Test mode : 802.11ax(HE40)_OFDMA / MIMO_5670 MHz

Frequency (MHz)	Detector	Pol. (V/H)	Reading (dBµV)	Factor (dB)	Dutycycle Factor (dB)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
			Not Detected					

Test mode : 802.11ax(HE40)_OFDMA / MIMO_5755 MHz

Frequency (MHz)	Detector	Pol. (V/H)	Reading (dBµV)	Factor (dB)	Dutycycle Factor (dB)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
			Not Detected					

Test mode : 802.11ax(HE40)_OFDMA / MIMO_5795 MHz

Frequency (MHz)	Detector	Pol. (V/H)	Reading (dBµV)	Factor (dB)	Dutycycle Factor (dB)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5988.30	PK	V	40.50	4.16	-	44.66	74.00	29.34
5988.40	PK	H	41.50	4.16	-	45.66	74.00	28.34

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Test mode : 802.11ax(HE80)_OFDMA / MIMO_5210 MHz

Frequency (MHz)	Detector	Pol. (V/H)	Reading (dBµV)	Factor (dB)	Dutycycle Factor (dB)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5093.25	PK	V	48.20	2.16	-	50.36	74.00	23.64
5096.77	PK	H	42.90	2.16	-	45.06	74.00	28.94

Test mode : 802.11ax(HE80)_OFDMA / MIMO_5290 MHz

Frequency (MHz)	Detector	Pol. (V/H)	Reading (dBµV)	Factor (dB)	Dutycycle Factor (dB)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5351.44	PK	H	45.00	2.76	-	47.76	74.00	26.24
5398.63	PK	V	45.30	2.86	-	48.16	74.00	25.84

Test mode : 802.11ax(HE80)_OFDMA / MIMO_5530 MHz

Frequency (MHz)	Detector	Pol. (V/H)	Reading (dBµV)	Factor (dB)	Dutycycle Factor (dB)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5455.50	PK	V	41.30	2.96	-	44.26	74.00	29.74
5456.35	PK	H	41.00	2.96	-	43.96	74.00	30.04

Test mode : 802.11ax(HE80)_OFDMA / MIMO_5690 MHz

Frequency (MHz)	Detector	Pol. (V/H)	Reading (dBµV)	Factor (dB)	Dutycycle Factor (dB)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
			Not Detected					

Test mode : 802.11ax(HE80)_OFDMA / MIMO_5775 MHz

Frequency (MHz)	Detector	Pol. (V/H)	Reading (dBµV)	Factor (dB)	Dutycycle Factor (dB)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5982.40	PK	V	41.80	4.16	-	45.96	74.00	28.04
5991.96	PK	H	40.90	4.16	-	45.06	74.00	28.94

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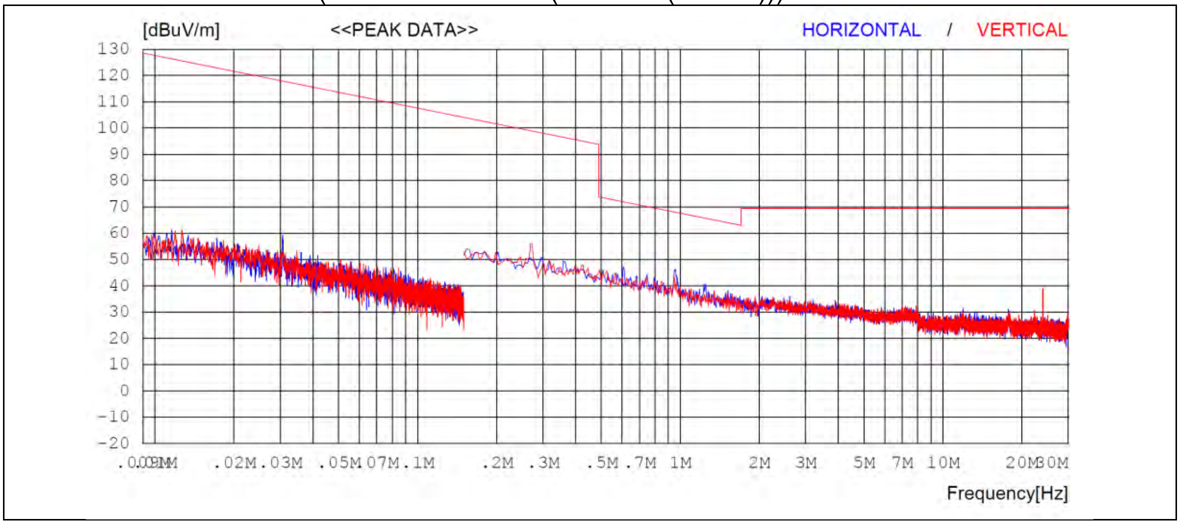
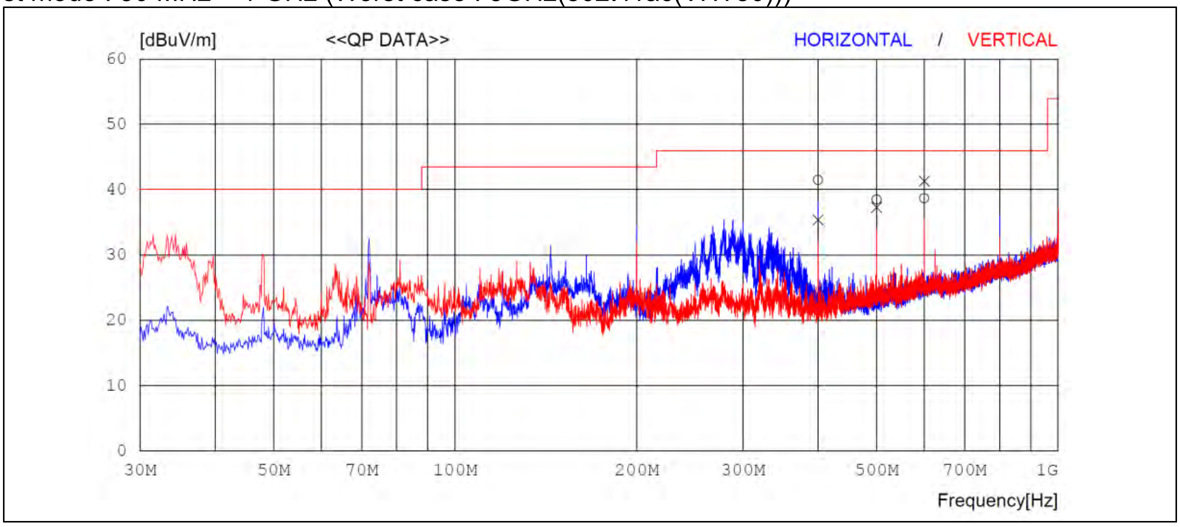
4.3.6.6 Measurement Plot

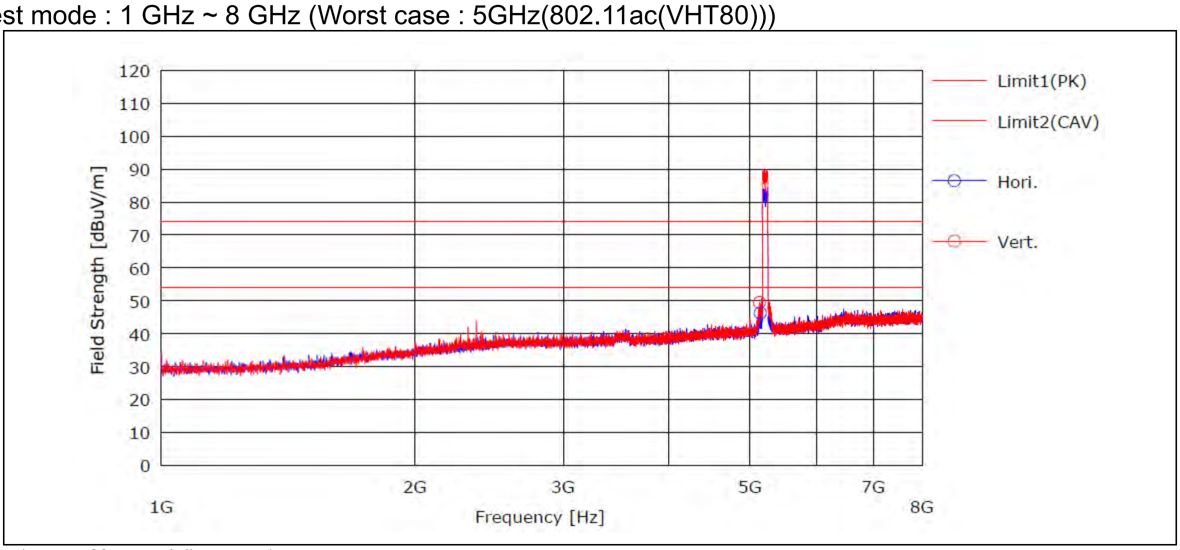
Test mode : 9 kHz ~ 30 MHz (Worst case : 5GHz(802.11ac(VHT80)))



Test mode : 30 MHz ~ 1 GHz (Worst case : 5GHz(802.11ac(VHT80)))



Test mode : 1 GHz ~ 8 GHz (Worst case : 5GHz(802.11ac(VHT80)))



Note 1 : Measured distance : 1 m
Note 2 : Limit : Peak : 74 dBμV/m, Average : 54 dBμV/m

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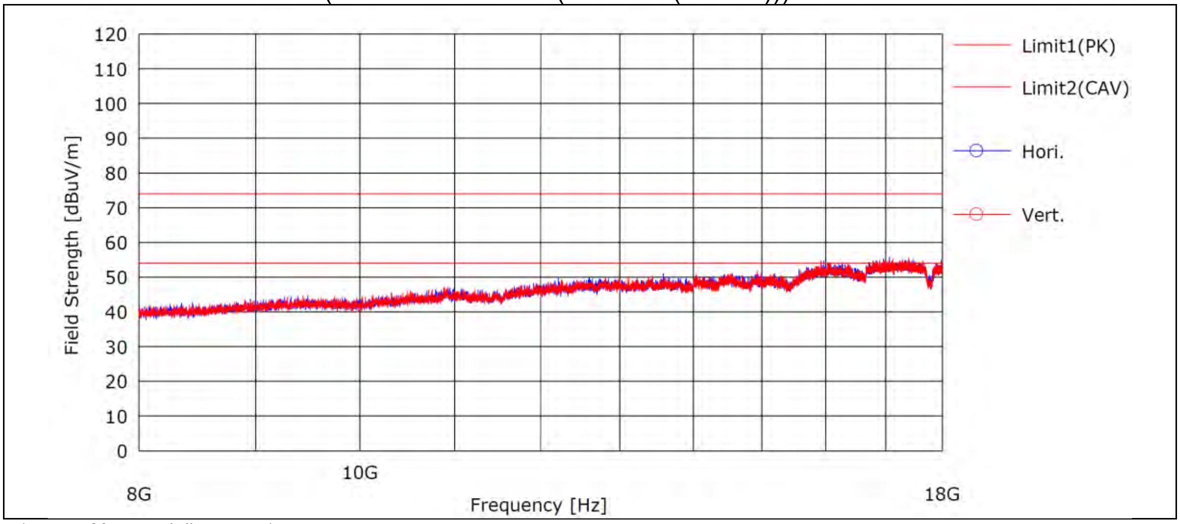
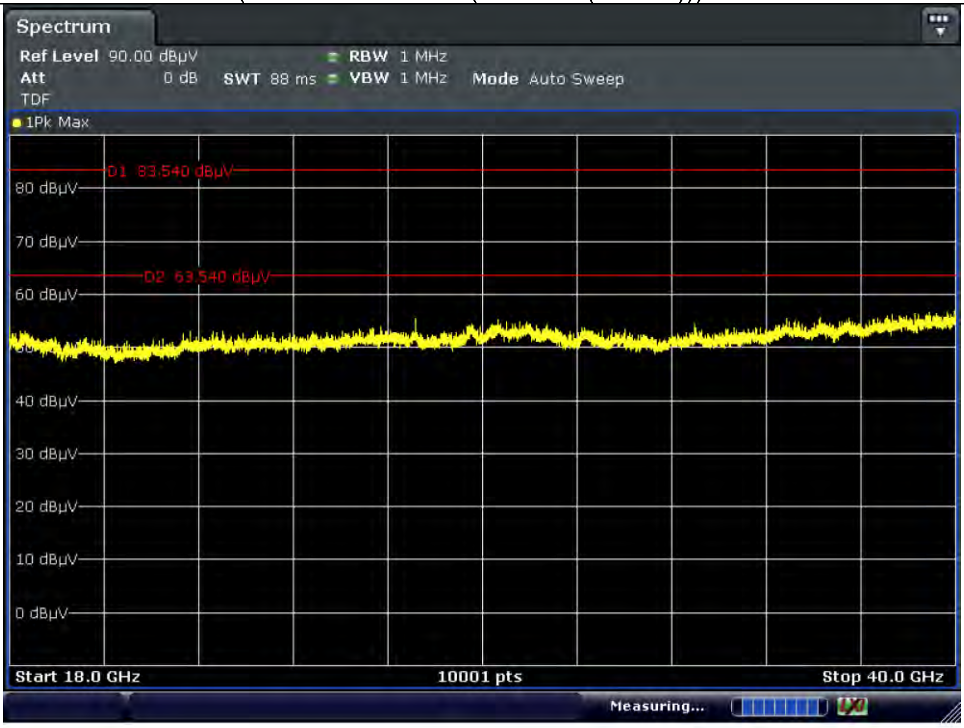
Test mode : 8 GHz ~ 18 GHz (Worst case : 5GHz(802.11ac(VHT80)))



Note 1 : Measured distance : 1 m
Note 2 : Limit : Peak : 74 dBμV/m, Average : 54 dBμV/m

Test mode : 18 GHz ~ 40 GHz (Worst case : 5GHz(802.11ac(VHT80)))



NOTE 1 : Measured distance : 1 m
NOTE 2 : Limit : Peak : 83.54 dBμV/m, Average : 63.54 dBμV/m

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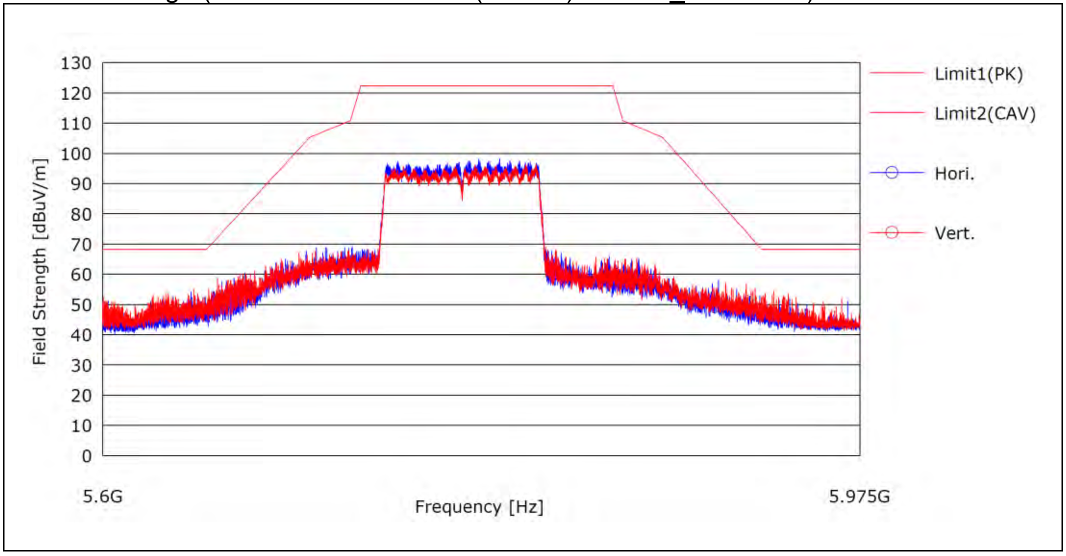
Test mode : Bandedge (Worst case : 802.11ac(VHT80) / MIMO_5210 MHz)



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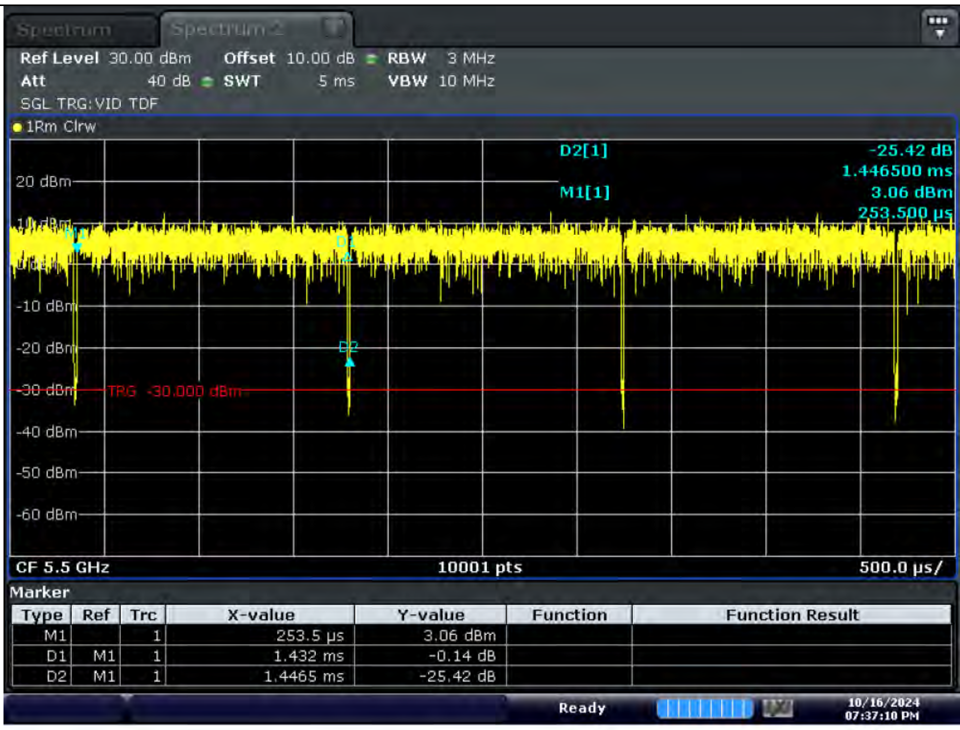
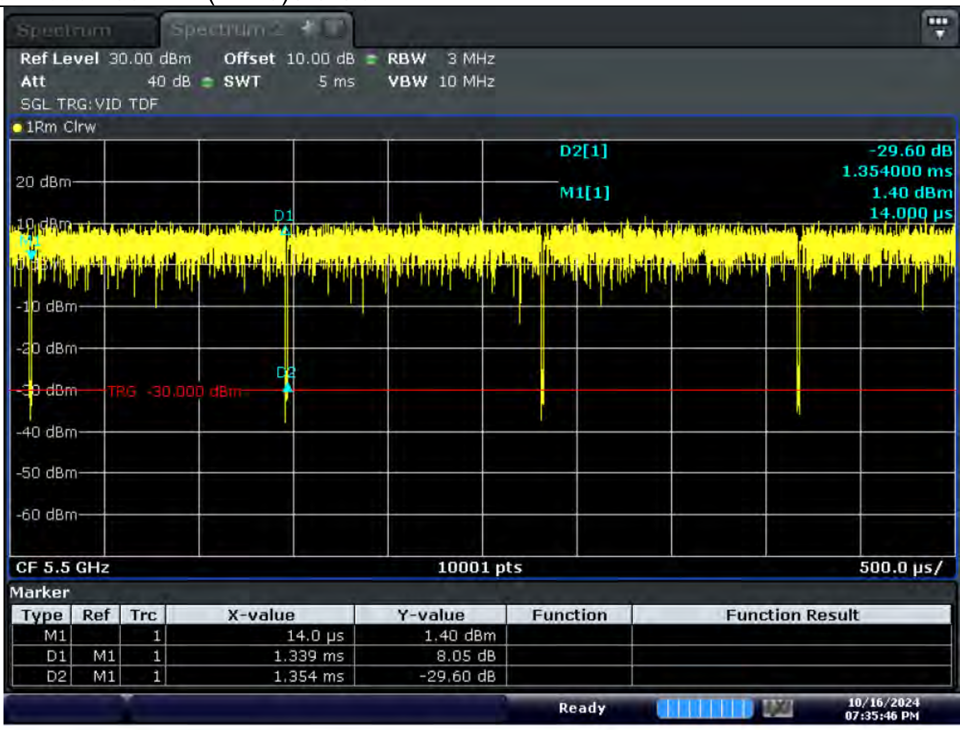
4.3.6.7 Measurement Plot_Dutycycle Note1

Test mode : 802.11a / SISO



Average factor(dB) : 10log(ontime/period) = 0.05 dB

Test mode : 802.11n(HT20) / SISO



Average factor(dB) : 10log(ontime/period) = 0.05 dB

Note 1 : Only one representation of the same duty cycle in SISO(Antenna 1,2) and MIMO operating modes.

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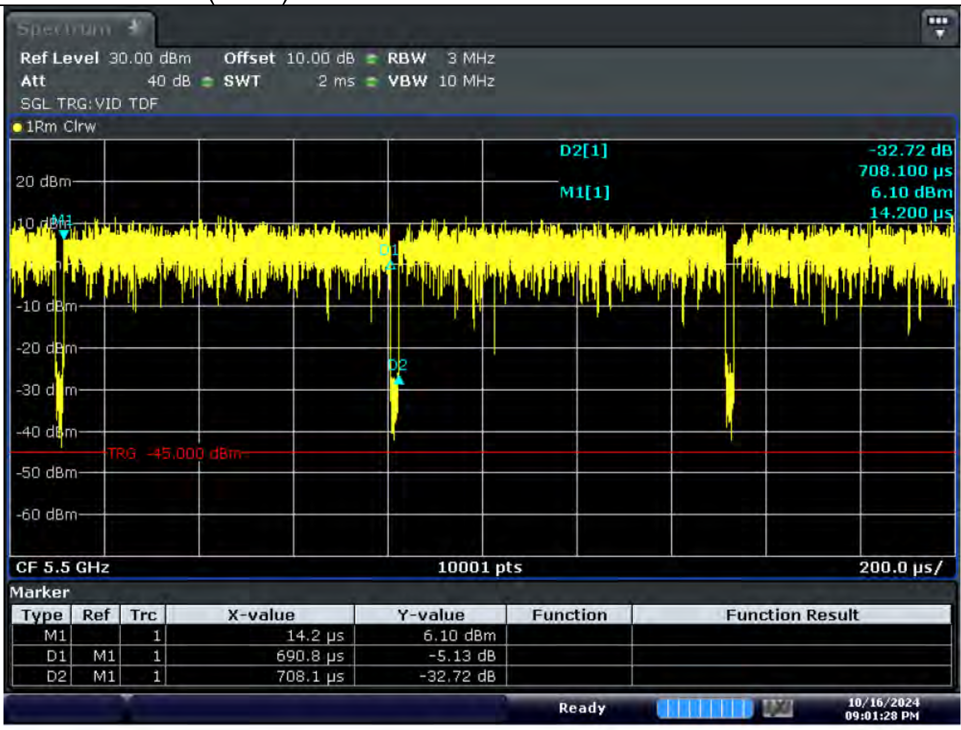
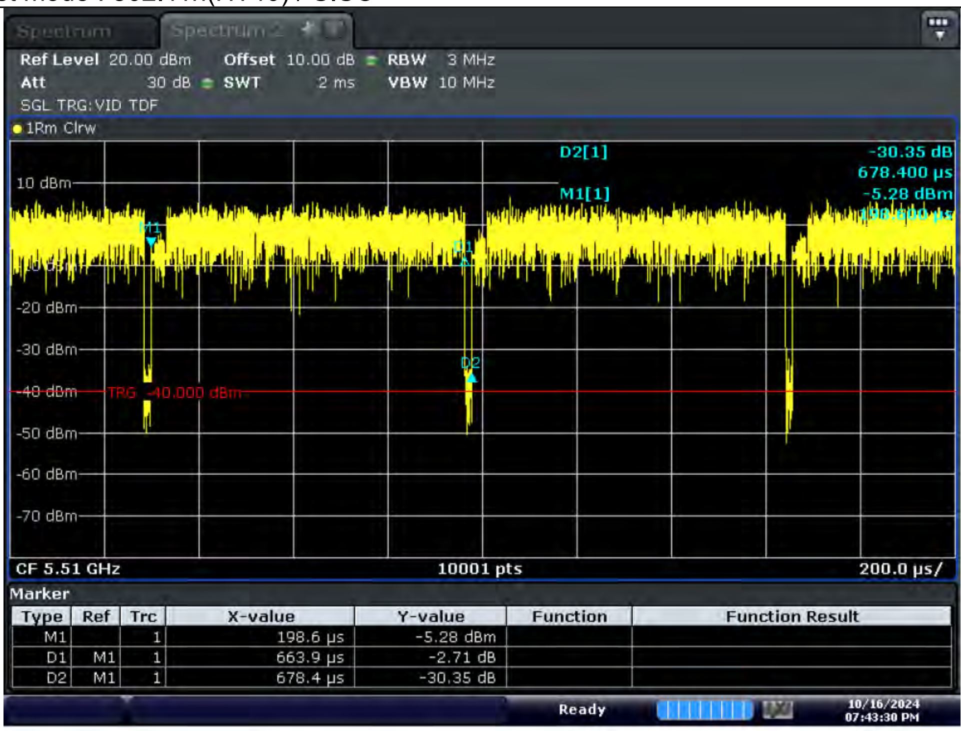
Test mode : 802.11n(HT20) / MIMO



Average factor(dB) : 10log(ontime/period) = 0.11 dB

Test mode : 802.11n(HT40) / SISO



Average factor(dB) : 10log(ontime/period) = 0.09 dB

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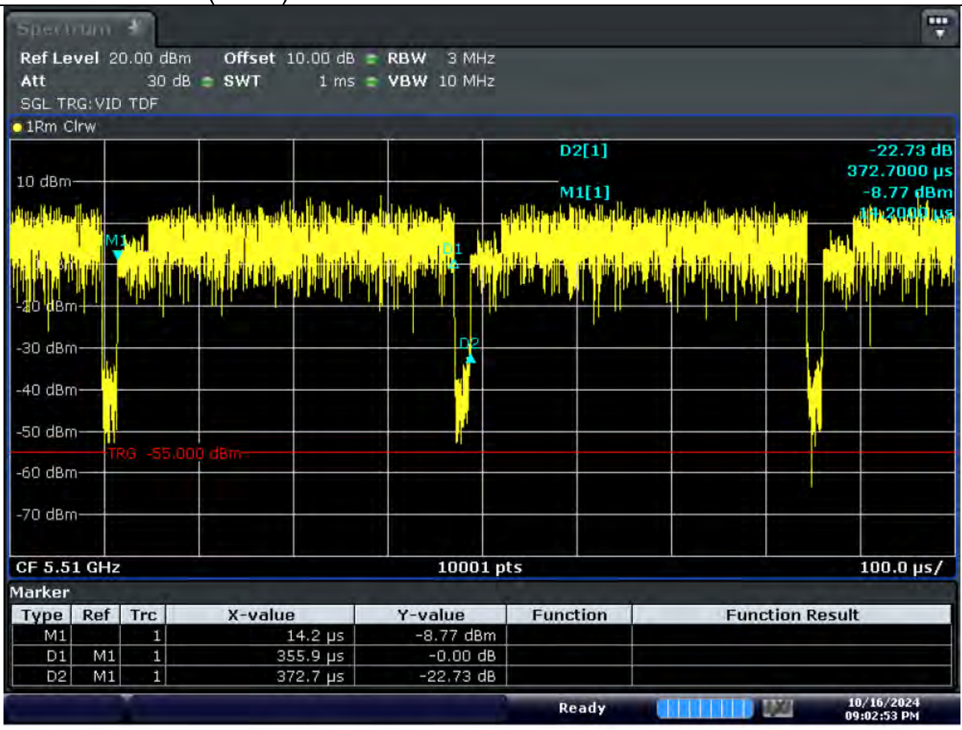
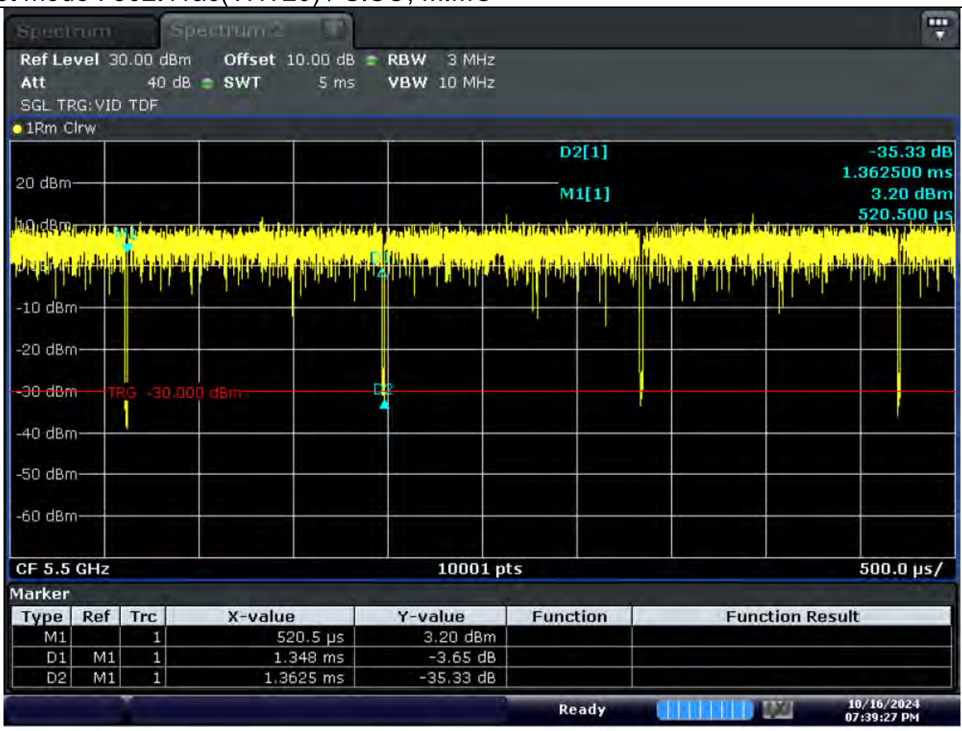
Test mode : 802.11n(HT40) / MIMO



Average factor(dB) : 10log(ontime/period) = 0.20 dB

Test mode : 802.11ac(VHT20) / SISO, MIMO



Average factor(dB) : 10log(ontime/period) = 0.05 dB

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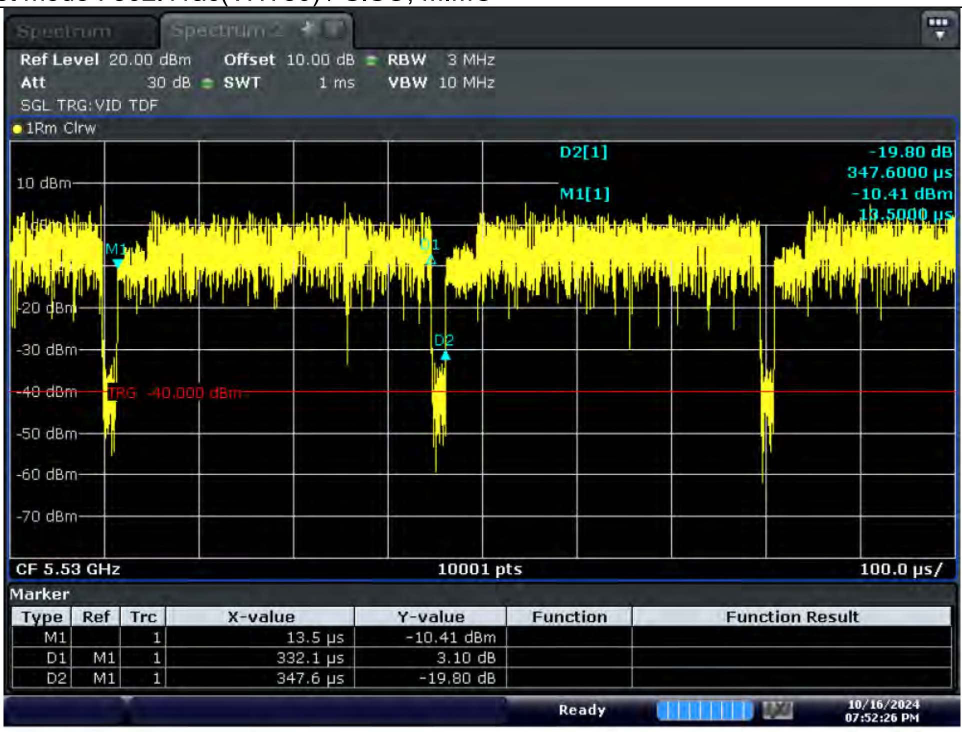
Test mode : 802.11ac(VHT40) / SISO, MIMO

Average factor(dB) : 10log(ontime/period) = 0.10 dB

Test mode : 802.11ac(VHT80) / SISO, MIMO



Average factor(dB) : 10log(ontime/period) = 0.20 dB

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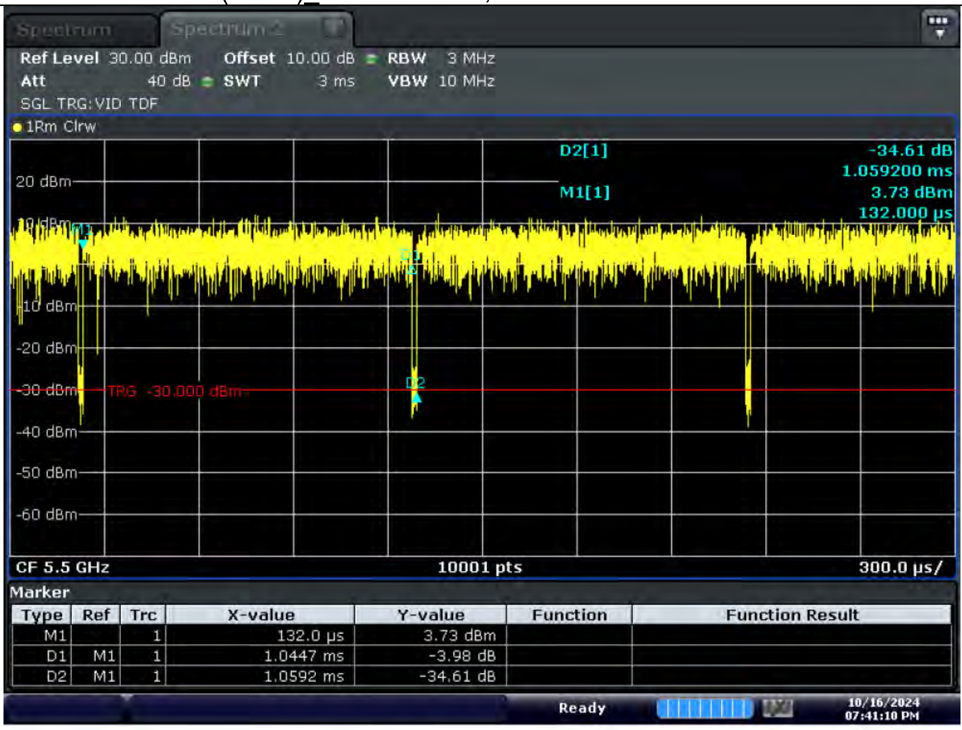
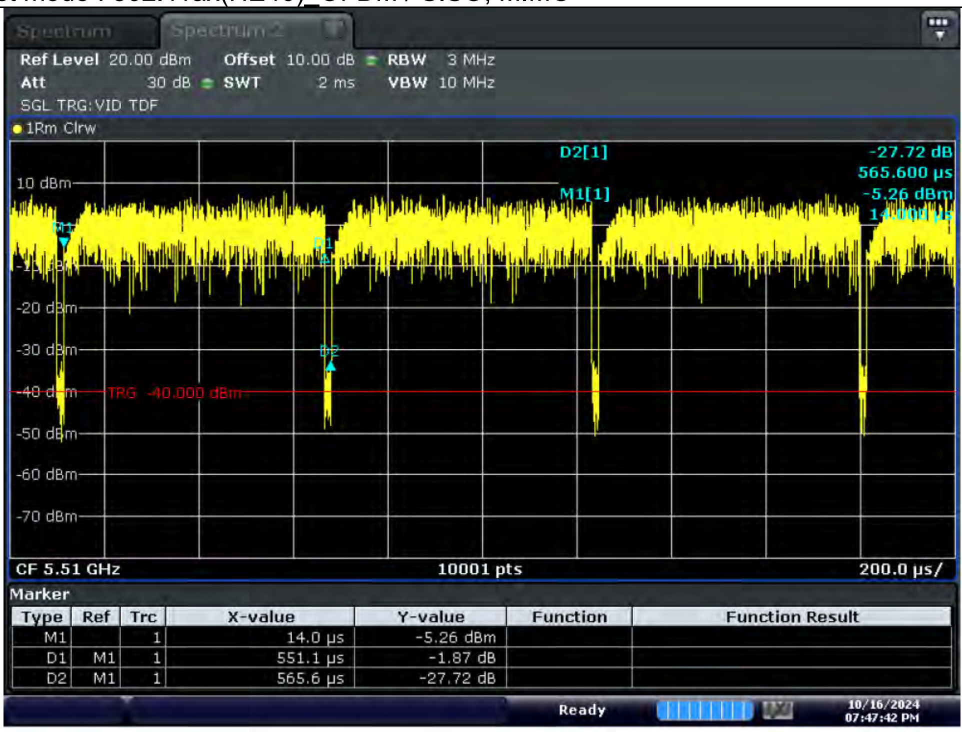
Test mode : 802.11ax(HE20)_OFDM / SISO, MIMO



Average factor(dB) : 10log(ontime/period) = 0.06 dB

Test mode : 802.11ax(HE40)_OFDM / SISO, MIMO



Average factor(dB) : 10log(ontime/period) = 0.12 dB

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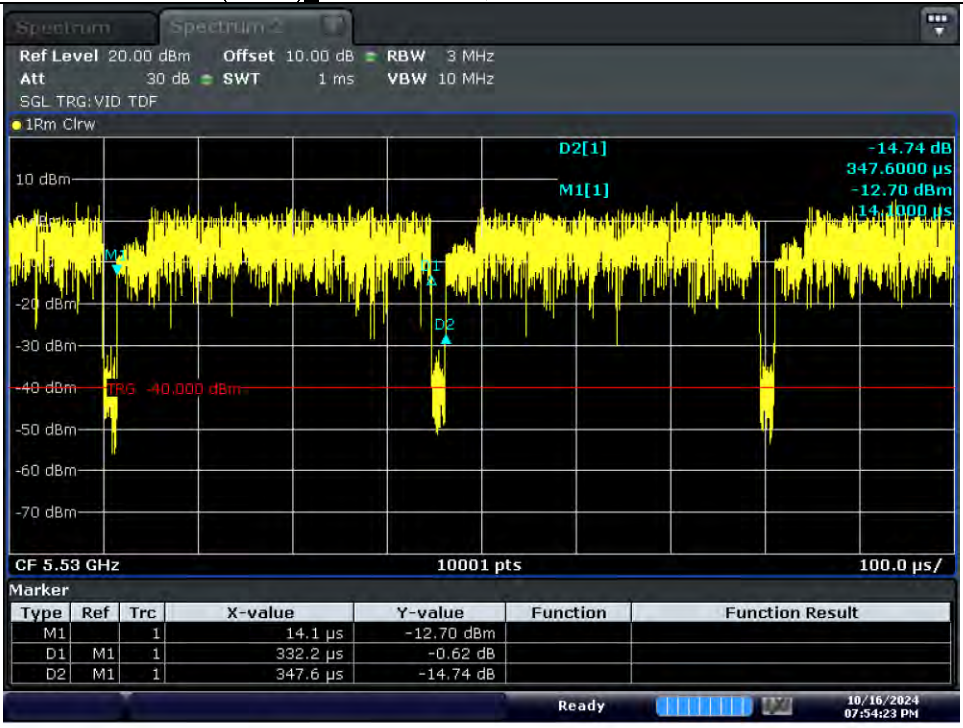
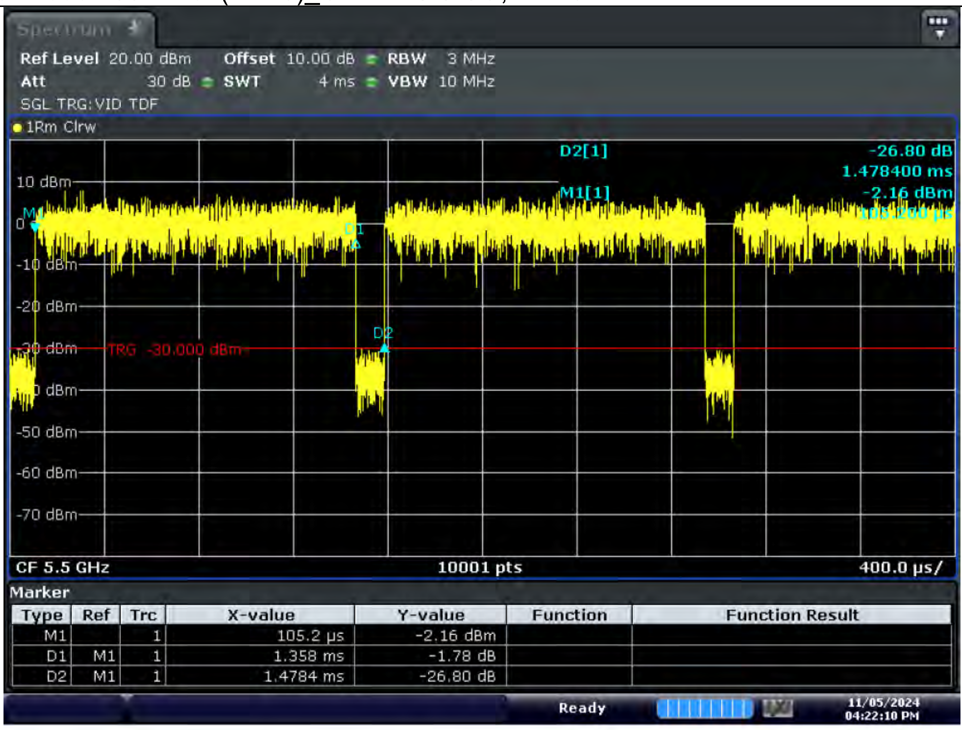
Test mode : 802.11ax(HE80)_OFDM / SISO, MIMO



Average factor(dB) : 10log(ontime/period) = 0.20 dB

Test mode : 802.11ax(HE20)_OFDMA / SISO, MIMO



Average factor(dB) : 10log(ontime/period) = 0.37 dB

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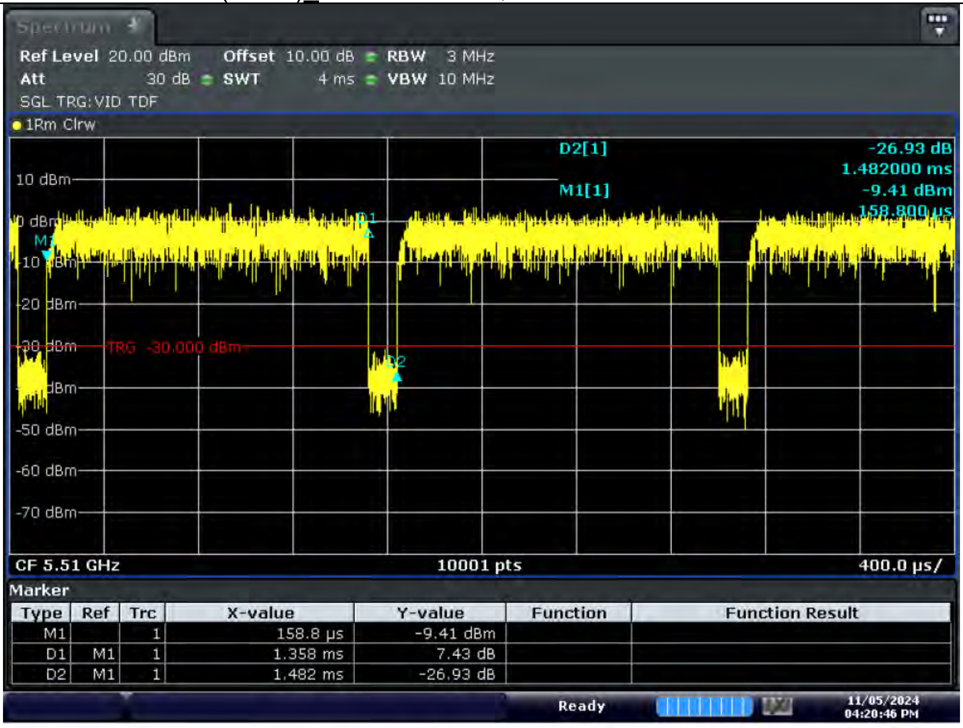
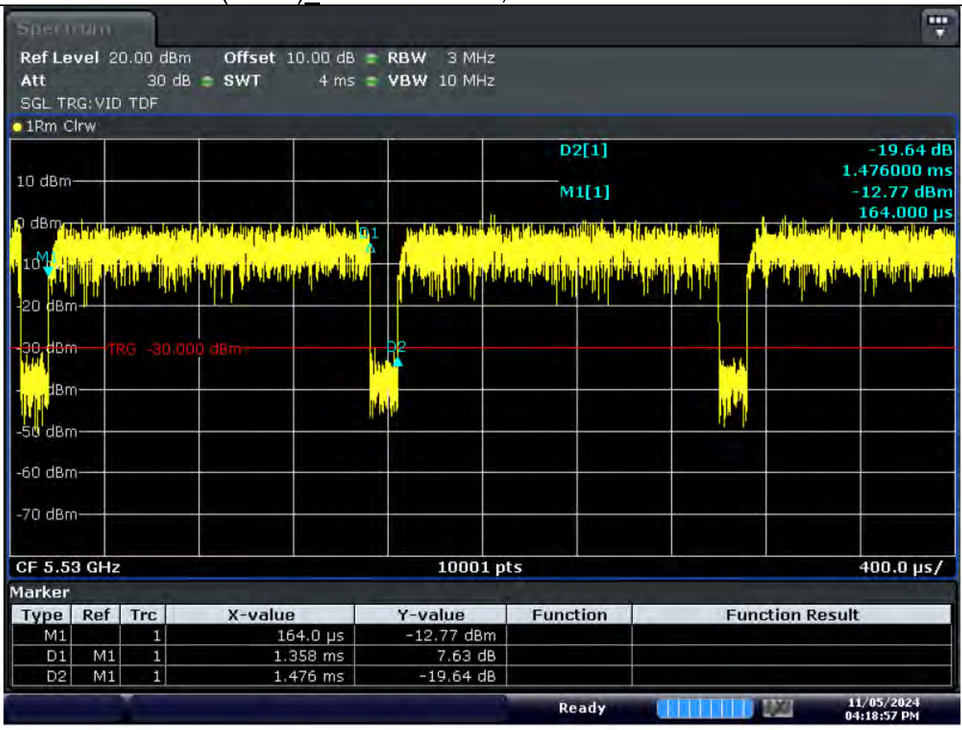
Test mode : 802.11ax(HE40)_OFDMA / SISO, MIMO



Average factor(dB) : 10log(ontime/period) = 0.38 dB

Test mode : 802.11ax(HE80)_OFDMA / SISO, MIMO



Average factor(dB) : 10log(ontime/period) = 0.36 dB

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4.3.7 Conducted Emission

4.3.7.1 Regulation

According to §15.207(a), and RSS-GEN 8.8 for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 Ω line impedance stabilization network (LISN).
Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of emission (MHz)	Conducted limit (dBμV)	
	Qausi-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.

According to §15.107(a), for unintentional device, except for Class A digital devices, line conducted emission limits are the same as the above table.

4.3.7.2 Measurement Procedure

1) The EUT was placed on a wooden table of size, 1 m by 1.5 m, raised 80 cm in which is located 40 cm away from the vertical wall and 1.5 m away from the side wall of the shielded room.

2) Each current-carrying conductor of the EUT power cord was individually connected through a 50 Ω/50 μH LISN, which is an input transducer to a Spectrum Analyzer or an EMI/Field Intensity Meter, to the input power source.

3) Exploratory measurements were made to identify the frequency of the emission that had the highest amplitude relative to the limit by operating the EUT in a range of typical modes of operation, cable position, and with a typical system equipment configuration and arrangement. Based on the exploratory tests of the EUT, the one EUT cable configuration and arrangement and mode of operation that had produced the emission with the highest amplitude relative to the limit was selected for the final measurement.

4) The final test on all current-carrying conductors of all of the power cords to the equipment that comprises the EUT (but not the cords associated with other non-EUT equipment is the system) was then performed over the frequency range of 0.15 MHz to 30 MHz.

5) The measurements were made with the detector set to PEAK amplitude within a bandwidth of 10 kHz or to QUASIPEAK and AVERAGE within a bandwidth of 9 kHz. The EUT was in transmitting mode during the measurements.

4.3.7.3 Result

N/A (The device only uses DC power, so it was not tested)

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4.3.8 Dynamic Frequency Selection (DFS).

4.3.8.1 Regulation

According to §15.407(h) and RSS-247 6.3 Dynamic Frequency Selection (DFS).

(2) Radar Detection Function of Dynamic Frequency Selection (DFS). U-NII devices operating with any part of its 26 dB emission bandwidth in the 5.25-5.35 GHz and 5.47-5.725 GHz bands shall employ a DFS radar detection mechanism to detect the presence of radar systems and to avoid co-channel operation with radar systems. Operators shall only use equipment with a DFS mechanism that is turned on when operating in these bands. The device must sense for radar signals at 100 percent of its emission bandwidth. The minimum DFS detection threshold for devices with a maximum e.i.r.p. of 200 mW to 1 W is −64 dBm. For devices that operate with less than 200 mW e.i.r.p. and a power spectral density of less than 10 dBm in a 1 MHz band, the minimum detection threshold is −62 dBm. The detection threshold is the received power averaged over 1 microsecond referenced to a 0 dBi antenna. For the initial channel setting, the manufacturers shall be permitted to provide for either random channel selection or manual channel selection.

(i) Operational Modes. The DFS requirement applies to the following operational modes:
(A) The requirement for channel availability check time applies in the master operational mode.
(B) The requirement for channel move time applies in both the master and slave operational modes.

(ii) Channel Availability Check Time. A U-NII device shall check if there is a radar system already operating on the channel before it can initiate a transmission on a channel and when it has to move to a new channel. The U-NII device may start using the channel if no radar signal with a power level greater than the interference threshold values listed in paragraph (h)(2) of this section, is detected within 60 seconds.

(iii) Channel Move Time. After a radar's presence is detected, all transmissions shall cease on the operating channel within 10 seconds. Transmissions during this period shall consist of normal traffic for a maximum of 200 ms after detection of the radar signal. In addition, intermittent management and control signals can be sent during the remaining time to facilitate vacating the operating channel.

(iv) Non-occupancy Period. A channel that has been flagged as containing a radar system, either by a channel availability check or in-service monitoring, is subject to a non-occupancy period of at least 30 minutes. The non-occupancy period starts at the time when the radar system is detected.

(i) Device Security. All U-NII devices must contain security features to protect against modification of software by unauthorized parties.

(1) Manufacturers must implement security features in any digitally modulated devices capable of operating in any of the U-NII bands, so that third parties are not able to reprogram the device to operate outside the parameters for which the device was certified. The software must prevent the user from operating the transmitter with operating frequencies, output power, modulation types or other radio frequency parameters outside those that were approved for the device. Manufacturers may use means including, but not limited to the use of a private network that allows only authenticated users to download software, electronic signatures in software or coding in hardware that is decoded by software to verify that new software can be legally loaded into a device to meet these requirements and must describe the methods in their application for equipment authorization.

(2) Manufacturers must take steps to ensure that DFS functionality cannot be disabled by the operator of the U-NII device.

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TECHNICAL REQUIREMENTS FOR DFS IN THE 5250-5350 MHz AND 5470-5725 MHz BANDS

Applicability of DFS Requirements Prior to Use of a Channel

Requirement	Operational Mode		
	Master	Client Without Radar Detection	Client With Radar Detection
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

Applicability of DFS requirements during normal operation

Requirement	Operational Mode	
	Master Device or Client with Radar Detection	Client Without Radar Detection
DFS Detection Threshold	Yes	Not required
Channel Closing Transmission Time	Yes	Yes
Channel Move Time	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required

Additional requirements for devices with multiple bandwidth modes	Master Device or Client with Radar Detection	Client Without Radar Detection
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required
Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency.		

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DFS Detection Thresholds

below provides the DFS Detection Thresholds for Master Devices as well as Client Devices incorporating In-Service Monitoring.

DFS Detection Thresholds for Master Devices and Client Devices with Radar Detection

Maximum Transmit Power	Value (See Notes 1, 2, and 3)
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna. Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	

Response Requirements

provides the response requirements for Master and Client Devices incorporating DFS

DFS Response Requirement Values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.
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.	

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RADAR TEST WAVEFORMS

This section provides the parameters for required test waveforms, minimum percentage of successful detections, and the minimum number of trials that must be used for determining DFS conformance. Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1 MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.

Short Pulse Radar Test Waveforms

Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a Test B: 15 unique PRI values randomly selected within the range of 518-3066 μsec, with a minimum increment of 1 μsec, excluding PRI values selected in Test A	$\text{Roundup}\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot10^{6}}{\text{PRI}_{\mu sec}}\right)\right\}$	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120
Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.					

A minimum of 30 unique waveforms are required for each of the Short Pulse Radar Types 2 through 4. If more than 30 waveforms are used for Short Pulse Radar Types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms. If more than 30 waveforms are used for Short Pulse Radar Type 1, then each additional waveform is generated with Test B and must also be unique and not repeated from the previous waveforms in Tests A or B.

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For example if in Short Pulse Radar Type 1 Test B a PRI of 3066 μsec is selected, the number of pulses would be $\text{Roundup}\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot 10^6}{3066}\right)\right\} = \text{Round up }\{17.2\} = 18.$

Pulse Repetition Intervals Values for Test A

Pulse Repetition Frequency Number	Pulse Repetition Frequency (Pulses Per Second)	Pulse Repetition Interval (Microseconds)
1	1930.5	518
2	1858.7	538
3	1792.1	558
4	1730.1	578
5	1672.2	598
6	1618.1	618
7	1567.4	638
8	1519.8	658
9	1474.9	678
10	1432.7	698
11	1392.8	718
12	1355	738
13	1319.3	758
14	1285.3	778
15	1253.1	798
16	1222.5	818
17	1193.3	838
18	1165.6	858
19	1139	878
20	1113.6	898
21	1089.3	918
22	1066.1	938
23	326.2	3066

The aggregate is the average of the percentage of successful detections of Short Pulse Radar Types 1-4.

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Long Pulse Radar Test Waveform

Long Pulse Radar Test Waveform

Radar Type	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μsec)	Number of Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Number of Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

The parameters for this waveform are randomly chosen. Thirty unique waveforms are required for the Long Pulse Radar Type waveforms. If more than 30 waveforms are used for the Long Pulse Radar Type waveforms, then each additional waveform must also be unique and not repeated from the previous waveforms.

Frequency Hopping Radar Test Waveform

Long Pulse Radar Test Waveform

Radar Type	Pulse Width (μsec)	PRI (μsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Number of Trials
6	1	333	9	0.333	30	70%	30

For the Frequency Hopping Radar Type, the same Burst parameters are used for each waveform. The hopping sequence is different for each waveform and a 100-length segment is selected from the hopping sequence defined by the following algorithm:

The first frequency in a hopping sequence is selected randomly from the group of 475 integer frequencies from 5250 – 5724 MHz. Next, the frequency that was just chosen is removed from the group and a frequency is randomly selected from the remaining 474 frequencies in the group. This process continues until all 475 frequencies are chosen for the set. For selection of a random frequency, the frequencies remaining within the group are always treated as equally likely.

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4.3.8.2 Client Devices requreiment

a) A Client Device will not transmit before having received appropriate control signals from a Master Device.

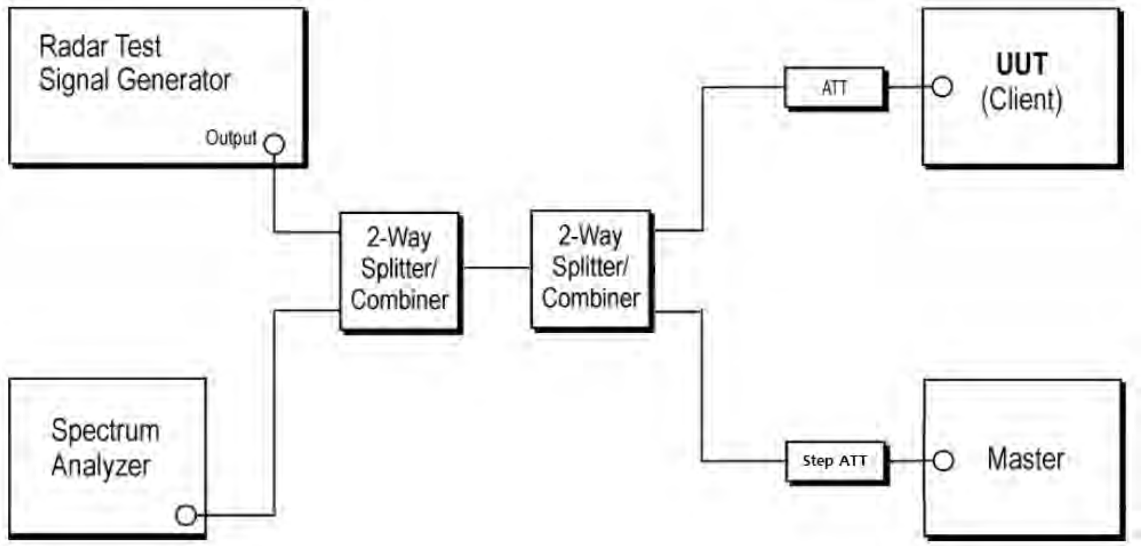
b) A Client Device will stop all its transmissions whenever instructed by a Master Device to which it is associated and will meet the Channel Move Time and Channel Closing Transmission Time requirements. The Client Device will not resume any transmissions until it has again received control signals from a Master Device.

c) If a Client Device is performing In-Service Monitoring and detects a Radar Waveform above the DFS Detection Threshold, it will inform the Master Device. This is equivalent to the Master Device detecting the Radar Waveform and d) through f) of section 5.1.1 apply.

d) Irrespective of Client Device or Master Device detection the Channel Move Time and Channel Closing Transmission Time requirements remain the same.

e) The client test frequency must be monitored to ensure no transmission of any type has occurred for 30 minutes. Note: If the client moves with the master, the device is considered compliant if nothing appears in the client non-occupancy period test. For devices that shut down (rather than moving channels), no beacons should appear.

4.3.8.3 Conduct test setup



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4.3.8.4 In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period

4.4.8.4.1 Measurement Procedure

The steps below define the procedure to determine the above mentioned parameters when a radar Burst with a level equal to the DFS Detection Threshold + 1dB is generated on the Operating Channel of the U-NII device (In- Service Monitoring).

a) One frequency will be chosen from the Operating Channels of the UUT within the 5250-5350 MHz or 5470-5725 MHz bands. For 802.11 devices, the test frequency must contain control signals. This can be verified by disabling channel loading and monitoring the spectrum analyzer. If no control signals are detected, another frequency must be selected within the emission bandwidth where control signals are detected.

b) In case the UUT is a U-NII device operating as a Client Device (with or without DFS), a U-NII device operating as a Master Device will be used to allow the UUT (Client device) to Associate with the Master Device. In case the UUT is a Master Device, a U-NII device operating as a Client Device will be used and it is assumed that the Client will Associate with the UUT (Master). In both cases for conducted tests, the Radar Waveform generator will be connected to the Master Device. For radiated tests, the emissions of the Radar Waveform generator will be directed towards the Master Device. If the Master Device has antenna gain, the main beam of the antenna will be directed toward the radar emitter. Vertical polarization is used for testing.

c) Stream the channel loading test file from the Master Device to the Client Device on the test Channel for the entire period of the test.

d) At time T0 the Radar Waveform generator sends a Burst of pulses for one of the Radar Type 0 in Table 5 at levels defined in Table 3, on the Operating Channel. An additional 1 dB is added to the radar test signal to ensure it is at or above the DFS Detection Threshold, accounting for equipment variations/errors.

e) Observe the transmissions of the UUT at the end of the radar Burst on the Operating Channel for duration greater than 10 seconds. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). Measure and record the Channel Move Time and Channel Closing Transmission Time if radar detection occurs. Figure 17 illustrates Channel Closing Transmission Time.

f) When operating as a Master Device, monitor the UUT for more than 30 minutes following instant T2 to verify that the UUT does not resume any transmissions on this Channel. Perform this test once and record the measurement result.

g) In case the UUT is a U-NII device operating as a Client Device with In-Service Monitoring, perform steps a) to f).

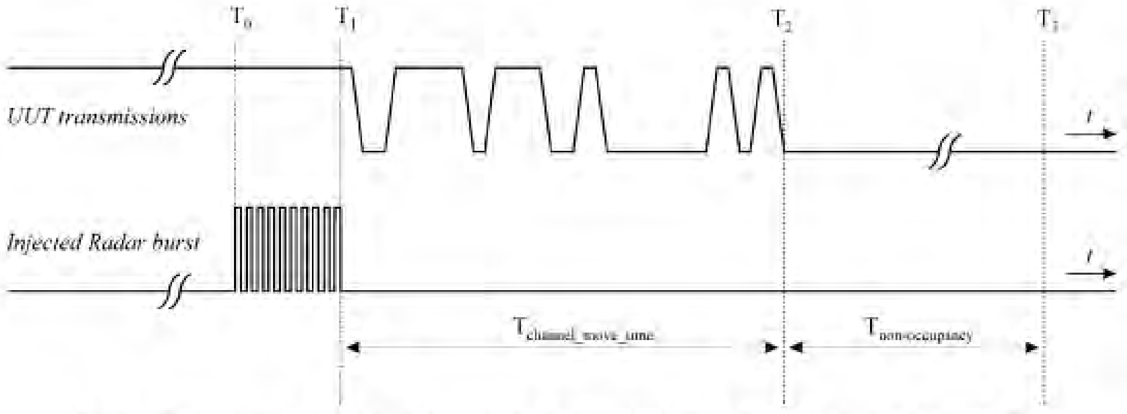

Figure 17: Example of Channel Closing Transmission Time & Channel Closing Time

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4.3.8.4.2 Result

Comply
(This device is Client Device without radar detection)

4.3.8.4.3 Measurement data

Client Device without radar detection

Channel Move Time			
Bandwidth (MHz)	Frequency (MHz)	Channel Move Time (s)	Limit (s)
80	5 290	1.08	10.00
	5 530	1.07	10.00

Channel Closing Transmission Time			
Bandwidth (MHz)	Frequency (MHz)	Channel Closing Transmission Time (ms)	Limit (ms)
80	5 290	22.00	60.00
	5 530	24.00	60.00

Note : In case of Channel Close Transmission Time, ASC II trace data was exported to Excel and calculated.

Non-Occupancy Period			
Bandwidth (MHz)	Frequency (MHz)	Non-Occupancy Period (min)	Limit (min)
80	5 290	> 30	30
	5 530	> 30	30

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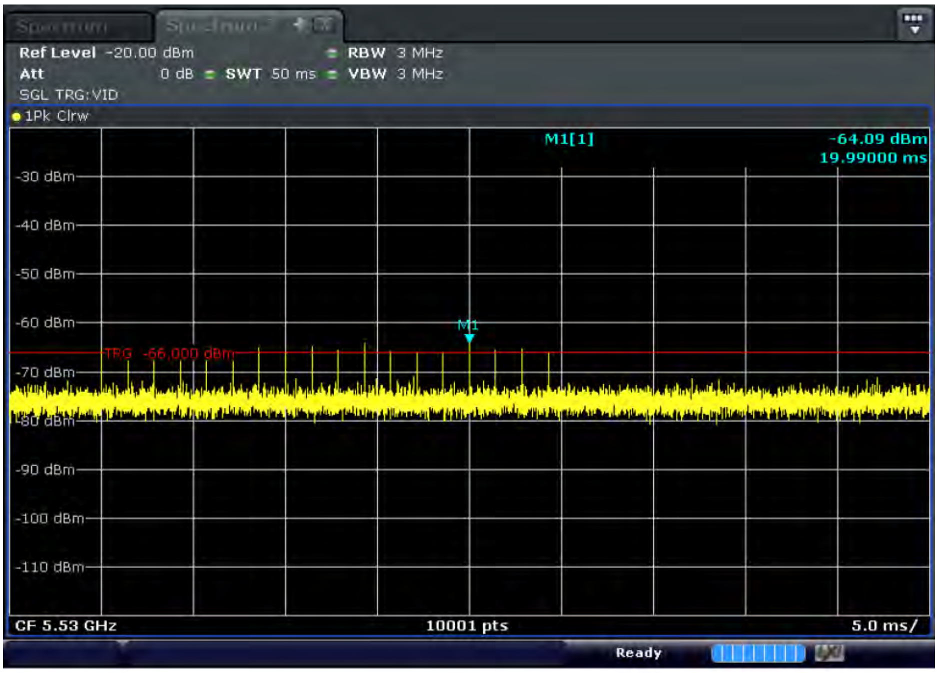
4.3.8.4.4 Test Plot_DFS Detection Threshold

Radar Signal 0



Note : The Interference Radar Detection Threshold Level is -64.00 dBm.
The tested level is lower than required level hence it provides margin to the limit.

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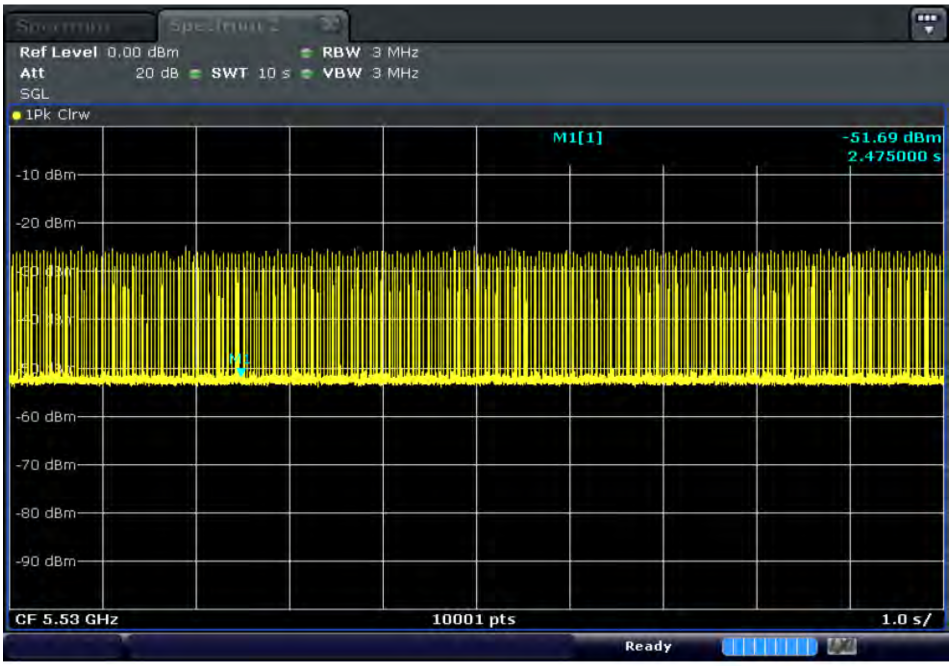
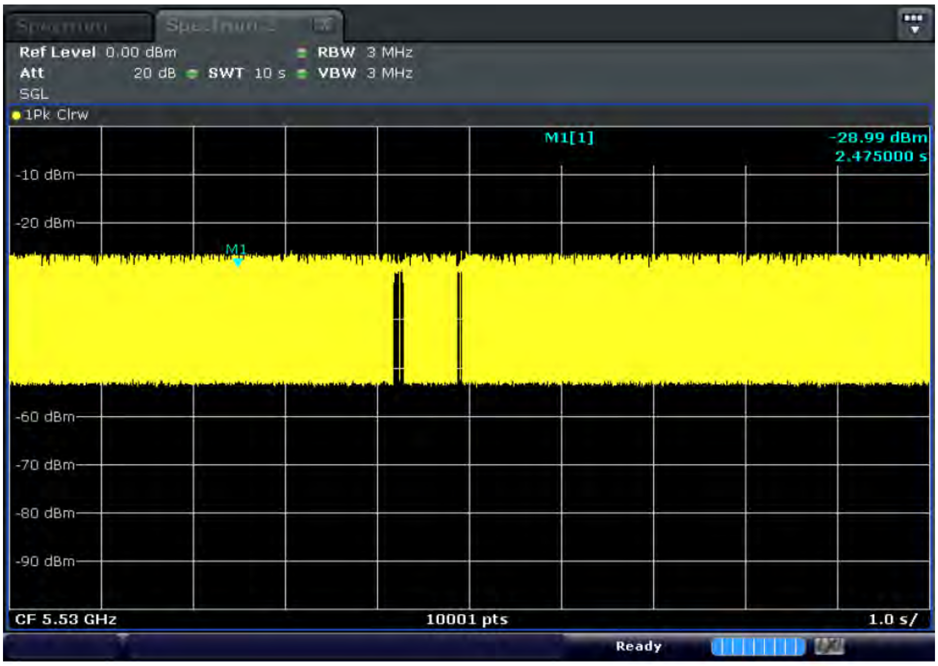
4.3.8.4.5 Test Plot_Test Channel Loading

Test mode : Client Signal



Test mode : Traffic Signal



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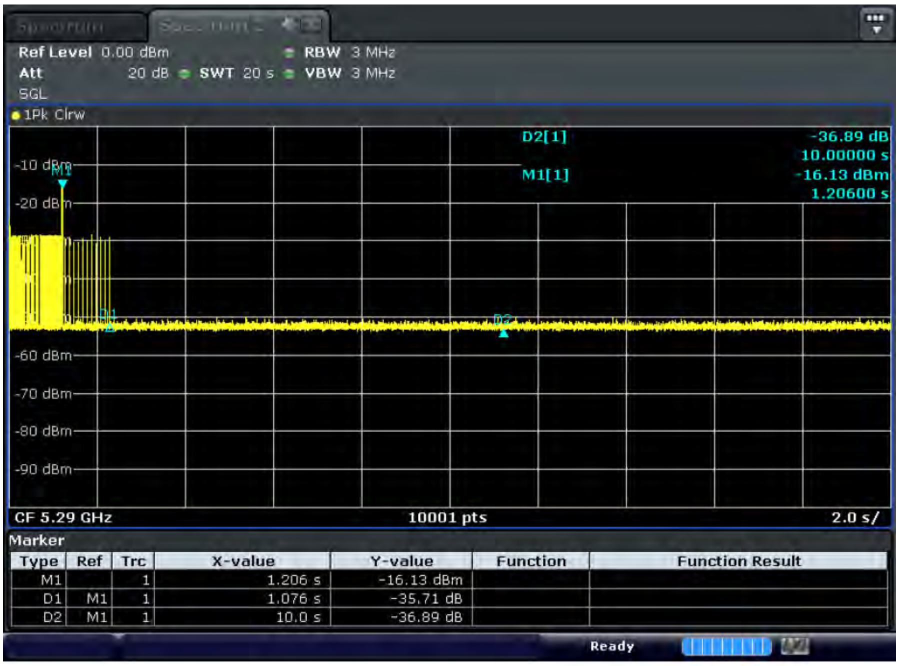
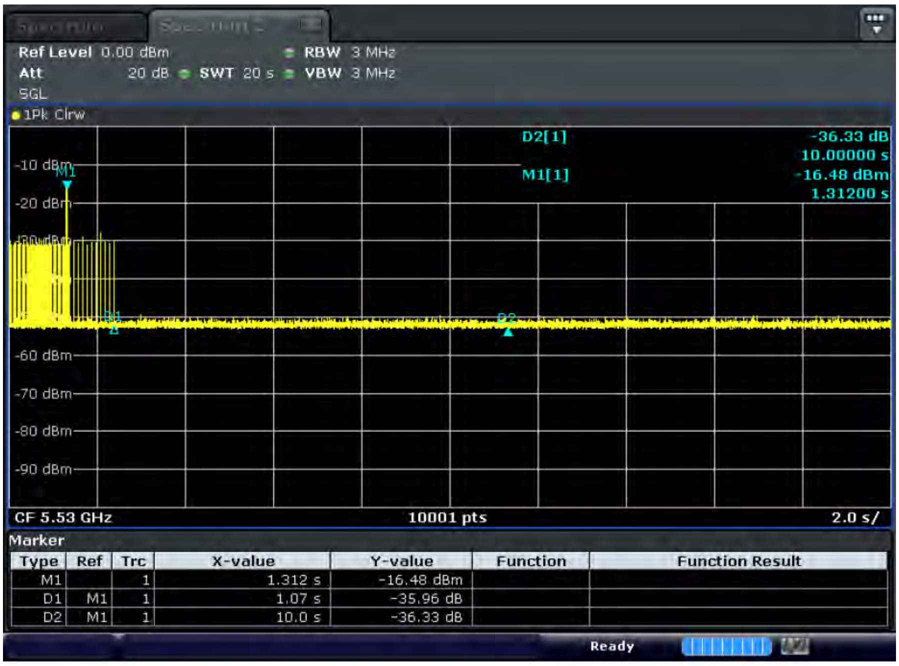
4.3.8.4.6 Test Plot_Channel move time

Test mode : 80 MHz BW_5 290 MHz



Test mode : 80 MHz BW_5 530 MHz



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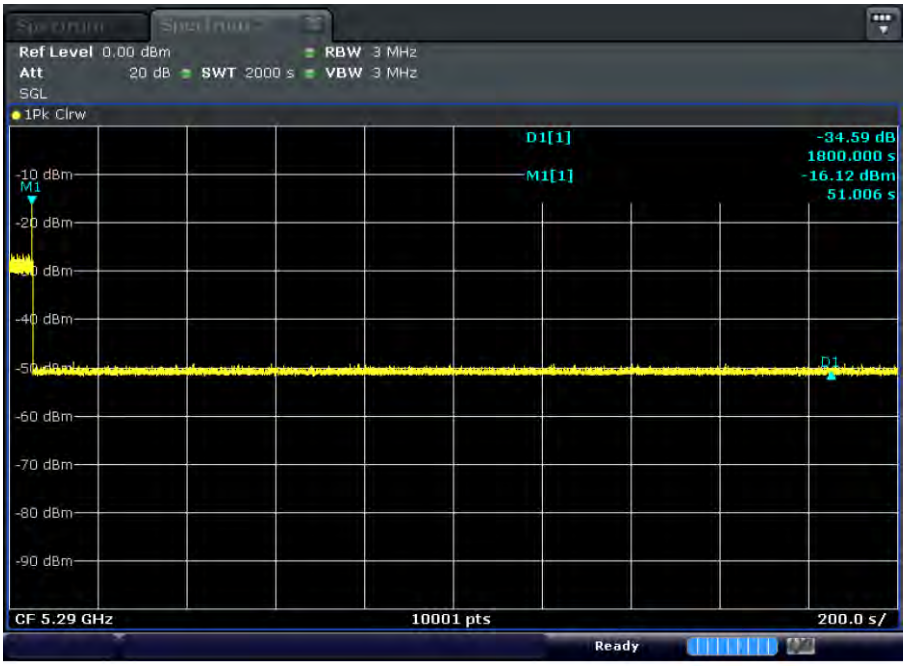
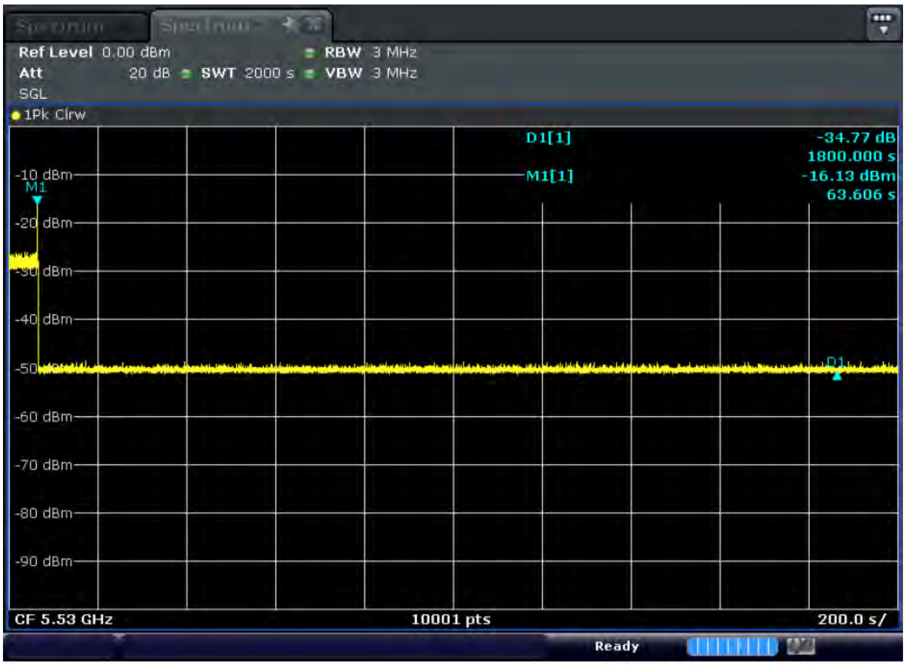
4.3.8.4.7 Test Plot_Non-Occupancy Period

Test mode : 80 MHz BW_5 290 MHz



Test mode : 80 MHz BW_5 530 MHz



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APPENDIX I

TEST EQUIPMENT USED FOR TESTS

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To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment.

Equipment	Manufacturer	Model	Serial No.	Cal. Date (yy.mm.dd)	Next Cal.Date (yy.mm.dd)
FSV Signal Analyzer	ROHDE&SCHWARZ	FSV40	101010	2024-04-01	2025-04-01
FSV Signal Analyzer	ROHDE&SCHWARZ	FSV30	103370	2024-10-10	2025-10-10
ATTENUATOR	WEINSCHEL	54A-10	69672	2024-10-10	2025-10-10
Power Sensor	KEYSIGHT	U2022XA	MY55320008	2024-08-12	2025-08-12
Digital MultiMeter	HP	34401A	US36025428	2024-01-04	2025-01-04
Humidity & Temp. chamber	SJ SCIENCE	SJ-TH-S50	170719	2024-04-01	2025-04-01
Power Supply	KIKUSUI	PWX1500L	SM002050	2024-08-12	2025-08-12
Signal Generator	ROHDE&SCHWARZ	SMB100A	178384	2024-10-10	2025-10-10
Vector Signal Generator	ROHDE&SCHWARZ	SMBV100A	261413	2024-10-10	2025-10-10
POWER DIVIDER	WEINSCHEL	1580	RZ183	2024-10-10	2025-10-10
POWER DIVIDER	WEINSCHEL	1580-10	SQ748	2024-04-04	2025-04-04
TERMINATION	HP	909D	737	2024-08-09	2025-08-09
TERMINATION	Agilent	909D	08804	2024-08-09	2025-08-09
EMI Test Receiver	ROHDE&SCHWARZ	ESU40	100445	2024-09-04	2025-09-04
BiLog Antenna	Schwarzbeck	VULB9168	821	2023-03-29	2025-03-29
ATTENUATOR	JFW	50F-006	6 dB-3	2024-04-01	2025-04-01
Antenna Mast	TOKIN	5977	-	-	-
Antenna Mast	Innco	MA4640-XPET-0800	578	-	-
Controller	TOKIN	5909L	141909L-1	-	-
Controller	Innco	CO3000	40040217	-	-
Turn Table	TOKIN	5983-1.5	-	-	-
Active Loop H-Field	ETS	6502	00150598	2024-04-02	2026-06-03
Double Ridege Horn Antenna	ETS	3117	168719	2024-08-05	2025-08-05
Double Ridege Horn Antenna	A.H Systems, Inc	SAS-574	465	2023-04-18	2025-04-18
PREAMPLIFIER	Agilent	8449B	3008A02110	2024-01-08	2025-01-08
PREAMPLIFIER	A.H Systems, Inc	PAM-1840VH	166	2024-01-08	2025-01-08
Preamplifier	TSJ	MLA-10k01-b01-27	1870367	2024-04-01	2025-04-01
STEP ATTENUATOR	Agilent	8494B	MY42145885	2024-04-02	2025-04-02
STEP ATTENUATOR	Agilent	8495B	MY42143360	2024-04-02	2025-04-02
High pass filter	Wainwright Instruments GmbH	WHKX10-2580-3000-18000-60SS	14	2024-01-08	2025-01-08
High pass filter	Wainwright Instruments GmbH	WHNX6-5840-8000-26500-60CC	4	2024-01-08	2025-01-08
RF Cable	Radiall	1800920922000KE	CON-R008	2024-07-26	2025-01-26

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