

## 9.8. LP SPURIOUS EMISSIONS IN-BAND – EMISSION MASK

### LIMITS

#### **FCC §15.407**

(b)(7) For transmitters operating within the 5.925-7.125 GHz bands: power spectral density must be suppressed by 20 dB at 1 MHz outside of channel edge, by 28 dB at one channel bandwidth from the channel center, and by 40 dB at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression, and at frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression. Emissions removed from the channel center by more than one- and one-half times the channel bandwidth must be suppressed by at least 40 dB.

### TEST PROCEDURE

Follow KDB 987594 D02, Section II-J, RBW & VBW settings were based on 26dB bandwidth test settings. Only RU26 tone for all bandwidths, the RBW & VBW settings were used equal or greater than 26dB bandwidth test settings.

Band	Tones	*20MHz (RBW/VBW)	*40MHz (RBW/VBW)	*80MHz (RBW/VBW)	*160MHz (RBW/VBW)
UNII- 5/6/7/8	Partial RU	MRU106+26T: 300kHz/910kHz 52T: 300kHz/910kHz 106T: 300kHz/910kHz	52T: 510kHz/1.6MHz 106T: 510kHz/1.6MHz 242T: 510kHz/1.6MHz	484T: 820kHz/2.7MHz MRU484+242T: 1MHz/3MHz	52T: 510kHz/1.6MHz (UNII-5/-7) 52T: 820kHz/2.7MHz (UINI-6) 484T: 820kHz/2.7MHz MRU484+242T: 1MHz/3MHz
	SU	300kHz/910kHz	510kHz/1.6MHz	1MHz/3MHz	2MHz/6MHz

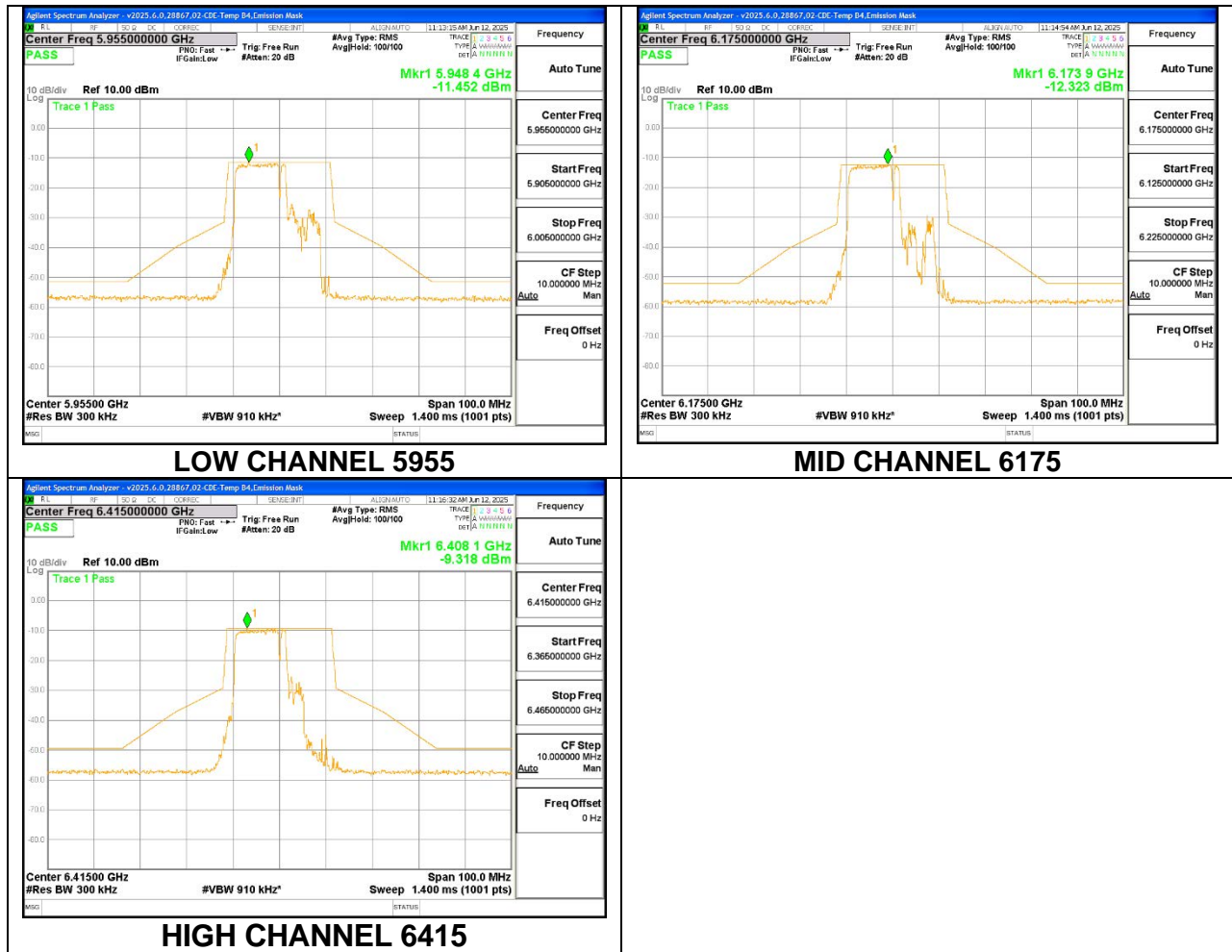
\*Different RBW/VBW due to different partial tones.

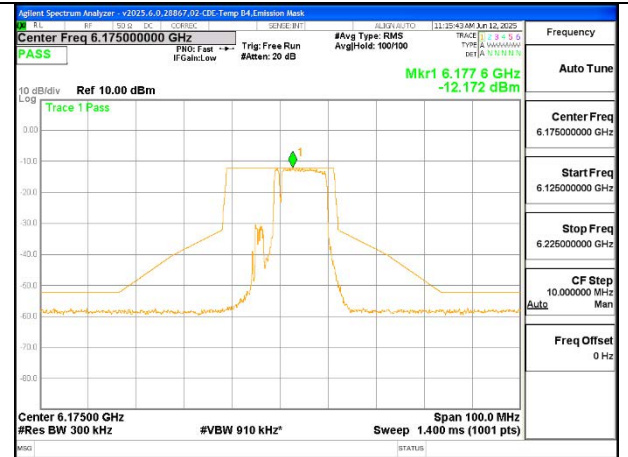
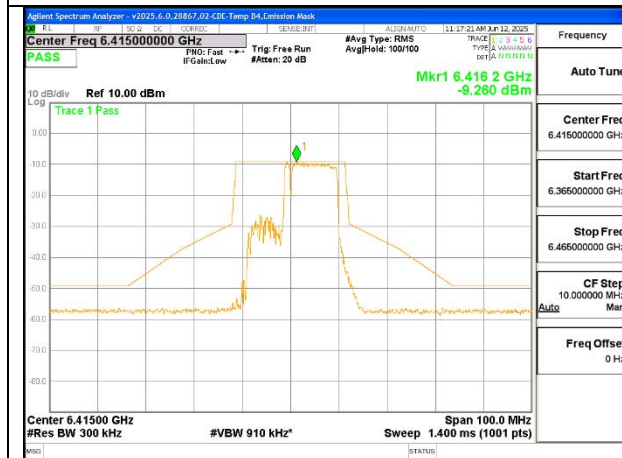
### RESULTS

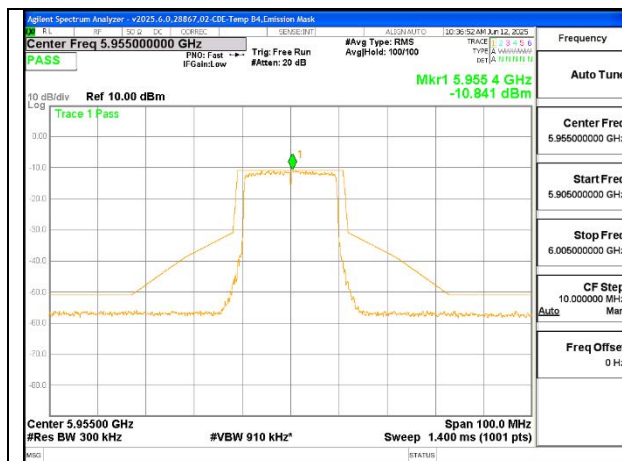
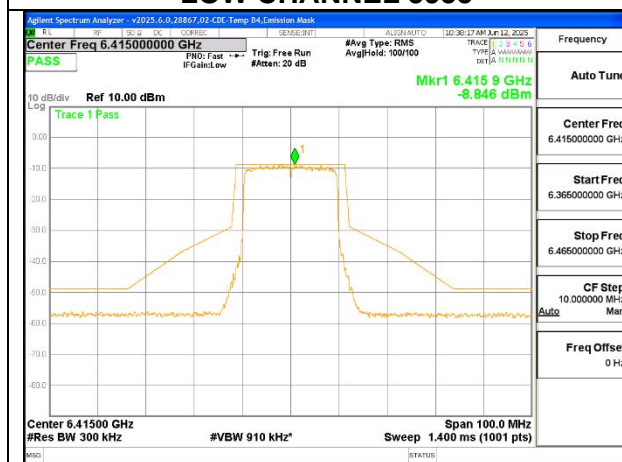
For mask and bandwidth measurements partial RU allocations are tested with the RUs allocated at the lower and upper positions within the channel for the low, mid and high channels in each band. Additionally, the mid channel is also tested with the RU allocated in the center of the channel to verify that the low / high RU allocations are worst case.

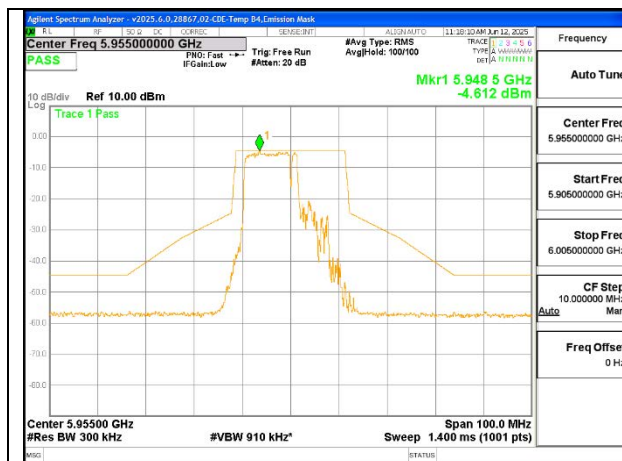
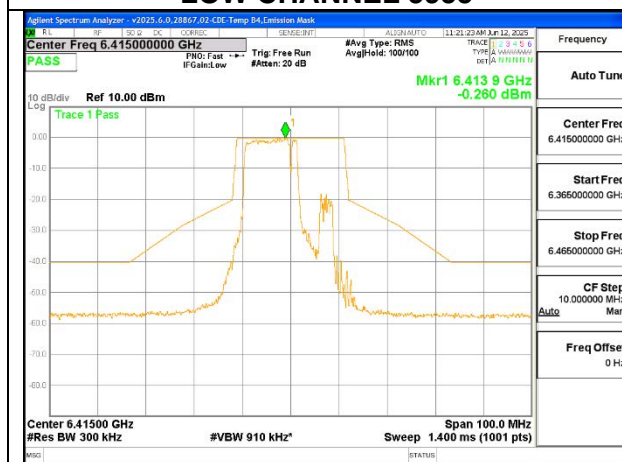
### 9.8.1. 802.11be EHT20 MODE IN THE UNII-5 BAND

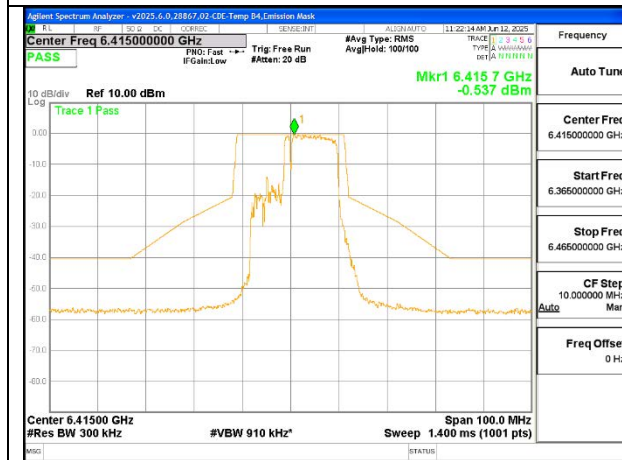
#### 1TX Antenna 6 MODE (FCC+IC) MOBILE – MRU106+26-Tones, RU Index 82

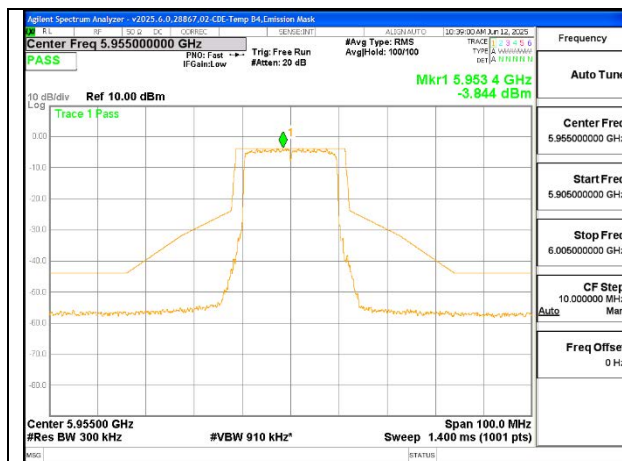
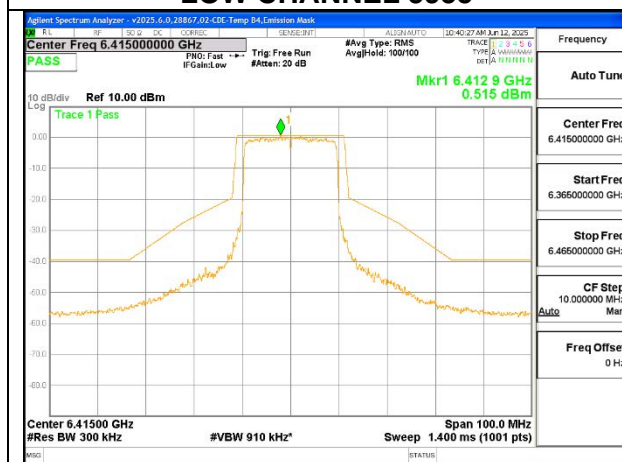


**1TX Antenna 6 MODE (FCC+IC) MOBILE – MRU106+26-Tones, RU Index 83****LOW CHANNEL 5955****MID CHANNEL 6175****HIGH CHANNEL 6415**

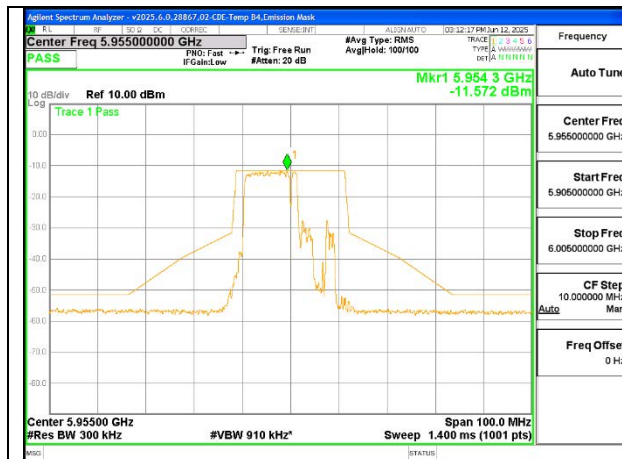
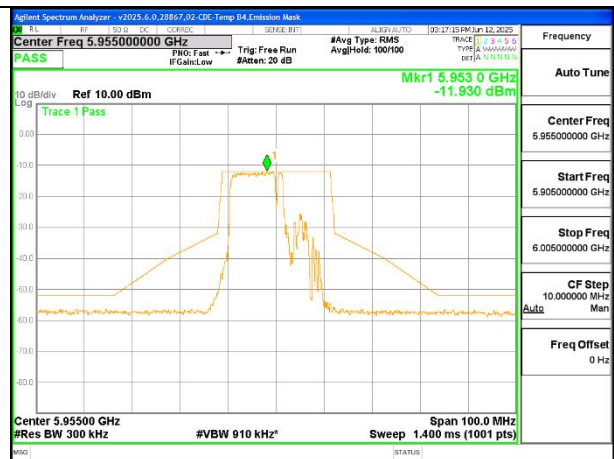
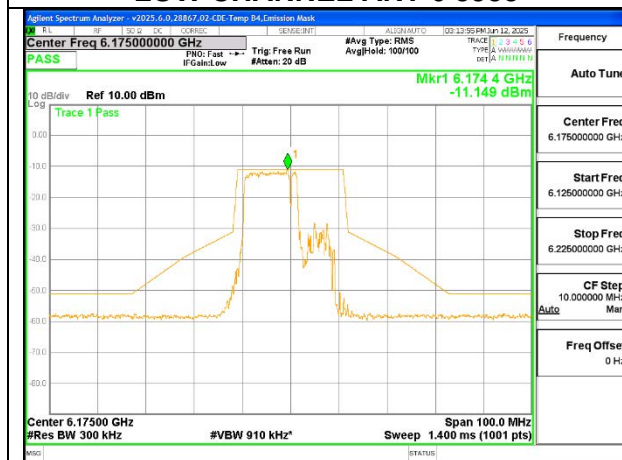
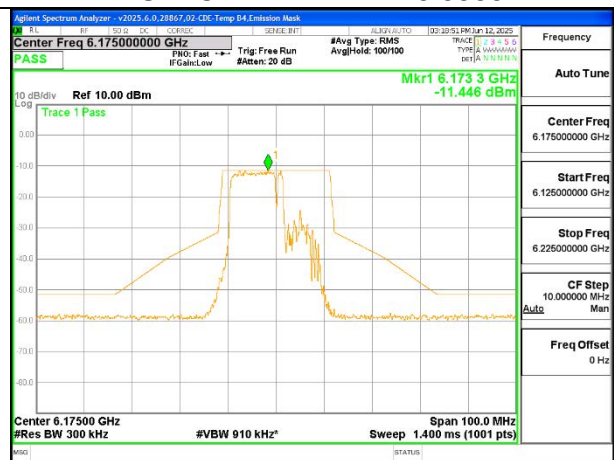
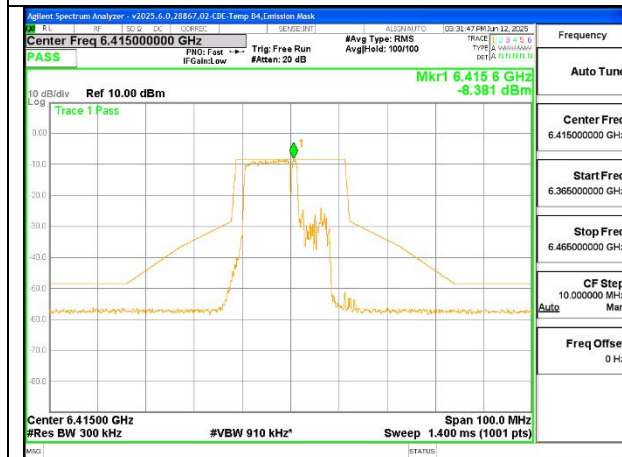
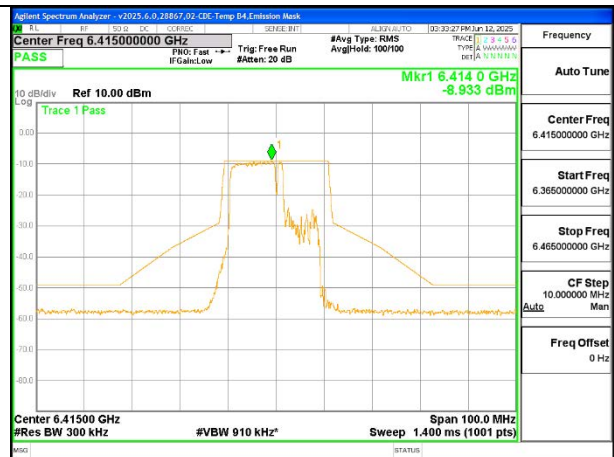
**1TX Antenna 6 MODE (FCC+IC) MOBILE – SU MODE****LOW CHANNEL 5955****MID CHANNEL 6175****HIGH CHANNEL 6415**

**1TX Antenna 5 MODE (FCC+IC) MOBILE – MRU106+26-Tones, RU Index 82****LOW CHANNEL 5955****MID CHANNEL 6175****HIGH CHANNEL 6415**

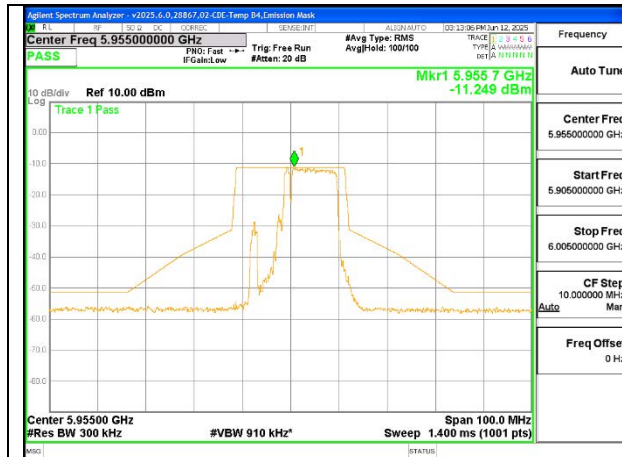
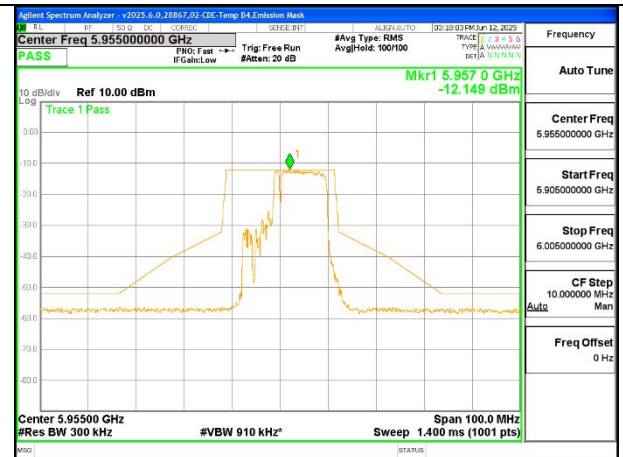
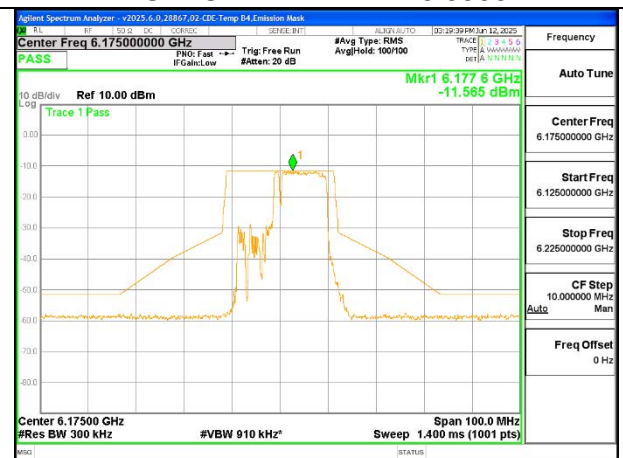
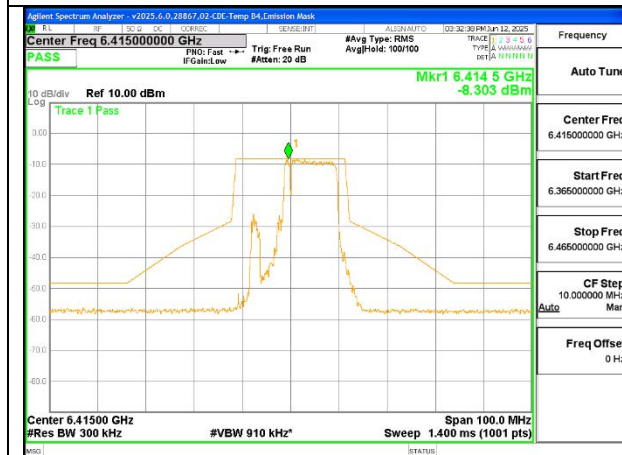
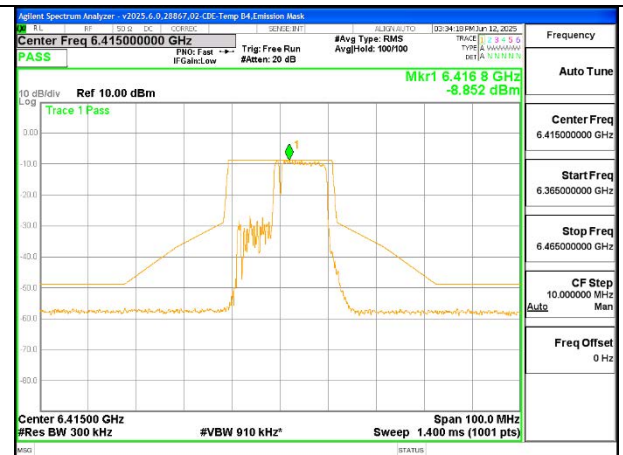
**1TX Antenna 5 MODE (FCC+IC) MOBILE – MRU106+26-Tones, RU Index 83****LOW CHANNEL 5955****MID CHANNEL 6175****HIGH CHANNEL 6415**

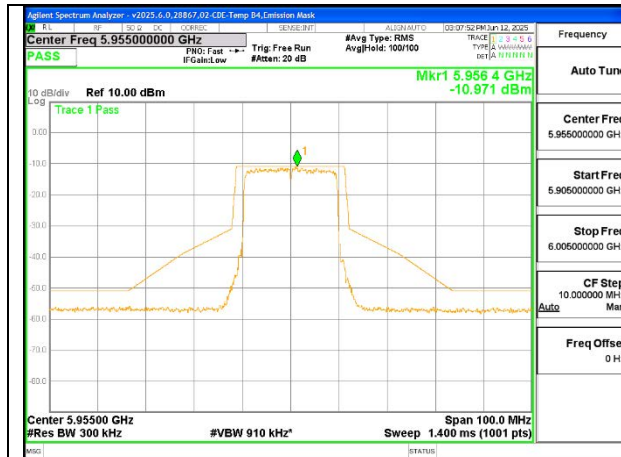
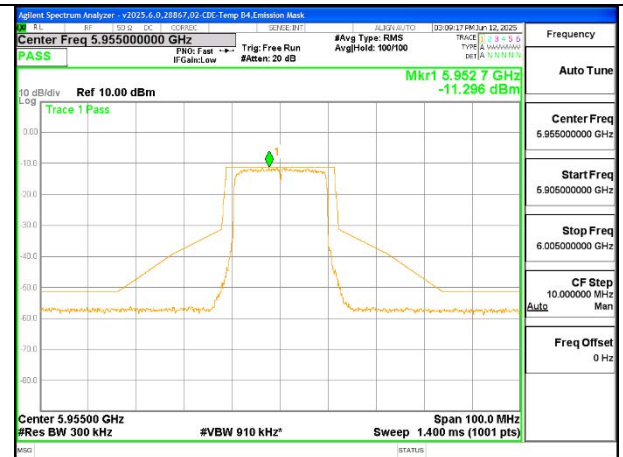
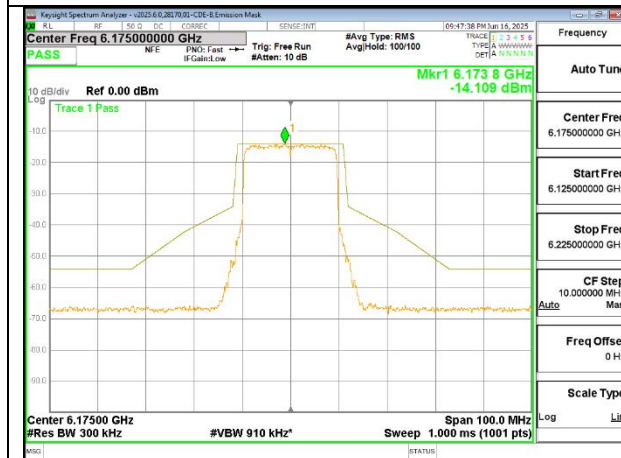
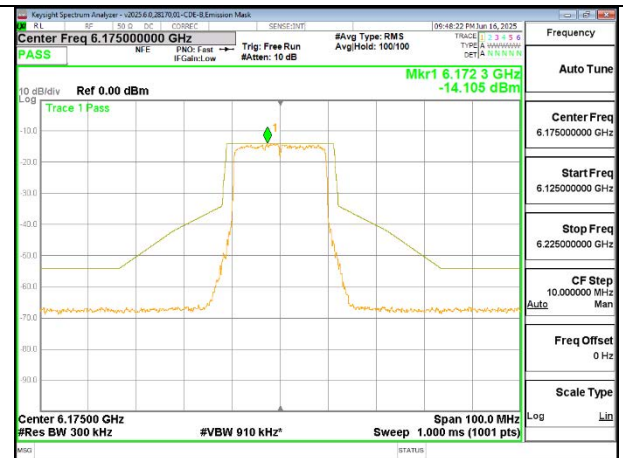
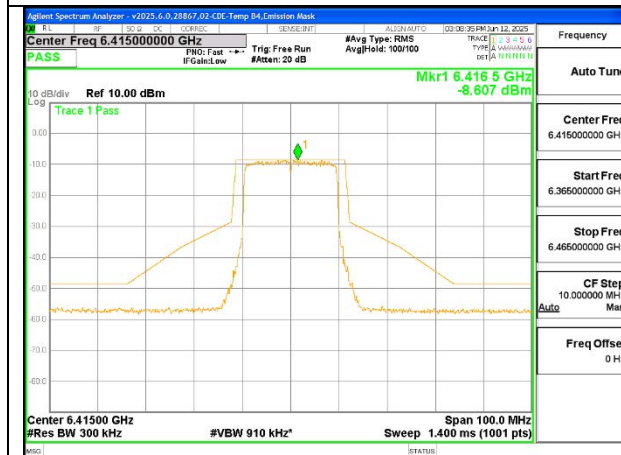
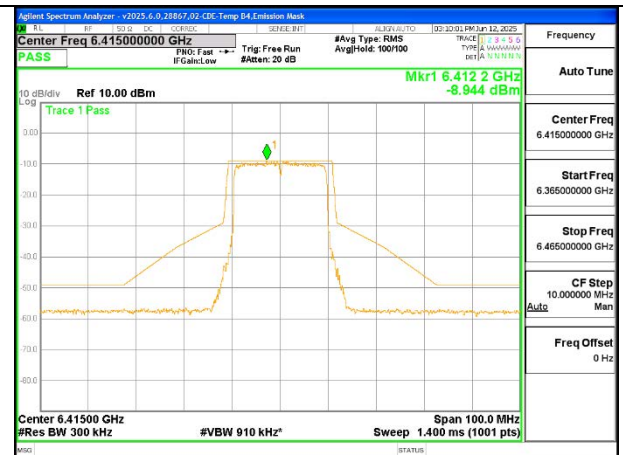
**1TX Antenna 5 MODE (FCC+IC) MOBILE – SU MODE****LOW CHANNEL 5955****MID CHANNEL 6175****HIGH CHANNEL 6415**



**2TX CDD MODE (FCC + IC) – MRU106+26-Tones, RU Index 82****LOW CHANNEL ANT 6 5955****LOW CHANNEL ANT 5 5955****MID CHANNEL ANT 6 6175****MID CHANNEL ANT 5 6175****HIGH CHANNEL ANT 6 6415****HIGH CHANNEL ANT 5 6415**



**2TX CDD MODE (FCC + IC) – MRU106+26T-Tones, RU Index 83****LOW CHANNEL ANT 6 5955****LOW CHANNEL ANT 5 5955****MID CHANNEL ANT 6 6175****MID CHANNEL ANT 5 6175****HIGH CHANNEL ANT 6 6415****HIGH CHANNEL ANT 5 6415**

**2TX CDD MODE (FCC + IC) – SU MODE****LOW CHANNEL ANT 6 5955****LOW CHANNEL ANT 5 5955****MID CHANNEL ANT 6 6175****MID CHANNEL ANT 5 6175****HIGH CHANNEL ANT 6 6415****HIGH CHANNEL ANT 5 6415**

Agilent Spectrum Analyzer - v2025.6.1.104995.28498, Cond D2, Emission Mask

Center Freq 5.955000000 GHz  
#Avg Type: RMS  
AvgHld: 100/100  
#Atten: 20 dB

Auto Tune

Center Freq 5.95500000 GHz  
Start Freq 5.905000000 GHz  
Stop Freq 6.005000000 GHz  
CF Step 10.000000 MHz  
Man  
Freq Offset 0 Hz

10 dB/div Ref 10.00 dBm  
Log

Trace 1 Pass

Mkr1 5.954 2 GHz  
-12.501 dBm

Center 5.95500 GHz  
#Res BW 300 kHz  
#VBW 910 kHz  
Sweep 1.000 ms (1001 pts)

LOW CHANNEL ANT 6 5955

Agilent Spectrum Analyzer - v2025.6.1.104995.28498, Cond D2, Emission Mask

Center Freq 5.955000000 GHz  
#Avg Type: RMS  
AvgHld: 100/100  
#Atten: 20 dB

Auto Tune

Center Freq 5.95500000 GHz  
Start Freq 5.905000000 GHz  
Stop Freq 6.005000000 GHz  
CF Step 10.000000 MHz  
Man  
Freq Offset 0 Hz

10 dB/div Ref 10.00 dBm  
Log

Trace 1 Pass

Mkr1 5.953 7 GHz  
-13.340 dBm

Center 5.95500 GHz  
#Res BW 300 kHz  
#VBW 910 kHz  
Sweep 1.000 ms (1001 pts)

LOW CHANNEL ANT 5 5955

Agilent Spectrum Analyzer - v2025.6.1.104995.28498, Cond D2, Emission Mask

Center Freq 6.175000000 GHz  
#Avg Type: RMS  
AvgHld: 100/100  
#Atten: 20 dB

Auto Tune

Center Freq 6.17500000 GHz  
Start Freq 6.125000000 GHz  
Stop Freq 6.225000000 GHz  
CF Step 10.000000 MHz  
Man  
Freq Offset 0 Hz

10 dB/div Ref 10.00 dBm  
Log

Trace 1 Pass

Mkr1 6.174 4 GHz  
-12.154 dBm

Center 6.17500 GHz  
#Res BW 300 kHz  
#VBW 910 kHz  
Sweep 1.000 ms (1001 pts)

MID CHANNEL ANT 6 6175

Agilent Spectrum Analyzer - v2025.6.1.104995.28498, Cond D2, Emission Mask

Center Freq 6.175000000 GHz  
#Avg Type: RMS  
AvgHld: 100/100  
#Atten: 20 dB

Auto Tune

Center Freq 6.17500000 GHz  
Start Freq 6.125000000 GHz  
Stop Freq 6.225000000 GHz  
CF Step 10.000000 MHz  
Man  
Freq Offset 0 Hz

10 dB/div Ref 10.00 dBm  
Log

Trace 1 Pass

Mkr1 6.173 4 GHz  
-12.399 dBm

Center 6.17500 GHz  
#Res BW 300 kHz  
#VBW 910 kHz  
Sweep 1.000 ms (1001 pts)

MID CHANNEL ANT 5 6175

Agilent Spectrum Analyzer - v2025.6.1.104995.28498, Cond D2, Emission Mask

Center Freq 6.415000000 GHz  
#Avg Type: RMS  
AvgHld: 100/100  
#Atten: 20 dB

Auto Tune

Center Freq 6.41500000 GHz  
Start Freq 6.365000000 GHz  
Stop Freq 6.465000000 GHz  
CF Step 10.000000 MHz  
Man  
Freq Offset 0 Hz

10 dB/div Ref 10.00 dBm  
Log

Trace 1 Pass

Mkr1 6.413 6 GHz  
-9.889 dBm

Center 6.41500 GHz  
#Res BW 300 kHz  
#VBW 910 kHz  
Sweep 1.000 ms (1001 pts)

HIGH CHANNEL ANT 6 6415

Agilent Spectrum Analyzer - v2025.6.1.104995.28498, Cond D2, Emission Mask

Center Freq 6.415000000 GHz  
#Avg Type: RMS  
AvgHld: 100/100  
#Atten: 20 dB

Auto Tune

Center Freq 6.41500000 GHz  
Start Freq 6.365000000 GHz  
Stop Freq 6.465000000 GHz  
CF Step 10.000000 MHz  
Man  
Freq Offset 0 Hz

10 dB/div Ref 10.00 dBm  
Log

Trace 1 Pass

Mkr1 6.416 0 GHz  
-9.196 dBm

Center 6.41500 GHz  
#Res BW 300 kHz  
#VBW 910 kHz  
Sweep 1.000 ms (1001 pts)

HIGH CHANNEL ANT 5 6415



The figure displays four Agilent Spectrum Analyzer screenshots, arranged in a 2x2 grid, showing signal traces for different antennas and channels. Each plot includes a main frequency plot and a side panel with various measurement parameters.

**Top Left: LOW CHANNEL ANT 6 5955**

- Center Freq: 5.95500000 GHz
- Marker 1 (Mkr1): 5.9577 GHz, -12.498 dBm
- Span: 100.0 MHz
- Resolution Bandwidth (Res BW): 300 kHz
- Video Bandwidth (VBW): 910 kHz
- Sweep: 1.000 ms (1001 pts)

**Top Right: LOW CHANNEL ANT 5 5955**

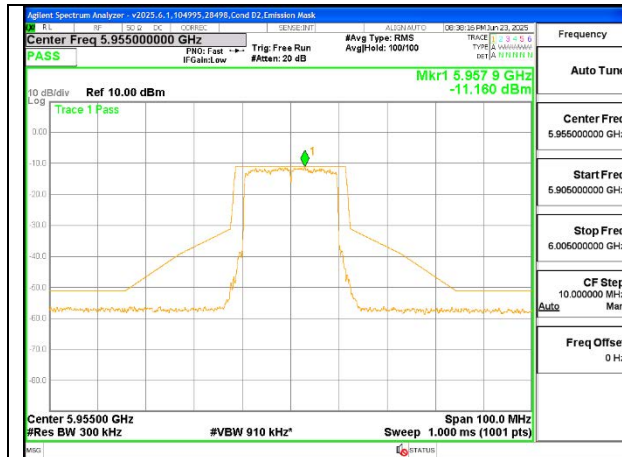
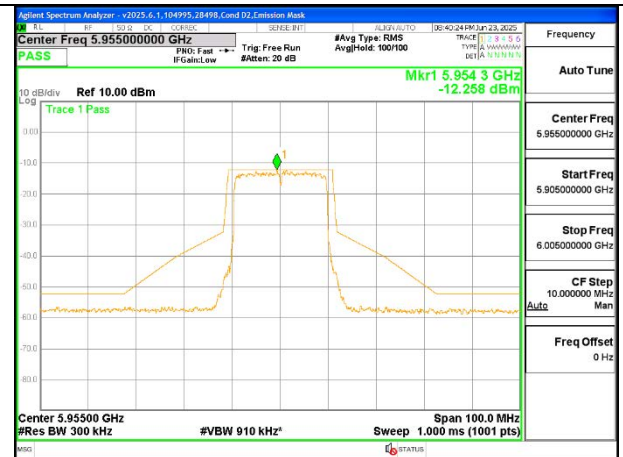
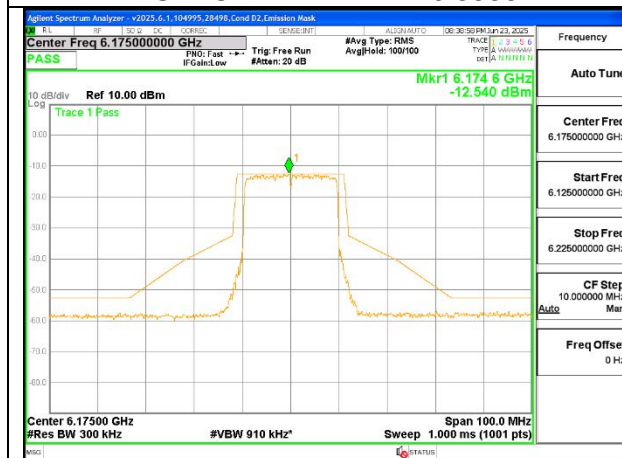
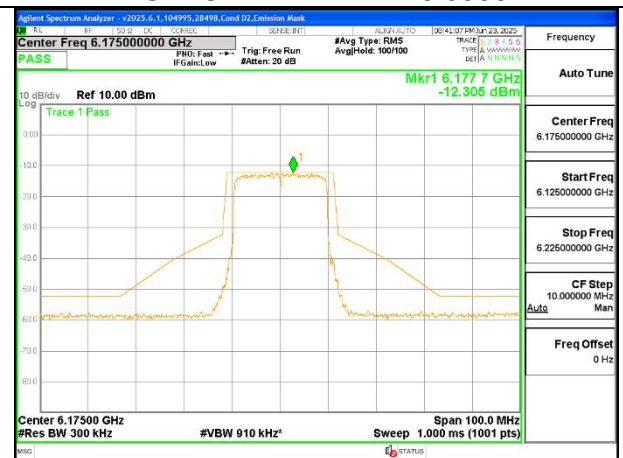
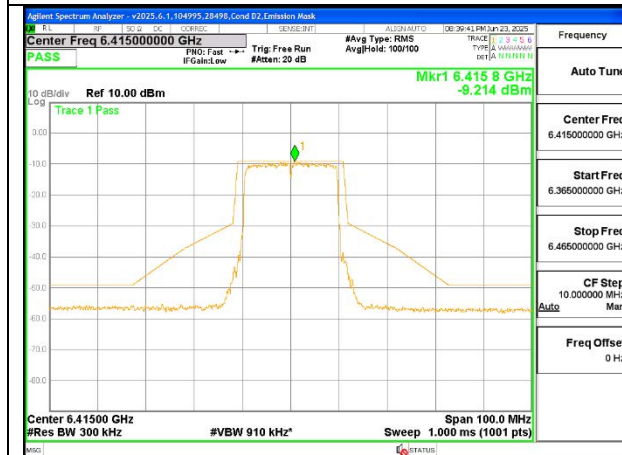
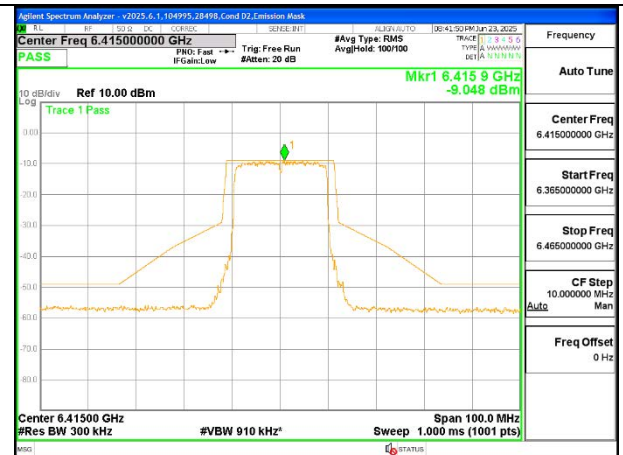
- Center Freq: 5.95500000 GHz
- Marker 1 (Mkr1): 5.9544 GHz, -12.473 dBm
- Span: 100.0 MHz
- Resolution Bandwidth (Res BW): 300 kHz
- Video Bandwidth (VBW): 910 kHz
- Sweep: 1.000 ms (1001 pts)

**Bottom Left: MID CHANNEL ANT 6 6175**

- Center Freq: 6.17500000 GHz
- Marker 1 (Mkr1): 6.1760 GHz, -12.288 dBm
- Span: 100.0 MHz
- Resolution Bandwidth (Res BW): 300 kHz
- Video Bandwidth (VBW): 910 kHz
- Sweep: 1.000 ms (1001 pts)

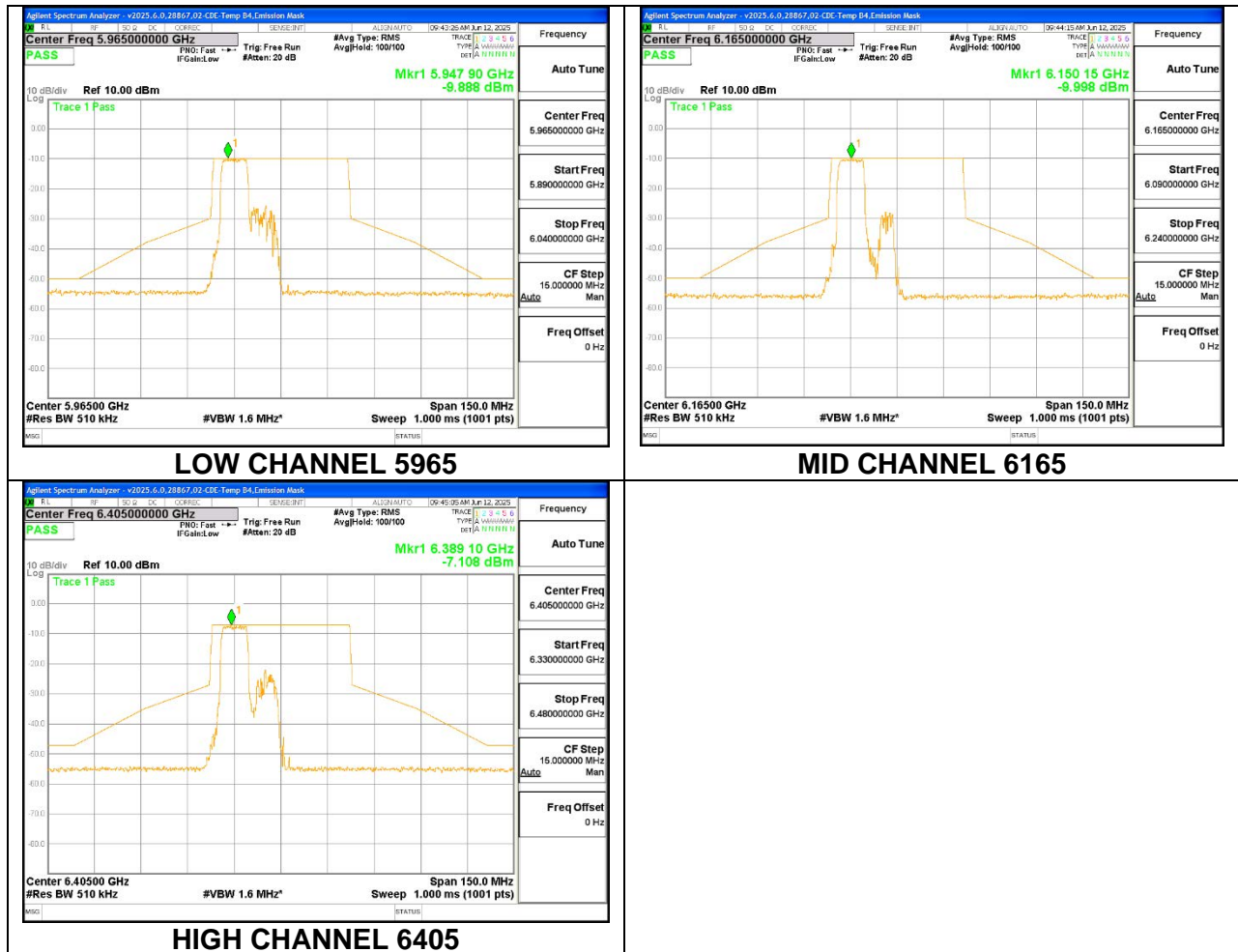
**Bottom Right: MID CHANNEL ANT 5 6175**

- Center Freq: 6.17500000 GHz
- Marker 1 (Mkr1): 6.1745 GHz, -11.891 dBm
- Span: 100.0 MHz
- Resolution Bandwidth (Res BW): 300 kHz
- Video Bandwidth (VBW): 910 kHz
- Sweep: 1.000 ms (1001 pts)

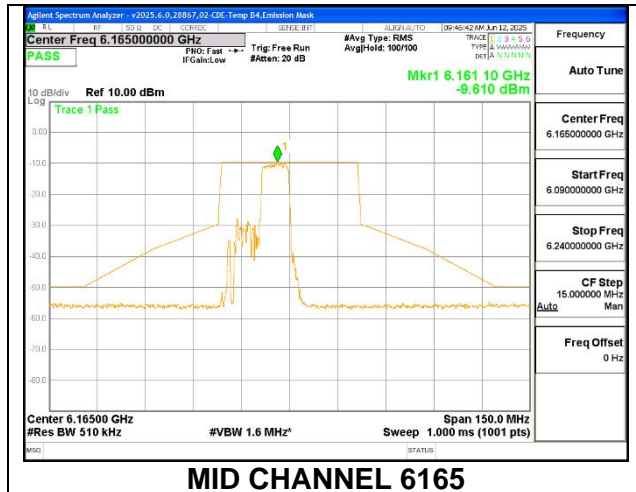
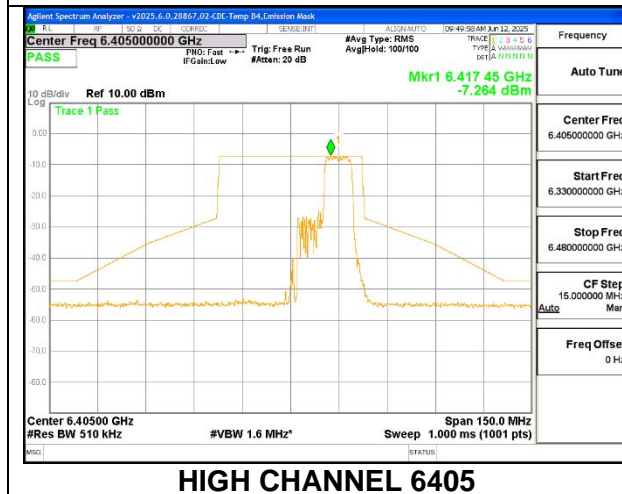
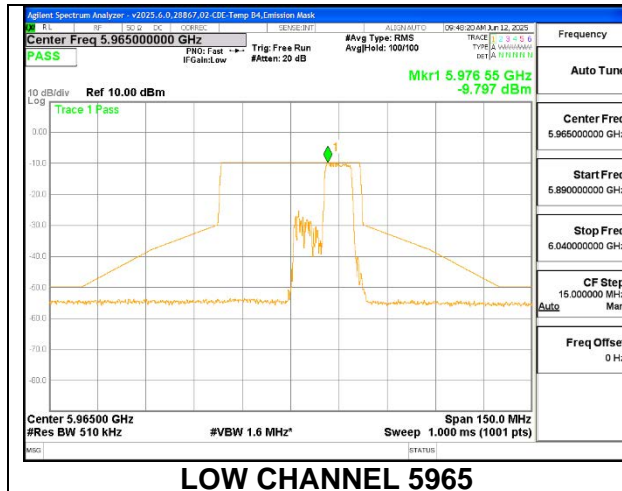
**2TX Antenna 6 + Antenna 5 SDM MODE (FCC + IC) – SU Mode****LOW CHANNEL ANT 6 5955****LOW CHANNEL ANT 5 5955****MID CHANNEL ANT 6 6175****MID CHANNEL ANT 5 6175****HIGH CHANNEL ANT 6 6415****HIGH CHANNEL ANT 5 6415**

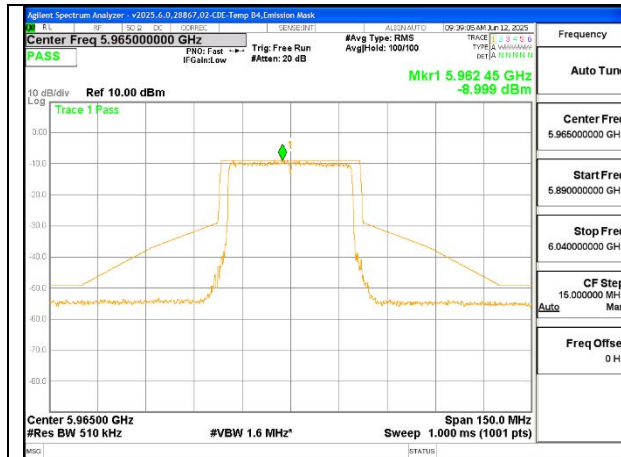
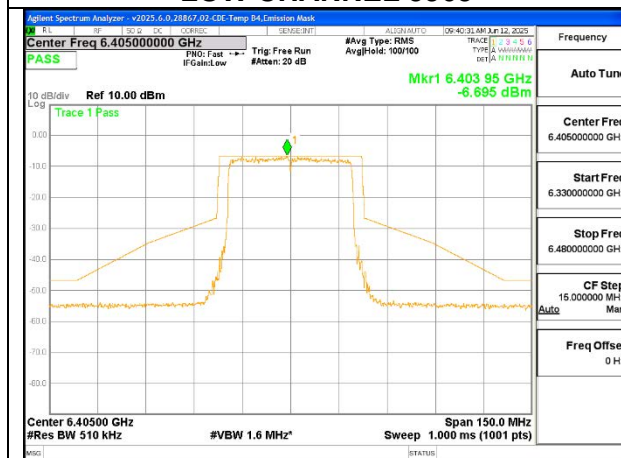
## 9.8.2. 802.11be EHT40 MODE IN THE UNII-5 BAND

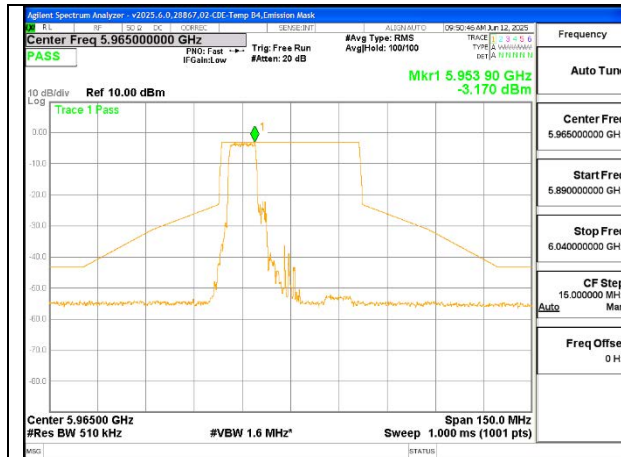
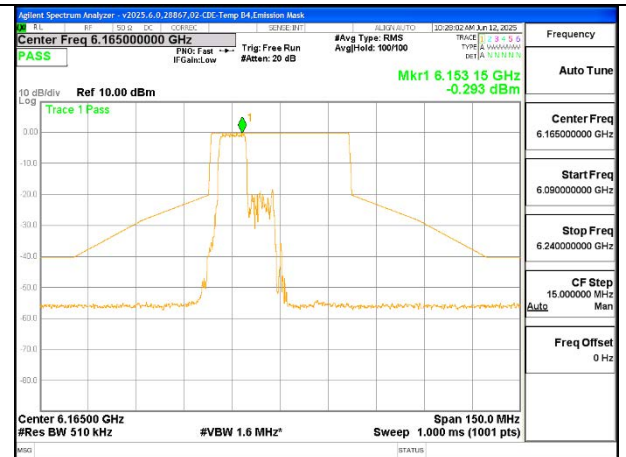
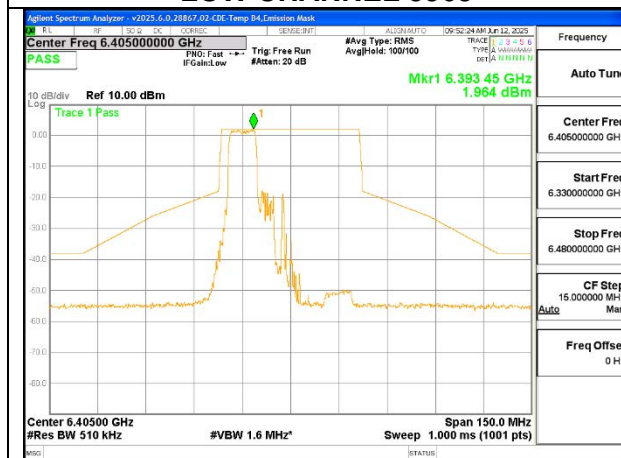
### 1TX Antenna 6 MODE (FCC+IC) MOBILE – 106-Tones, RU Index 53

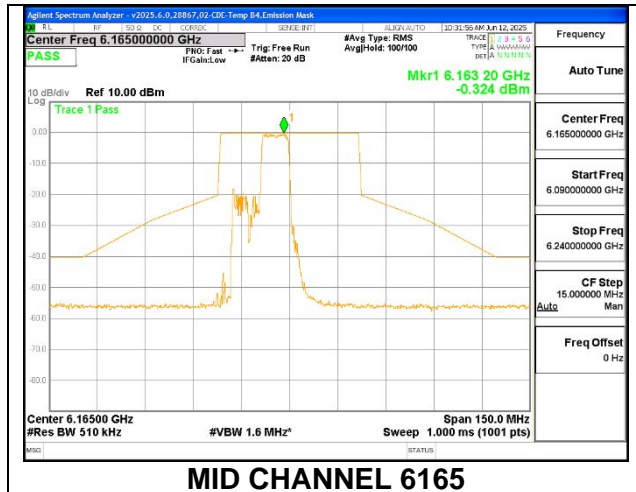
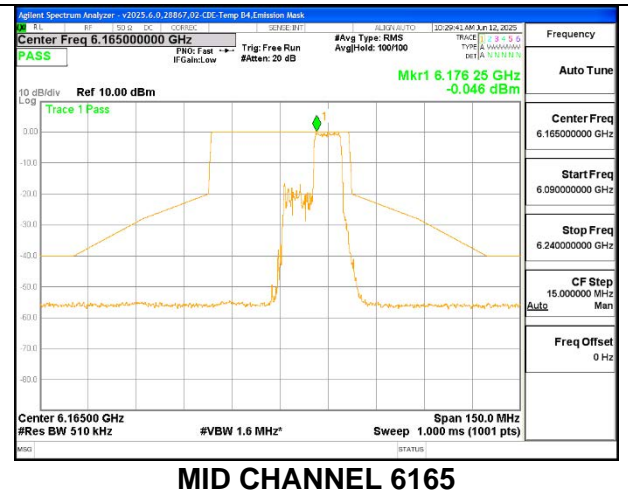
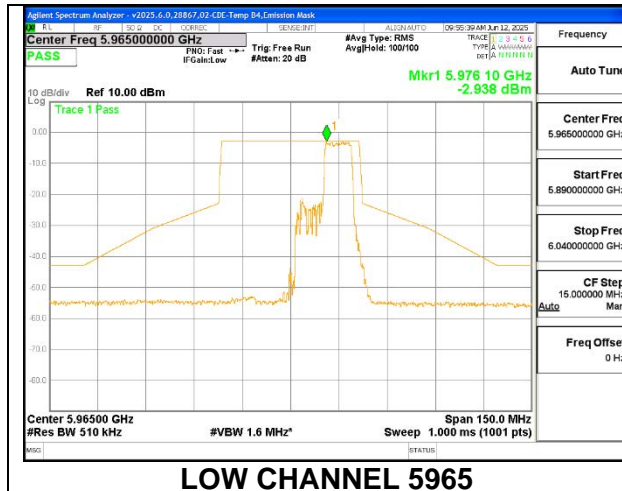


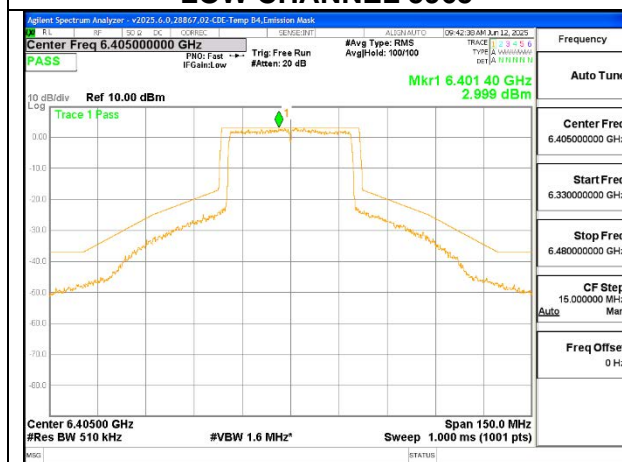


**1TX Antenna 6 MODE (FCC+IC) MOBILE – 106-Tones, RU Index 54****1TX Antenna 6 MODE (FCC+IC) MOBILE – 106-Tones, RU Index 56**

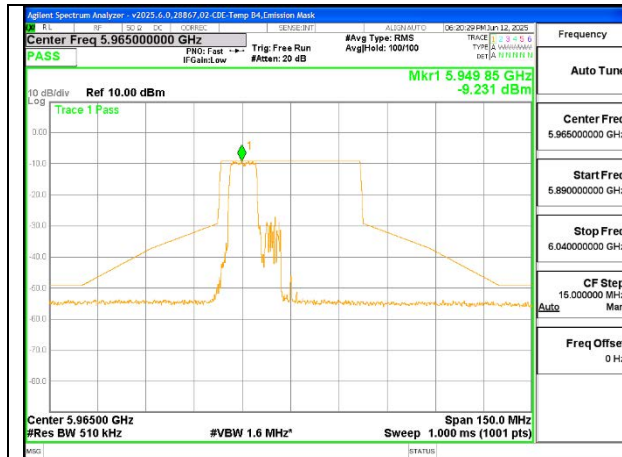
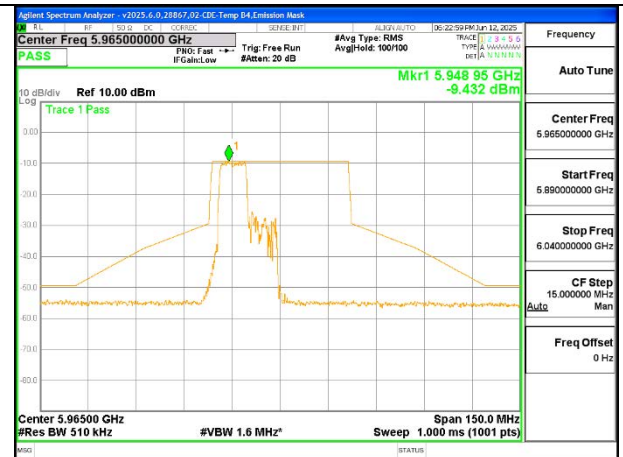
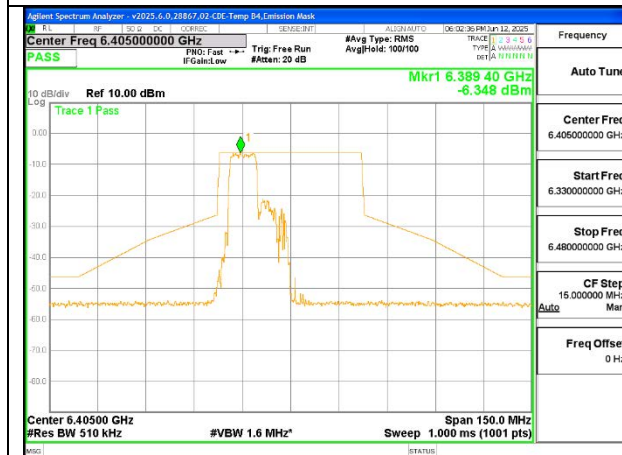
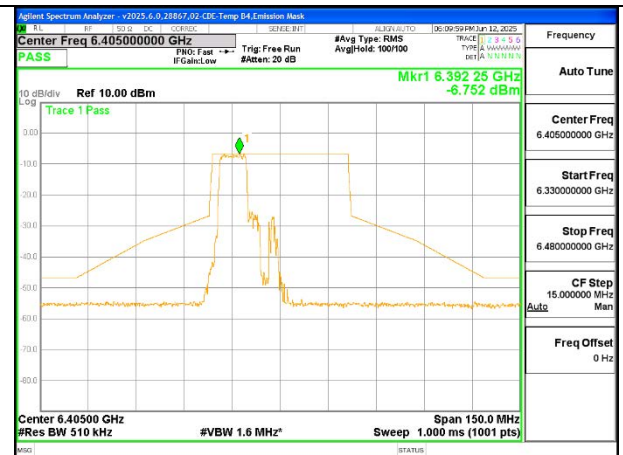
**1TX Antenna 6 MODE (FCC+IC) MOBILE – SU MODE****LOW CHANNEL 5965****MID CHANNEL 6165****HIGH CHANNEL 6405**

**1TX Antenna 5 MODE (FCC+IC) MOBILE – 106-Tones, RU Index 53****LOW CHANNEL 5965****MID CHANNEL 6165****HIGH CHANNEL 6405**

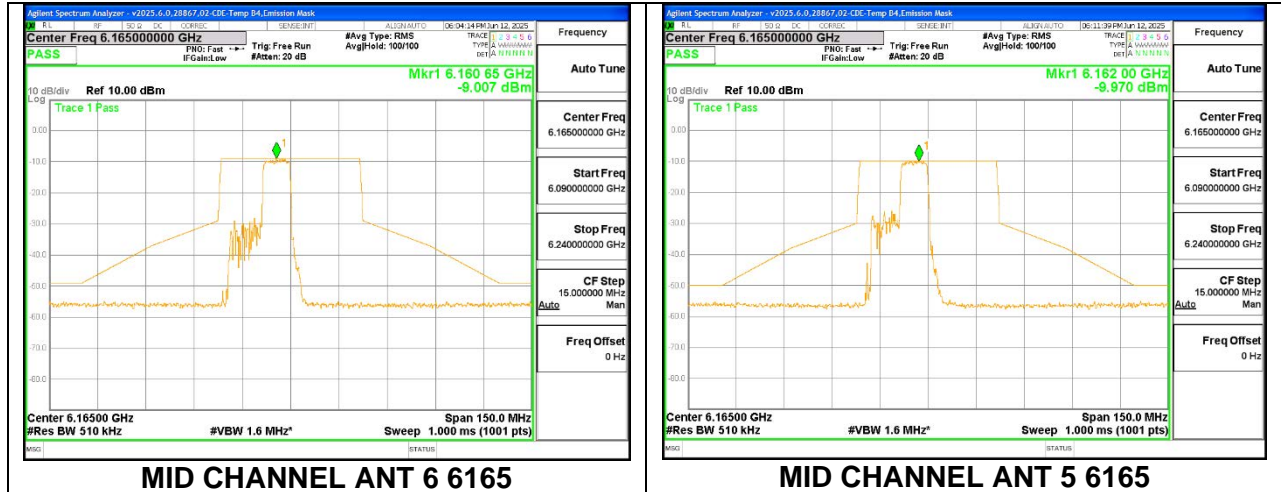
**1TX Antenna 5 MODE (FCC+IC) MOBILE – 106-Tones, RU Index 54****1TX Antenna 5 MODE (FCC+IC) MOBILE – 106-Tones, RU Index 56**

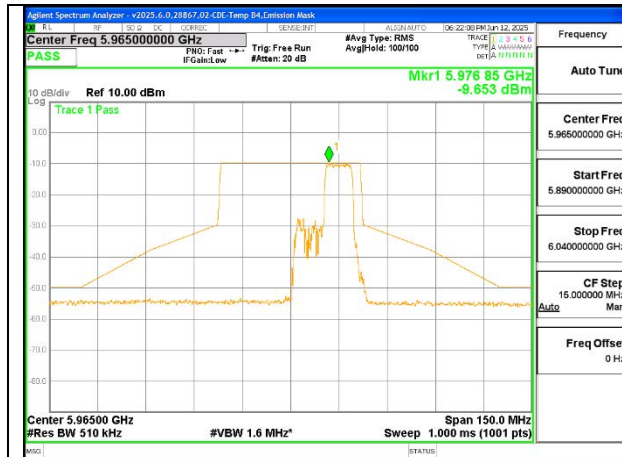
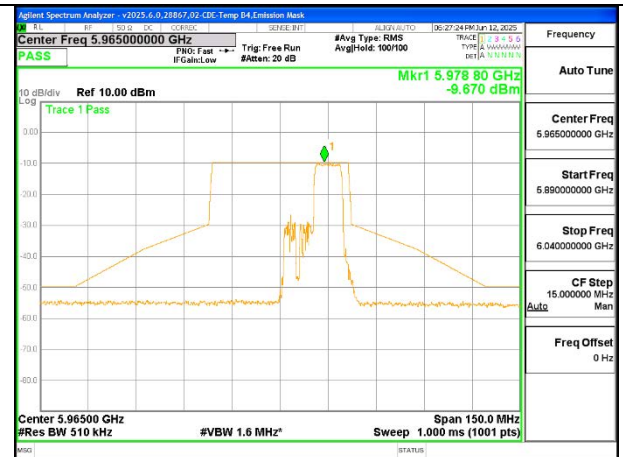
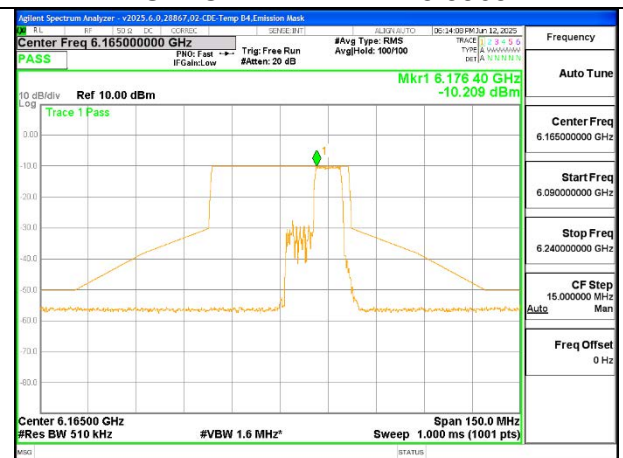
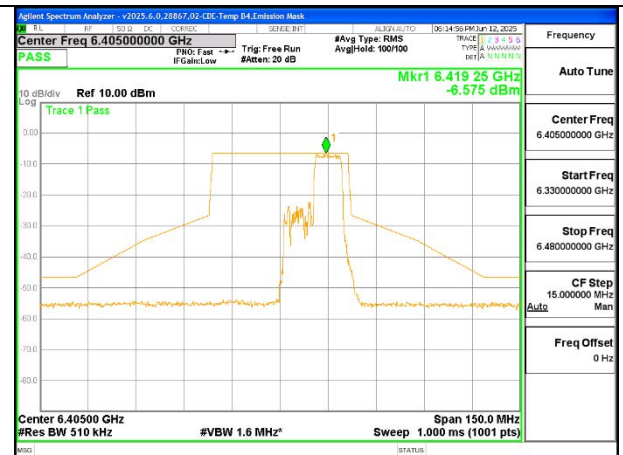
**1TX Antenna 5 MODE (FCC+IC) MOBILE – SU MODE****LOW CHANNEL 5965****MID CHANNEL 6165****HIGH CHANNEL 6405**

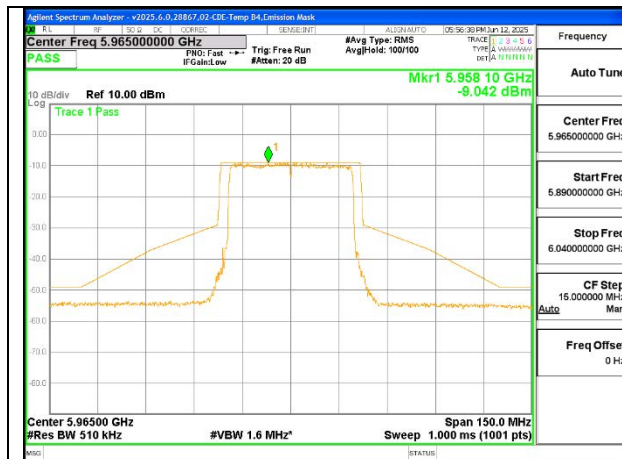
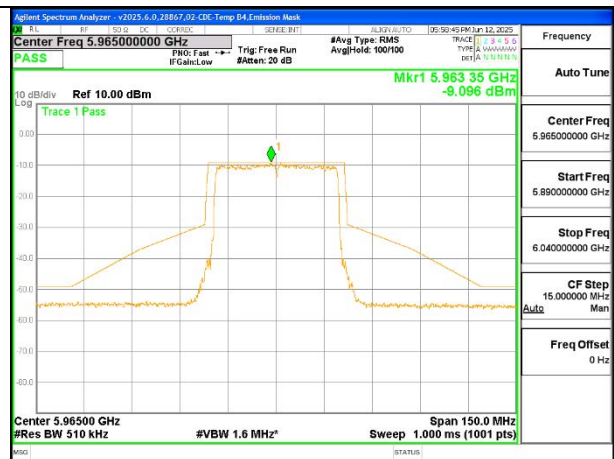
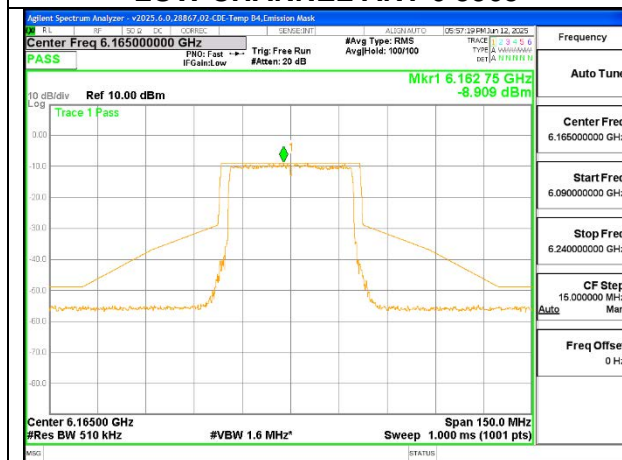
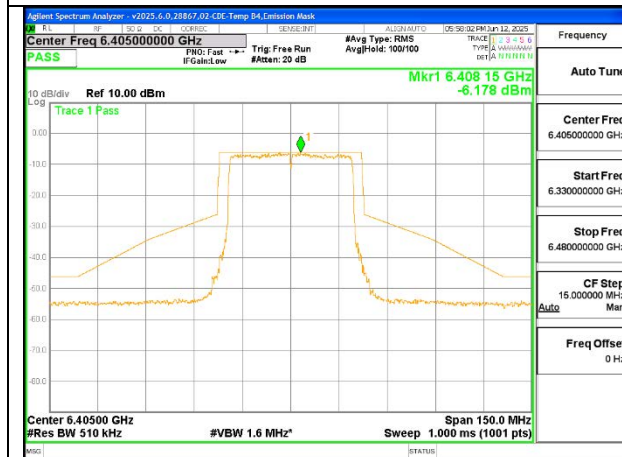
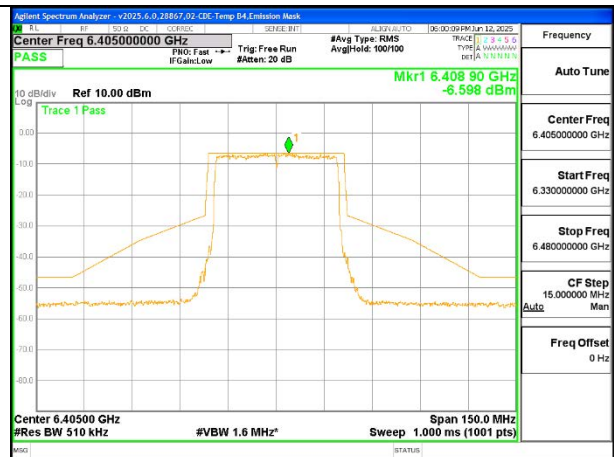


**2TX CDD MODE (FCC + IC) – 106-Tones, RU Index 53****LOW CHANNEL ANT 6 5965****LOW CHANNEL ANT 5 5965****MID CHANNEL ANT 6 6165****MID CHANNEL ANT 5 6165****HIGH CHANNEL ANT 6 6405****HIGH CHANNEL ANT 5 6405**



**2TX CDD MODE (FCC + IC) – 106-Tones, RU Index 54**

**2TX CDD MODE (FCC + IC) – 106-Tones, RU Index 56****LOW CHANNEL ANT 6 5965****LOW CHANNEL ANT 5 5965****MID CHANNEL ANT 6 6165****MID CHANNEL ANT 5 6165****HIGH CHANNEL ANT 6 6405****HIGH CHANNEL ANT 5 6405**

**2TX CDD MODE (FCC + IC) – SU MODE****LOW CHANNEL ANT 6 5965****LOW CHANNEL ANT 5 5965****MID CHANNEL ANT 6 6165****MID CHANNEL ANT 5 6165****HIGH CHANNEL ANT 6 6405****HIGH CHANNEL ANT 5 6405**

**2TX Antenna 6 + Antenna 5 SDM MODE (FCC + IC) – 106-Tones, RU Index 53**