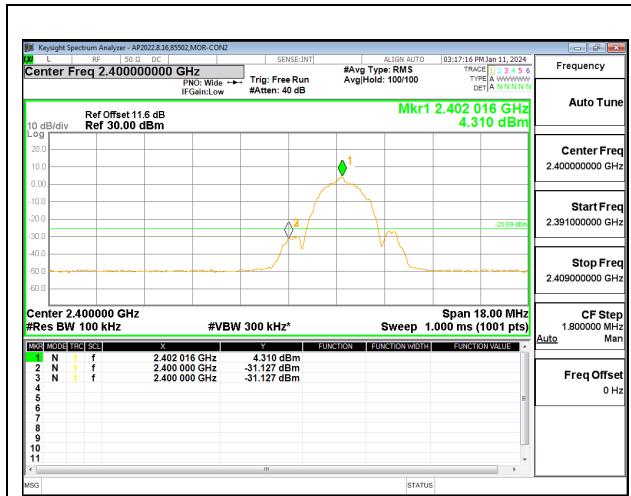
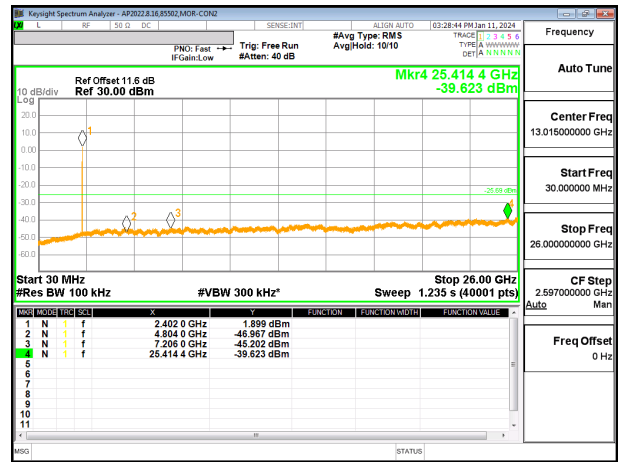


### 10.6.2. BLE (2Mbps)

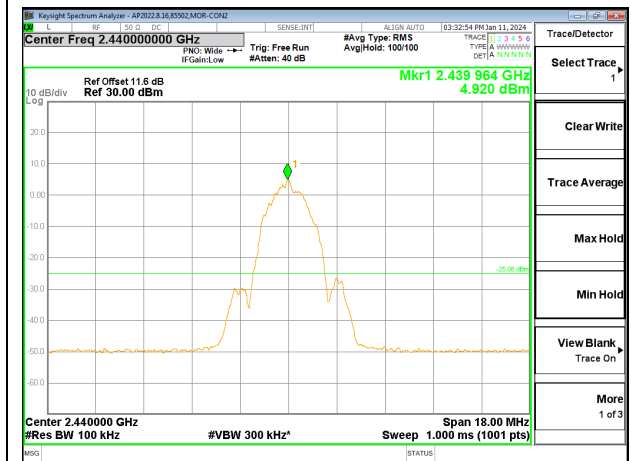
#### CHAIN 0



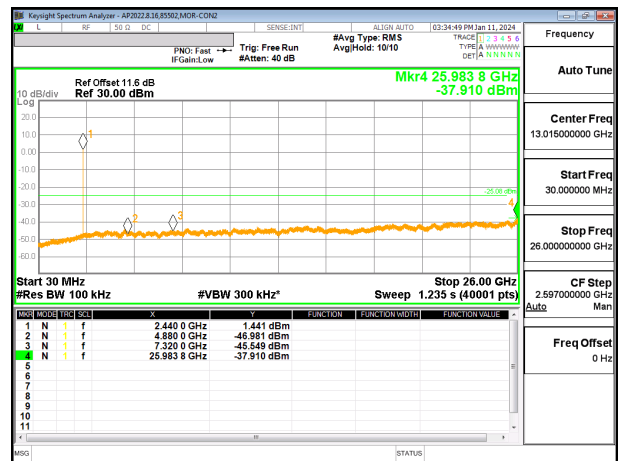
**LOW CHANNEL BANDEDGE**



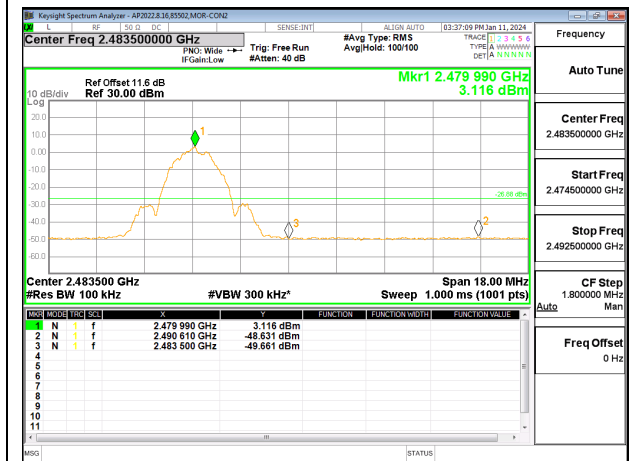
**OUT-OF-BAND LOW CHANNEL**



**IN-BAND REFERENCE LEVEL**



**OUT-OF-BAND MID CHANNEL**

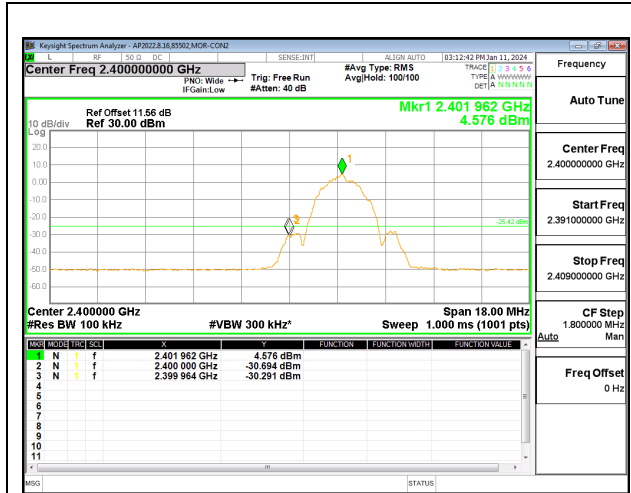


**HIGH CHANNEL BANDEDGE**

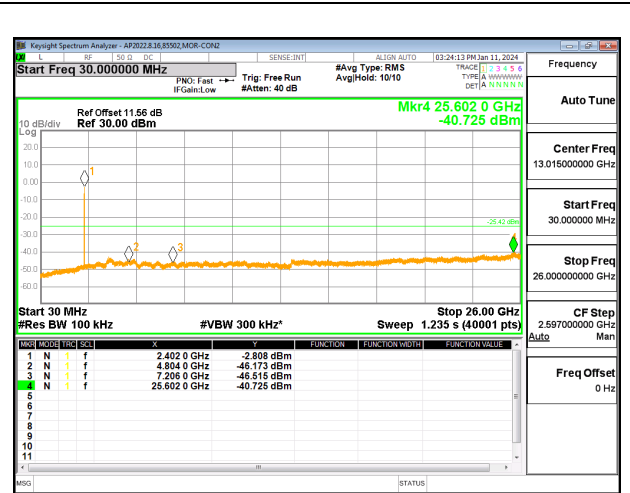


**OUT-OF-BAND HIGH CHANNEL**

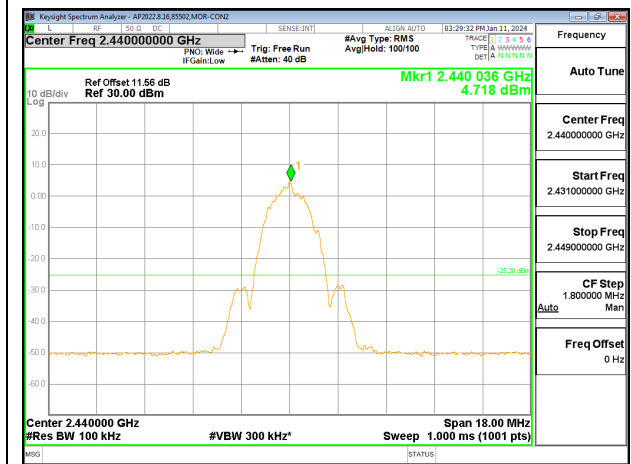
**CHAIN 1**



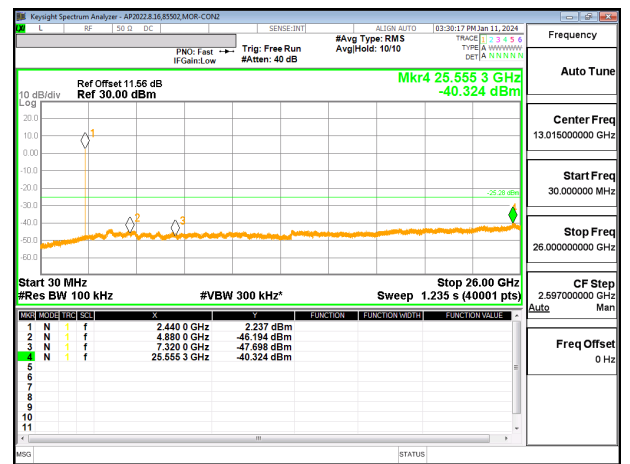
**LOW CHANNEL BANDEDGE**



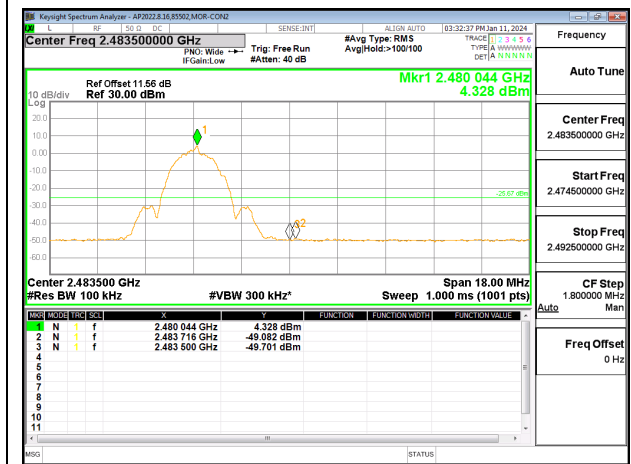
**OUT-OF-BAND LOW CHANNEL**



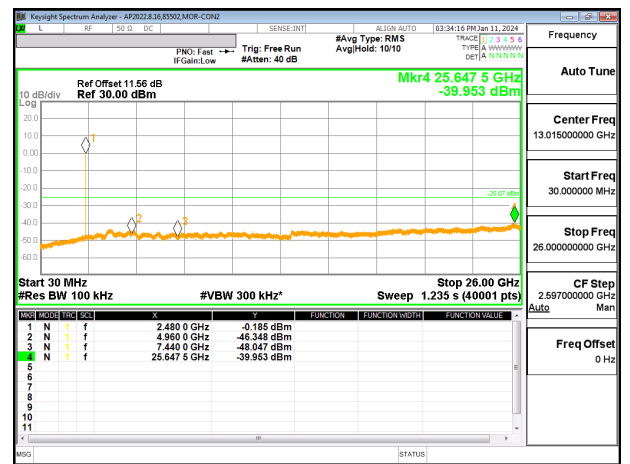
**IN-BAND REFERENCE LEVEL**



**OUT-OF-BAND MID CHANNEL**



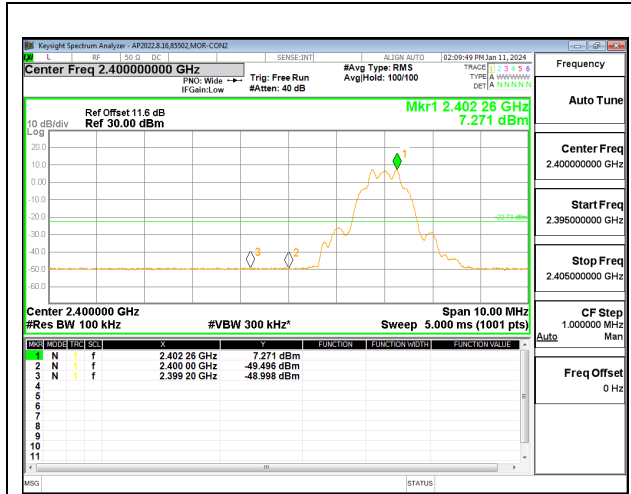
**HIGH CHANNEL BANDEDGE**



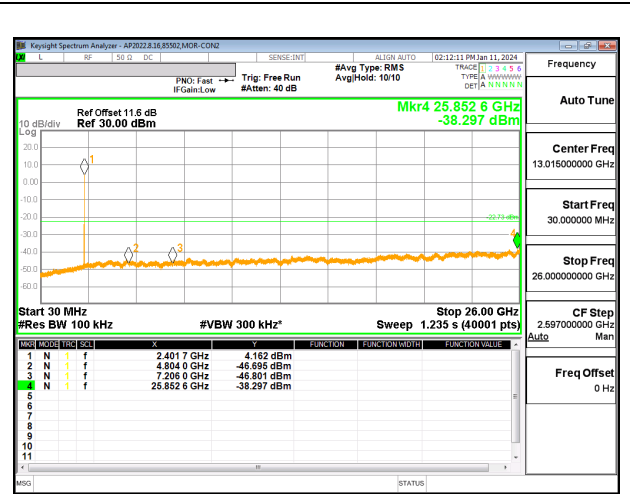
**OUT-OF-BAND HIGH CHANNEL**

### 10.6.3. BLE (125Kbps)

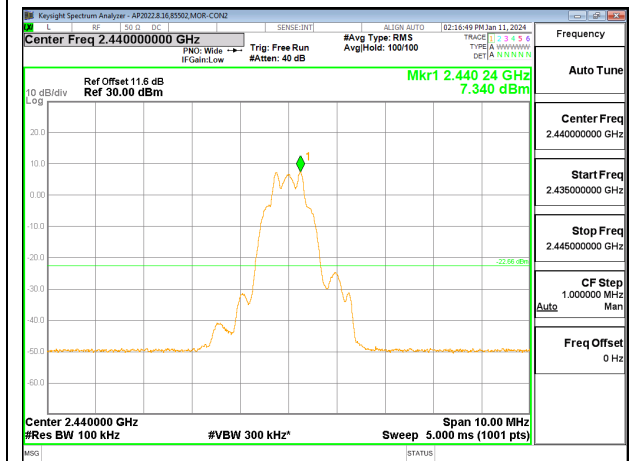
#### CHAIN 0



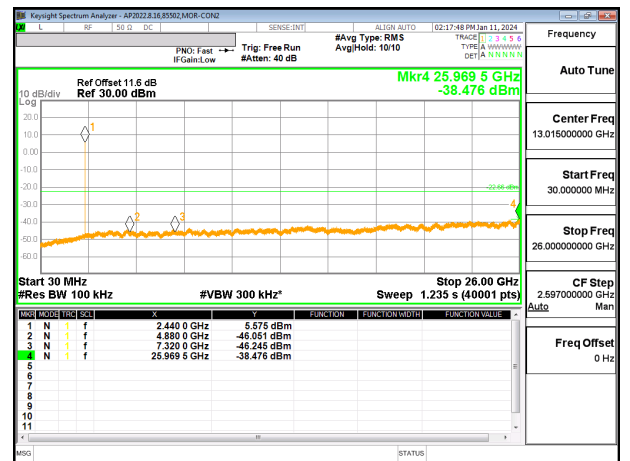
LOW CHANNEL BANDEDGE



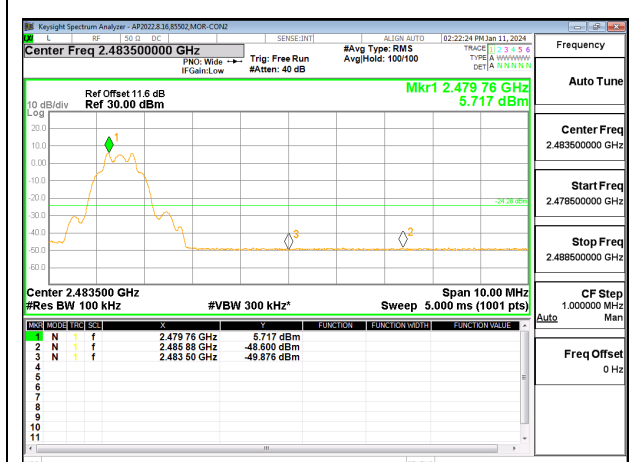
OUT-OF-BAND LOW CHANNEL



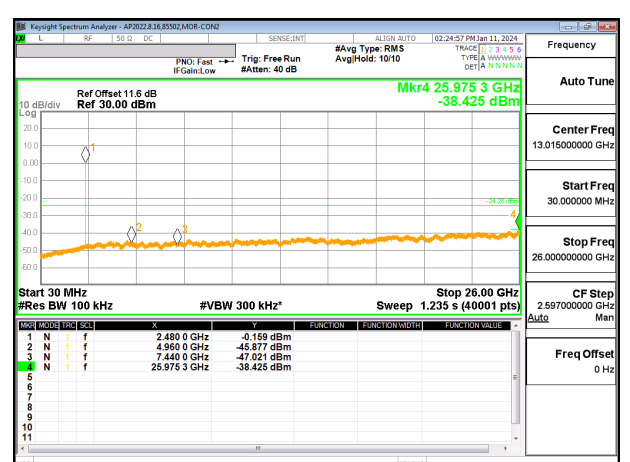
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL

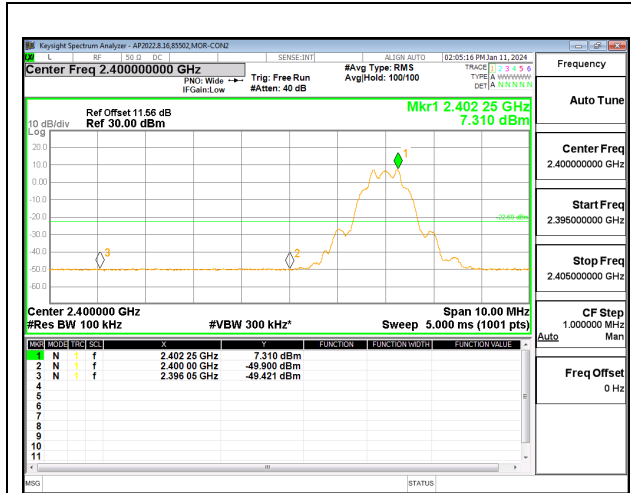


HIGH CHANNEL BANDEDGE

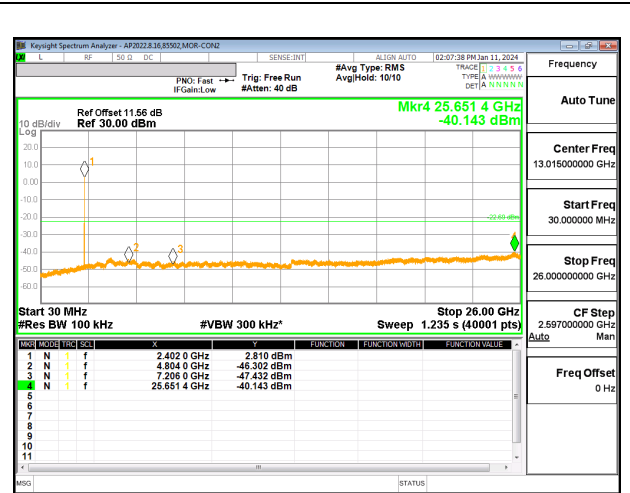


OUT-OF-BAND HIGH CHANNEL

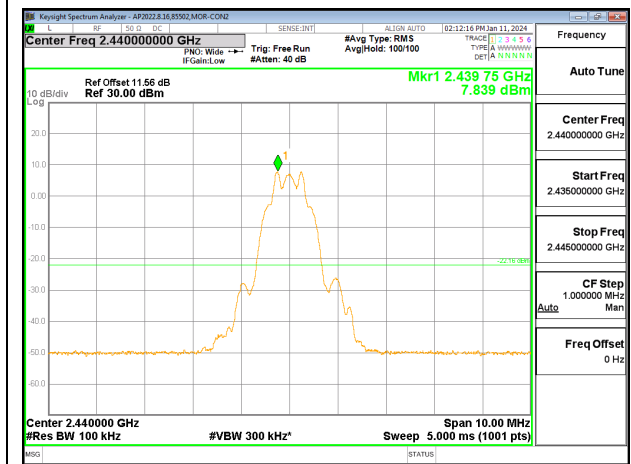
**CHAIN 1**



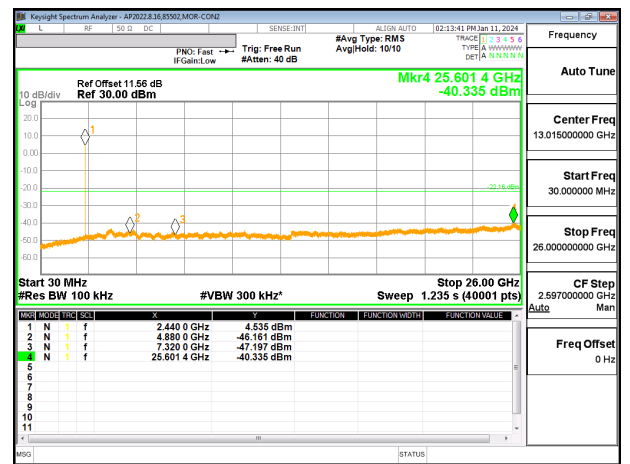
**LOW CHANNEL BANDEDGE**



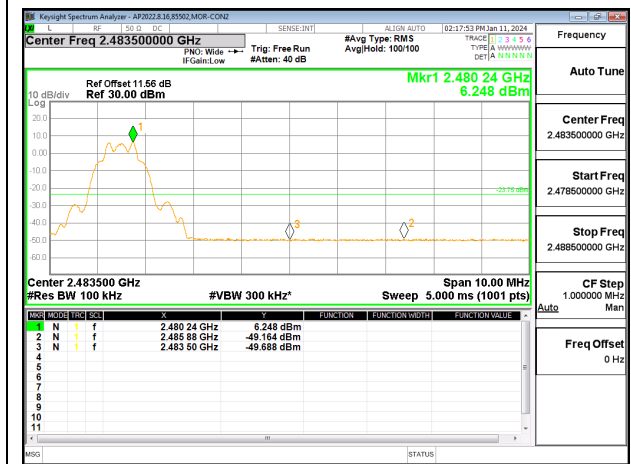
**OUT-OF-BAND LOW CHANNEL**



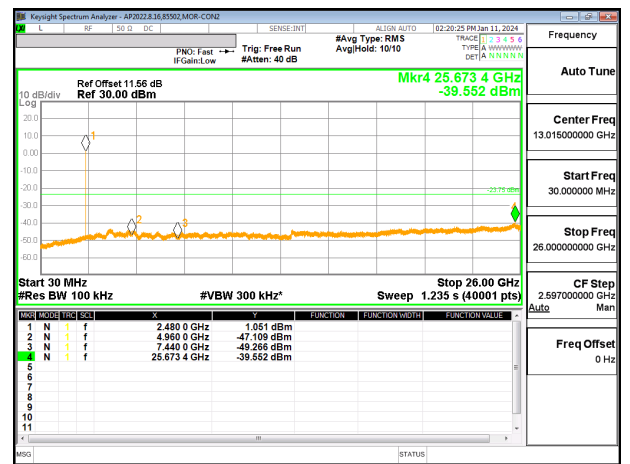
**IN-BAND REFERENCE LEVEL**



**OUT-OF-BAND MID CHANNEL**



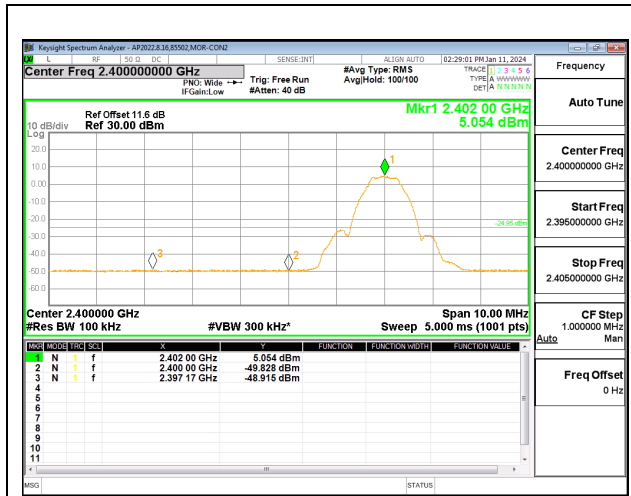
**HIGH CHANNEL BANDEDGE**



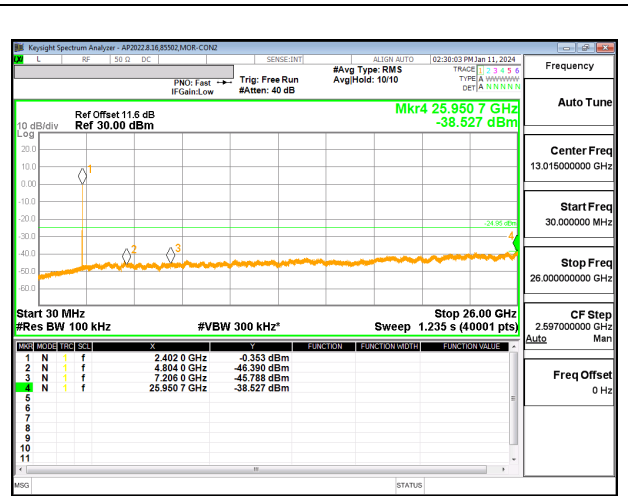
**OUT-OF-BAND HIGH CHANNEL**

### 10.6.4. BLE (500Kbps)

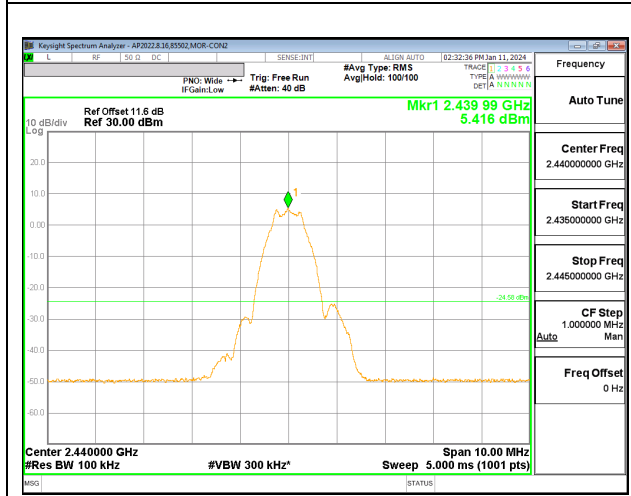
#### CHAIN 0



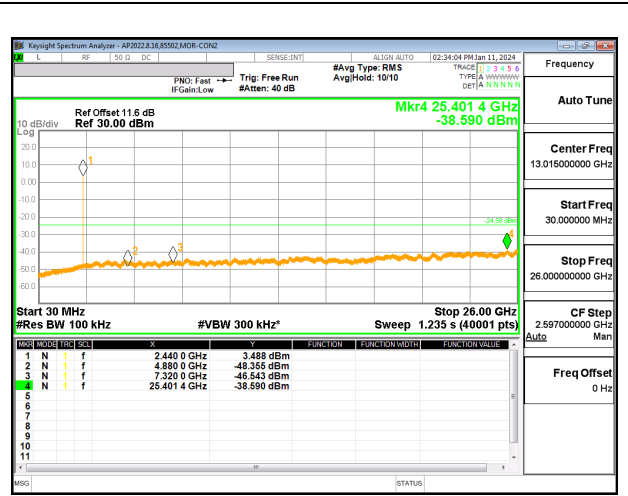
**LOW CHANNEL BANDEDGE**



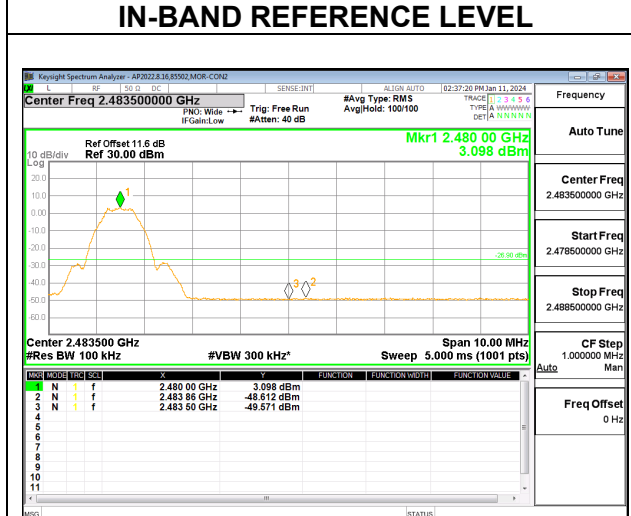
**OUT-OF-BAND LOW CHANNEL**



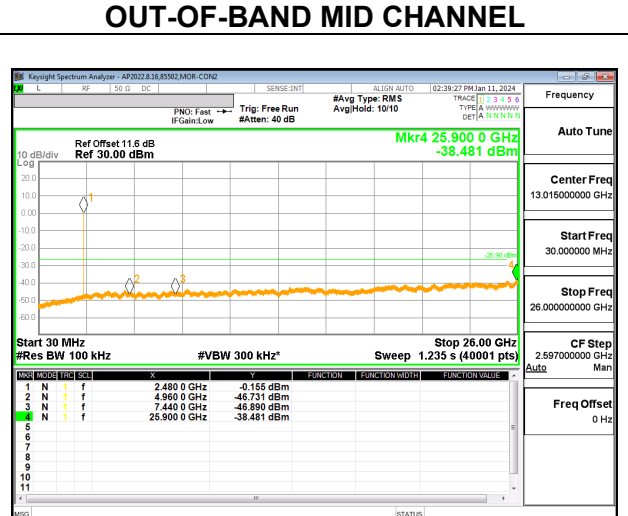
**IN-BAND REFERENCE LEVEL**



**OUT-OF-BAND MID CHANNEL**

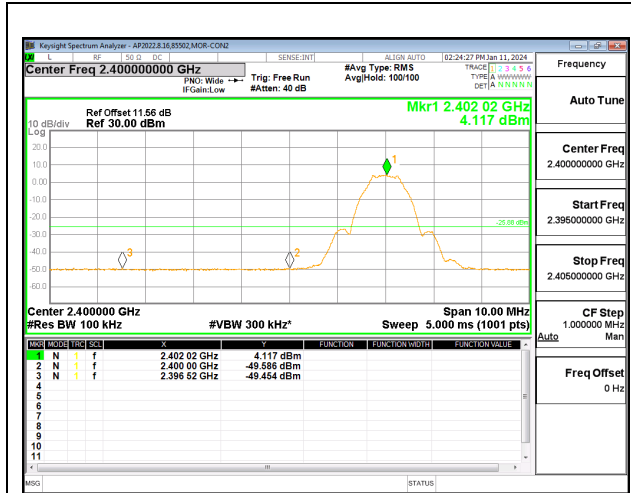


**HIGH CHANNEL BANDEDGE**

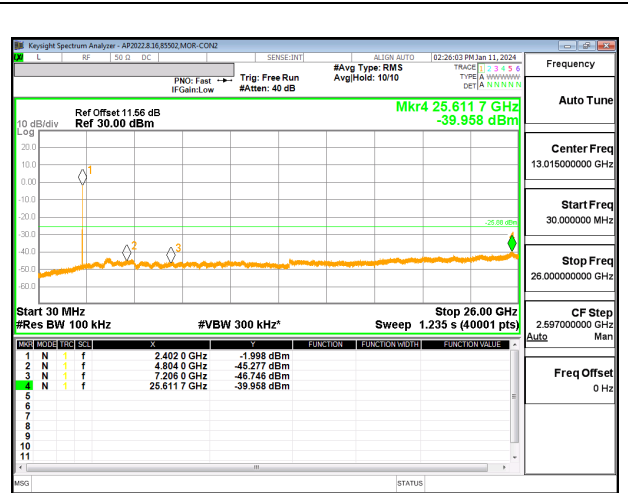


**OUT-OF-BAND HIGH CHANNEL**

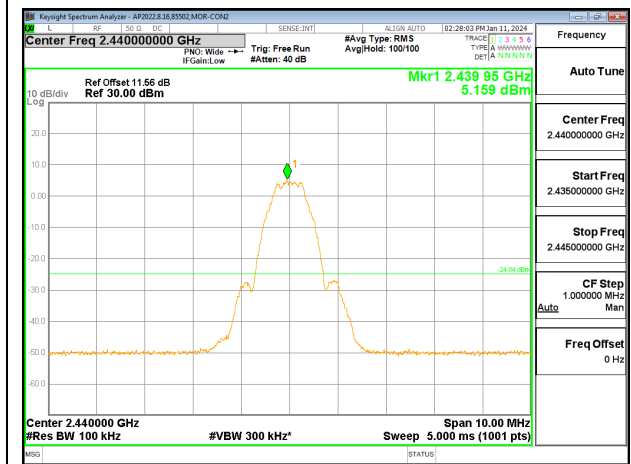
**CHAIN 1**



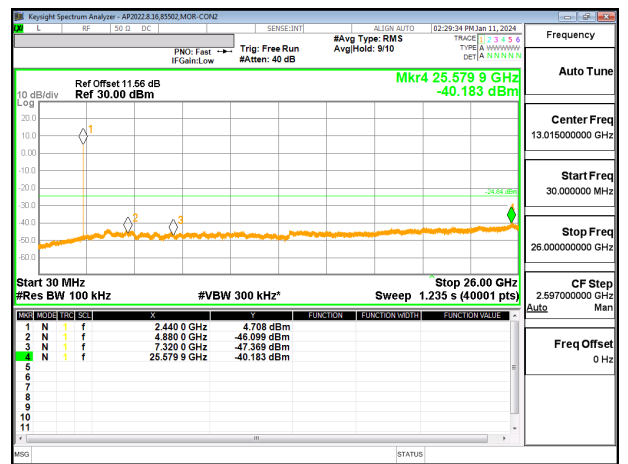
**LOW CHANNEL BANDEDGE**



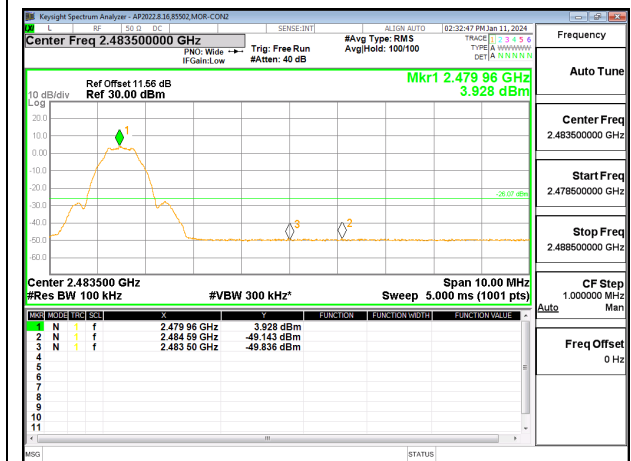
**OUT-OF-BAND LOW CHANNEL**



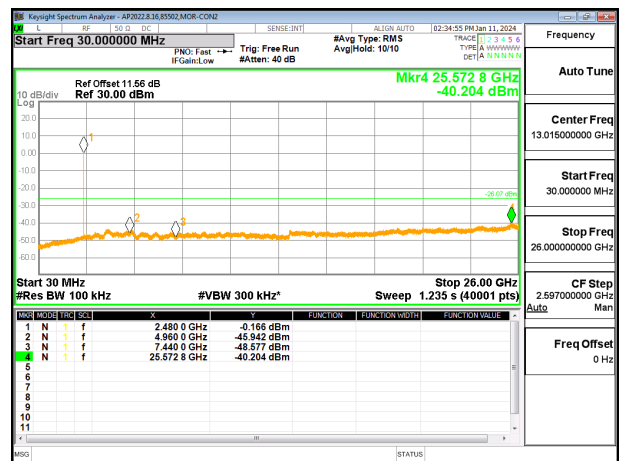
**IN-BAND REFERENCE LEVEL**



**OUT-OF-BAND MID CHANNEL**



**HIGH CHANNEL BANDEDGE**



**OUT-OF-BAND HIGH CHANNEL**

## 10.7. CONDUCTED SPURIOUS EMISSIONS – MIMO RESTRICTED BAND

### LIMITS

FCC §15.205 and §15.209

Frequency Range (MHz)	Field Strength (dBuV/m)	Measurement Distance (m)
0.009 - 0.490	$20 \cdot \log[2400/F(\text{kHz})]$	300
0.490 - 1.705	$20 \cdot \log[24000/F(\text{kHz})]$	30
1.705 - 30	29.5	30
30 - 88	40	3
88 - 216	43.5	3
216 - 960	46	3
Above 960	54	3

### TEST PROCEDURE

Conducted measurements were made for this test.

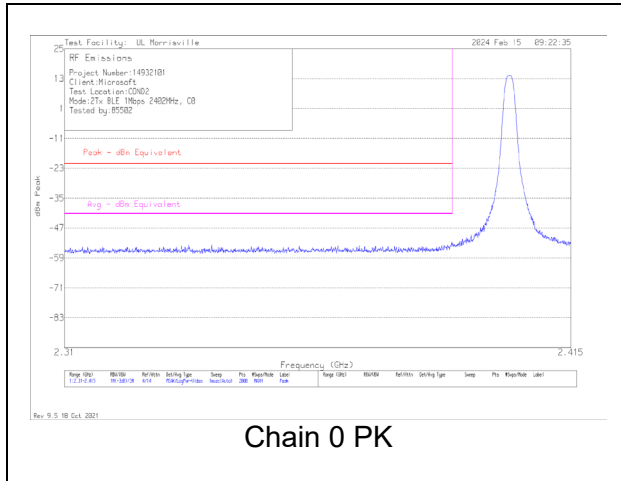
For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements in the 30-1000MHz range, 9kHz for peak and/or quasi-peak detection measurements in the 0.15-30MHz range and 200Hz for peak and/or quasi-peak detection measurements in the 9 to 150kHz range. Peak detection is used unless otherwise noted as quasi-peak or average (9-90kHz and 110-490kHz).

For peak measurements above 1 GHz, the resolution bandwidth is set to 1 MHz and the video bandwidth is set to 3 MHz.

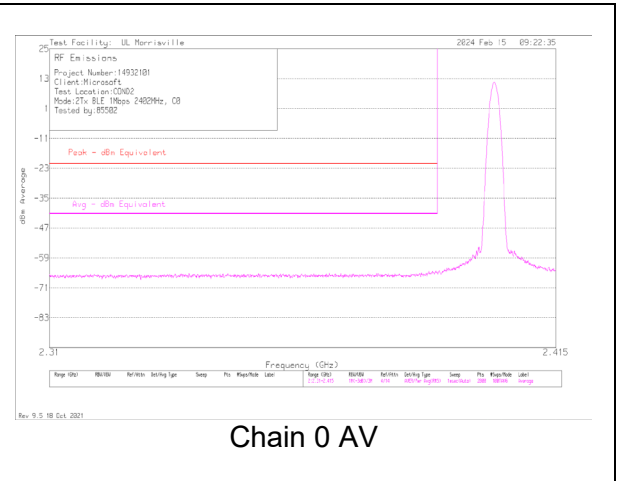
The spectrum from 9 kHz to 26 GHz is investigated with the transmitter set to the channels/modes as described in Section 6.5.

Note: This data leveraged from R14932101-E1a

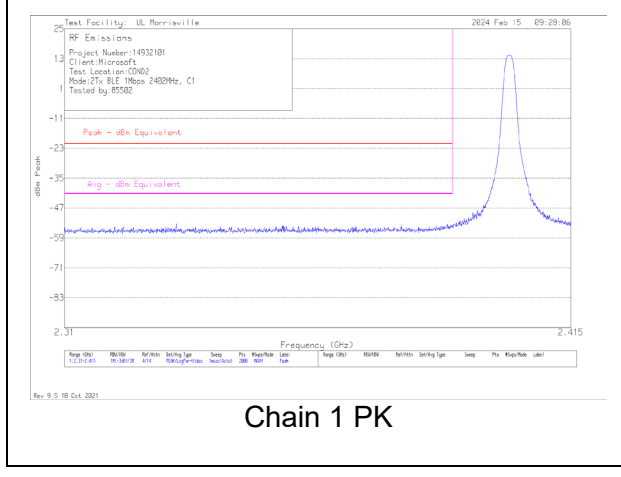
**10.7.1. BLE (1Mbps)  
 LOW CHANNEL RESTRICTED BAND EDGE**



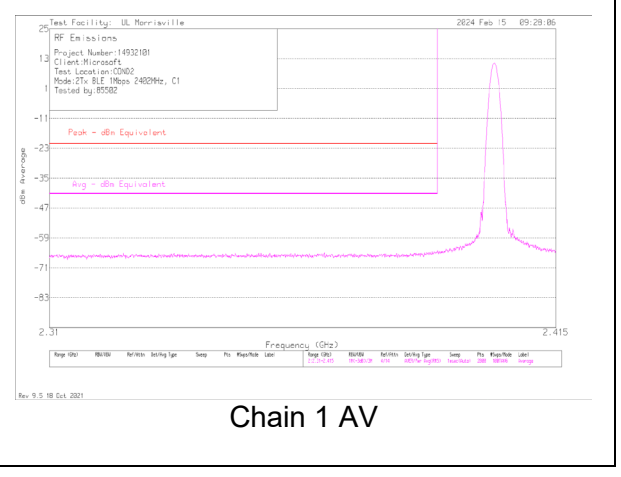
Chain 0 PK



Chain 0 AV



Chain 1 PK

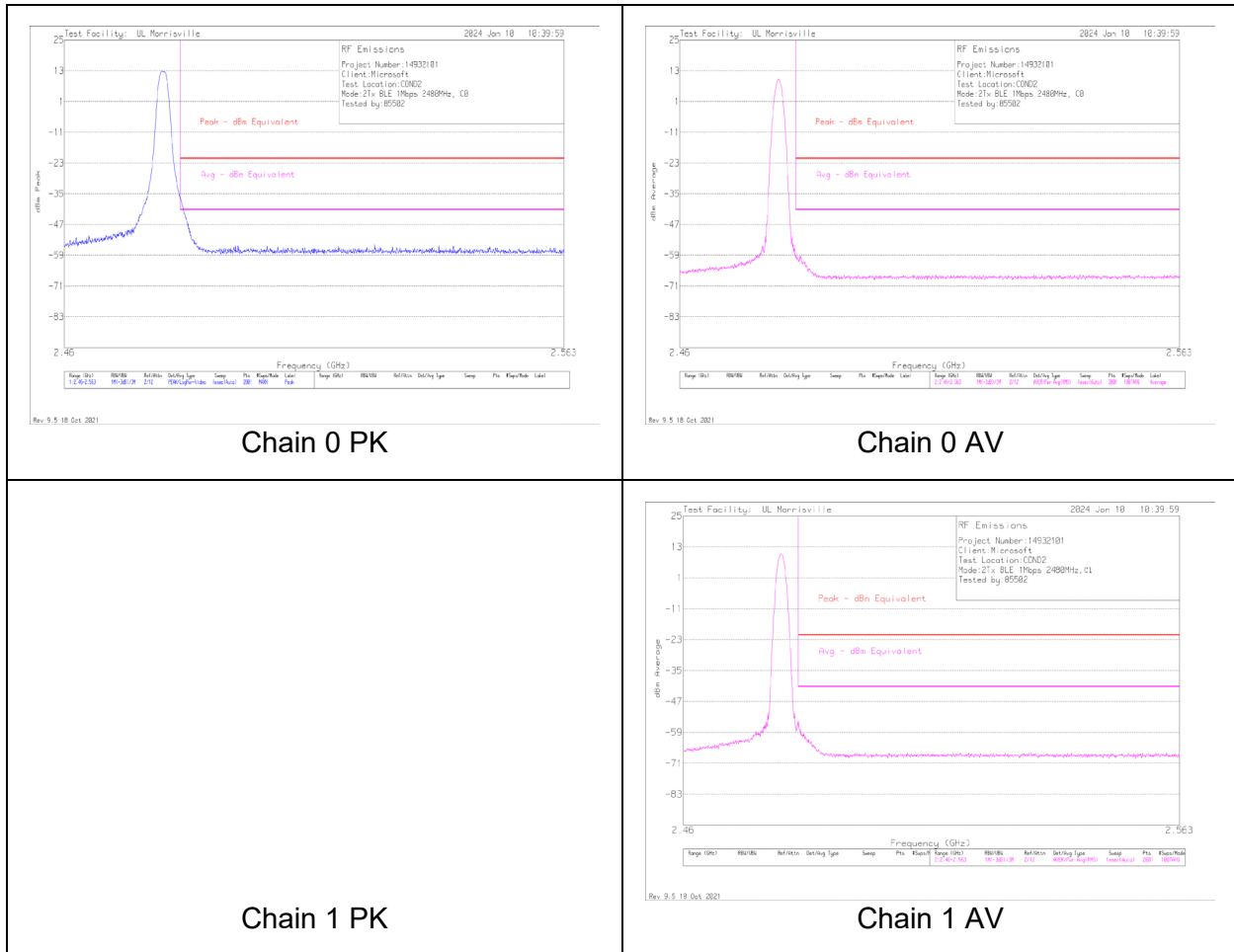


Chain 1 AV

Array Gain (dBi)	GRF (dB)	Meas. Dist (m)				
6.74	0	3				
DCCF (dB)	2.03					
Frequency (GHz)	Meter PK Reading Chain 0 (dBm)	Meter PK Reading Chain 1 (dBm)	PK EIRP (dBm)	PK E-field (dBuV/m)	PK E-field Limit (dBuV/m)	Margin (dB)
2.38984	-52.57	-53.9	-42.36	52.89	74	-21.11
Frequency (GHz)	Meter AV Reading Chain 0 (dBm)	Meter AV Reading Chain 1 (dBm)	AV EIRP (dBm)	AV E-field (dBuV/m)	AV E-field Limit (dBuV/m)	Margin (dB)
2.389734	-64.26	-64.89	-52.78	42.48	54	-11.52

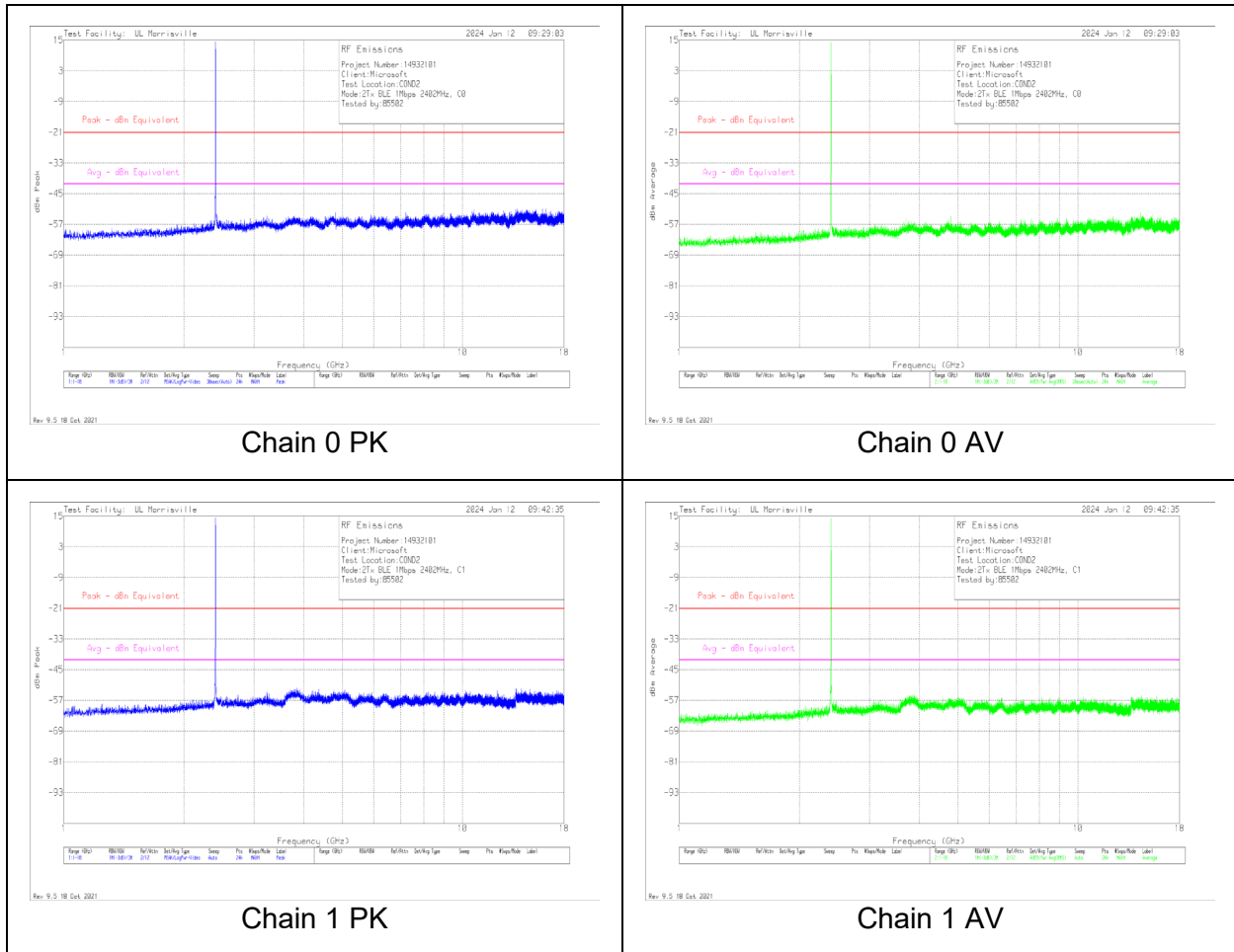


**HIGH CHANNEL RESTRICTED BAND EDGE**



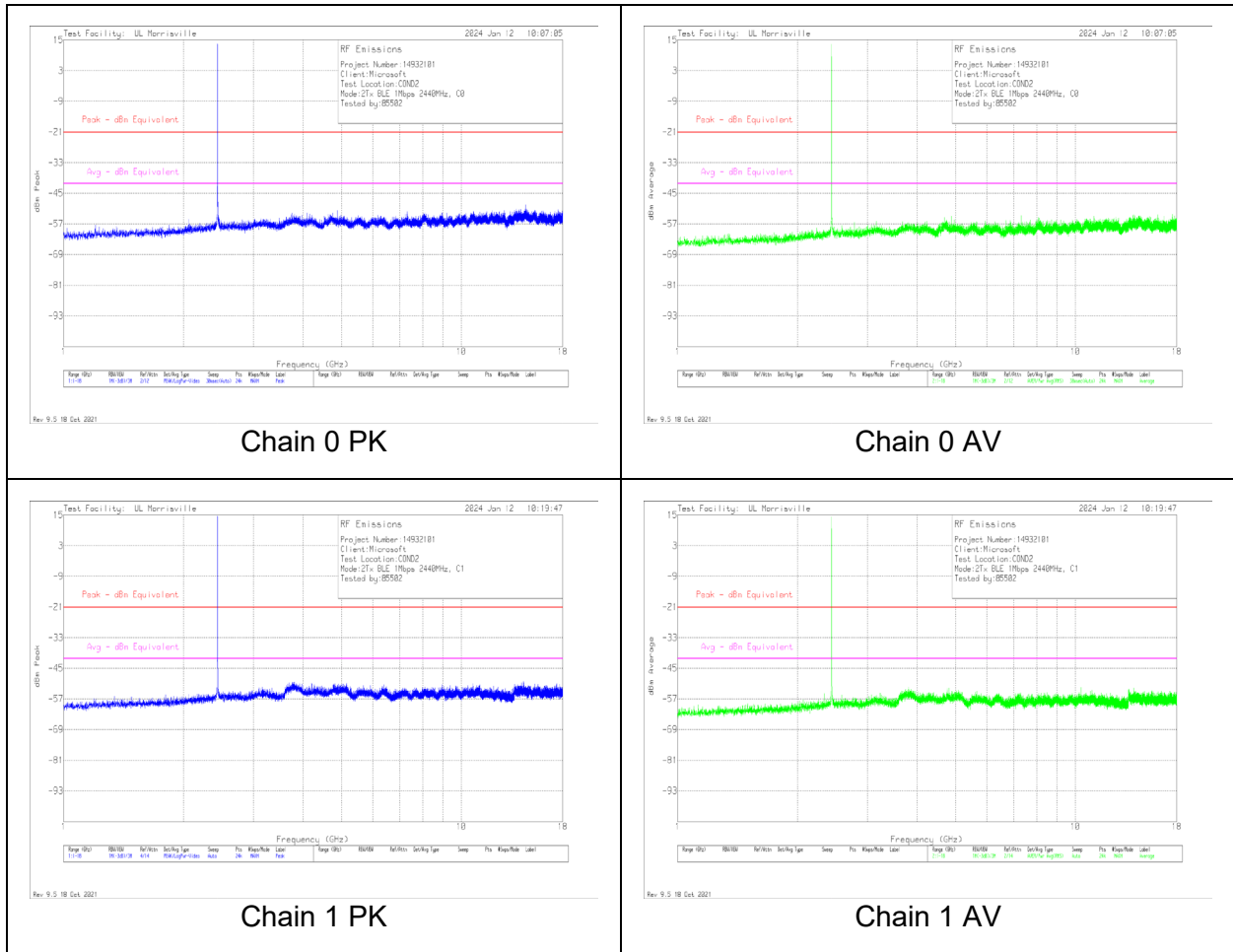
Array Gain (dBi)	GRF (dB)	Meas. Dist (m)				
6.74	0	3				
DCCF (dB)	2.03					
Frequency (GHz)	Meter PK Reading Chain 0 (dBm)	Meter PK Reading Chain 1 (dBm)	PK EIRP (dBm)	PK E-field (dBuV/m)	PK E-field Limit (dBuV/m)	Margin (dB)
2.483547	-36.82	-37.28	-27.29	67.96	74	-6.04
Frequency (GHz)	Meter AV Reading Chain 0 (dBm)	Meter AV Reading Chain 1 (dBm)	AV EIRP (dBm)	AV E-field (dBuV/m)	AV E-field Limit (dBuV/m)	Margin (dB)
2.483547	-58.42	-54.91	-44.54	50.72	54	-3.28

**LOW CHANNEL SPURIOUS: 1-18 GHz**



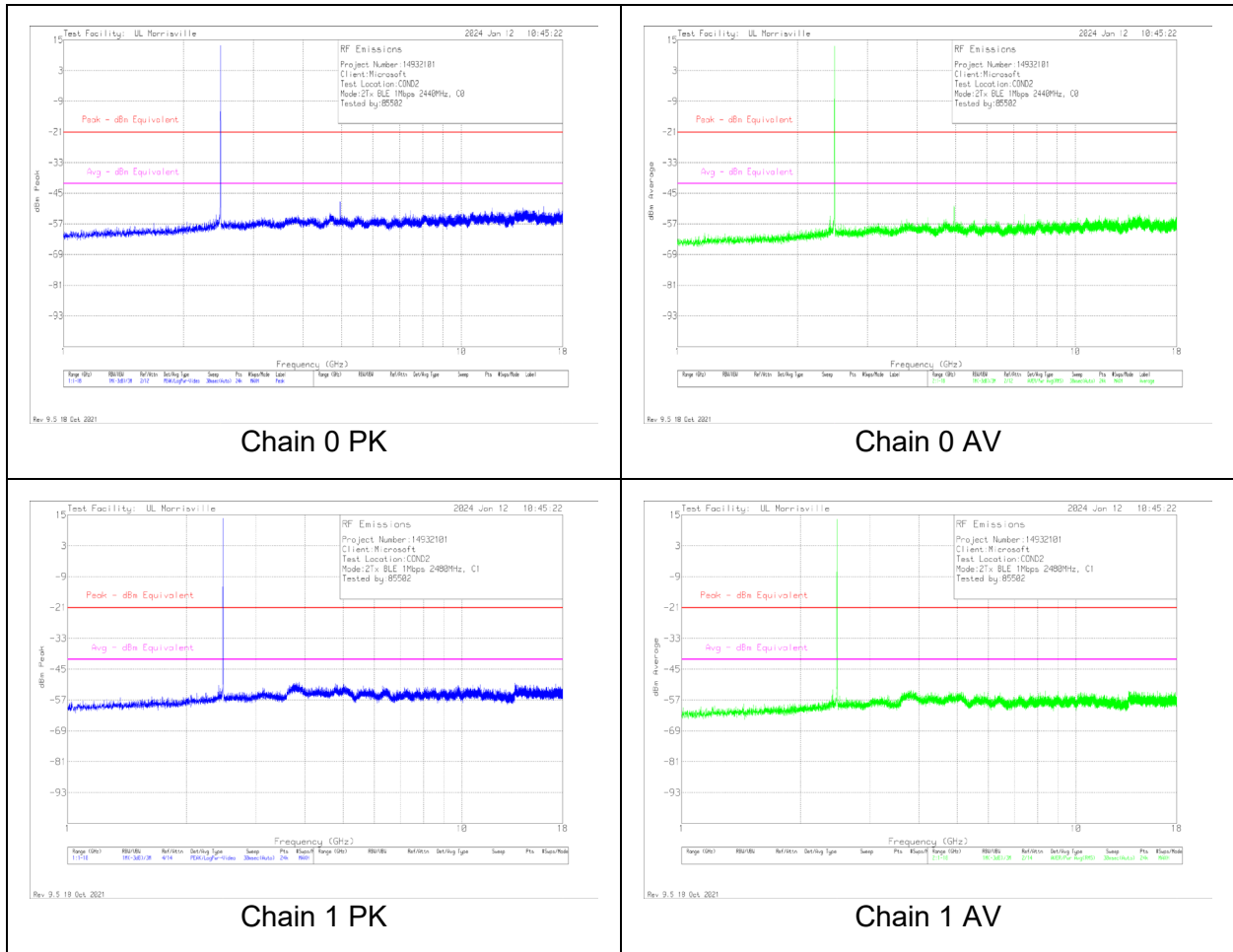
Array Gain (dBi)	GRF (dB)	Meas. Dist (m)				
6.74	0	3				
DCCF (dB)	2.03					
Frequency (GHz)	Meter PK Reading Chain 0 (dBm)	Meter PK Reading Chain 1 (dBm)	PK EIRP (dBm)	PK E-field (dBuV/m)	PK E-field Limit (dBuV/m)	PK E-field Margin (dB)
4.803201	-50.26	-53.48	-41.83	53.43	74	-20.57
Frequency (GHz)	Meter AV Reading Chain 0 (dBm)	Meter AV Reading Chain 1 (dBm)	AV EIRP (dBm)	AV E-field (dBuV/m)	AV E-field Limit (dBuV/m)	Margin (dB)
14.382837	-52.5	-58.23	-42.70	52.56	54	-1.44

**MID CHANNEL SPURIOUS: 1-18 GHz**



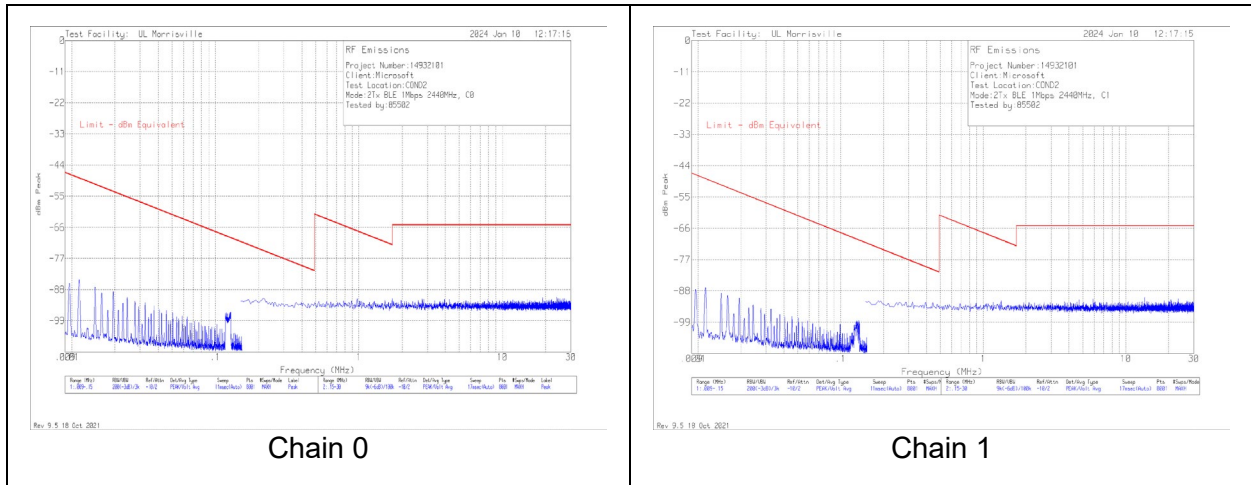
Array Gain (dBi)	GRF (dB)	Meas. Dist (m)				
6.74	0	3				
DCCF (dB)	2.03					
Frequency (GHz)	Meter PK Reading Chain 0 (dBm)	Meter PK Reading Chain 1 (dBm)	PK EIRP (dBm)	PK E-field (dBuV/m)	PK E-field Limit (dBuV/m)	PK E-field Margin (dB)
4.881121	-50.46	-55.02	-42.42	52.84	74	-21.16
Frequency (GHz)	Meter AV Reading Chain 0 (dBm)	Meter AV Reading Chain 1 (dBm)	AV EIRP (dBm)	AV E-field (dBuV/m)	AV E-field Limit (dBuV/m)	Margin (dB)
3.810431	-57.99	-52.35	-42.53	52.73	54	-1.27

**HIGH CHANNEL SPURIOUS: 1-18 GHz**



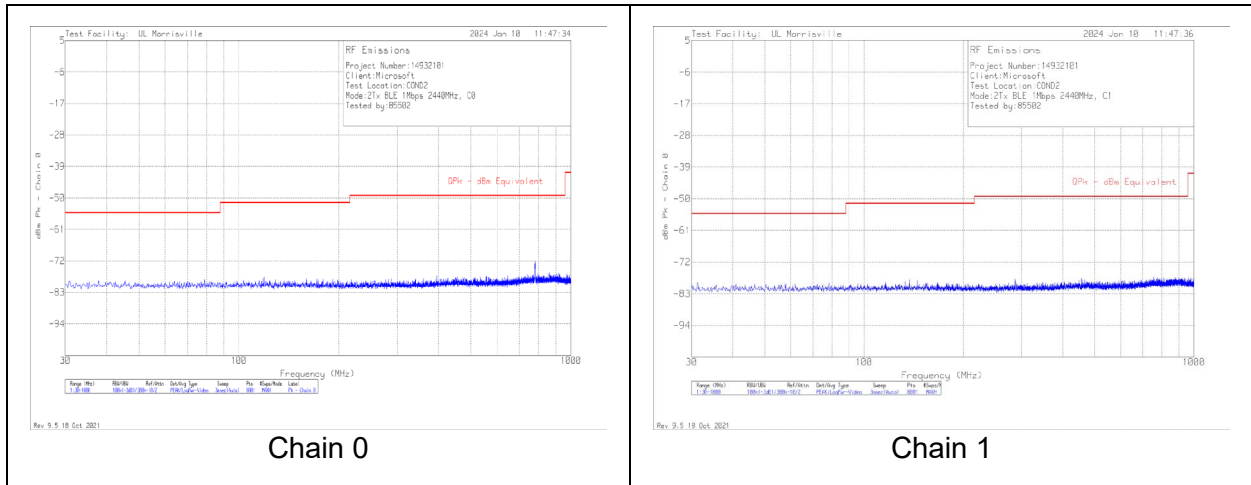
Array Gain (dBi)	GRF (dB)	Meas. Dist (m)				
6.74	0	3				
DCCF (dB)	2.03					
Frequency (GHz)	Meter PK Reading Chain 0 (dBm)	Meter PK Reading Chain 1 (dBm)	PK EIRP (dBm)	PK E-field (dBuV/m)	PK E-field Limit (dBuV/m)	PK E-field Margin (dB)
4.959749	-50.1	-52.05	-41.22	54.04	74	-19.96
Frequency (GHz)	Meter AV Reading Chain 0 (dBm)	Meter AV Reading Chain 1 (dBm)	AV EIRP (dBm)	AV E-field (dBuV/m)	AV E-field Limit (dBuV/m)	Margin (dB)
14.479162	-54.5	-54.67	-42.80	52.45	54	-1.55

**WORSE-CASE CHANNEL SPURIOUS: 0.009-30 MHz**



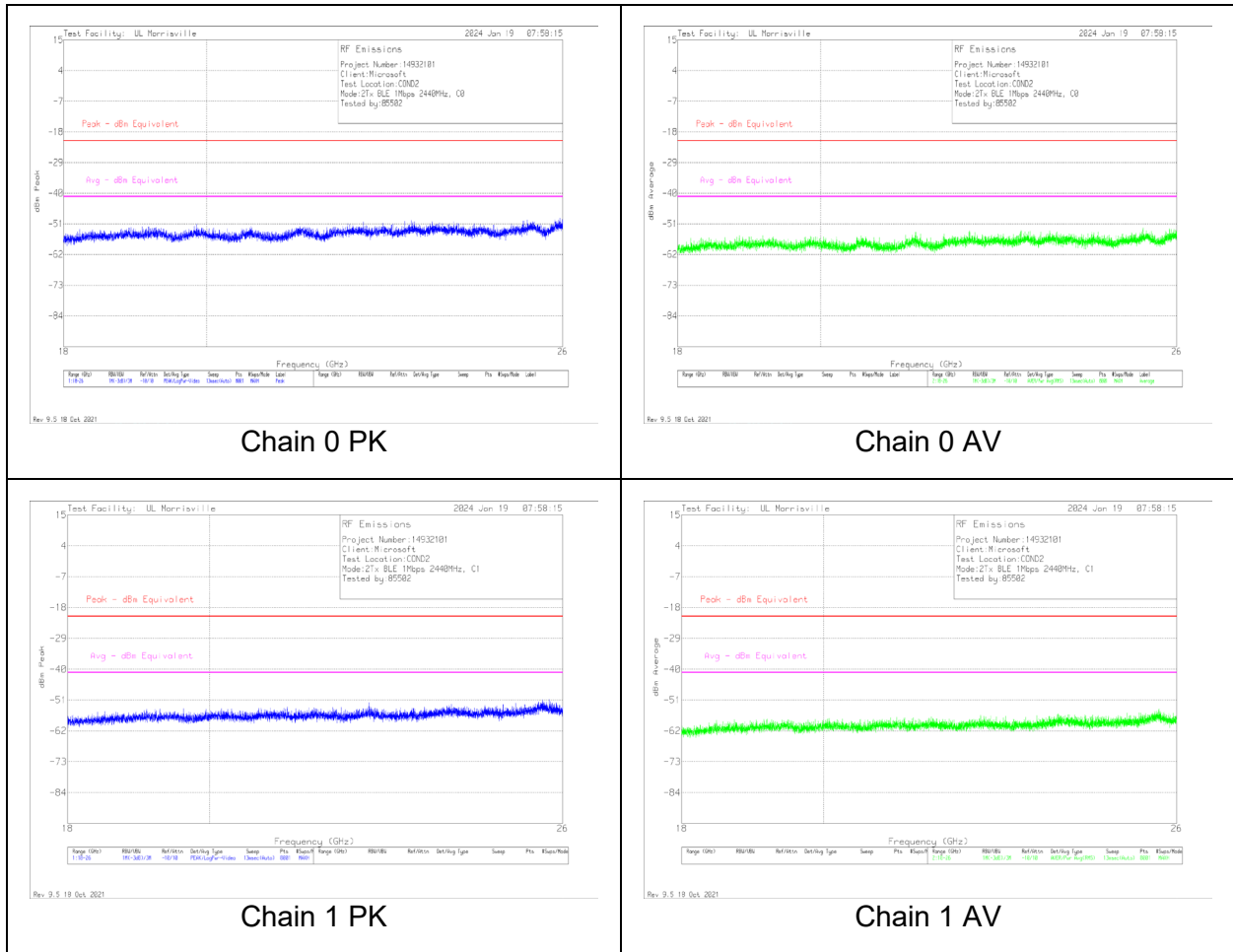
		Meas. Dist (m)				
Array Gain (dBi)	6.74	9-490kHz	0.49-30MHz			
GRF (dB):	6	300	30			
Frequency (MHz)	Meter PK Reading Chain 0 (dBm)	Meter PK Reading Chain 1 (dBm)	PK EIRP (dBm)	PK E-field (dBuV/m)	AV/QP E-field Limit (dBuV/m)	Margin (dB)
26.9720	-94.6	-90.29	-76.18	-0.92	46	-46.92

**WORSE-CASE CHANNEL SPURIOUS: 30-1000 MHz**



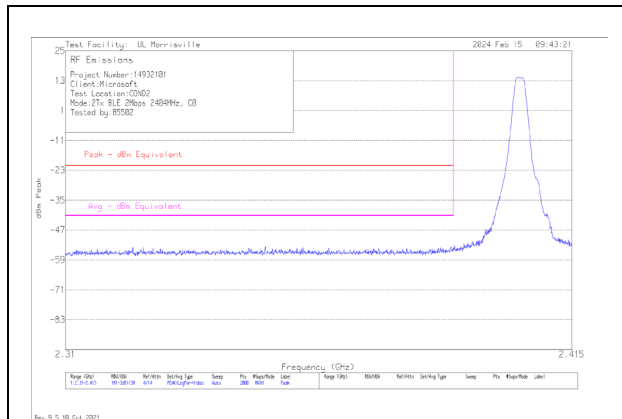
Array Gain (dBi)	GRF (dB)	Meas. Dist (m)				
6.74	4.7	3				
Frequency (MHz)	Meter PK Reading Chain 0 (dBm)	Meter PK Reading Chain 1 (dBm)	PK EIRP (dBm)	PK E-field (dBuV/m)	QPK E-field Limit (dBuV/m)	Margin (dB)
61.88875	-79.41	-79.64	-65.07	30.18	40	-9.82

**WORSE-CASE CHANNEL SPURIOUS: 18-26 GHz**

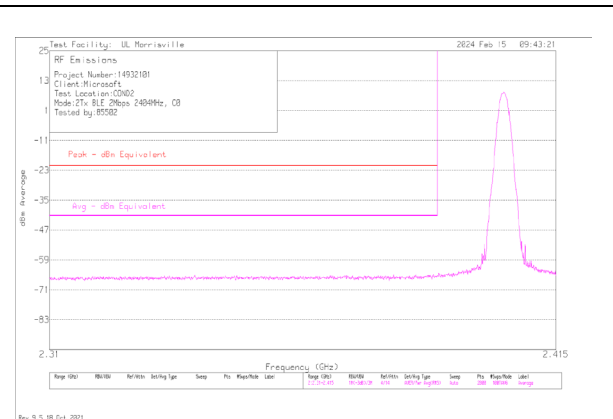


Array Gain (dBi)	GRF (dB)	Meas. Dist (m)				
6.74	0	3				
DCCF (dB)	2.03					
Frequency (GHz)	Meter PK Reading Chain 0 (dBm)	Meter PK Reading Chain 1 (dBm)	PK EIRP (dBm)	PK E-field (dBuV/m)	PK E-field Limit (dBuV/m)	PK E-field Margin (dB)
25.949	-48.95	-55.03	-41.25	54.00	74	-20.00
Frequency (GHz)	Meter AV Reading Chain 0 (dBm)	Meter AV Reading Chain 1 (dBm)	AV EIRP (dBm)	AV E-field (dBuV/m)	AV E-field Limit (dBuV/m)	Margin (dB)
25.862	-57.77	-52.66	-42.72	52.54	54	-1.46

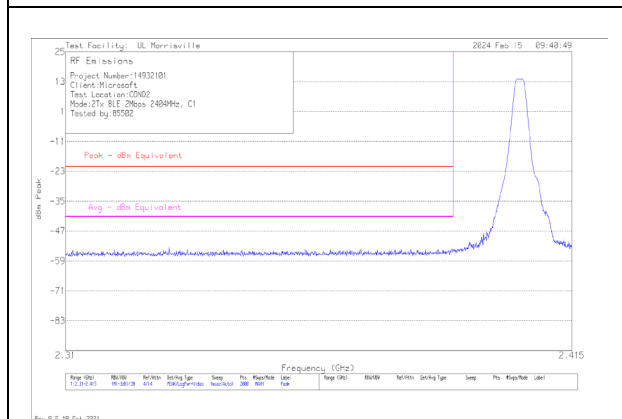
**10.7.2. BLE (2Mbps)  
 LOW CHANNEL RESTRICTED BAND EDGE**



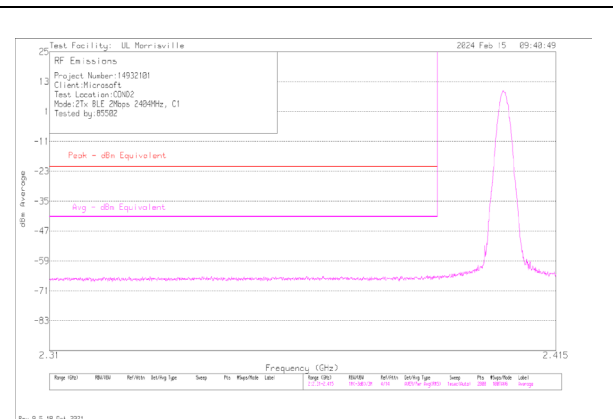
Chain 0 PK



Chain 0 AV



Chain 1 PK

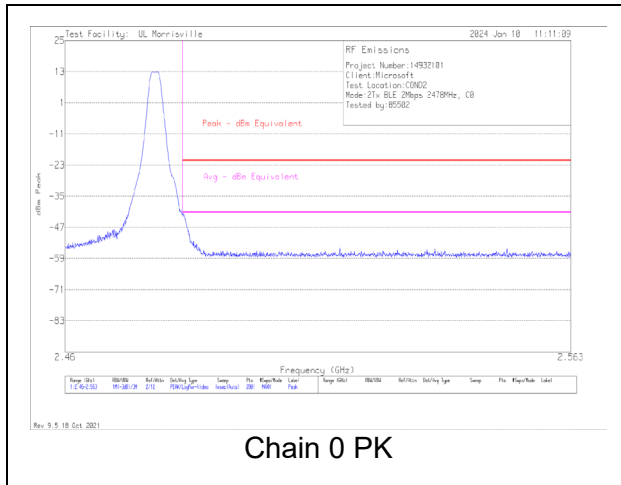


Chain 1 AV

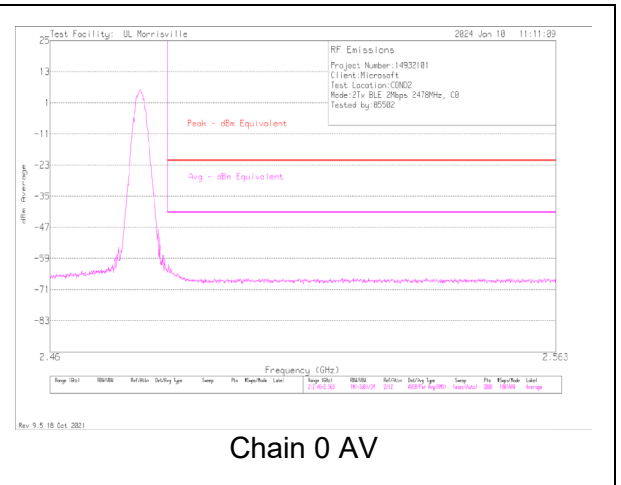
Array Gain (dBi)	GRF (dB)	Meas. Dist (m)				
6.74	0	3				
DCCF (dB)	4.87					
Frequency (GHz)	Meter PK Reading Chain 0 (dBm)	Meter PK Reading Chain 1 (dBm)	PK EIRP (dBm)	PK E-field (dBuV/m)	PK E-field Limit (dBuV/m)	Margin (dB)
2.389997	-54.13	-54.49	-44.56	50.70	74	-23.30
Frequency (GHz)	Meter AV Reading Chain 0 (dBm)	Meter AV Reading Chain 1 (dBm)	AV EIRP (dBm)	AV E-field (dBuV/m)	AV E-field Limit (dBuV/m)	Margin (dB)
2.389104	-64.91	-65.24	-50.45	44.81	54	-9.19



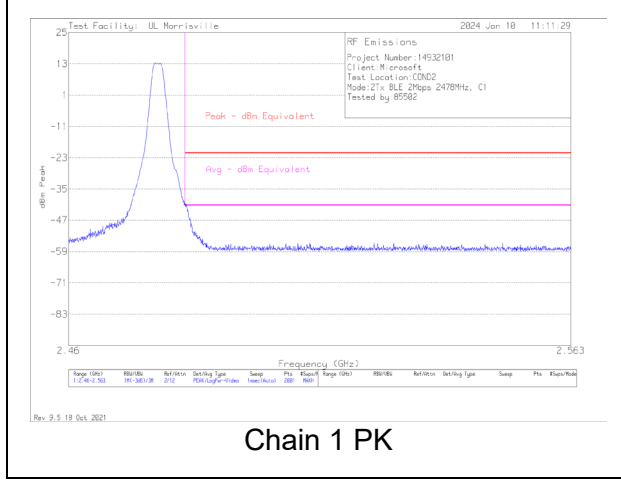
**HIGH CHANNEL RESTRICTED BAND EDGE**



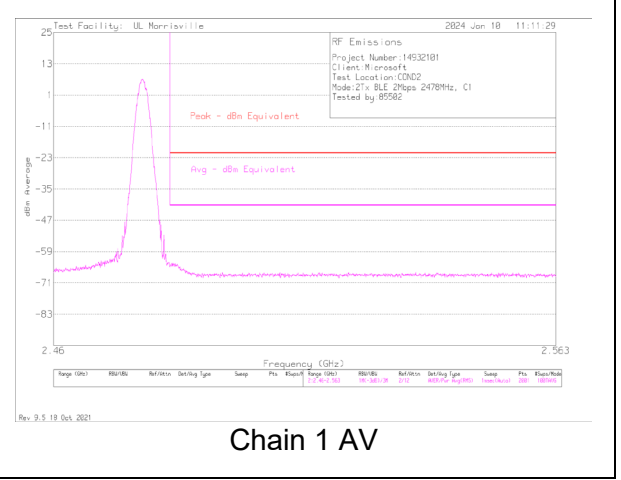
Chain 0 PK



Chain 0 AV



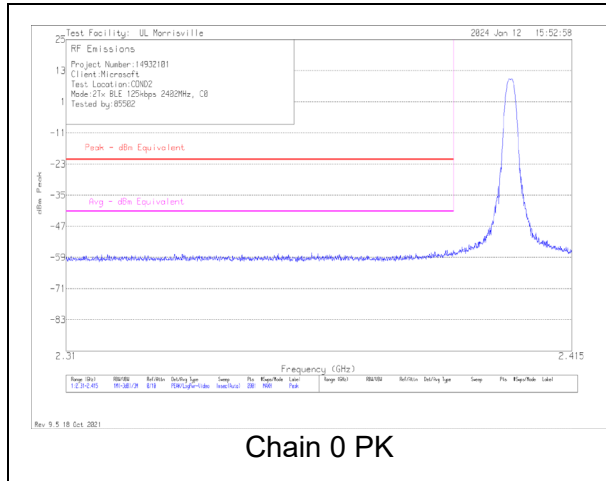
Chain 1 PK



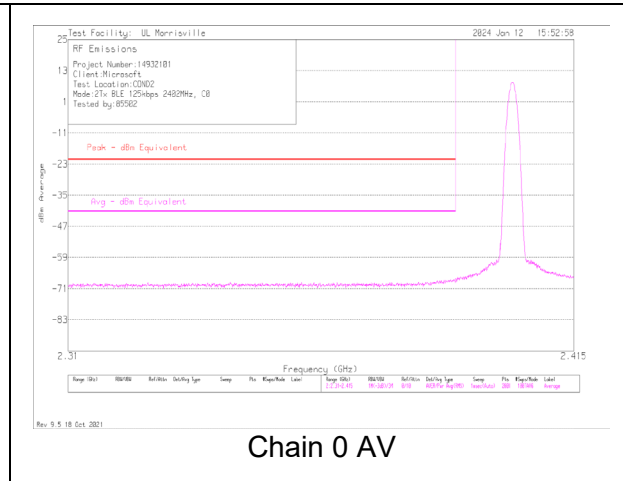
Chain 1 AV

Array Gain (dBi)	GRF (dB)	Meas. Dist (m)				
6.74	0	3				
DCCF (dB)	4.87					
Frequency (GHz)	Meter PK Reading Chain 0 (dBm)	Meter PK Reading Chain 1 (dBm)	PK EIRP (dBm)	PK E-field (dBuV/m)	PK E-field Limit (dBuV/m)	Margin (dB)
2.483702	-41.95	-40.59	-31.47	63.79	74	-10.21
Frequency (GHz)	Meter AV Reading Chain 0 (dBm)	Meter AV Reading Chain 1 (dBm)	AV EIRP (dBm)	AV E-field (dBuV/m)	AV E-field Limit (dBuV/m)	Margin (dB)
2.483702	-61.27	-63.83	-47.74	47.51	54	-6.49

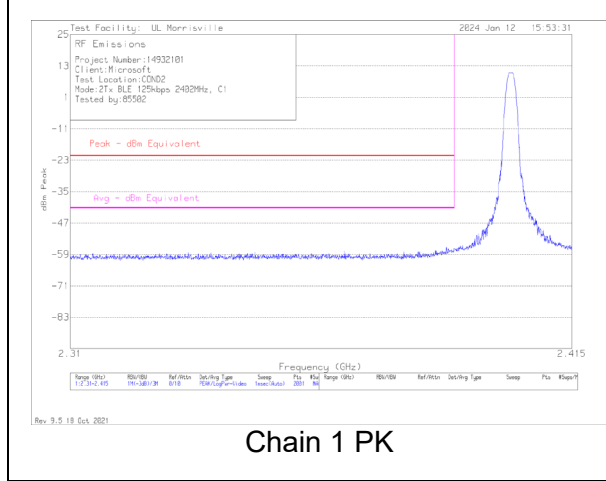
**10.7.3. BLE (125kbps)**  
**LOW CHANNEL RESTRICTED BAND EDGE**



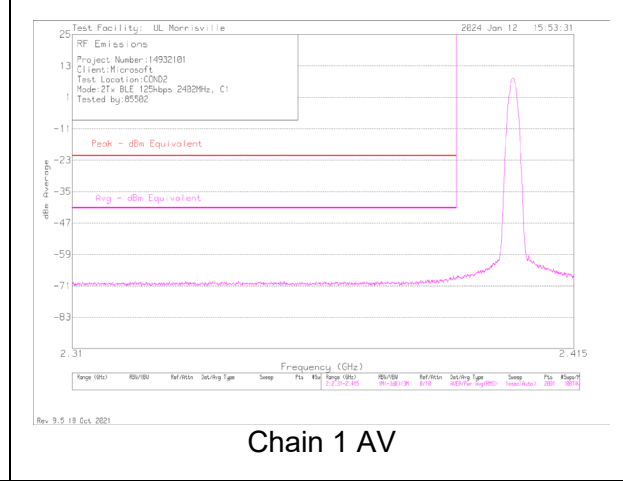
Chain 0 PK



Chain 0 AV



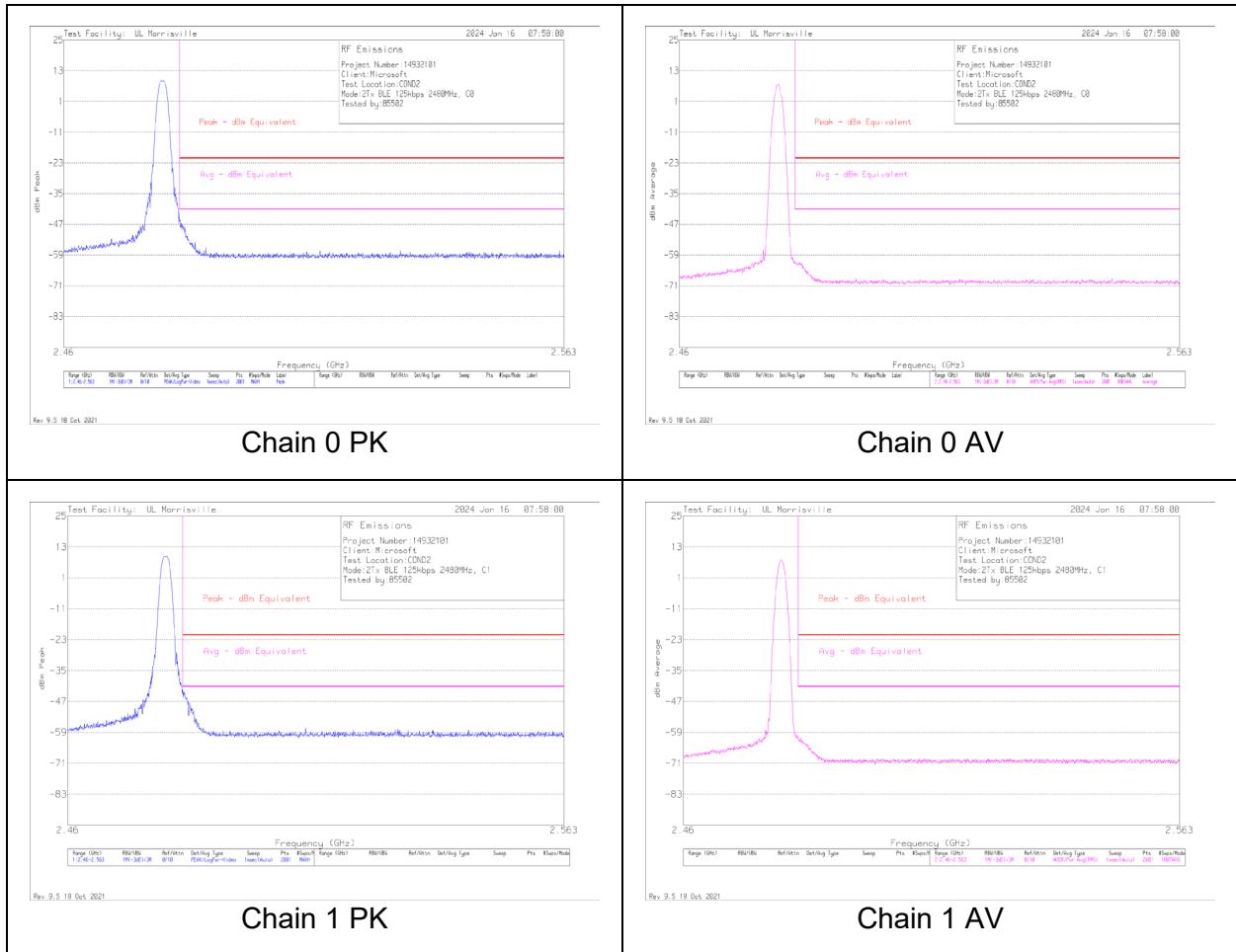
Chain 1 PK



Chain 1 AV

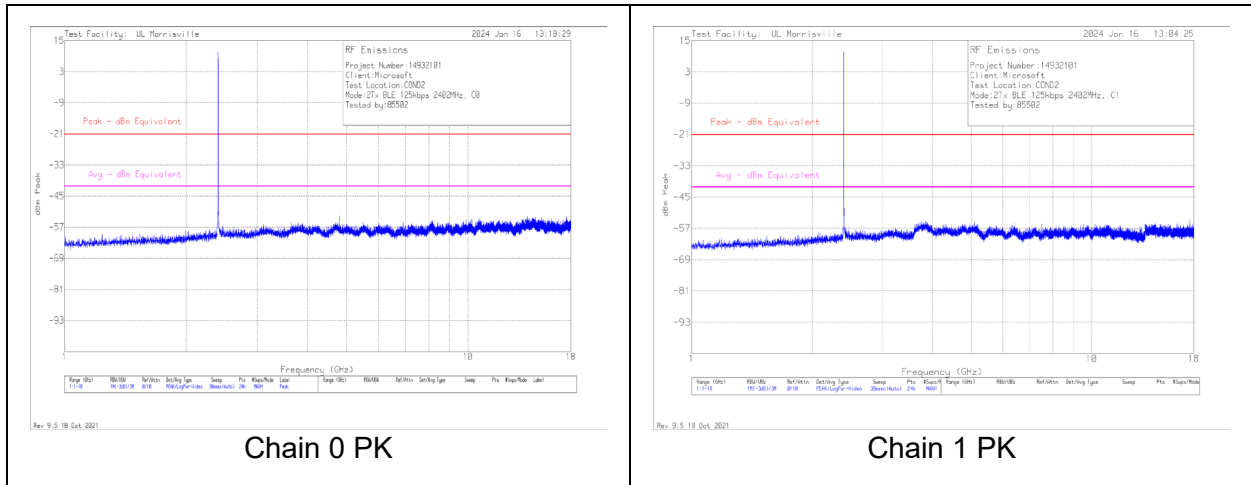
Array Gain (dBi)	GRF (dB)	Meas. Dist (m)				
6.74	0	3				
DCCF (dB)	0.82					
Frequency (GHz)	Meter PK Reading Chain 0 (dBm)	Meter PK Reading Chain 1 (dBm)	PK EIRP (dBm)	PK E-field (dBuV/m)	PK E-field Limit (dBuV/m)	Margin (dB)
2.388369	-56.35	-56.25	-46.55	48.71	74	-25.29
Frequency (GHz)	Meter AV Reading Chain 0 (dBm)	Meter AV Reading Chain 1 (dBm)	AV EIRP (dBm)	AV E-field (dBuV/m)	AV E-field Limit (dBuV/m)	Margin (dB)
2.389419	-67.95	-67.12	-56.95	38.31	54	-15.69

**HIGH CHANNEL RESTRICTED BAND EDGE**



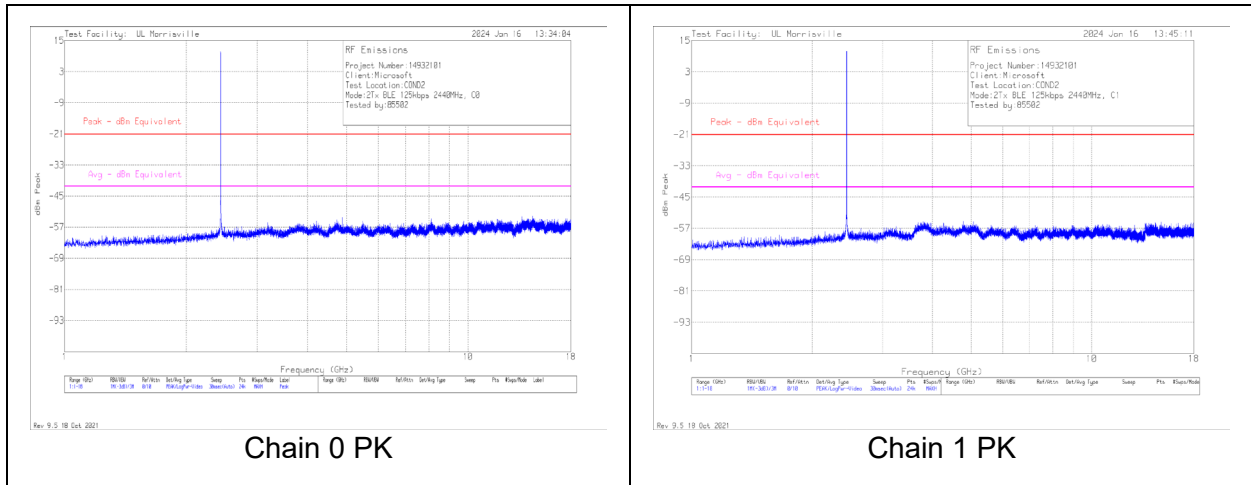
Array Gain (dBi)	GRF (dB)	Meas. Dist (m)				
6.74	0	3				
DCCF (dB)	0.82					
Frequency (GHz)	Meter PK Reading Chain 0 (dBm)	Meter PK Reading Chain 1 (dBm)	PK EIRP (dBm)	PK E-field (dBuV/m)	PK E-field Limit (dBuV/m)	Margin (dB)
2.483599	-45.84	-43.5	-34.76	60.49	74	-13.51
Frequency (GHz)	Meter AV Reading Chain 0 (dBm)	Meter AV Reading Chain 1 (dBm)	AV EIRP (dBm)	AV E-field (dBuV/m)	AV E-field Limit (dBuV/m)	Margin (dB)
2.484063	-62.6	-61.16	-51.25	44.01	54	-9.99

**LOW CHANNEL SPURIOUS: 1-18 GHz**



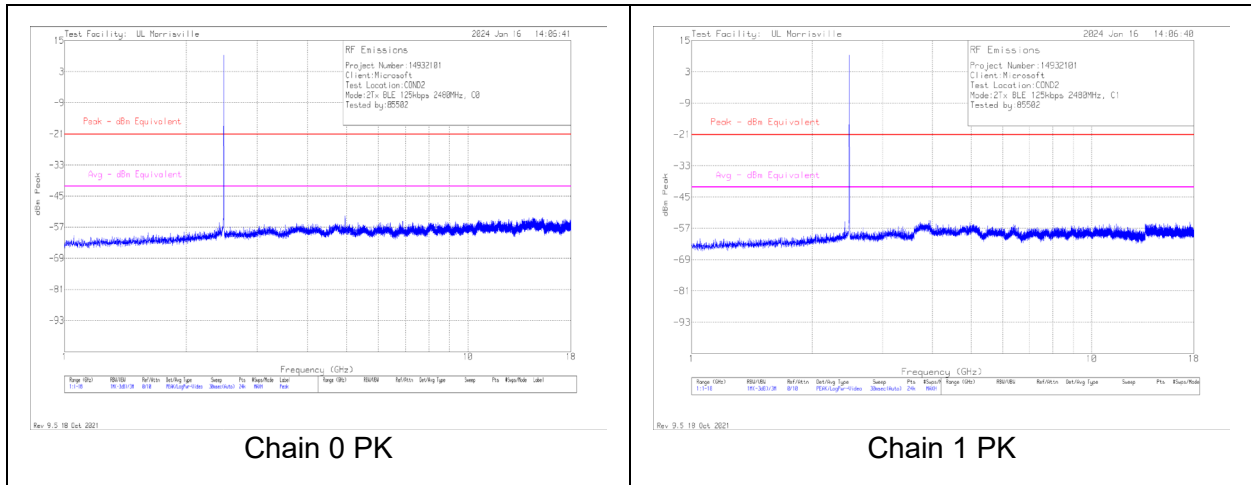
Array Gain (dBi)	GRF (dB)	Meas. Dist (m)				
6.74	0	3				
Frequency (GHz)	Meter PK Reading Chain 0 (dBm)	Meter PK Reading Chain 1 (dBm)	PK EIRP (dBm)	PK E-field (dBuV/m)	PK E-field Limit (dBuV/m)	PK E-field Margin (dB)
14.023962	-52.77	-57.47	-44.76	50.49	74	-23.51
Frequency (GHz)	Meter AV Reading Chain 0 (dBm)	Meter AV Reading Chain 1 (dBm)	AV EIRP (dBm)	AV E-field (dBuV/m)	AV E-field Limit (dBuV/m)	Margin (dB)
14.023962	-52.77	-57.47	-43.94	51.31	54	-2.69

**MID CHANNEL SPURIOUS: 1-18 GHz**



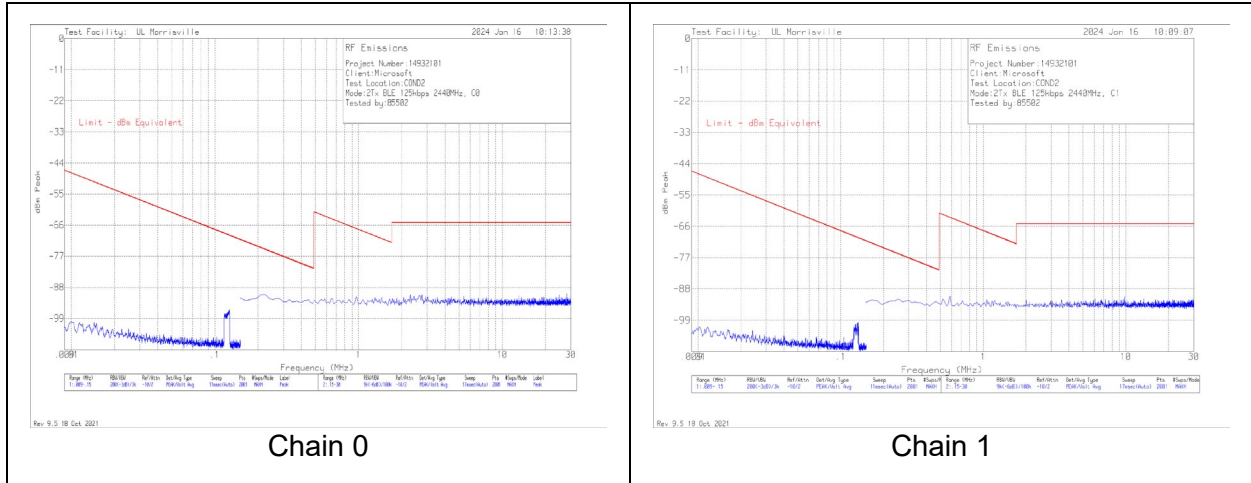
Array Gain (dBi)	GRF (dB)	Meas. Dist (m)				
6.74	0	3				
Frequency (GHz)	Meter PK Reading Chain 0 (dBm)	Meter PK Reading Chain 1 (dBm)	PK EIRP (dBm)	PK E-field (dBuV/m)	PK E-field Limit (dBuV/m)	PK E-field Margin (dB)
13.612403	-53.02	-57.24	-44.89	50.37	74	-23.63
Frequency (GHz)	Meter AV Reading Chain 0 (dBm)	Meter AV Reading Chain 1 (dBm)	AV EIRP (dBm)	AV E-field (dBuV/m)	AV E-field Limit (dBuV/m)	Margin (dB)
13.612403	-53.02	-57.24	-44.89	50.37	54	-3.63

**HIGH CHANNEL SPURIOUS: 1-18 GHz**



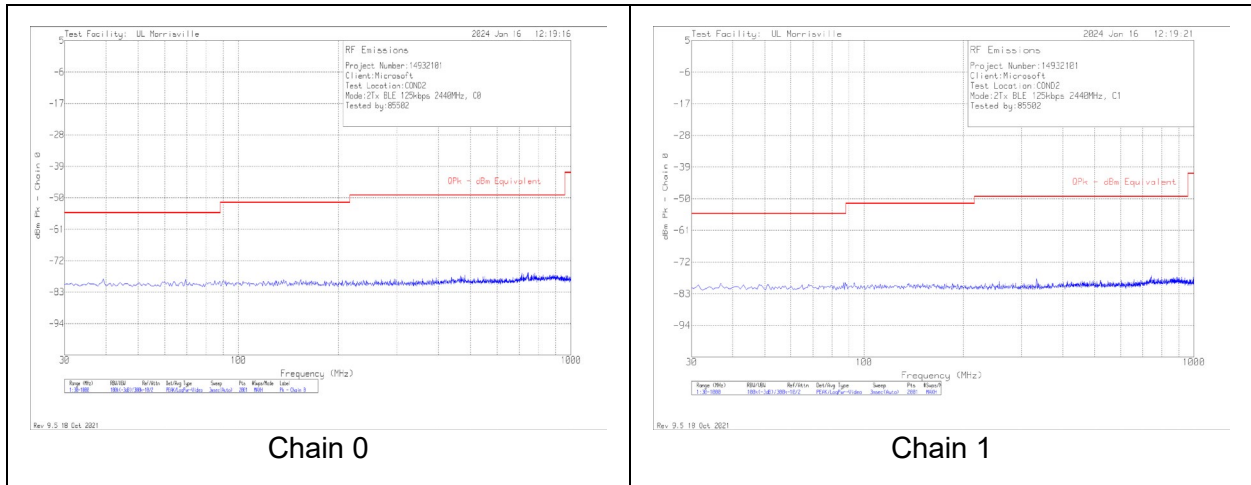
Array Gain (dBi)	GRF (dB)	Meas. Dist (m)				
6.74	0	3				
Frequency (GHz)	Meter PK Reading Chain 0 (dBm)	Meter PK Reading Chain 1 (dBm)	PK EIRP (dBm)	PK E-field (dBuV/m)	PK E-field Limit (dBuV/m)	PK E-field Margin (dB)
4.959749	-52.66	-54.78	-43.84	51.42	74	-22.58
Frequency (GHz)	Meter AV Reading Chain 0 (dBm)	Meter AV Reading Chain 1 (dBm)	AV EIRP (dBm)	AV E-field (dBuV/m)	AV E-field Limit (dBuV/m)	Margin (dB)
4.959749	-52.66	-54.78	-43.84	51.42	54	-2.58

**WORSE-CASE CHANNEL SPURIOUS: 0.009-30 MHz**



		Meas. Dist (m)				
Array Gain (dBi)	6.74	9-490kHz	0.49-30MHz			
GRF (dB):	6	300	30			
Frequency (MHz)	Meter PK Reading Chain 0 (dBm)	Meter PK Reading Chain 1 (dBm)	PK EIRP (dBm)	PK E-field (dBuV/m)	AV/QP E-field Limit (dBuV/m)	Margin (dB)
1.6574	-92.61	-93.17	-77.13	-1.87	23.2	-25.09

**WORSE-CASE CHANNEL SPURIOUS: 30-1000 MHz**



Array Gain (dBi)	GRF (dB)	Meas. Dist (m)				
6.74	4.7	3				
Frequency (MHz)	Meter PK Reading Chain 0 (dBm)	Meter PK Reading Chain 1 (dBm)	PK EIRP (dBm)	PK E-field (dBuV/m)	QPK E-field Limit (dBuV/m)	Margin (dB)
136.70	-78.68	-79.5	-64.62	30.64	40	-9.36