

As per RSS-Gen, Spurious Emissions include intermodulation products. Test procedures are carried out according to the ANSI C63.36-2015. Spurious Emissions requirements are specified in RSS-131 Section 10.5. RSS-131 section 10.3 also states the requirement that the effective radiated power (ERP) of intermodulation products shall not exceed -30dBm in a 10kHz measurement bandwidth. This requirement is related to deployment practice similar to FCC 47 CFR 90.219 which specifies the following good engineering practice. It is not a standard.

*"Good engineering practice must be used in regard to the radiation of intermodulation products and noise, such that interference to licensed communications systems is avoided. In the event of harmful interference caused by any given deployment, the FCC may require additional attenuation or filtering of the emissions and/or noise from signal boosters or signal booster systems, as necessary to eliminate the interference."*

As part of the system commissioning practice, professional Zone Enhancer installer/field technician measures the intermodulation products by attaching a spectrum analyser to the output of the Remote Unit in the field. Since every deployment is different with different passive distribution network, field technician is required to assess the ERP of the intermodulation products at the antenna by taking into account the total passive component losses and make the necessary adjustments to meet the -30dBm requirement. For some jurisdiction, lower than -30dBm is required.

The intermodulation product of 2 tone is below the -13dBm emission limit with input power

- 0.5 dB below AGC threshold
- 2 dB below AGC threshold
- 3 dB above AGC threshold

Compliant ☒

Non-Compliant ☐

Not Applicable ☐

## Test setup

The procedure used was ANSI C63.26-2015. Two tones (CW) method was used. The input power to the amplifier was set at maximum drive level by combining the two tones. The two tones were chosen in such a way (1) the third order intermodulation product frequencies are located within the pass band of the DUT and (2) they produce the worst-case emissions out of band.

Based on ANSI C63.26-2015, the two tone was located on either side of the maximum gain frequency in the passing band, and separated with the available spacing, which is 12.5kHz.

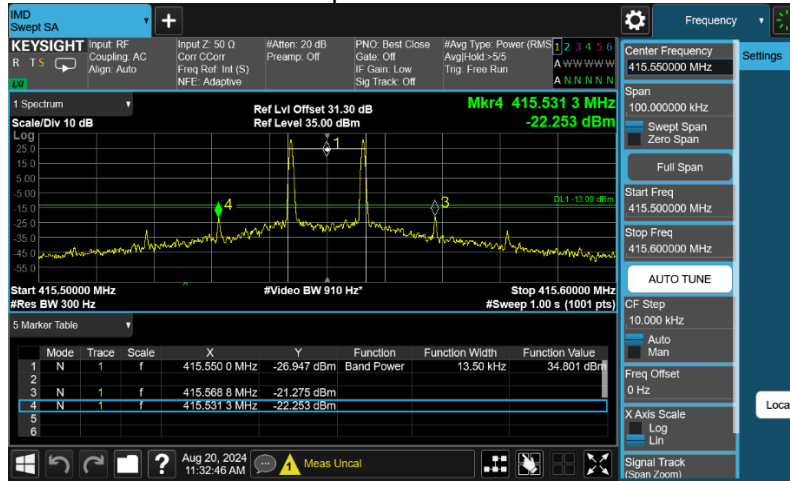
Measurements were performed with modulated -tone at identical input amplitude which produced integrated maximum rated output power.

The EUT was set to **Operation Mode #1 with configuration Mode #1.**



## Results

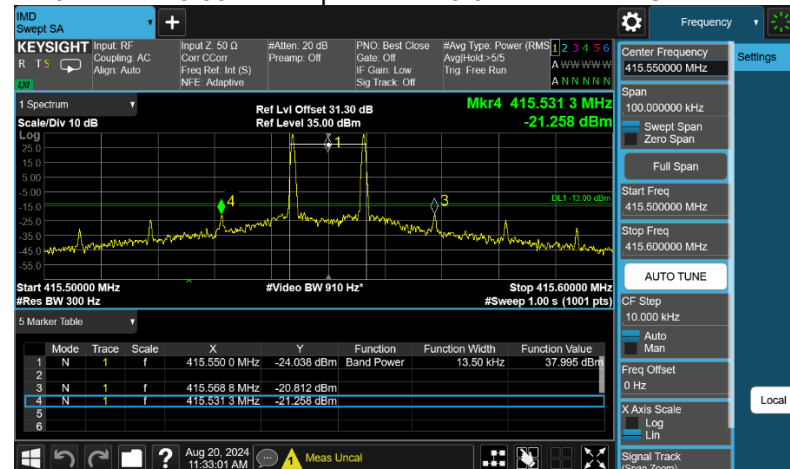
### 415 PS at 415.55 MHz Input Power 2 dB Below ALC Threshold



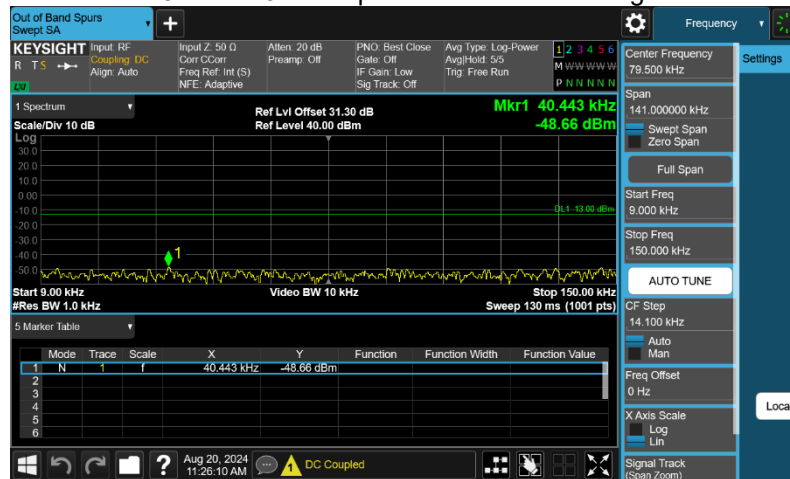
### 415 PS at 415.55 MHz Input Power 3 dB Above ALC Threshold



### 415 PS at 415.55 MHz Input Power 0.5 dB Below ALC Threshold



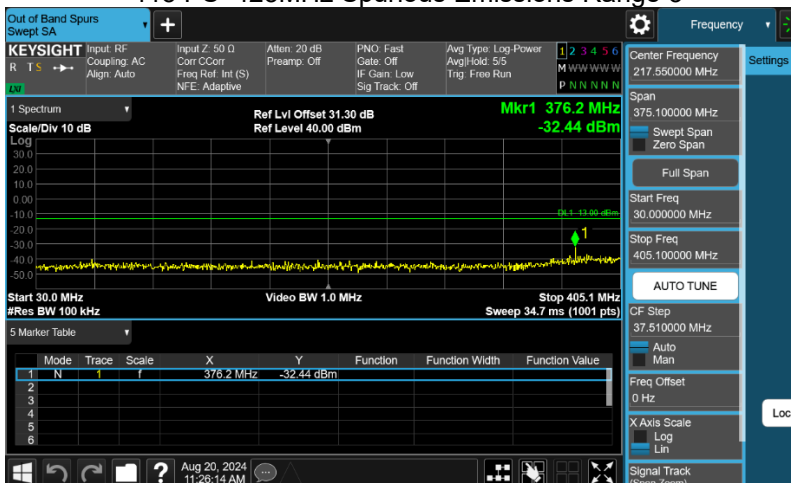
### 415 PS 425MHz Spurious Emissions Range 1



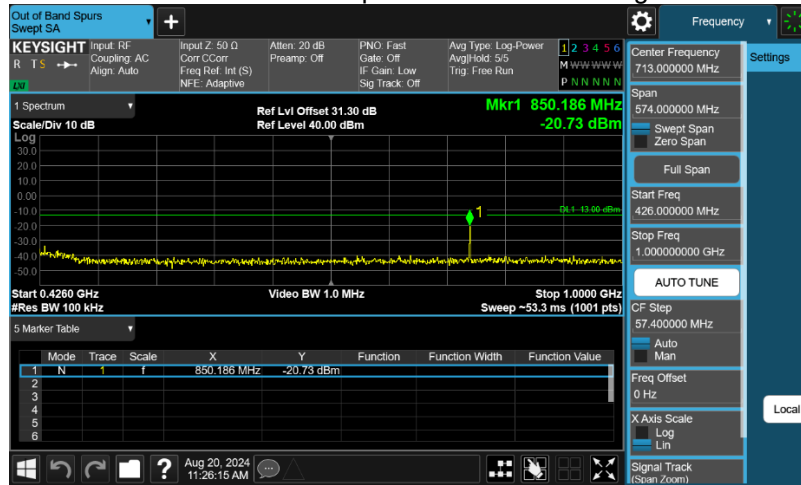
### 415 PS 425MHz Spurious Emissions Range 2



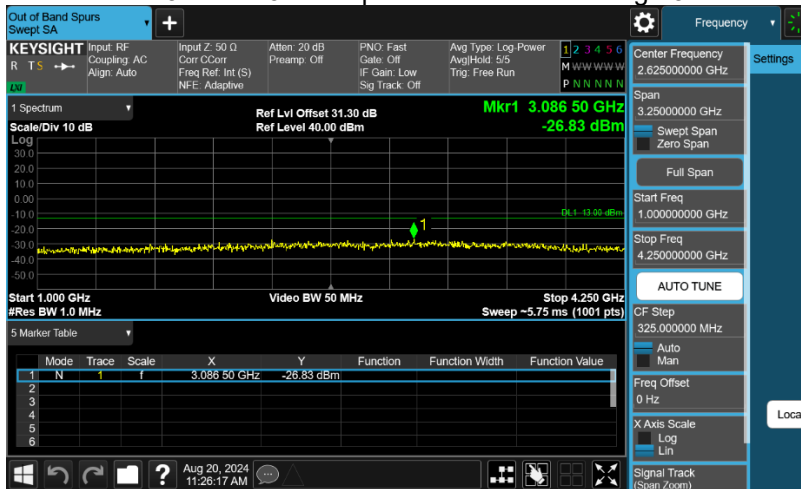
### 415 PS 425MHz Spurious Emissions Range 3



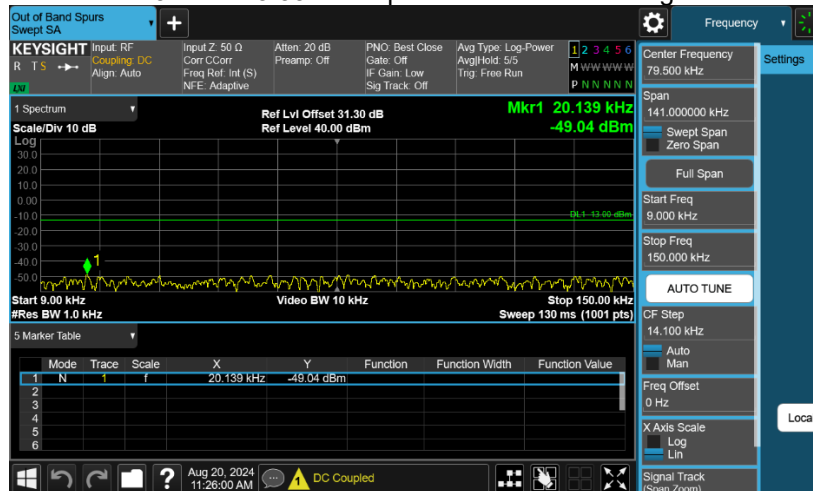
#### 415 PS 425MHz Spurious Emissions Range 4



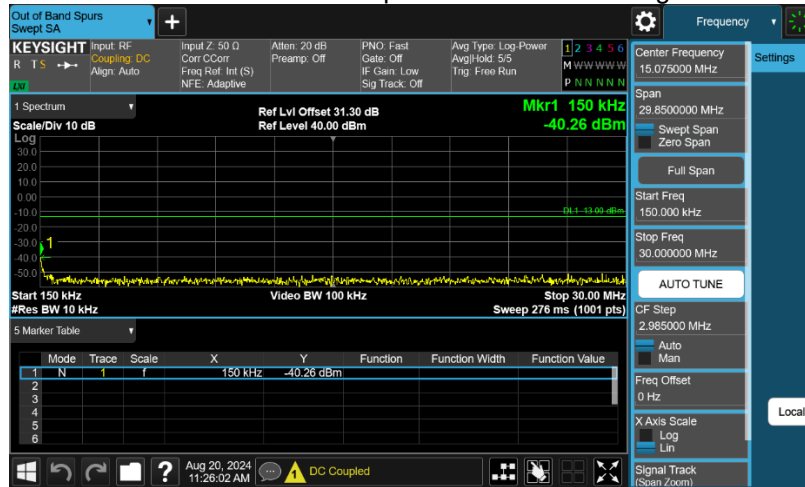
#### 415 PS 425MHz Spurious Emissions Range 5



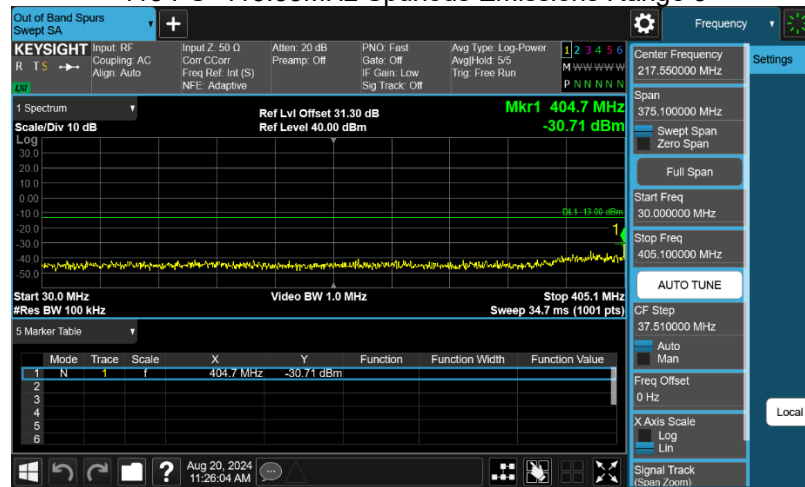
#### 415 PS 415.55MHz Spurious Emissions Range 1



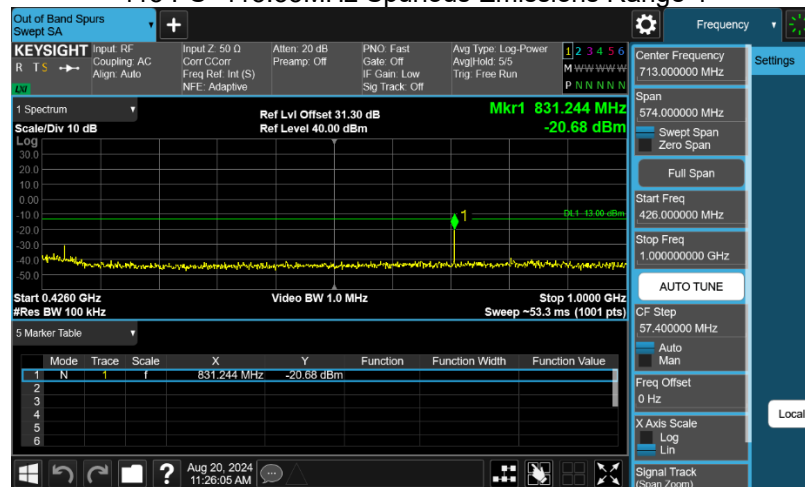
### 415 PS 415.55MHz Spurious Emissions Range 2



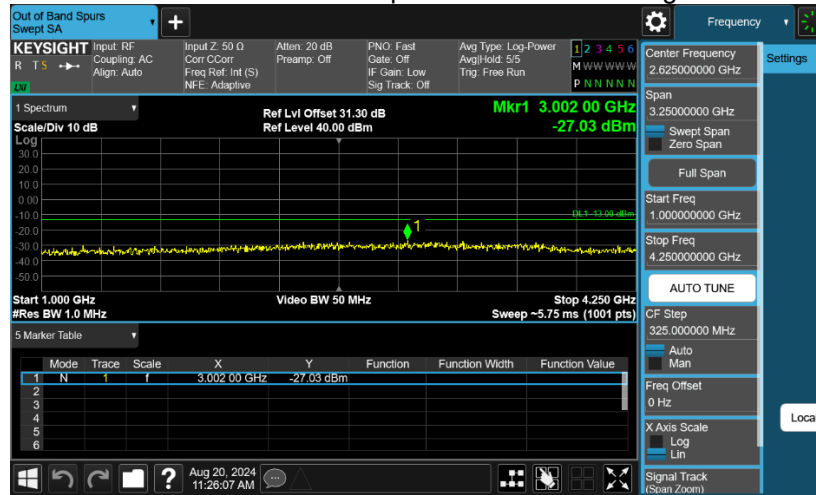
### 415 PS 415.55MHz Spurious Emissions Range 3



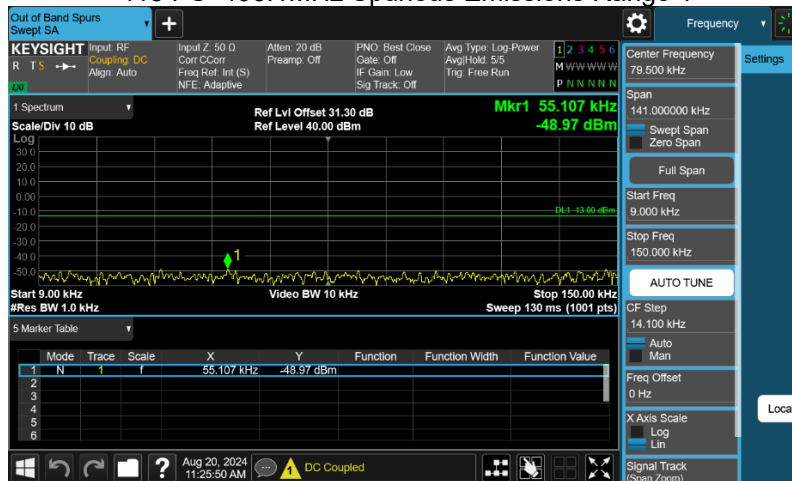
### 415 PS 415.55MHz Spurious Emissions Range 4



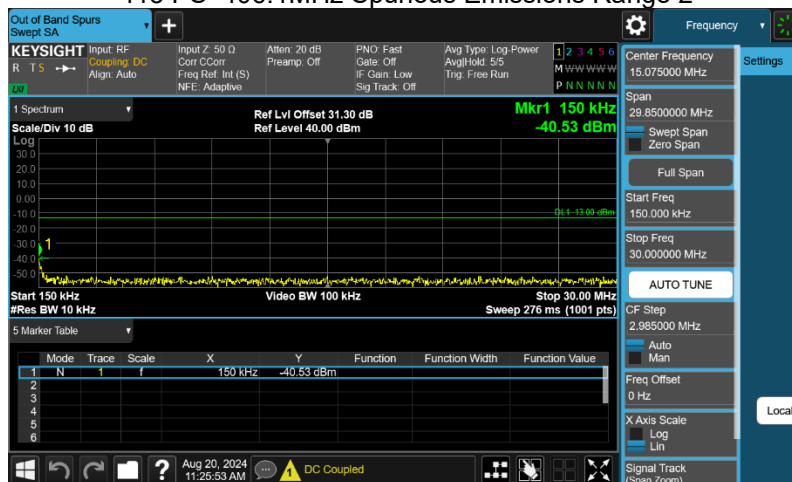
### 415 PS 415.55MHz Spurious Emissions Range 5



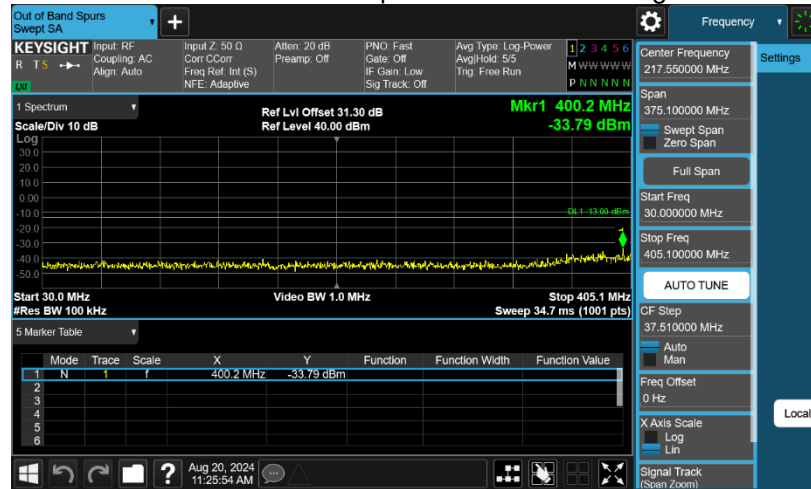
### 415 PS 406.1MHz Spurious Emissions Range 1



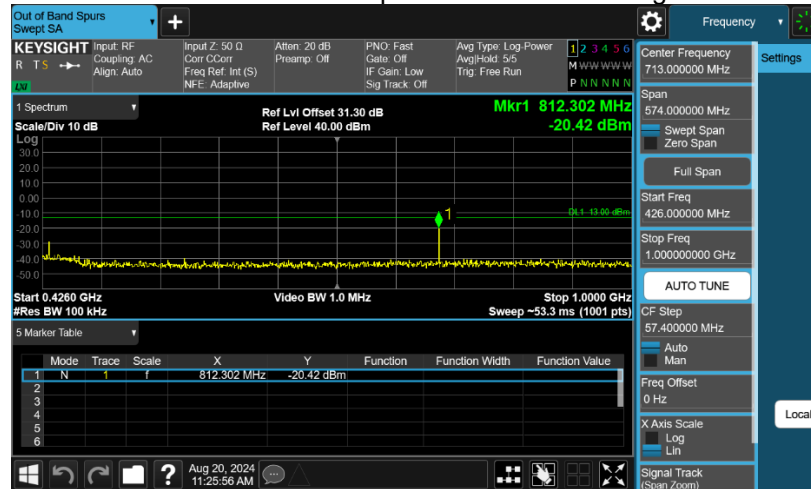
### 415 PS 406.1MHz Spurious Emissions Range 2



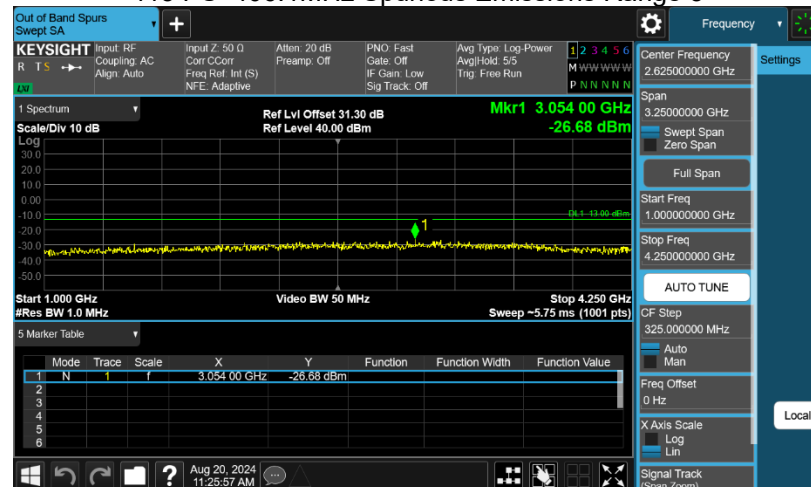
### 415 PS 406.1MHz Spurious Emissions Range 3



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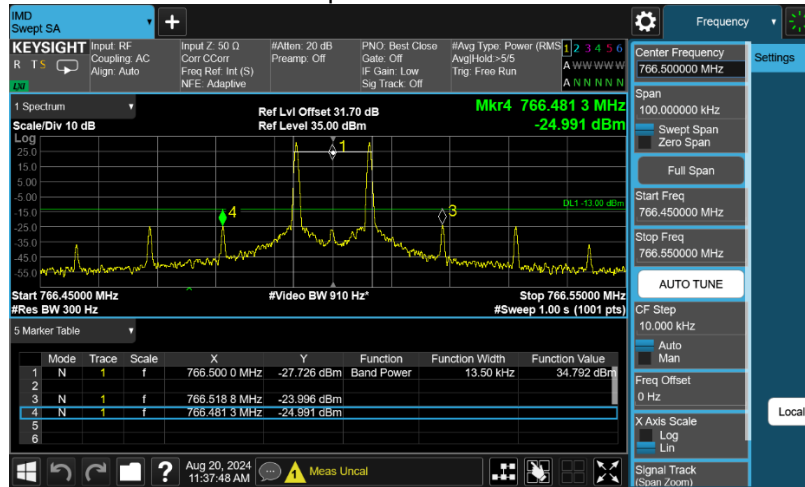


### 415 PS 406.1MHz Spurious Emissions Range 5

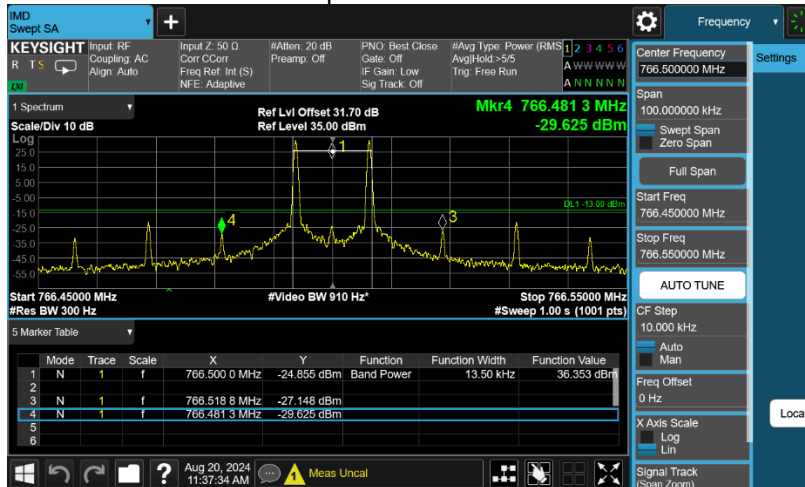




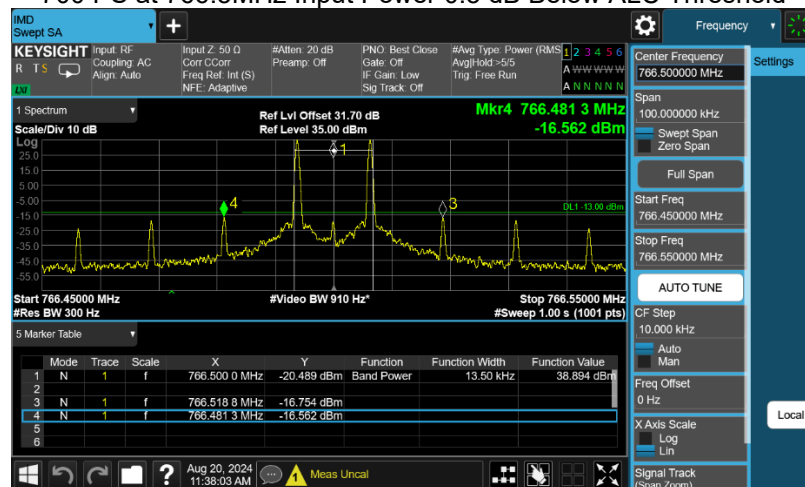
### 700 PS at 766.5MHz Input Power 2 dB Below ALC Threshold



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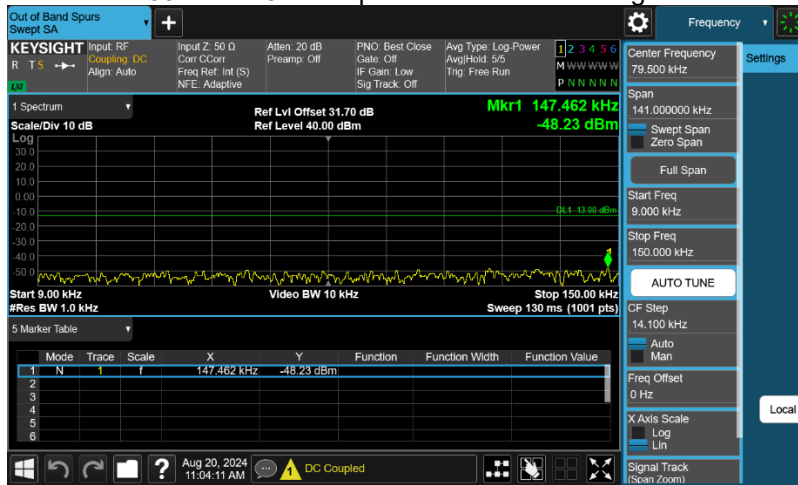


### 700 PS at 766.5MHz Input Power 0.5 dB Below ALC Threshold





### 700 PS 775MHz Spurious Emissions Range 1



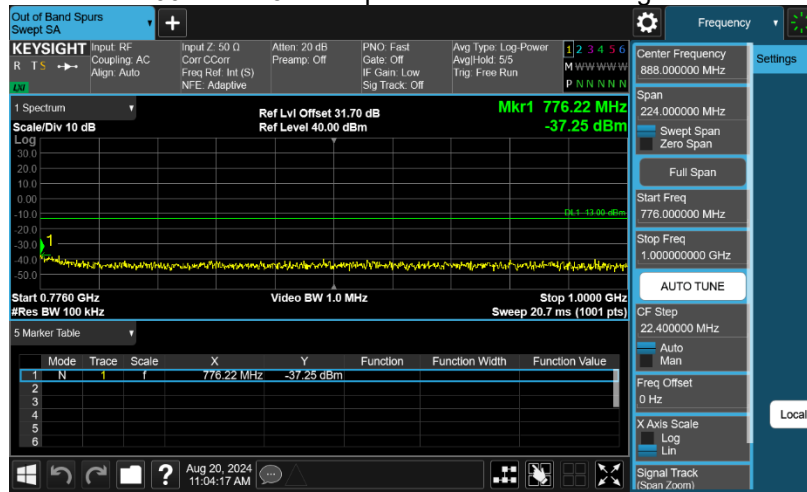
### 700 PS 775MHz Spurious Emissions Range 2



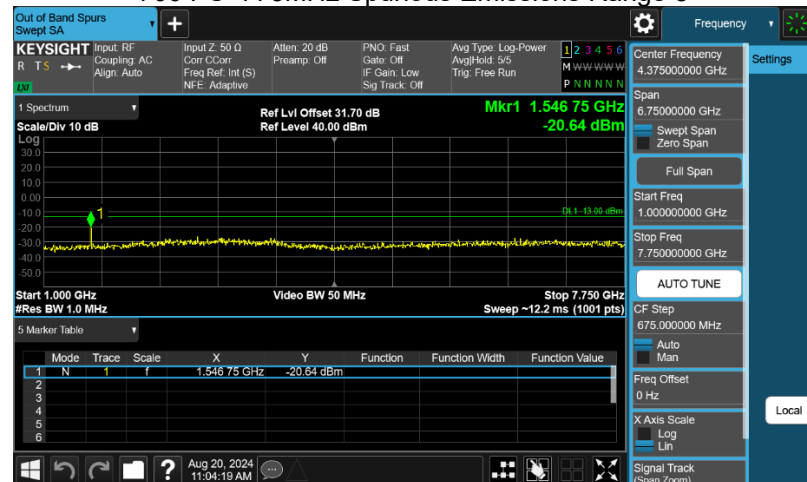
### 700 PS 775MHz Spurious Emissions Range 3



### 700 PS 775MHz Spurious Emissions Range 4



### 700 PS 775MHz Spurious Emissions Range 5



### 700 PS 766.5MHz Spurious Emissions Range 1

