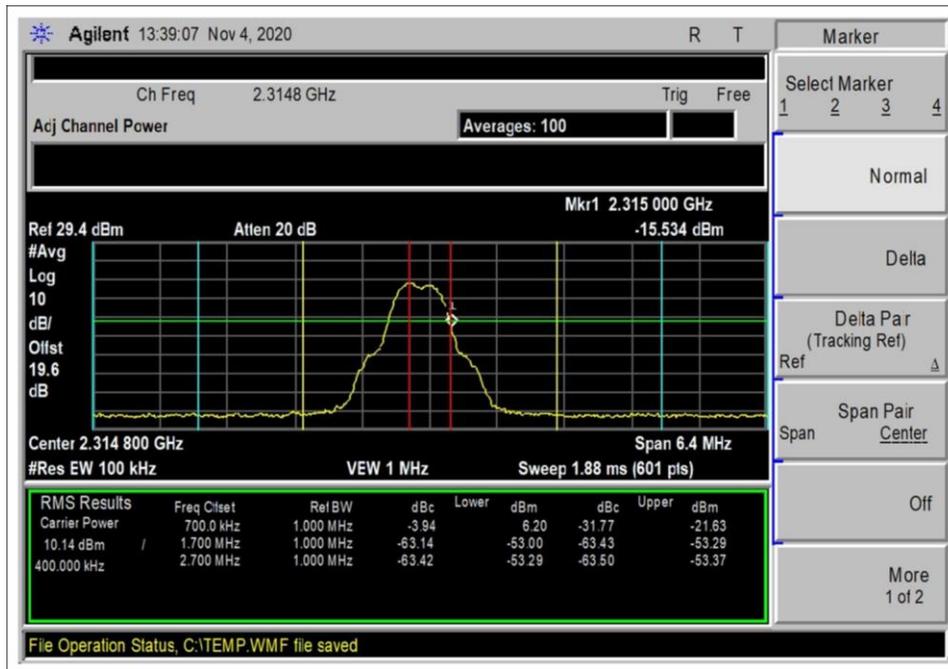
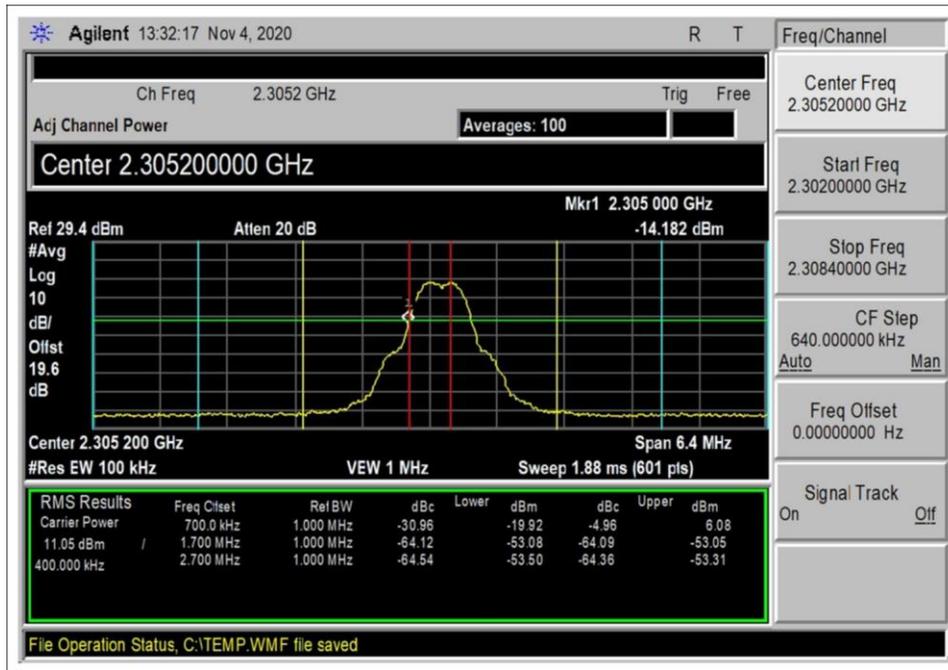


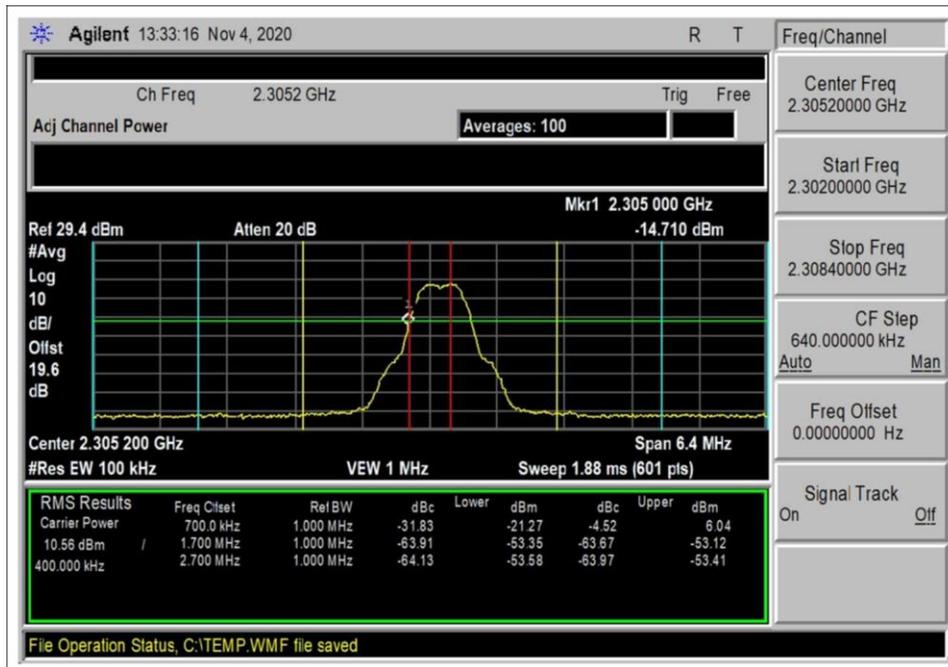
UL 2305-2315 High band AGC+3dB



UL 2305-2315 High band preAGC



UL 2305-2315 Low band AGC+3dB



UL 2305-2315 Low band preAGC

3.6.3 Conducted Spurious Emissions

Test Setup/Conditions			
Test Location:	Brea Lab A	Test Engineer:	Don Nguyen
Test Method:	KDB 935210 D05 Indus Booster Basic Meas v01r04, 04/03/2020	Test Date(s):	11/4/2020
Configuration:	1		
Test Setup:	<p>The EUTs (Antenna and Equipment units) are placed on test bench and connected to 12Vdc and 48Vdc external power supplies. Input port (BDA) is connected to a signal generator. Output port (Antenna) is connected a spectrum analyzer. Uplink (Equipment) unit and Downlink (Antenna) Unit are connected via an unshielded optical cable.</p> <p>The manufacturer declares that the Equipment Unit output port is only intended for BDA unit and is not connected to an antenna.</p> <p>All tests are performed only on the Antenna Unit output port.</p> <p>Frequency range of measurement: 9kHz-24GHz RBW=100kHz, 200kHz, 300kHz, 1MHz, 2MHz VBW=300kHz, 600kHz, 910kHz, 3MHz, 6MHz</p> <p>27.53(f) For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.</p>		

Environmental Conditions			
Temperature (°C)	25.9	Relative Humidity (%):	43

Test Equipment					
Asset#	Description	Manufacturer	Model	Cal Date	Cal Due
03643	Spectrum Analyzer	Agilent	E4440A	5/20/2020	5/20/2022
P06660	Cable	Gore	PHASEFLEX FJR01N01036.0	3/27/2020	3/27/2022
P07243	Cable	H&S	32022-29094K- 29094K-24TC	5/29/2020	5/29/2022
P06664	Cable	Gore	PHASEFLEX FJR01N01036.0	3/27/2020	3/27/2022
03431	Attenuator	Aeroflex/Weinschel	89-20-21	12/20/2019	12/20/2021
P07037	Signal Generator	Agilent	E4432B	2/7/2019	2/7/2021
00786	Preamp	HP	83017A	5/20/2020	5/20/2022

Limit Line For Spurious Conducted Emission

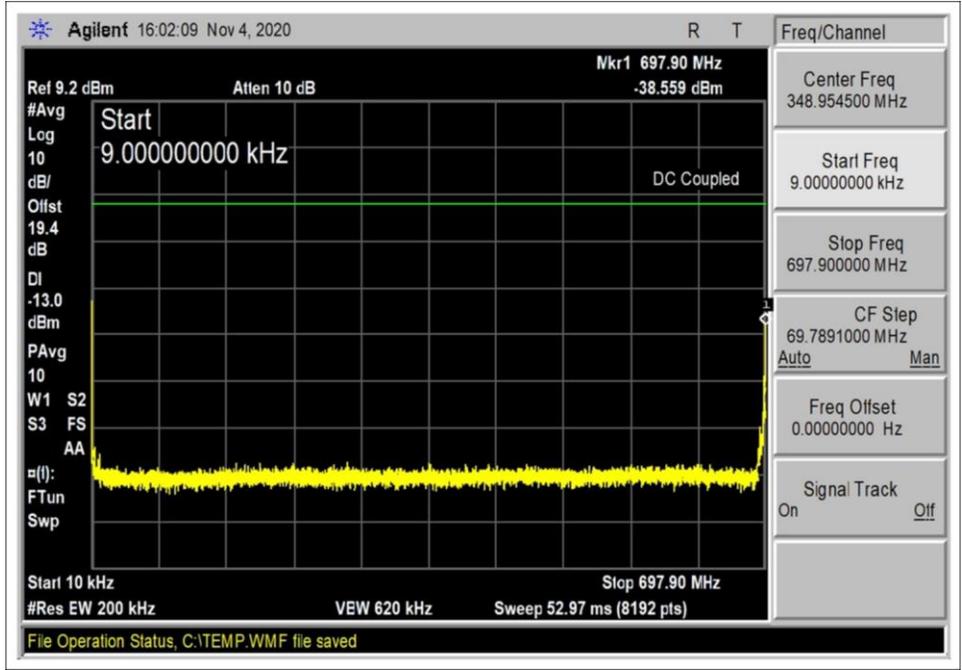
Per section 27.53 (f), the 1559-1610 band was also investigated and found emission within limits using applied correction.

Limit Line Calculation				
Frequency (MHz)	Max Antenna Gain (dBi)	Limit Line EIRP (dBW/MHz)	Limit Line EIRP (dBm)	Limit line EIRP corrected (dBm)
UL 776-787	16	-70	-40	-56

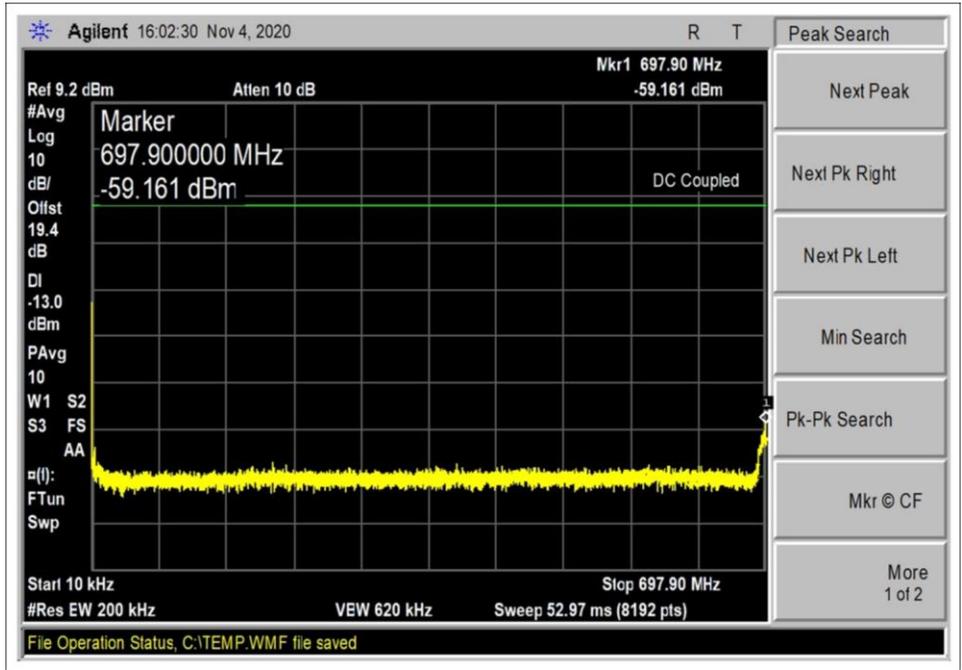
$$\begin{aligned}
 \text{REQUIRED ATTENUATION} &= 43+10 \text{ LOG } P \text{ DB} \\
 \\
 \text{Limit} &= \text{Power} - \text{Required Attenuation} \\
 &= 10 \text{ Log } P - (43 + 10\text{Log } P) \\
 &= 10\text{Log } P - 43 - 10\text{Log } P \\
 &= -43 \text{ dBW} \\
 &= 0.00005\text{W} (0.05\text{mW} \quad) \\
 &= 10 \text{ Log } 0.00005/0.001 \\
 &= -13\text{dBm} (94\text{dBuV}) \text{ at any power level.}
 \end{aligned}$$

Plots

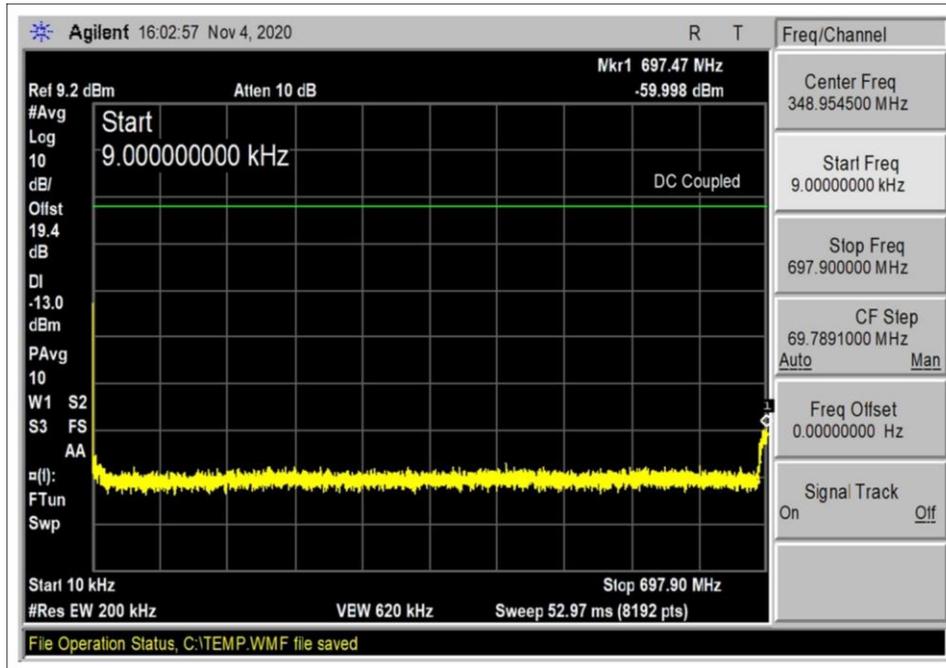
AWGN



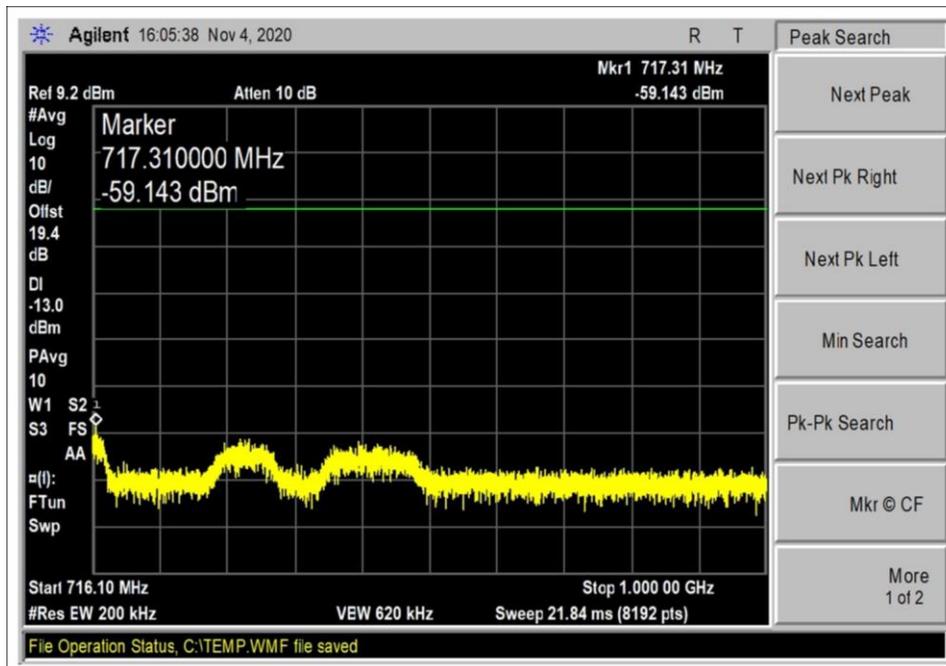
UL 698-716_Low CH_9k-697.9M



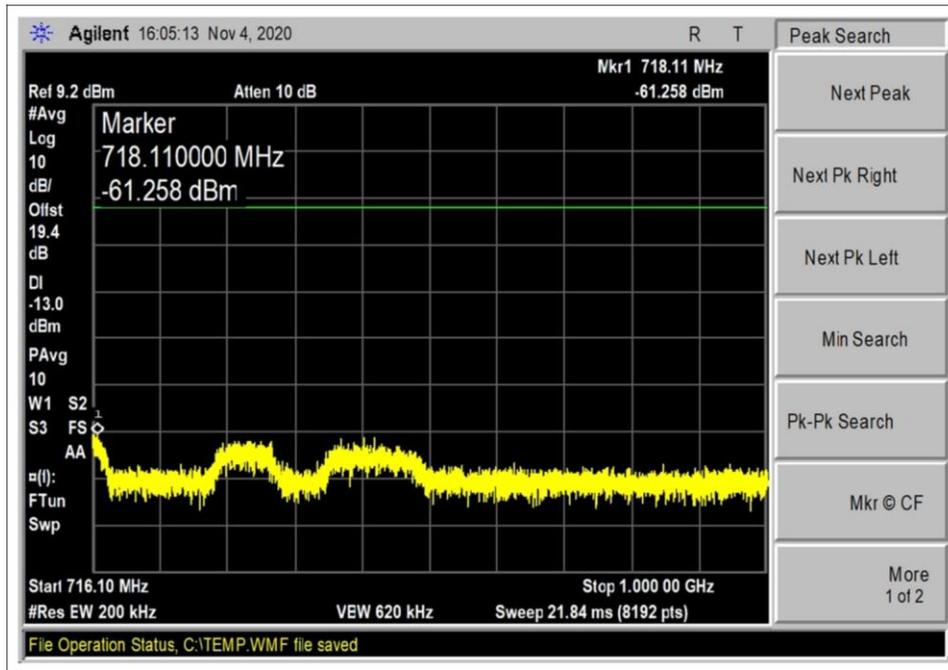
UL 698-716_Middle CH_9k-697.9M



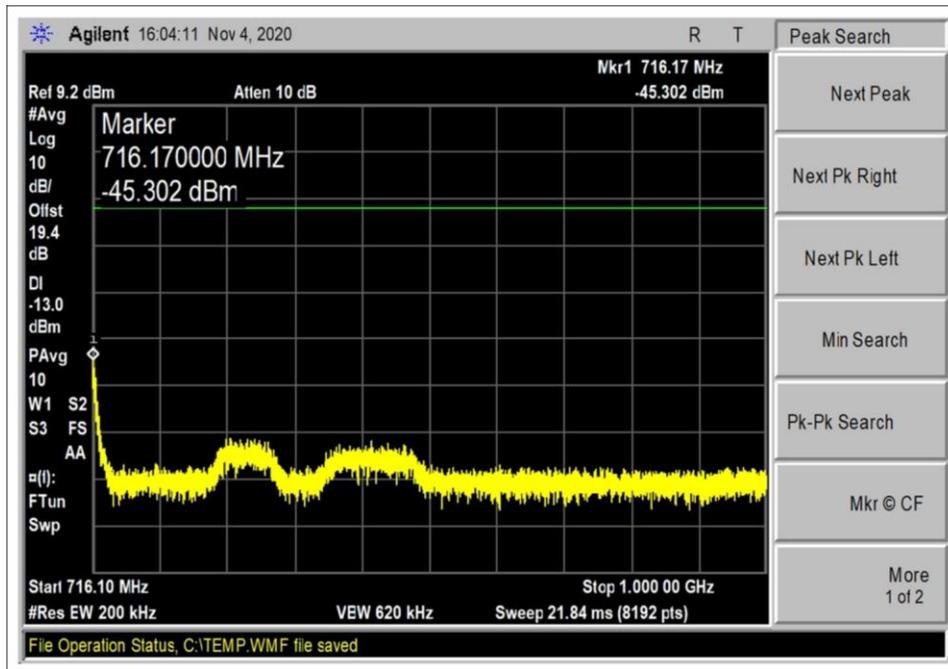
UL 698-716_High CH_9k-697.9M



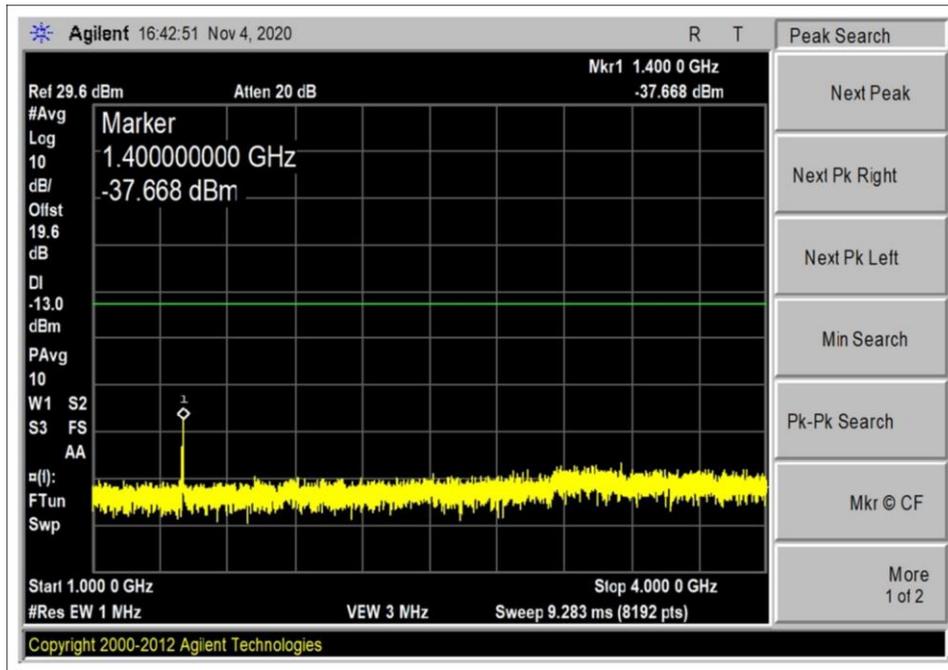
UL 698-716_Low CH_716.1M-1G



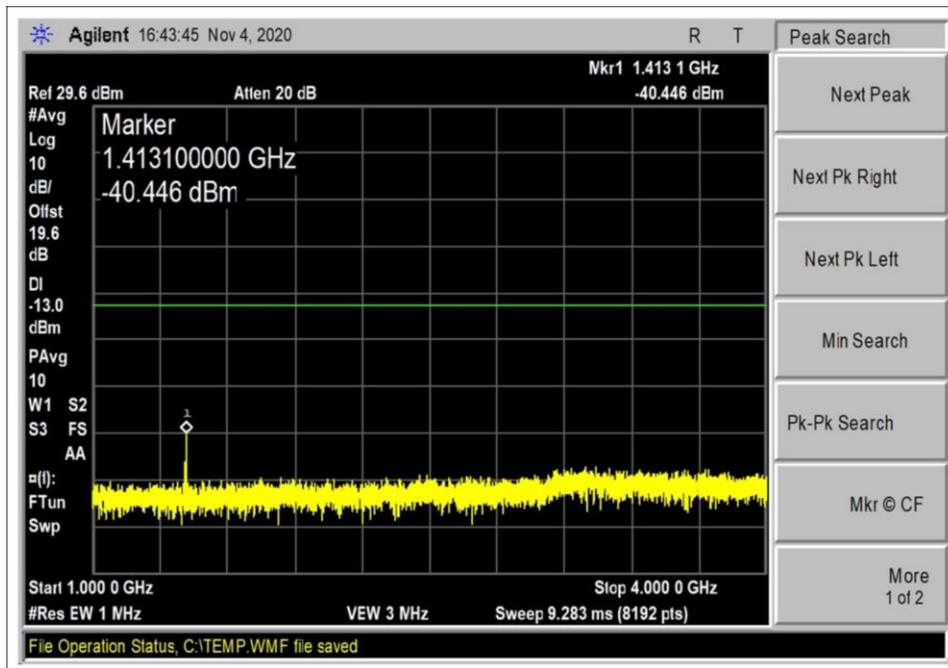
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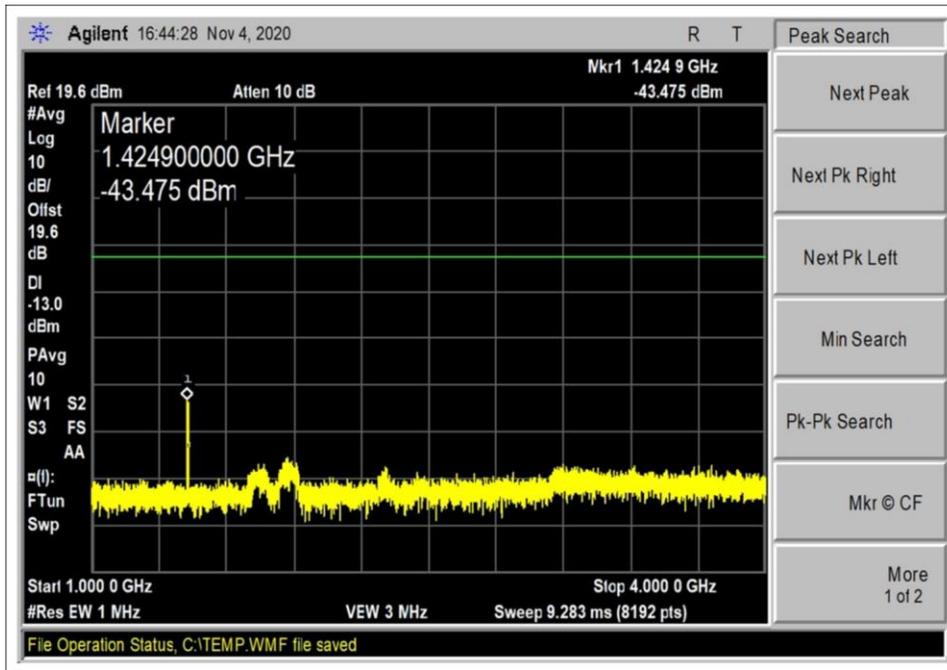
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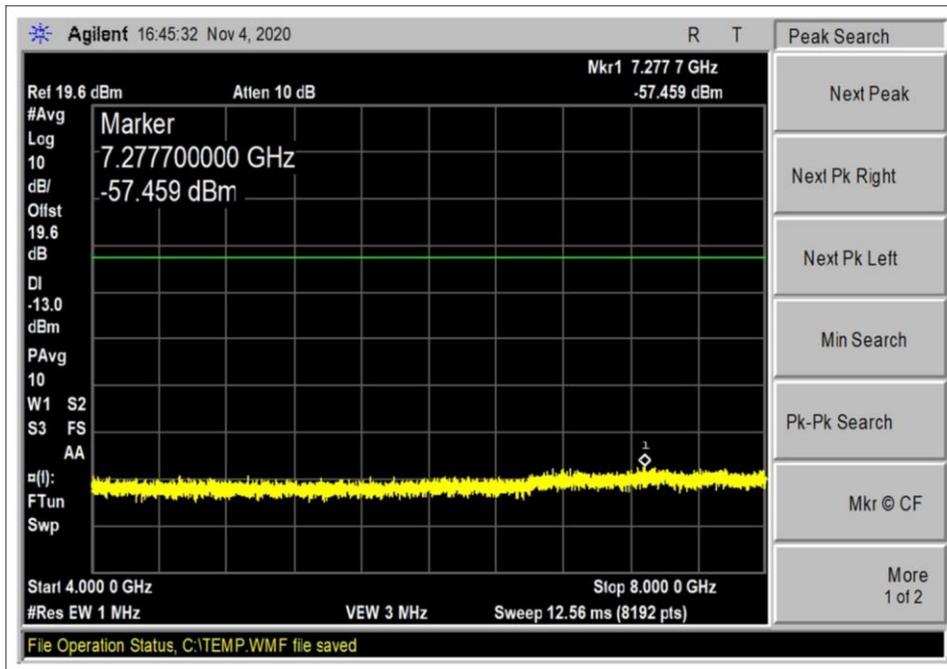
UL 698-716_Low CH_1G-4G



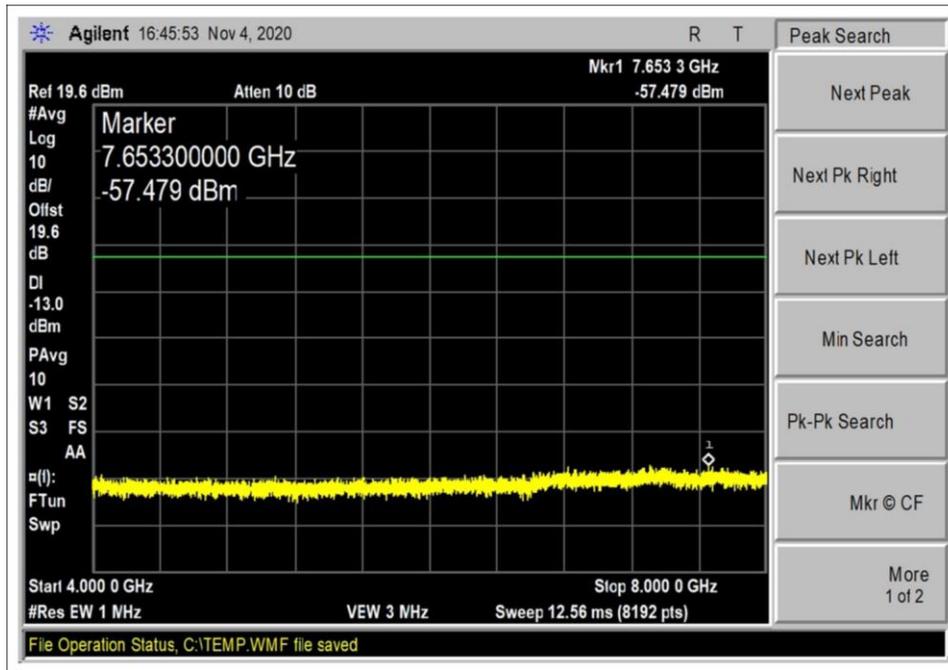
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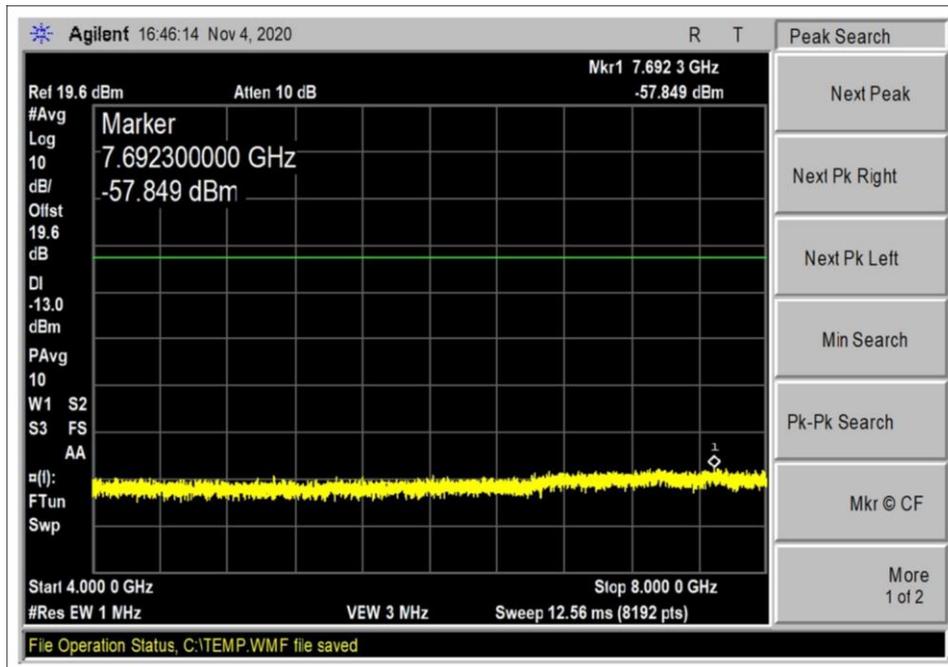
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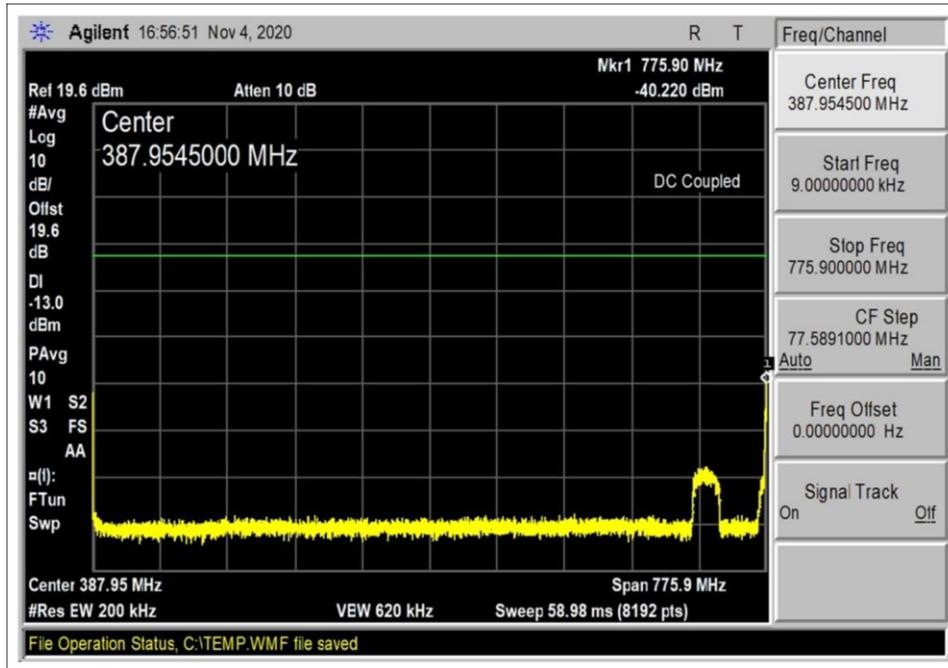
UL 698-716_Low CH_4G-8G



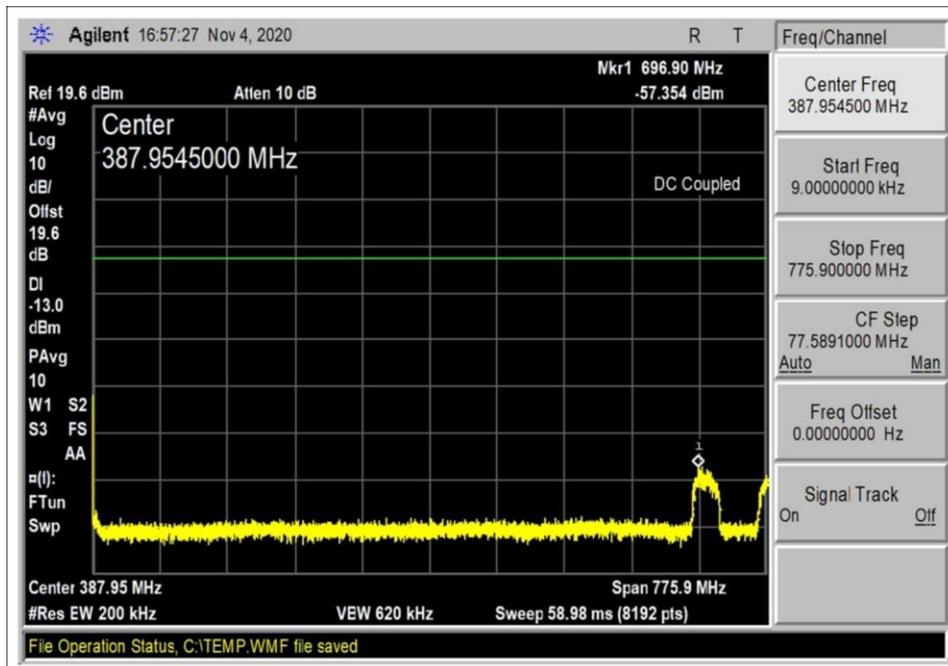
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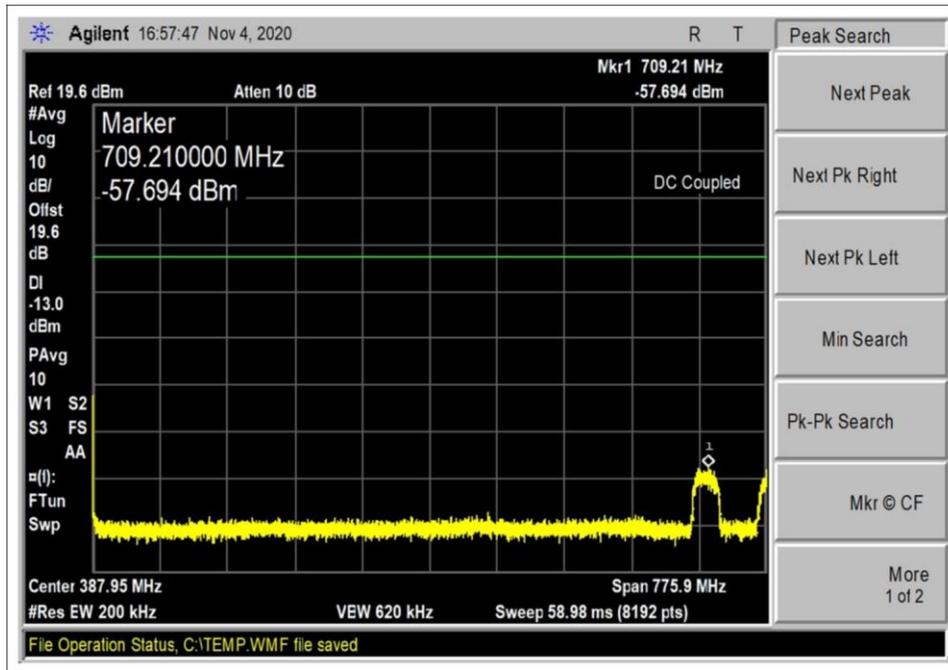
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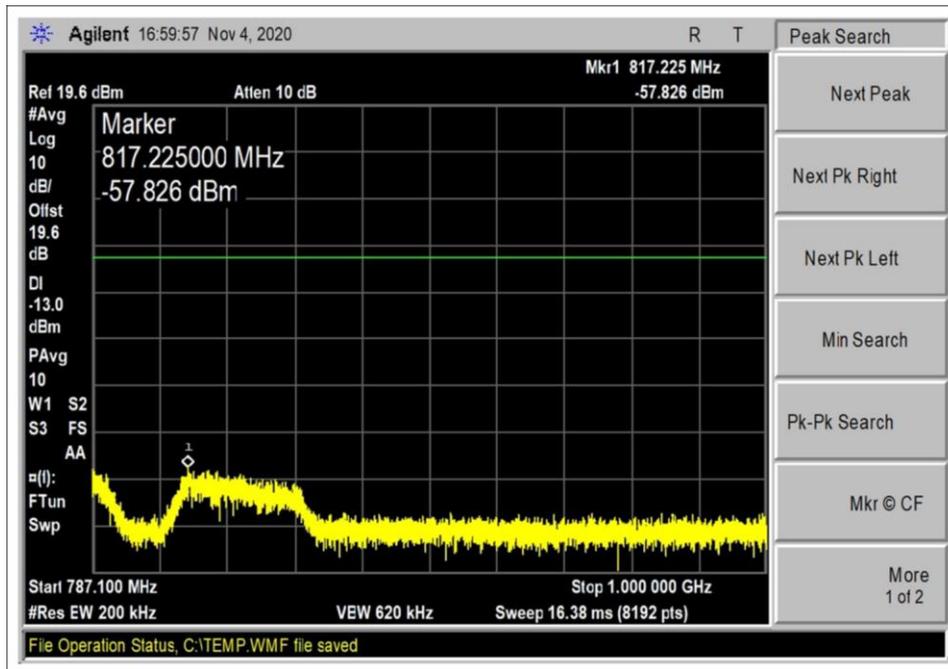
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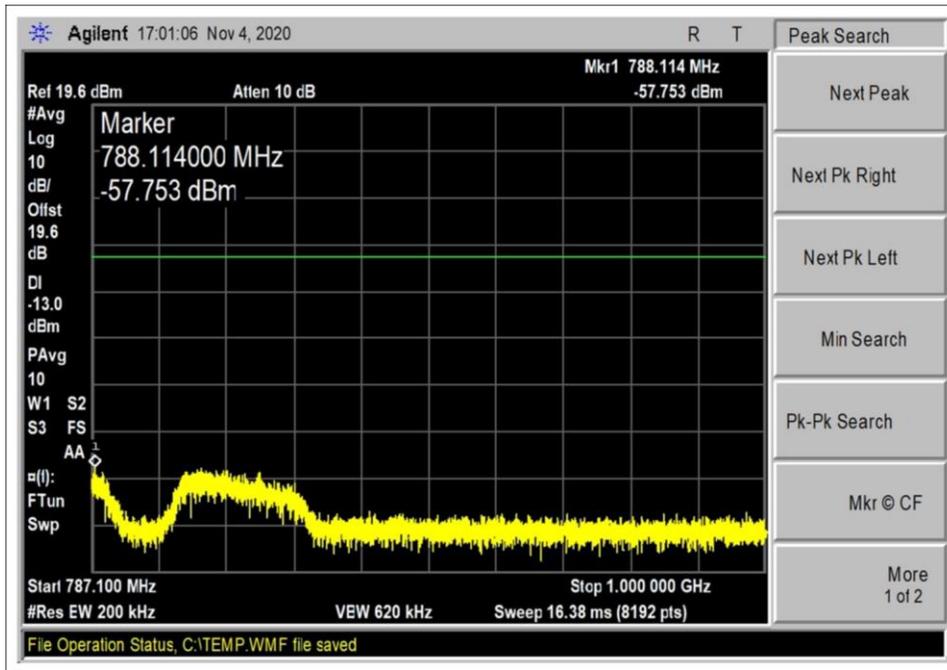
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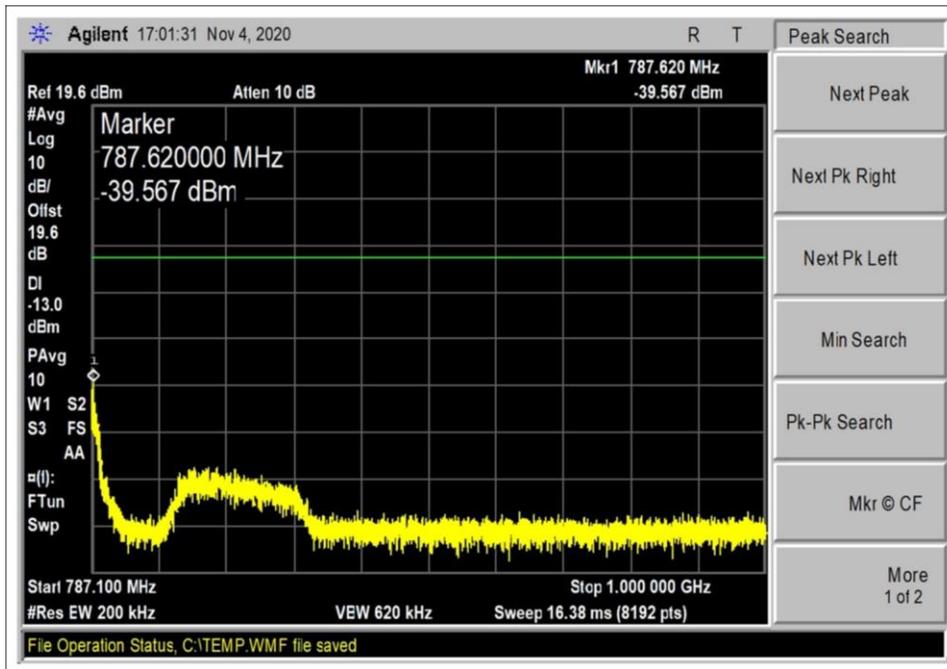
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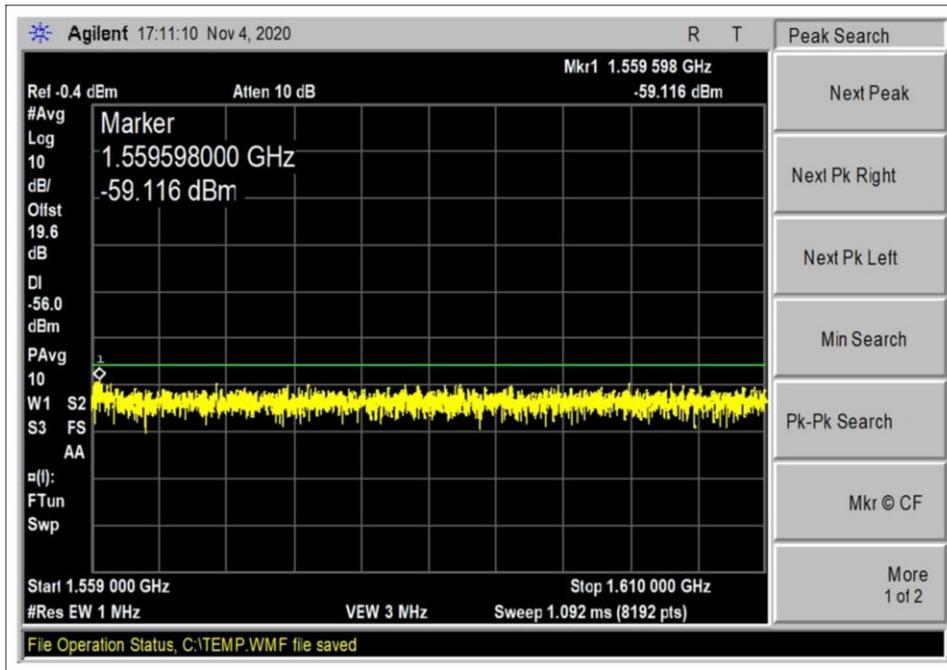
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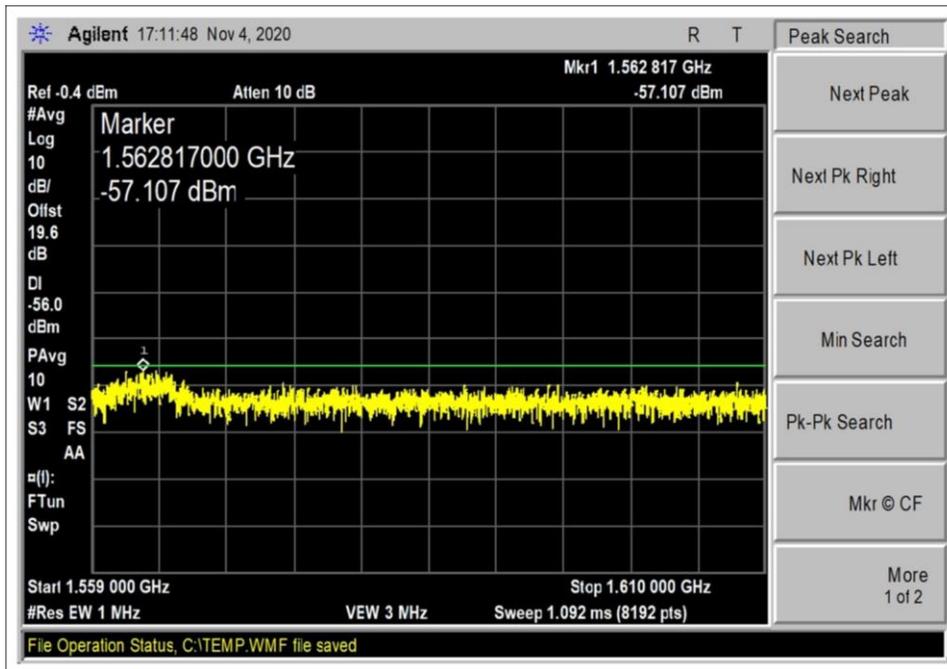
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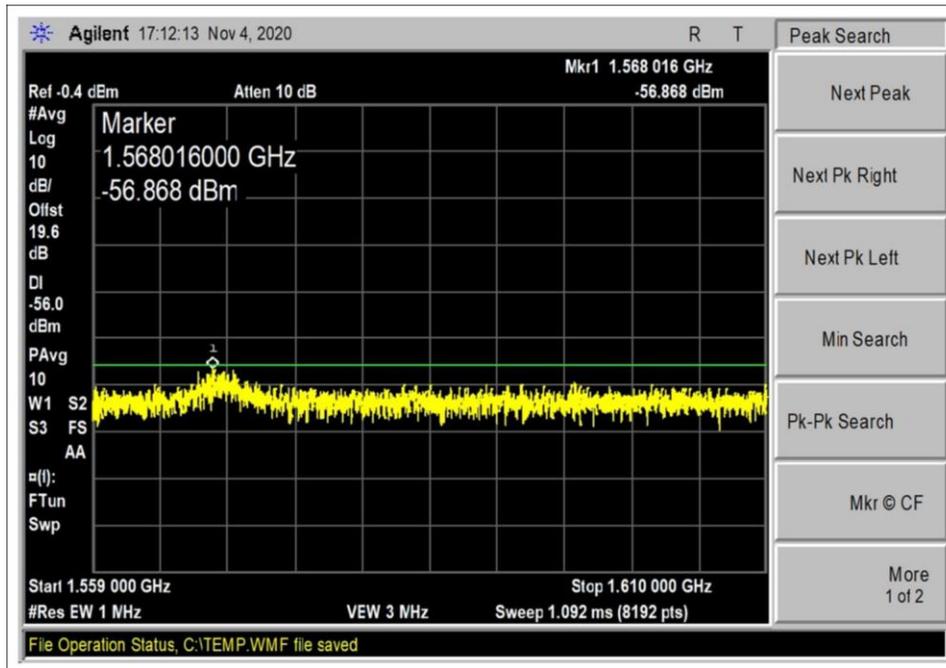
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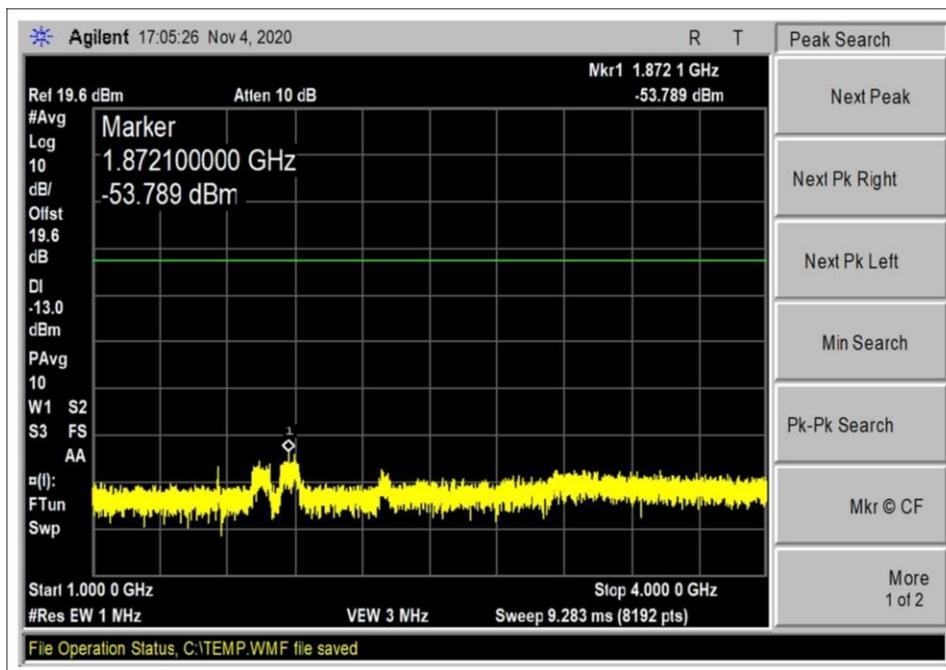
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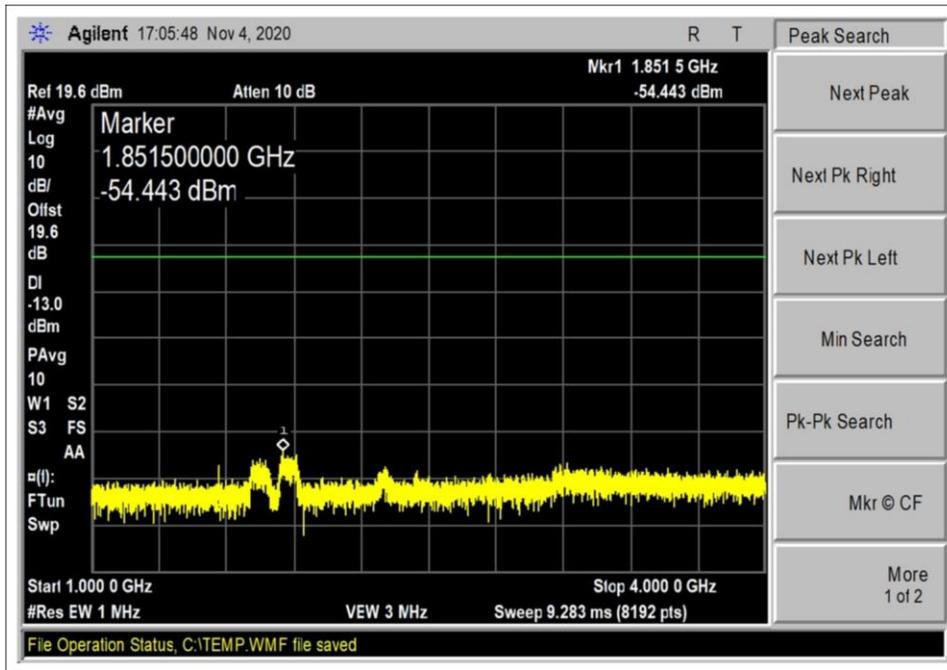
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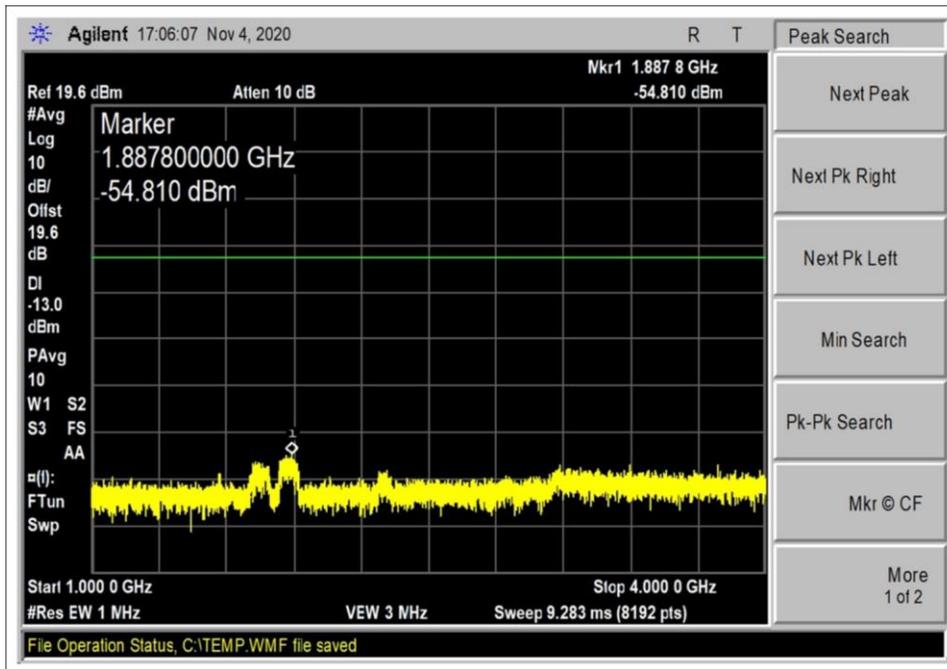
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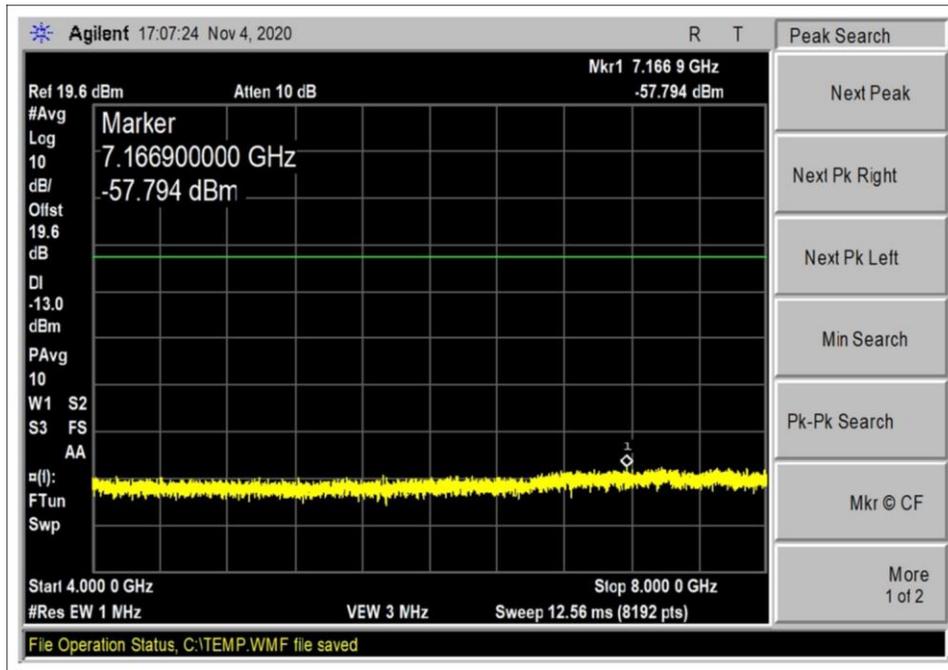
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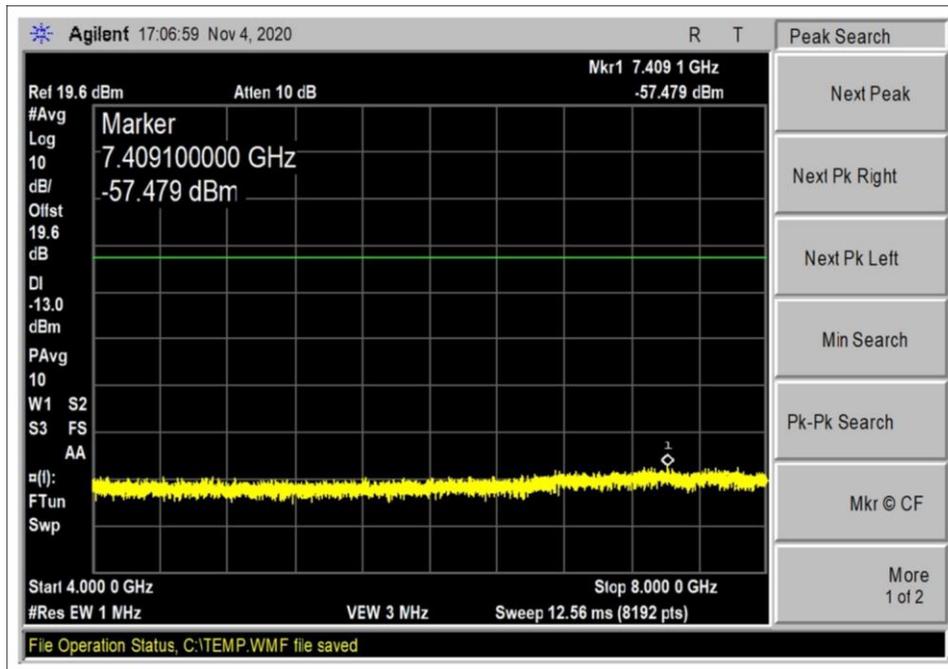
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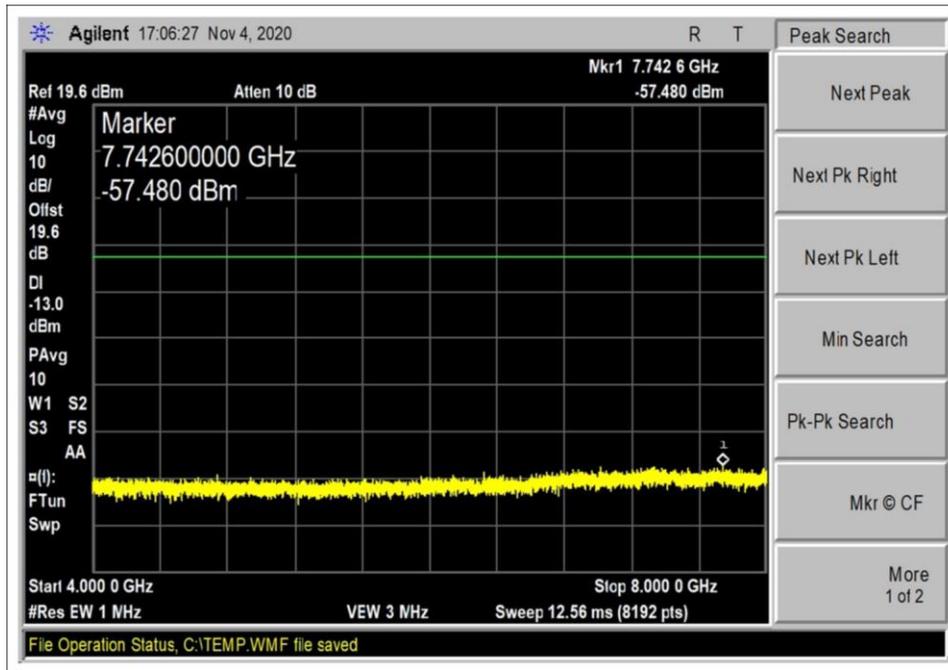
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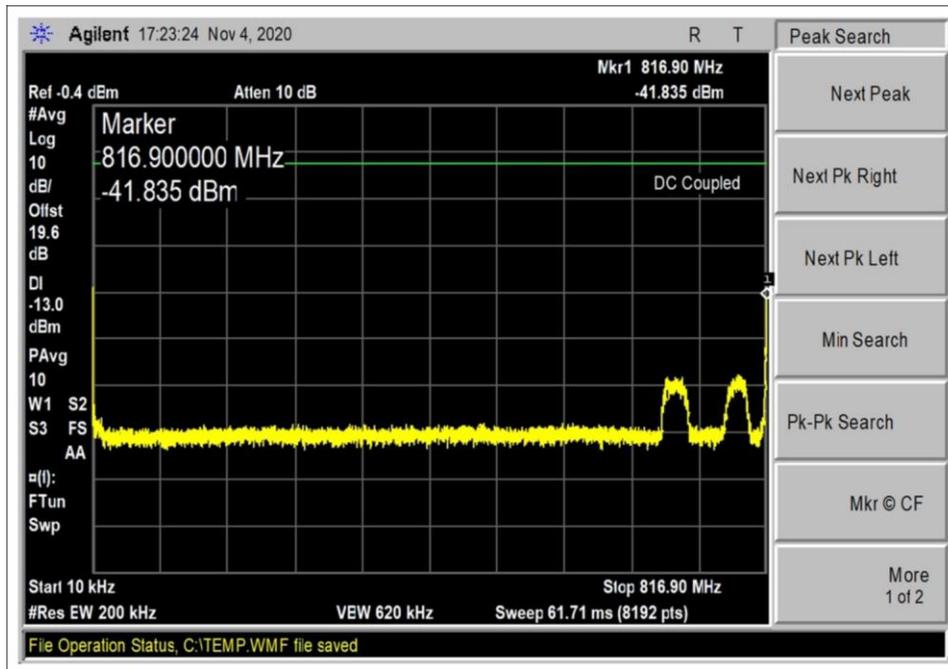
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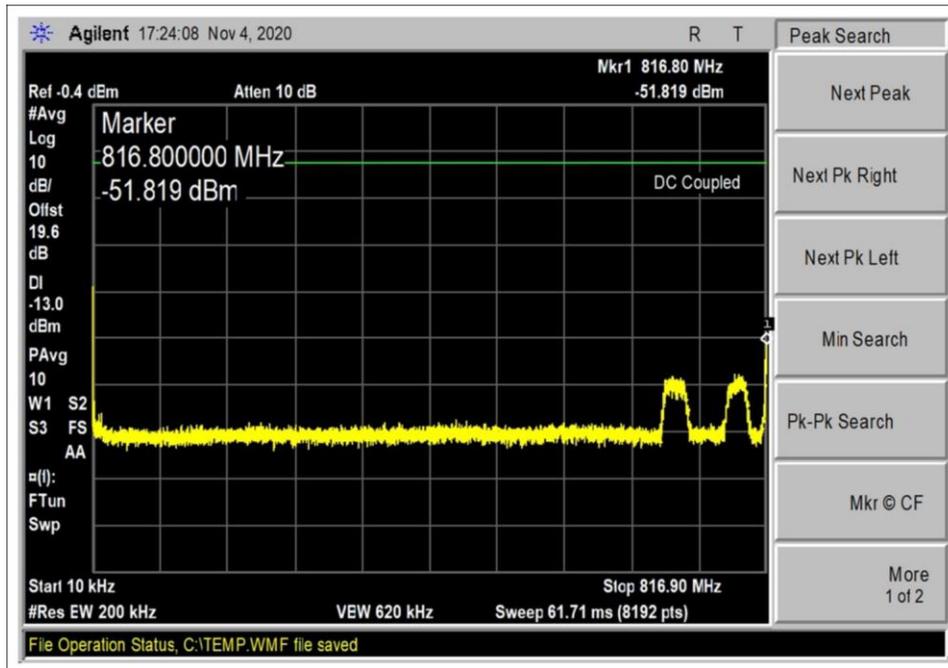
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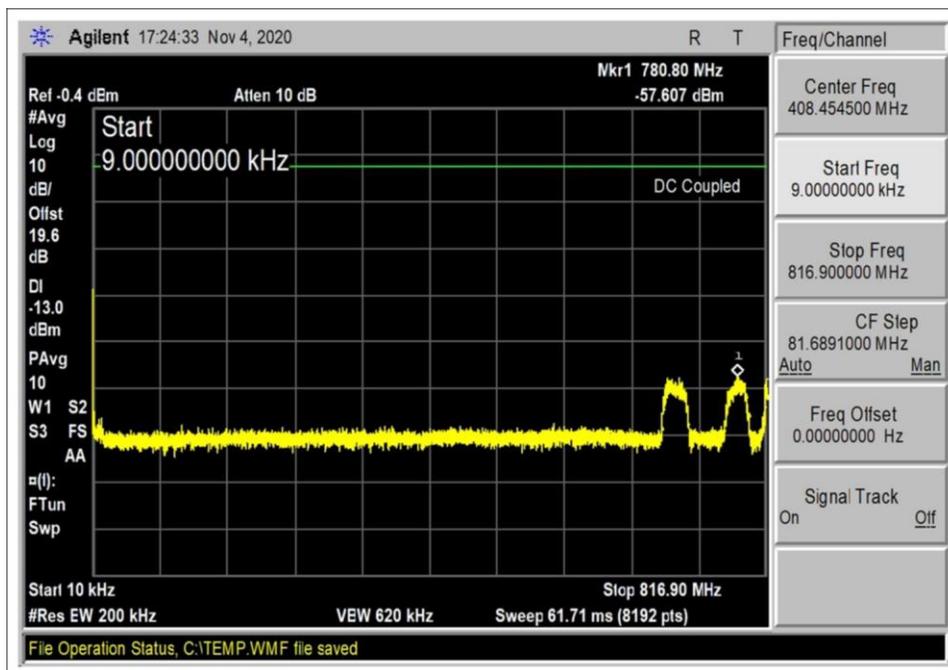
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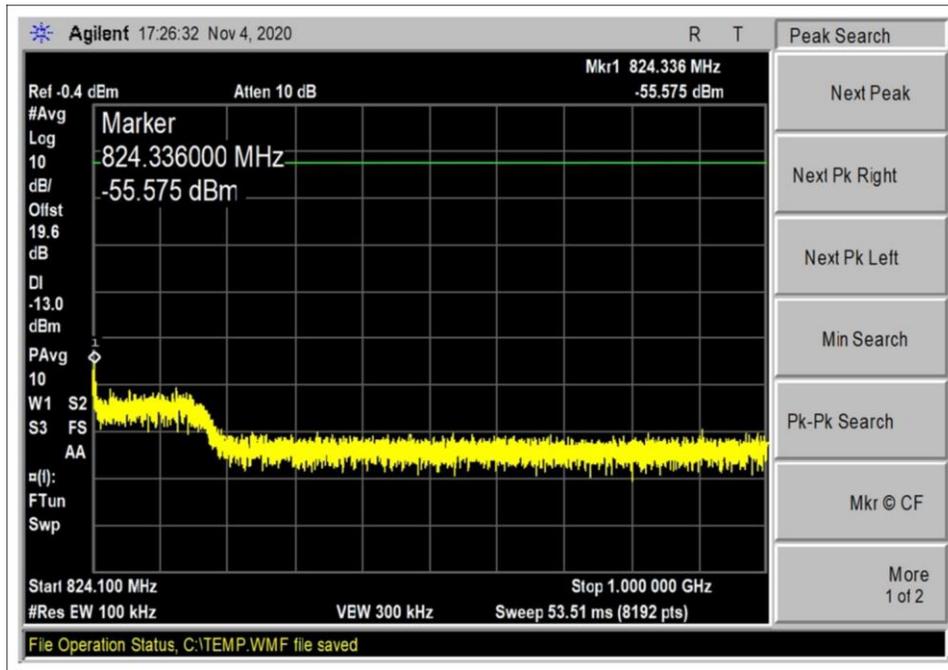
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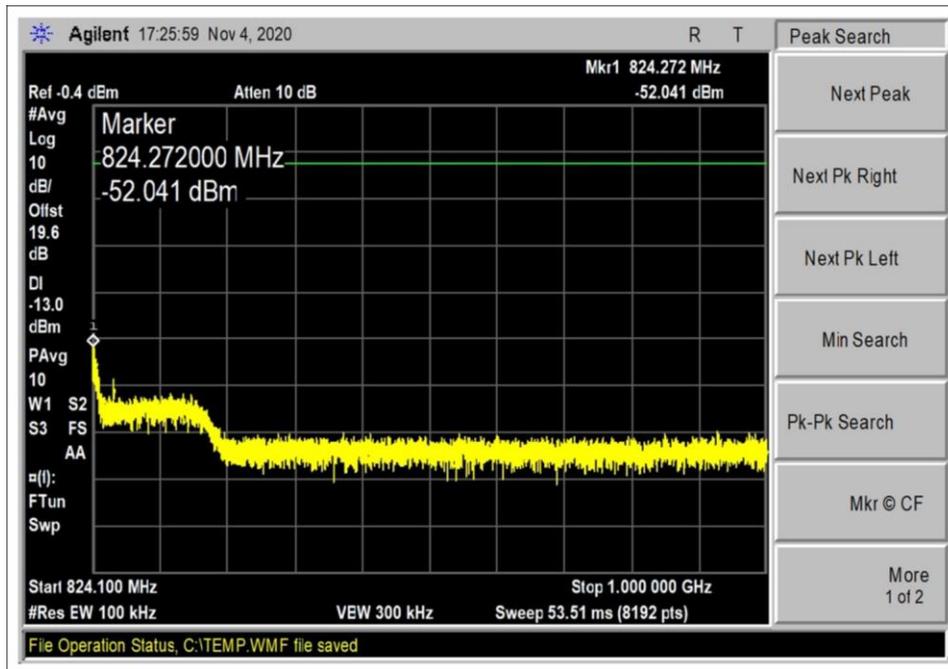
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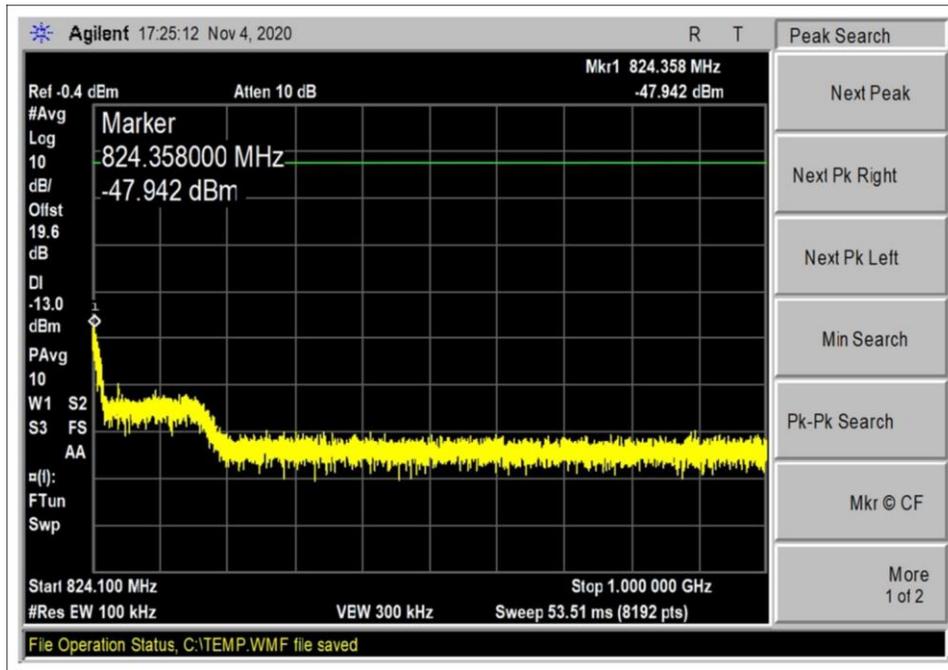
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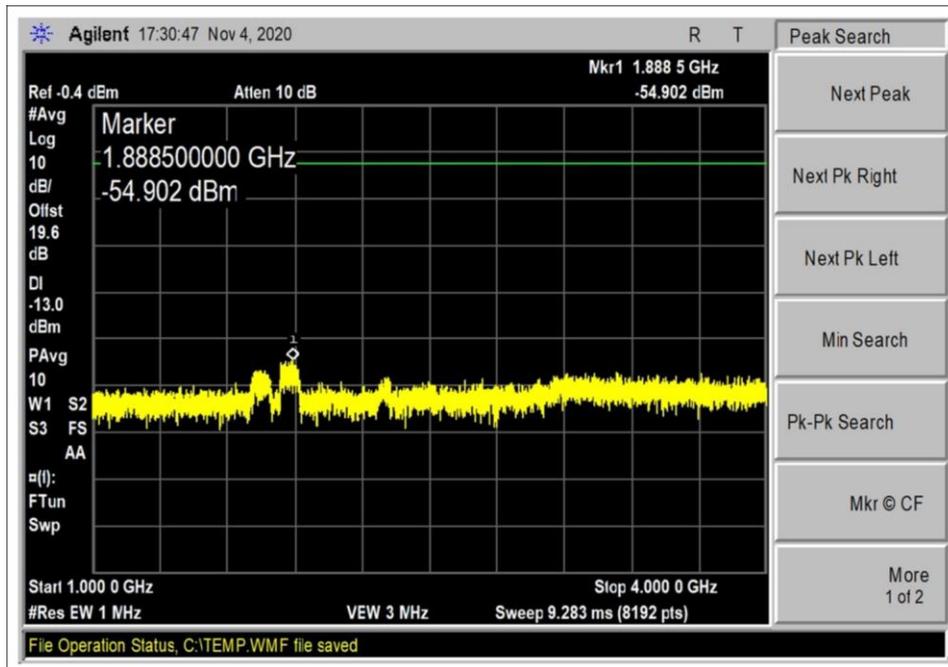
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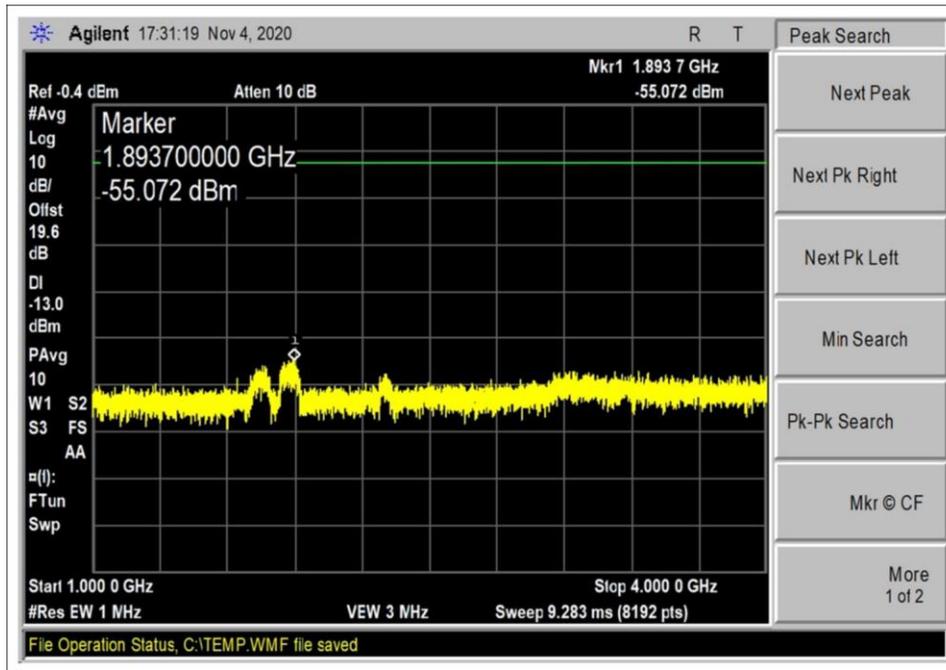
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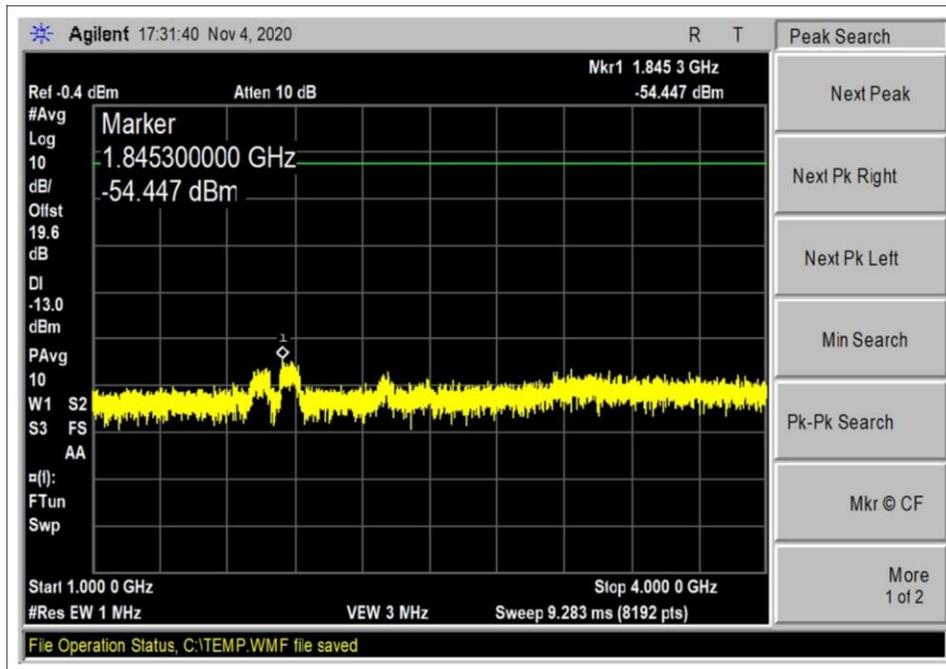
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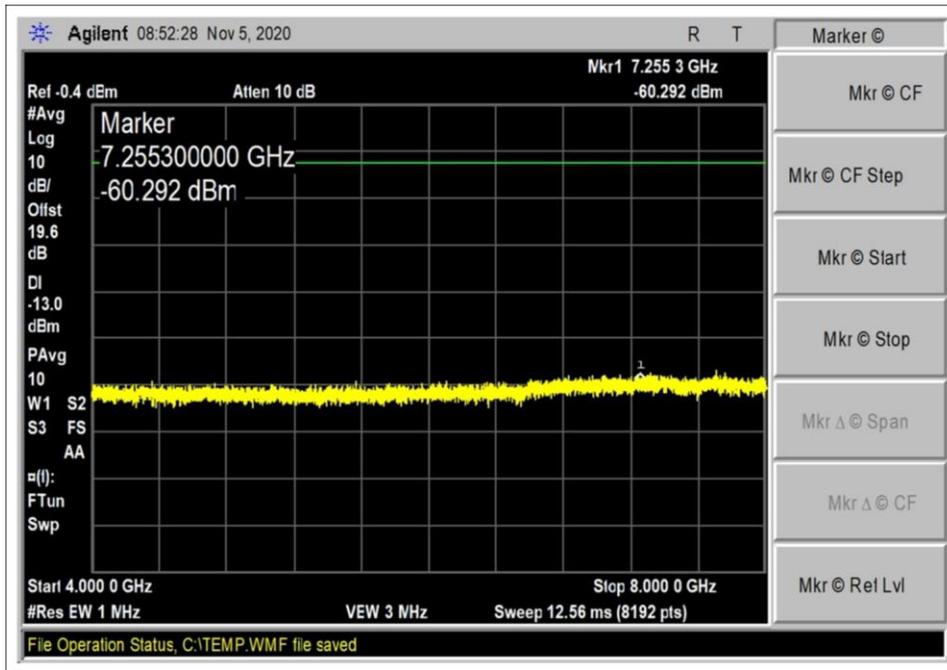
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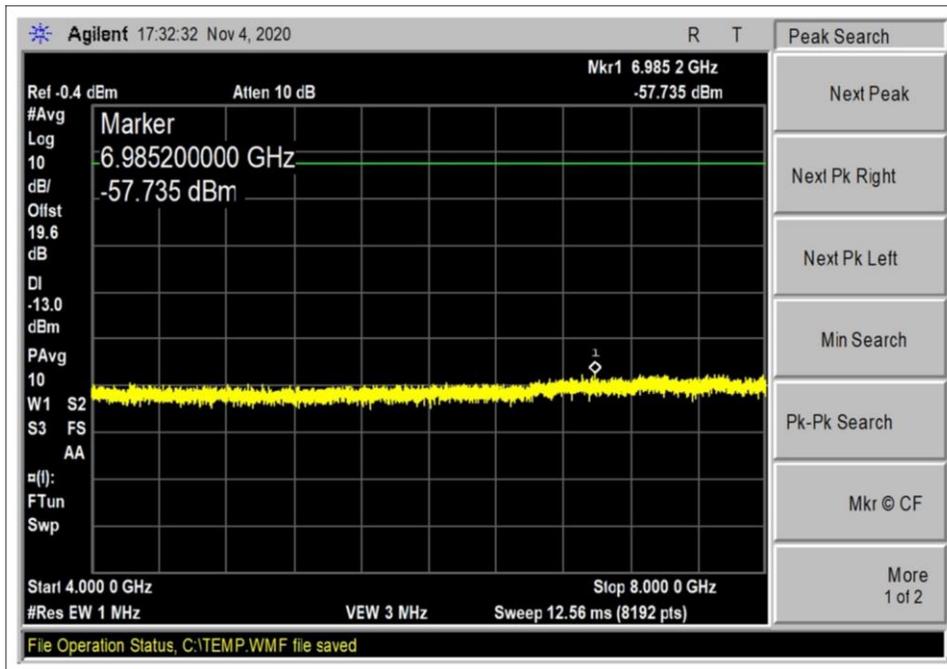
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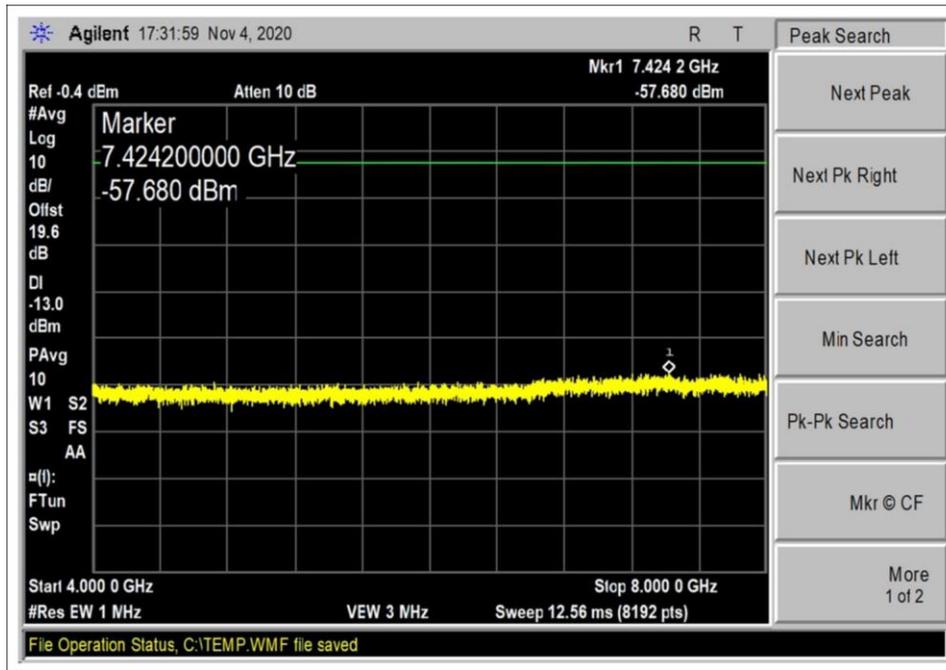
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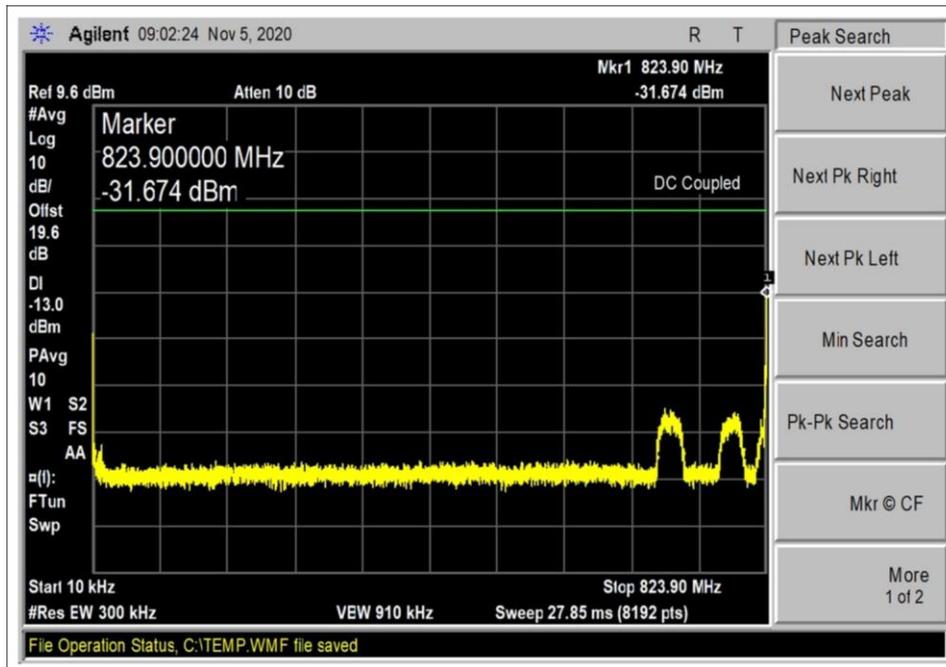
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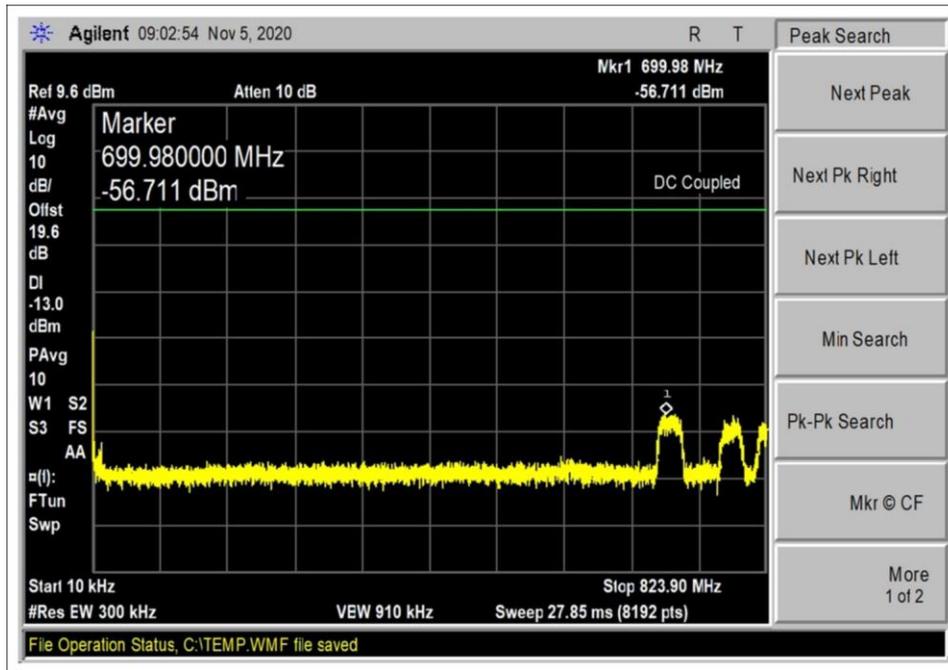
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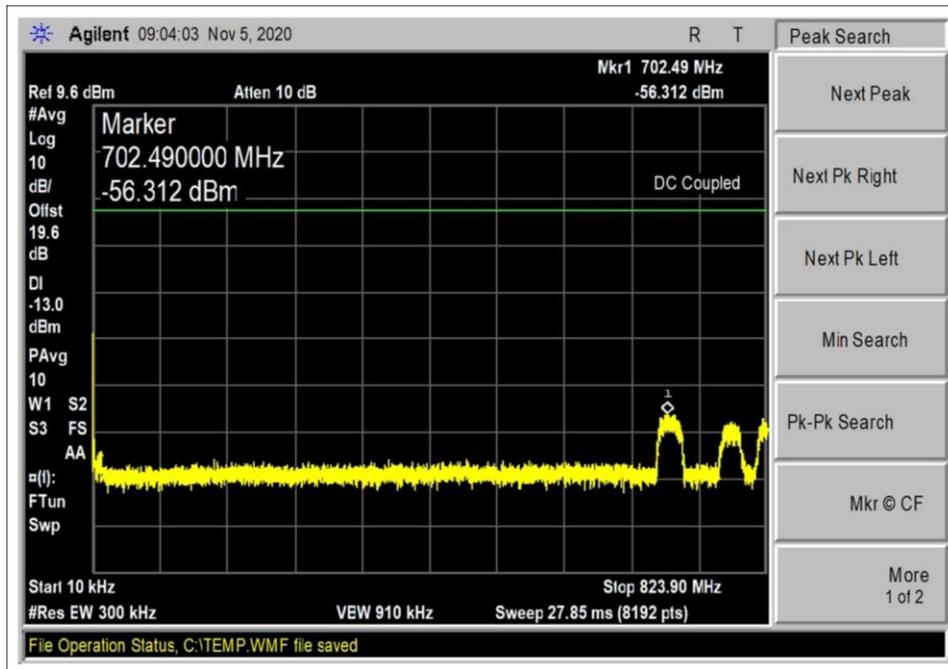
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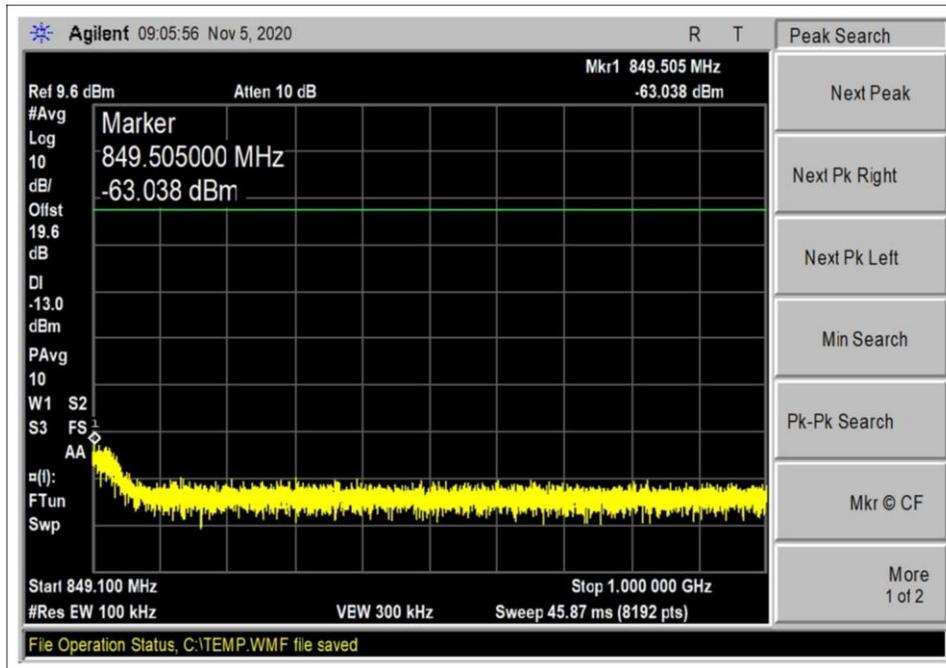
UL 824-849_Low CH_9k-823.9M



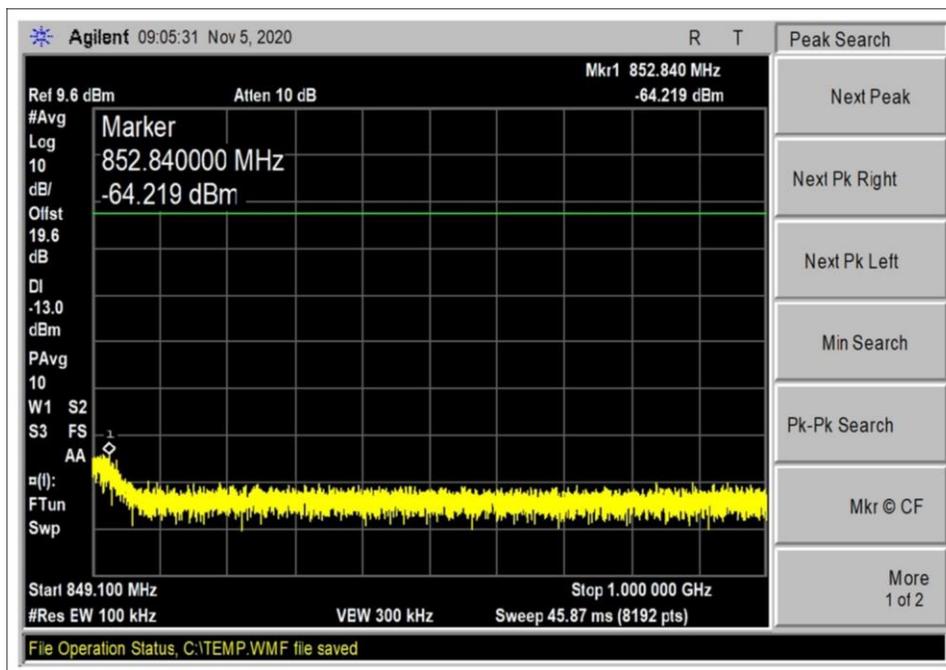
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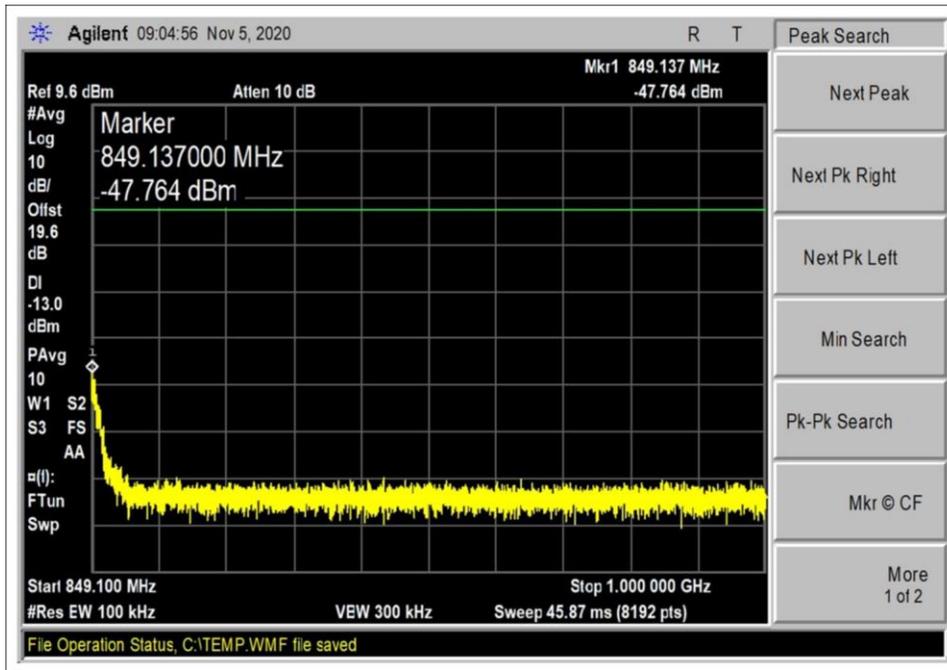
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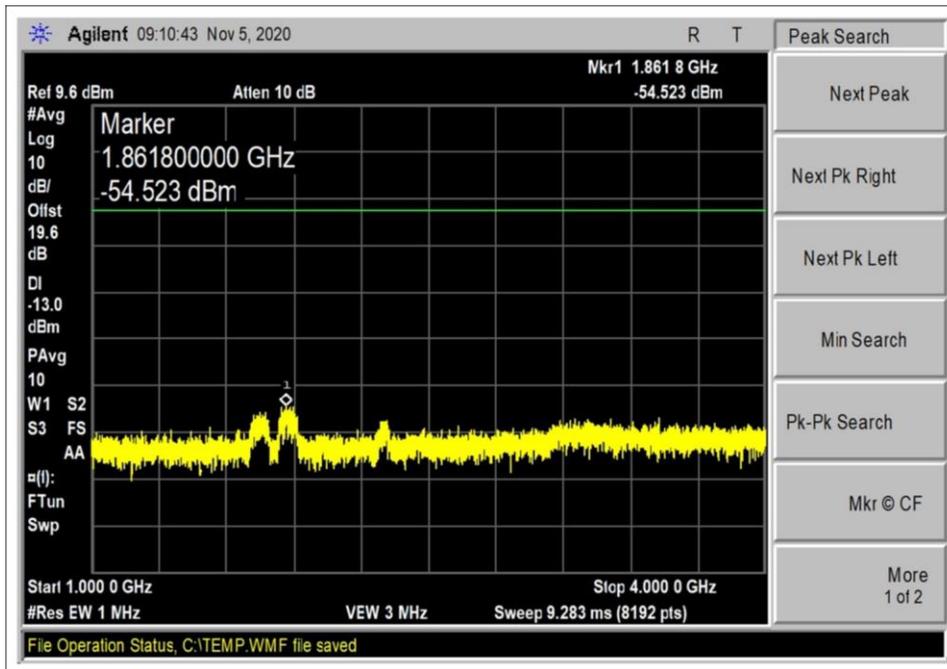
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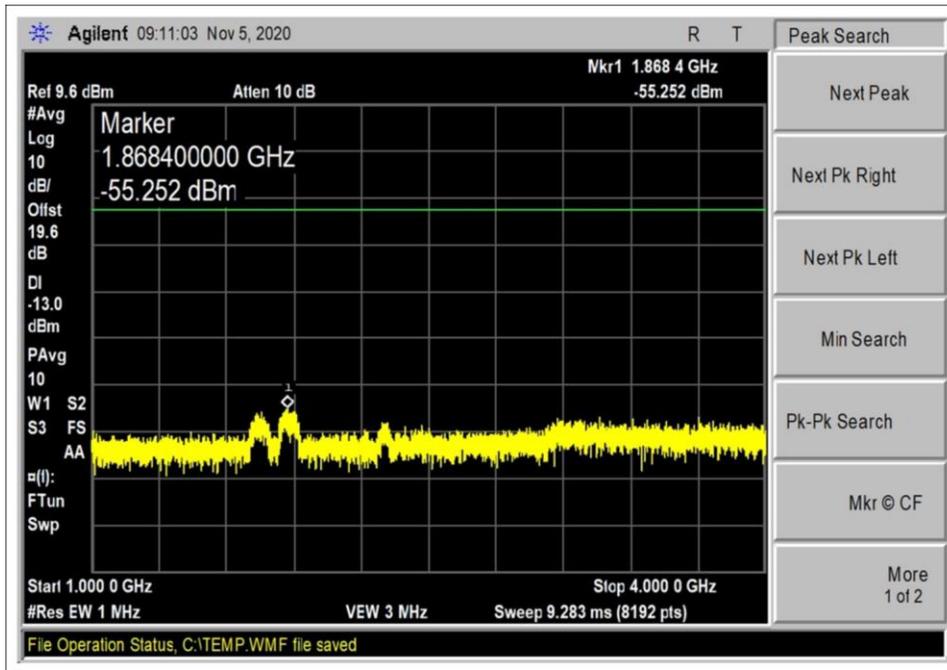
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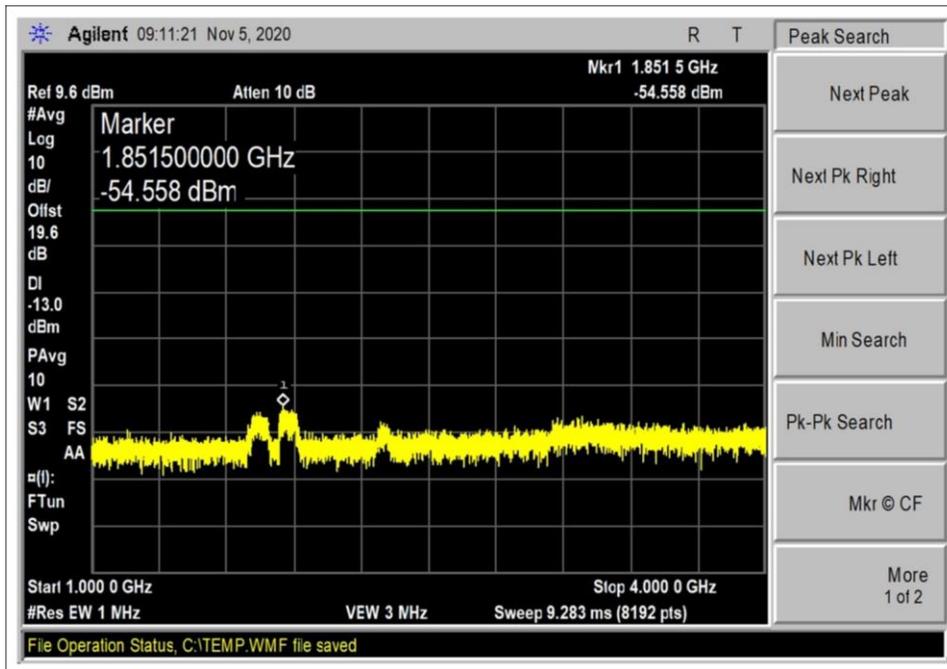
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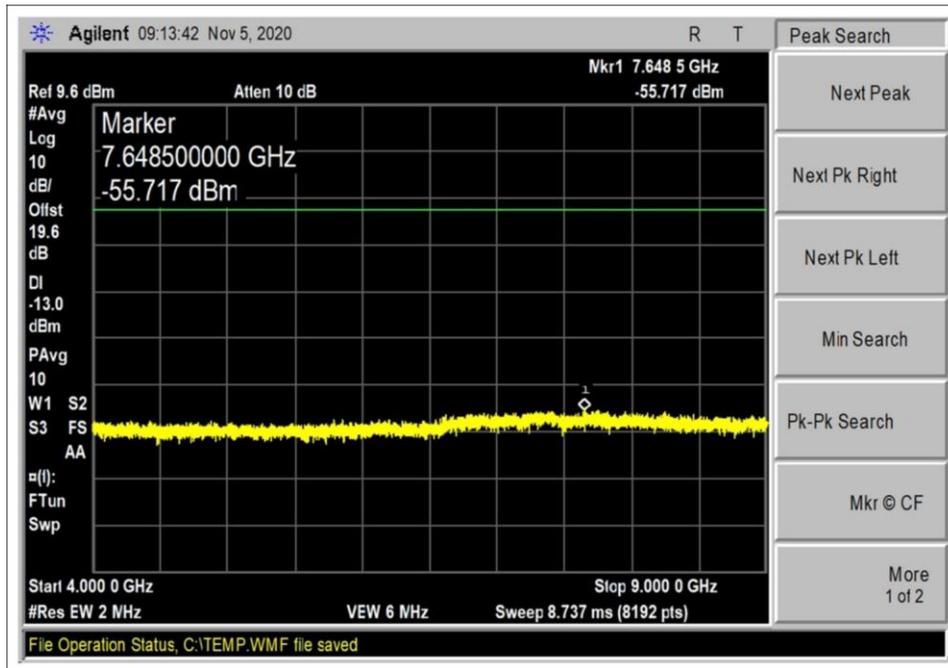
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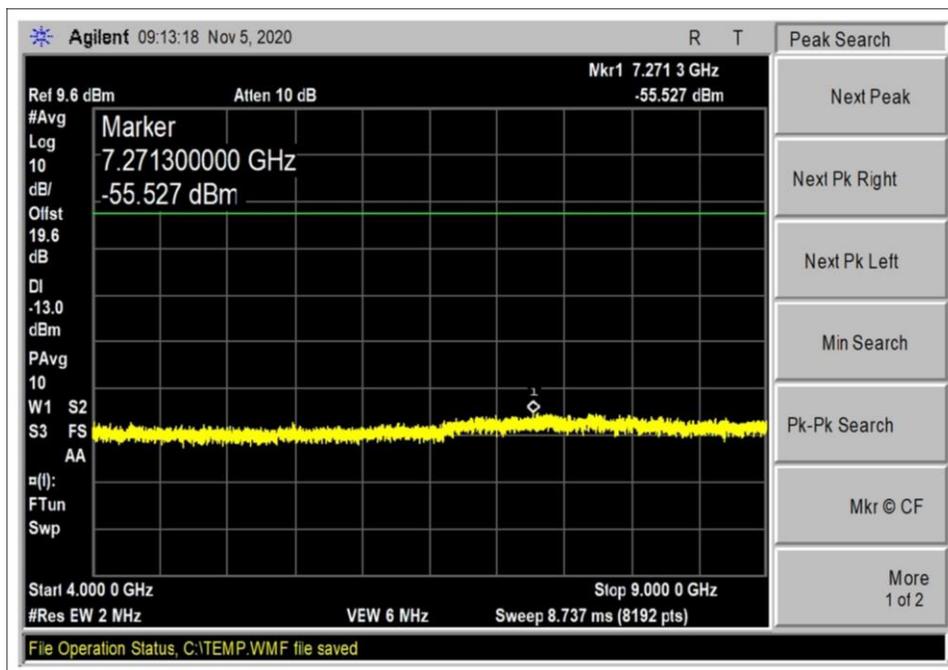
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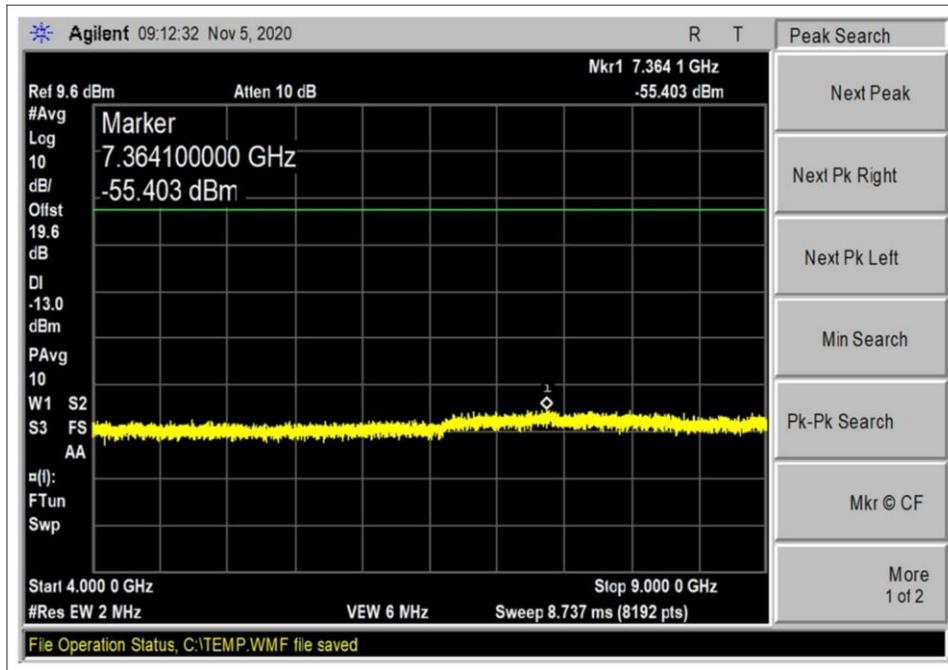
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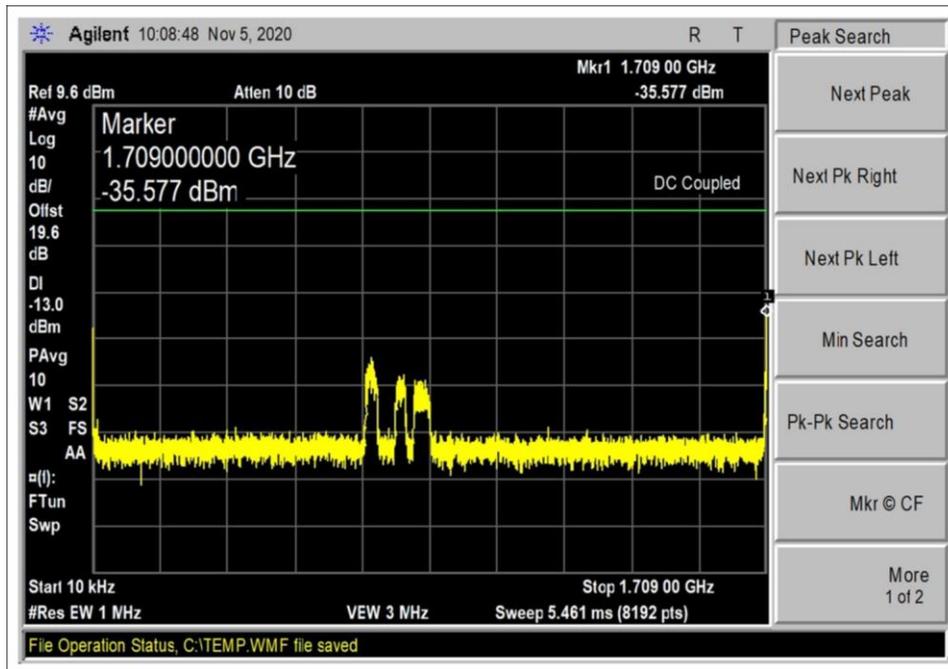
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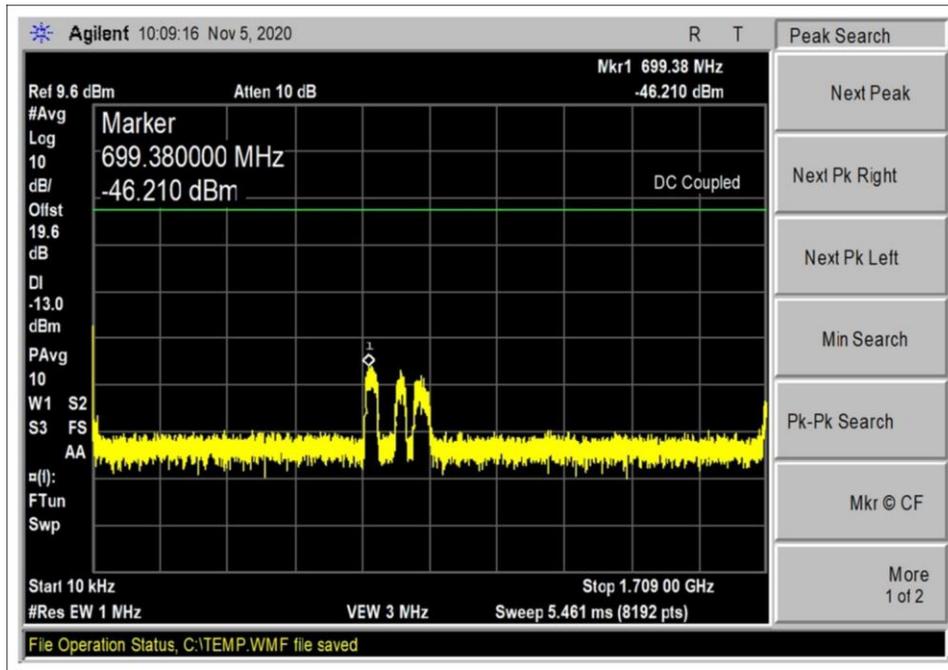
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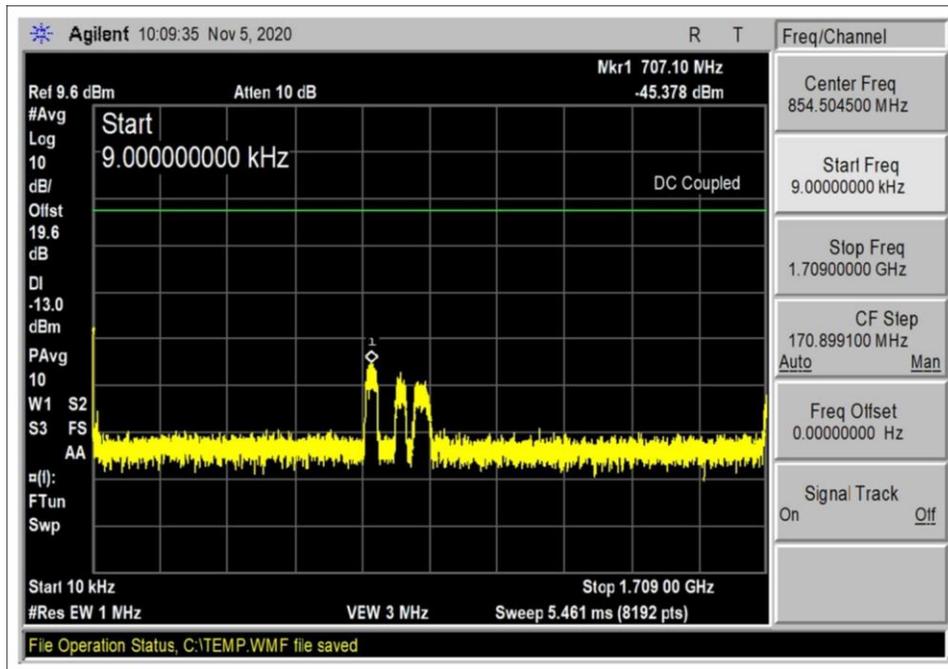
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UL 1710-1755_Low CH_9k-1709M



UL 1710-1755_Middle CH_9k-1709M



UL 1710-1755_High CH_9k-1709M