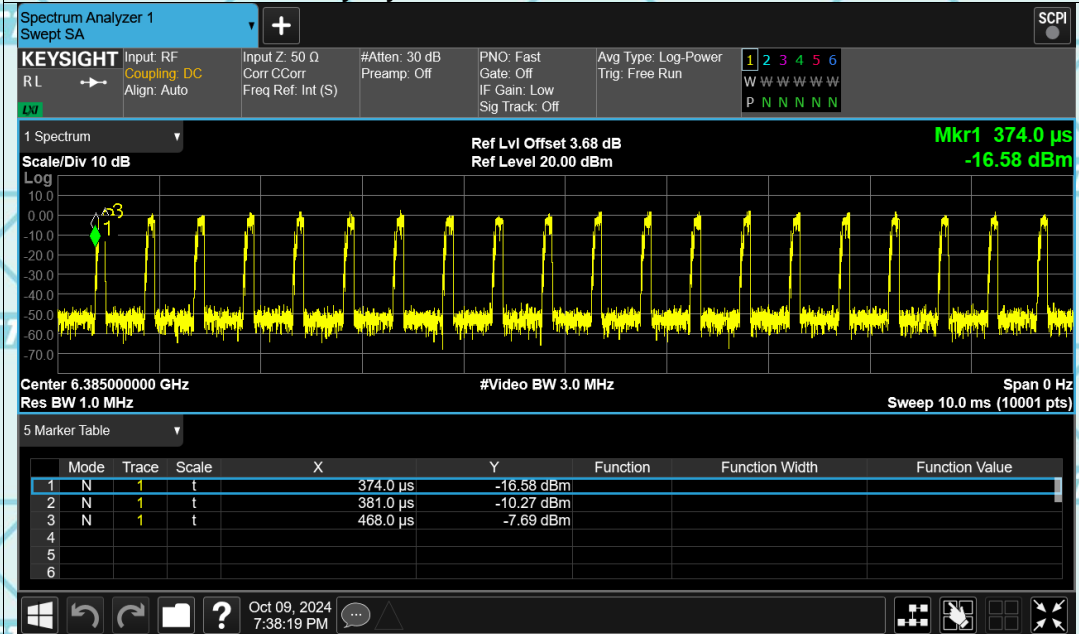
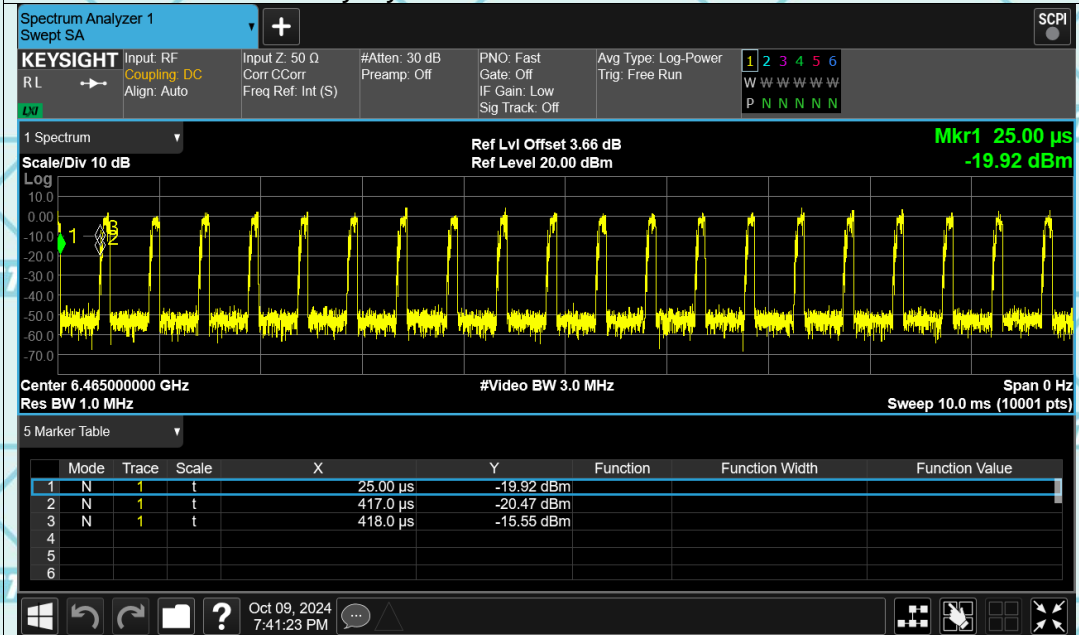


Report No.: WSCT-ANAB-R&E240900045A-Wi-Fi3

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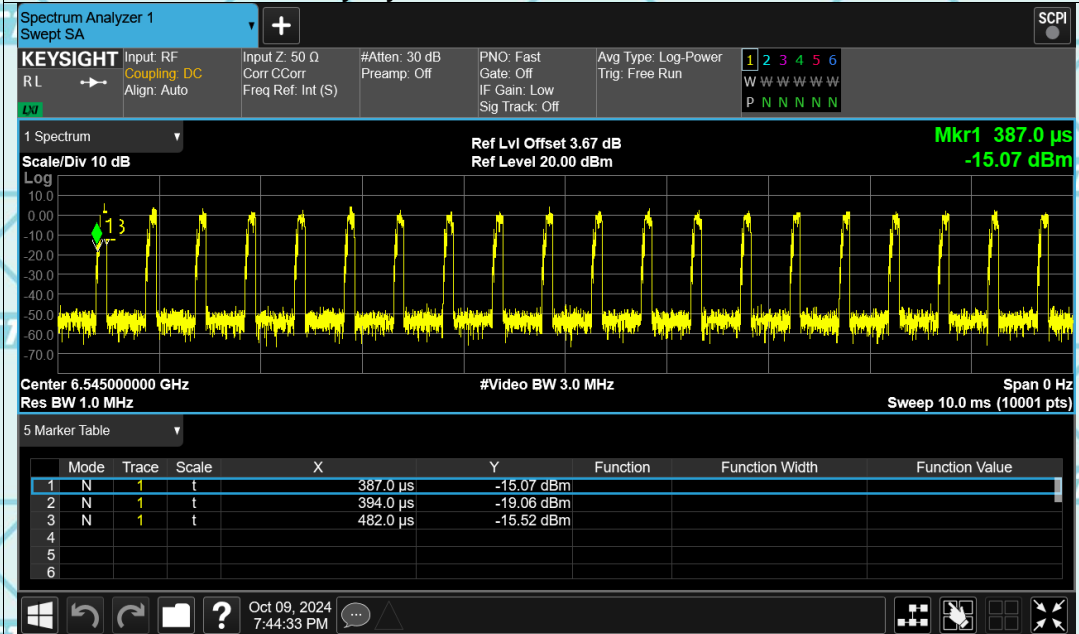


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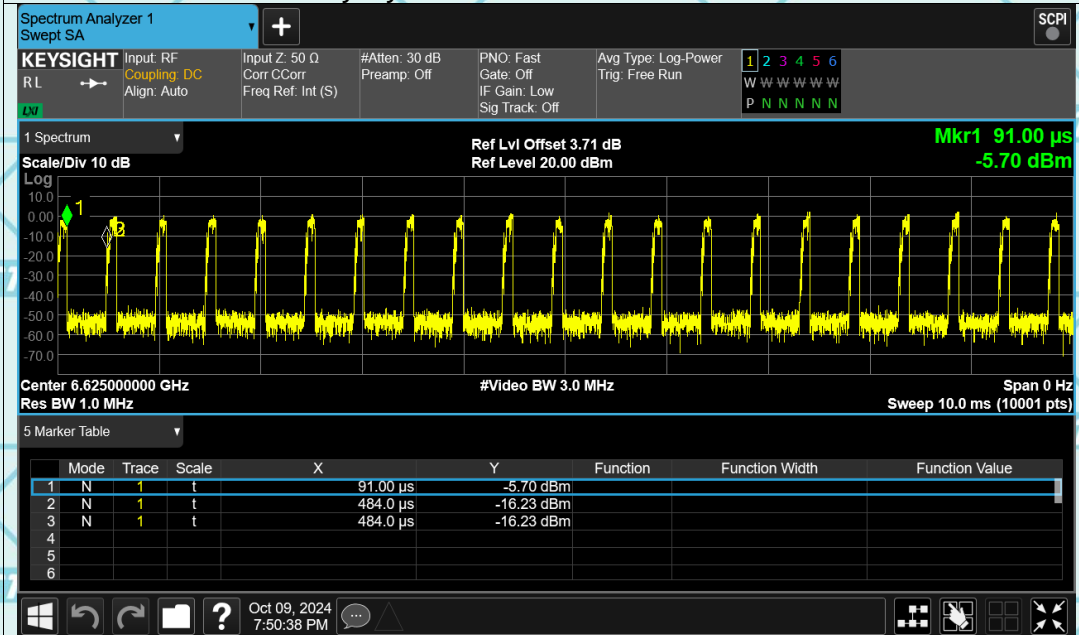


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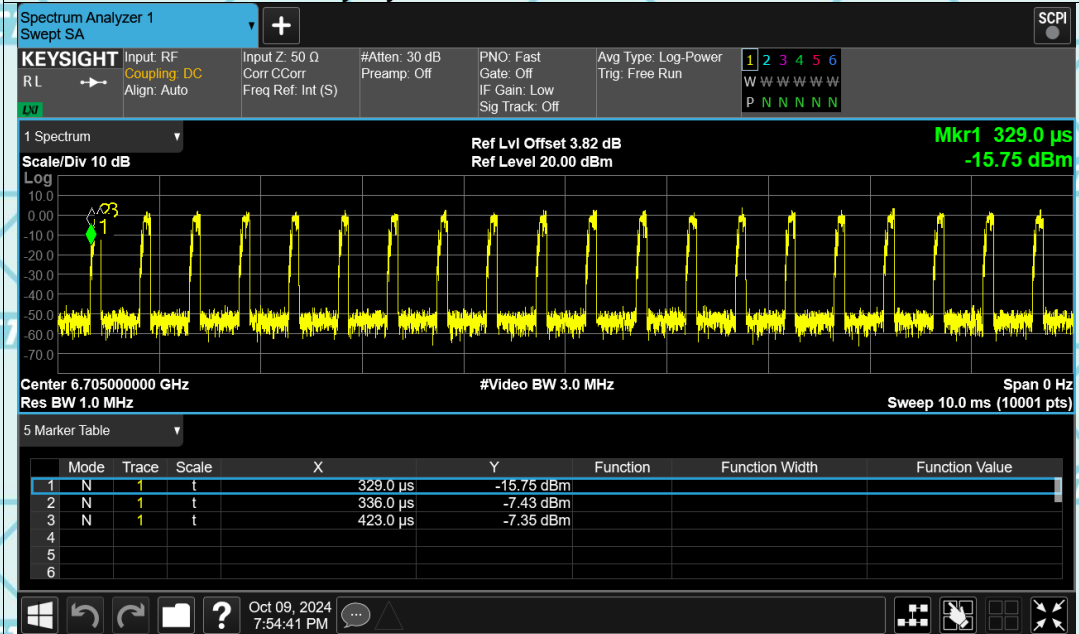


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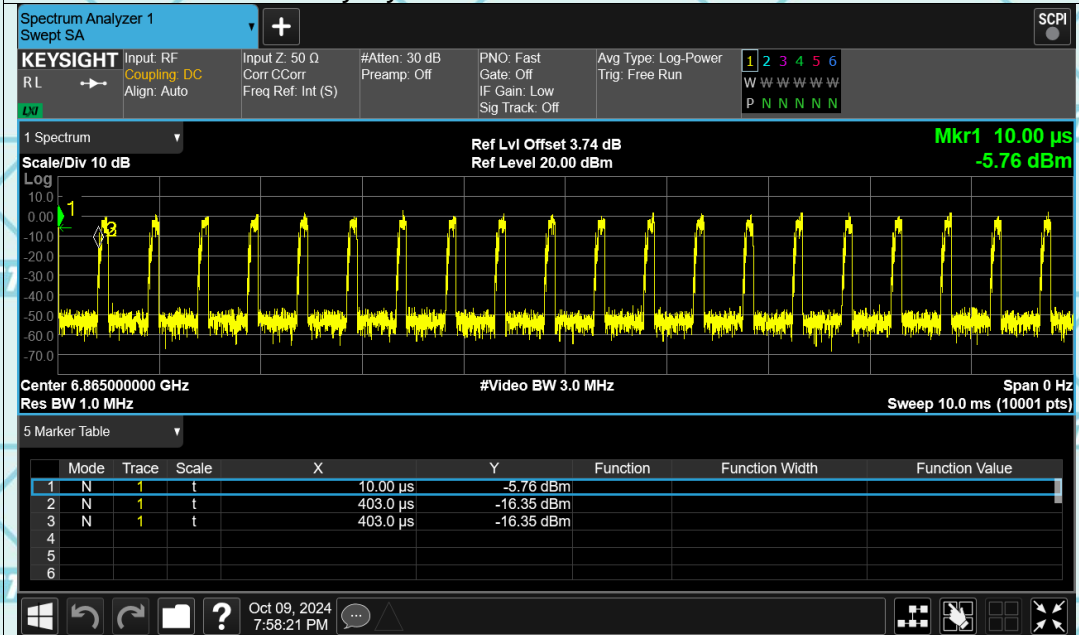


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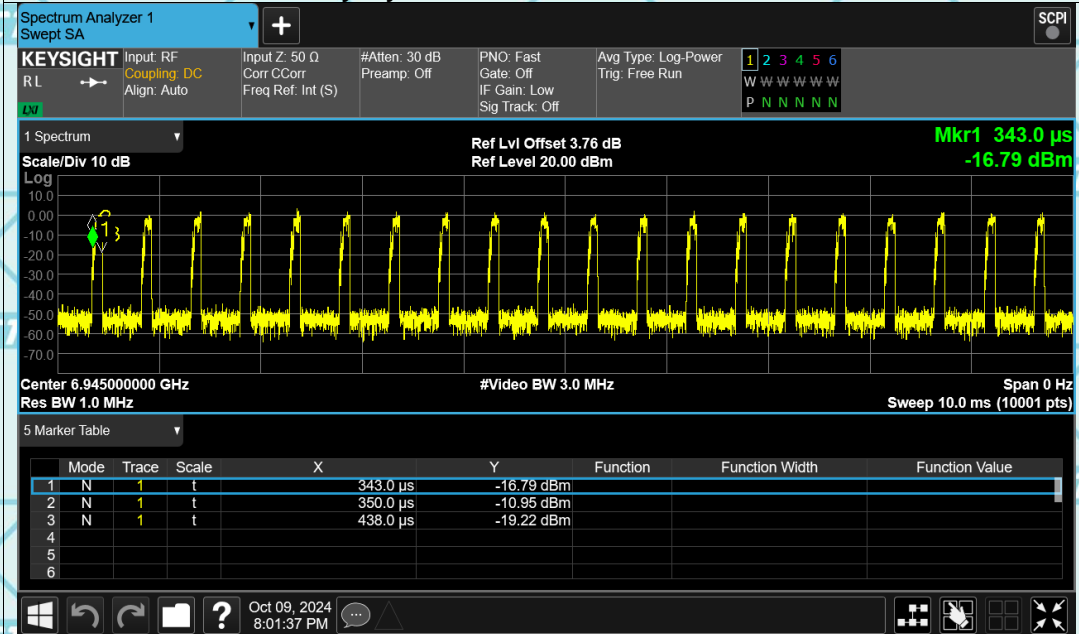


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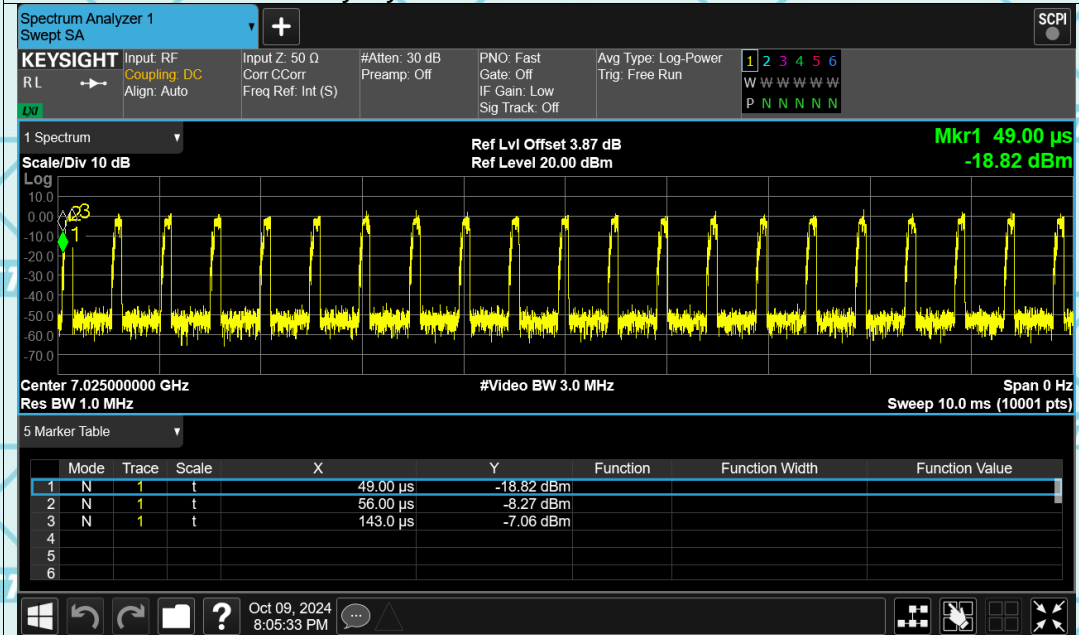


Report No.: WSCT-ANAB-R&E240900045A-Wi-Fi3

Duty Cycle NVNT ax80 6945MHz Ant1



Duty Cycle NVNT ax80 7025MHz Ant1

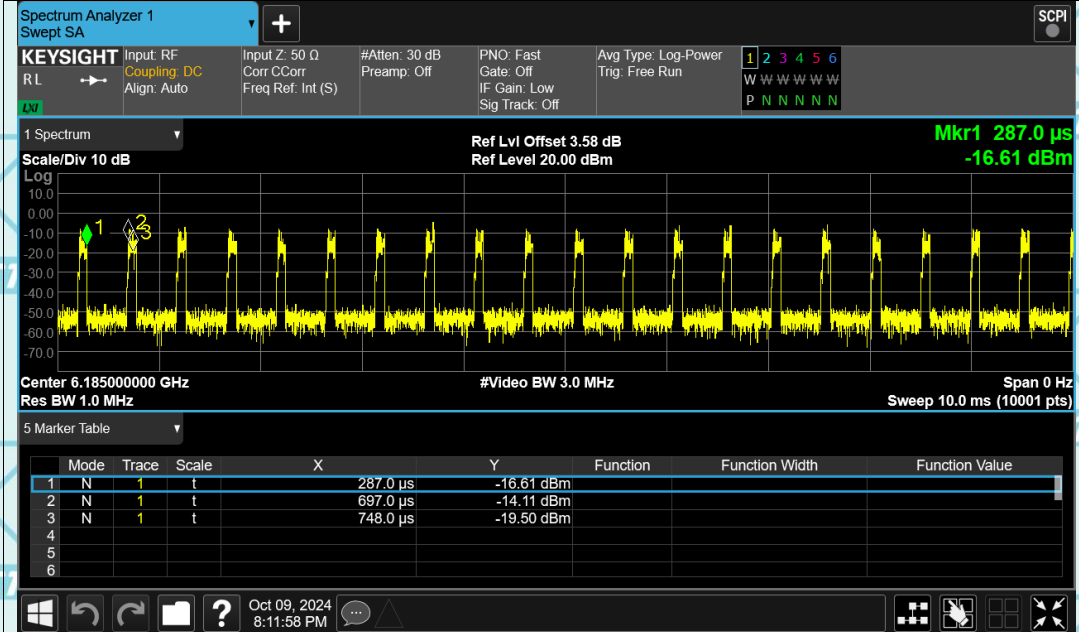


Report No.: WSCT-ANAB-R&E240900045A-Wi-Fi3

Duty Cycle NVNT ax160 6025MHz Ant1

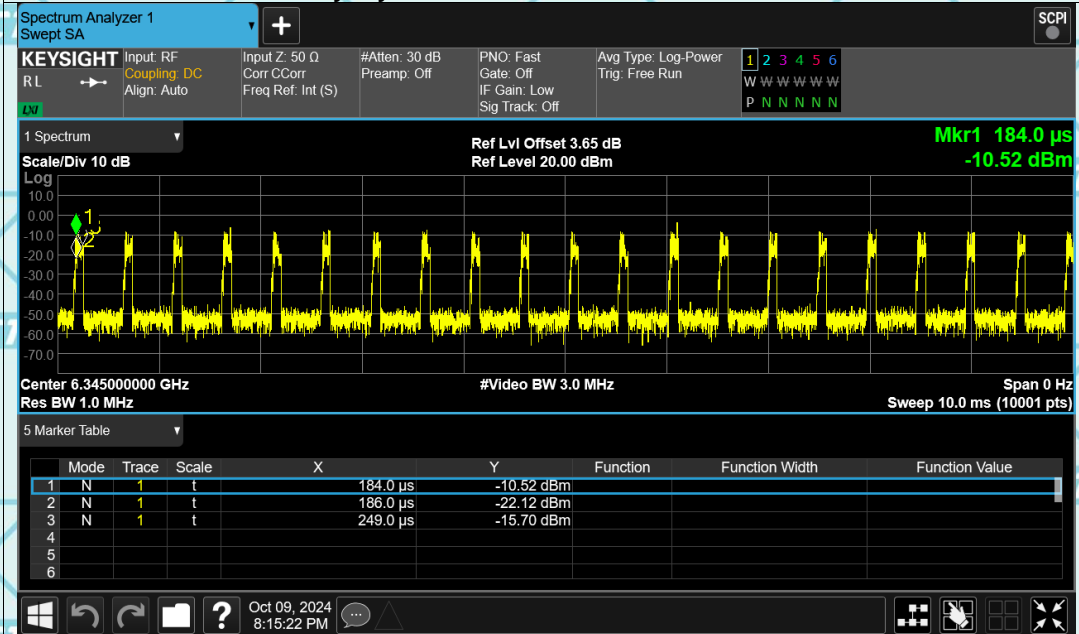


Duty Cycle NVNT ax160 6185MHz Ant1



Report No.: WSCT-ANAB-R&E240900045A-Wi-Fi3

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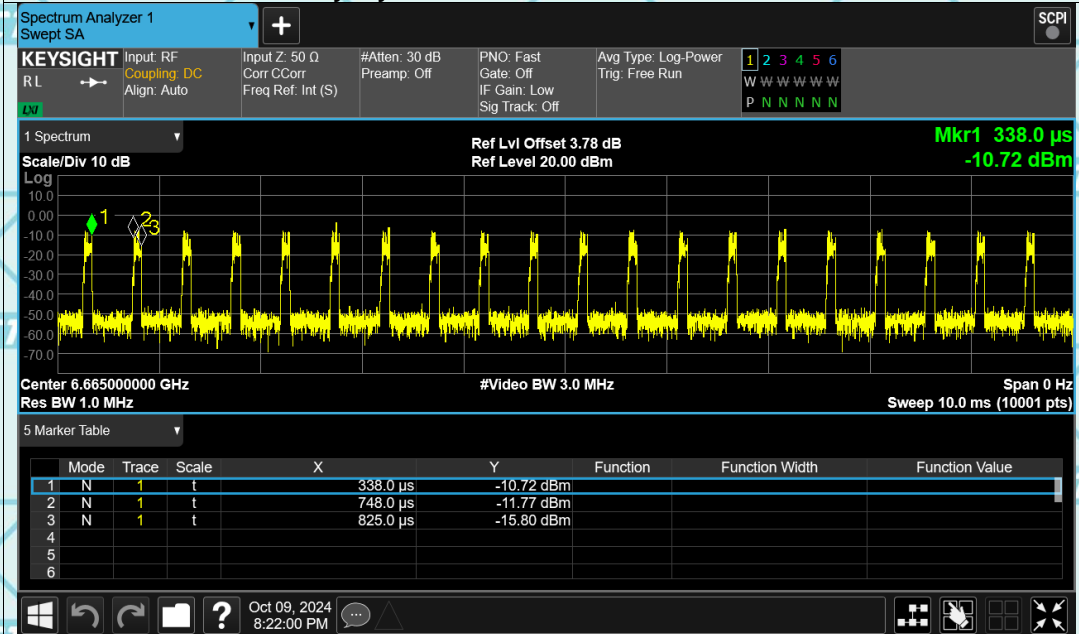


Duty Cycle NVNT ax160 6505MHz Ant1



Report No.: WSCT-ANAB-R&E240900045A-Wi-Fi3

Duty Cycle NVNT ax160 6665MHz Ant1



Duty Cycle NVNT ax160 6825MHz Ant1



Report No.: WSCT-ANAB-R&E240900045A-Wi-Fi3

Duty Cycle NVNT ax160 6985MHz Ant1



7.10 CONTENTION BASED PROTOCOL

7.10.1 LIMIT OF CONTENTION BASED PROTOCOL

<FCC 14-30 CFR 15.407>

(d)(6) Indoor access points, subordinate devices and client devices operating in the 5.925-7.125 GHz band must employ a contention-based protocol.

FCC KDB 987594 D02 U-NII 6GHz EMC Measurement v01

Unlicensed low-power indoor devices must detect co-channel radio frequency power that is at least -62 dBm or lower. Upon detection of energy in the band, unlicensed low power indoor devices must vacate the channel and stay off the channel as long as detected radio frequency power is equal to or greater than the threshold (-62 dBm). The -62 dBm (or lower) threshold is referenced to a 0 dBi antenna gain. To ensure incumbent operations are reliably detected in the band, low power indoor devices must detect RF energy throughout their intended operating channel. For example, an 802.11 device that plans to transmit a 40 MHz- wide signal (on a primary 20 MHz channel and a secondary 20 MHz channel) must detect energy throughout the entire 40 MHz channel. Additionally, low-power indoor devices must detect co-channel energy with 90% or greater certainty.

Table 1. Criteria to determine number of times detection threshold test may be performed

If	Number of Tests	Placement of Incumbent Transmission
$BW_{EUT} \leq BW_{Inc}$	Once	Tune incumbent and EUT transmissions ($f_{c1} = f_{c2}$)
$BW_{Inc} < BW_{EUT} \leq 2BW_{Inc}$	Once	Incumbent transmission is contained within BW_{EUT}
$2BW_{Inc} < BW_{EUT} \leq 4BW_{Inc}$	Twice. Incumbent transmission is contained within BW_{EUT}	Incumbent transmission is located as closely as possible to the lower edge and upper edge, respectively, of the EUT channel
$BW_{EUT} > 4BW_{Inc}$	Three times	Incumbent transmission is located as closely as possible to the lower edge of the EUT channel, in the middle of EUT channel, and as closely as possible to the upper edge of the EUT channel

where:

BW_{EUT} : Transmission bandwidth of EUT signal

BW_{Inc} : Transmission bandwidth of the simulated incumbent signal (10 MHz wide AWGN signal)

f_{c1} : Center frequency of EUT transmission

f_{c2} : Center frequency of simulated incumbent signal

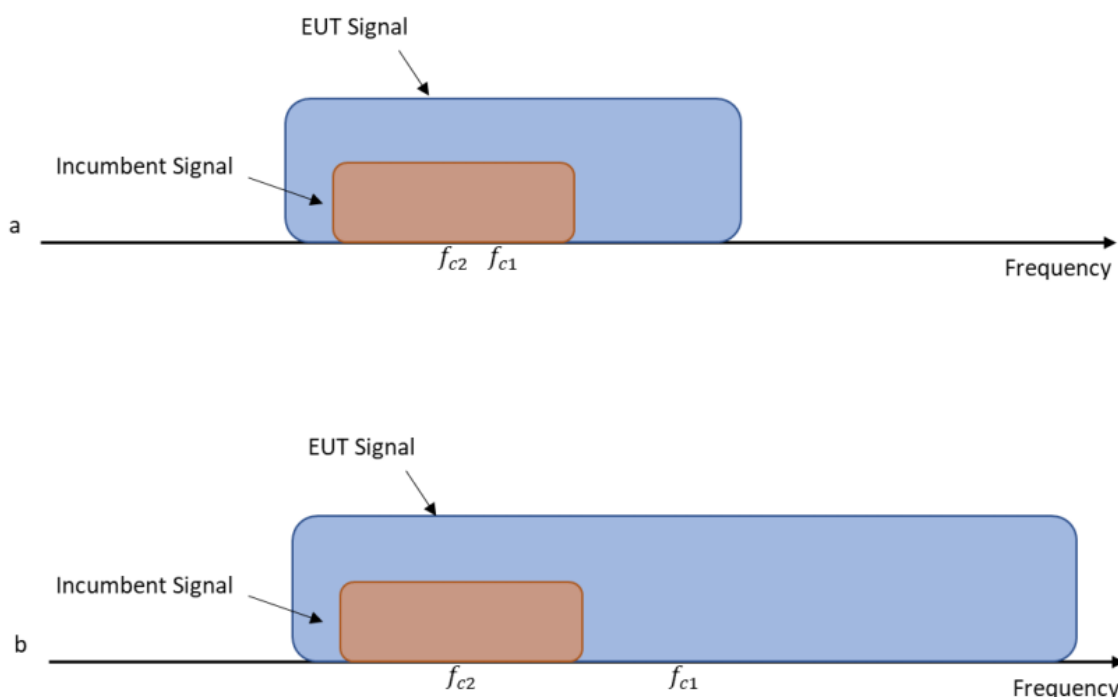


Figure 1. Two possible scenarios where a) center frequency of EUT transmission falls within incumbent's bandwidth, or b) outside of it

7.10.2 MEASURING INSTRUMENTS

See list of measuring equipment of this test report.

7.10.3 TEST PROCEDURES

Refer to KDB 987594 D02 v01v01.

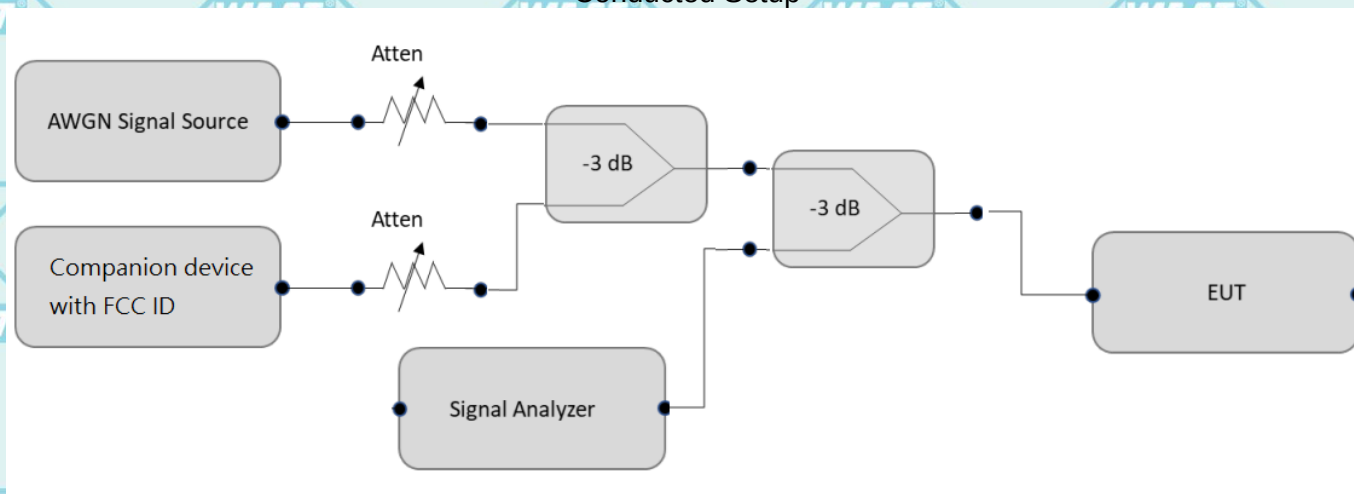
1. To ensure EUT reliably detects an incumbent signal in both scenarios shown in Figure 1, the detection threshold test may be repeated more than once with the incumbent signal (having center frequency f_{c2}) tuned to different center frequencies within the UT transmission bandwidth. The criteria specified in Table 1 determines how many times the detection threshold test must be performed
2. Using an AWGN signal source, generate (but do not transmit, i.e., RF OFF) a 10 MHz-wide AWGN signal. Use Table 1 to determine the center frequency of the 10 MHz AWGN signal relative to the EUT's channel bandwidth and center frequency.
3. Monitor the signal analyzer to verify if the AWGN signal has been detected and the EUT has ceased transmission. If the EUT continues to transmit, then incrementally increase the AWGN signal power level until the EUT stops transmitting.
4. (Including all losses in the RF paths) Determine and record the AWGN signal power level (at the EUT's antenna port) at which the EUT ceased transmission. Repeat the procedure at least 10 times to verify the EUT can detect an AWGN signal with 90% (or better) level of certainty.

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5. Refer to Table 1 to determine number of times the detection threshold testing needs to be repeated. If testing is required more than once, then go back to step 2, choose a different center frequency for the AWGN signal and repeat the process.

7.10.4 TEST SETUP

Conducted Setup



Report No.: WSCT-ANAB-R&E240900045A-Wi-Fi3

7.10.5 TEST RESULT

Contention Based Protocol

Mode	Frequency (MHz)	AWGN Location	AWGN Frequency (MHz)	Test Time	Is Detected	Verdict
ax20	6115	Center	6115	1	Yes	Pass
ax20	6115	Center	6115	2	Yes	Pass
ax20	6115	Center	6115	3	Yes	Pass
ax20	6115	Center	6115	4	Yes	Pass
ax20	6115	Center	6115	5	Yes	Pass
ax20	6115	Center	6115	6	Yes	Pass
ax20	6115	Center	6115	7	Yes	Pass
ax20	6115	Center	6115	8	Yes	Pass
ax20	6115	Center	6115	9	Yes	Pass
ax20	6115	Center	6115	10	Yes	Pass
ax20	6755	Center	6755	1	Yes	Pass
ax20	6755	Center	6755	2	Yes	Pass
ax20	6755	Center	6755	3	Yes	Pass
ax20	6755	Center	6755	4	Yes	Pass
ax20	6755	Center	6755	5	Yes	Pass
ax20	6755	Center	6755	6	Yes	Pass
ax20	6755	Center	6755	7	Yes	Pass
ax20	6755	Center	6755	8	Yes	Pass
ax20	6755	Center	6755	9	Yes	Pass
ax20	6755	Center	6755	10	Yes	Pass
ax20	6895	Center	6895	1	Yes	Pass
ax20	6895	Center	6895	2	Yes	Pass
ax20	6895	Center	6895	3	Yes	Pass
ax20	6895	Center	6895	4	Yes	Pass
ax20	6895	Center	6895	5	Yes	Pass
ax20	6895	Center	6895	6	Yes	Pass
ax20	6895	Center	6895	7	Yes	Pass
ax20	6895	Center	6895	8	Yes	Pass
ax20	6895	Center	6895	9	Yes	Pass
ax20	6895	Center	6895	10	Yes	Pass
ax160	6185	Center	6185	1	Yes	Pass
ax160	6185	Center	6185	2	Yes	Pass
ax160	6185	Center	6185	3	Yes	Pass
ax160	6185	Center	6185	4	Yes	Pass
ax160	6185	Center	6185	5	Yes	Pass
ax160	6185	Center	6185	6	Yes	Pass
ax160	6185	Center	6185	7	Yes	Pass
ax160	6185	Center	6185	8	Yes	Pass
ax160	6185	Center	6185	9	Yes	Pass
ax160	6185	Center	6185	10	Yes	Pass
ax160	6505	Center	6505	1	Yes	Pass
ax160	6505	Center	6505	2	Yes	Pass
ax160	6505	Center	6505	3	Yes	Pass
ax160	6505	Center	6505	4	No	Fail
ax160	6505	Center	6505	5	Yes	Pass
ax160	6505	Center	6505	6	Yes	Pass
ax160	6505	Center	6505	7	Yes	Pass
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ax160	6505	Center	6505	10	Yes	Pass
ax160	6665	Center	6665	1	Yes	Pass
ax160	6665	Center	6665	2	Yes	Pass
ax160	6665	Center	6665	3	Yes	Pass
ax160	6665	Center	6665	4	Yes	Pass
ax160	6665	Center	6665	5	Yes	Pass
ax160	6665	Center	6665	6	Yes	Pass
ax160	6665	Center	6665	7	Yes	Pass
ax160	6665	Center	6665	8	Yes	Pass

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ax160	6665	Center	6665	9	Yes	Pass
ax160	6665	Center	6665	10	Yes	Pass
ax160	6985	Center	6985	1	Yes	Pass
ax160	6985	Center	6985	2	Yes	Pass
ax160	6985	Center	6985	3	Yes	Pass
ax160	6985	Center	6985	4	Yes	Pass
ax160	6985	Center	6985	5	Yes	Pass
ax160	6985	Center	6985	6	Yes	Pass
ax160	6985	Center	6985	7	Yes	Pass
ax160	6985	Center	6985	8	Yes	Pass
ax160	6985	Center	6985	9	Yes	Pass
ax160	6985	Center	6985	10	Yes	Pass

Note: All modes and antennas had been tested, but only the worst data was recorded in the report.

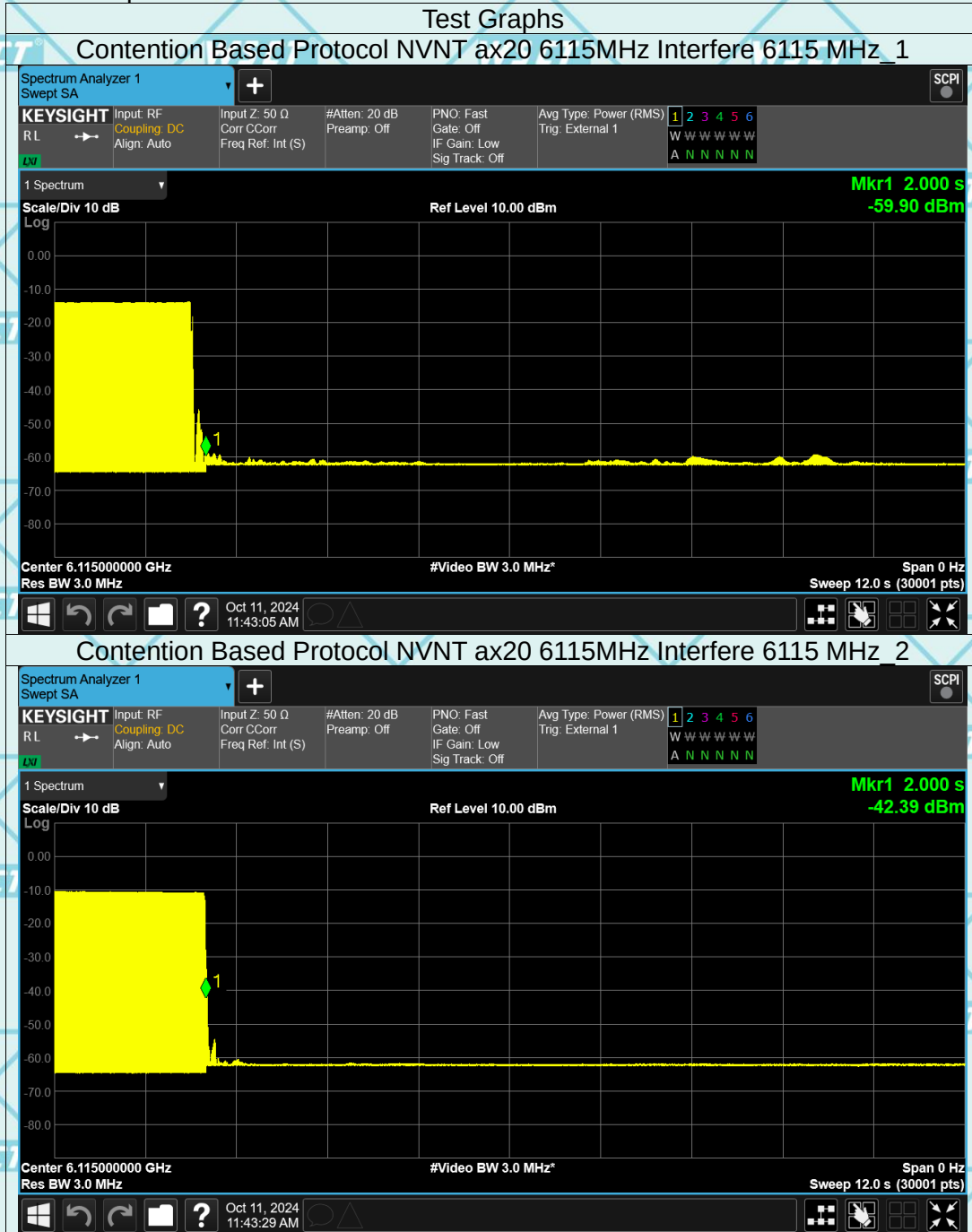
Contention Based Protocol Calibration

Mode	Frequency (MHz)	Antenna	AWGN Location	AWGN Frequency (MHz)	Injected Power (dBm)	Gain (dBi)	Path Loss (dB)	Adjusted Power (dBm)	Limit (dBm)
ax20	6115	Ant1	Center	6115	-61.49	0	0	-61.49	-62
ax20	6755	Ant1	Center	6755	-63.4	0	0	-63.4	-62
ax20	6895	Ant1	Center	6895	-62.46	0	0	-62.46	-62
ax160	6185	Ant1	Low	6110	-61.12	0	0	-61.12	-62
ax160	6505	Ant1	Low	6430	-62.71	0	0	-62.71	-62
ax160	6665	Ant1	Low	6590	-62.14	0	0	-62.14	-62
ax160	6985	Ant1	Low	6910	-62.64	0	0	-62.64	-62

Note 1: Detection Level/Adjusted Power Result = Injected AWGN Power (dBm) – Antenna Gain (dBi) + Path Loss (dB)

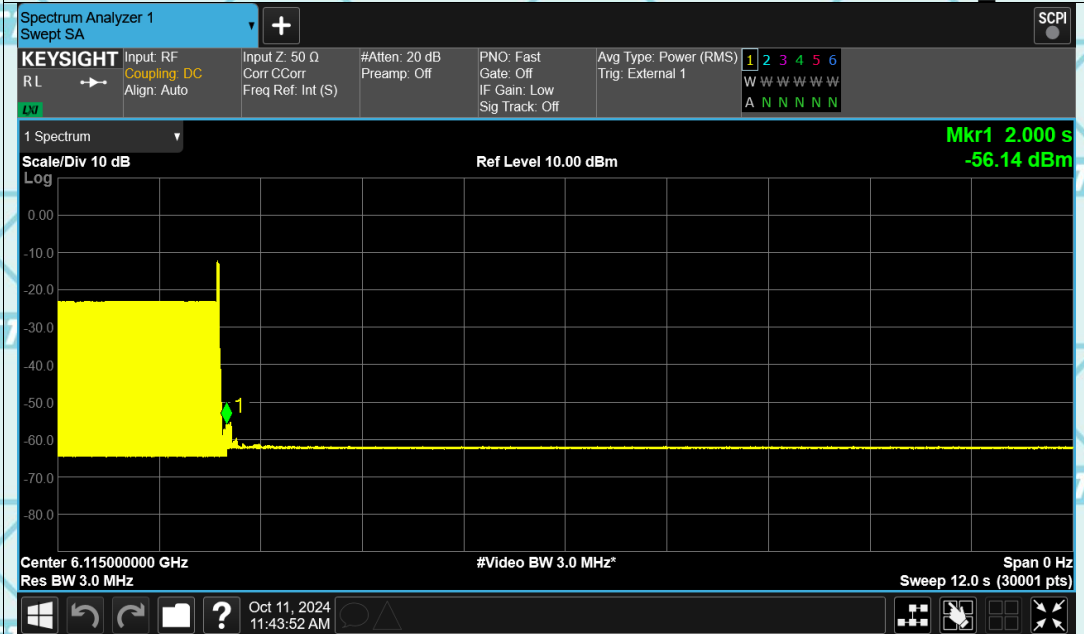
Report No.: WSCT-ANAB-R&E240900045A-Wi-Fi3

Mesh Mode Test Graphs

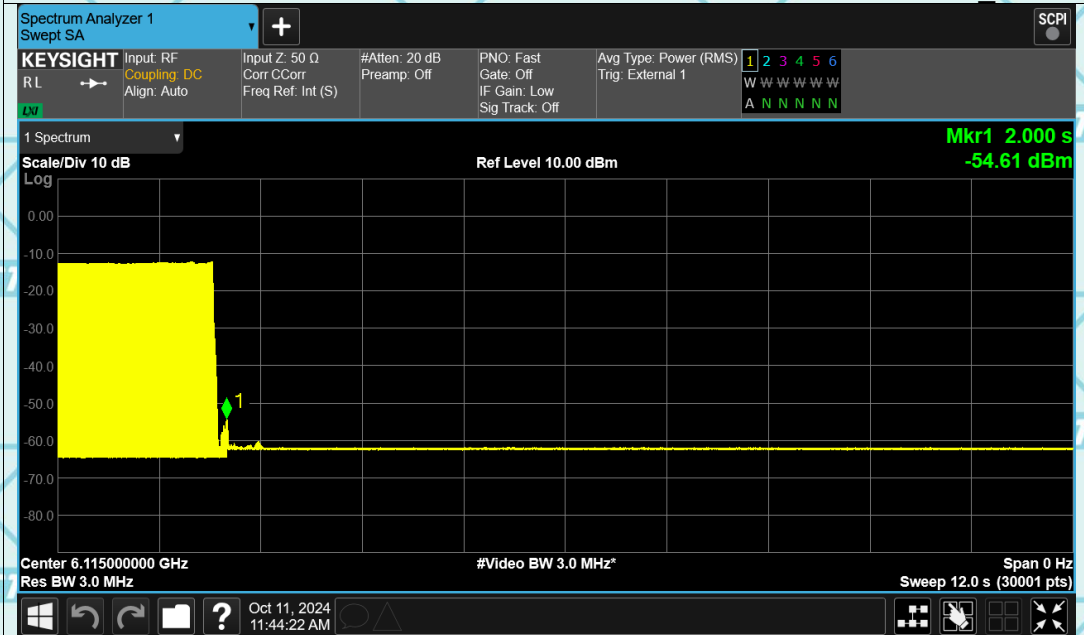


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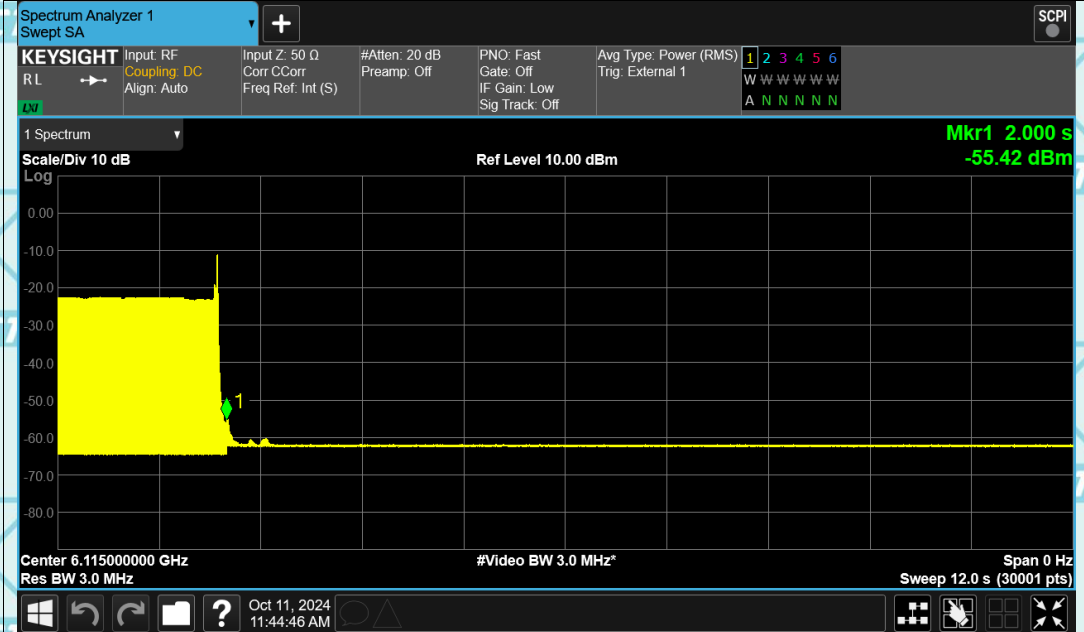


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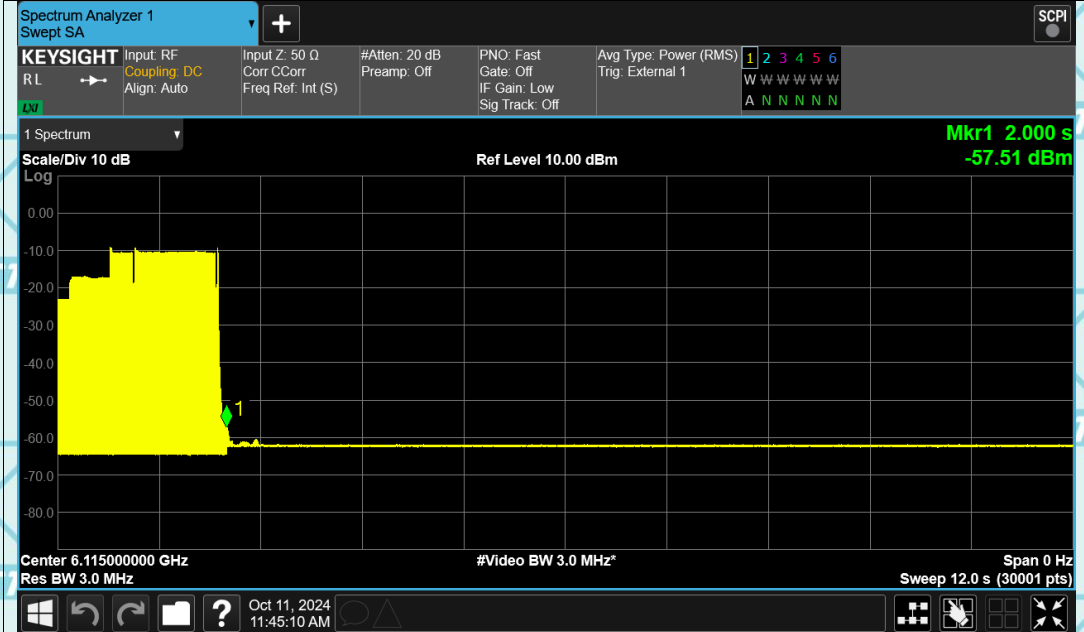


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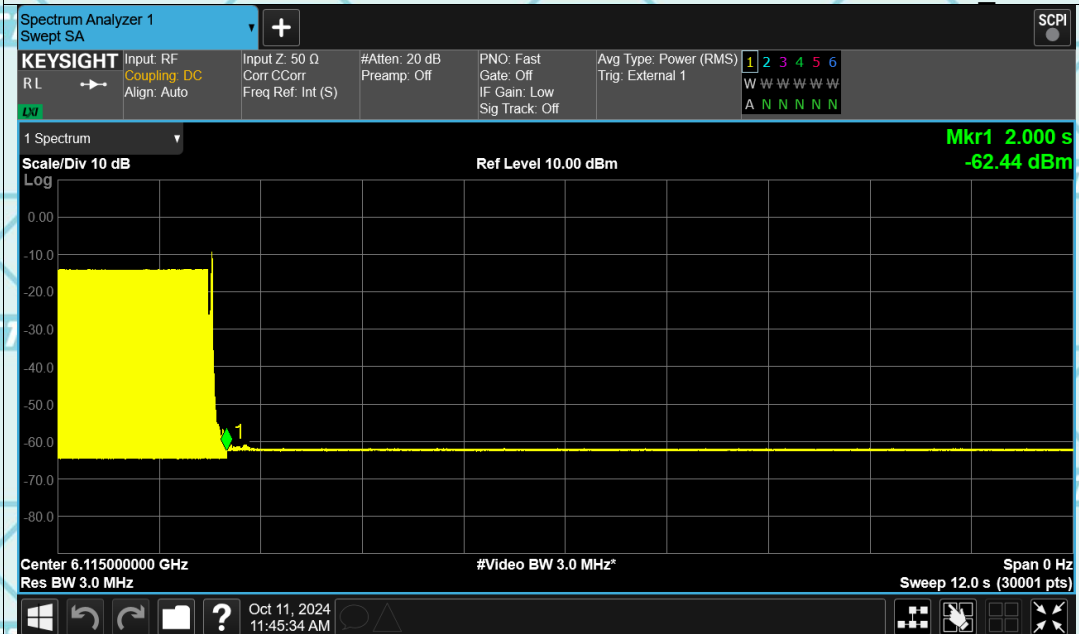


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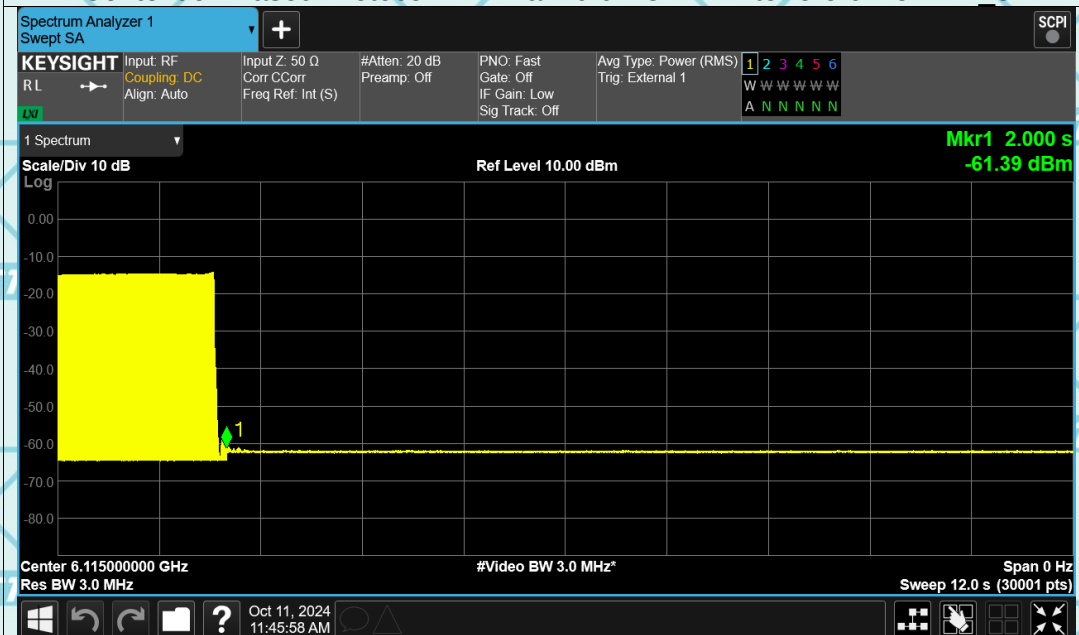


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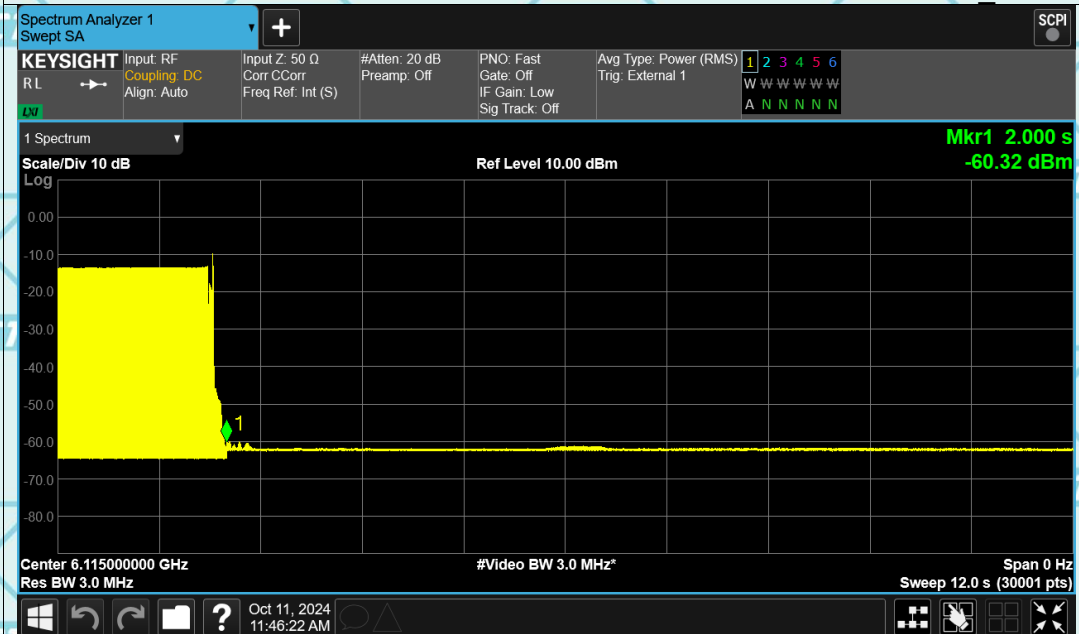


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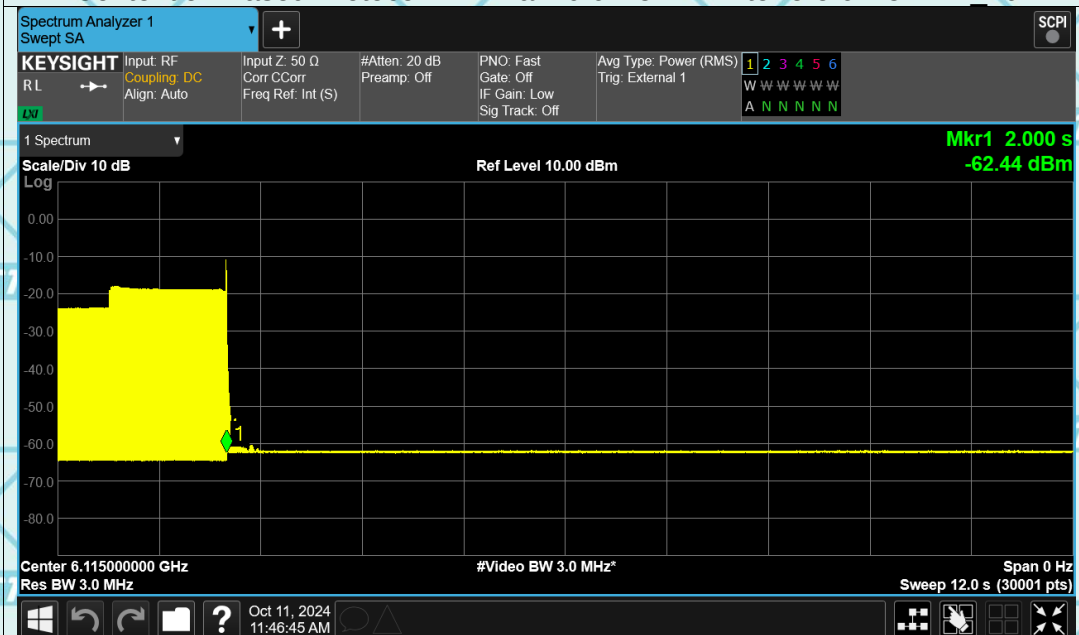


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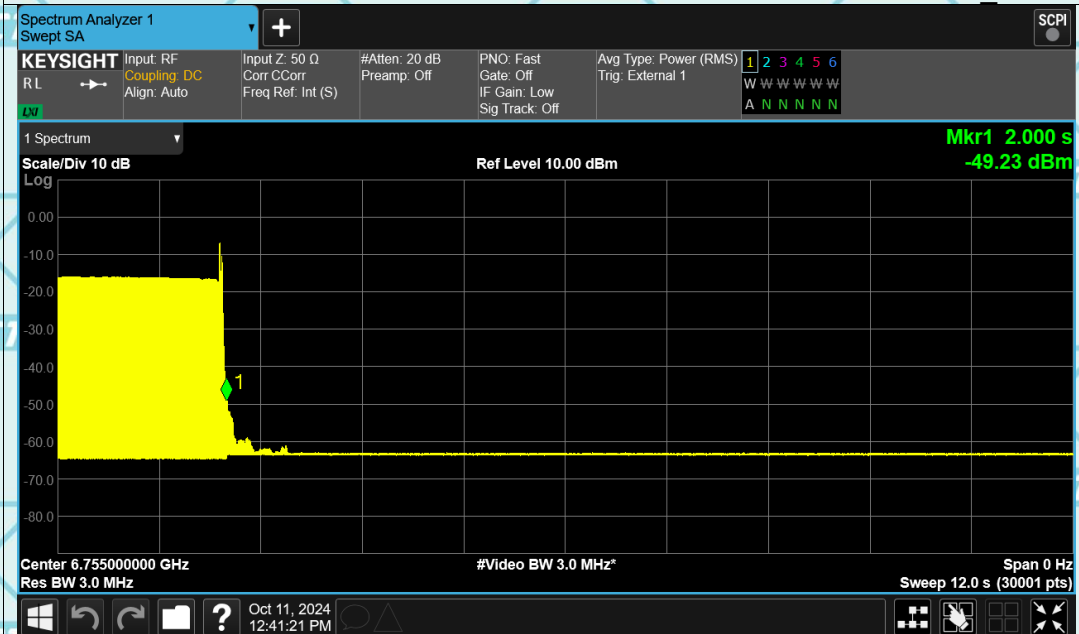


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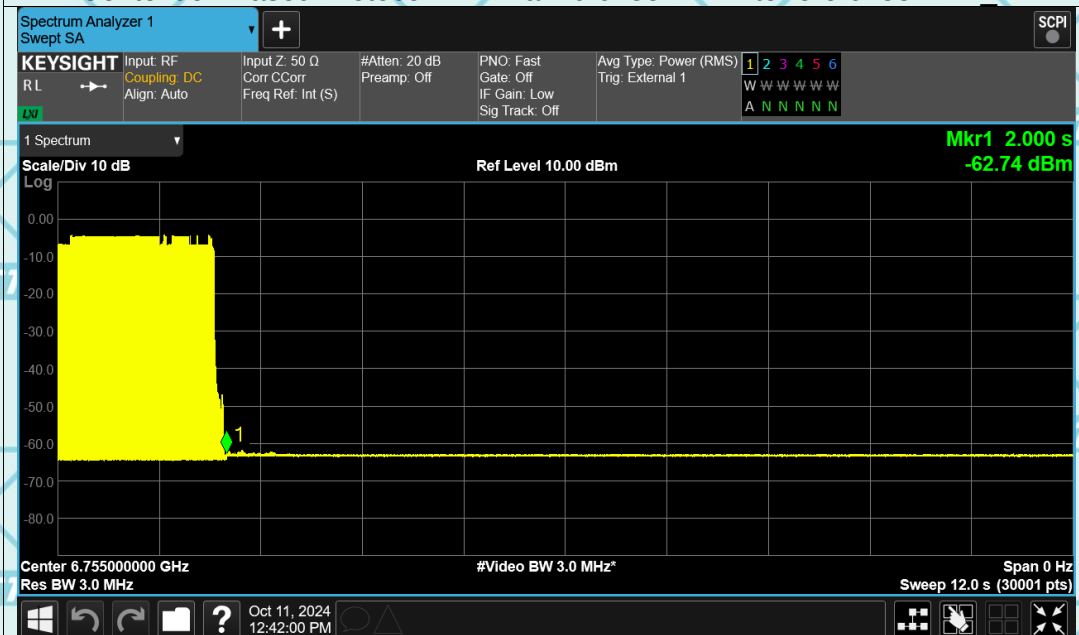


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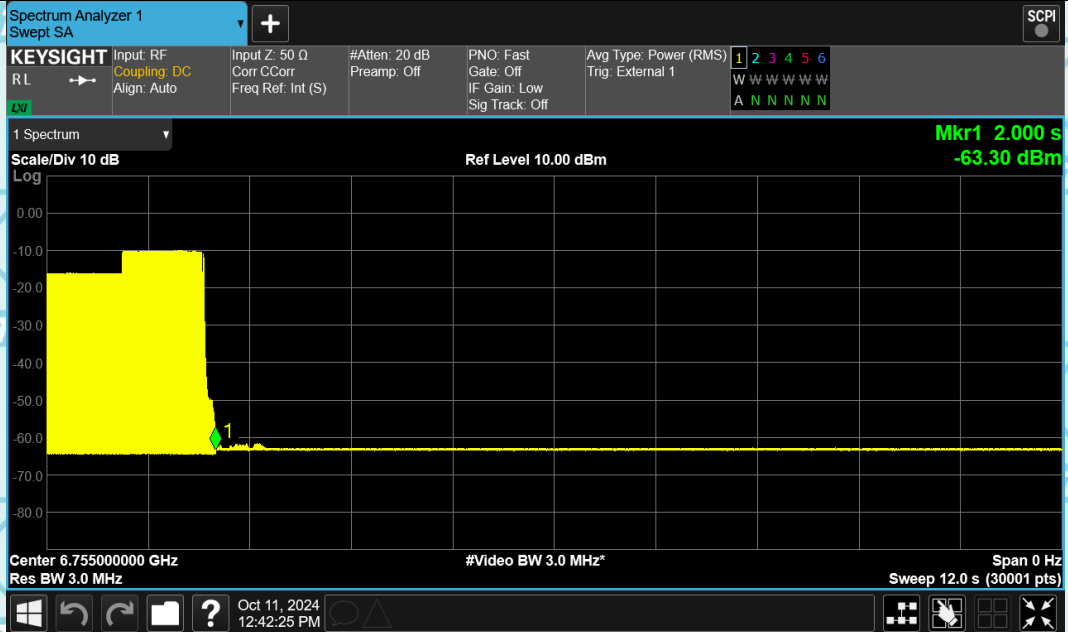


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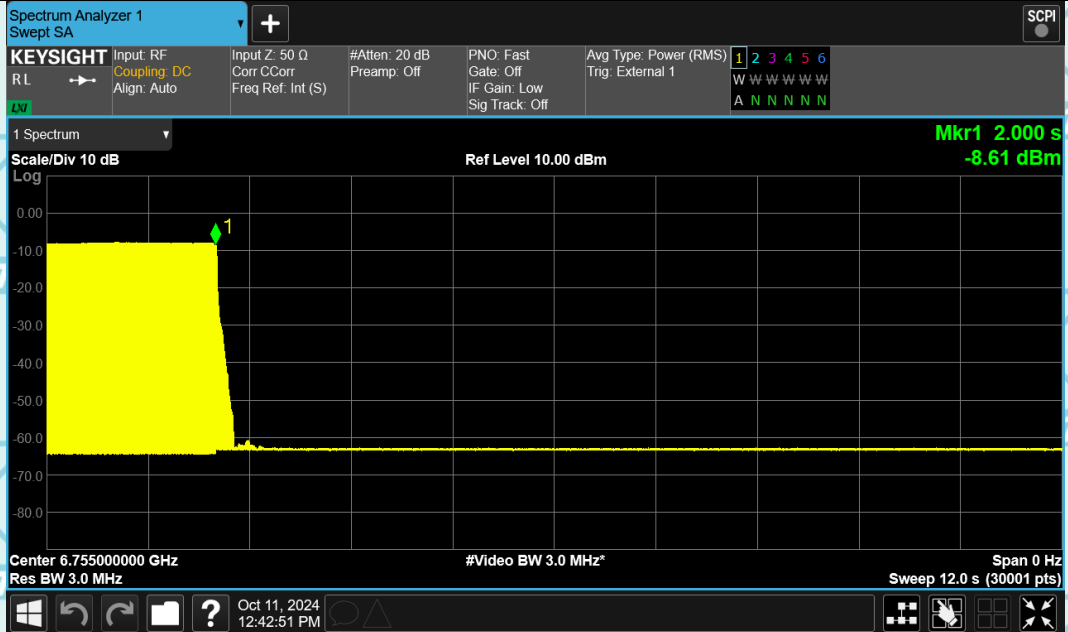


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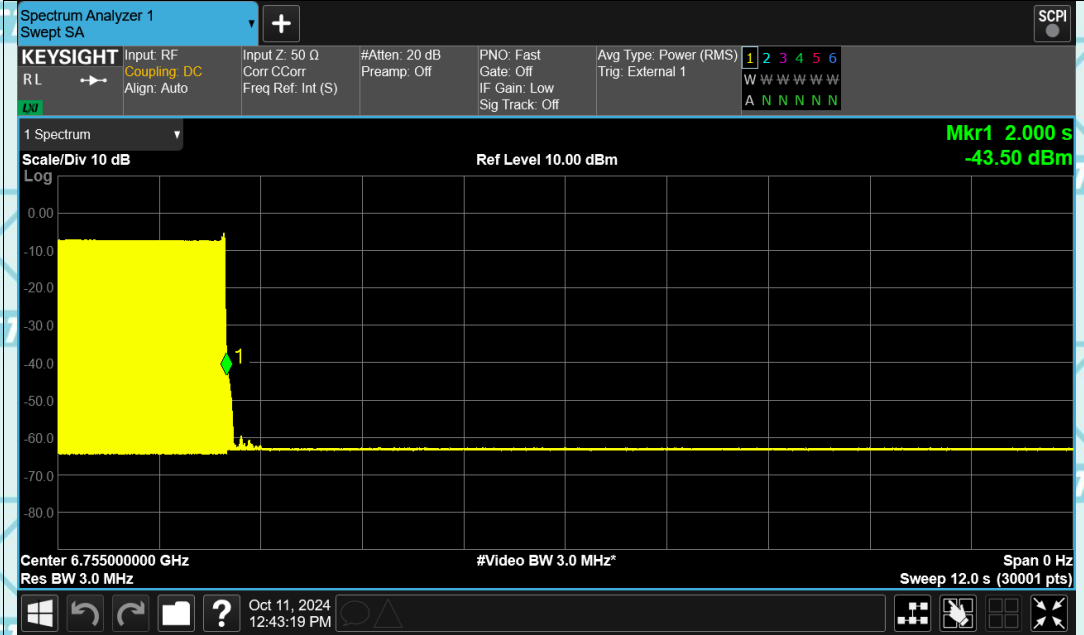


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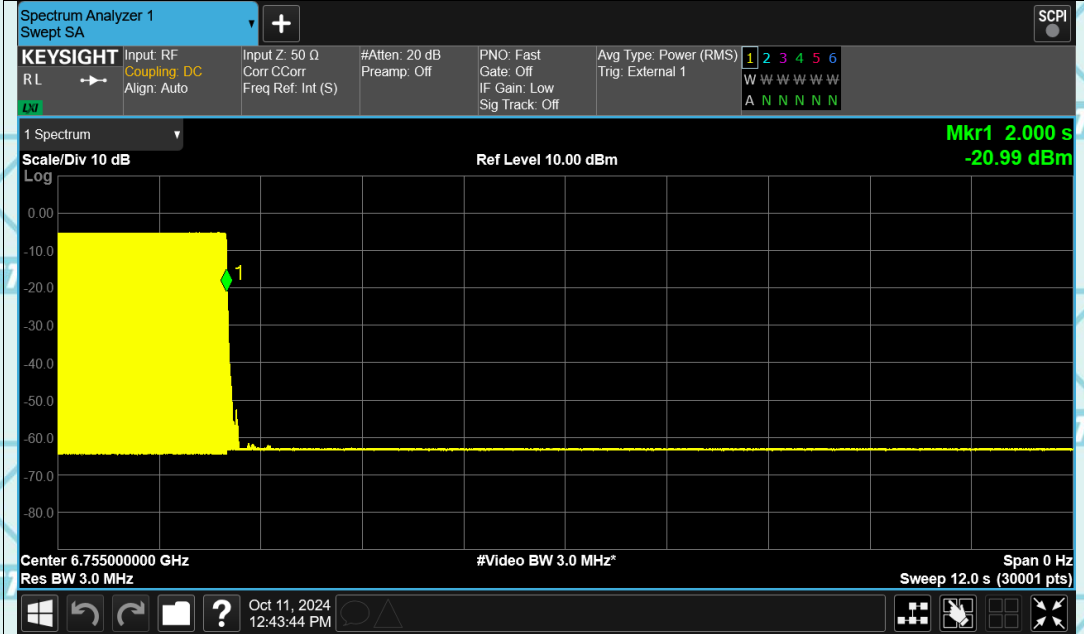


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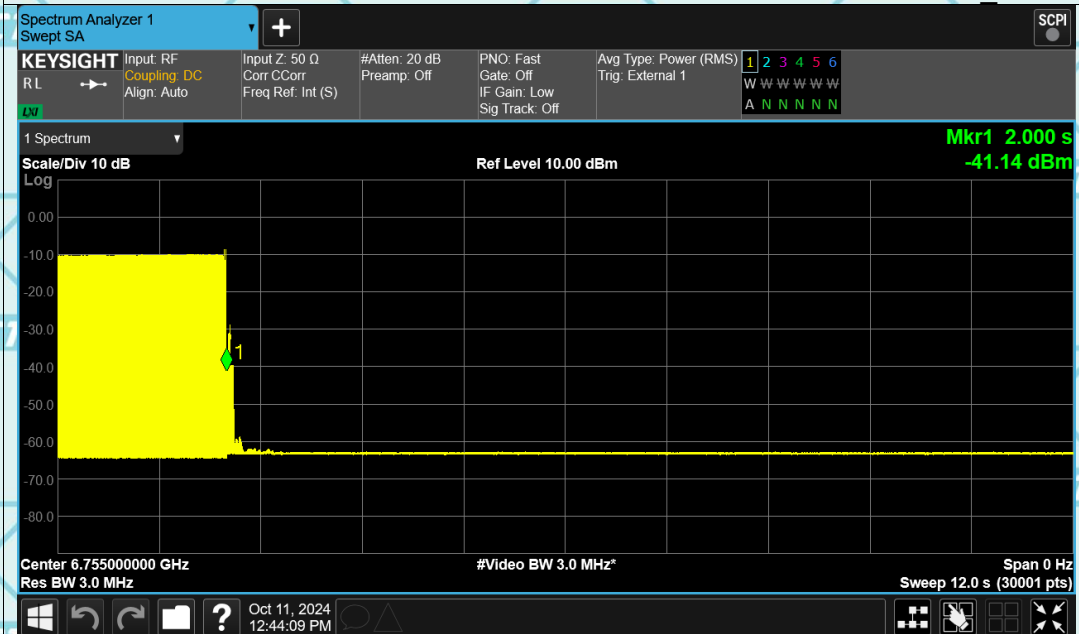


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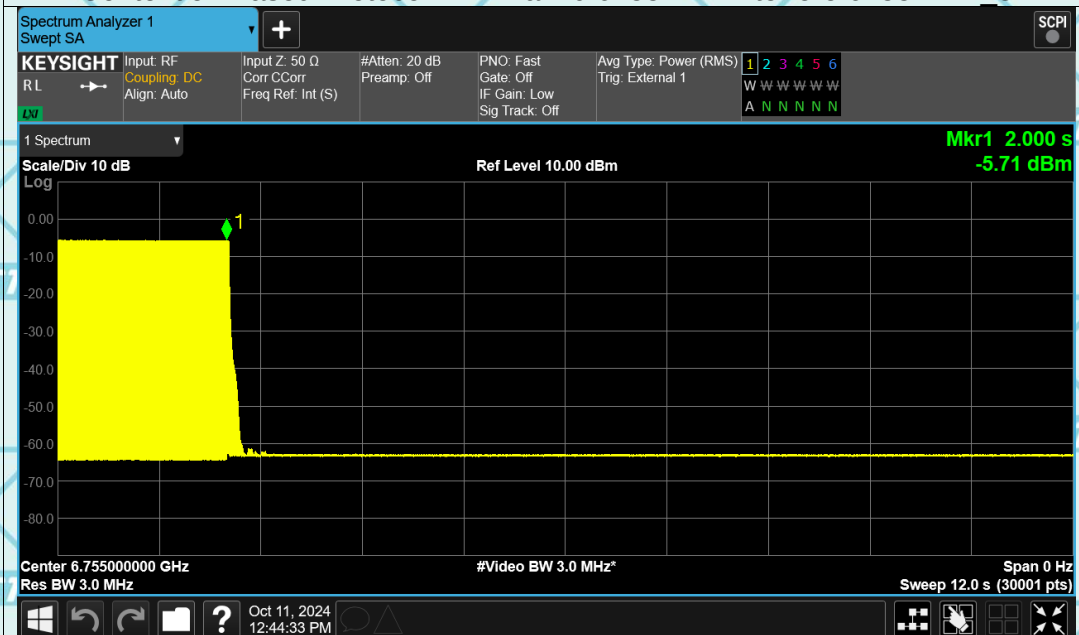


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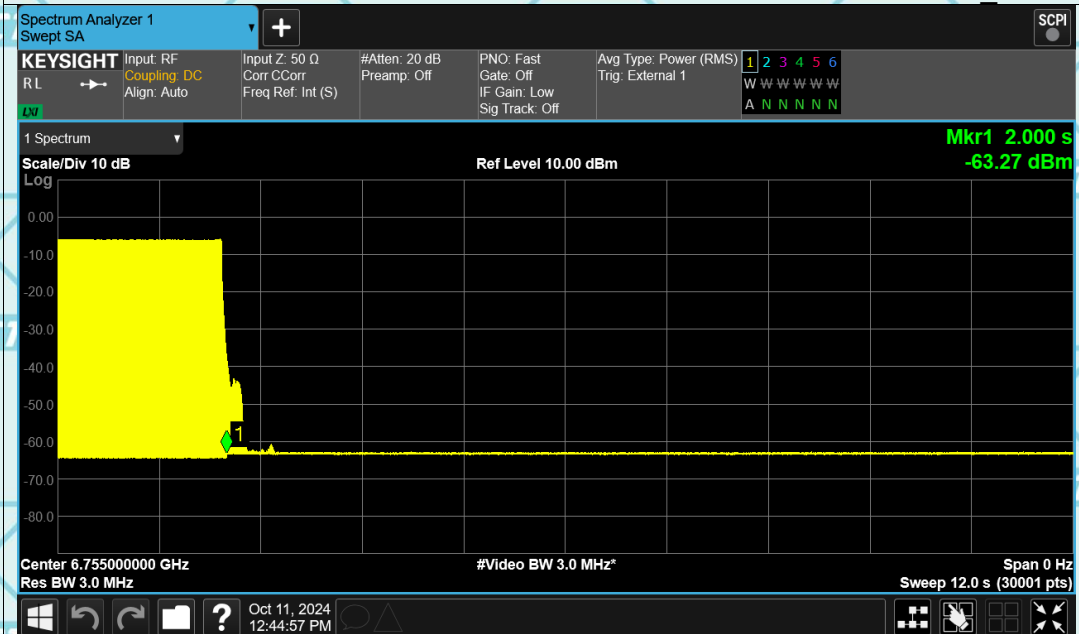


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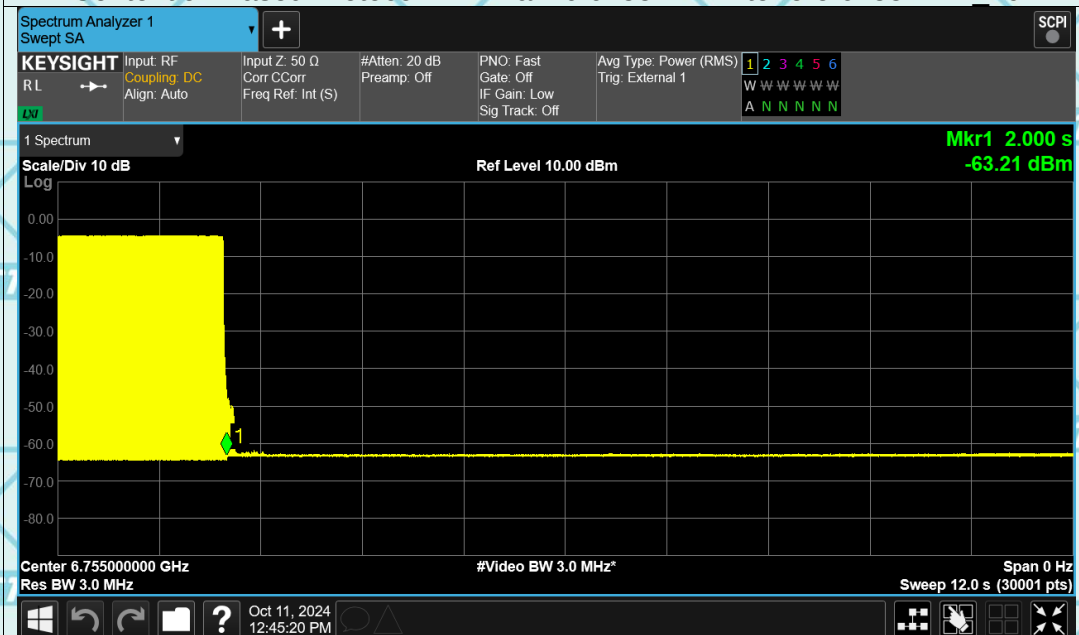


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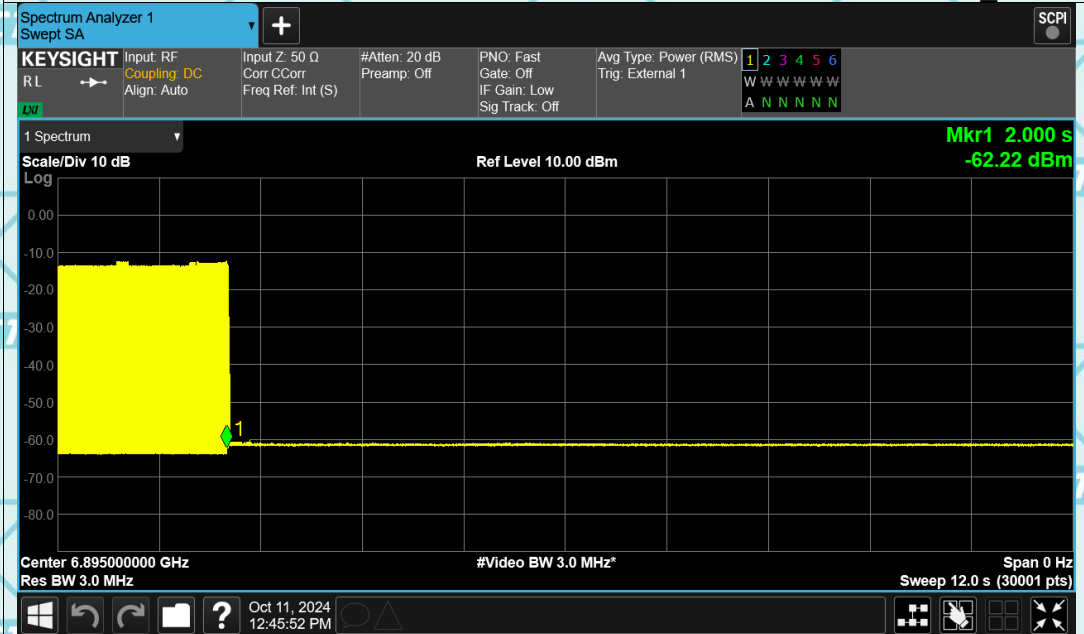


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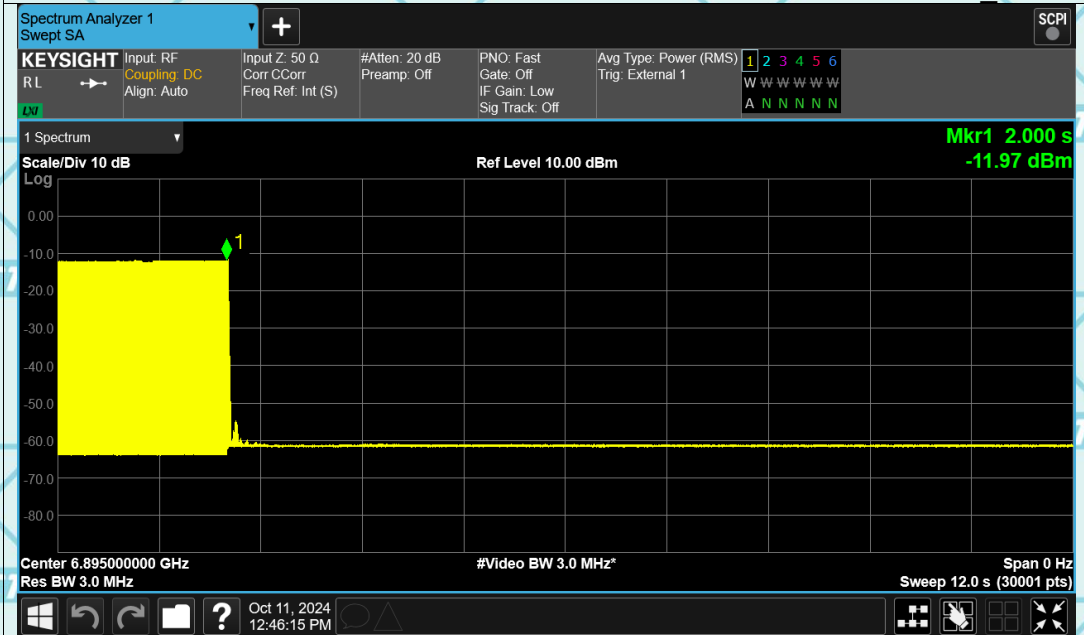


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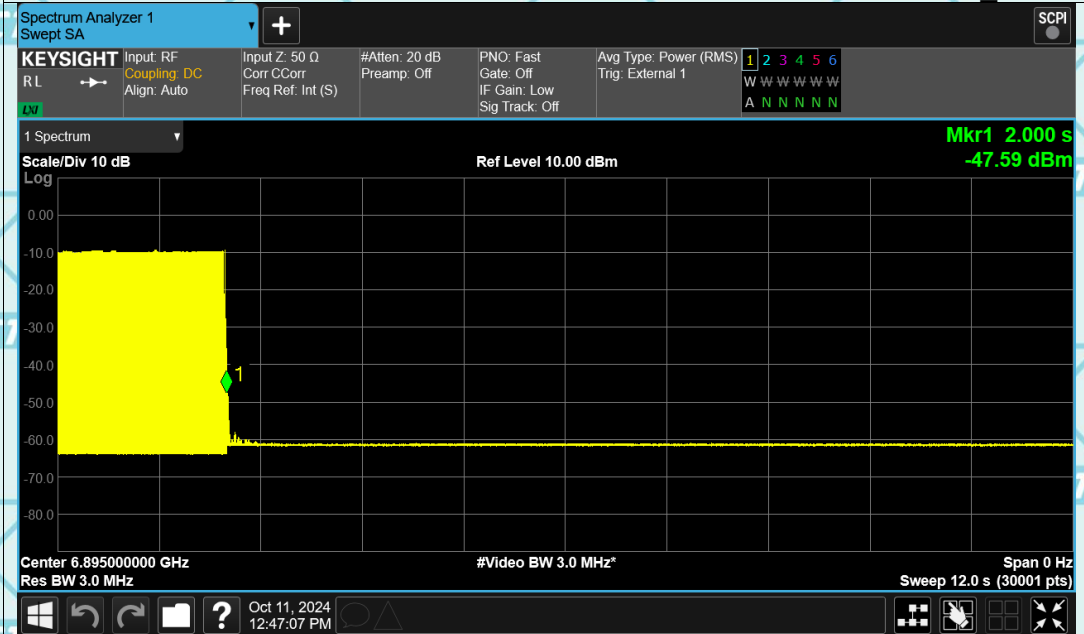


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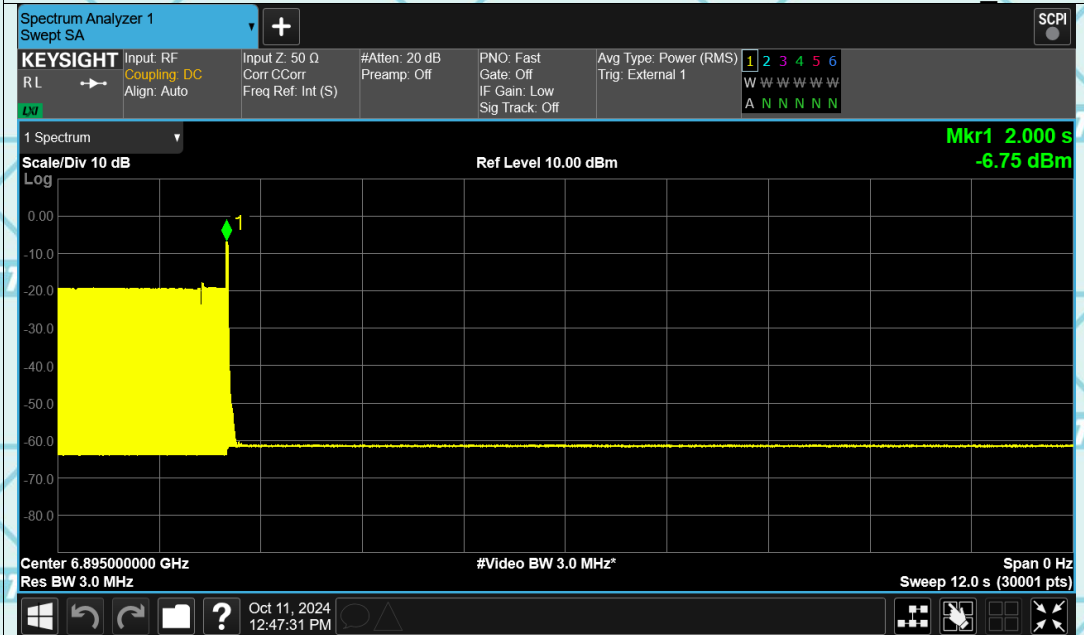


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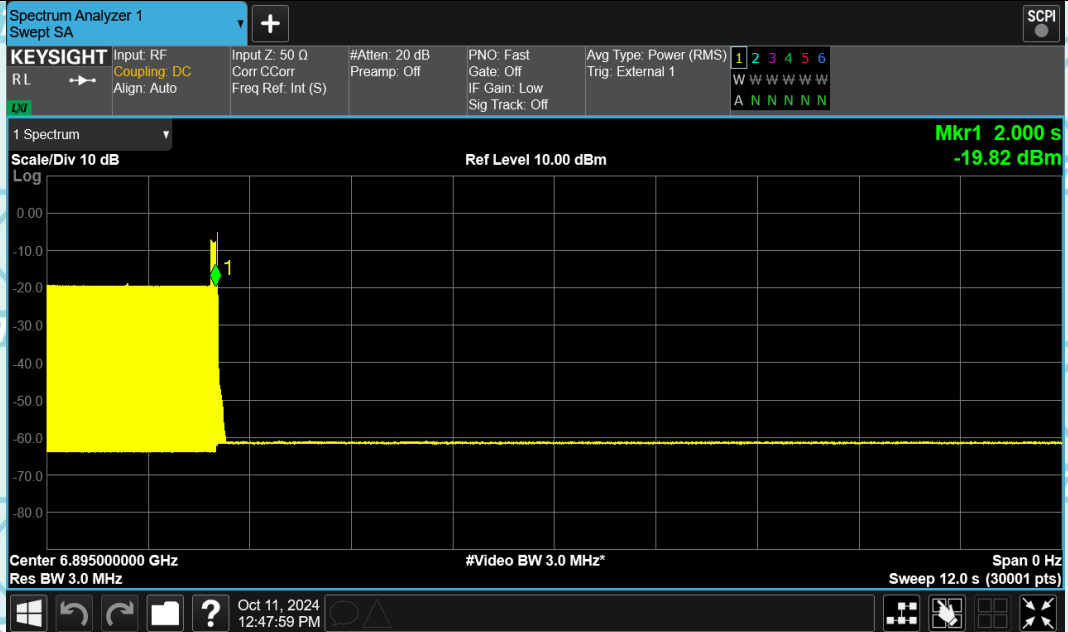


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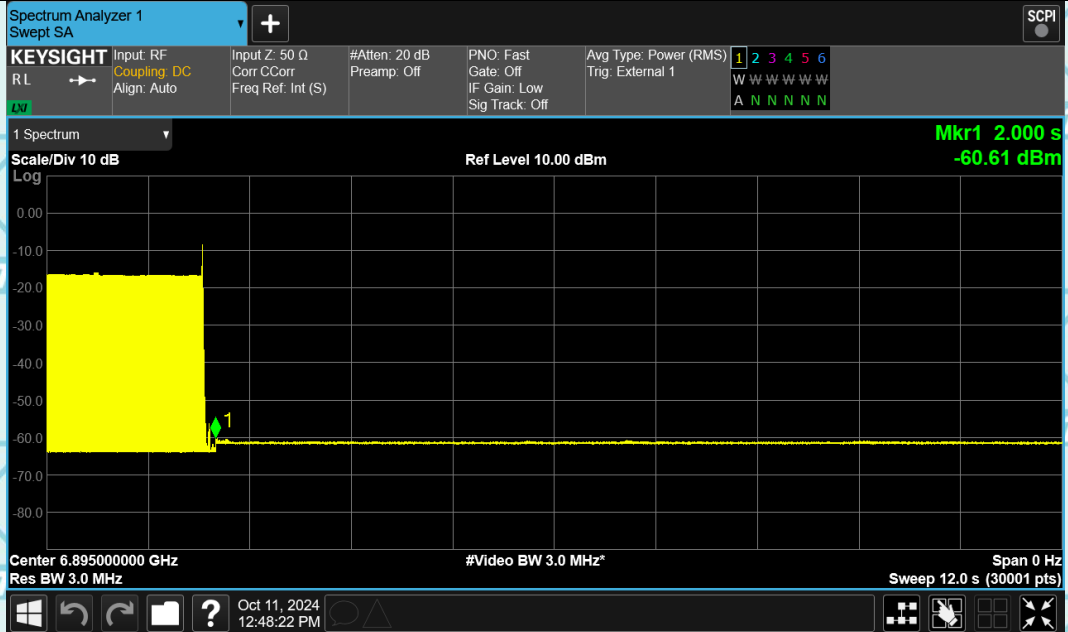


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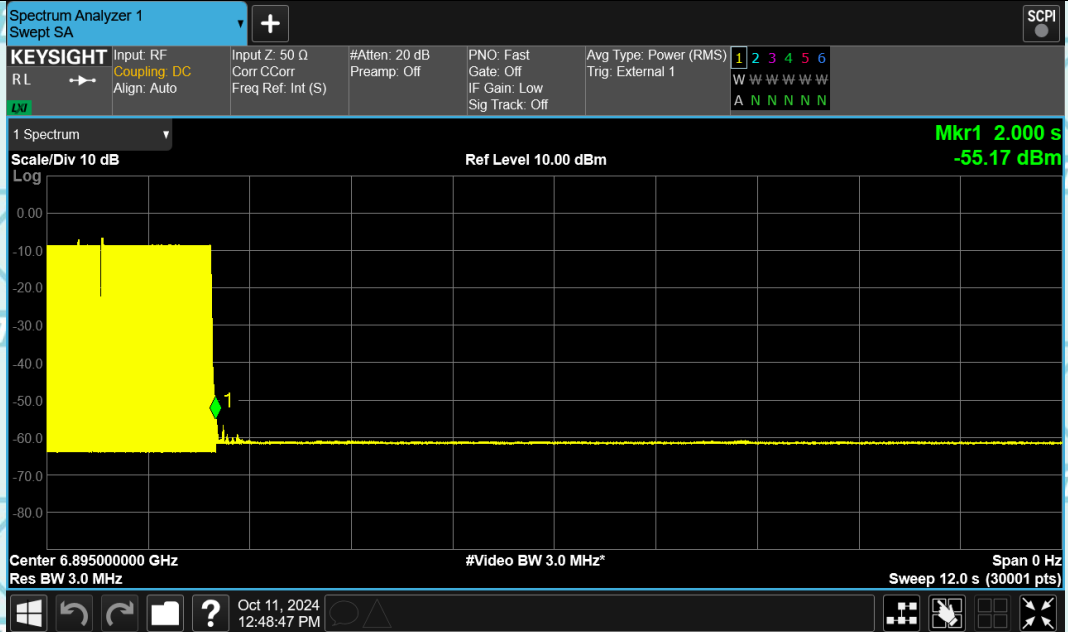


Contention Based Protocol NVNT ax20 6895MHz Interfere 6895 MHz 6



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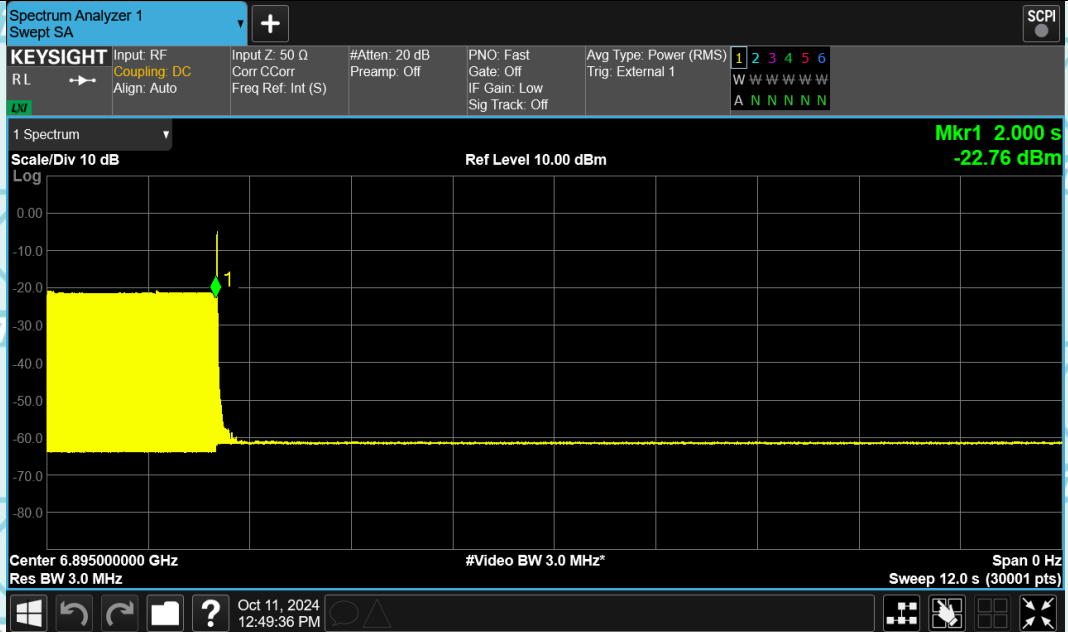


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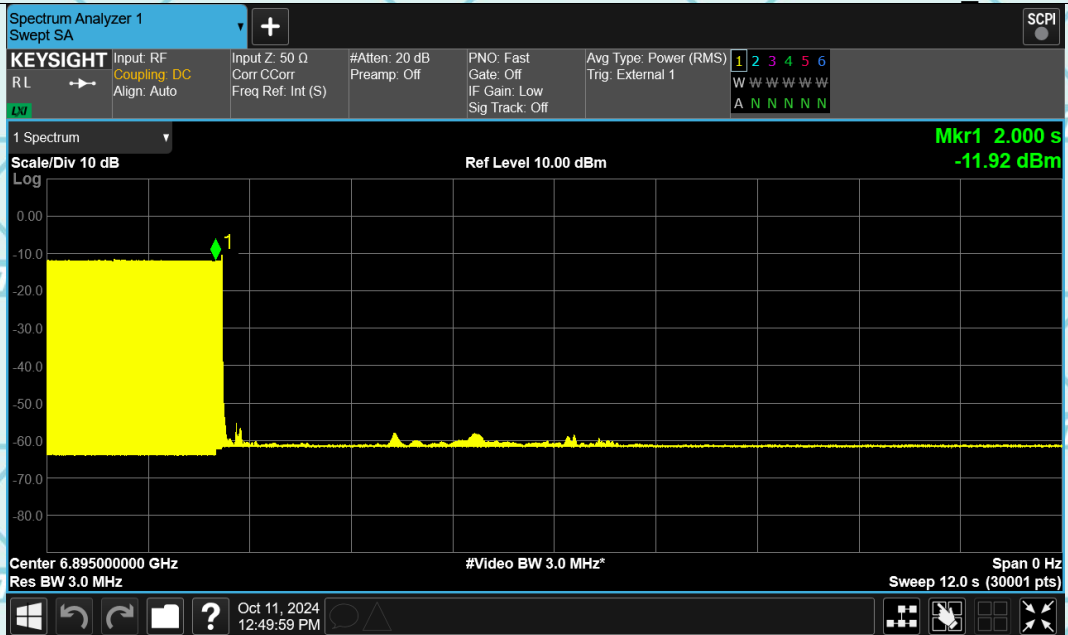


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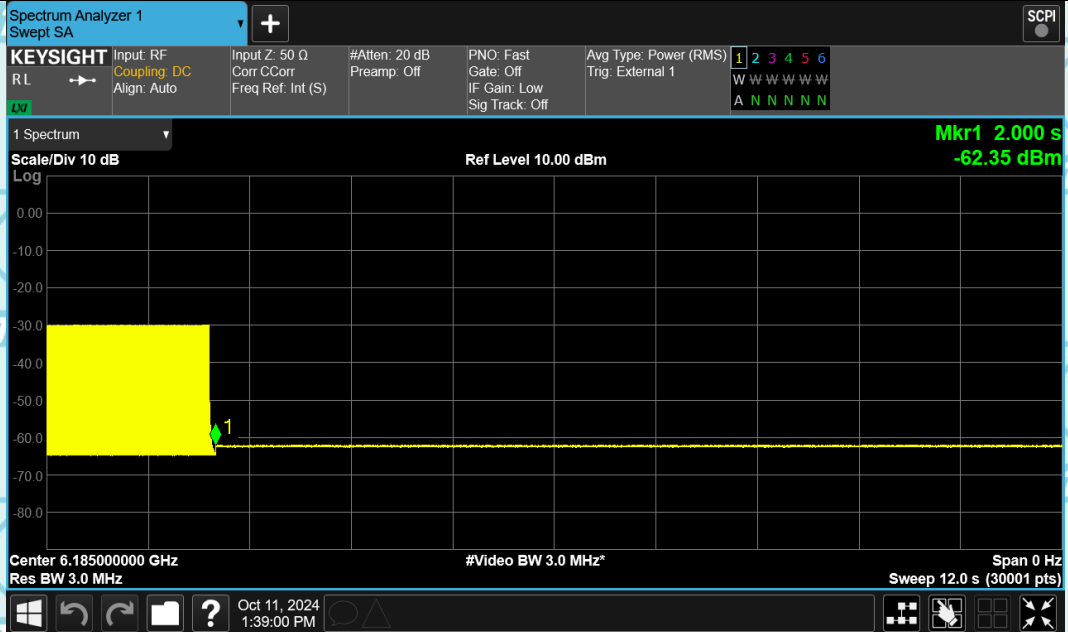


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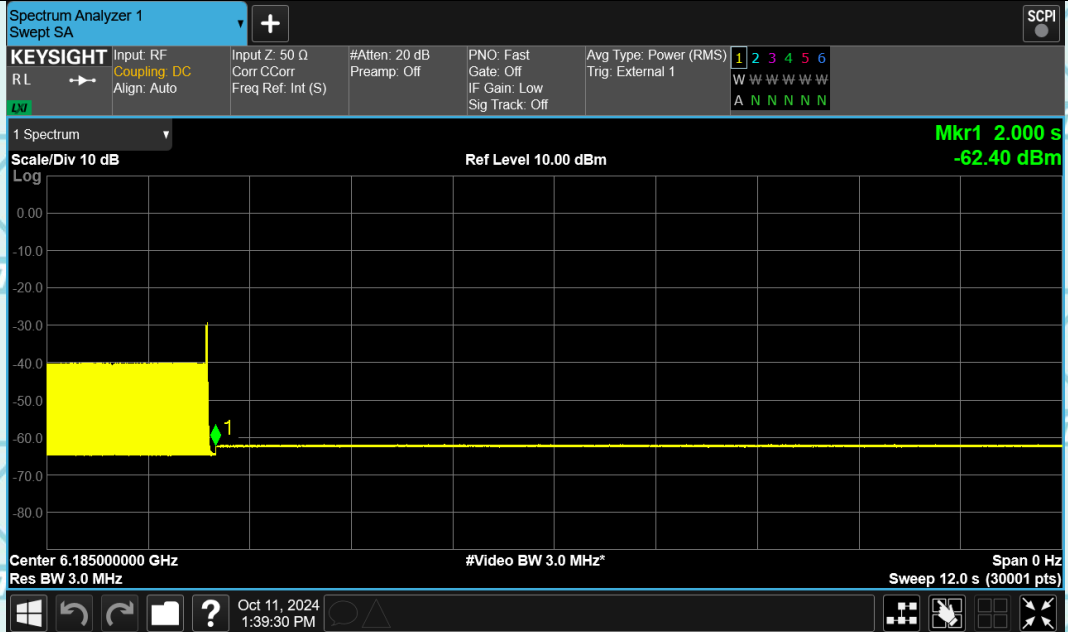


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Contention Based Protocol NVNT ax160 6185MHz Interfere 6185 MHz 1

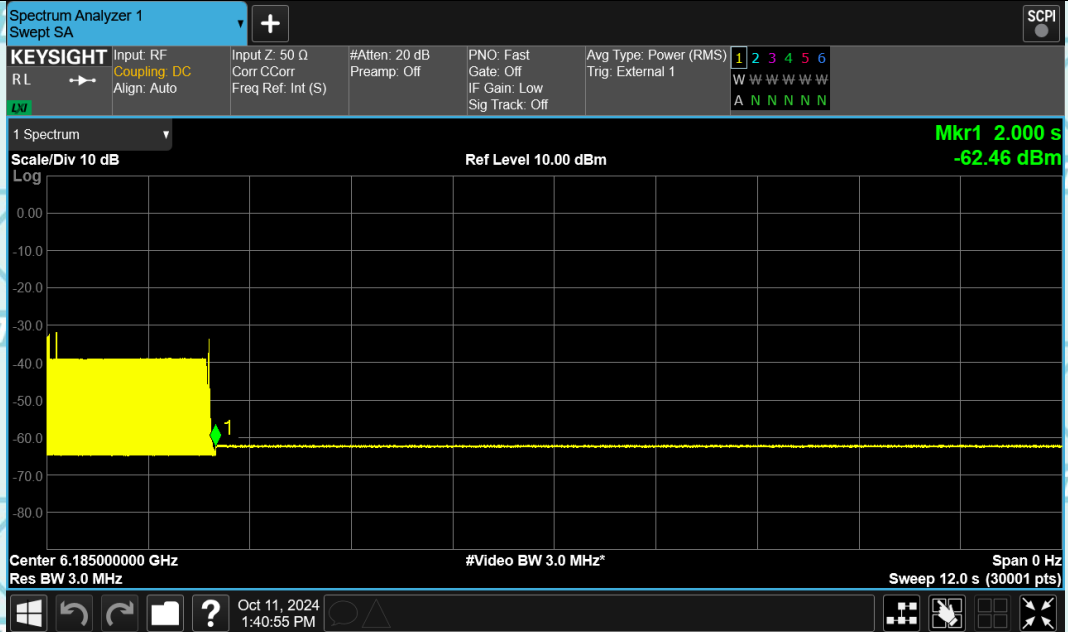


Contention Based Protocol NVNT ax160 6185MHz Interfere 6185 MHz 2

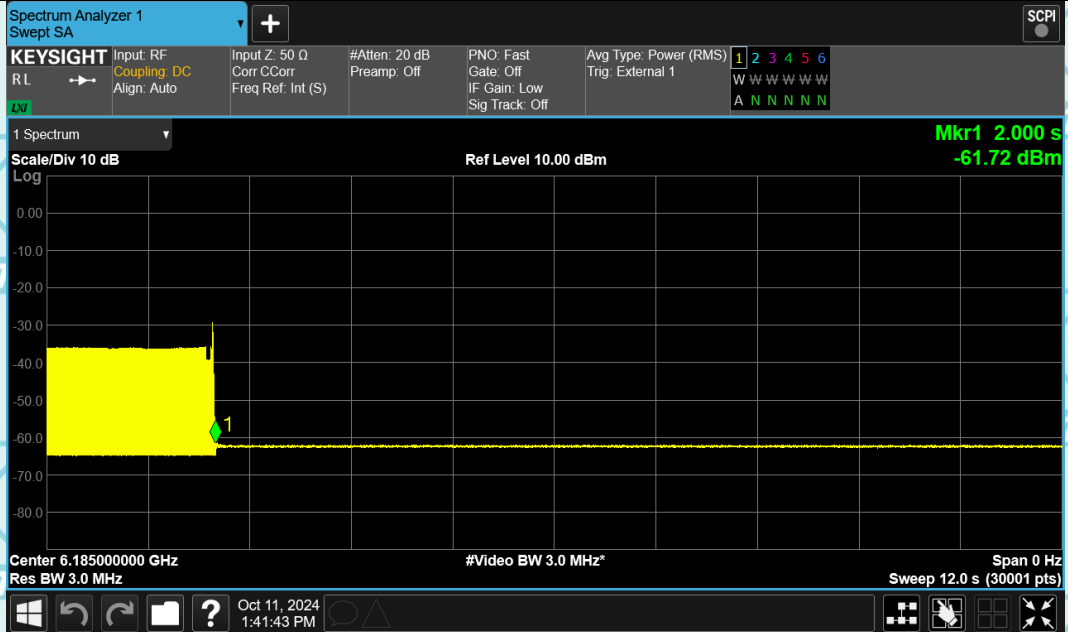


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Contention Based Protocol NVNT ax160 6185MHz Interfere 6185 MHz 3



Contention Based Protocol NVNT ax160 6185MHz Interfere 6185 MHz 4

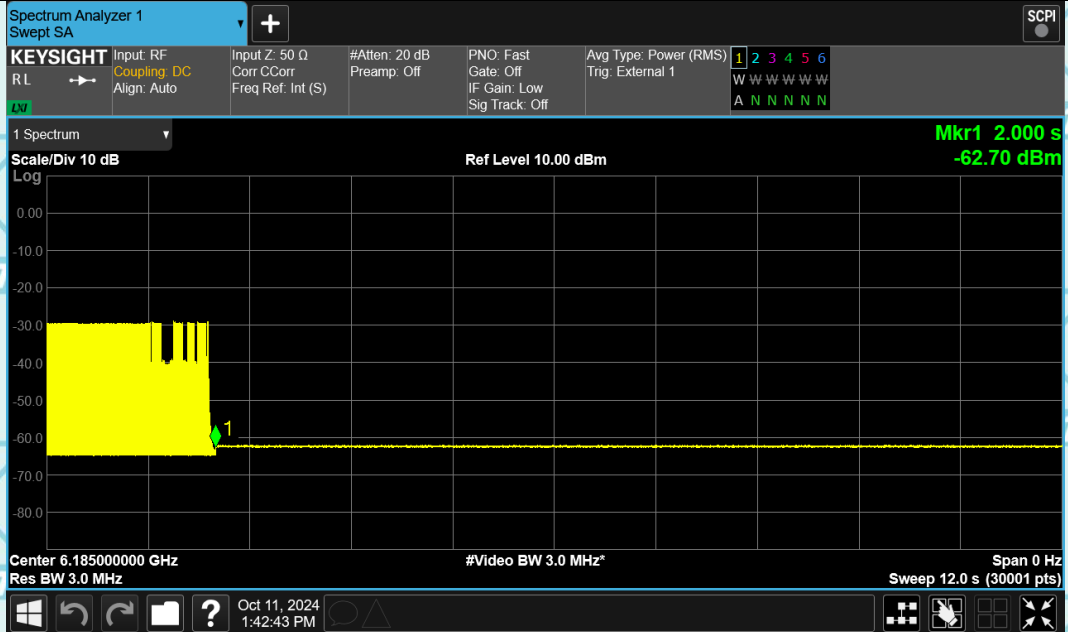


Report No.: WSCT-ANAB-R&E240900045A-Wi-Fi3

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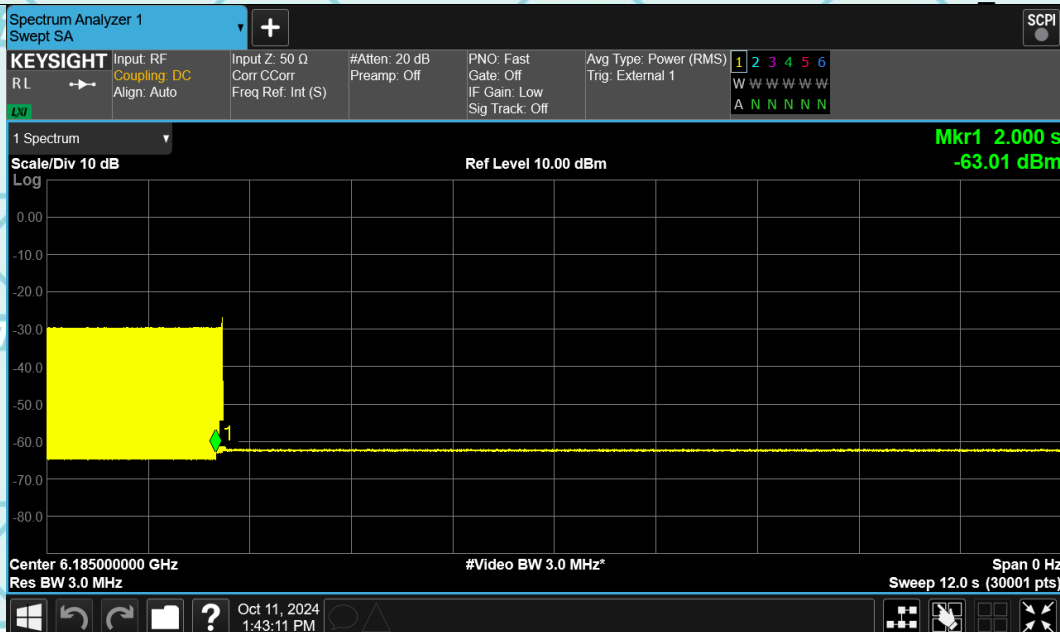


Contention Based Protocol NVNT ax160 6185MHz Interfere 6185 MHz 6

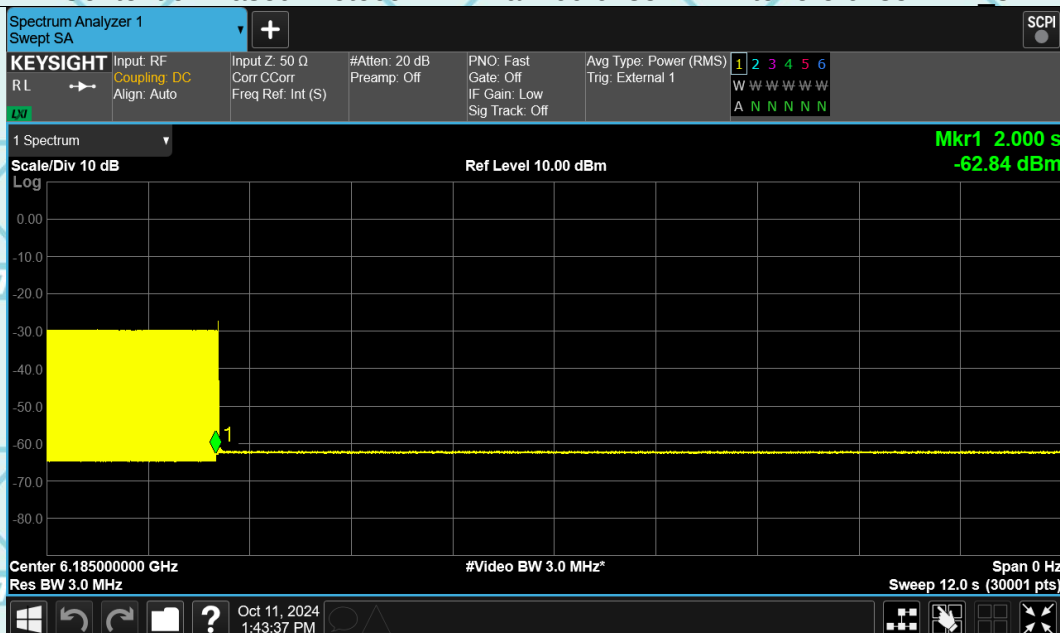


Report No.: WSCT-ANAB-R&E240900045A-Wi-Fi3

Contention Based Protocol NVNT ax160 6185MHz Interfere 6185 MHz 7

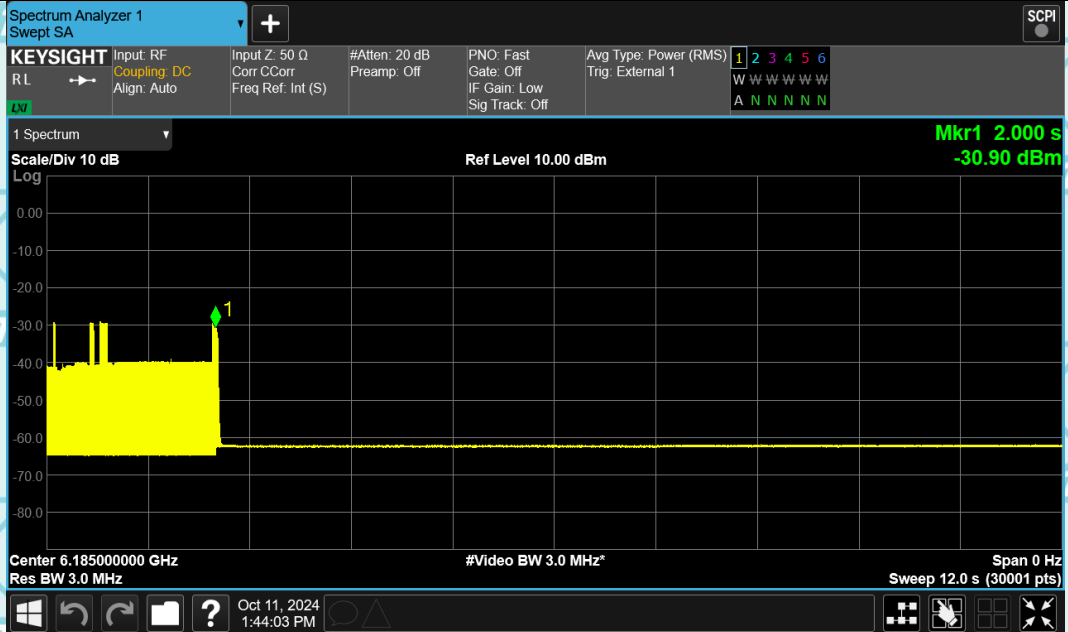


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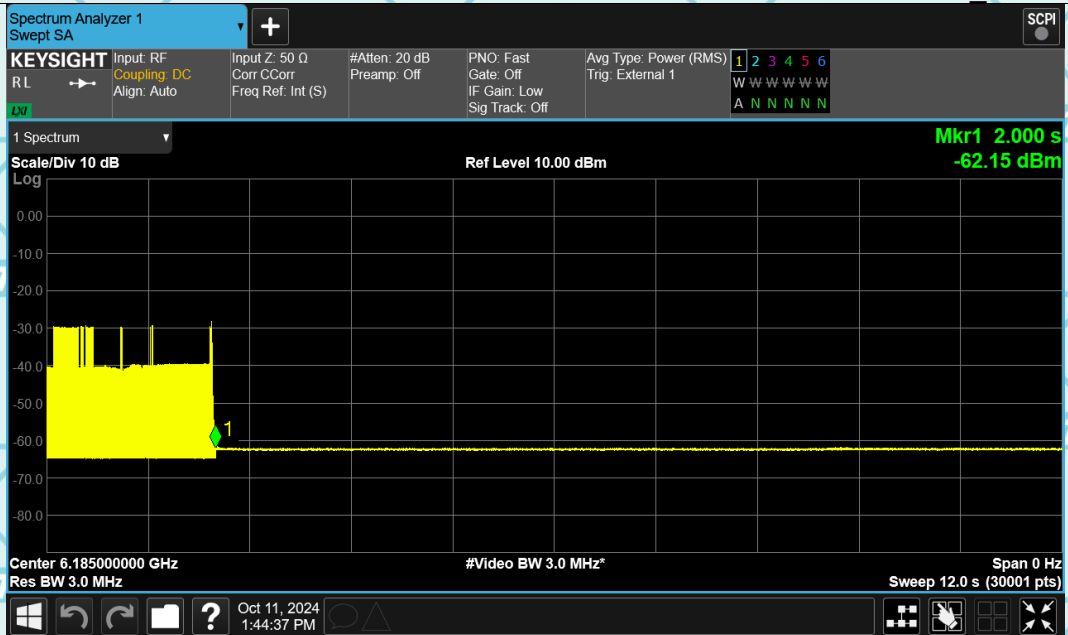


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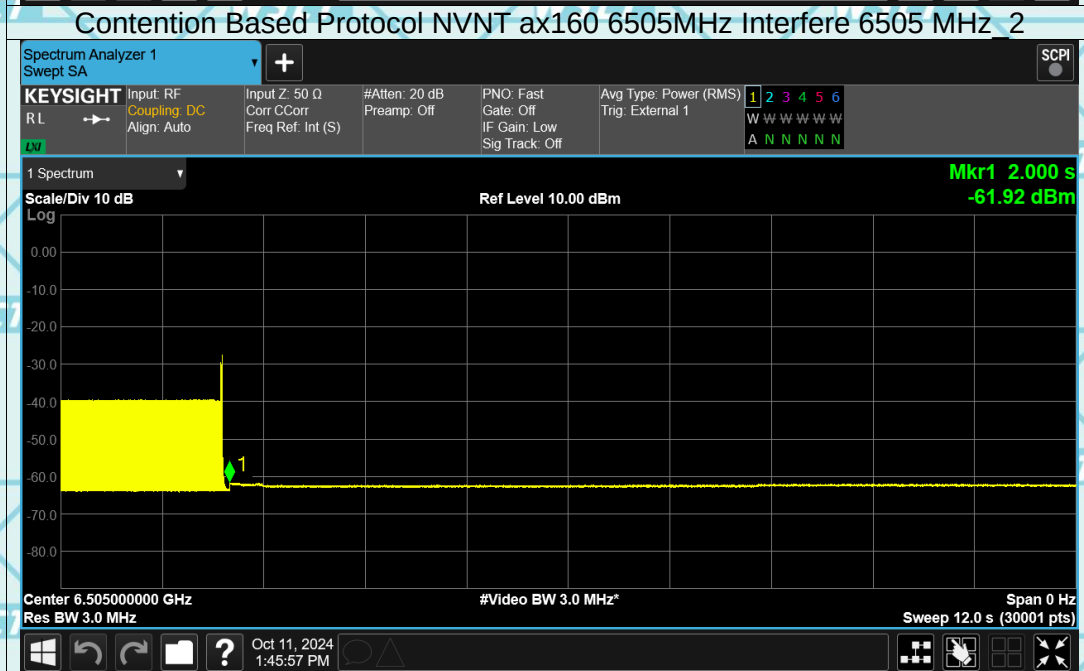
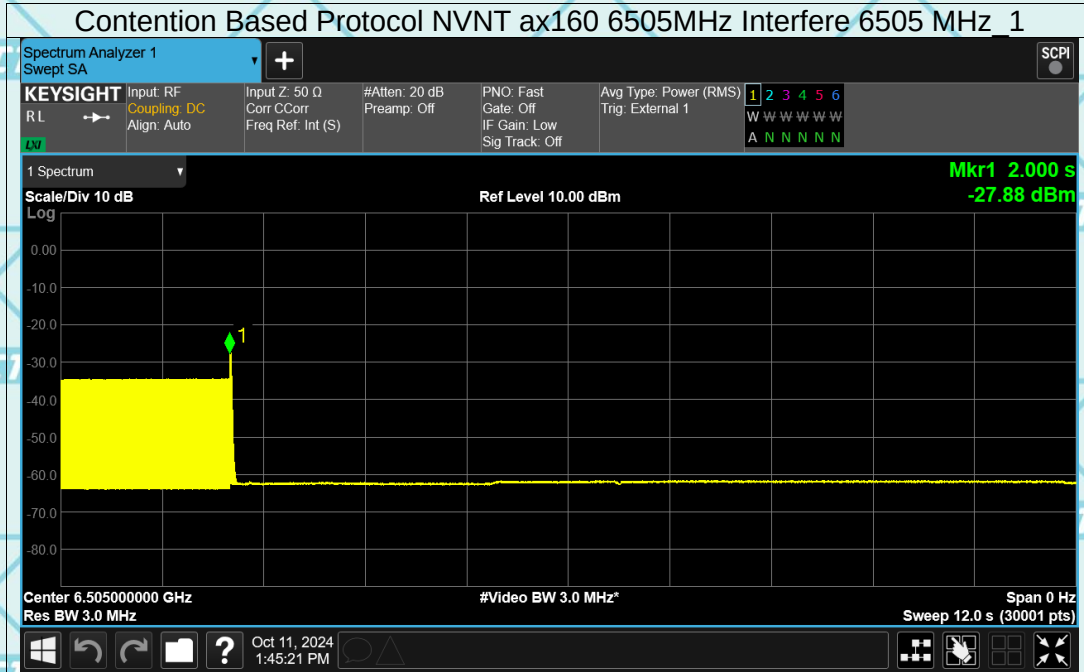
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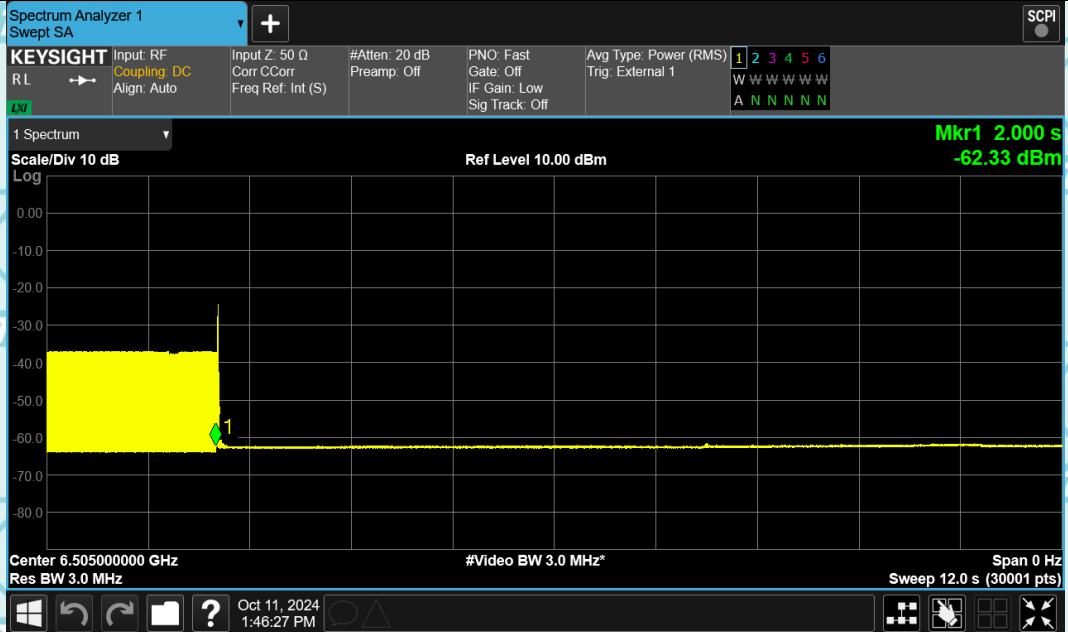


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Report No.: WSCT-ANAB-R&E240900045A-Wi-Fi3

Contention Based Protocol NVNT ax160 6505MHz Interfere 6505 MHz 3

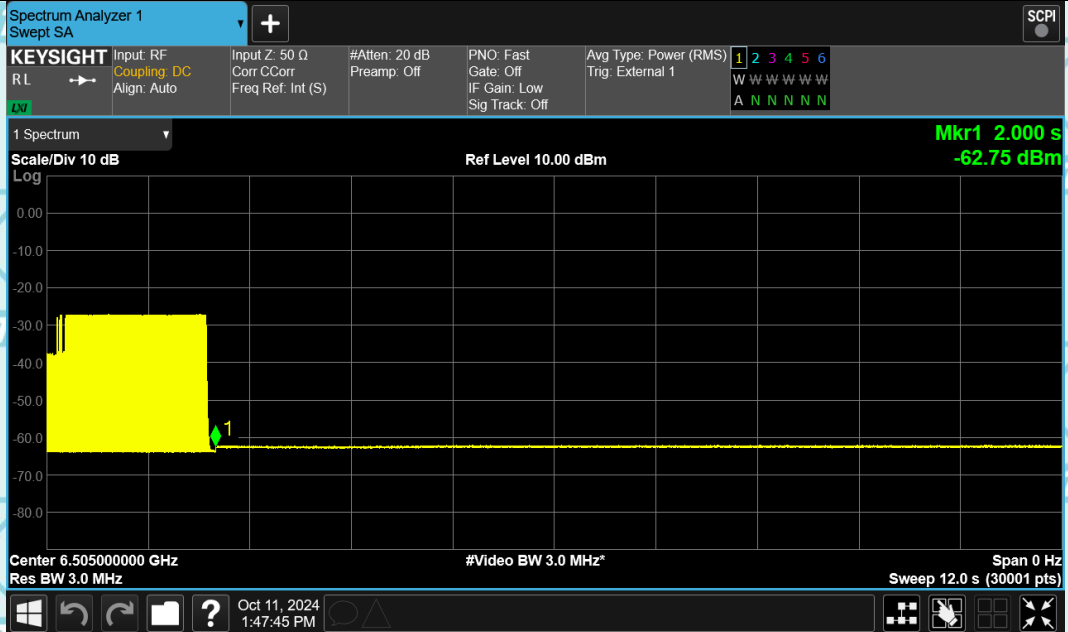


Contention Based Protocol NVNT ax160 6505MHz Interfere 6505 MHz 4

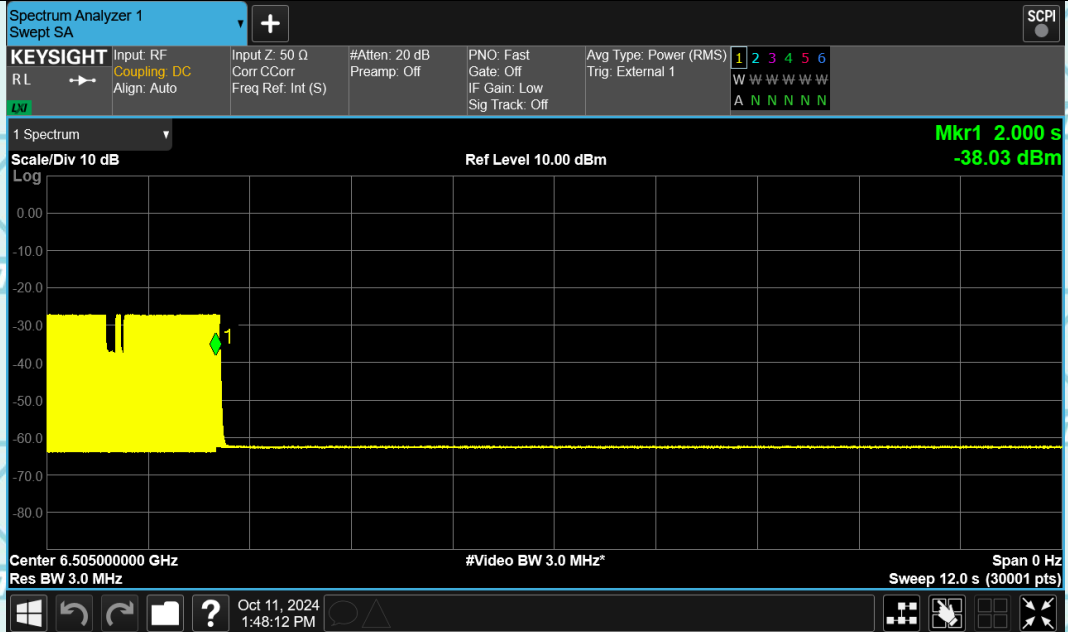


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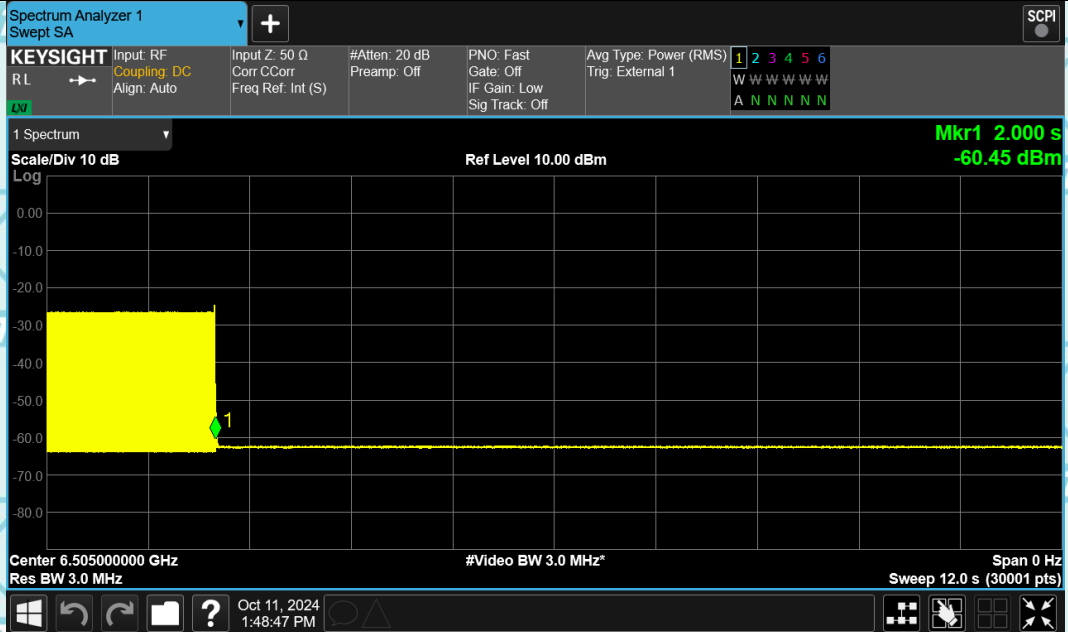


Contention Based Protocol NVNT ax160 6505MHz Interfere 6505 MHz 6



Report No.: WSCT-ANAB-R&E240900045A-Wi-Fi3

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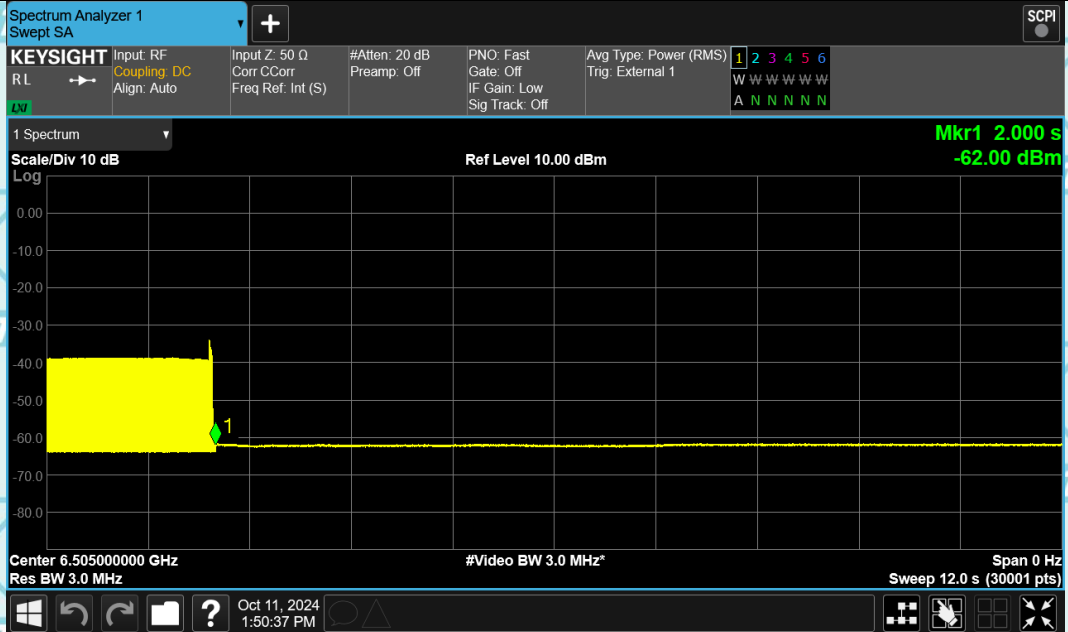


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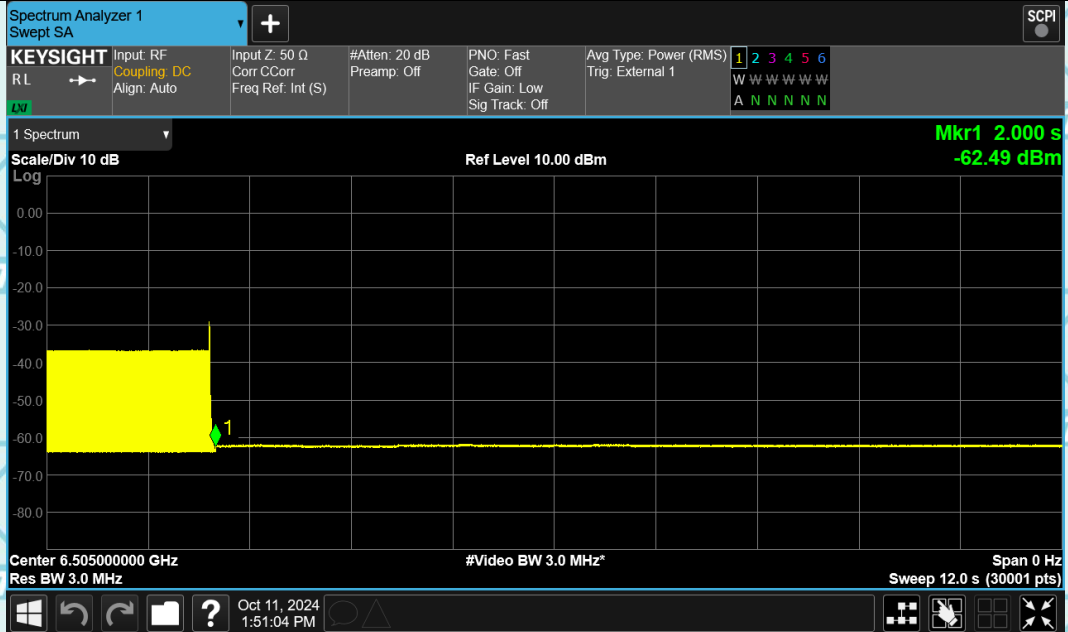


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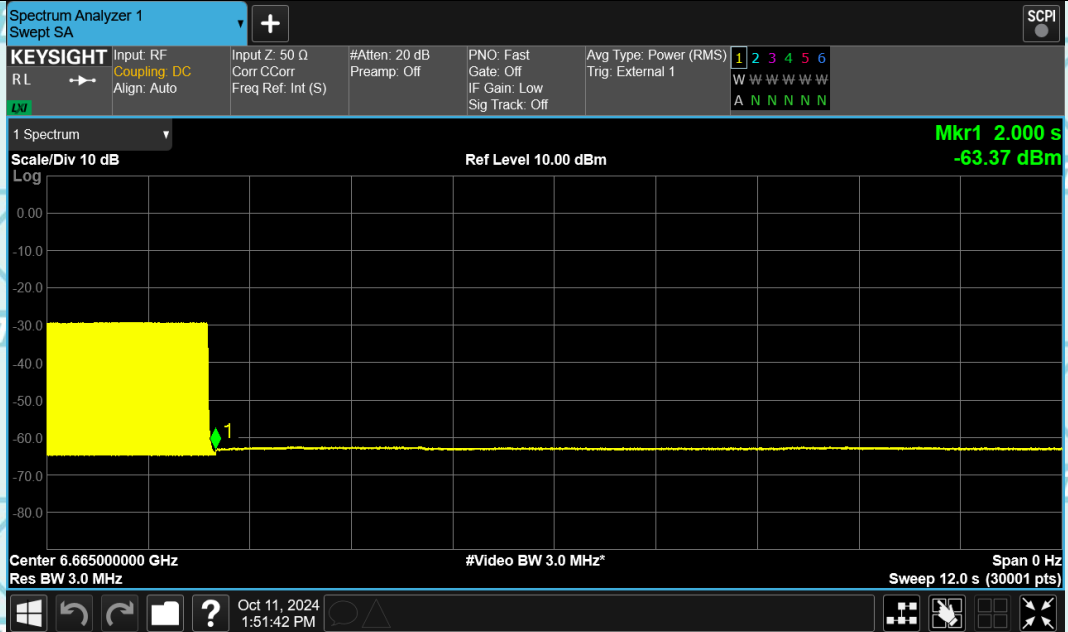


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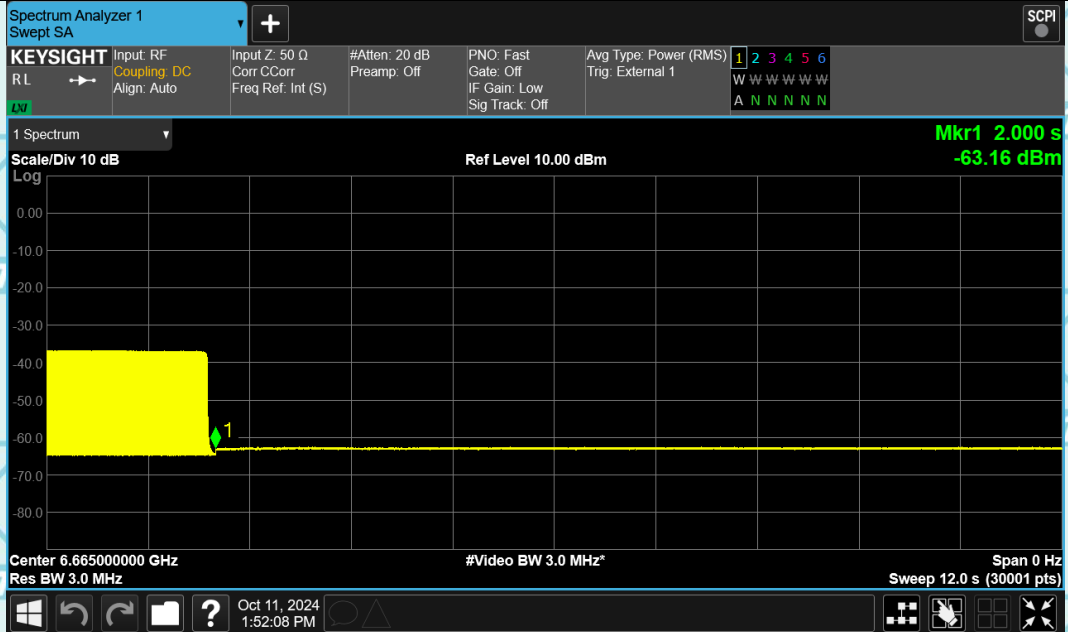


Report No.: WSCT-ANAB-R&E240900045A-Wi-Fi3

Contention Based Protocol NVNT ax160 6665MHz Interfere 6665 MHz 1

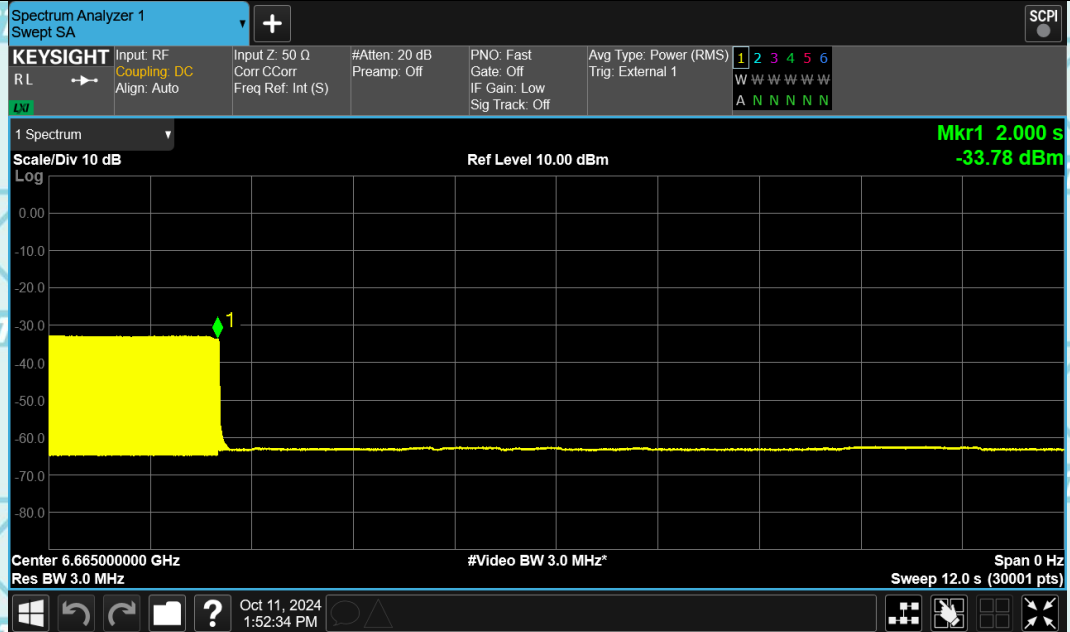


Contention Based Protocol NVNT ax160 6665MHz Interfere 6665 MHz 2



Report No.: WSCT-ANAB-R&E240900045A-Wi-Fi3

Contention Based Protocol NVNT ax160 6665MHz Interfere 6665 MHz 3



Contention Based Protocol NVNT ax160 6665MHz Interfere 6665 MHz 4

