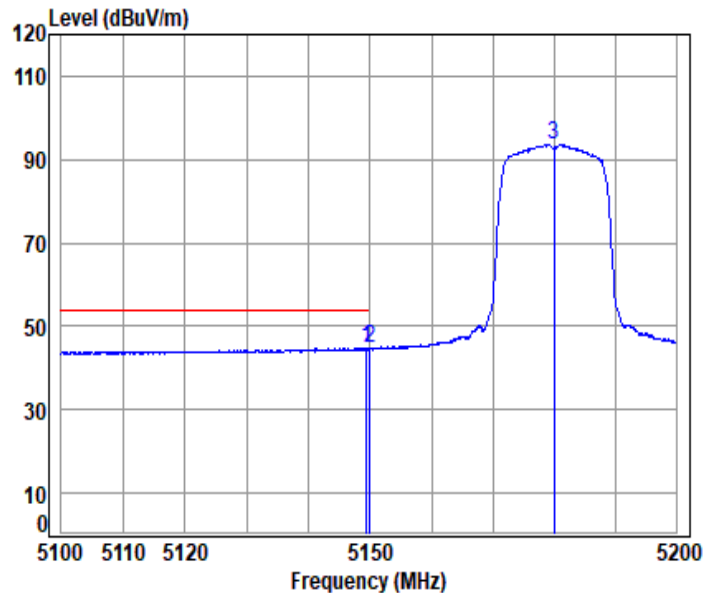
Mode : 5180 Band edge

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5147.958	10.13	32.40	30.84	48.11	59.80	74.00 -14.20 Peak
2	5149.980	10.14	32.40	30.84	49.03	60.73	74.00 -13.27 Peak
3 pp	5180.000	10.25	32.46	30.83	92.47	104.35	68.20 36.15 Peak



11a_TX_CH_36_Verical-Avg



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5180 Band edge

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5149.458	10.14	32.40	30.84	33.02	44.72	54.00 -9.28 Average
2	pp 5149.980	10.14	32.40	30.84	33.10	44.80	54.00 -9.20 Average
3	5180.000	10.25	32.46	30.83	81.85	93.73	----- Average



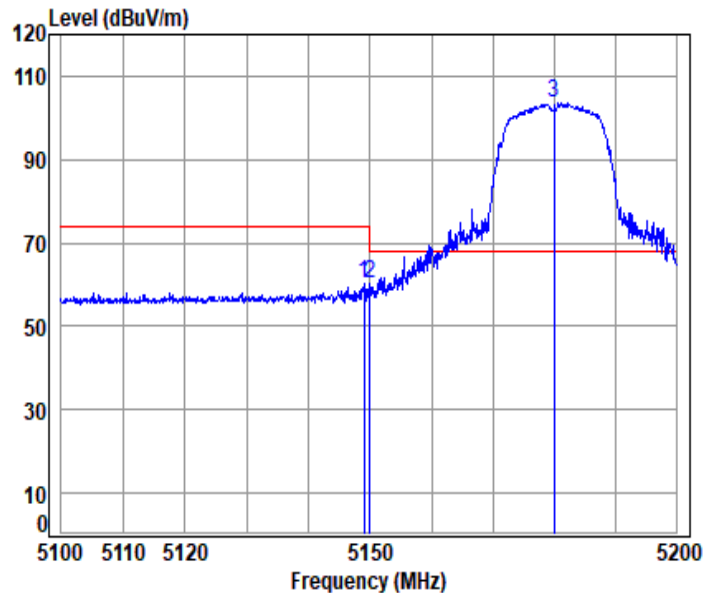
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11n_HT(20M)_TX_CH_36_Horizontal-Peak



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5180 Band edge

: 5G Wi-Fi 11n20

	Cable	Ant	Preampl	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5148.958	10.14	32.40	30.84	48.42	60.12	74.00 -13.88 peak
2	5149.980	10.14	32.40	30.84	48.67	60.37	74.00 -13.63 peak
3 pp	5180.000	10.25	32.46	30.83	91.60	103.48	68.20 35.28 peak



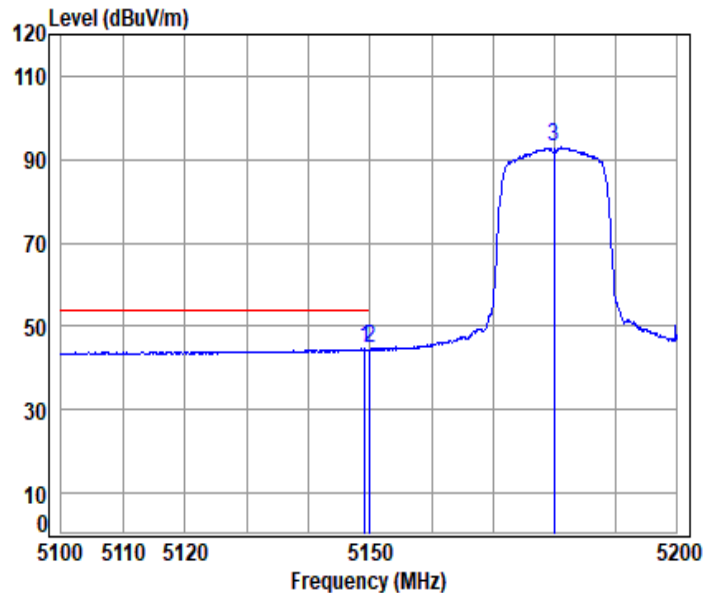
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11n_HT(20M)_TX_CH_36_Horizontal-Avg



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5180 Band edge

: 5G Wi-Fi 11n20

	Cable	Ant	Preamp	Read	Limit	Over		
	Freq	Loss	Factor	Level	Line	Limit	Remark	
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	
1 pp	5149.157	10.14	32.40	30.84	32.91	44.61	54.00	-9.39 Average
2	5149.980	10.14	32.40	30.84	32.84	44.54	54.00	-9.46 Average
3	5180.000	10.25	32.46	30.83	81.08	92.96	-----	----- Average



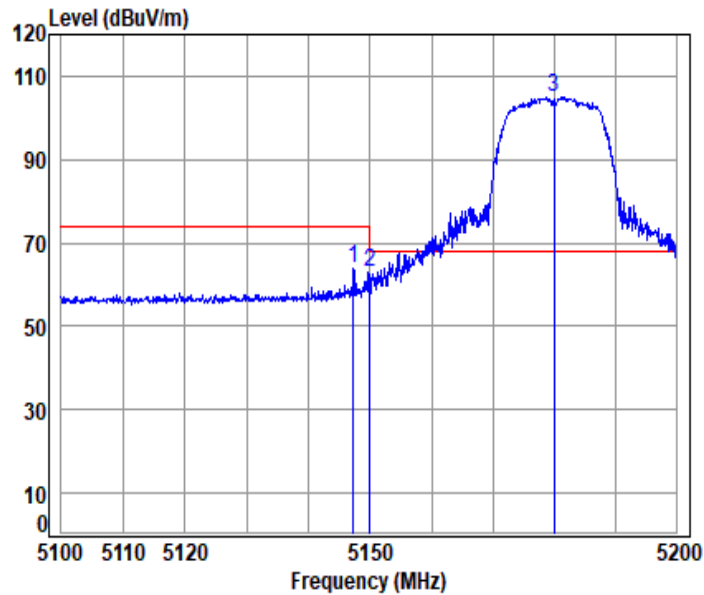
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11n_HT(20M)_TX_CH_36_Verical-Peak



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5180 Band edge

: 5G Wi-Fi 11n20

	Cable	Ant	Preamp	Read	Limit	Over		
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5147.258	10.13	32.39	30.84	52.01	63.69	74.00	-10.31 Peak
2	5149.980	10.14	32.40	30.84	51.19	62.89	74.00	-11.11 Peak
3 pp	5180.000	10.25	32.46	30.83	93.09	104.97	68.20	36.77 Peak



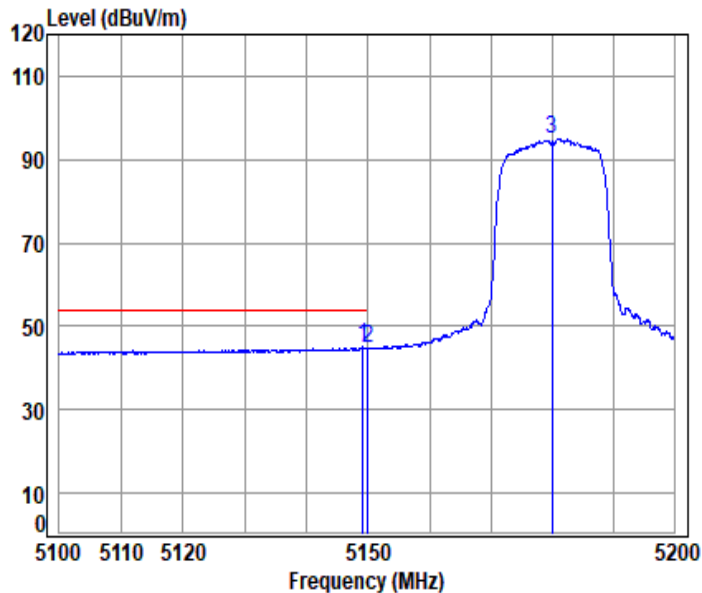
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11n_HT(20M)_TX_CH_36_Verical-Avg



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5180 Band edge

: 5G Wi-Fi 11n20

		Cable	Ant	Preamp	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5149.157	10.14	32.40	30.84	33.35	45.05	54.00	-8.95 Average
2	5149.980	10.14	32.40	30.84	33.17	44.87	54.00	-9.13 Average
3	5180.000	10.25	32.46	30.83	82.92	94.80	-----	----- Average



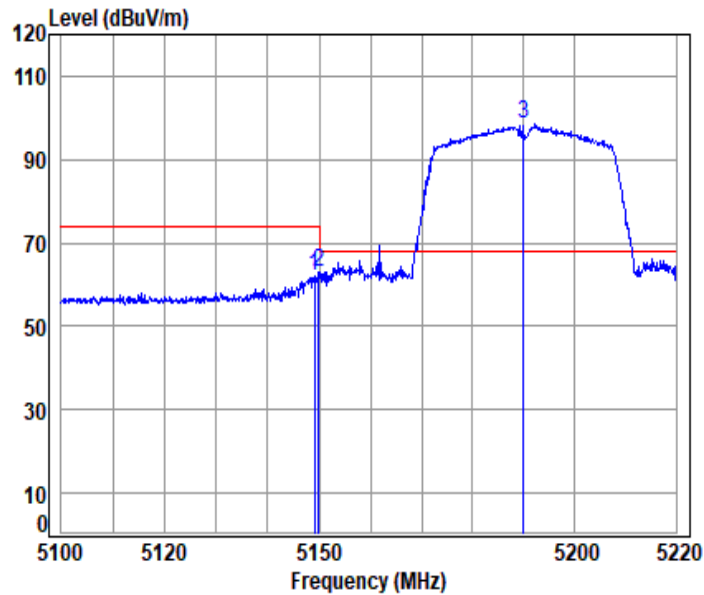
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11n_HT(40M)_TX_CH_38_Horizontal-Peak



Condition: 3m HORIZONTAL

Job No : 04945WM

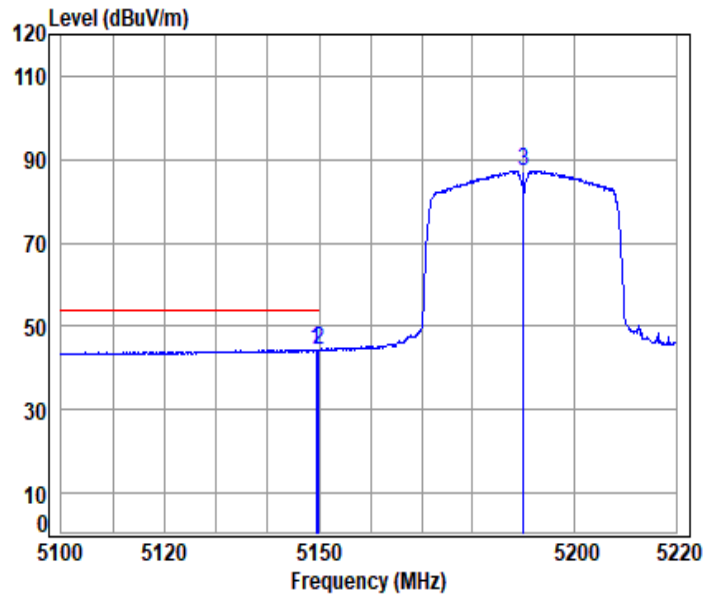
Mode : 5190 Band edge

: 5G Wi-Fi 11n40

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5149.102	10.14	32.40	30.84	50.14	61.84	74.00 -12.16 peak
2	5149.980	10.14	32.40	30.84	51.36	63.06	74.00 -10.94 peak
3 pp	5190.000	10.29	32.48	30.82	86.41	98.36	68.20 30.16 peak



11n_HT(40M)_TX_CH_38_Horizontal-Avg



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5190 Band edge

: 5G Wi-Fi 11n40

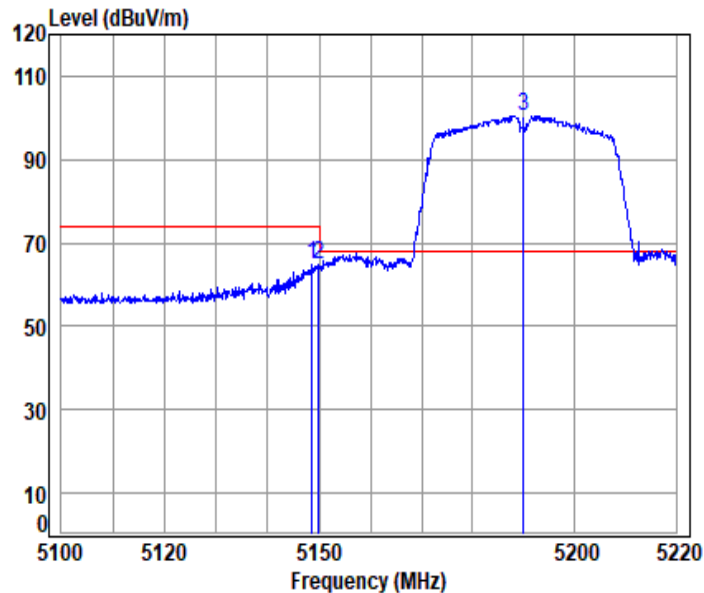
	Cable	Ant	Preamp	Read	Limit	Over		
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5149.461	10.14	32.40	30.84	32.68	44.38	54.00	-9.62 Average
2 pp	5149.980	10.14	32.40	30.84	32.73	44.43	54.00	-9.57 Average
3	5190.000	10.29	32.48	30.82	75.38	87.33	-----	----- Average



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11n_HT(40M)_TX_CH_38_Verical-Peak



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5190 Band edge

: 5G Wi-Fi 11n40

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5148.623	10.13	32.40	30.84	53.01	64.70	74.00 -9.30 Peak
2	5149.980	10.14	32.40	30.84	52.96	64.66	74.00 -9.34 Peak
3 pp	5190.000	10.29	32.48	30.82	88.59	100.54	68.20 32.34 Peak



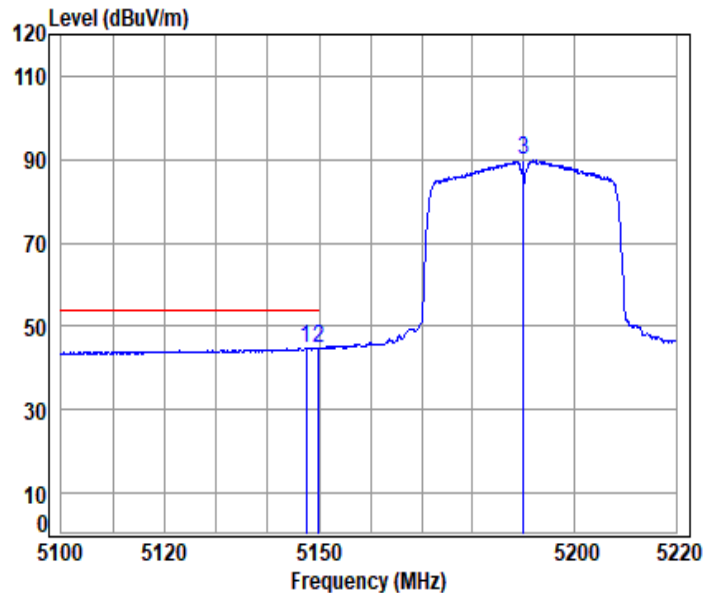
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11n_HT(40M)_TX_CH_38_Vertical-Avg



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5190 Band edge

: 5G Wi-Fi 11n40

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5147.426	10.13	32.39	30.84	33.05	44.73	54.00 -9.27 Average
2	pp 5149.980	10.14	32.40	30.84	33.13	44.83	54.00 -9.17 Average
3	5190.000	10.29	32.48	30.82	78.02	89.97	----- Average



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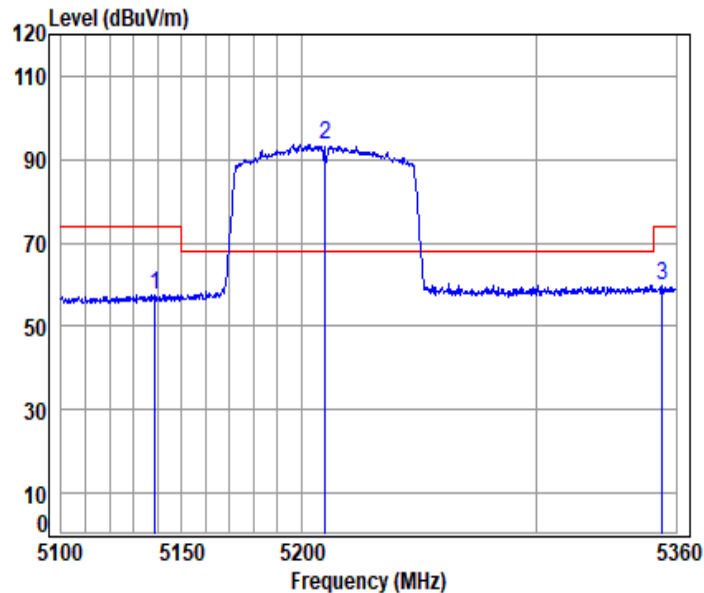
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SZEMC-TRF-01 Rev. A/1

Report No.: SZCR250100029108

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11ac_VHT(80M)_TX_CH_42_Horizontal-Peak



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5210 Band edge

: 5G Wi-Fi 11ac80

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5138.691	10.10	32.38	30.84	45.97	57.61	74.00 -16.39 peak
2	pp 5210.000	10.32	32.52	30.82	81.72	93.74	68.20 25.54 peak
3	5354.140	10.46	32.80	30.76	47.10	59.60	74.00 -14.40 peak



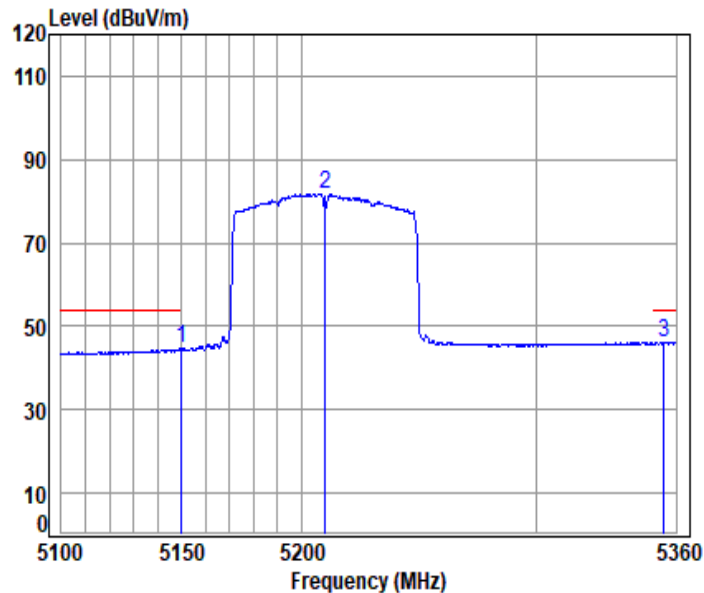
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11ac_VHT(80M)_TX_CH_42_Horizontal-Avg



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5210 Band edge

: 5G Wi-Fi 11ac80

	Cable	Ant	Preampl	Read	Limit	Over		
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5149.947	10.14	32.40	30.84	32.92	44.62	54.00	-9.38 Average
2	5210.000	10.32	32.52	30.82	69.77	81.79	-----	----- Average
3	5354.938	10.47	32.80	30.76	33.58	46.09	54.00	-7.91 Average



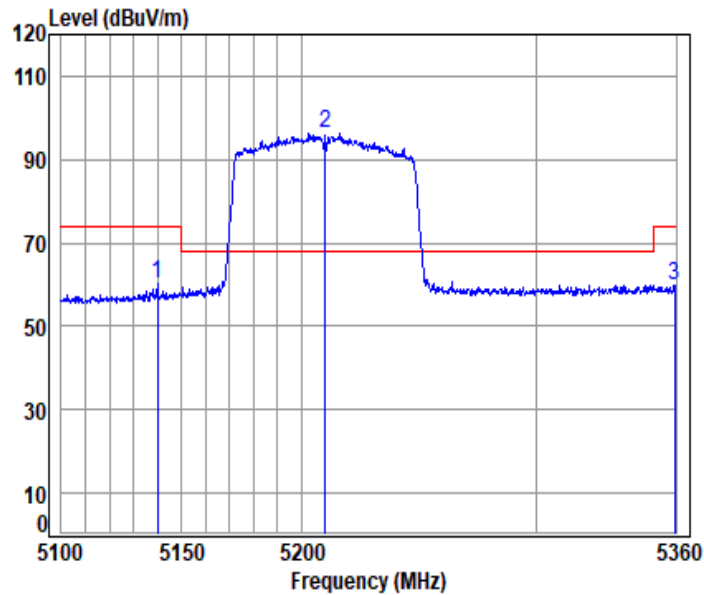
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11ac_VHT(80M)_TX_CH_42_Vertical-Peak



Condition: 3m VERTICAL

Job No : 04945WM

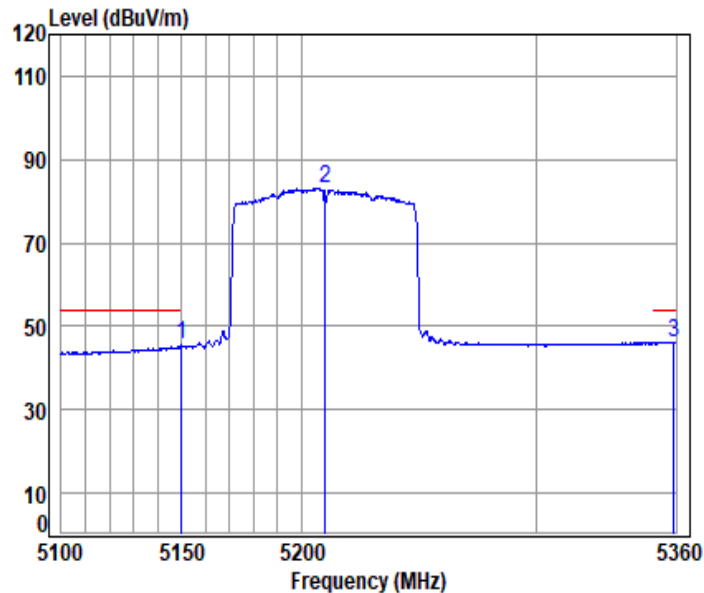
Mode : 5210 Band edge

: 5G Wi-Fi 11ac80

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5139.969	10.10	32.38	30.84	48.70	60.34	74.00 -13.66 Peak
2	pp 5210.000	10.32	32.52	30.82	84.47	96.49	68.20 28.29 Peak
3	5359.467	10.48	32.80	30.76	47.22	59.74	74.00 -14.26 Peak



11ac_VHT(80M)_TX_CH_42_Vertical-Avg



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5210 Band edge

: 5G Wi-Fi 11ac80

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 5149.690	10.14	32.40	30.84	33.75	45.45	54.00	-8.55 Average
2 5210.000	10.32	32.52	30.82	71.18	83.20	-----	----- Average
3 pp 5359.201	10.48	32.80	30.76	33.60	46.12	54.00	-7.88 Average



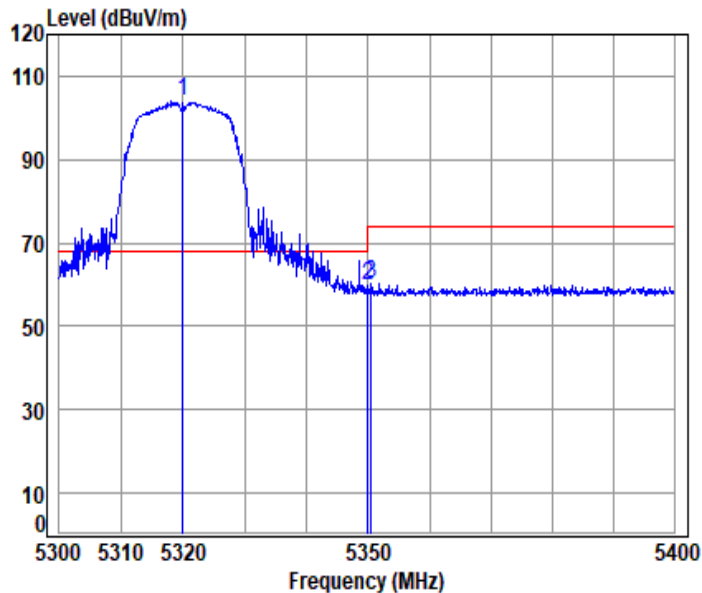
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11a_TX_CH_64_Horizontal-Peak



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5320 Band edge

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp 5320.000	10.35	32.74	30.77	91.61	103.93	68.20	35.73 peak
2 5350.020	10.45	32.80	30.76	47.13	59.62	74.00	-14.38 peak
3 5350.566	10.45	32.80	30.76	47.94	60.43	74.00	-13.57 peak



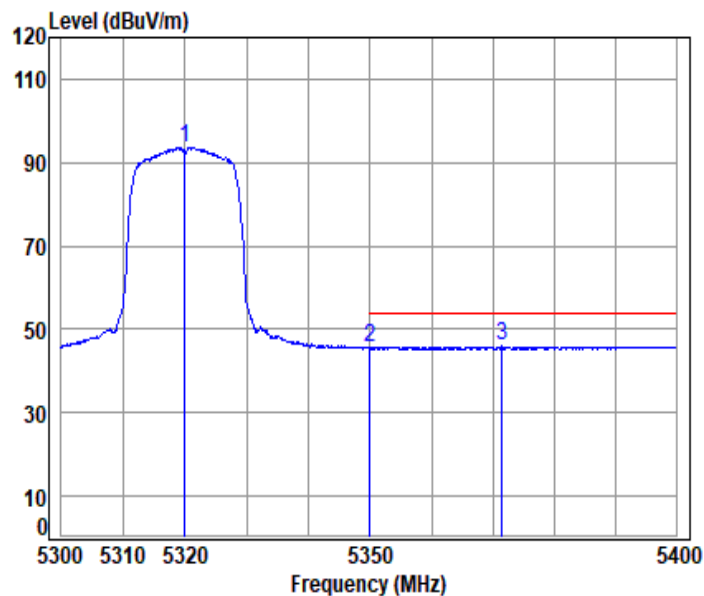
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11a_TX_CH_64_Horizontal-Avg



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5320 Band edge

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5320.000	10.35	32.74	30.77	81.42	93.74	----- Average
2	5350.020	10.45	32.80	30.76	33.13	45.62	54.00 -8.38 Average
3 pp	5371.510	10.52	32.80	30.75	33.31	45.88	54.00 -8.12 Average



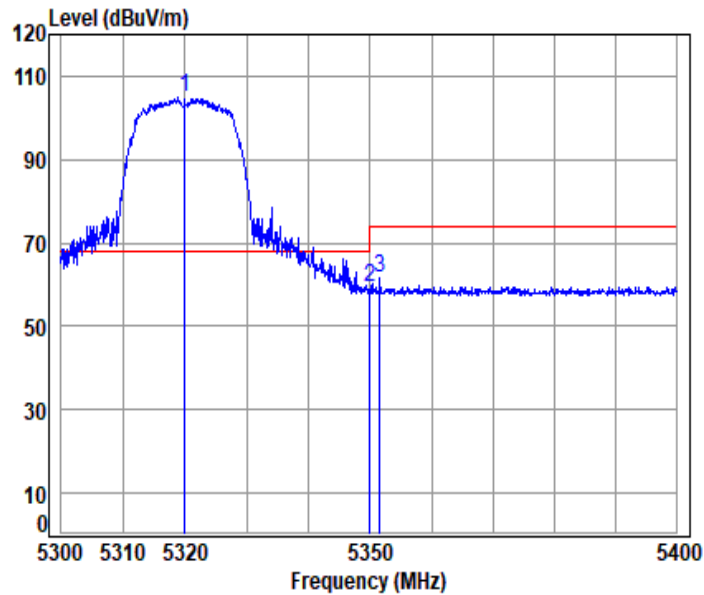
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11a_TX_CH_64_Verical-Peak



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5320 Band edge

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp 5320.000	10.35	32.74	30.77	92.48	104.80	68.20	36.60 Peak
2 5350.020	10.45	32.80	30.76	47.03	59.52	74.00	-14.48 Peak
3 5351.566	10.46	32.80	30.76	48.97	61.47	74.00	-12.53 Peak



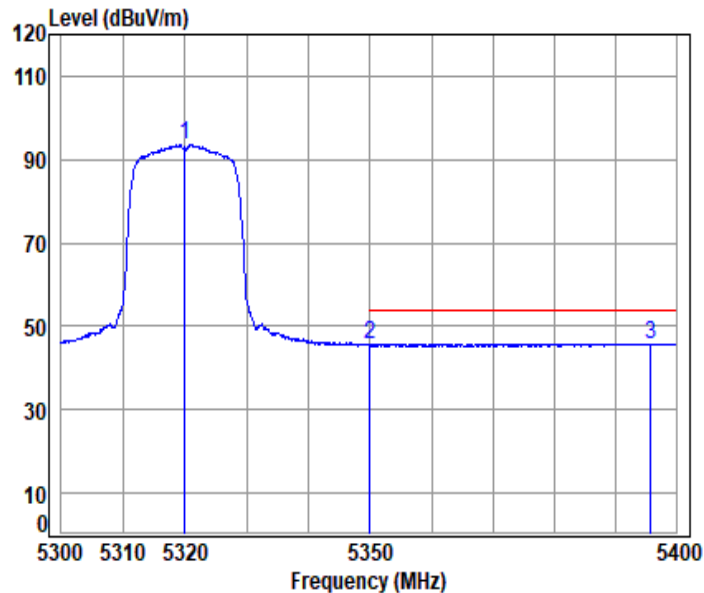
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11a_TX_CH_64_Verical-Avg



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5320 Band edge

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 5320.000	10.35	32.74	30.77	81.17	93.49	-----	----- Average
2 5350.020	10.45	32.80	30.76	33.11	45.60	54.00	-8.40 Average
3 pp 5395.863	10.61	32.80	30.74	33.11	45.78	54.00	-8.22 Average



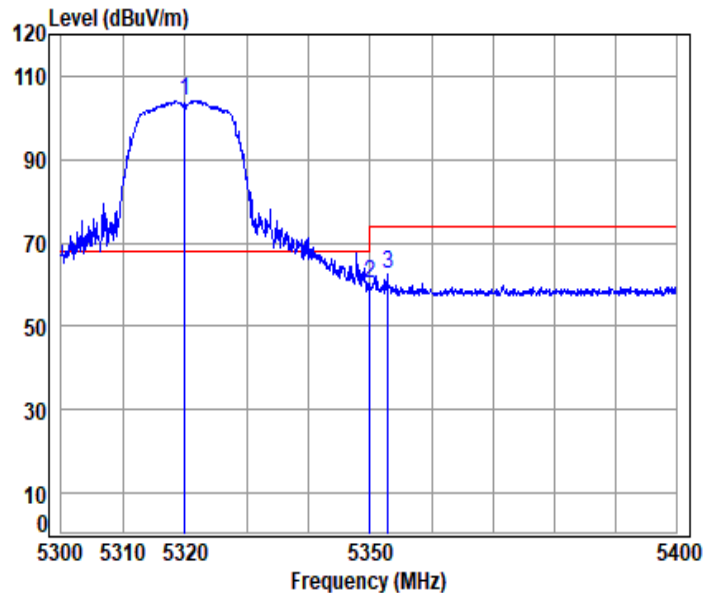
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11n_HT(20M)_TX_CH_64_Horizontal-Peak



Condition: 3m HORIZONTAL

Job No : 04945WM

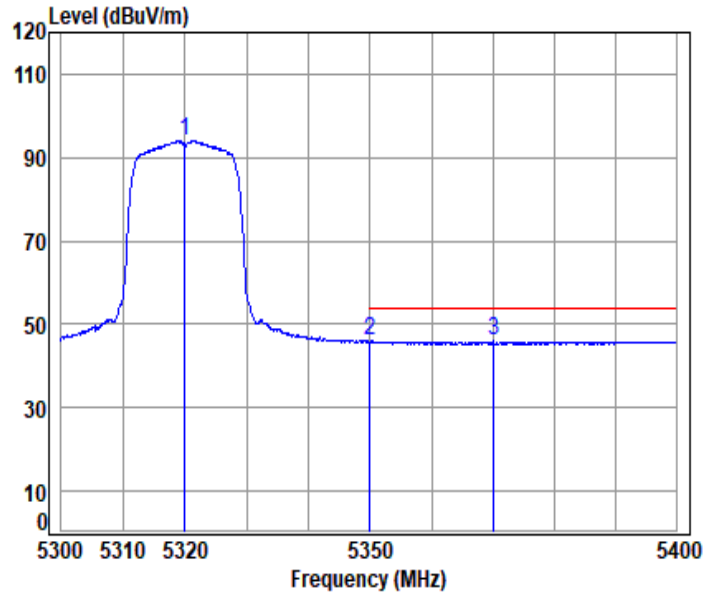
Mode : 5320 Band edge

: 5G Wi-Fi 11n20

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp 5320.000	10.35	32.74	30.77	91.72	104.04	68.20	35.84 peak
2 5350.020	10.45	32.80	30.76	47.93	60.42	74.00	-13.58 peak
3 5352.867	10.46	32.80	30.76	49.96	62.46	74.00	-11.54 peak



11n_HT(20M)_TX_CH_64_Horizontal-Avg



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5320 Band edge

: 5G Wi-Fi 11n20

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5320.000	10.35	32.74	30.77	81.84	94.16	----- Average
2	5350.020	10.45	32.80	30.76	33.39	45.88	54.00 -8.12 Average
3	pp 5370.205	10.52	32.80	30.75	33.33	45.90	54.00 -8.10 Average



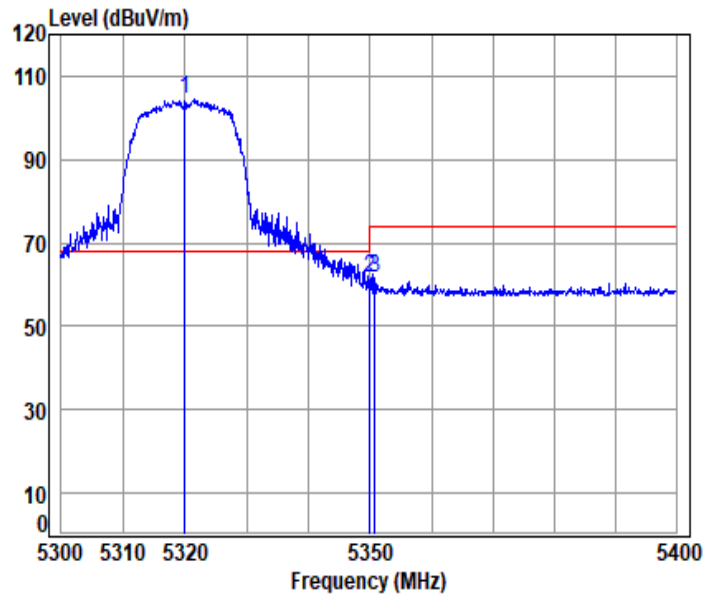
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11n_HT(20M)_TX_CH_64_Verical-Peak



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5320 Band edge

: 5G Wi-Fi 11n20

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp 5320.000	10.35	32.74	30.77	92.11	104.43	68.20	36.23 Peak
2 5350.020	10.45	32.80	30.76	48.95	61.44	74.00	-12.56 Peak
3 5350.767	10.45	32.80	30.76	49.06	61.55	74.00	-12.45 Peak



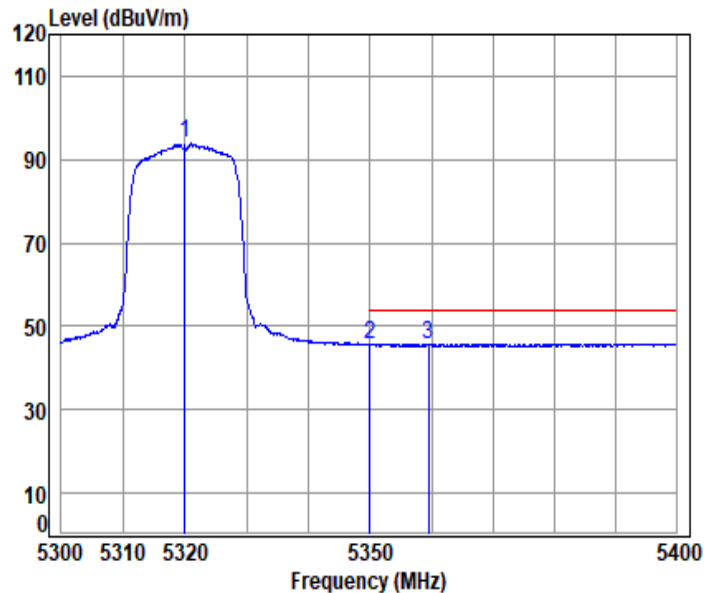
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11n_HT(20M)_TX_CH_64_Verical-Avg



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5320 Band edge

: 5G Wi-Fi 11n20

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 5320.000	10.35	32.74	30.77	81.50	93.82	-----	----- Average
2 5350.020	10.45	32.80	30.76	33.24	45.73	54.00	-8.27 Average
3 pp 5359.475	10.48	32.80	30.76	33.28	45.80	54.00	-8.20 Average



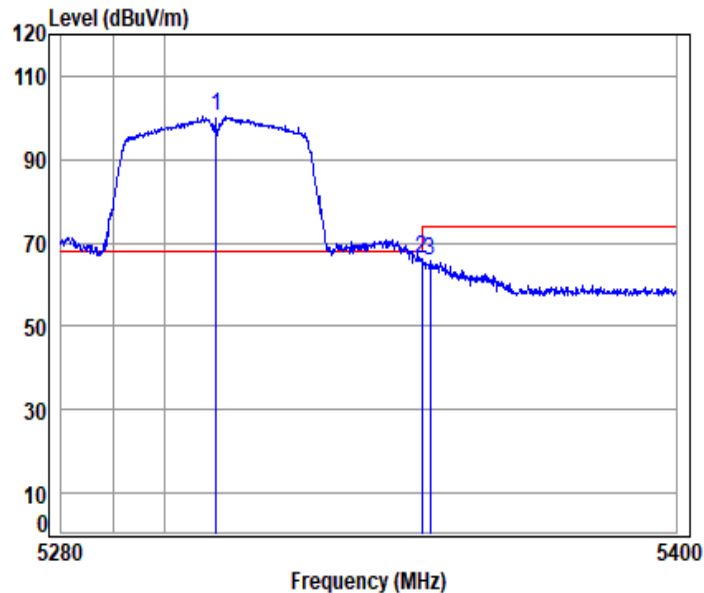
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11n_HT(40M)_TX_CH_62_Horizontal-Peak



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5310 Band edge

: 5G Wi-Fi 11n40

		Cable	Ant	Preamp	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5310.000	10.31	32.72	30.78	88.29	100.54	68.20	32.34 peak
2	5350.020	10.45	32.80	30.76	53.78	66.27	74.00	-7.73 peak
3	5351.676	10.46	32.80	30.76	53.32	65.82	74.00	-8.18 peak



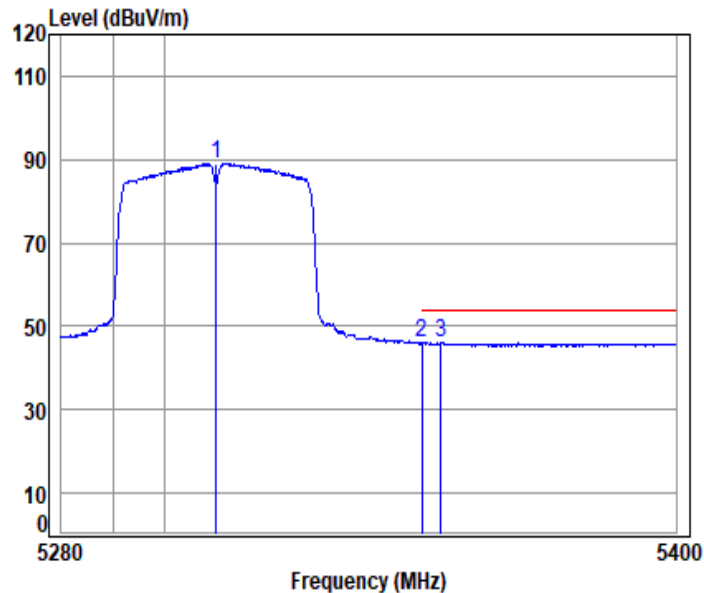
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11n_HT(40M)_TX_CH_62_Horizontal-Avg



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5310 Band edge

: 5G Wi-Fi 11n40

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5310.000	10.31	32.72	30.78	76.85	89.10	----- Average
2	pp 5350.020	10.45	32.80	30.76	33.59	46.08	54.00 -7.92 Average
3	5353.841	10.46	32.80	30.76	33.54	46.04	54.00 -7.96 Average



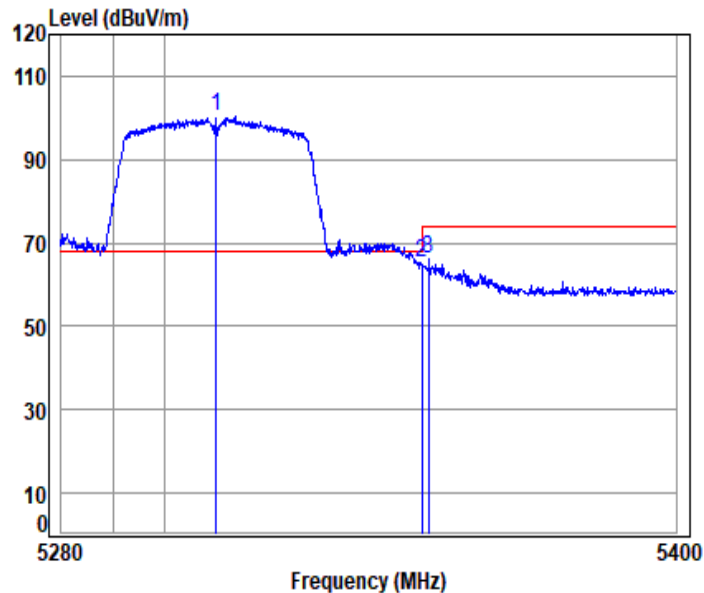
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11n_HT(40M)_TX_CH_62_Vertical-Peak



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5310 Band edge

: 5G Wi-Fi 11n40

		Cable	Ant	Preampl	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	pp 5310.000	10.31	32.72	30.78	87.94	100.19	68.20	31.99 Peak
2	5350.020	10.45	32.80	30.76	52.90	65.39	74.00	-8.61 Peak
3	5351.436	10.45	32.80	30.76	53.86	66.35	74.00	-7.65 Peak



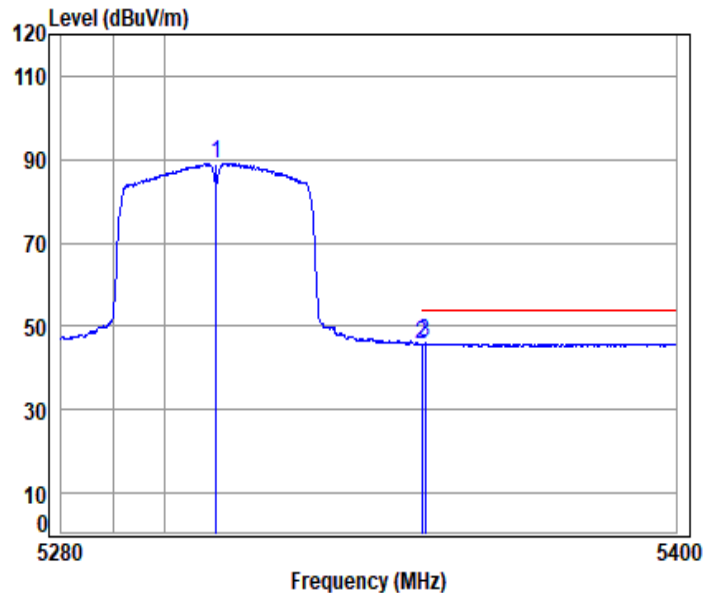
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11n_HT(40M)_TX_CH_62_Vertical-Avg



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5310 Band edge

: 5G Wi-Fi 11n40

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5310.000	10.31	32.72	30.78	76.95	89.20	----- Average
2	5350.020	10.45	32.80	30.76	33.32	45.81	54.00 -8.19 Average
3 pp	5350.714	10.45	32.80	30.76	33.48	45.97	54.00 -8.03 Average



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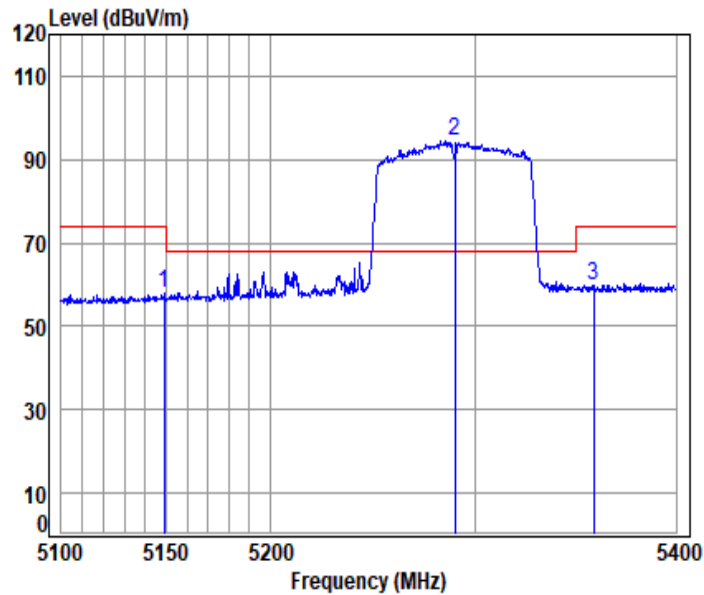
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11ac_VHT(80M)_TX_CH_58_Horizontal-Peak



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5290 Band edge

: 5G Wi-Fi 11ac80

	Cable	Ant	Preampl	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5149.209	10.14	32.40	30.84	46.46	58.16	74.00 -15.84 peak
2	pp 5290.000	10.28	32.68	30.78	82.48	94.66	68.20 26.46 peak
3	5358.798	10.48	32.80	30.76	47.34	59.86	74.00 -14.14 peak



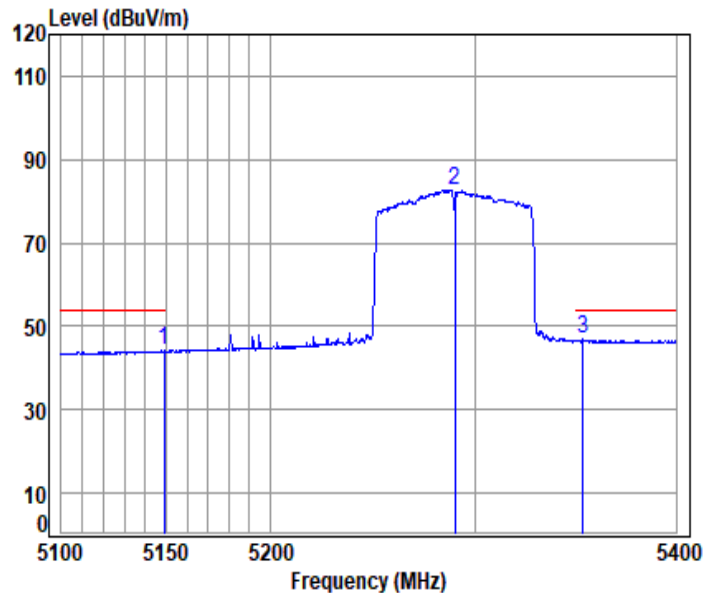
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11ac_VHT(80M)_TX_CH_58_Horizontal-Avg



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5290 Band edge

: 5G Wi-Fi 11ac80

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 5149.209	10.14	32.40	30.84	32.40	44.10	54.00	-9.90 Average
2 5290.000	10.28	32.68	30.78	70.62	82.80	-----	----- Average
3 pp 5353.594	10.46	32.80	30.76	34.28	46.78	54.00	-7.22 Average



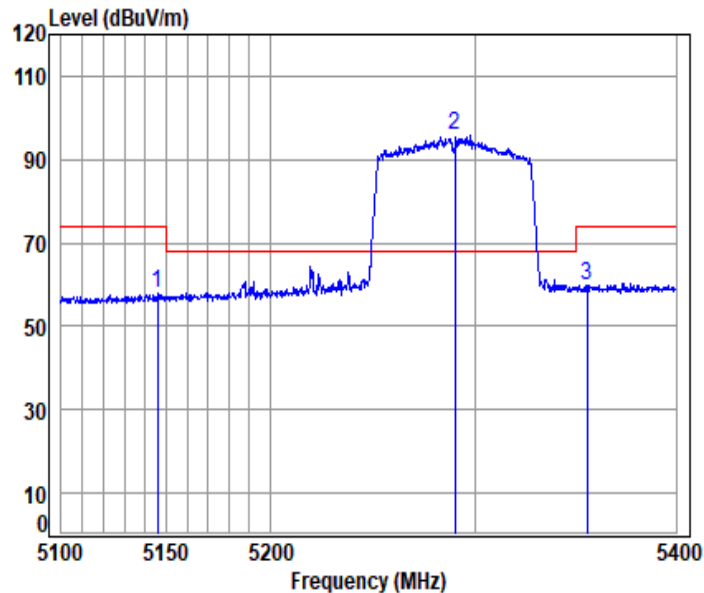
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11ac_VHT(80M)_TX_CH_58_Verical-Peak



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5290 Band edge

: 5G Wi-Fi 11ac80

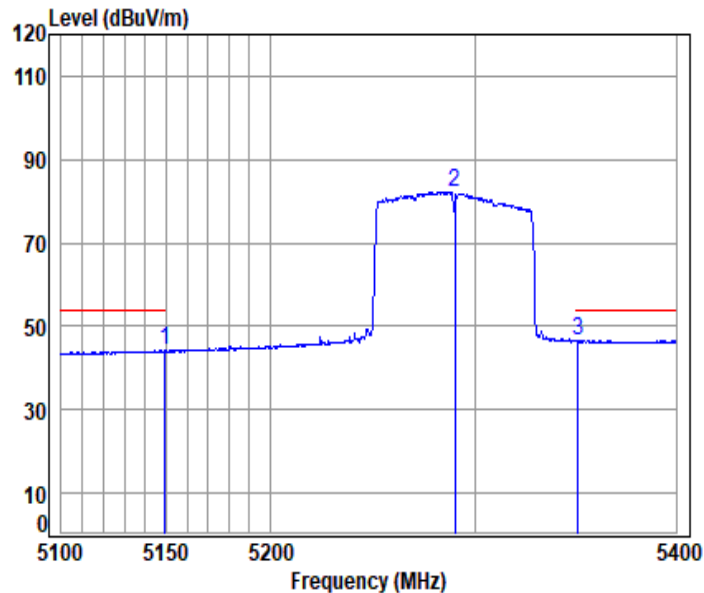
	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5145.973	10.12	32.39	30.84	46.16	57.83	74.00 -16.17 Peak
2 pp	5290.000	10.28	32.68	30.78	83.43	95.61	68.20 27.41 Peak
3	5355.736	10.47	32.80	30.76	47.09	59.60	74.00 -14.40 Peak



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11ac_VHT(80M)_TX_CH_58_Vertical-Avg



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5290 Band edge

: 5G Wi-Fi 11ac80

	Cable	Ant	Preamp	Read	Limit	Over		
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5149.503	10.14	32.40	30.84	32.44	44.14	54.00	-9.86 Average
2	5290.000	10.28	32.68	30.78	70.05	82.23	-----	----- Average
3 pp	5350.840	10.45	32.80	30.76	34.07	46.56	54.00	-7.44 Average



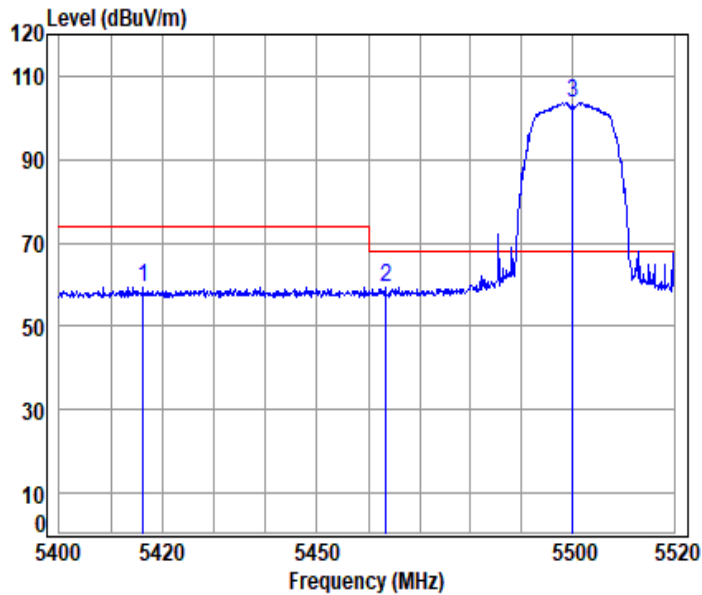
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11a_TX_CH_100_Horizontal-Peak



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5500 Band edge

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5416.166	10.61	32.83	30.73	46.74	59.45	74.00 -14.55 peak
2	5463.392	10.59	32.90	30.71	46.72	59.50	68.20 -8.70 peak
3	5500.000	10.58	32.90	30.70	91.02	103.80	68.20 35.60 peak



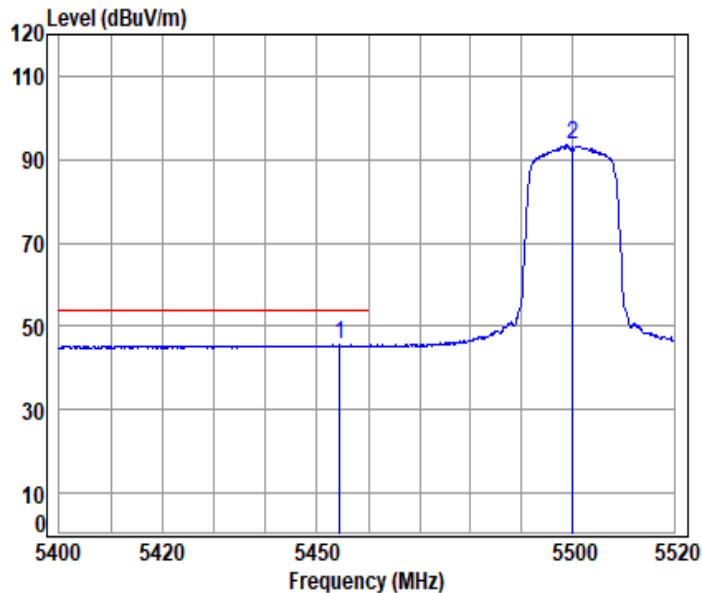
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11a_TX_CH_100_Horizontal-Avg



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5500 Band edge

: 5G Wi-Fi 11a

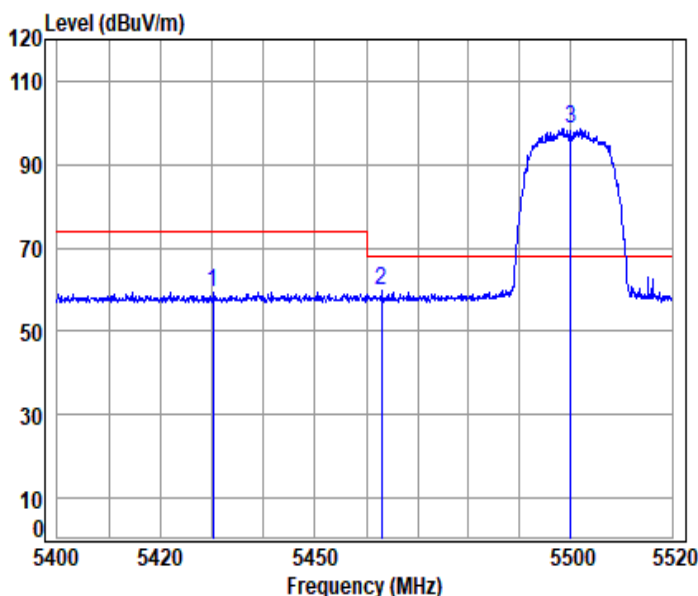
	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp 5454.393	10.60	32.90	30.72	32.70	45.48	54.00	-8.52 Average
2 5500.000	10.58	32.90	30.70	80.61	93.39	-----	----- Average



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11a_TX_CH_100_Vertical-Peak



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5500 Band edge

: 5G Wi-Fi 11a

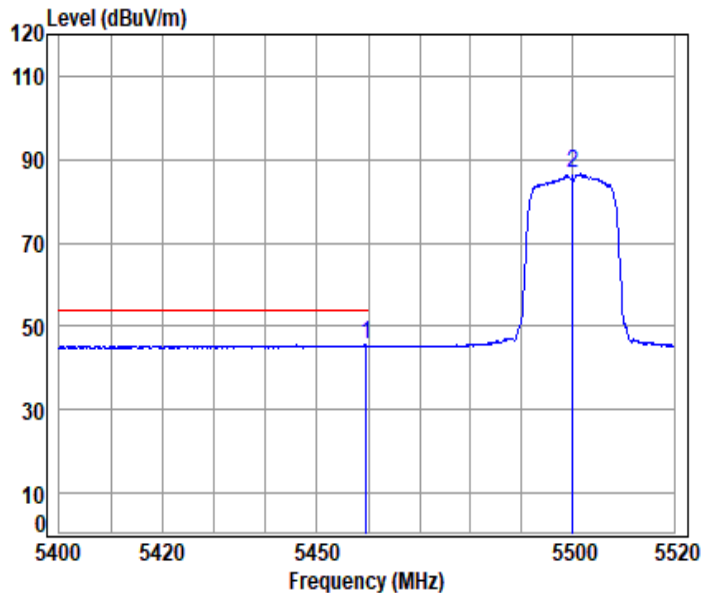
	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 5430.230	10.61	32.86	30.73	46.70	59.44	74.00	-14.56 Peak
2 5462.911	10.59	32.90	30.71	46.85	59.63	68.20	-8.57 peak
3 pp 5500.000	10.58	32.90	30.70	85.88	98.66	68.20	30.46 Peak



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11a_TX_CH_100_Vertical-Avg



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5500 Band edge

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp 5459.670	10.60	32.90	30.72	32.65	45.43	54.00	-8.57 Average
2 5500.000	10.58	32.90	30.70	73.71	86.49	-----	----- Average



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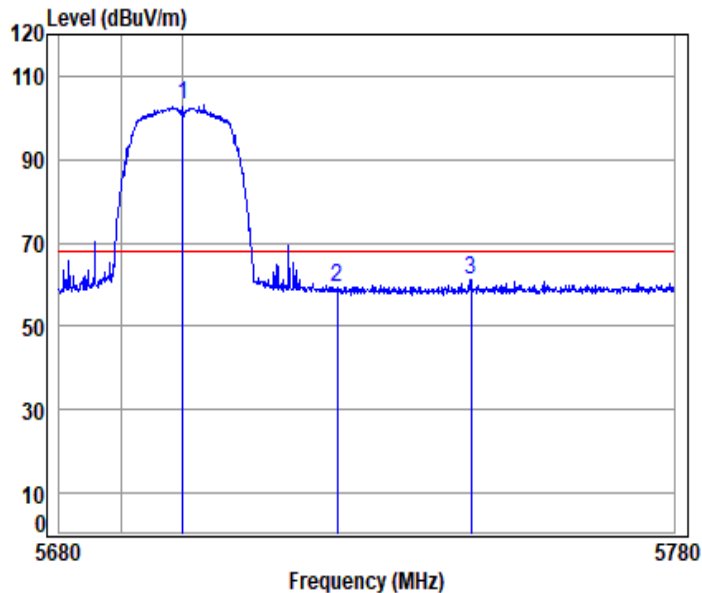
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SZEMC-TRF-01 Rev. A/1

Report No.: SZCR250100029108

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11a_TX_CH_140_Horizontal-Peak



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5700 Band edge

: 5G Wi-Fi 11a

	Cable	Ant	Preampl	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp 5700.000	10.56	33.20	30.62	89.83	102.97	68.20	34.77	peak
2 5725.000	10.68	33.25	30.61	46.12	59.44	68.20	-8.76	peak
3 5746.807	10.78	33.29	30.60	47.84	61.31	68.20	-6.89	peak



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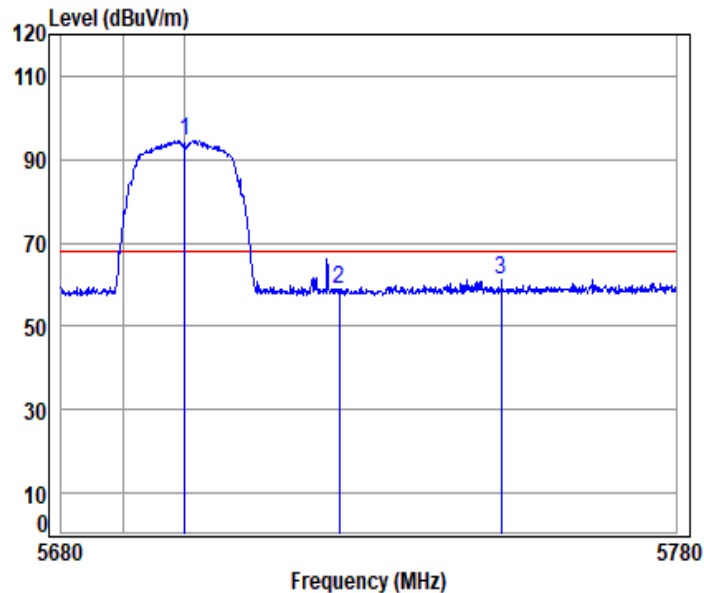
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SZEMC-TRF-01 Rev. A/1

Report No.: SZCR250100029108

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11a_TX_CH_140_Verical-Peak



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5700 Band edge

: 5G Wi-Fi 11a

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp 5700.000	10.56	33.20	30.62	81.53	94.67	68.20	26.47 Peak
2 5725.000	10.68	33.25	30.61	45.63	58.95	68.20	-9.25 peak
3 5751.422	10.80	33.30	30.60	47.79	61.29	68.20	-6.91 peak



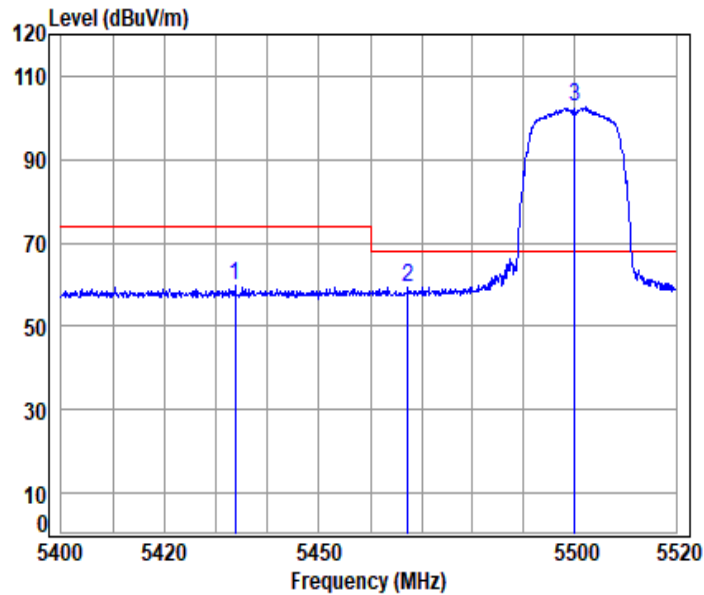
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11n_HT(20M)_TX_CH_100_Horizontal-Peak



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5500 Band edge

: 5G Wi-Fi 11n20

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5433.693	10.61	32.87	30.73	47.05	59.80	74.00 -14.20 peak
2	5467.355	10.59	32.90	30.71	46.49	59.27	68.20 -8.93 peak
3 pp	5500.000	10.58	32.90	30.70	89.83	102.61	68.20 34.41 peak



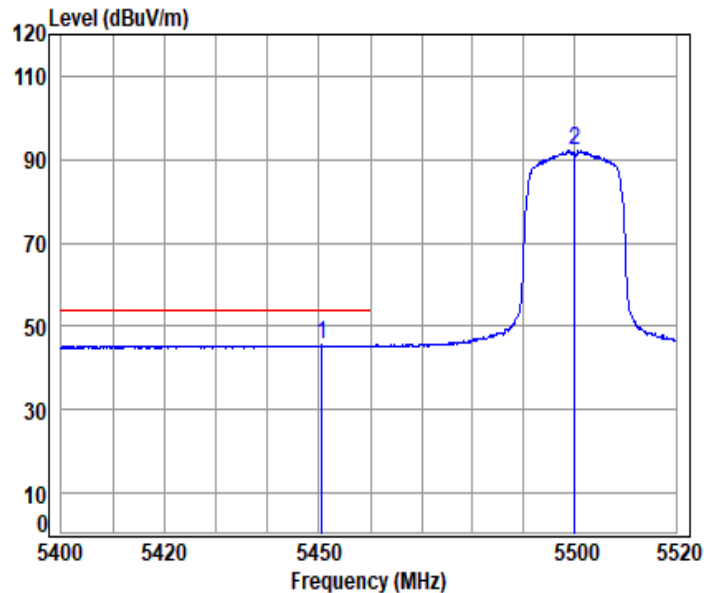
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11n_HT(20M)_TX_CH_100_Horizontal-Avg



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5500 Band edge

: 5G Wi-Fi 11n20

		Cable	Ant	Preamp	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5450.558	10.60	32.90	30.72	32.67	45.45	54.00	-8.55 Average
2	5500.000	10.58	32.90	30.70	79.30	92.08	-----	----- Average



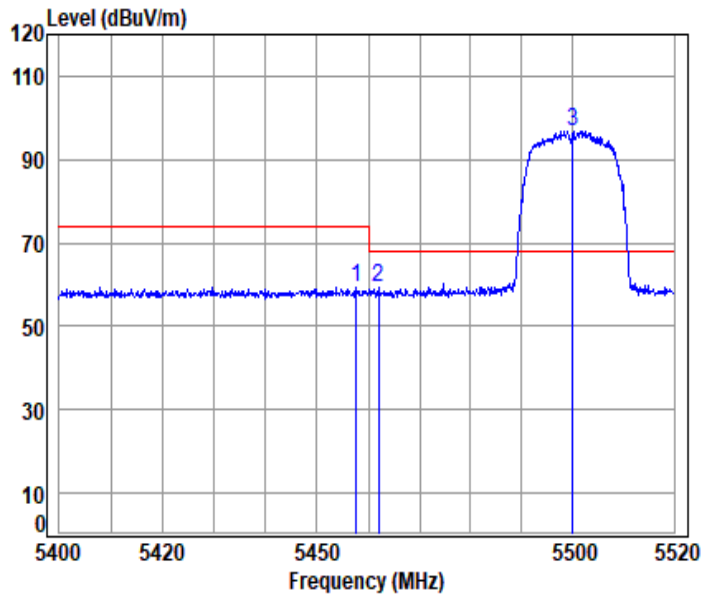
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11n_HT(20M)_TX_CH_100_Verical-Peak



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5500 Band edge

: 5G Wi-Fi 11n20

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5457.631	10.60	32.90	30.72	46.57	59.35	74.00 -14.65 Peak
2	5461.951	10.60	32.90	30.72	46.66	59.44	68.20 -8.76 peak
3 pp	5500.000	10.58	32.90	30.70	84.01	96.79	68.20 28.59 Peak



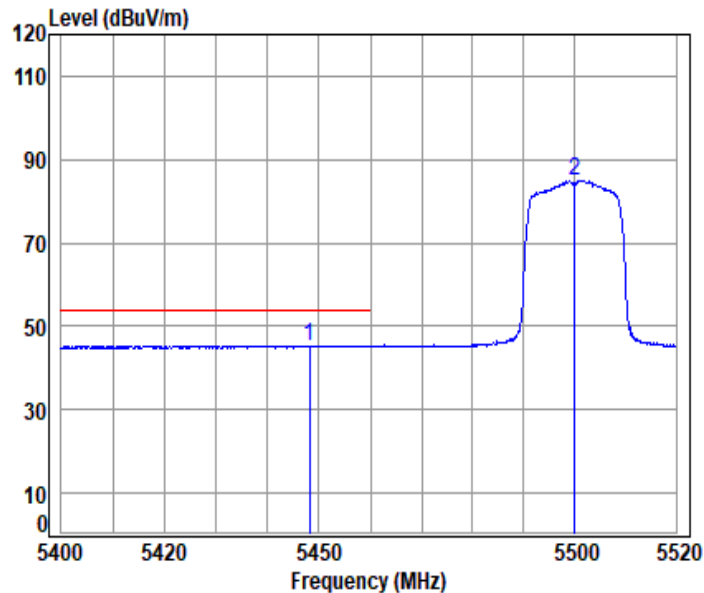
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11n_HT(20M)_TX_CH_100_Verical-Avg



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5500 Band edge

: 5G Wi-Fi 11n20

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp 5448.163	10.60	32.90	30.72	32.60	45.38	54.00	-8.62 Average
2 5500.000	10.58	32.90	30.70	72.26	85.04	-----	----- Average



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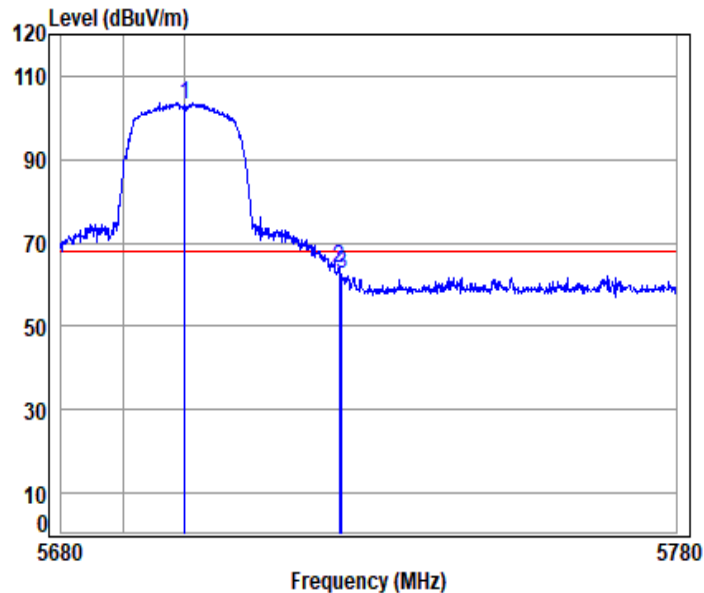
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SZEMC-TRF-01 Rev. A/1

Report No.: SZCR250100029108

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11n_HT(20M)_TX_CH_140_Horizontal-Peak



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5700 Band edge

: 5G Wi-Fi 11n20

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp 5700.000	10.56	33.20	30.62	89.80	102.94	68.20	34.74 Peak
2 5725.000	10.68	33.25	30.61	50.46	63.78	68.20	-4.42 peak
3 5725.483	10.68	33.25	30.61	49.18	62.50	68.20	-5.70 peak



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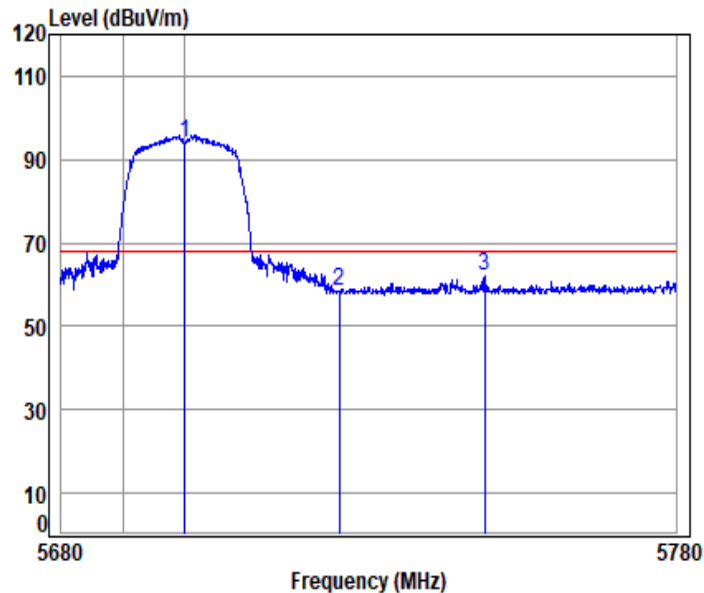
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SZEMC-TRF-01 Rev. A/1

Report No.: SZCR250100029108

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11n_HT(20M)_TX_CH_140_Verical-Peak



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5700 Band edge

: 5G Wi-Fi 11n20

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp 5700.000	10.56	33.20	30.62	80.70	93.84	68.20	25.64 Peak
2 5725.000	10.68	33.25	30.61	45.09	58.41	68.20	-9.79 peak
3 5748.713	10.78	33.30	30.60	48.43	61.91	68.20	-6.29 peak



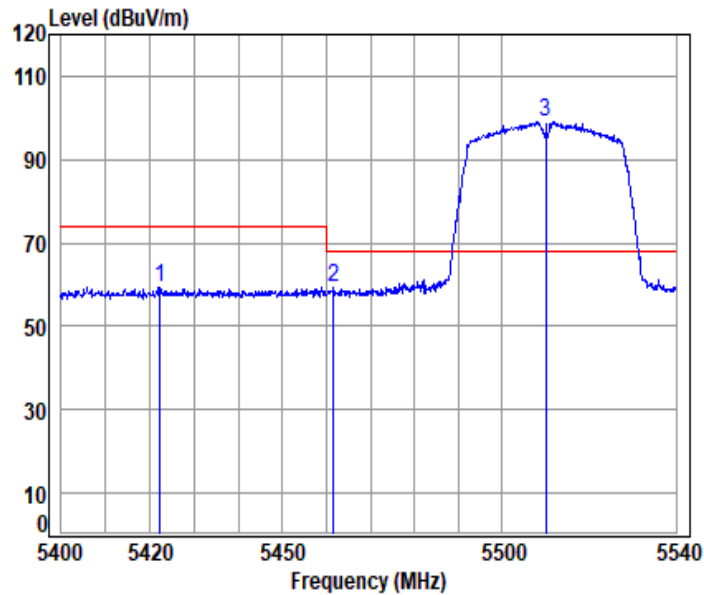
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11n_HT(40M)_TX_CH_102_Horizontal-Peak



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5510 Band edge

: 5G Wi-Fi 11n40

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5422.299	10.61	32.84	30.73	46.81	59.53	74.00 -14.47 peak
2	5461.578	10.60	32.90	30.72	46.32	59.10	68.20 -9.10 peak
3 pp	5510.000	10.56	32.90	30.70	86.16	98.92	68.20 30.72 peak



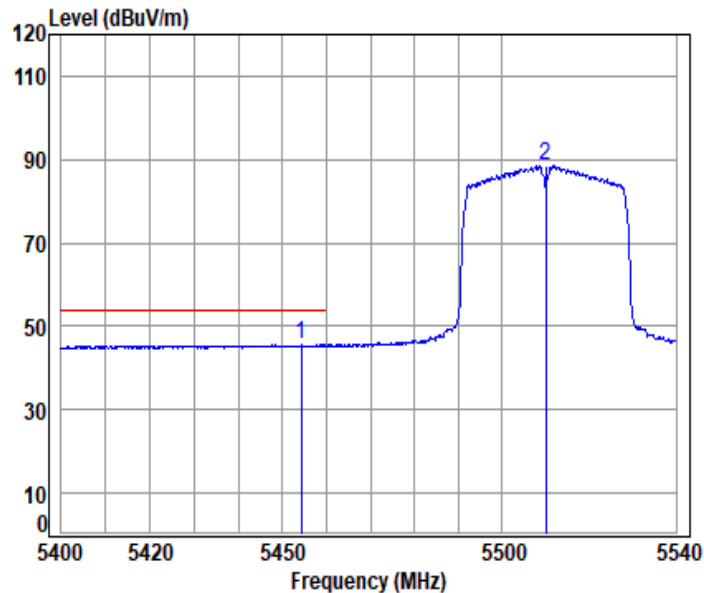
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11n_HT(40M)_TX_CH_102_Horizontal-Avg



Condition: 3m HORIZONTAL

Job No : 04945WM

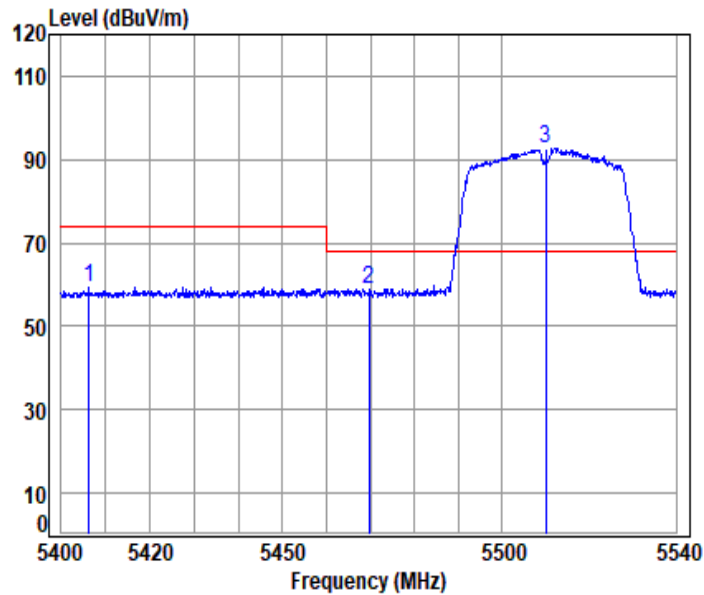
Mode : 5510 Band edge

: 5G Wi-Fi 11n40

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp 5454.174	10.60	32.90	30.72	32.77	45.55	54.00	-8.45 Average
2 5510.000	10.56	32.90	30.70	75.71	88.47	-----	----- Average



11n_HT(40M)_TX_CH_102_Verical-Peak



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5510 Band edge

: 5G Wi-Fi 11n40

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 5406.223	10.62	32.81	30.74	46.74	59.43	74.00	-14.57 Peak
2 5469.692	10.59	32.90	30.71	46.18	58.96	68.20	-9.24 peak
3 pp 5510.000	10.56	32.90	30.70	79.89	92.65	68.20	24.45 Peak



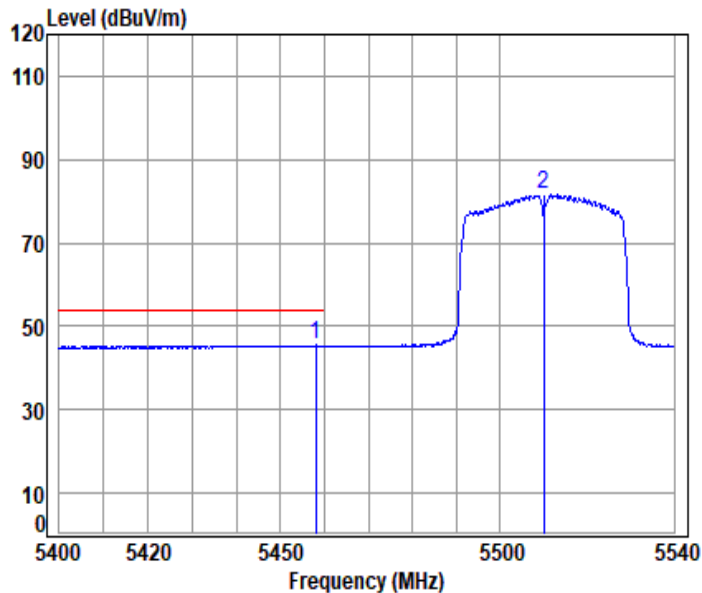
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11n_HT(40M)_TX_CH_102_Vertical-Avg



Condition: 3m VERTICAL

Job No : 04945WM

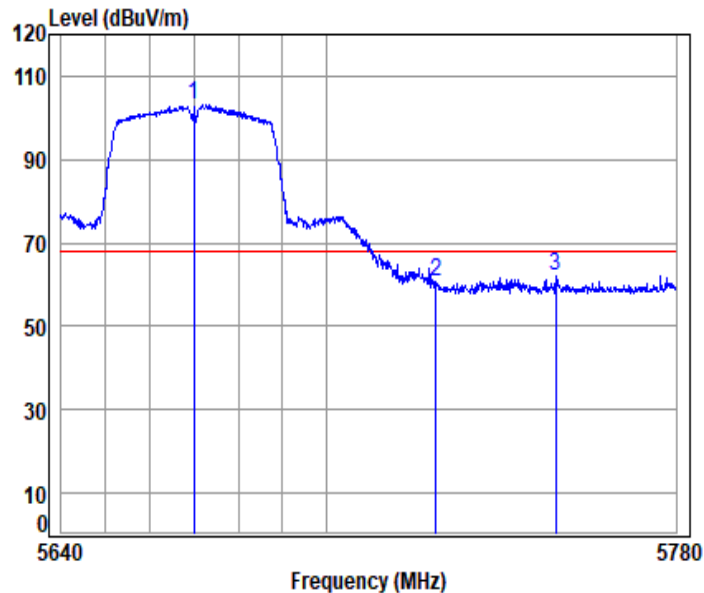
Mode : 5510 Band edge

: 5G Wi-Fi 11n40

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp 5458.084	10.60	32.90	30.72	32.70	45.48	54.00	-8.52 Average
2 5510.000	10.56	32.90	30.70	68.86	81.62	-----	----- Average



11n_HT(40M)_TX_CH_134_Horizontal-Peak



Condition: 3m HORIZONTAL

Job No : 04945WM

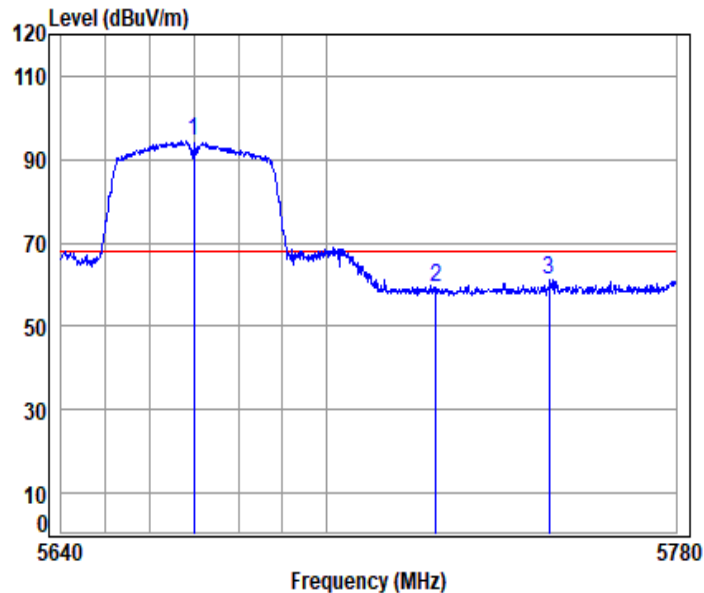
Mode : 5670 Band edge

: 5G Wi-Fi 11n40

		Cable	Ant	Preamp	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5670.000	10.52	33.14	30.63	90.06	103.09	68.20	34.89 peak
2	5725.000	10.68	33.25	30.61	47.45	60.77	68.20	-7.43 peak
3	5752.289	10.80	33.30	30.60	48.70	62.20	68.20	-6.00 peak



11n_HT(40M)_TX_CH_134_Vertical-Peak



Condition: 3m VERTICAL

Job No : 04945WM

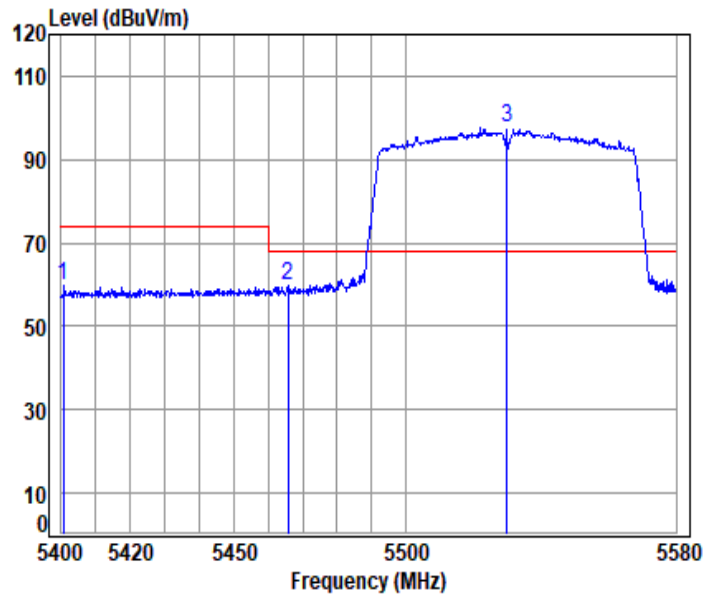
Mode : 5670 Band edge

: 5G Wi-Fi 11n40

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp 5670.000	10.52	33.14	30.63	81.20	94.23	68.20	26.03 Peak
2 5725.000	10.68	33.25	30.61	45.99	59.31	68.20	-8.89 peak
3 5750.878	10.79	33.30	30.60	47.77	61.26	68.20	-6.94 peak



11ac_VHT(80M)_TX_CH_106_Horizontal-Peak



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5530 Band edge

: 5G Wi-Fi 11ac80

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 5400.708	10.62	32.80	30.74	46.95	59.63	74.00	-14.37 peak
2 5465.734	10.59	32.90	30.71	47.03	59.81	68.20	-8.39 peak
3 pp 5530.000	10.53	32.90	30.69	84.96	97.70	68.20	29.50 peak



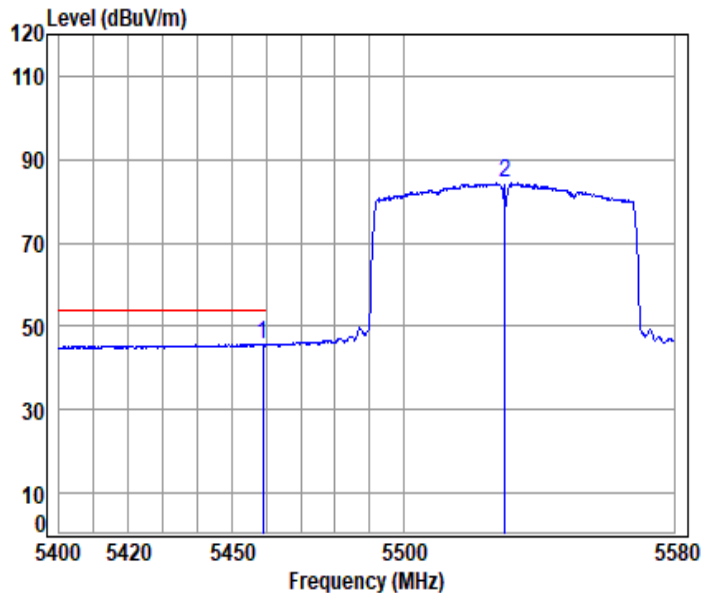
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11ac_VHT(80M)_TX_CH_106_Horizontal-Avg



Condition: 3m HORIZONTAL

Job No : 04945WM

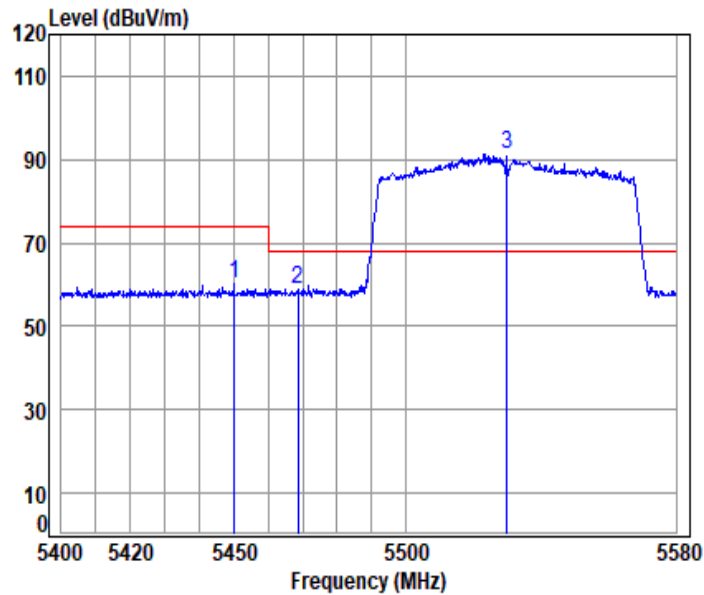
Mode : 5530 Band edge

: 5G Wi-Fi 11ac80

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp 5459.107	10.60	32.90	30.72	32.98	45.76	54.00	-8.24 Average
2 5530.000	10.53	32.90	30.69	71.56	84.30	-----	----- Average



11ac_VHT(80M)_TX_CH_106_Vertical-Peak



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5530 Band edge

: 5G Wi-Fi 11ac80

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5449.985	10.60	32.90	30.72	47.30	60.08	74.00 -13.92 Peak
2	5468.602	10.59	32.90	30.71	46.08	58.86	68.20 -9.34 peak
3 pp	5530.000	10.53	32.90	30.69	78.67	91.41	68.20 23.21 Peak



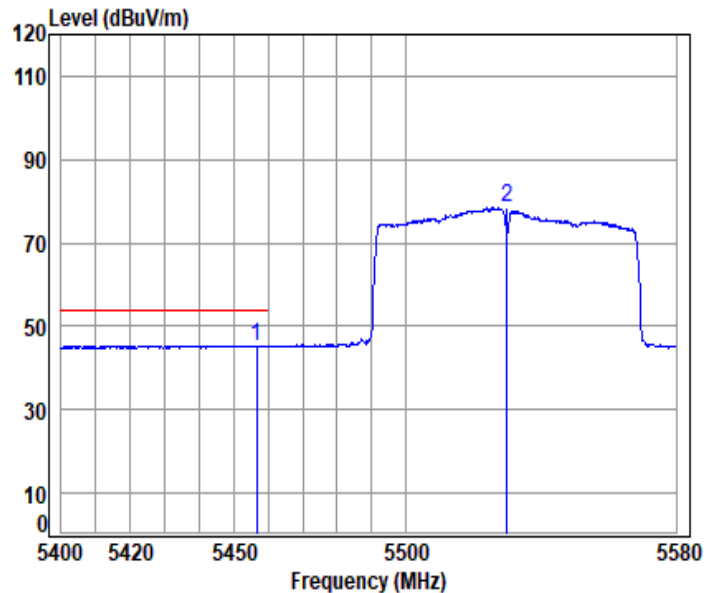
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11ac_VHT(80M)_TX_CH_106_Vertical-Avg



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5530 Band edge

: 5G Wi-Fi 11ac80

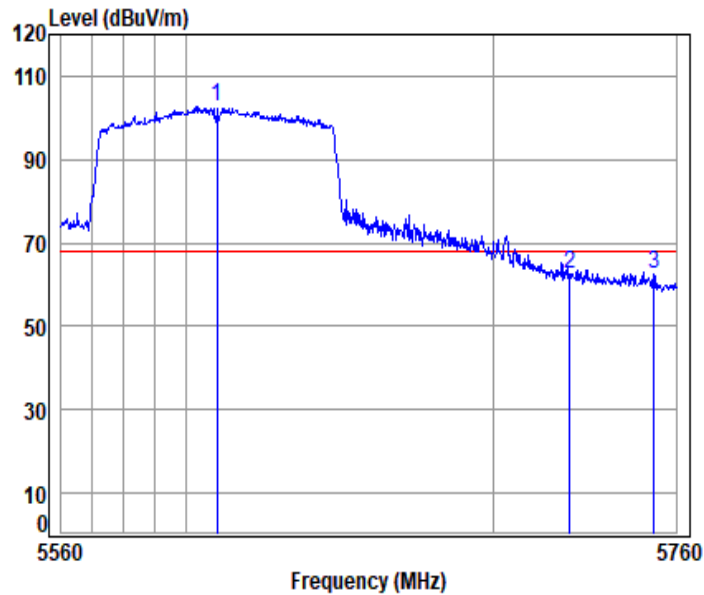
	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp 5456.601	10.60	32.90	30.72	32.59	45.37	54.00	-8.63 Average
2 5530.000	10.53	32.90	30.69	65.59	78.33	-----	----- Average



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11ac_VHT(80M)_TX_CH_122_Horizontal-Peak



Condition: 3m HORIZONTAL

Job No : 04945WM

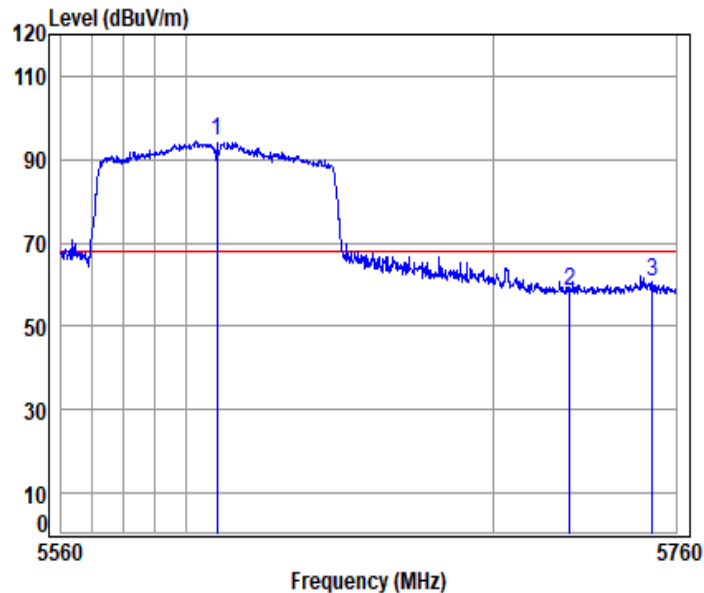
Mode : 5610 Band edge

: 5G Wi-Fi 11ac80

	Cable	Ant	Preampl	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp 5610.000	10.43	33.02	30.66	89.87	102.66	68.20	34.46	peak
2 5725.000	10.68	33.25	30.61	49.13	62.45	68.20	-5.75	Peak
3 5752.677	10.80	33.31	30.60	49.17	62.68	68.20	-5.52	peak



11ac_VHT(80M)_TX_CH_122_Vertical-Peak



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5610 Band edge

: 5G Wi-Fi 11ac80

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp 5610.000	10.43	33.02	30.66	81.56	94.35	68.20	26.15 Peak
2 5725.000	10.68	33.25	30.61	45.12	58.44	68.20	-9.76 Peak
3 5752.270	10.80	33.30	30.60	47.21	60.71	68.20	-7.49 Peak



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No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
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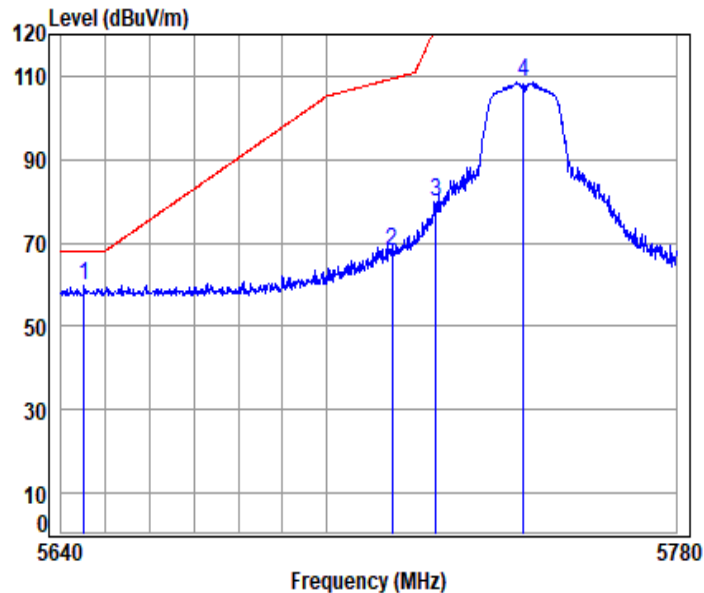
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SZEMC-TRF-01 Rev. A/1

Report No.: SZCR250100029108

Page: 126 of 308

11a_TX_CH_149_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5745 Band edge

: 5.8G Wi-Fi 11a

		Cable	Ant	Preamp	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5645.119	10.48	33.09	30.64	46.91	59.84	68.20	-8.36 peak
2	5715.000	10.63	33.23	30.61	54.62	67.87	109.40	-41.53 peak
3	5725.000	10.68	33.25	30.61	66.44	79.76	122.20	-42.44 peak
4	5745.000	10.77	33.29	30.60	95.00	108.46	-----	----- peak



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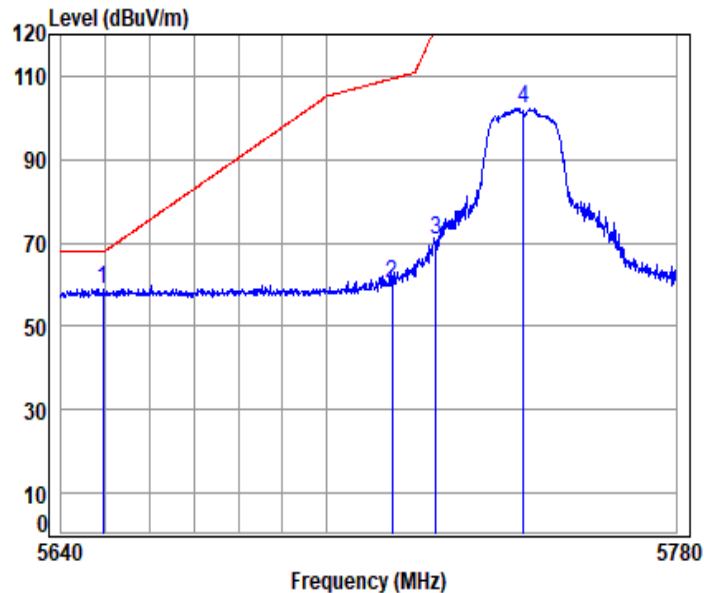
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SZEMC-TRF-01 Rev. A/1

Report No.: SZCR250100029108

Page: 127 of 308

11a_TX_CH_149_Vertical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5745 Band edge

: 5.8G Wi-Fi 11a

		Cable	Ant	Preampl	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	pp 5649.412	10.48	33.10	30.64	46.11	59.05	68.20	-9.15 peak
2	5715.000	10.63	33.23	30.61	47.03	60.28	109.40	-49.12 peak
3	5725.000	10.68	33.25	30.61	57.31	70.63	122.20	-51.57 peak
4	5745.000	10.77	33.29	30.60	88.84	102.30	-----	----- peak



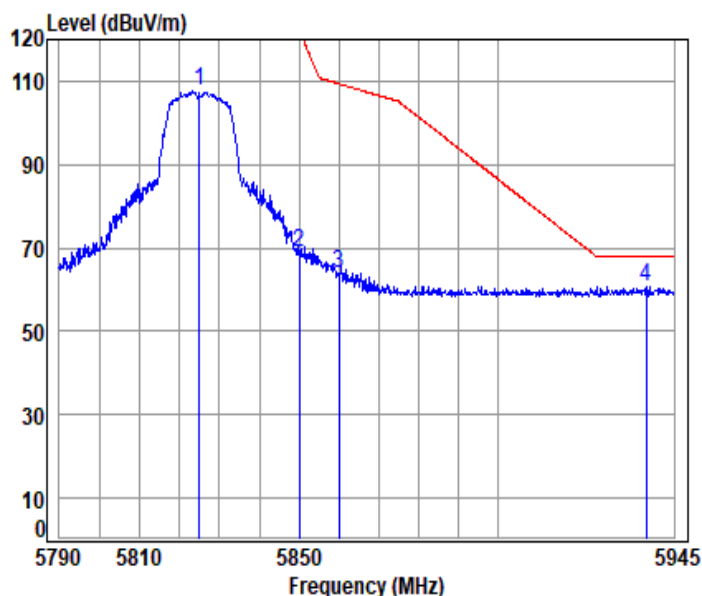
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11a_TX_CH_165_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5825 Band edge

: 5.8G Wi-Fi 11a

	Cable	Ant	Preampl	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5825.000	10.99	33.50	30.57	93.60	107.52	----- peak
2	5850.000	10.95	33.60	30.56	54.81	68.80	122.20 -53.40 peak
3	5860.000	10.94	33.58	30.56	50.08	64.04	109.40 -45.36 peak
4	pp 5937.937	10.86	33.58	30.52	46.65	60.57	68.20 -7.63 peak



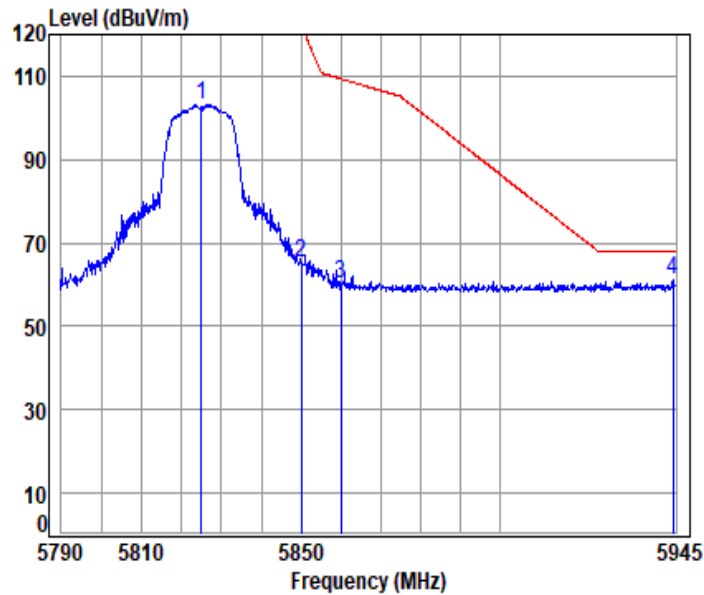
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11a_TX_CH_165_Vertical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5825 Band edge

: 5.8G Wi-Fi 11a

	Cable	Ant	Preampl	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5825.000	10.99	33.50	30.57	89.31	103.23	----- peak
2	5850.000	10.95	33.60	30.56	51.04	65.03	122.20 -57.17 peak
3	5860.000	10.94	33.58	30.56	46.42	60.38	109.40 -49.02 peak
4	pp 5944.215	10.85	33.59	30.52	47.05	60.97	68.20 -7.23 peak



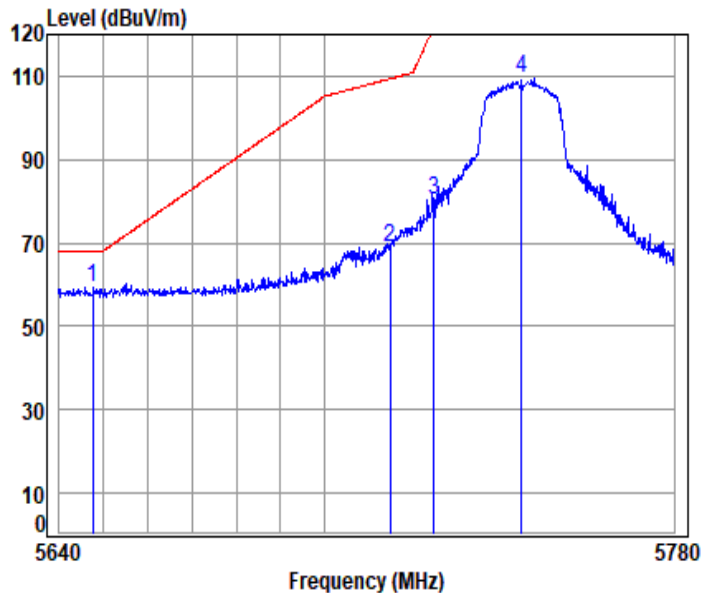
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11n_HT(20M)_TX_CH_149_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5745 Band edge

: 5.8G Wi-Fi 11n20

		Cable	Ant	Preamp	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	pp 5647.611	10.48	33.10	30.64	46.40	59.34	68.20	-8.86 peak
2	5715.000	10.63	33.23	30.61	55.61	68.86	109.40	-40.54 peak
3	5725.000	10.68	33.25	30.61	67.04	80.36	122.20	-41.84 peak
4	5745.000	10.77	33.29	30.60	95.82	109.28	-----	----- peak



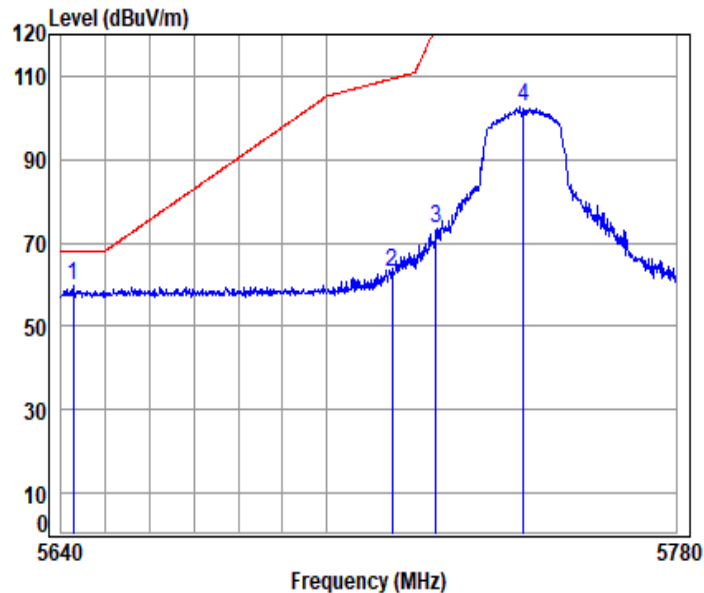
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11n_HT(20M)_TX_CH_149_Vertical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5745 Band edge

: 5.8G Wi-Fi 11n20

		Cable	Ant	Preamp	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5642.628	10.47	33.09	30.64	47.03	59.95	68.20	-8.25 peak
2	5715.000	10.63	33.23	30.61	49.93	63.18	109.40	-46.22 peak
3	5725.000	10.68	33.25	30.61	60.32	73.64	122.20	-48.56 peak
4	5745.000	10.77	33.29	30.60	89.03	102.49	-----	----- peak



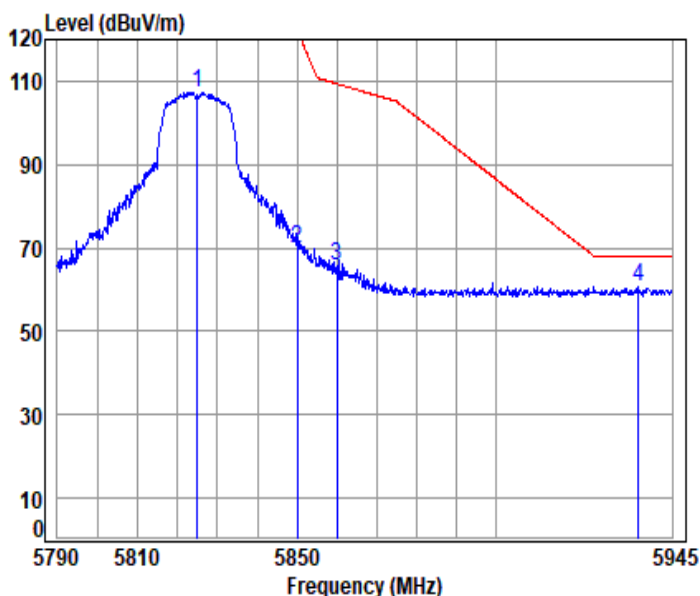
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11n_HT(20M)_TX_CH_165_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5825 Band edge

: 5.8G Wi-Fi 11n20

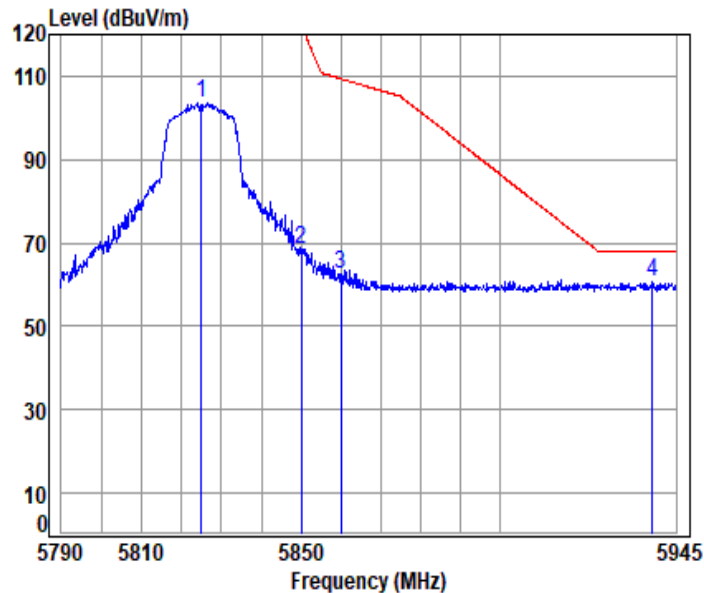
	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5825.000	10.99	33.50	30.57	93.46	107.38	----- peak
2	5850.000	10.95	33.60	30.56	56.02	70.01	122.20 -52.19 peak
3	5860.000	10.94	33.58	30.56	51.93	65.89	109.40 -43.51 peak
4 pp	5936.368	10.86	33.57	30.53	46.70	60.60	68.20 -7.60 peak



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11n_HT(20M)_TX_CH_165_Vertical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5825 Band edge

: 5.8G Wi-Fi 11n20

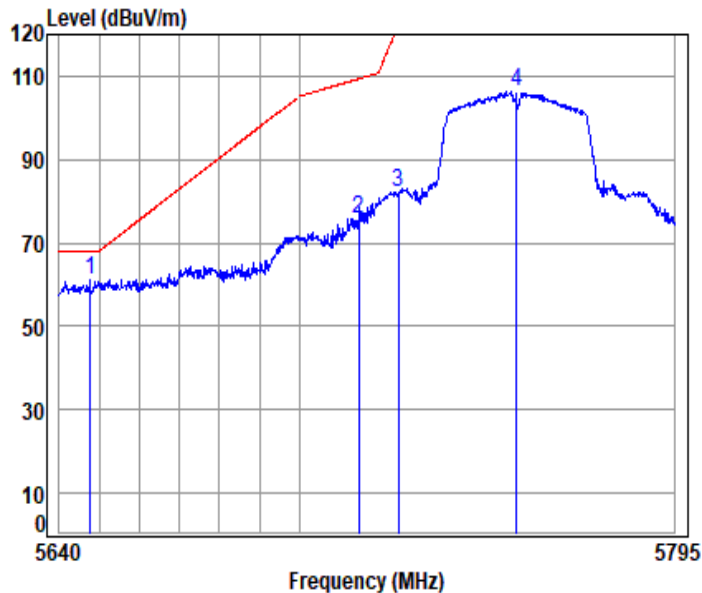
	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5825.000	10.99	33.50	30.57	89.57	103.49	----- peak
2	5850.000	10.95	33.60	30.56	54.49	68.48	122.20 -53.72 peak
3	5860.000	10.94	33.58	30.56	48.64	62.60	109.40 -46.80 peak
4 pp	5938.878	10.86	33.58	30.52	46.70	60.62	68.20 -7.58 peak



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11n_HT(40M)_TX_CH_151_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

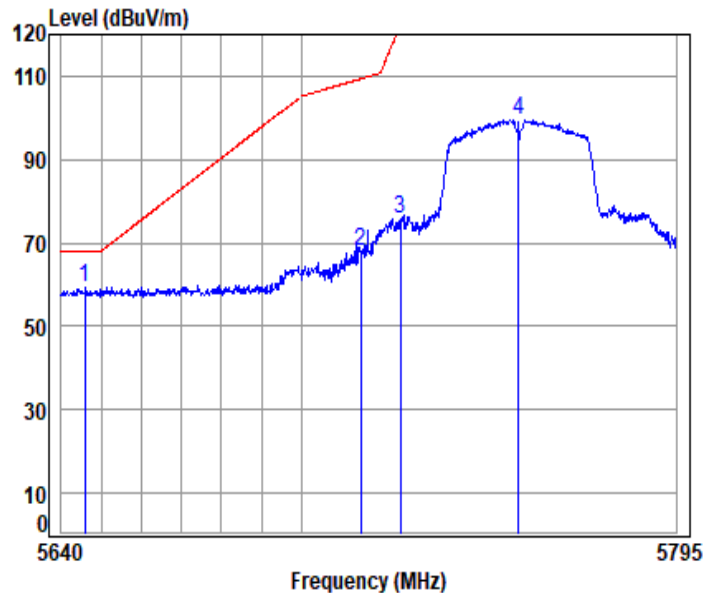
Mode : 5755 Band edge

: 5.8G Wi-Fi 11n40

		Cable	Ant	Preampl	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	pp 5647.650	10.48	33.10	30.64	48.01	60.95	68.20	-7.25 peak
2	5715.000	10.63	33.23	30.61	62.43	75.68	109.40	-33.72 peak
3	5725.000	10.68	33.25	30.61	68.80	82.12	122.20	-40.08 peak
4	5755.000	10.81	33.31	30.60	92.65	106.17	-----	----- peak



11n_HT(40M)_TX_CH_151_Vertical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5755 Band edge

: 5.8G Wi-Fi 11n40

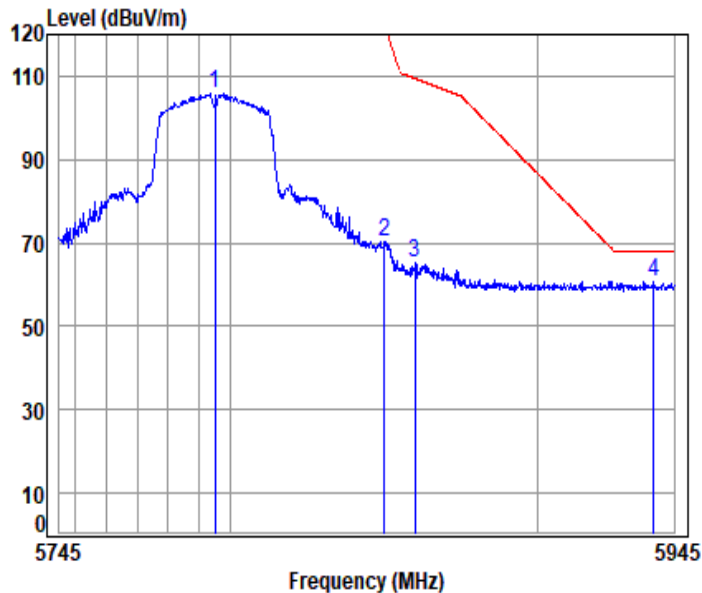
	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp 5645.967	10.48	33.09	30.64	46.38	59.31	68.20	-8.89 peak
2 5715.000	10.63	33.23	30.61	54.70	67.95	109.40	-41.45 peak
3 5725.000	10.68	33.25	30.61	62.63	75.95	122.20	-46.25 peak
4 5755.000	10.81	33.31	30.60	86.04	99.56	-----	----- peak



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11n_HT(40M)_TX_CH_159_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

Mode : 5795 Band edge

: 5.8G Wi-Fi 11n40

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5795.000	11.00	33.39	30.58	92.02	105.83	----- peak
2	5850.000	10.95	33.60	30.56	56.42	70.41	122.20 -51.79 peak
3	5860.000	10.94	33.58	30.56	51.46	65.42	109.40 -43.98 peak
4 pp	5938.290	10.86	33.58	30.52	46.76	60.68	68.20 -7.52 peak



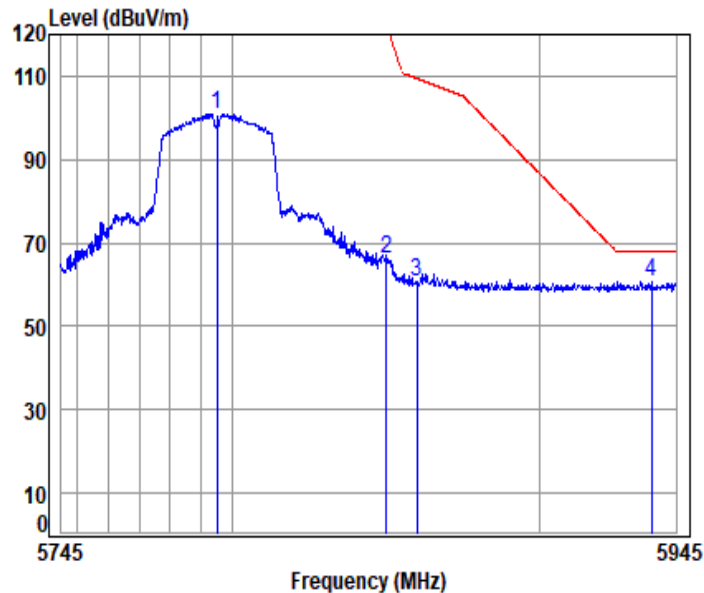
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11n_HT(40M)_TX_CH_159_Vertical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5795 Band edge

: 5.8G Wi-Fi 11n40

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5795.000	11.00	33.39	30.58	87.17	100.98	----- peak
2	5850.000	10.95	33.60	30.56	51.99	65.98	122.20 -56.22 peak
3	5860.000	10.94	33.58	30.56	46.62	60.58	109.40 -48.82 peak
4 pp	5936.868	10.86	33.57	30.53	46.58	60.48	68.20 -7.72 peak



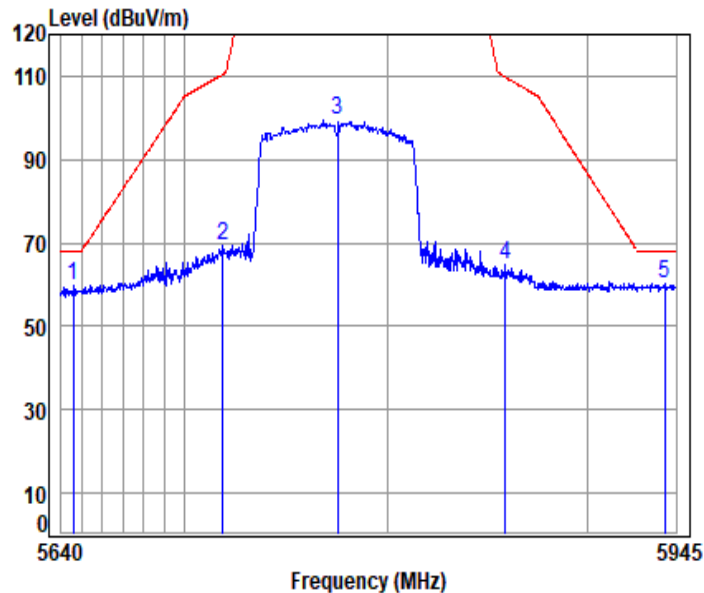
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11ac_VHT(80M)_TX_CH_155_Horizontal



Condition: 3m HORIZONTAL

Job No : 04945WM

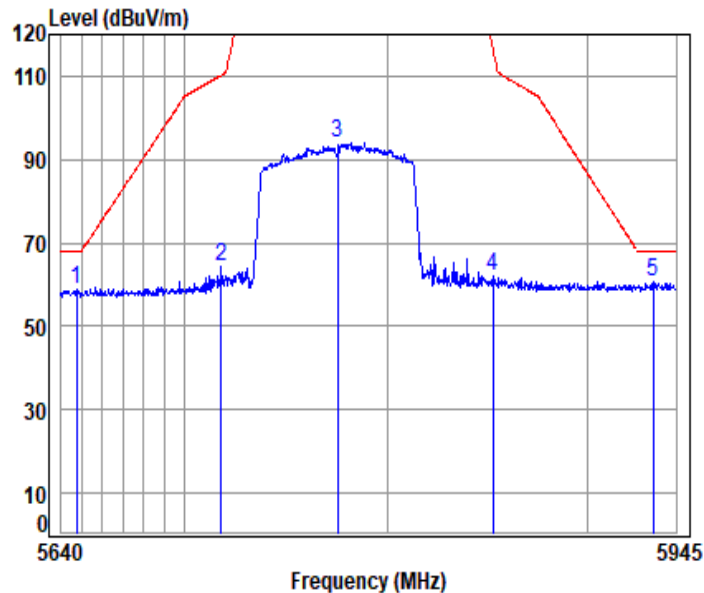
Mode : 5775 Band edge

: 5.8G Wi-Fi 11ac80

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	5645.646	10.48	33.09	30.64	46.93	59.86	68.20 -8.34 Peak
2	5718.665	10.65	33.24	30.61	56.00	69.28	110.43 -41.15 peak
3	5775.000	10.91	33.35	30.59	85.76	99.43	----- peak
4	5858.900	10.94	33.58	30.56	50.71	64.67	109.71 -45.04 peak
5 pp	5939.367	10.86	33.58	30.52	46.44	60.36	68.20 -7.84 peak



11ac_VHT(80M)_TX_CH_155_Vertical



Condition: 3m VERTICAL

Job No : 04945WM

Mode : 5775 Band edge

: 5.8G Wi-Fi 11ac80

	Cable	Ant	Preamp	Read	Limit	Over		
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5647.431	10.48	33.09	30.64	45.77	58.70	68.20	-9.50 Peak
2	5717.761	10.64	33.24	30.61	51.06	64.33	110.17	-45.84 peak
3	5775.000	10.91	33.35	30.59	80.22	93.89	-----	----- peak
4	5852.424	10.95	33.60	30.56	48.20	62.19	116.67	-54.48 peak
5 pp	5933.426	10.86	33.57	30.53	46.80	60.70	68.20	-7.50 peak



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8.6 Channel Move Time

Test Requirement KDB 905462 D02 Section 5.1
Test Method: KDB 905462 D02 Section 7.8.3

Limit:

Test item	Limit	Applicability	
		Master Device or client with Radar Detection	Client without Radar Detection
Non-occupancy period	Minimum 30 minutes	Yes	Not required
Channel Availability Check Time	60 seconds	Yes	Not required
Channel Move Time	10 seconds See Note 1.	Yes	Yes
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.	Yes	Yes
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.	Yes	Not required

Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.

Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

8.6.1 E.U.T. Operation

Operating Environment:

Temperature: 20.7 °C Humidity: 42.9 % RH Atmospheric Pressure: 1020 mbar



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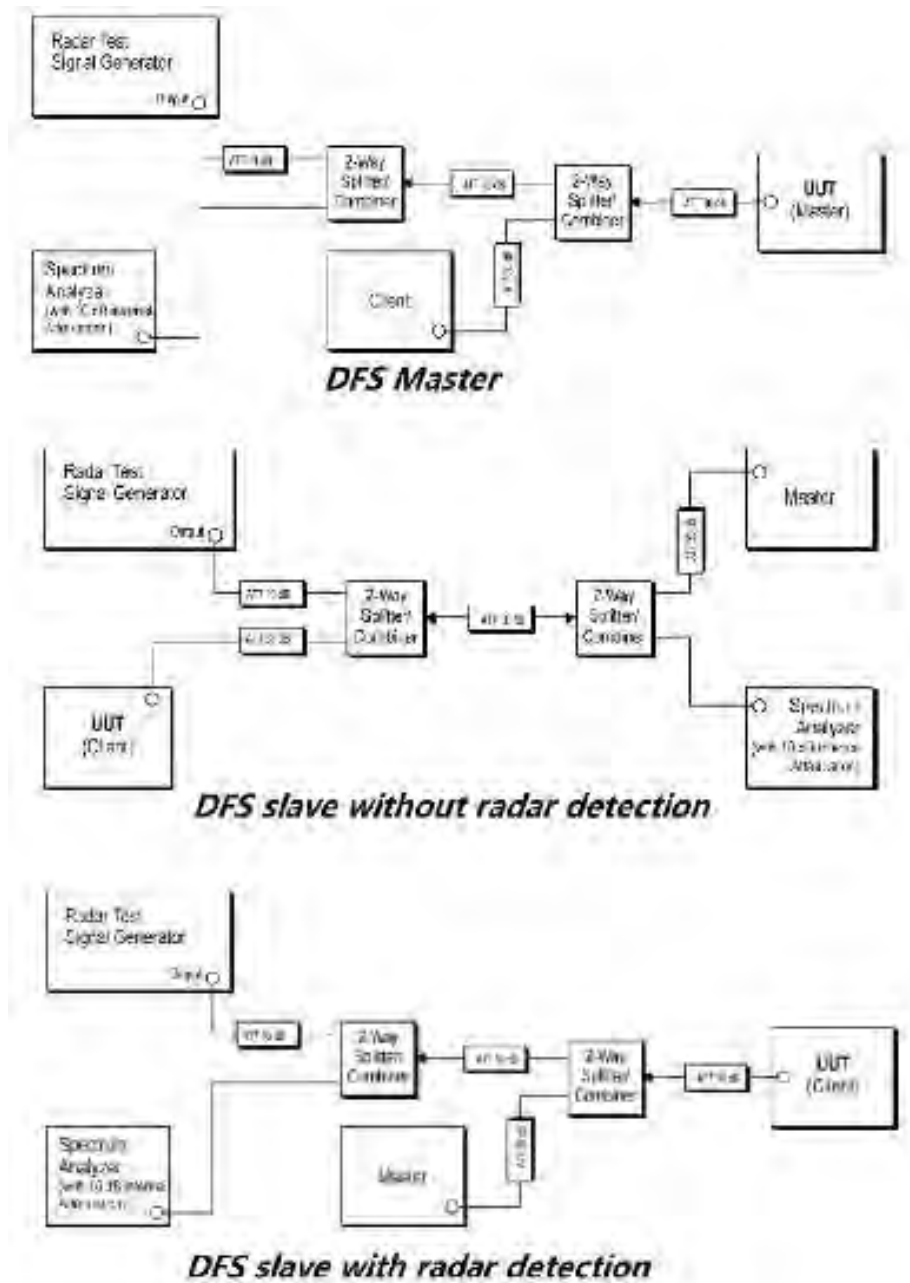
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8.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	13	Normal operating_Keep the EUT communication with the companion device.

8.6.3 Test Setup Diagram



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8.6.4 Measurement Procedure and Data

- 1) The radar pulse generator is setup to provide a pulse at frequency that the master and client are operating. A type 0 radar pulse with a 1us pulse width and a 1428us PRI is used for the testing.
- 2) The vector signal generator is adjusted to provide the radar burst (18 pulses) at the level of approximately -61dBm at the antenna port of the master device.
- 3) A trigger is provided from the pulse generator to the DFS monitoring system in order to capture the traffic and the occurrence of the radar pulse.
- 4) EUT will associate with the master at channel. The file "iperf.exe" specified by the FCC is streamed from the PC 2 through the master and the client device to the PC 1 and played in full motion video using Media Player Classic Ver. 6.4.8.6 in order to properly load the network for the entire period of the test.
- 5) When radar burst with a level equal to the DFS Detection Threshold +1dB is generated on the operating channel of the U-NII device. At time T0 the radar waveform generator sends a burst of pulse of the radar waveform at Detection Threshold +1dB.
- 6) Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). One 15 seconds plot is reported for the Short Pulse Radar Type 0. The plot for the Short Pulse Radar Types start at the end of the radar burst. The Channel Move Time will be calculated based on the zoom in 600ms plot of the Short Pulse Radar Type.
- 7) Measurement of the aggregate duration of the Channel Closed Transmission Time method. With the spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: $Dwell (0.3ms) = S (12000ms) / B (4000)$; where Dwell is the dwell time per spectrum analyzer sampling bin, S is sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of Channel Closing Transmission Time is calculated by: $C (ms) = N \times Dwell (0.3ms)$; where C is the Closing Time, N is the number of spectrum analyzer sampling bins (intermittent control signals) showing a U-NII transmission and Dwell is the dwell time per bin.
- 8) Measurement the EUT for more than 30 minutes following the channel move time to verify that no transmission or beacons occur on this channel.

Please Refer to Appendix for Details



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8.7 Duty Cycle

Test Requirement ANSI C63.10 (2013) Section 12.2

Test Method: ANSI C63.10 (2013) Section 12.2

8.7.1 E.U.T. Operation

Operating Environment:

Temperature: 21.3 °C

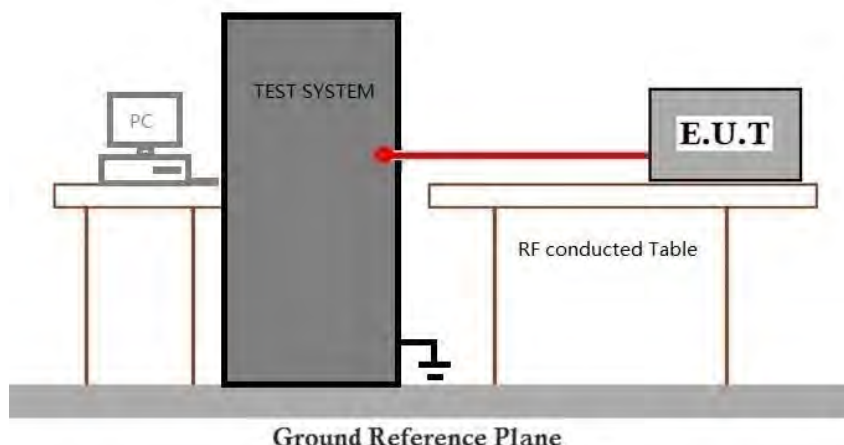
Humidity: 35.3 % RH

Atmospheric Pressure: 1020 mbar

8.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	09	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	10	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	11	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	12	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.

8.7.3 Test Setup Diagram



8.7.4 Measurement Procedure and Data

Please Refer to Appendix for Details



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8.8 99% Bandwidth

Test Requirement ANSI C63.10 (2013) Section 12.4.2

Test Method: ANSI C63.10 (2013) Section 12.4.2

8.8.1 E.U.T. Operation

Operating Environment:

Temperature: 21.3 °C

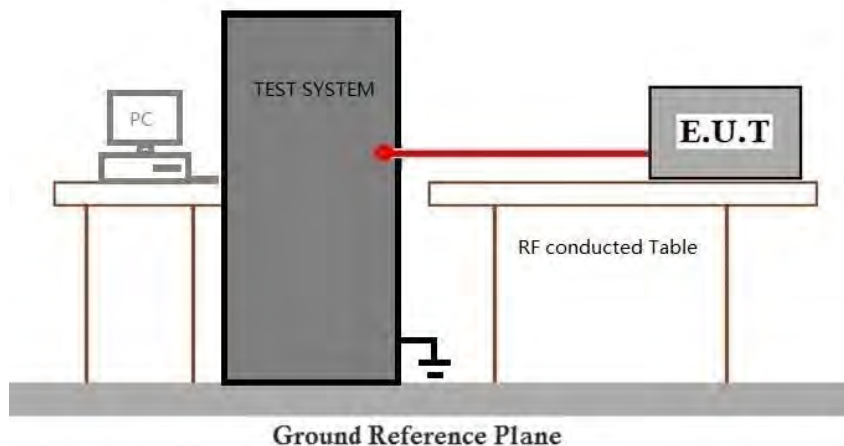
Humidity: 35.3 % RH

Atmospheric Pressure: 1020 mbar

8.8.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	09	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	10	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	11	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	12	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.

8.8.3 Test Setup Diagram



8.8.4 Measurement Procedure and Data

Please Refer to Appendix for Details



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8.9 26dB Emission bandwidth

Test Requirement 47 CFR Part 15, Subpart E 15.407 (a)

Test Method: ANSI C63.10 (2013) Section 12.4.1

8.9.1 E.U.T. Operation

Operating Environment:

Temperature: 21.3 °C

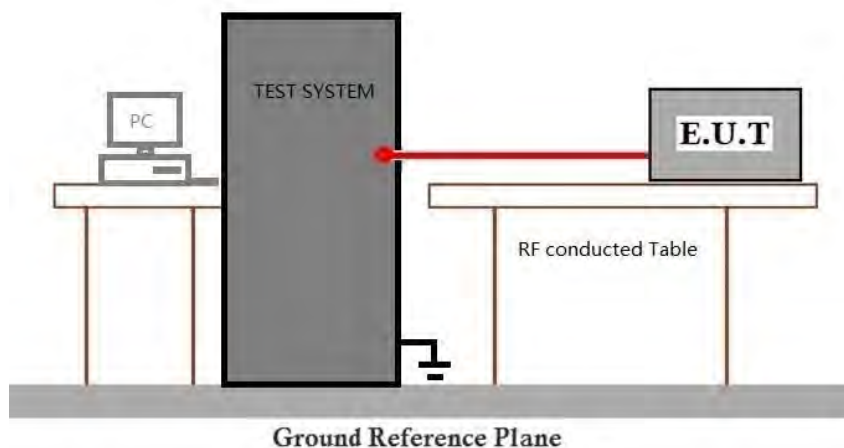
Humidity: 35.3 % RH

Atmospheric Pressure: 1020 mbar

8.9.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	09	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	10	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	11	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	12	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.

8.9.3 Test Setup Diagram



8.9.4 Measurement Procedure and Data

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8.10 Minimum 6 dB bandwidth (5.725-5.85 GHz band)

Test Requirement 47 CFR Part 15, Subpart E 15.407 (e)

Test Method: ANSI C63.10 (2013) Section 6.9.2

Limit:

Frequency band(MHz)	Limit
5725-5850	≥500 kHz

8.10.1 E.U.T. Operation

Operating Environment:

Temperature: 21.3 °C

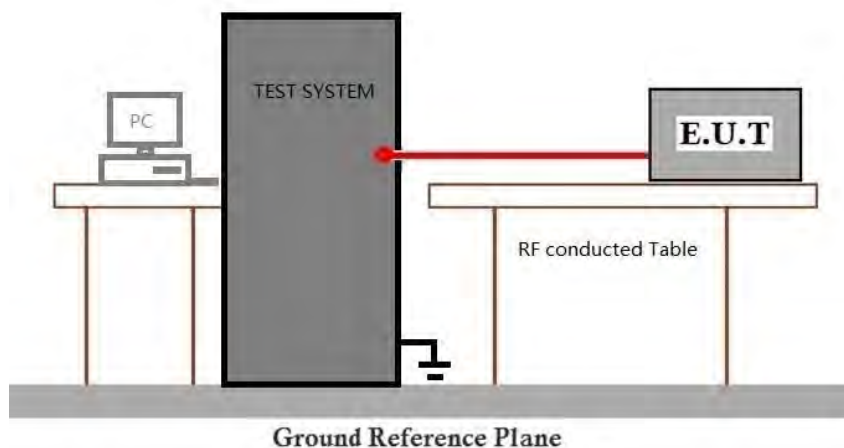
Humidity: 35.3 % RH

Atmospheric Pressure: 1020 mbar

8.10.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	12	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.

8.10.3 Test Setup Diagram



8.10.4 Measurement Procedure and Data

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8.11 Peak Power spectrum density

Test Requirement 47 CFR Part 15, Subpart E 15.407 (a)

Test Method: ANSI C63.10 (2013) Section 12.5

Limit:

Frequency band(MHz)	Limit
5150-5250	≤17dBm in 1MHz for master device
	≤11dBm in 1MHz for client device
5250-5350	≤11dBm in 1MHz for client device
5470-5725	≤11dBm in 1MHz for client device
5725-5850	≤30dBm in 500 kHz
Remark:	The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test.

8.11.1 E.U.T. Operation

Operating Environment:

Temperature: 21.3 °C

Humidity: 35.3 % RH

Atmospheric Pressure: 1020 mbar

8.11.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	09	TX mode (U-NII-1) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	10	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	11	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	12	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.



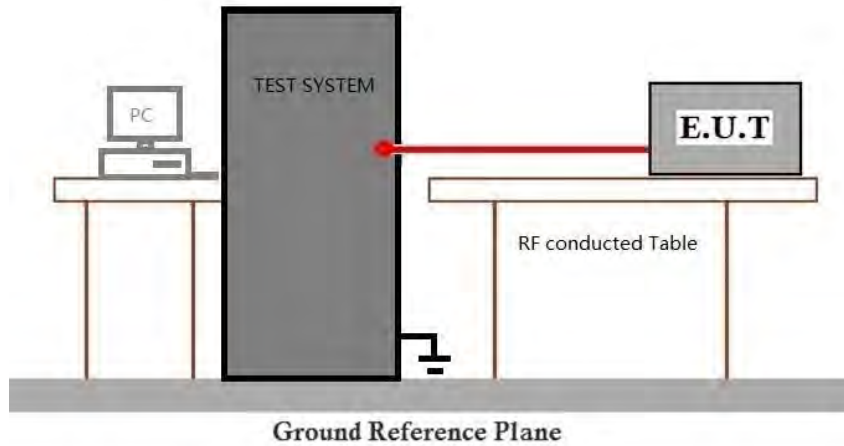
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8.11.3 Test Setup Diagram



8.11.4 Measurement Procedure and Data

Please Refer to Appendix for Details



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8.12 Frequency Stability

Test Requirement 47 CFR Part 15, Subpart E 15.407 (g)

Test Method: ANSI C63.10 (2013) Section 6.8

8.12.1 E.U.T. Operation

Operating Environment:

Temperature: 21.3 °C

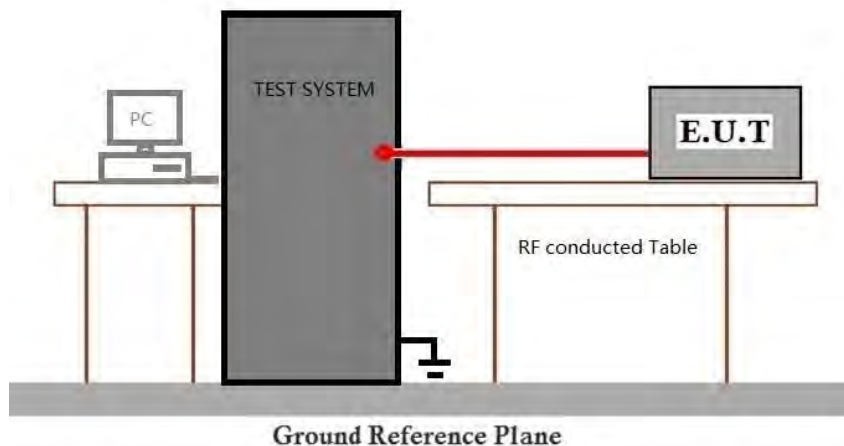
Humidity: 35.3 % RH

Atmospheric Pressure: 1020 mbar

8.12.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	09	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	10	TX mode (U-NII-2A) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	11	TX mode (U-NII-2C) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.
Final test	12	TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested, Only the data of worst case is recorded in the report.

8.12.3 Test Setup Diagram



8.12.4 Measurement Procedure and Data

Please Refer to Appendix for Details



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8.13 Non-occupancy period

Test Requirement KDB 905462 D02 Section 5.1
Test Method: KDB 905462 D02 Section 7.8.3

Limit:

Test item	Limit	Applicability	
		Master Device or client with Radar Detection	Client without Radar Detection
Non-occupancy period	Minimum 30 minutes	Yes	Not required
Channel Availability Check Time	60 seconds	Yes	Not required
Channel Move Time	10 seconds See Note 1.	Yes	Yes
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.	Yes	Yes
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.	Yes	Not required

Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.

Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

8.13.1 E.U.T. Operation

Operating Environment:

Temperature: 20.7 °C Humidity: 42.9 % RH Atmospheric Pressure: 1020 mbar



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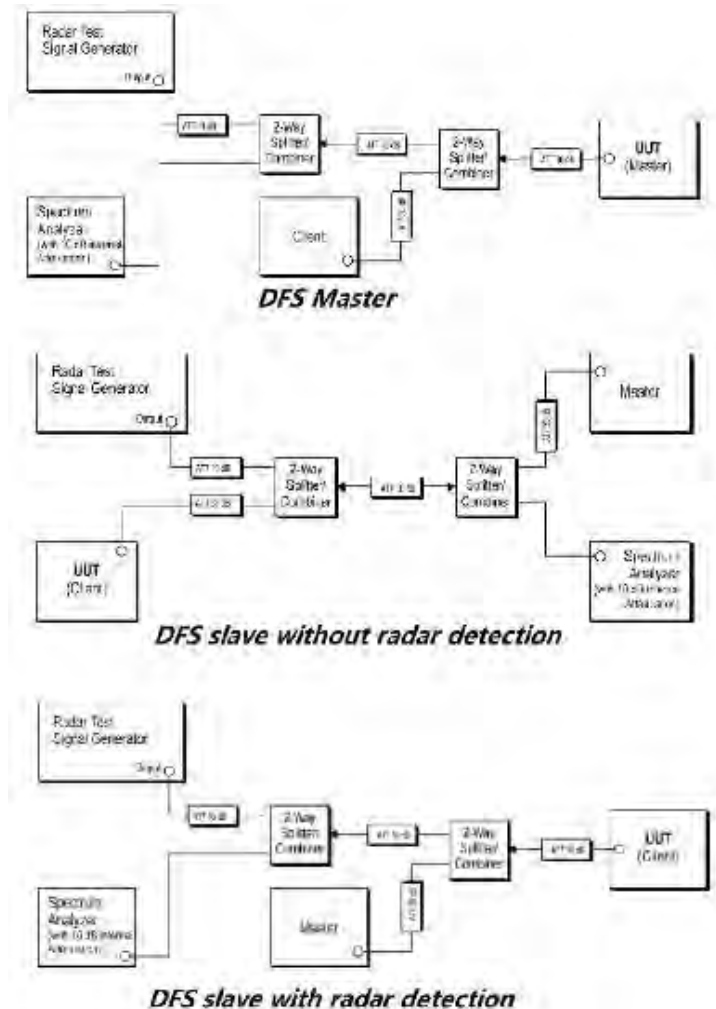
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8.13.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	13	Normal operating_Keep the EUT communication with the companion device.

8.13.3 Test Setup Diagram



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8.13.4 Measurement Procedure and Data

- 1) The radar pulse generator is setup to provide a pulse at frequency that the master and client are operating. A type 0 radar pulse with a 1us pulse width and a 1428us PRI is used for the testing.
- 2) The vector signal generator is adjusted to provide the radar burst (18 pulses) at the level of approximately -61dBm at the antenna port of the master device.
- 3) A trigger is provided from the pulse generator to the DFS monitoring system in order to capture the traffic and the occurrence of the radar pulse.
- 4) EUT will associate with the master at channel. The file "iperf.exe" specified by the FCC is streamed from the PC 2 through the master and the client device to the PC 1 and played in full motion video using Media Player Classic Ver. 6.4.8.6 in order to properly load the network for the entire period of the test.
- 5) When radar burst with a level equal to the DFS Detection Threshold +1dB is generated on the operating channel of the U-NII device. At time T0 the radar waveform generator sends a burst of pulse of the radar waveform at Detection Threshold +1dB.
- 6) Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). One 15 seconds plot is reported for the Short Pulse Radar Type 0. The plot for the Short Pulse Radar Types start at the end of the radar burst. The Channel Move Time will be calculated based on the zoom in 600ms plot of the Short Pulse Radar Type.
- 7) Measurement of the aggregate duration of the Channel Closed Transmission Time method. With the spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: $Dwell (0.3ms) = S (12000ms) / B (4000)$; where Dwell is the dwell time per spectrum analyzer sampling bin, S is sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of Channel Closing Transmission Time is calculated by: $C (ms) = N \times Dwell (0.3ms)$; where C is the Closing Time, N is the number of spectrum analyzer sampling bins (intermittent control signals) showing a U-NII transmission and Dwell is the dwell time per bin.
- 8) Measurement the EUT for more than 30 minutes following the channel move time to verify that no transmission or beacons occur on this channel.

Please Refer to Appendix for Details



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8.14 Channel Closing Transmission Time

Test Requirement KDB 905462 D02 Section 5.1
Test Method: KDB 905462 D02 Section 7.8.3

Limit:

Test item	Limit	Applicability	
		Master Device or client with Radar Detection	Client without Radar Detection
Non-occupancy period	Minimum 30 minutes	Yes	Not required
Channel Availability Check Time	60 seconds	Yes	Not required
Channel Move Time	10 seconds See Note 1.	Yes	Yes
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.	Yes	Yes
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.	Yes	Not required

Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.

Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

8.14.1 E.U.T. Operation

Operating Environment:

Temperature: 20.7 °C Humidity: 42.9 % RH Atmospheric Pressure: 1020 mbar



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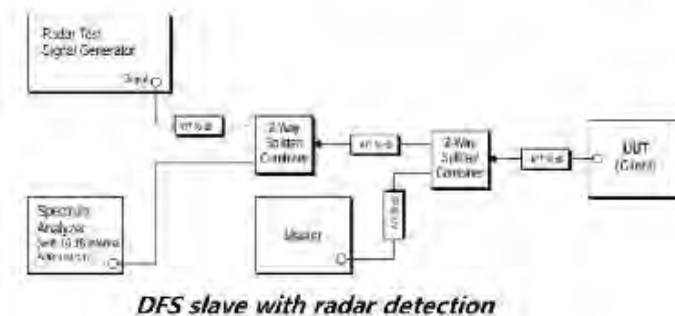
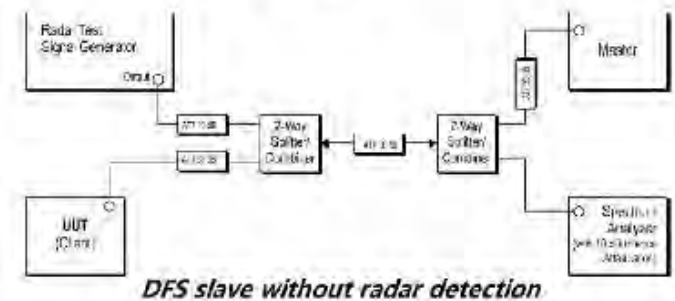
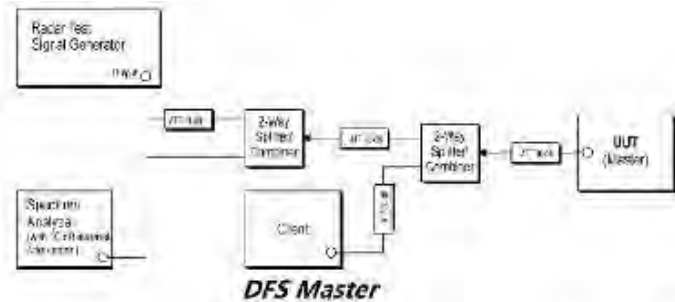
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8.14.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	13	Normal operating_Keep the EUT communication with the companion device.

8.14.3 Test Setup Diagram



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8.14.4 Measurement Procedure and Data

- 1) The radar pulse generator is setup to provide a pulse at frequency that the master and client are operating. A type 0 radar pulse with a 1us pulse width and a 1428us PRI is used for the testing.
- 2) The vector signal generator is adjusted to provide the radar burst (18 pulses) at the level of approximately -61dBm at the antenna port of the master device.
- 3) A trigger is provided from the pulse generator to the DFS monitoring system in order to capture the traffic and the occurrence of the radar pulse.
- 4) EUT will associate with the master at channel. The file "iperf.exe" specified by the FCC is streamed from the PC 2 through the master and the client device to the PC 1 and played in full motion video using Media Player Classic Ver. 6.4.8.6 in order to properly load the network for the entire period of the test.
- 5) When radar burst with a level equal to the DFS Detection Threshold +1dB is generated on the operating channel of the U-NII device. At time T0 the radar waveform generator sends a burst of pulse of the radar waveform at Detection Threshold +1dB.
- 6) Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). One 15 seconds plot is reported for the Short Pulse Radar Type 0. The plot for the Short Pulse Radar Types start at the end of the radar burst. The Channel Move Time will be calculated based on the zoom in 600ms plot of the Short Pulse Radar Type.
- 7) Measurement of the aggregate duration of the Channel Closed Transmission Time method. With the spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: $Dwell (0.3ms) = S (12000ms) / B (4000)$; where Dwell is the dwell time per spectrum analyzer sampling bin, S is sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of Channel Closing Transmission Time is calculated by: $C (ms) = N \times Dwell (0.3ms)$; where C is the Closing Time, N is the number of spectrum analyzer sampling bins (intermittent control signals) showing a U-NII transmission and Dwell is the dwell time per bin.
- 8) Measurement the EUT for more than 30 minutes following the channel move time to verify that no transmission or beacons occur on this channel.

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9 Test Setup Photo

Please refer to SZCR2501000291 Appendix_Setup Photo

10 EUT Constructional Details (EUT Photos)

Refer to Appendix – External and Internal Photos for SZCR2501000291WM.



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11 Appendix

1. Duty Cycle

1.1 Test Result

1.1.1 Ant22

Ant22							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11a	SISO	5180	1.392	1.428	97.48	0.11	0.03
		5200	1.394	1.428	97.62	0.10	0.06
		5240	1.394	1.428	97.62	0.10	0.06
		5260	1.393	1.428	97.55	0.11	0.07
		5300	1.392	1.427	97.55	0.11	0.10
		5320	1.393	1.428	97.55	0.11	0.03
		5500	1.392	1.427	97.55	0.11	0.00
		5580	1.393	1.428	97.55	0.11	0.06
		5700	1.392	1.428	97.48	0.11	0.10
		5745	1.395	1.428	97.69	0.10	0.03
		5785	1.394	1.428	97.62	0.10	0.03
		5825	1.394	1.428	97.62	0.10	0.06
		5720	1.392	1.427	97.55	0.11	0.03
802.11n (HT20)	SISO	5180	1.300	1.336	97.31	0.12	0.00
		5200	1.302	1.336	97.46	0.11	0.10
		5240	1.302	1.336	97.46	0.11	0.07
		5260	1.302	1.337	97.38	0.12	0.07
		5300	1.301	1.336	97.38	0.12	0.07
		5320	1.301	1.336	97.38	0.12	0.04
		5500	1.300	1.335	97.38	0.12	0.00
		5580	1.300	1.335	97.38	0.12	0.03
		5700	1.300	1.335	97.38	0.12	0.04
		5745	1.302	1.336	97.46	0.11	0.03
		5785	1.302	1.336	97.46	0.11	0.03
		5825	1.302	1.336	97.46	0.11	0.03
		5720	1.301	1.336	97.38	0.12	0.07
802.11n (HT40)	SISO	5190	0.650	0.683	95.17	0.22	0.03
		5230	0.649	0.682	95.16	0.22	0.03



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		5270	0.649	0.683	95.02	0.22	0.03
		5310	0.648	0.683	94.88	0.23	0.07
		5510	0.650	0.684	95.03	0.22	0.03
		5550	0.648	0.683	94.88	0.23	0.03
		5670	0.649	0.684	94.88	0.23	0.07
		5755	0.649	0.683	95.02	0.22	0.03
		5795	0.649	0.683	95.02	0.22	0.03
		5710	0.648	0.683	94.88	0.23	0.00
802.11ac (VHT20)	SISO	5180	1.313	1.348	97.40	0.11	0.04
		5200	1.313	1.348	97.40	0.11	0.07
		5240	1.313	1.347	97.48	0.11	0.07
		5260	1.312	1.348	97.33	0.12	0.03
		5300	1.314	1.348	97.48	0.11	0.07
		5320	1.312	1.348	97.33	0.12	0.03
		5500	1.313	1.348	97.40	0.11	0.07
		5580	1.312	1.347	97.40	0.11	0.03
		5700	1.312	1.348	97.33	0.12	0.04
		5745	1.314	1.348	97.48	0.11	0.03
		5785	1.314	1.348	97.48	0.11	0.07
		5825	1.314	1.348	97.48	0.11	0.07
802.11ac (VHT40)	SISO	5720	1.313	1.349	97.33	0.12	0.10
		5190	0.653	0.687	95.05	0.22	0.04
		5230	0.653	0.687	95.05	0.22	0.03
		5270	0.652	0.687	94.91	0.23	0.07
		5310	0.653	0.687	95.05	0.22	0.03
		5510	0.653	0.687	95.05	0.22	0.03
		5550	0.653	0.687	95.05	0.22	0.04
		5670	0.654	0.687	95.20	0.21	0.07
		5755	0.653	0.687	95.05	0.22	0.03
		5795	0.654	0.687	95.20	0.21	0.03
802.11ac (VHT80)	SISO	5710	0.653	0.687	95.05	0.22	0.04
		5210	0.324	0.358	90.50	0.43	0.07
		5290	0.325	0.358	90.78	0.42	0.07
		5530	0.325	0.359	90.53	0.43	0.04
		5610	0.324	0.358	90.50	0.43	0.07
		5775	0.324	0.358	90.50	0.43	0.07
		5690	0.325	0.359	90.53	0.43	0.11



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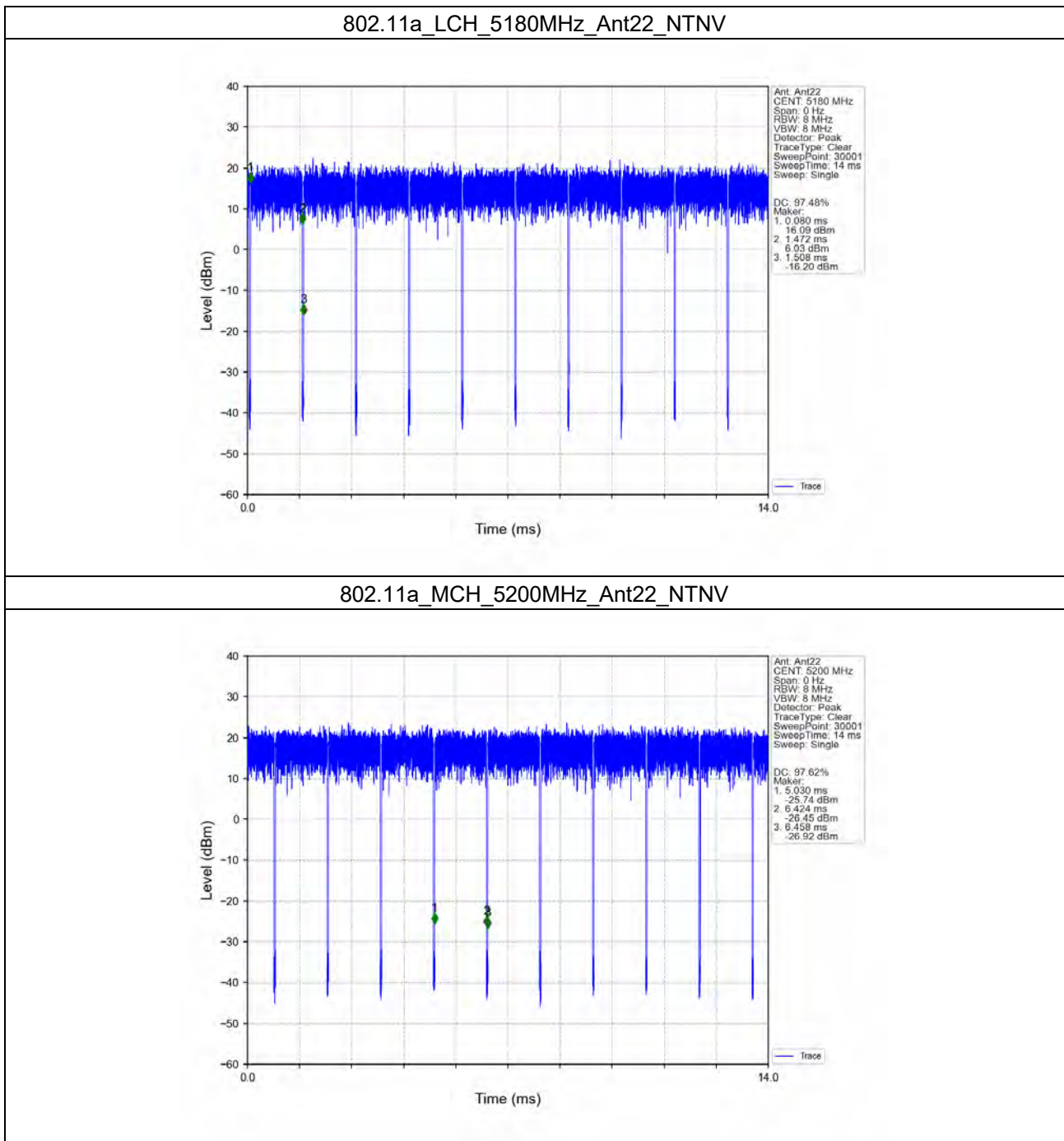
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1.2 Test Graph

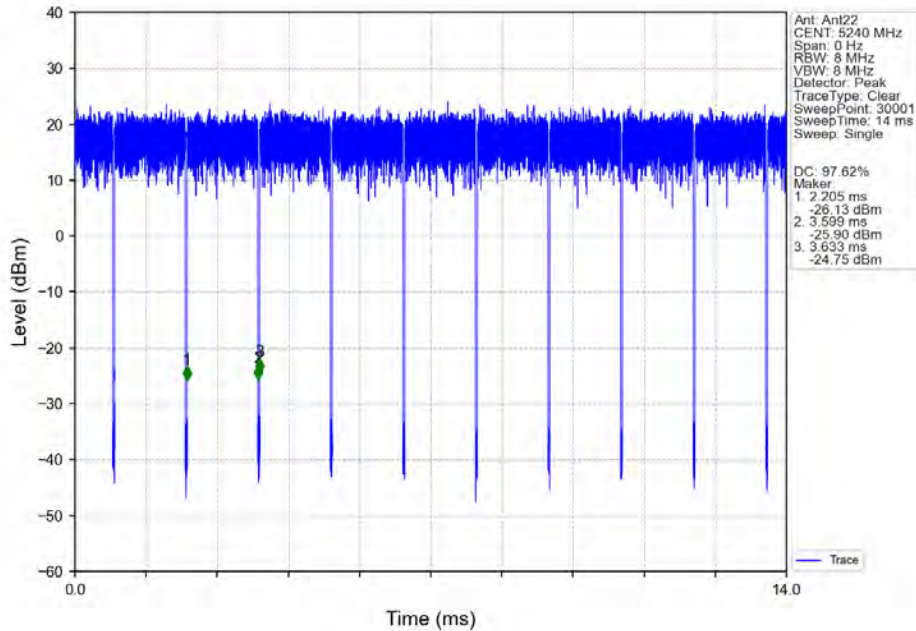
1.2.1 Ant22



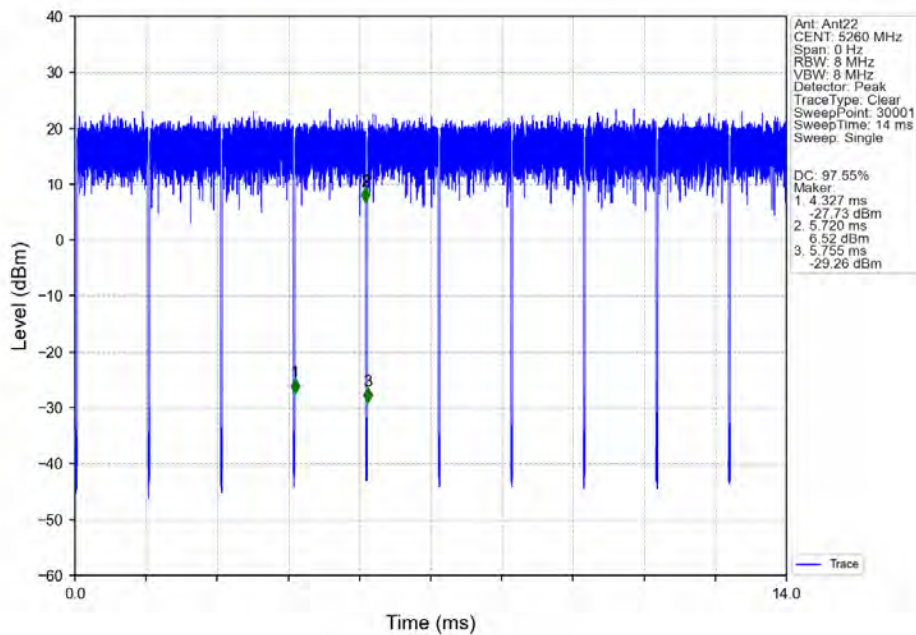
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802.11a_HCH_5240MHz_Ant22_NTNV



802.11a_LCH_5260MHz_Ant22_NTNV



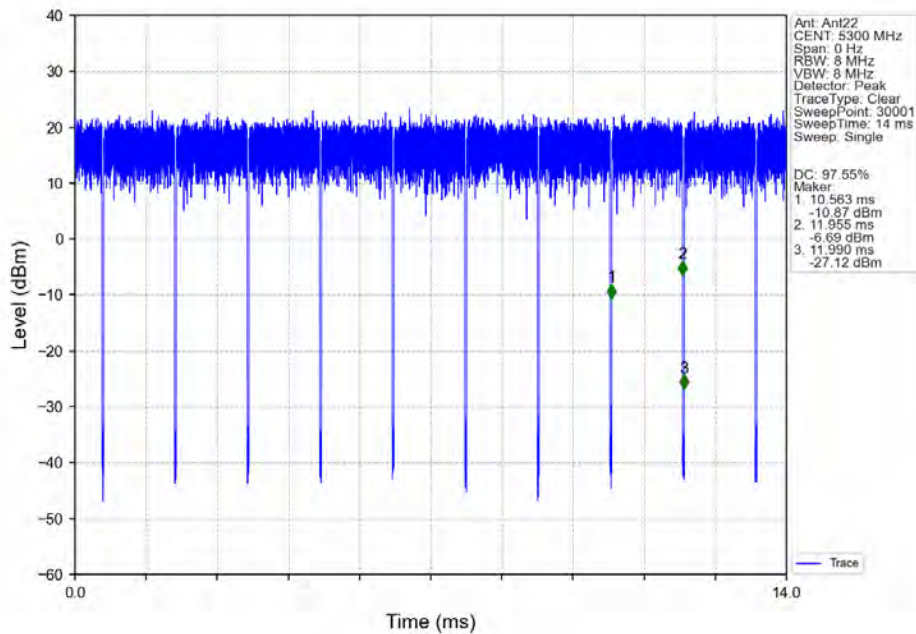
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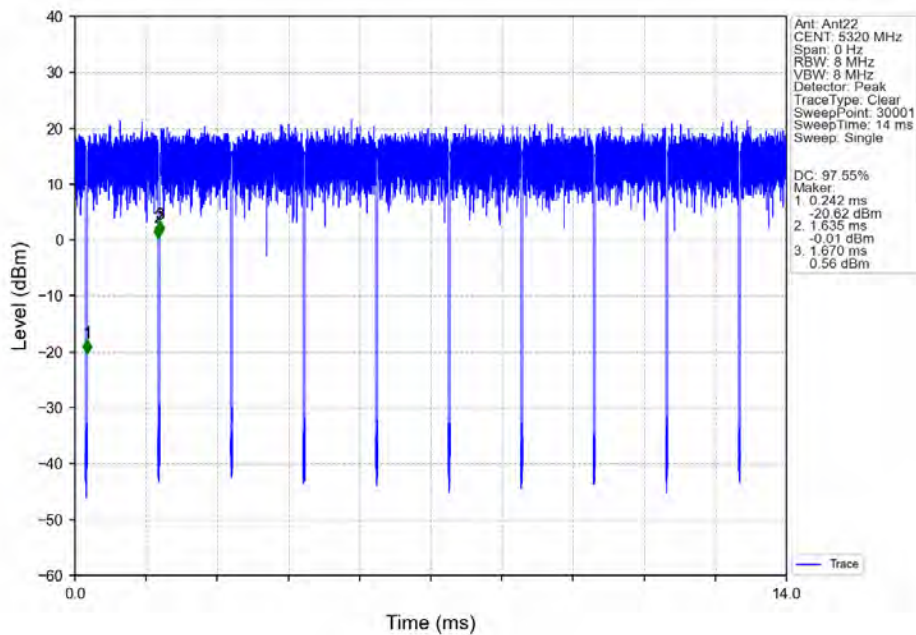
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802.11a_MCH_5300MHz_Ant22_NTNV



802.11a_HCH_5320MHz_Ant22_NTNV



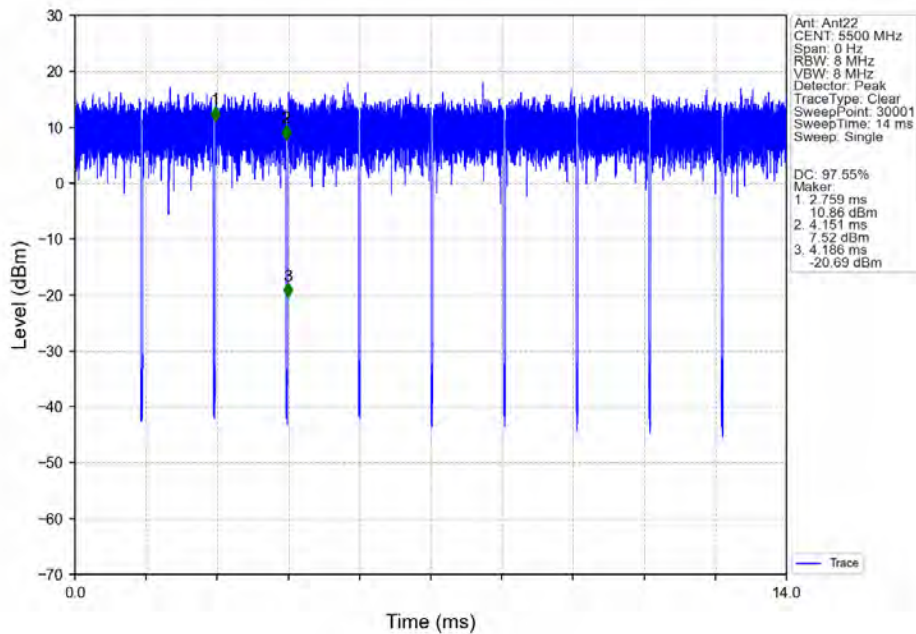
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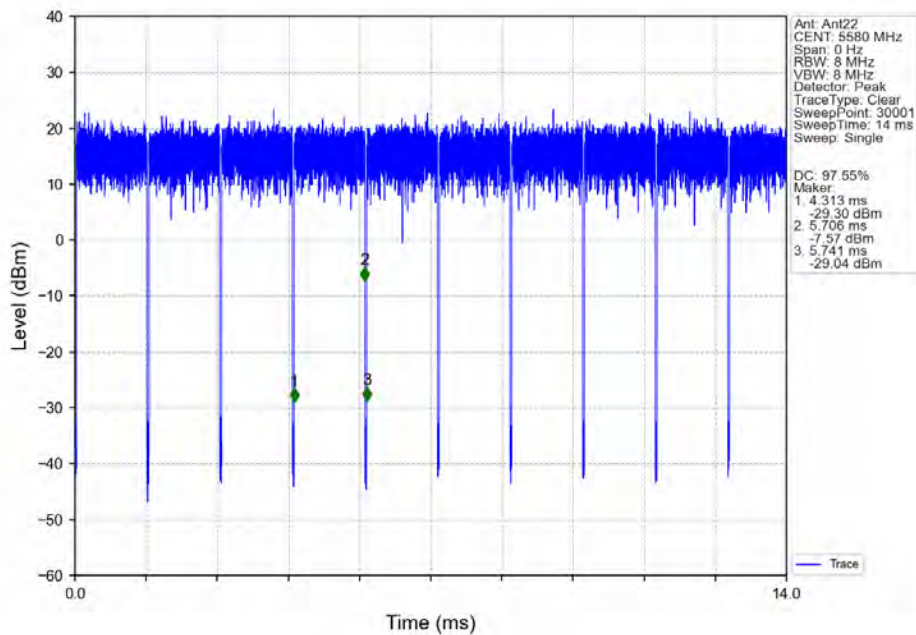
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802.11a_LCH_5500MHz_Ant22_NTNV



802.11a_MCH_5580MHz_Ant22_NTNV



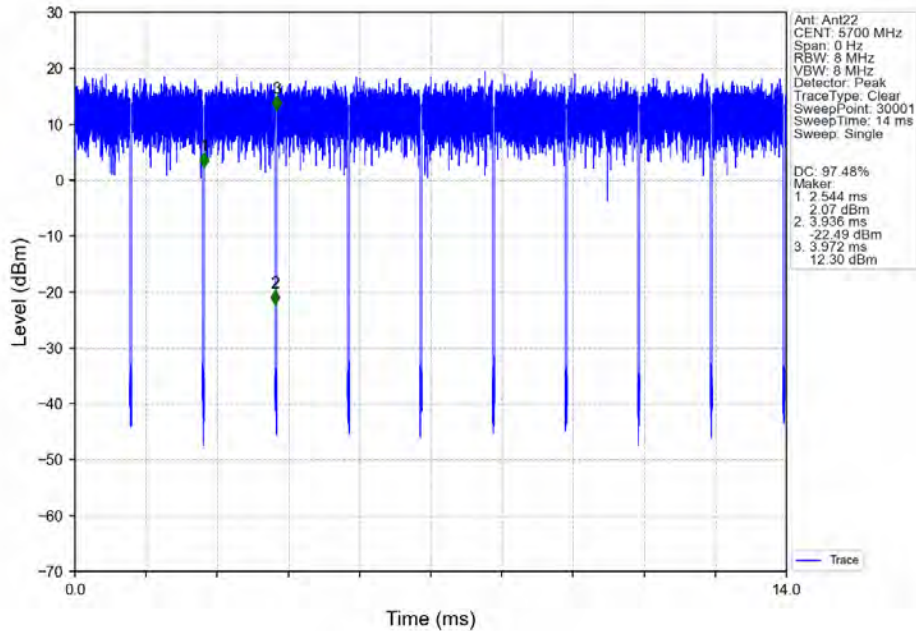
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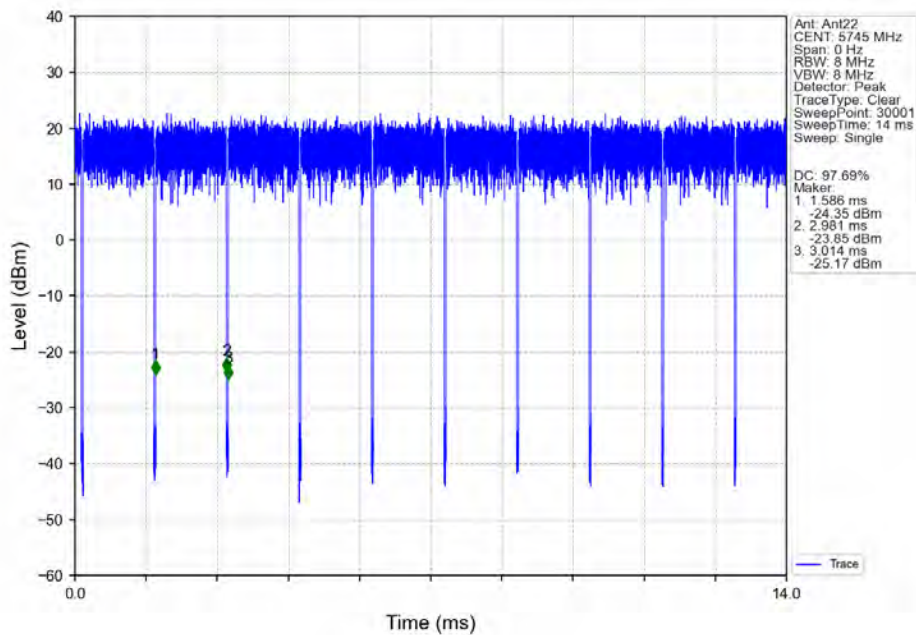
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802.11a_HCH_5700MHz_Ant22_NTNV



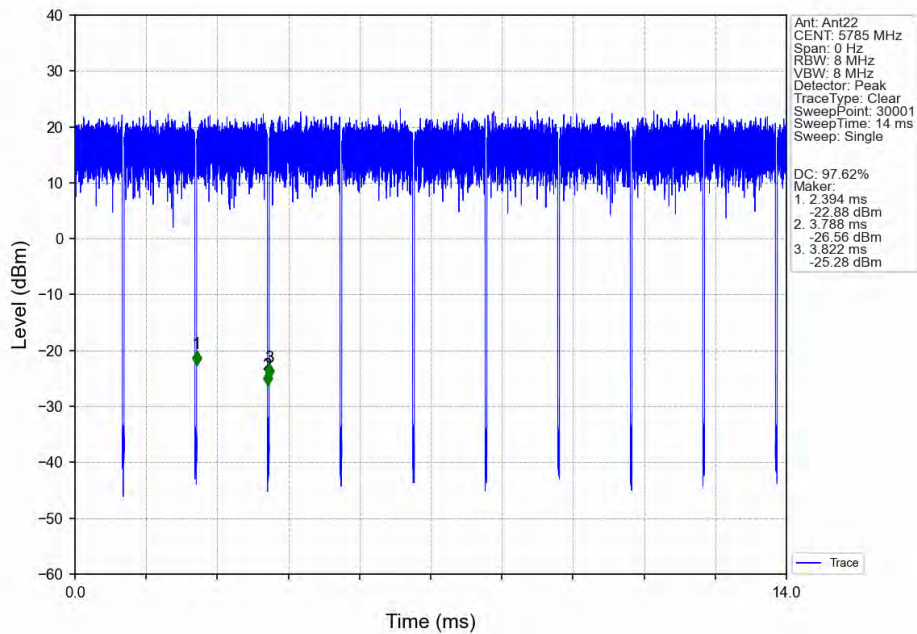
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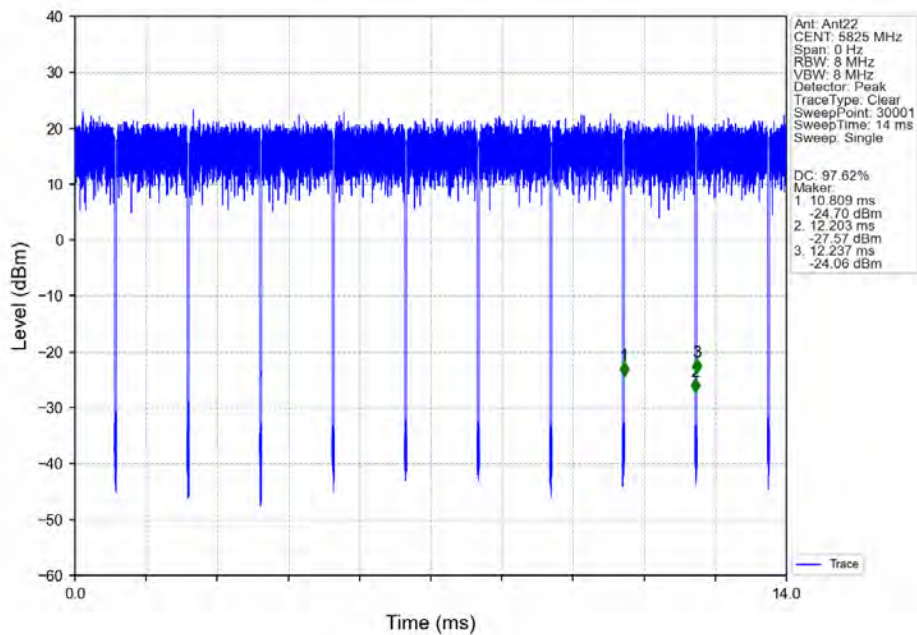
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802.11a_MCH_5785MHz_Ant22_NTNV



802.11a_HCH_5825MHz_Ant22_NTNV



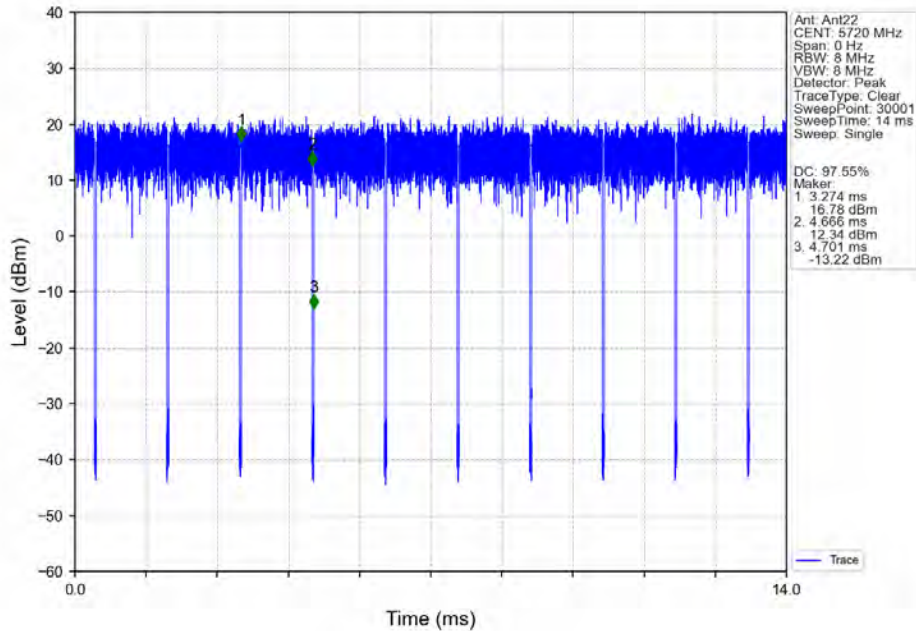
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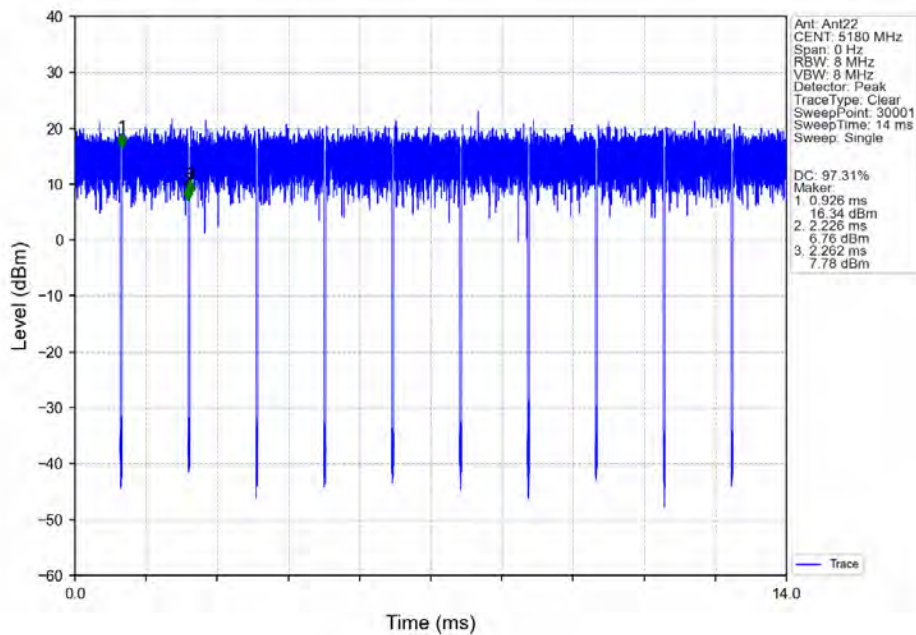
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802.11a_HCH_5720MHz_Ant22_NTNV



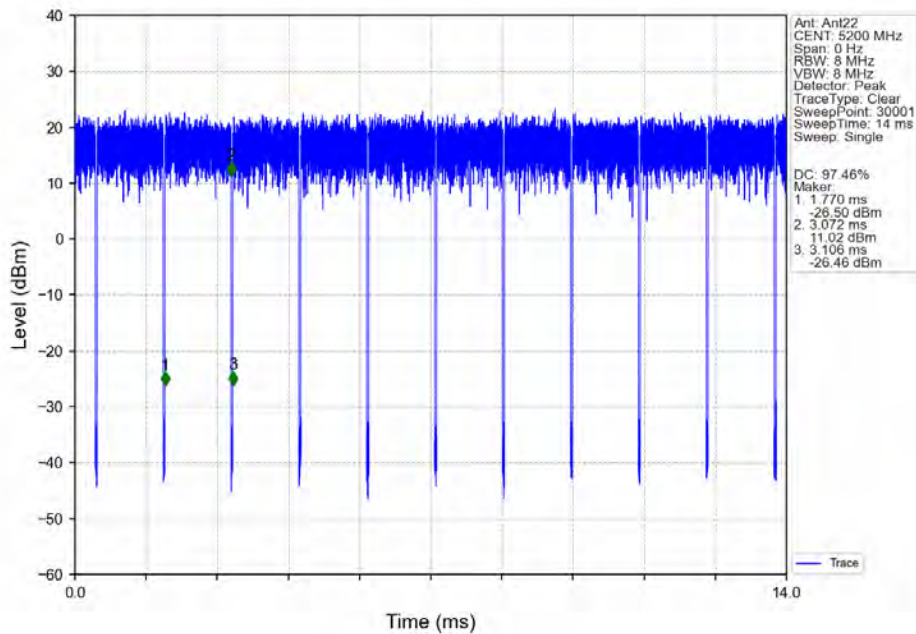
802.11n(HT20)_LCH_5180MHz_Ant22_NTNV



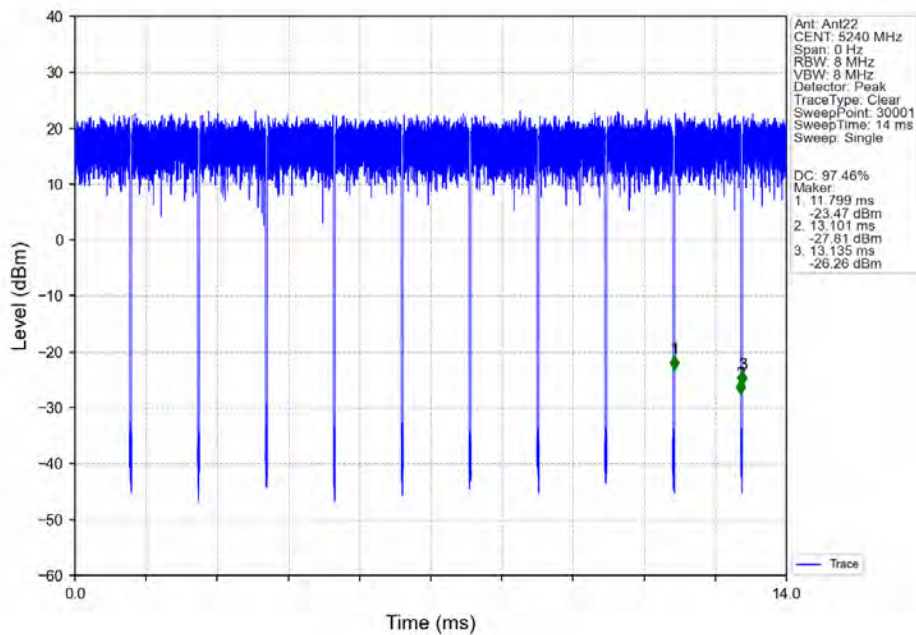
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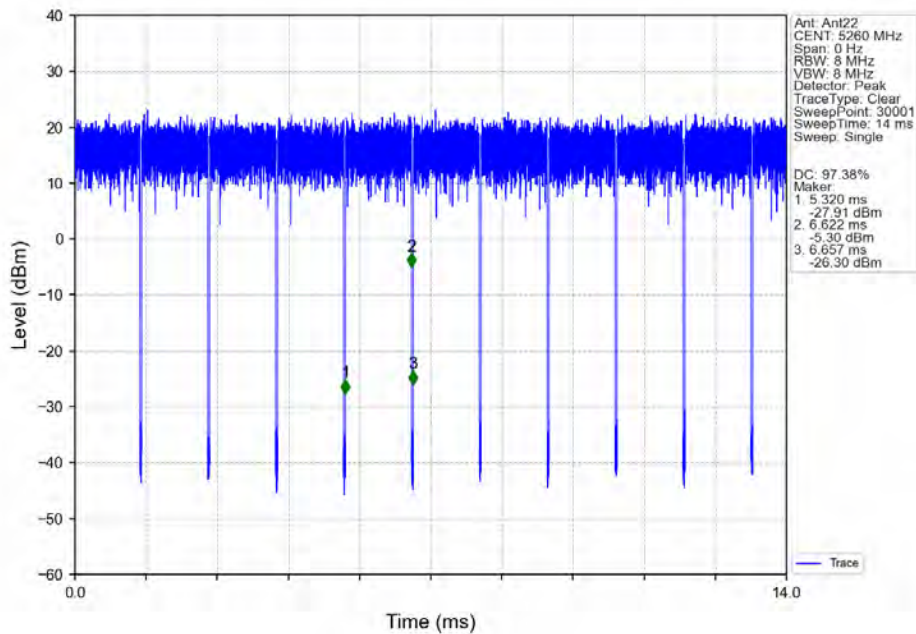
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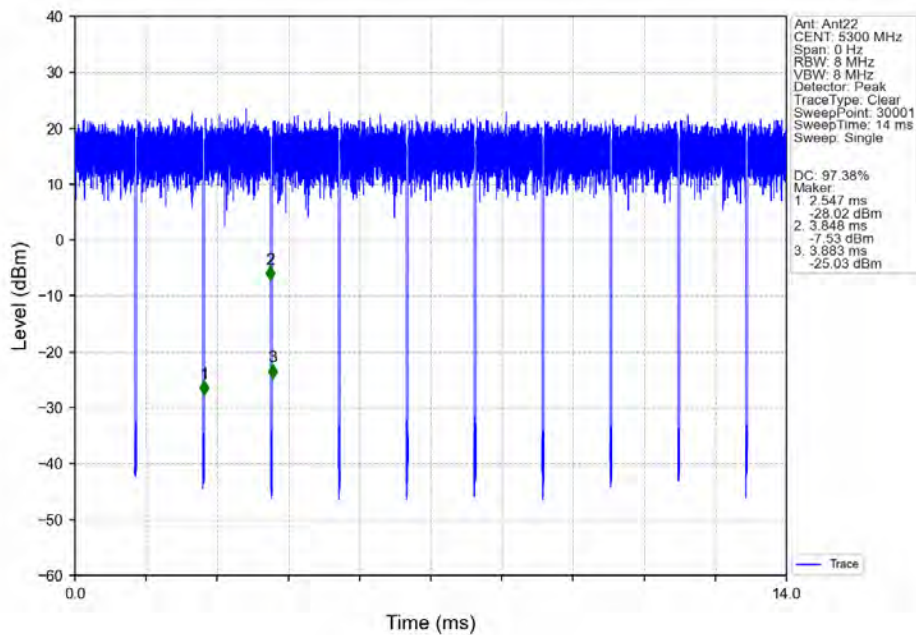
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802.11n(HT20)_LCH_5260MHz_Ant22_NTNV



802.11n(HT20)_MCH_5300MHz_Ant22_NTNV



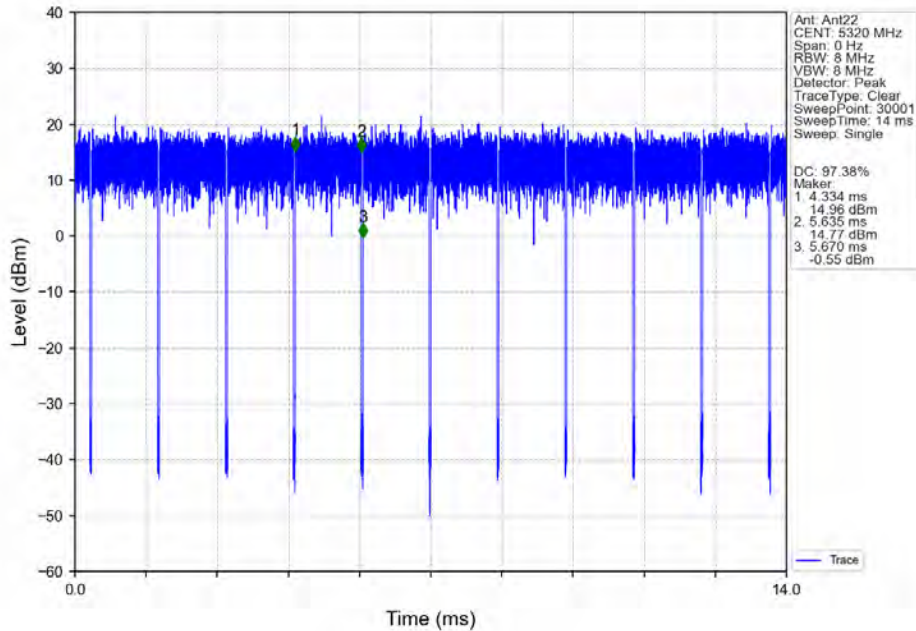
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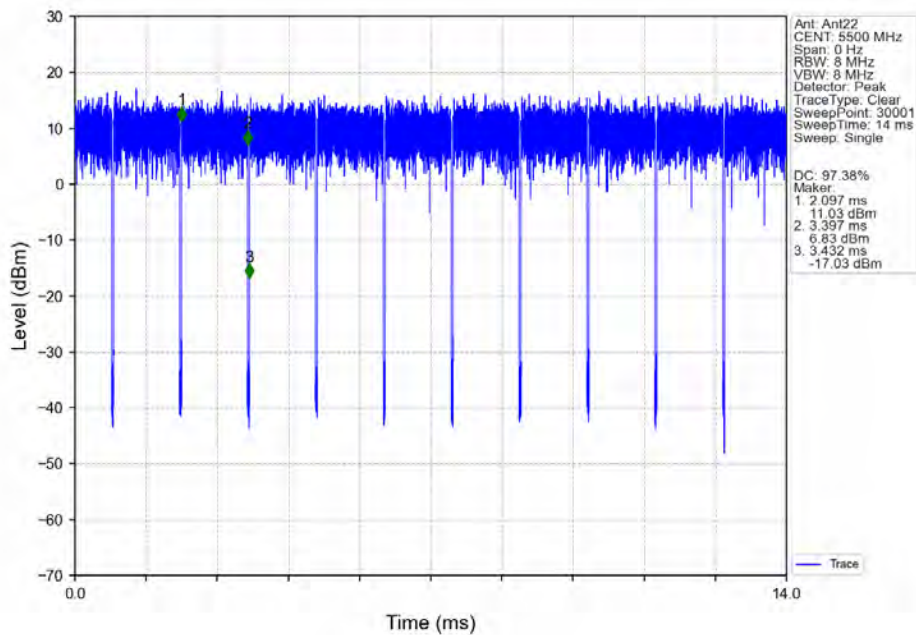
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802.11n(HT20)_HCH_5320MHz_Ant22_NTNV



802.11n(HT20)_LCH_5500MHz_Ant22_NTNV



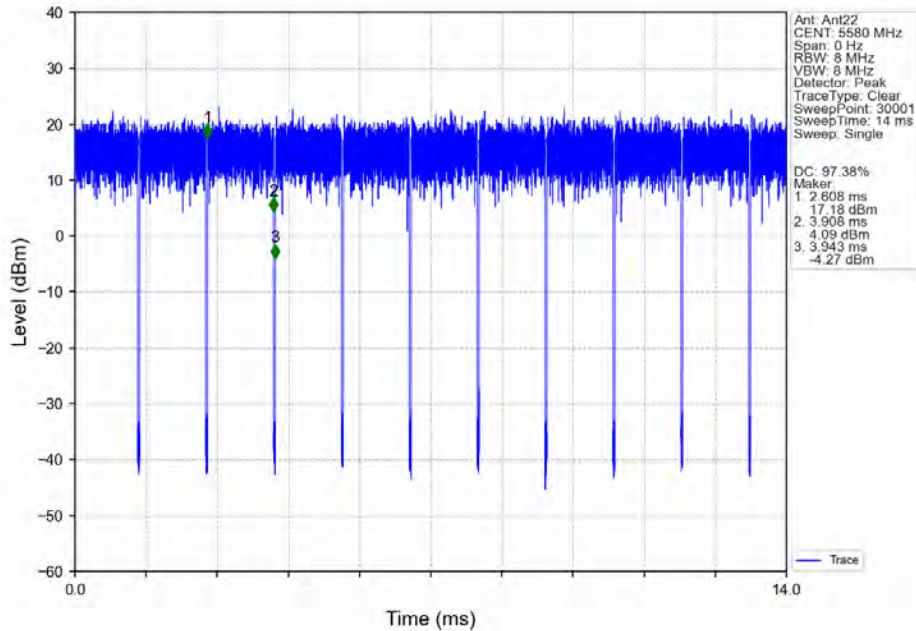
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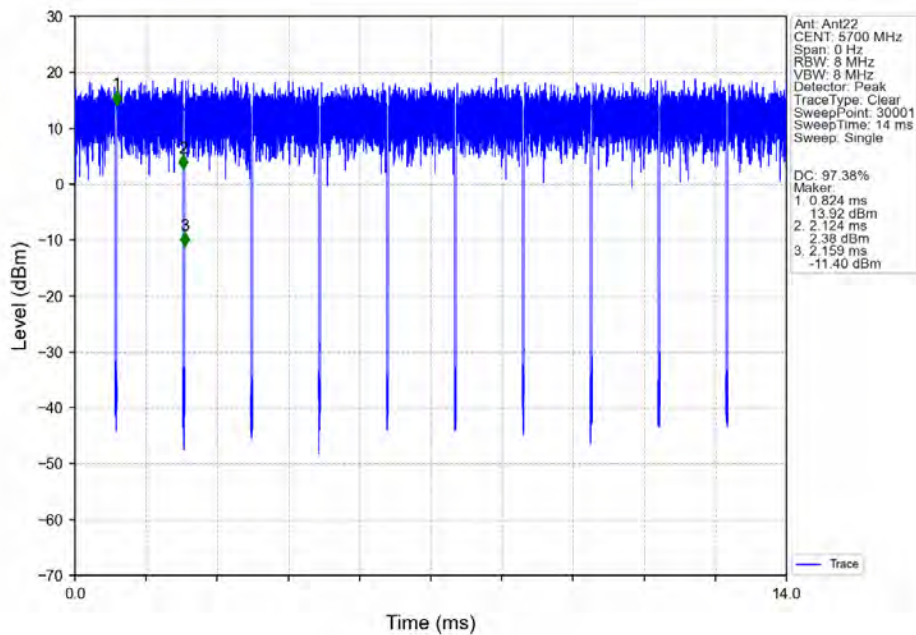
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802.11n(HT20)_MCH_5580MHz_Ant22_NTNV



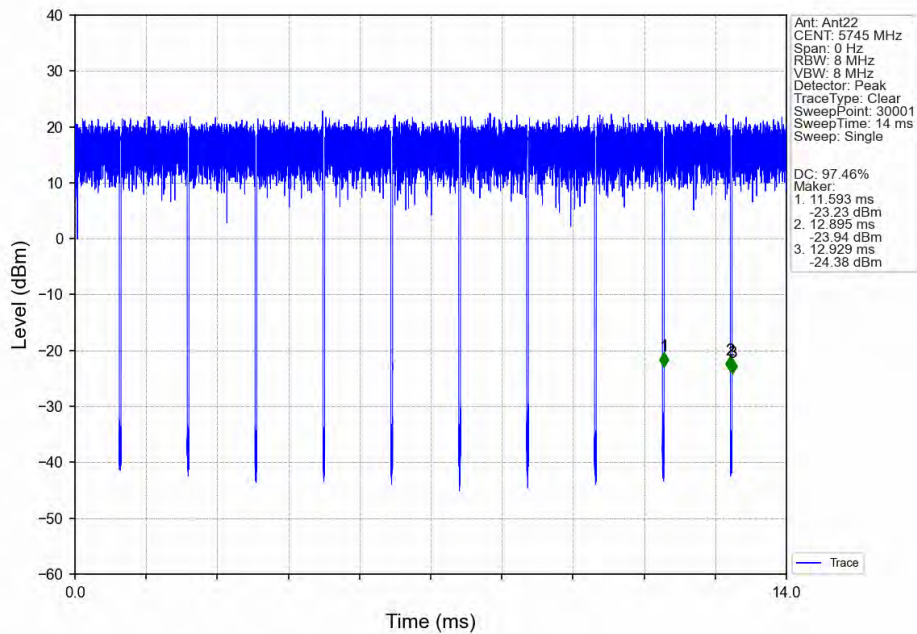
802.11n(HT20)_HCH_5700MHz_Ant22_NTNV



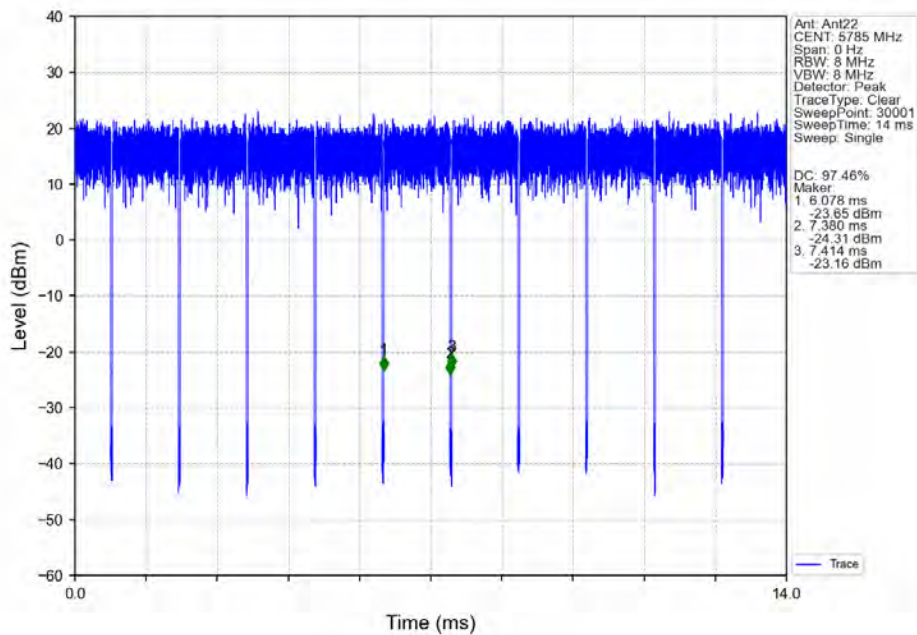
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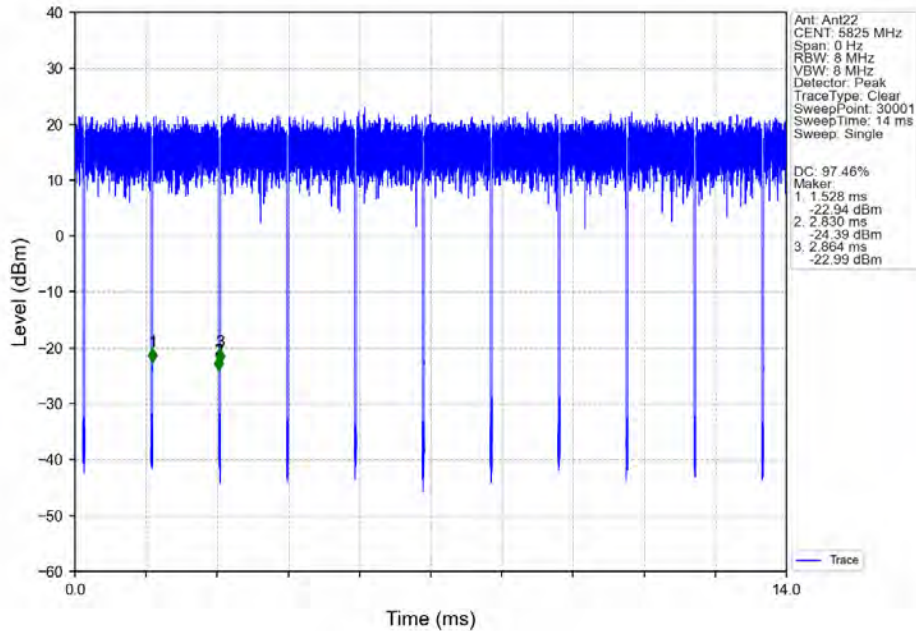
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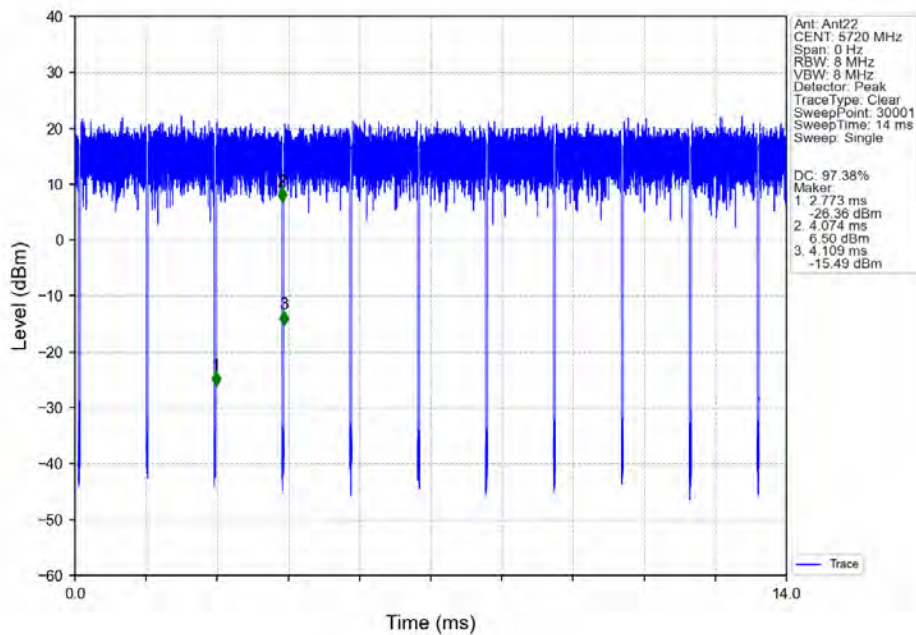
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802.11n(HT20)_HCH_5825MHz_Ant22_NTNV



802.11n(HT20)_HCH_5720MHz_Ant22_NTNV



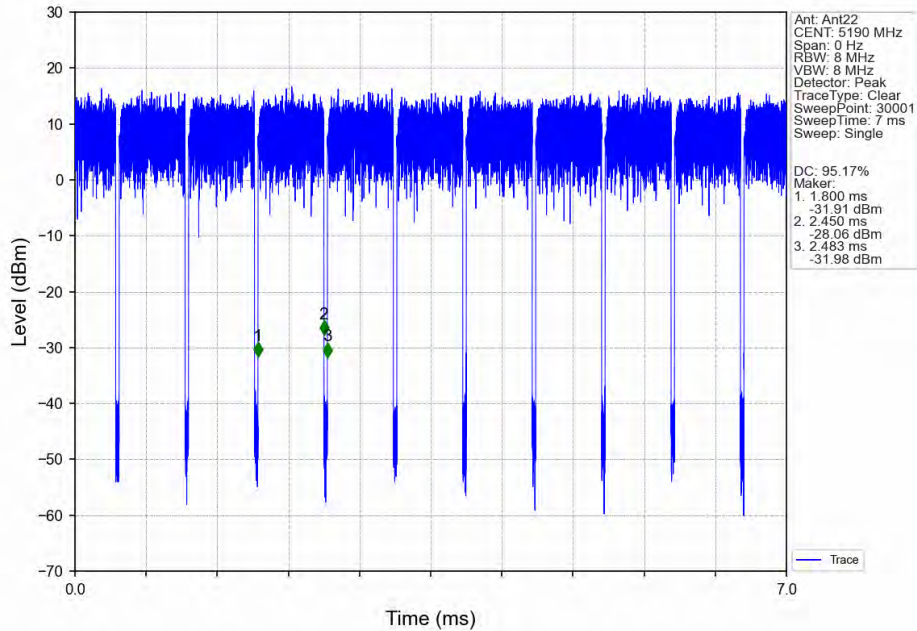
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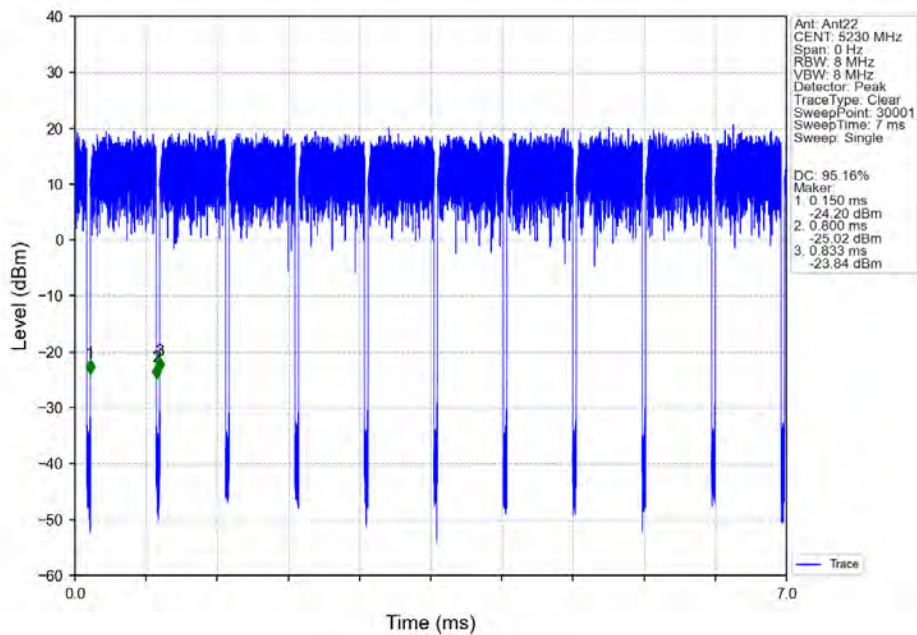
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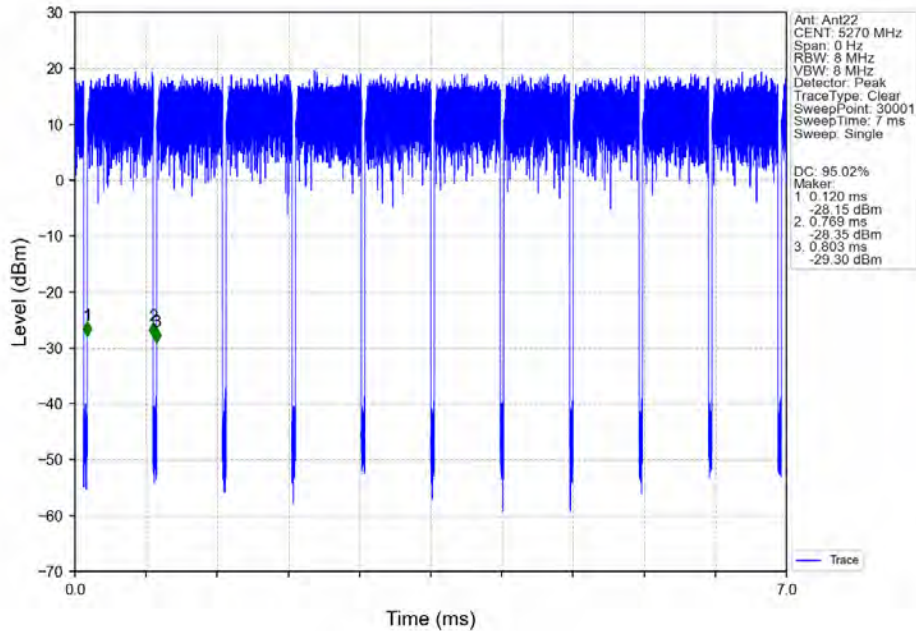
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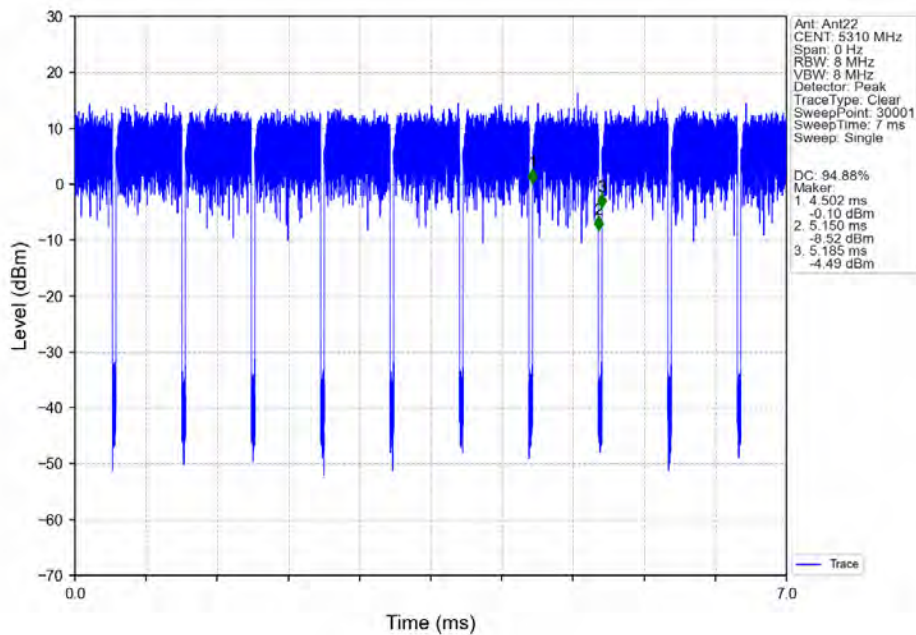
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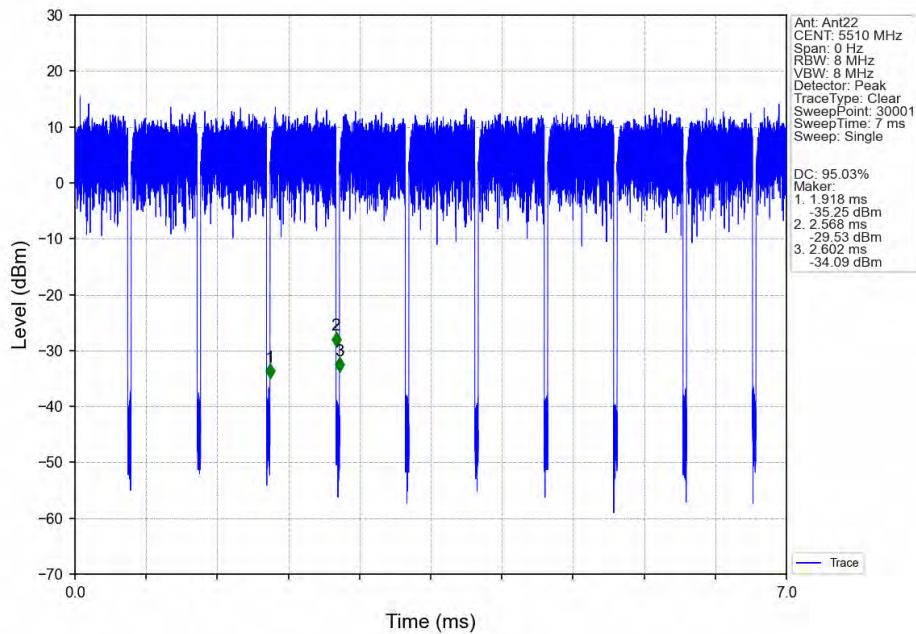
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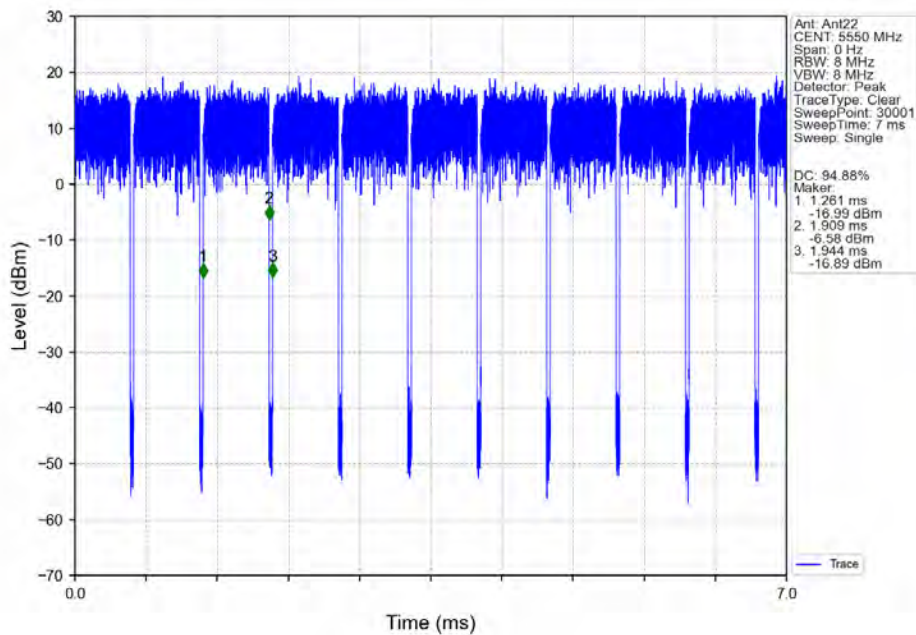
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802.11n(HT40)_LCH_5510MHz_Ant22_NTNV



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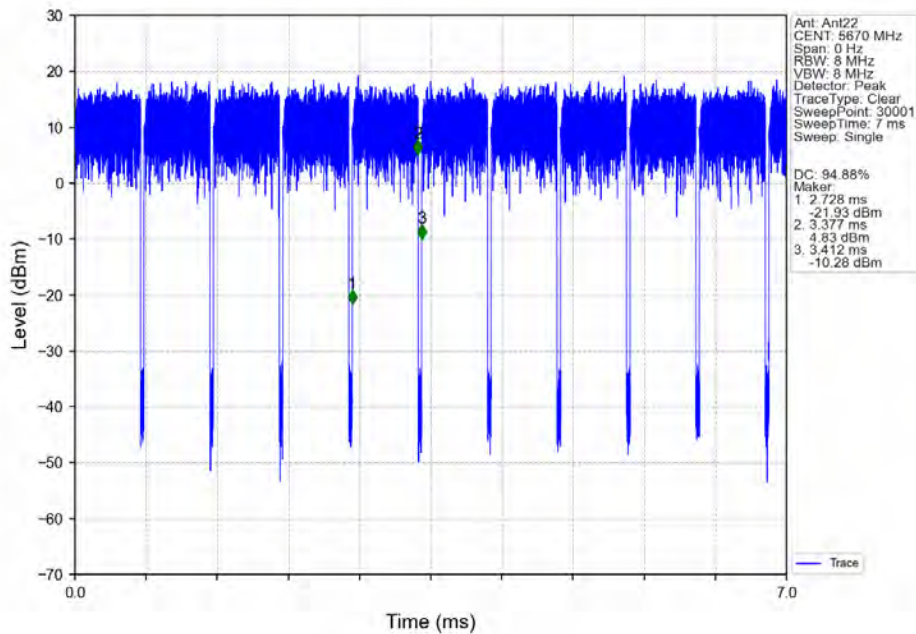
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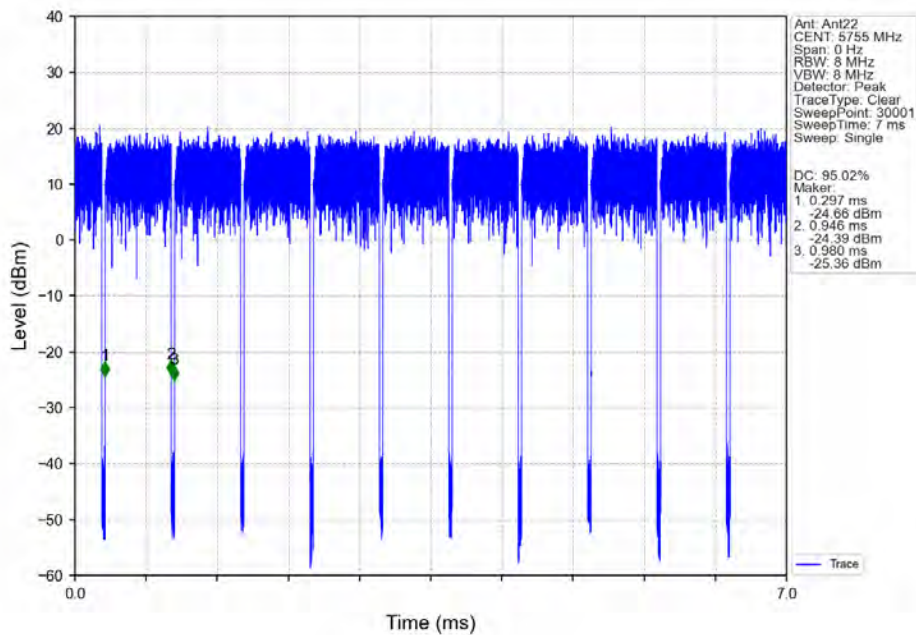
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802.11n(HT40)_HCH_5670MHz_Ant22_NTNV



802.11n(HT40)_LCH_5755MHz_Ant22_NTNV



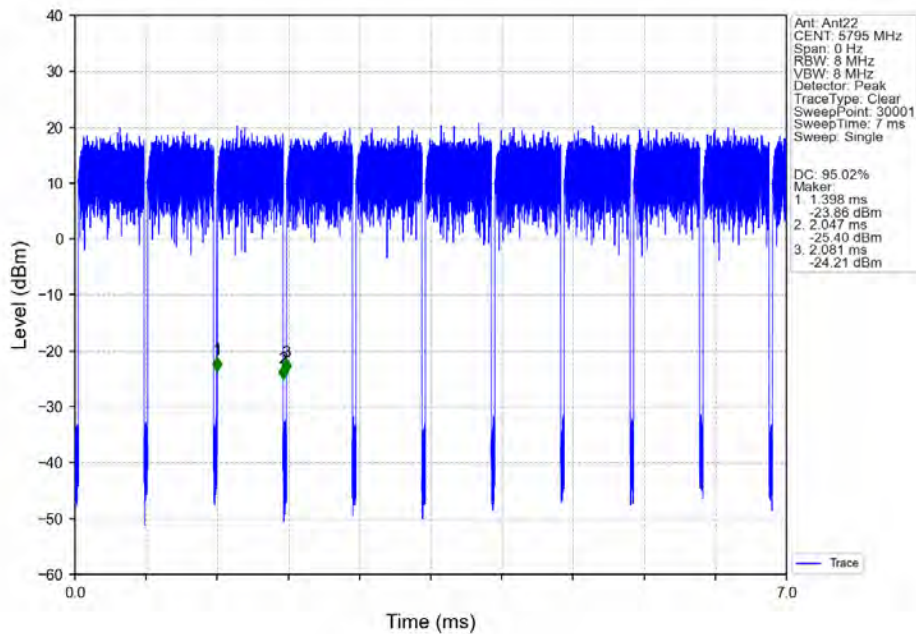
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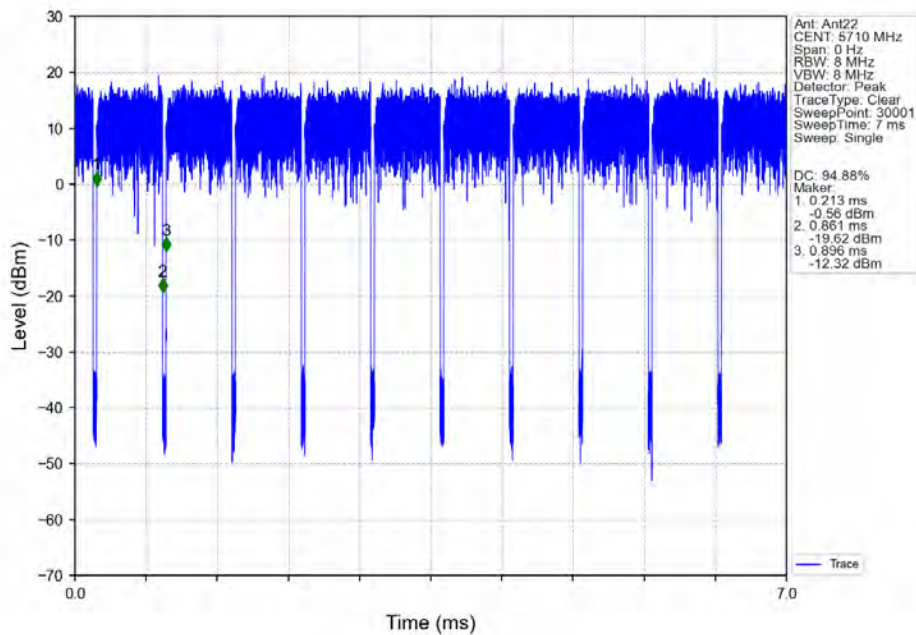
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802.11n(HT40)_HCH_5795MHz_Ant22_NTNV



802.11n(HT40)_HCH_5710MHz_Ant22_NTNV



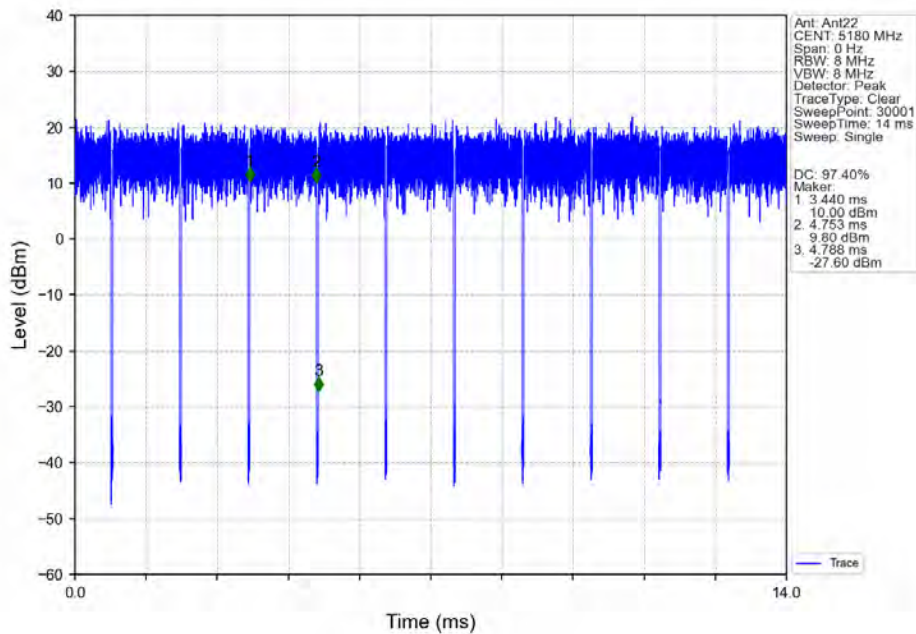
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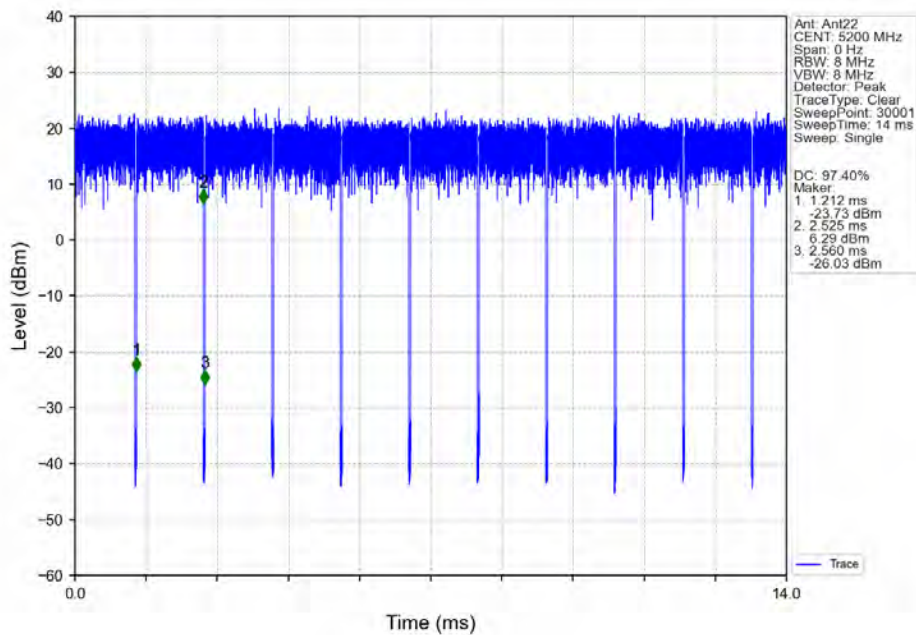
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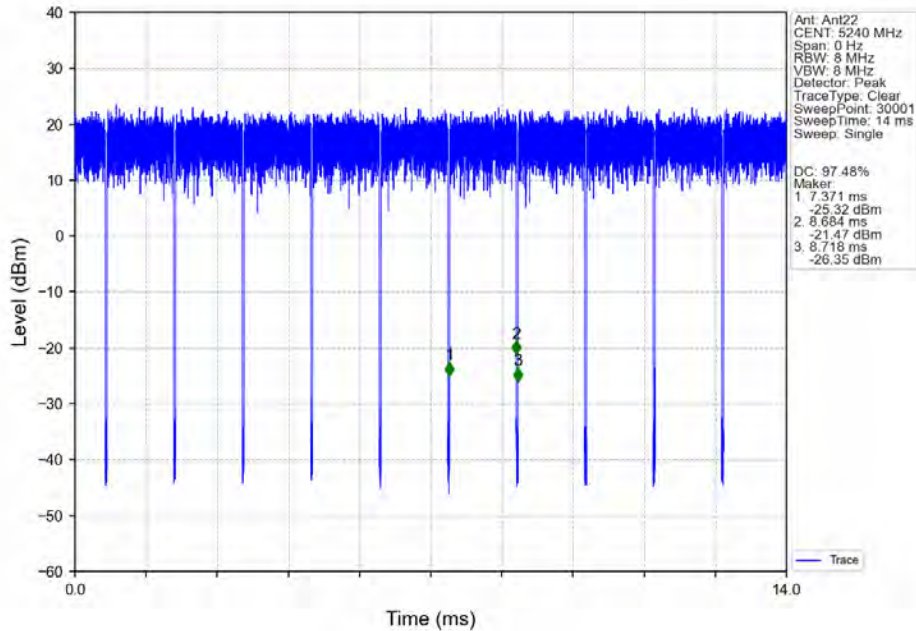
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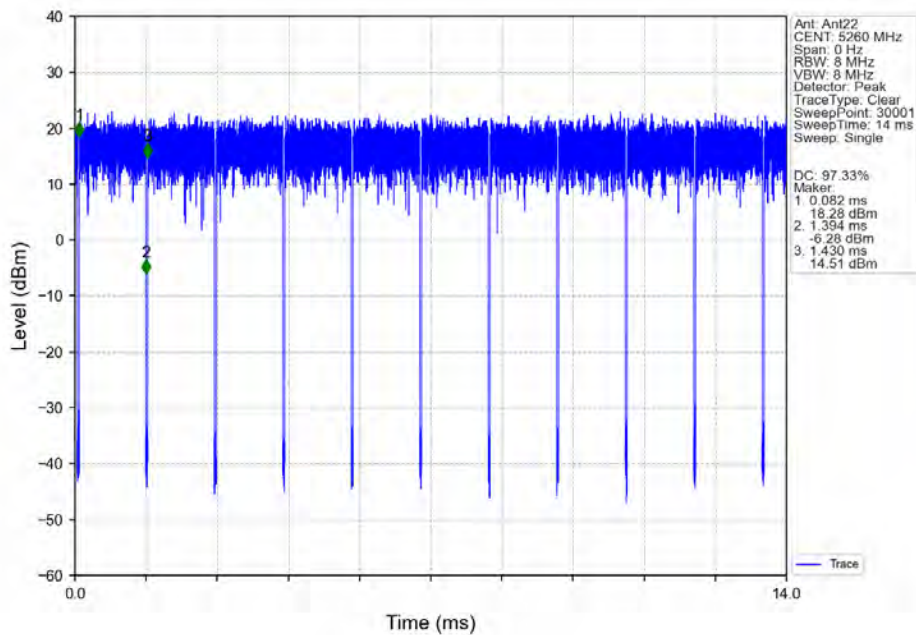
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802.11ac(VHT20)_HCH_5240MHz_Ant22_NTNV



802.11ac(VHT20)_LCH_5260MHz_Ant22_NTNV



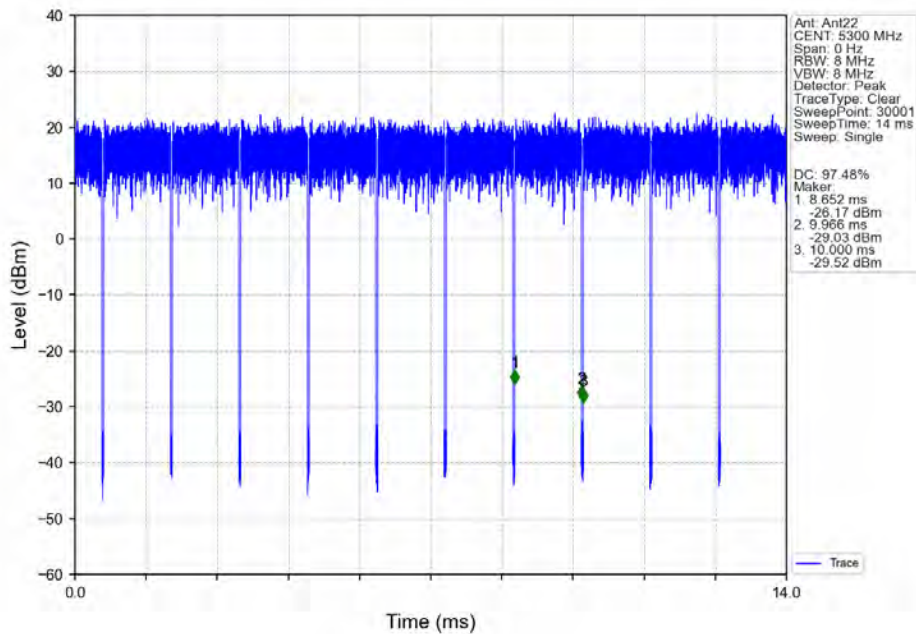
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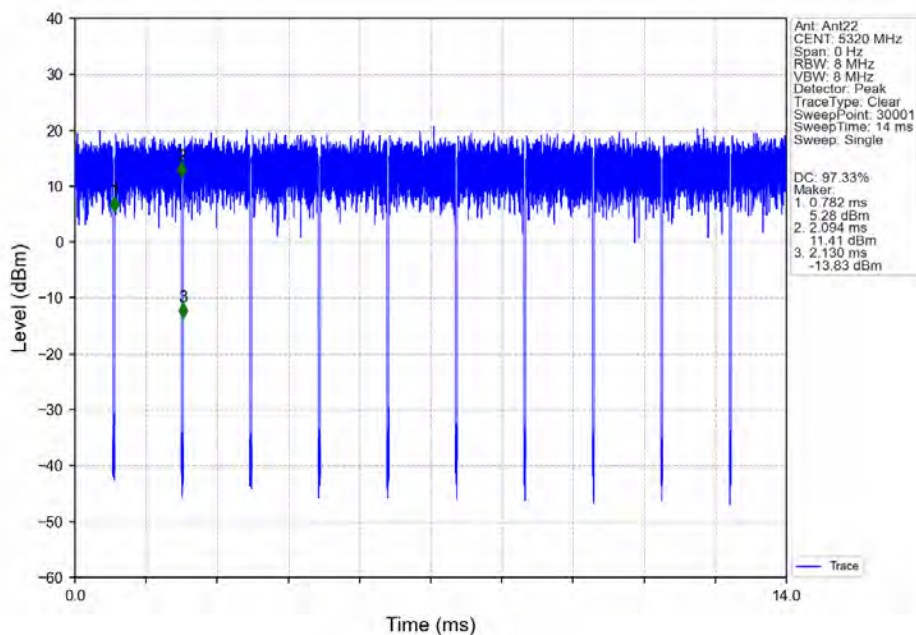
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802.11ac(VHT20)_MCH_5300MHz_Ant22_NTNV



802.11ac(VHT20)_HCH_5320MHz_Ant22_NTNV



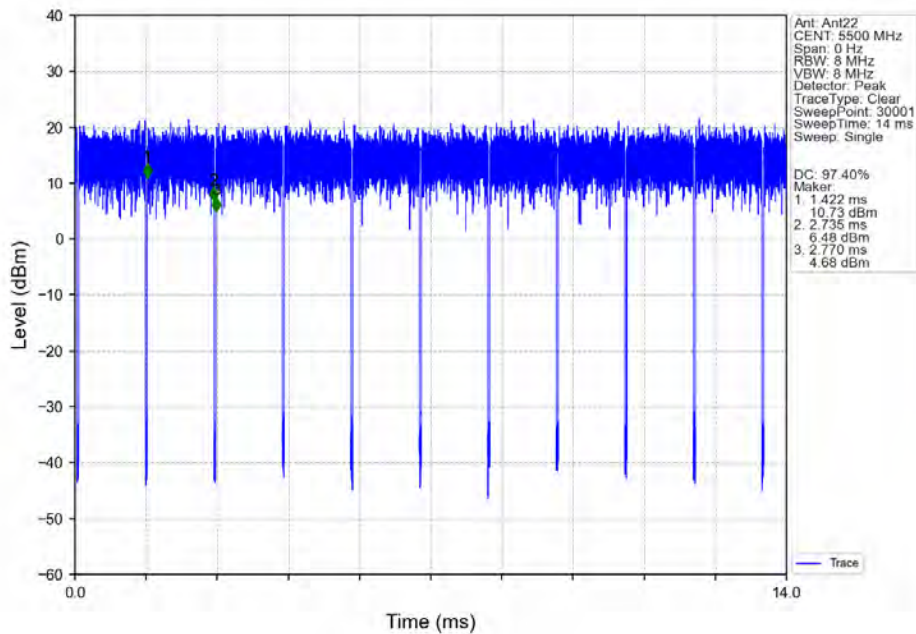
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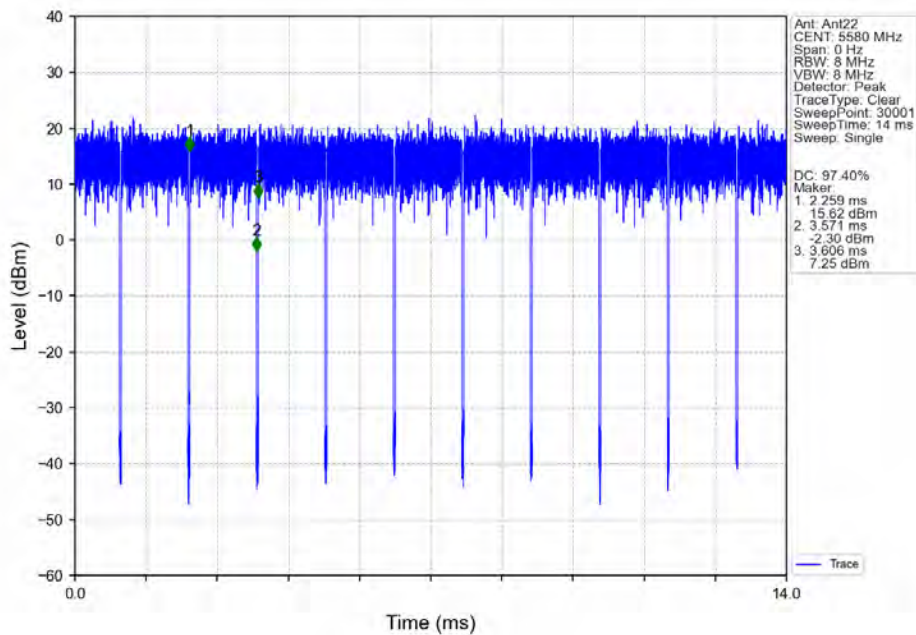
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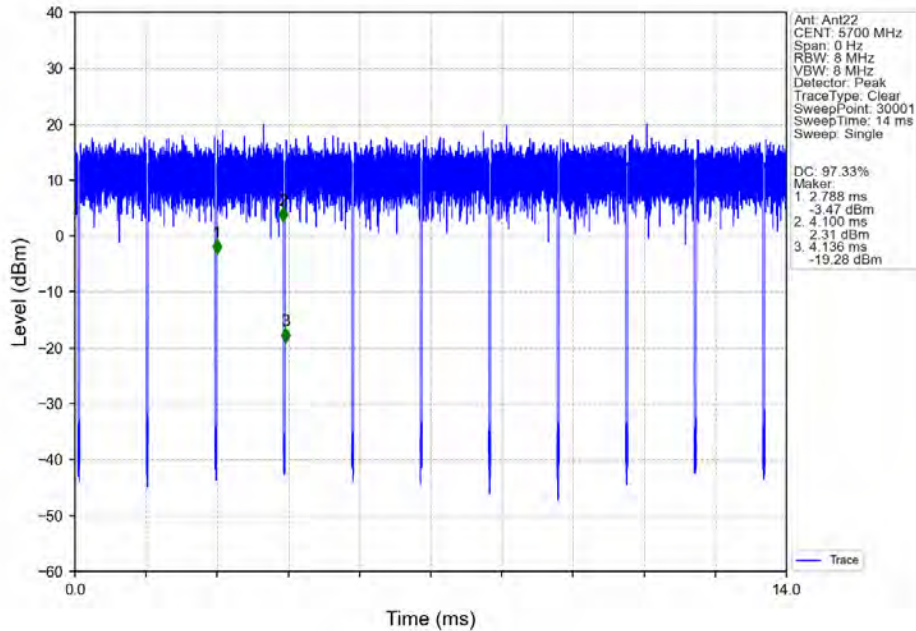
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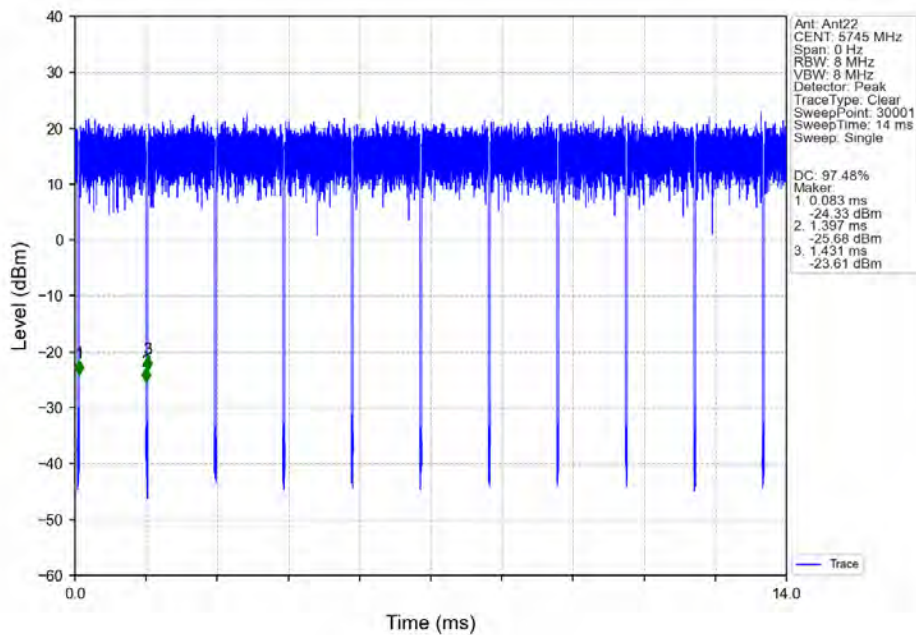
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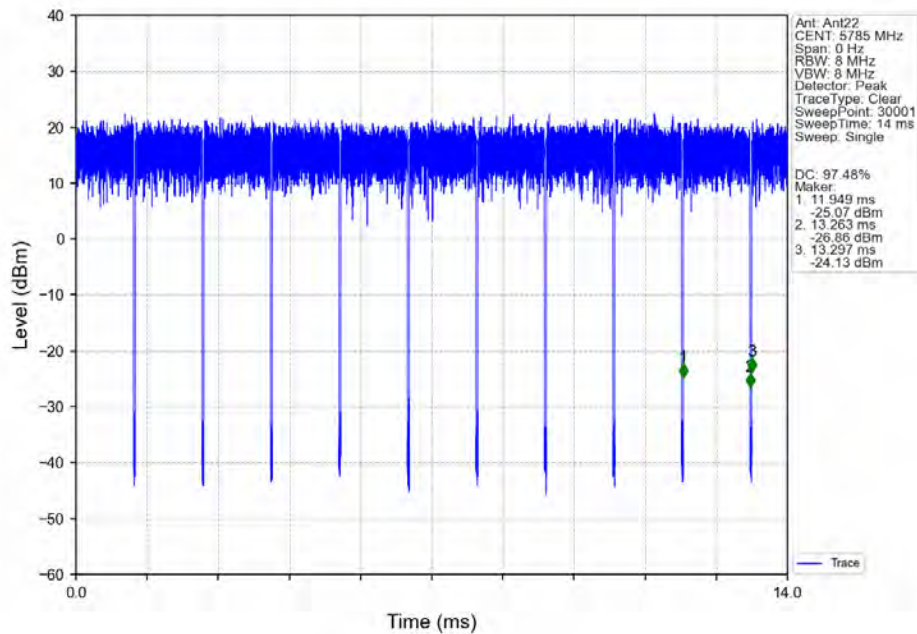
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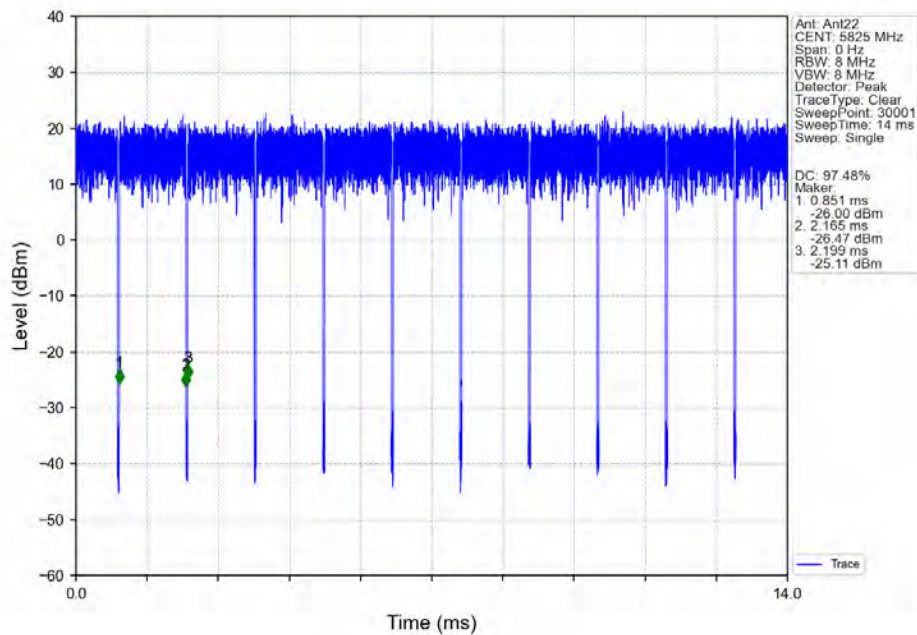
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802.11ac(VHT20)_MCH_5785MHz_Ant22_NTNV



802.11ac(VHT20)_HCH_5825MHz_Ant22_NTNV



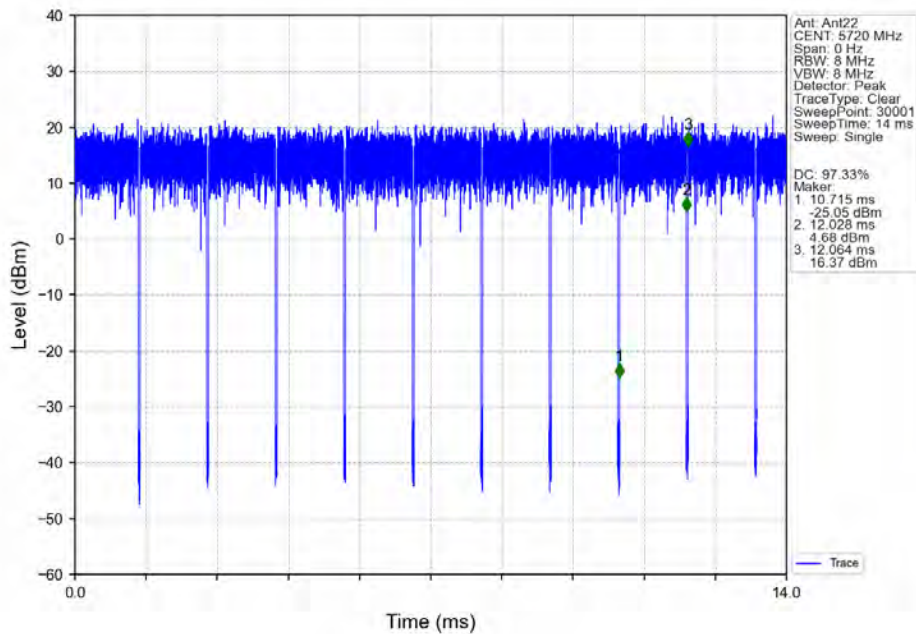
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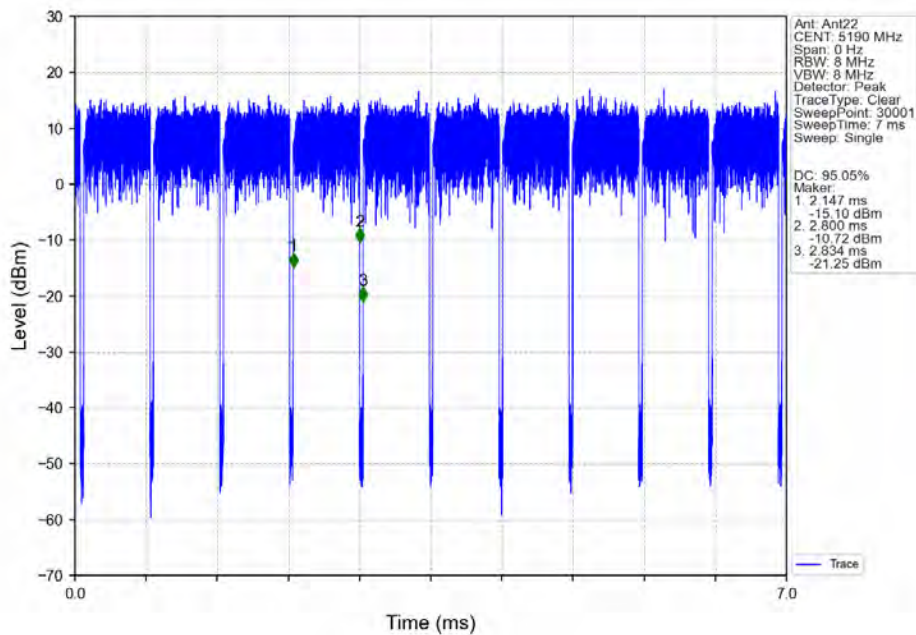
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802.11ac(VHT20)_HCH_5720MHz_Ant22_NTNV



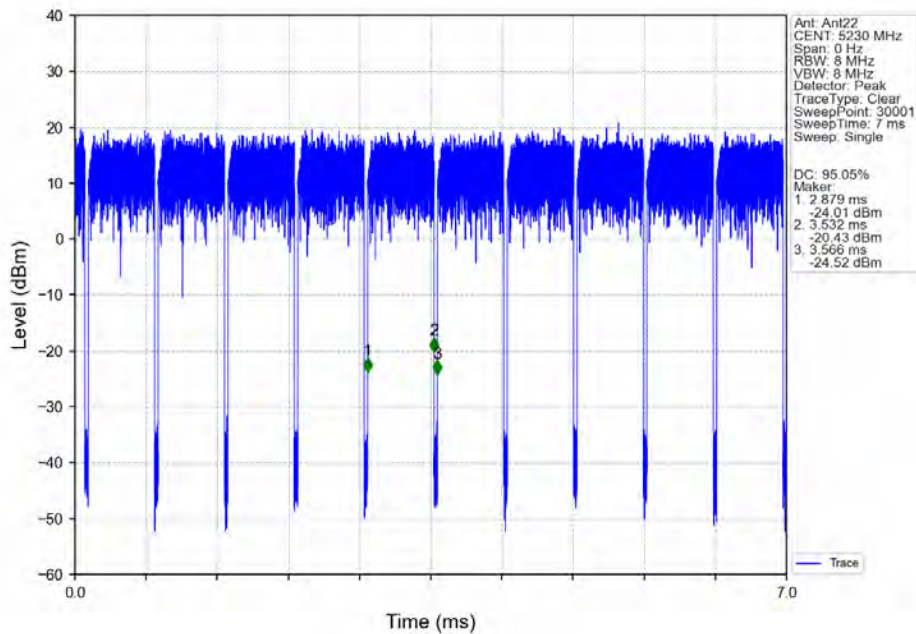
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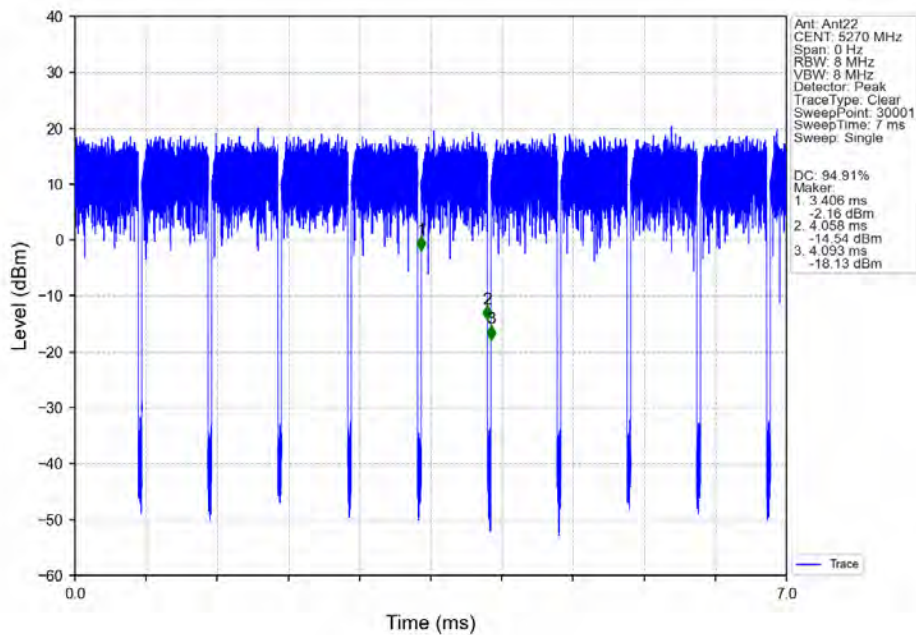
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802.11ac(VHT40)_HCH_5230MHz_Ant22_NTNV



802.11ac(VHT40)_LCH_5270MHz_Ant22_NTNV



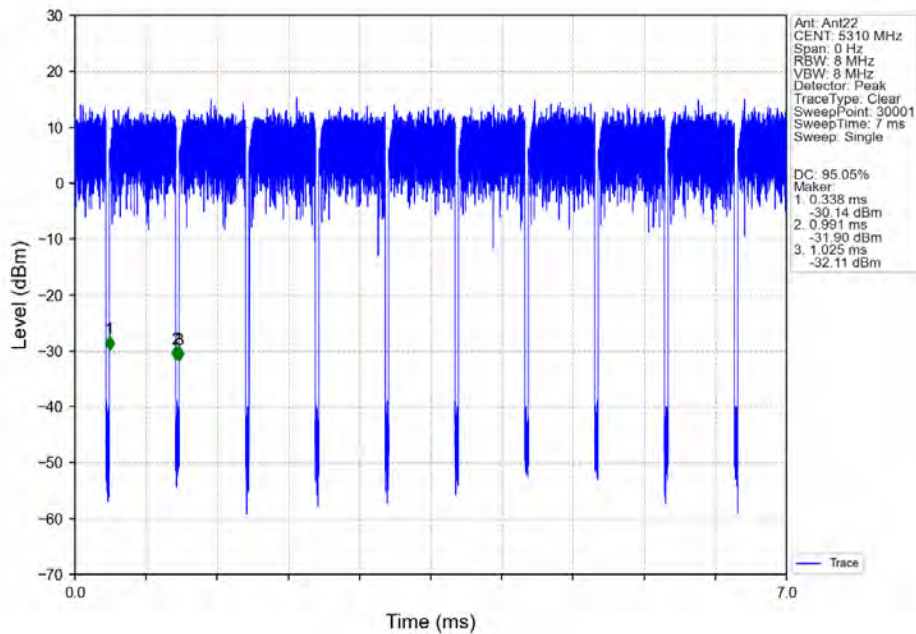
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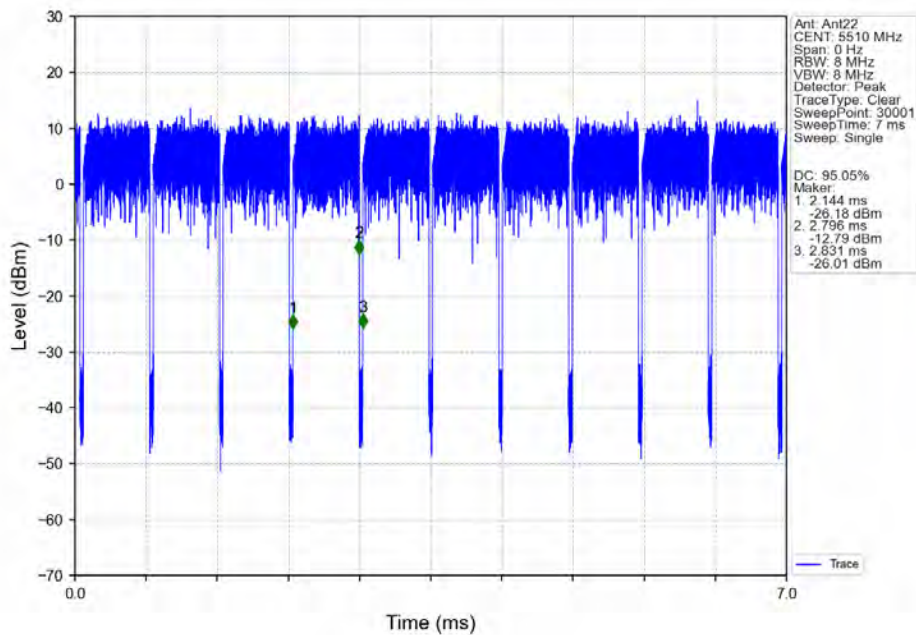
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802.11ac(VHT40)_HCH_5310MHz_Ant22_NTNV



802.11ac(VHT40)_LCH_5510MHz_Ant22_NTNV



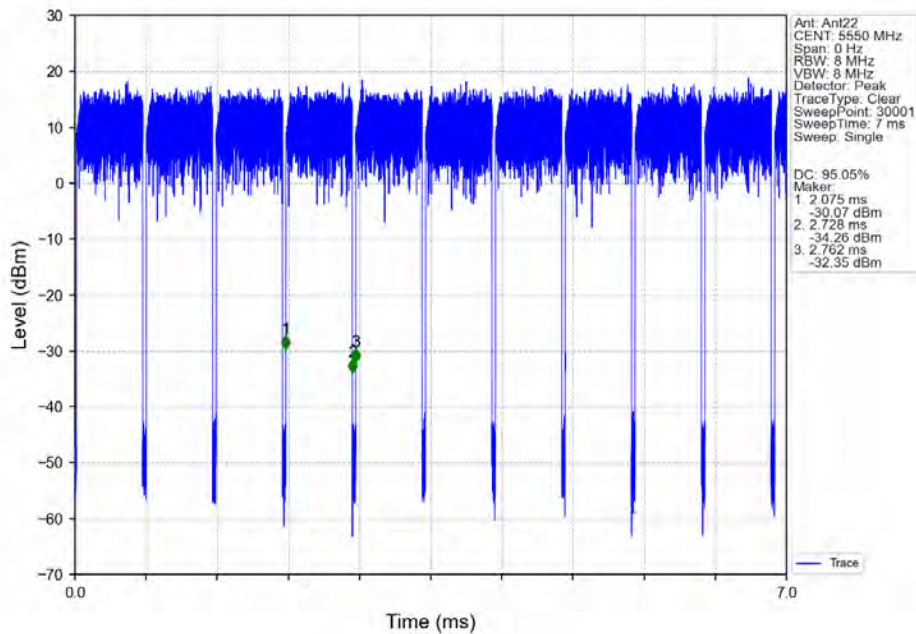
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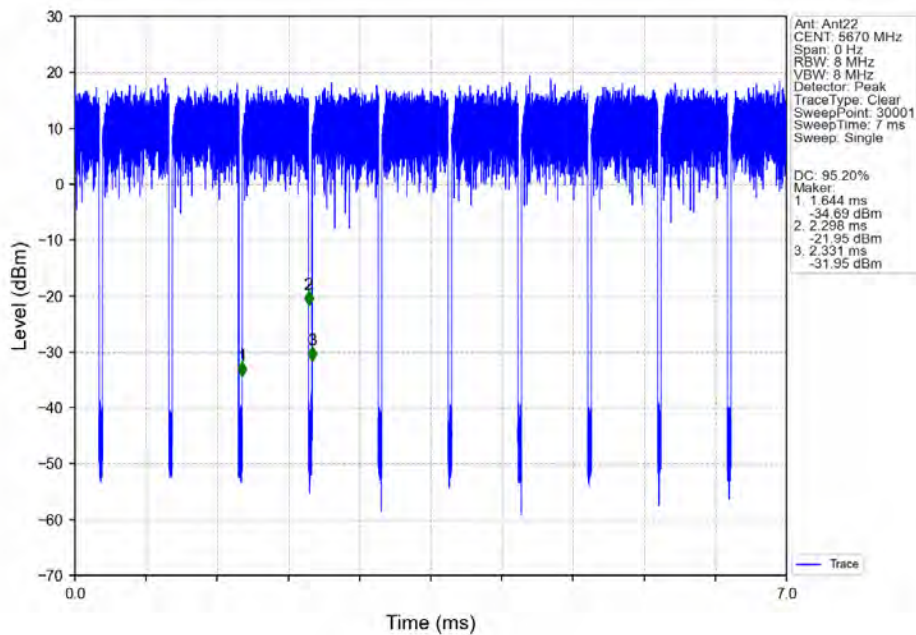
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802.11ac(VHT40)_HCH_5670MHz_Ant22_NTNV



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