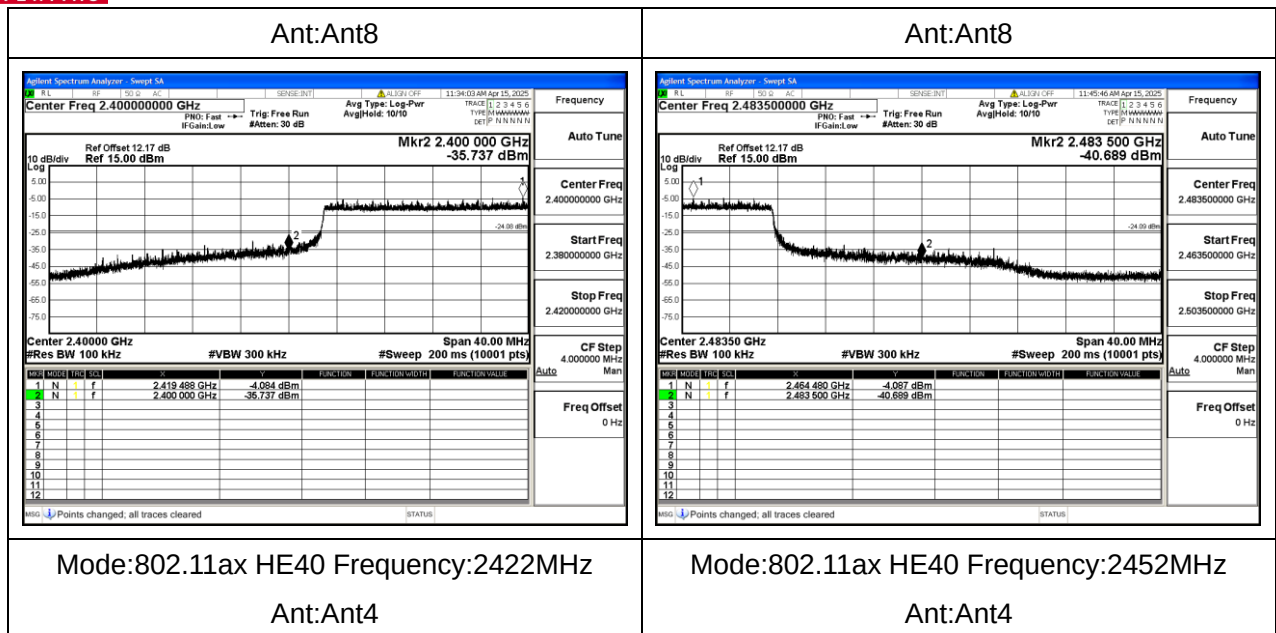
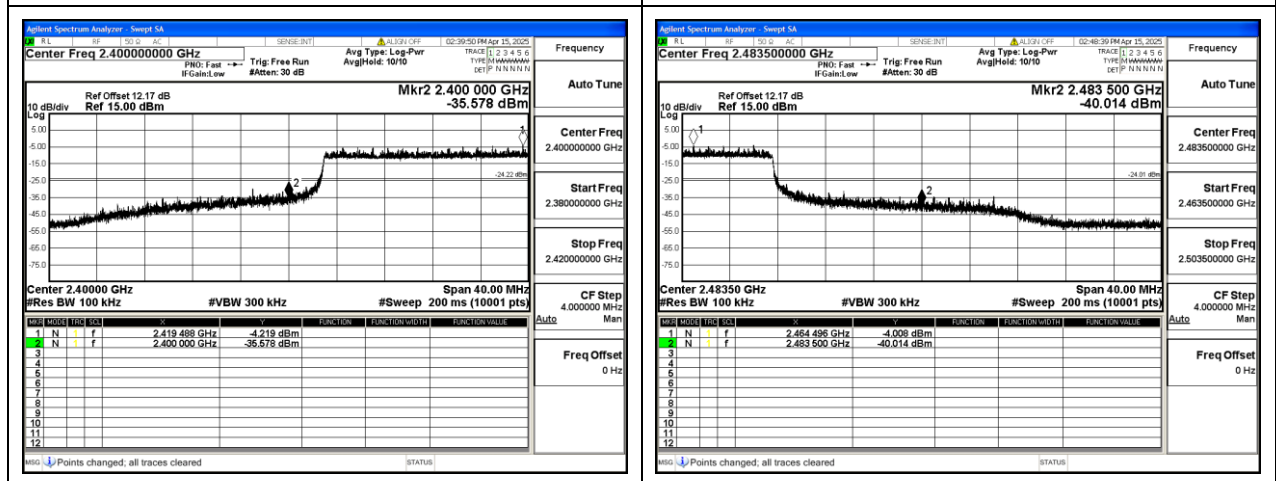
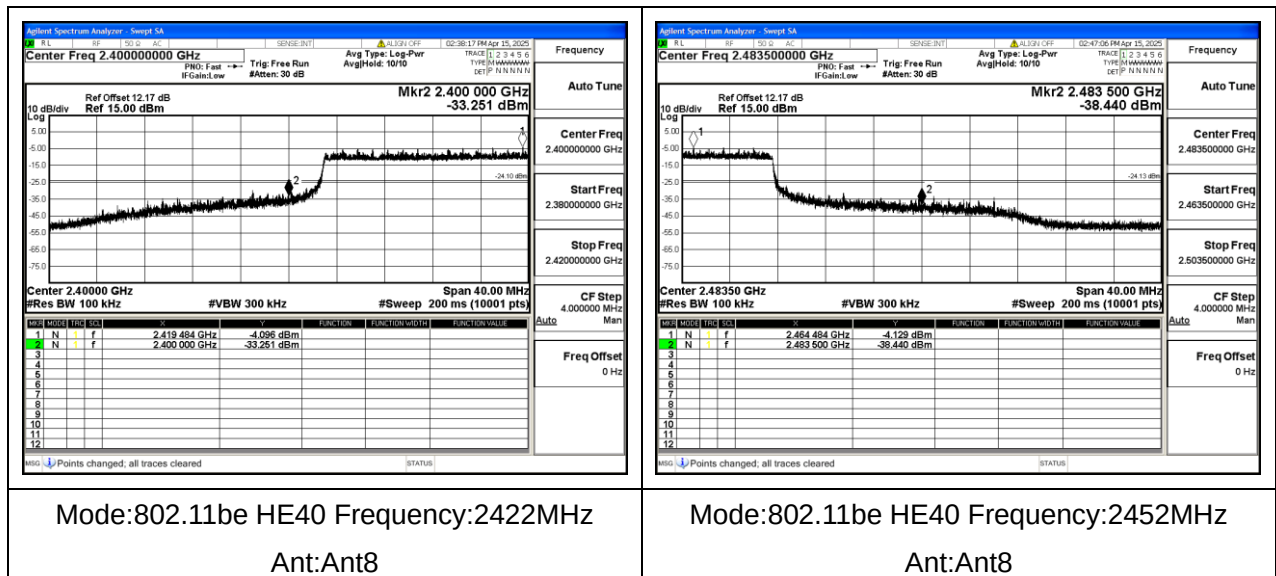




Test Mode: 802.11be HE40





BUREAU VERITAS Test Report No.: PSU-NQN2504150110RF07

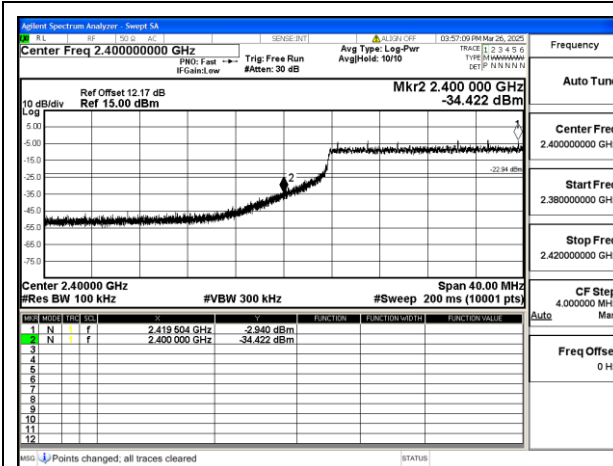
Mode:802.11be HE40 Frequency:2422MHz

Ant:Ant4

Mode:802.11be HE40 Frequency:2452MHz

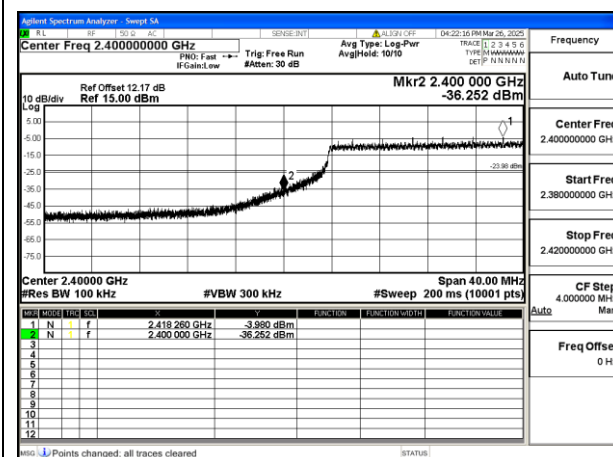
Ant:Ant4

Test Mode: 802.11n HT40



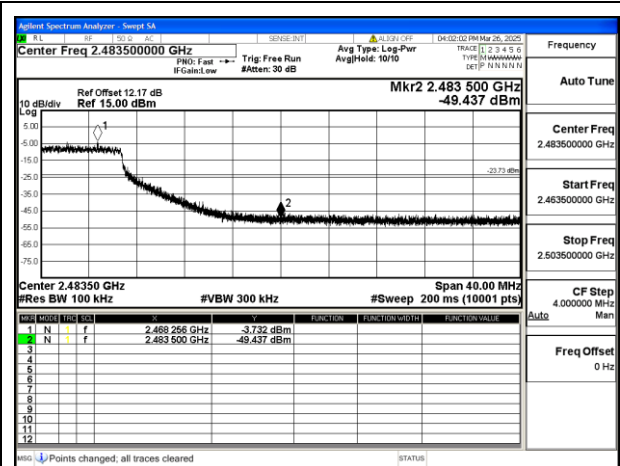
Mode:802.11n HT40 Frequency:2422MHz

Ant:Ant8



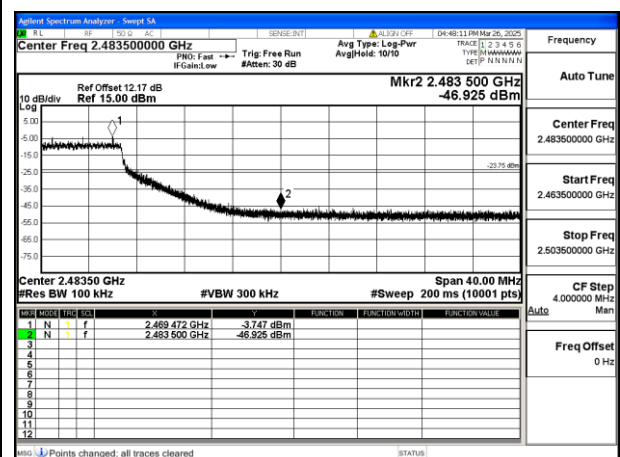
Mode:802.11n HT40 Frequency:2422MHz

Ant:Ant4



Mode:802.11n HT40 Frequency:2452MHz

Ant:Ant8



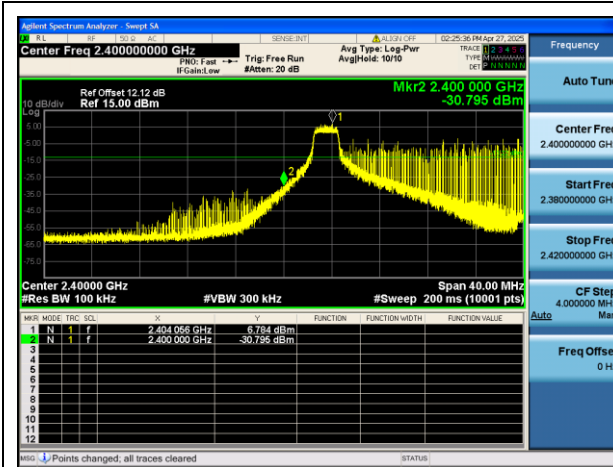
Mode:802.11n HT40 Frequency:2452MHz

Ant:Ant4

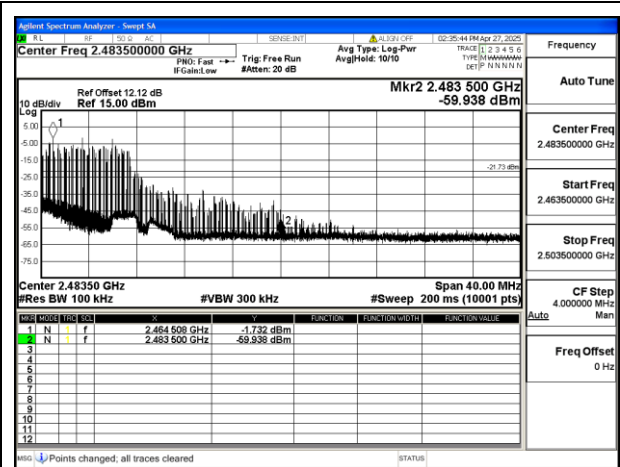


BUREAU VERITAS Test Report No.: PSU-NQN2504150110RF07

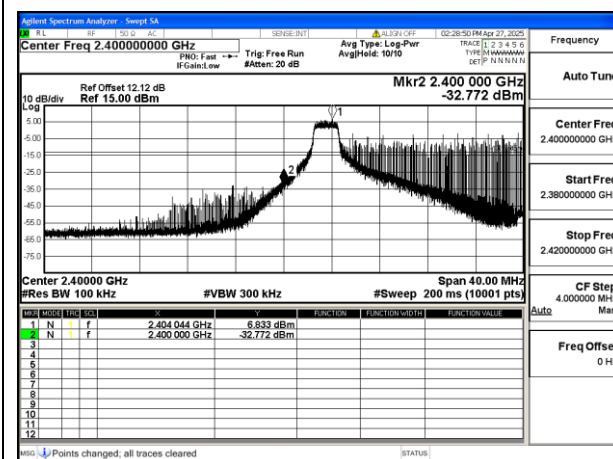
Test Mode: 802.11ax HE20 26T



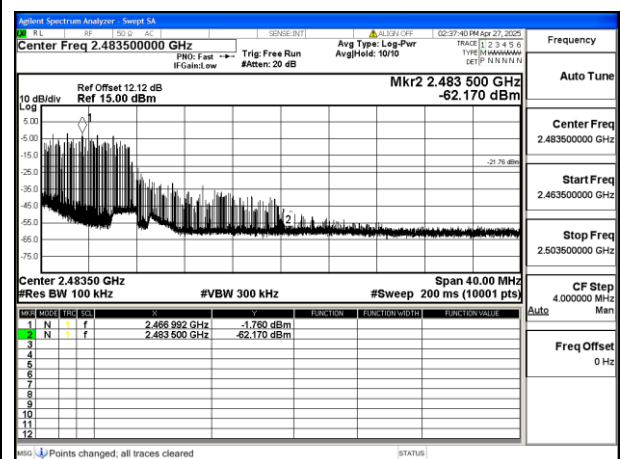
Mode:802.11ax HE20 26T Frequency:2412MHz
Ant:Chain0



Mode:802.11ax HE20 26T Frequency:2462MHz
Ant:Chain0



Mode:802.11ax HE20 26T Frequency:2412MHz
Ant:Chain1



Mode:802.11ax HE20 26T Frequency:2462MHz
Ant:Chain1



7 APPENDIX 2 BLE

BLE ANT4

1 Duty Cycle and Antenna Gain

Test Mode	Frequency (MHz)	Plot	Duty Cycle	Correction Factor(dB)	Antenna Gain(dBi)
GFSK (LE 1Mbps)	2402	Fig.1	64.50%	1.90	-3.20

Note: Correction Factor= $10 \cdot \log(1/\text{Duty Cycle})$

Test Mode	Frequency (MHz)	Plot	Duty Cycle	Correction Factor(dB)	Antenna Gain(dBi)
GFSK (LE 2Mbps)	2402	Fig.2	58.80%	2.31	-3.20

Note: Correction Factor= $10 \cdot \log(1/\text{Duty Cycle})$

Test Mode	Frequency (MHz)	Plot	Duty Cycle	Correction Factor(dB)	Antenna Gain(dBi)
Coded 125K	2402	Fig.3	97.60%	0.11	-3.20

Note: Correction Factor= $10 \cdot \log(1/\text{Duty Cycle})$

Test Mode	Frequency (MHz)	Plot	Duty Cycle	Correction Factor(dB)	Antenna Gain(dBi)
Coded 500K	2402	Fig.4	91.50%	0.39	-3.20

Note: Correction Factor= $10 \cdot \log(1/\text{Duty Cycle})$



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Test Report No.: PSU-NQN2504150110RF07

Test Mode: GFSK (LE 1Mbps)

Test Mode: GFSK (LE 2Mbps)

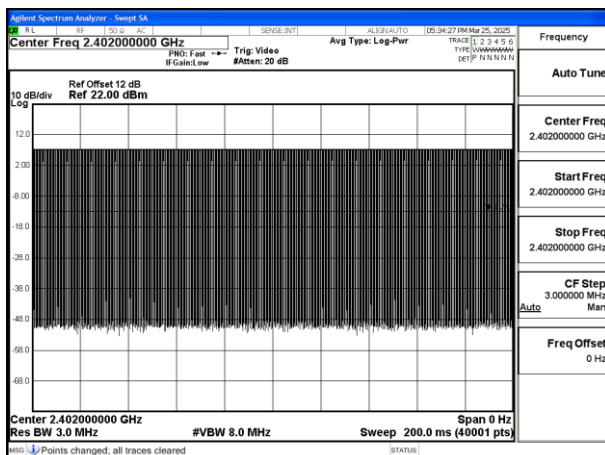


Fig.1

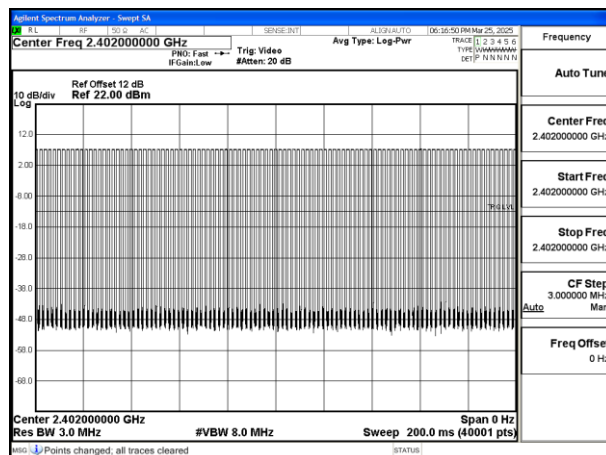


Fig.2

Test Mode: Coded 125K

Test Mode: Coded 500K

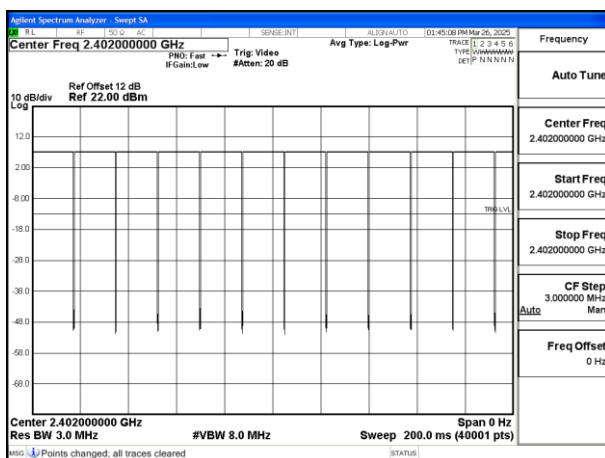


Fig.3

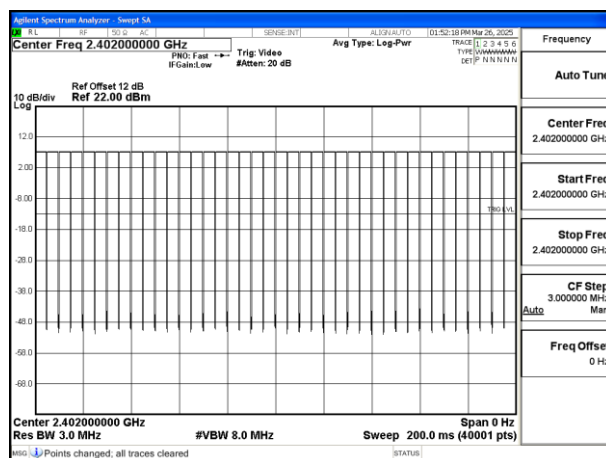


Fig.4

**2 EIRP****Conducted Power**

Modulation type	Conducted Peak Power(dBm)		
	2402MHz	2440MHz	2480MHz
GFSK (LE 1Mbps)	6.29	6.62	6.86
GFSK (LE 2Mbps)	6.25	6.62	6.80
Coded 125K	6.26	6.59	6.76
Coded 500K	6.24	6.62	6.83

Modulation type	Conducted Average Power(dBm)		
	2402MHz	2440MHz	2480MHz
GFSK (LE 1Mbps)	6.94	6.41	6.67
GFSK (LE 2Mbps)	6.59	6.23	6.70
Coded 125K	6.38	6.27	6.42
Coded 500K	6.73	6.37	5.87

EIRP

Modulation type	Peak EIRP(dBm)		
	2402MHz	2440MHz	2480MHz
GFSK (LE 1Mbps)	3.09	3.42	3.66
GFSK (LE 2Mbps)	3.05	3.42	3.60
Coded 125K	3.06	3.39	3.56
Coded 500K	3.04	3.42	3.63

Modulation type	Average EIRP(dBm)		
	2402MHz	2440MHz	2480MHz
GFSK (LE 1Mbps)	3.74	3.21	3.47
GFSK (LE 2Mbps)	3.39	3.03	3.50
Coded 125K	3.18	3.07	3.22
Coded 500K	3.53	3.17	2.67

EIRP (dBm)=Conducted Power(dBm)+Antenna Gain(dBi)

**3 Occupied Bandwidth****6dB Bandwidth**

Test Mode	Carrier frequency (MHz)	6dB Bandwidth(KHz)
GFSK (LE 1Mbps)	2402	673.4
GFSK (LE 1Mbps)	2440	671.6
GFSK (LE 1Mbps)	2480	681.9

Test Mode	Carrier frequency (MHz)	6dB Bandwidth(KHz)
GFSK (LE 2Mbps)	2402	1350.5
GFSK (LE 2Mbps)	2440	1369.9
GFSK (LE 2Mbps)	2480	1334.7

Test Mode	Carrier frequency (MHz)	6dB Bandwidth(KHz)
Coded 125K	2402	647.3
Coded 125K	2440	650.1
Coded 125K	2480	648.4

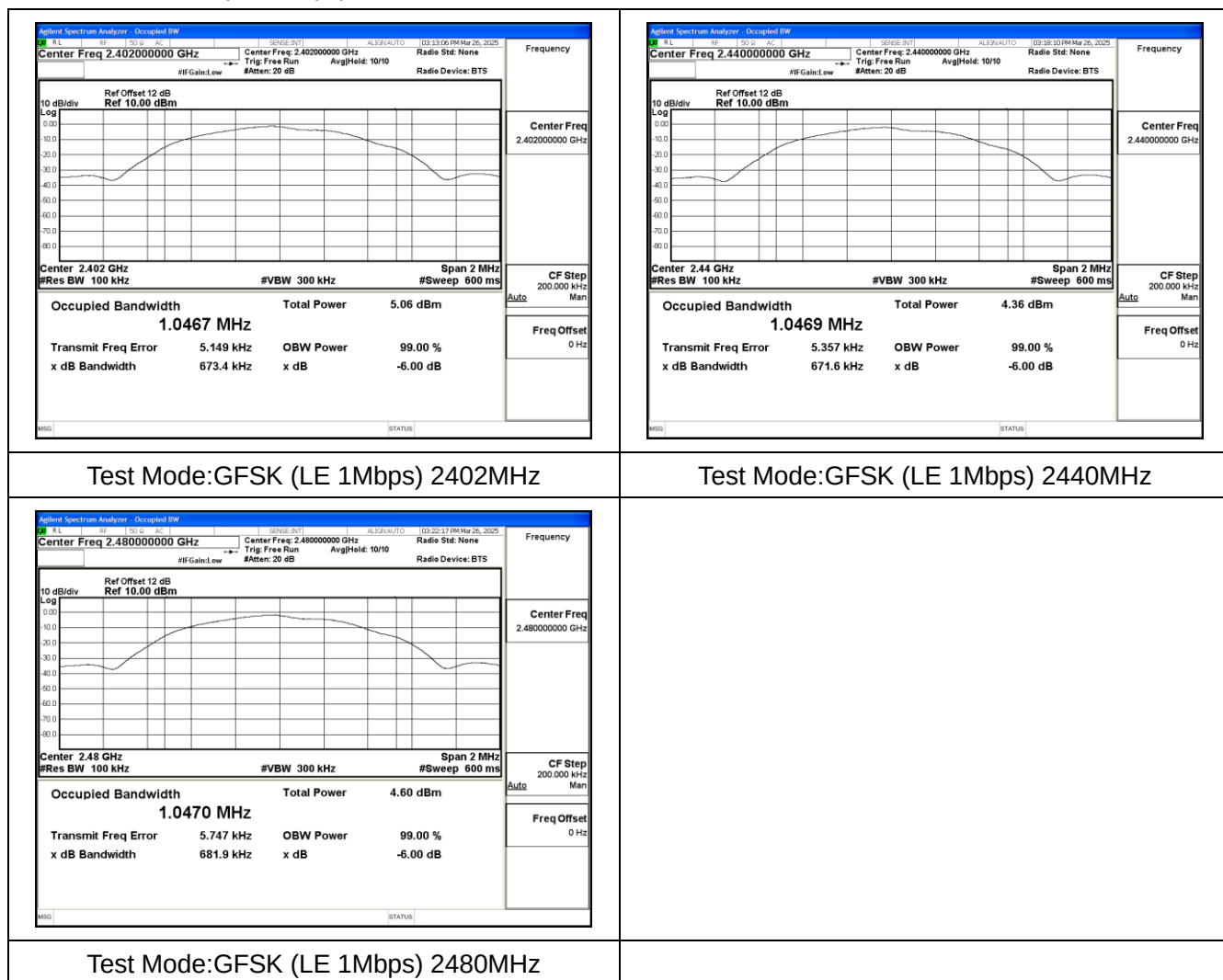
Test Mode	Carrier frequency (MHz)	6dB Bandwidth(KHz)
Coded 500K	2402	699.1
Coded 500K	2440	681.7
Coded 500K	2480	688.4



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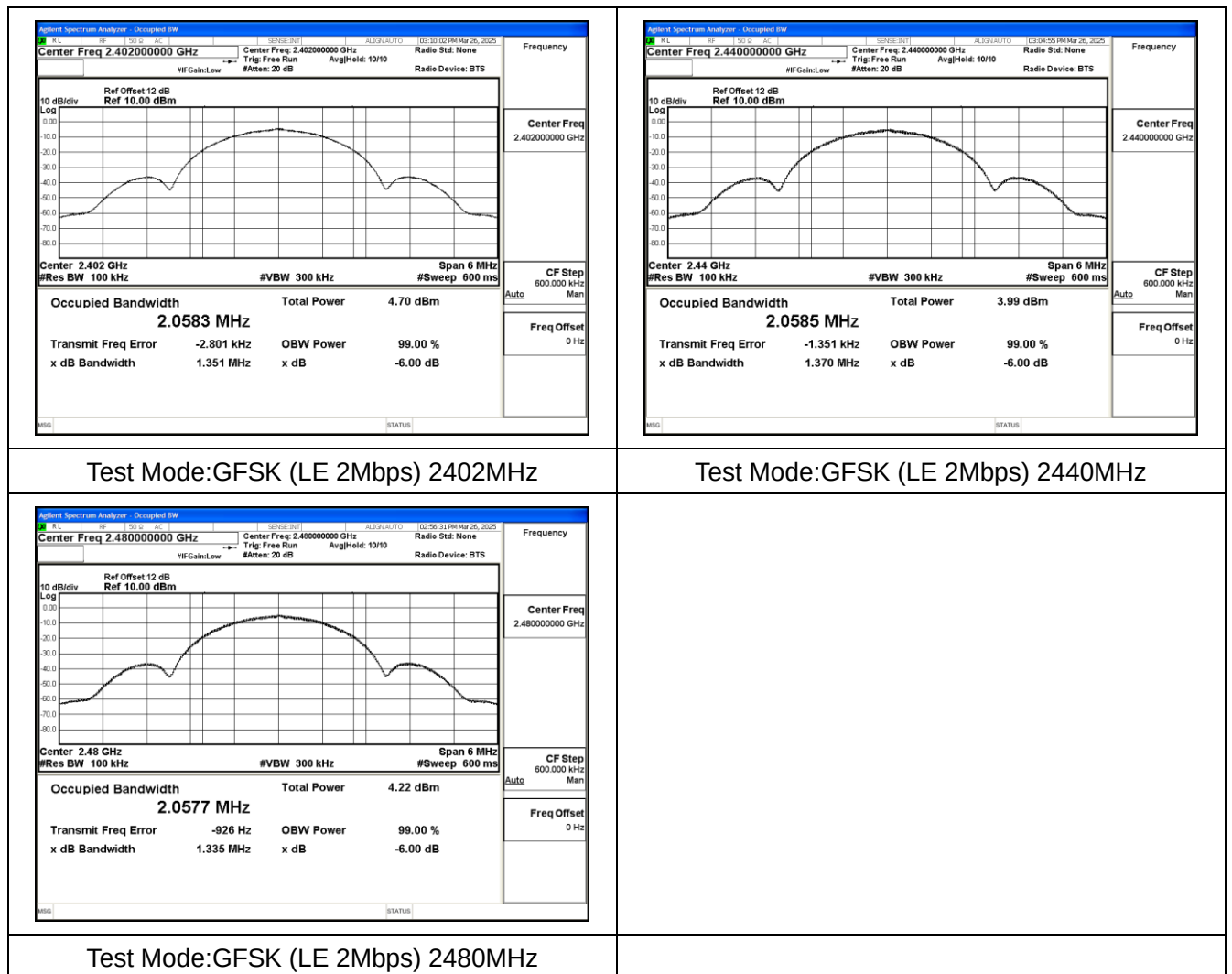
Test Report No.: PSU-NQN2504150110RF07

Test Mode: GFSK (LE 1Mbps)





Test Mode: GFSK (LE 2Mbps)

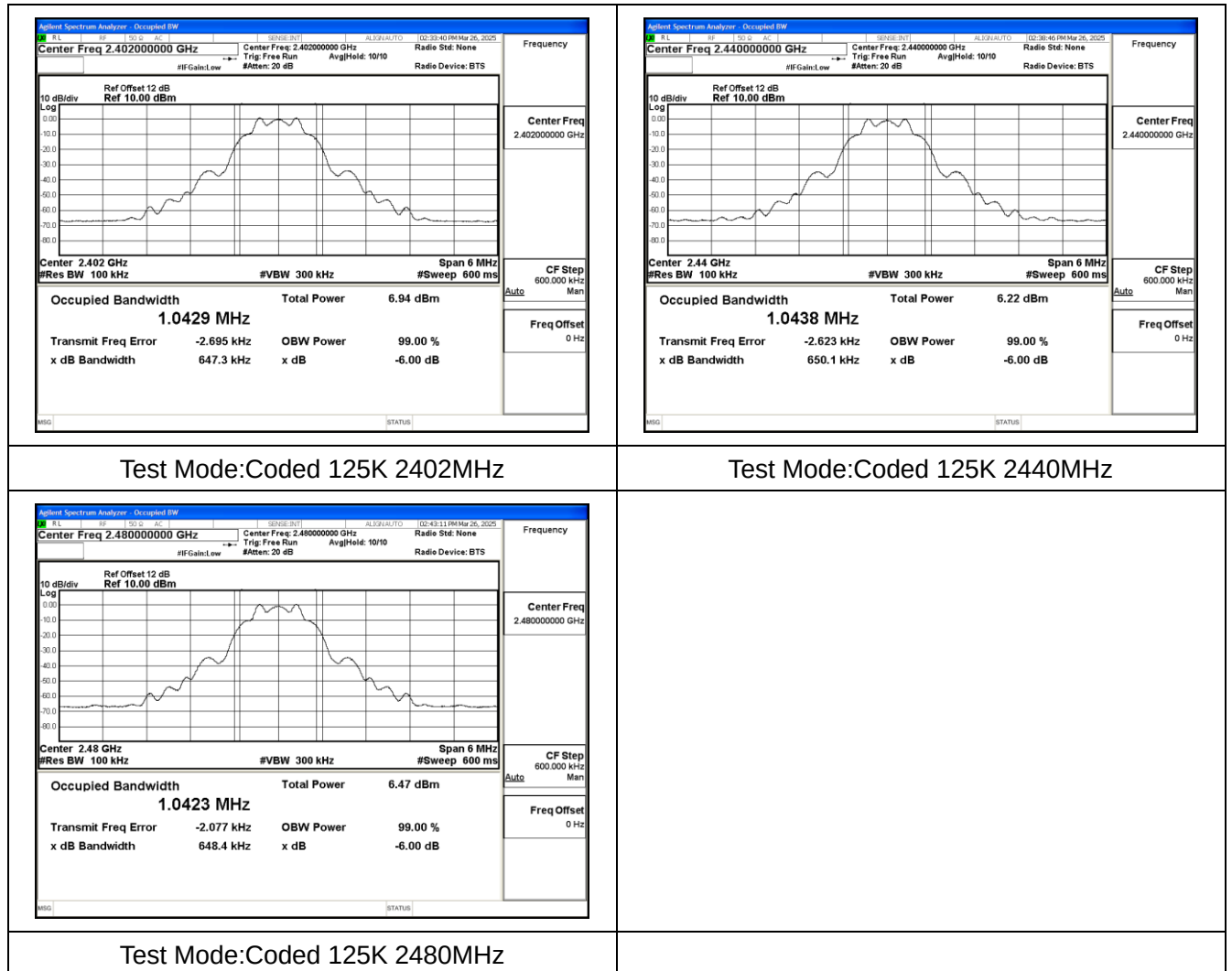




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Test Report No.: PSU-NQN2504150110RF07

Test Mode: Coded 125K



Test Mode:Coded 125K 2402MHz

Test Mode:Coded 125K 2440MHz

Test Mode:Coded 125K 2480MHz



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Test Report No.: PSU-NQN2504150110RF07

Test Mode: Coded 500K

Adjust Spectrum Analyzer - Occupied BW Center Freq 2.402000000 GHz Ref Offset 12 dB Ref 10.00 dBm Center 2.402 GHz #Res BW 100 kHz Occupied Bandwidth 1.0507 MHz Total Power 6.66 dBm Transmit Freq Error -2.735 kHz OBW Power 99.00 % x dB Bandwidth 699.1 kHz x dB -6.00 dB	Adjust Spectrum Analyzer - Occupied BW Center Freq 2.440000000 GHz Ref Offset 12 dB Ref 10.00 dBm Center 2.44 GHz #Res BW 100 kHz Occupied Bandwidth 1.0514 MHz Total Power 5.96 dBm Transmit Freq Error -2.474 kHz OBW Power 99.00 % x dB Bandwidth 681.7 kHz x dB -6.00 dB
Test Mode:Coded 500K 2402MHz	Test Mode:Coded 500K 2440MHz
Adjust Spectrum Analyzer - Occupied BW Center Freq 2.480000000 GHz Ref Offset 12 dB Ref 10.00 dBm Center 2.48 GHz #Res BW 100 kHz Occupied Bandwidth 1.0524 MHz Total Power 6.20 dBm Transmit Freq Error -2.185 kHz OBW Power 99.00 % x dB Bandwidth 688.4 kHz x dB -6.00 dB	
Test Mode:Coded 500K 2480MHz	

**99% Bandwidth**

Test Mode	Carrier frequency (MHz)	99% Bandwidth(kHz)
GFSK (LE 1Mbps)	2402	1023.3
GFSK (LE 1Mbps)	2440	1023.0
GFSK (LE 1Mbps)	2480	1023.3

Test Mode	Carrier frequency (MHz)	99% Bandwidth(kHz)
GFSK (LE 2Mbps)	2402	2047.2
GFSK (LE 2Mbps)	2440	2047.0
GFSK (LE 2Mbps)	2480	2047.2

Test Mode	Carrier frequency (MHz)	99% Bandwidth(kHz)
Coded 125K	2402	1022.4
Coded 125K	2440	1021.2
Coded 125K	2480	1022.5

Test Mode	Carrier frequency (MHz)	99% Bandwidth(kHz)
Coded 500K	2402	1027.4
Coded 500K	2440	1029.2
Coded 500K	2480	1029.4



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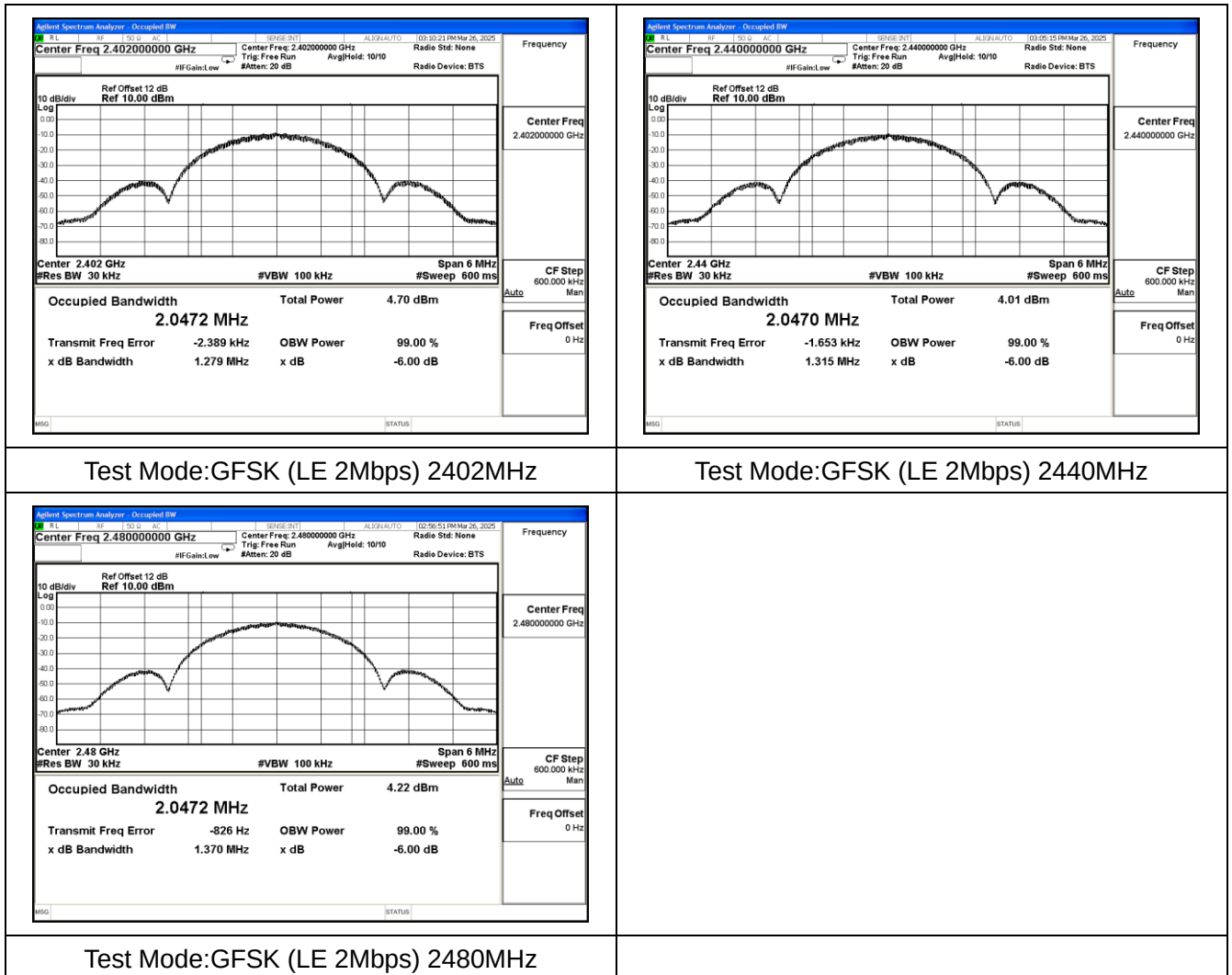
Test Report No.: PSU-NQN2504150110RF07

Test Mode: GFSK (LE 1Mbps)

Agilent Spectrum Analyzer - Occupied BW Center Freq 2.402000000 GHz Ref Offset 12 dB Ref 10.00 dBm Center Freq 2.402000000 GHz #Res BW 30 kHz #VBW 100 kHz #Sweep 600 ms Occupied Bandwidth 1.0233 MHz Total Power 5.06 dBm Transmit Freq Error 10.350 kHz OBW Power 99.00 % x dB Bandwidth 649.7 kHz x dB -6.00 dB	Agilent Spectrum Analyzer - Occupied BW Center Freq 2.440000000 GHz Ref Offset 12 dB Ref 10.00 dBm Center Freq 2.440000000 GHz #Res BW 30 kHz #VBW 100 kHz #Sweep 600 ms Occupied Bandwidth 1.0230 MHz Total Power 4.37 dBm Transmit Freq Error 10.649 kHz OBW Power 99.00 % x dB Bandwidth 651.8 kHz x dB -6.00 dB
Test Mode:GFSK (LE 1Mbps) 2402MHz	Test Mode:GFSK (LE 1Mbps) 2440MHz
Agilent Spectrum Analyzer - Occupied BW Center Freq 2.480000000 GHz Ref Offset 12 dB Ref 10.00 dBm Center Freq 2.480000000 GHz #Res BW 30 kHz #VBW 100 kHz #Sweep 600 ms Occupied Bandwidth 1.0233 MHz Total Power 4.60 dBm Transmit Freq Error 10.728 kHz OBW Power 99.00 % x dB Bandwidth 651.6 kHz x dB -6.00 dB	
Test Mode:GFSK (LE 1Mbps) 2480MHz	



Test Mode: GFSK (LE 2Mbps)

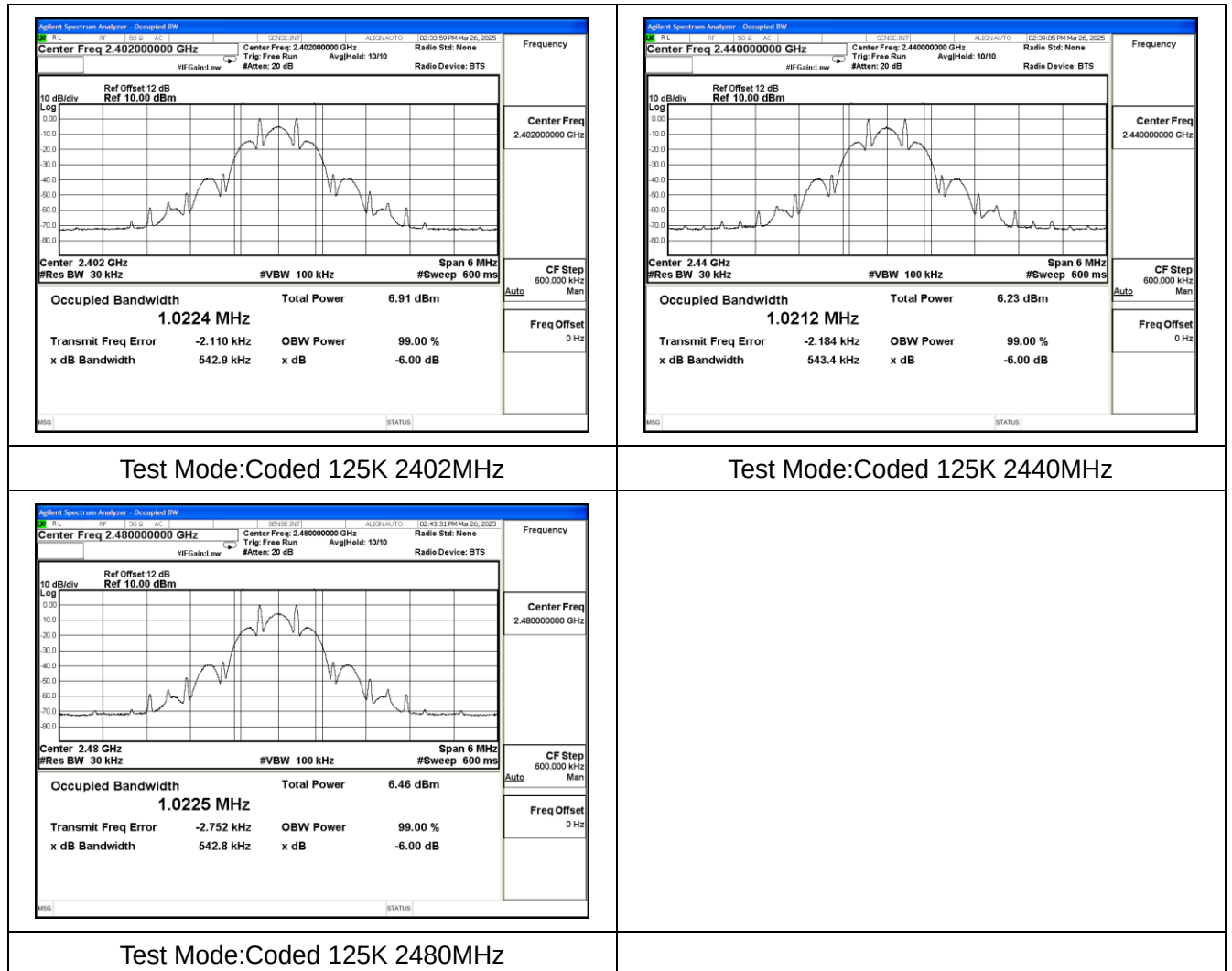




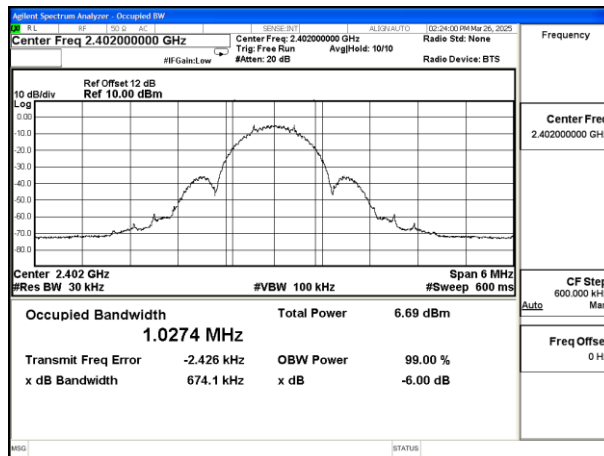
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Test Report No.: PSU-NQN2504150110RF07

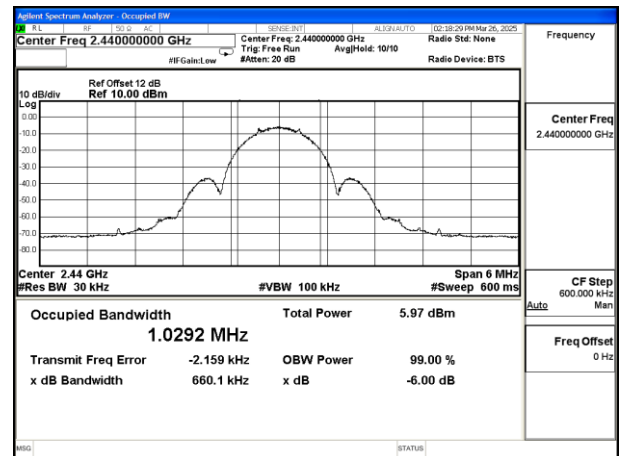
Test Mode: Coded 125K



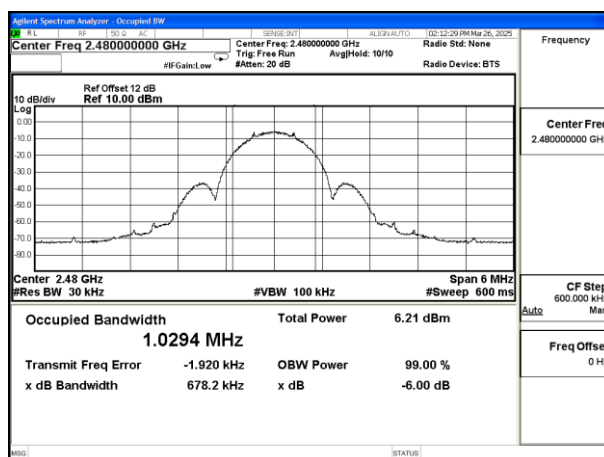
Test Mode: Coded 500K



Test Mode:Coded 500K 2402MHz



Test Mode:Coded 500K 2440MHz



Test Mode:Coded 500K 2480MHz

**4 Transmitter Power Spectral Density**

Test Mode	Carrier frequency (MHz)	Channel No.	Power Density (dBm/3kHz)
GFSK (LE 1Mbps)	2402	0	-8.4
GFSK (LE 1Mbps)	2440	19	-9.1
GFSK (LE 1Mbps)	2480	39	-8.8

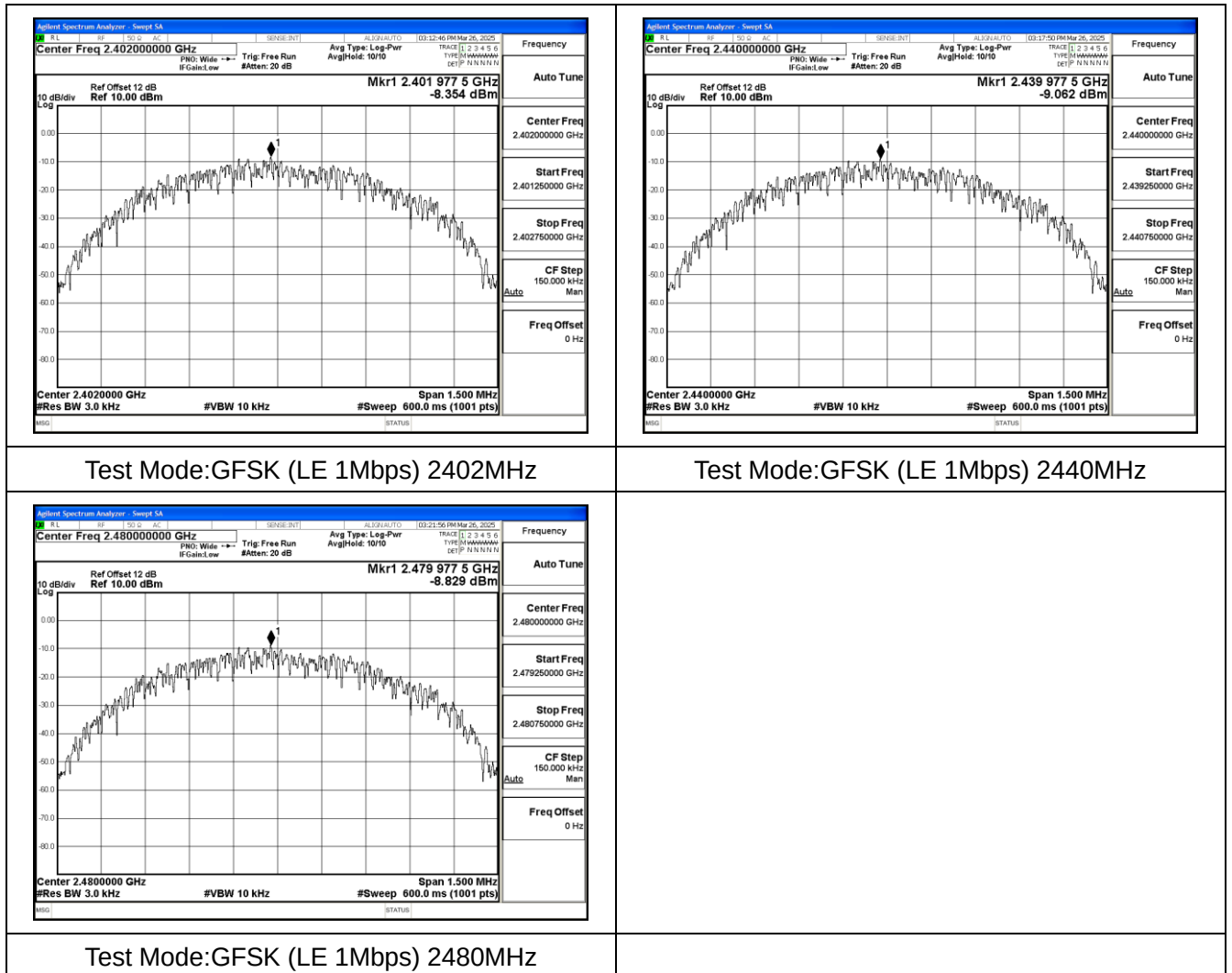
Test Mode	Carrier frequency (MHz)	Channel No.	Power Density (dBm/3kHz)
GFSK (LE 2Mbps)	2402	0	-12.1
GFSK (LE 2Mbps)	2440	19	-12.8
GFSK (LE 2Mbps)	2480	39	-12.7

Test Mode	Carrier frequency (MHz)	Channel No.	Power Density (dBm/3kHz)
Coded 125K	2402	0	0.8
Coded 125K	2440	19	0.1
Coded 125K	2480	39	0.4

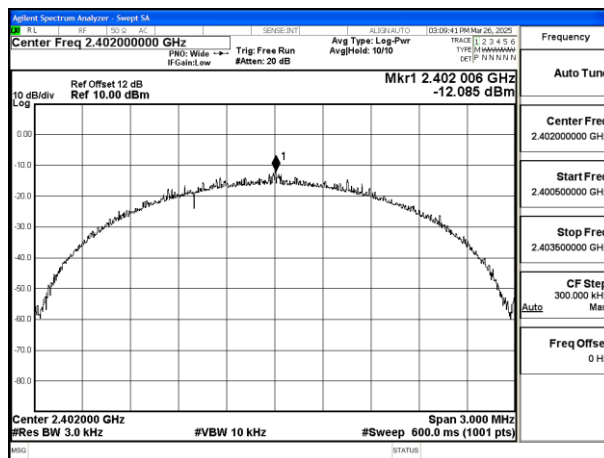
Test Mode	Carrier frequency (MHz)	Channel No.	Power Density (dBm/3kHz)
Coded 500K	2402	0	0.6
Coded 500K	2440	19	-0.5
Coded 500K	2480	39	-0.5



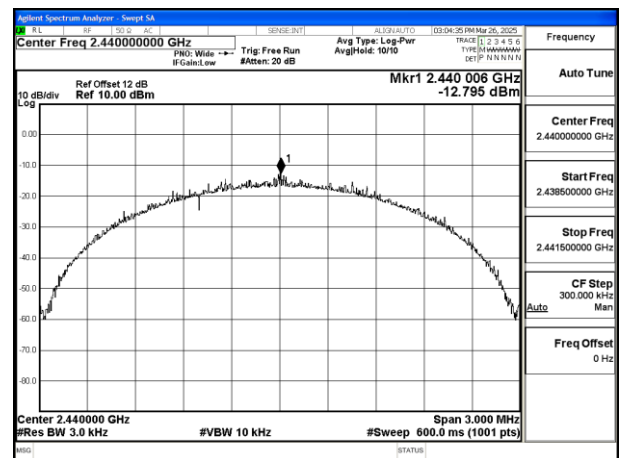
Test Mode: GFSK (LE 1Mbps)



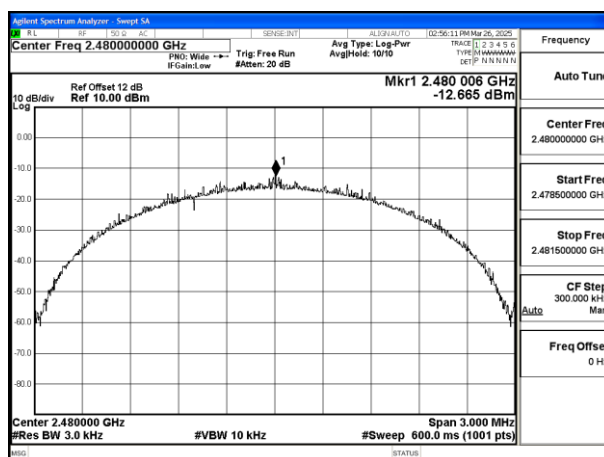
Test Mode: GFSK (LE 2Mbps)



Test Mode:GFSK (LE 2Mbps) 2402MHz



Test Mode:GFSK (LE 2Mbps) 2440MHz



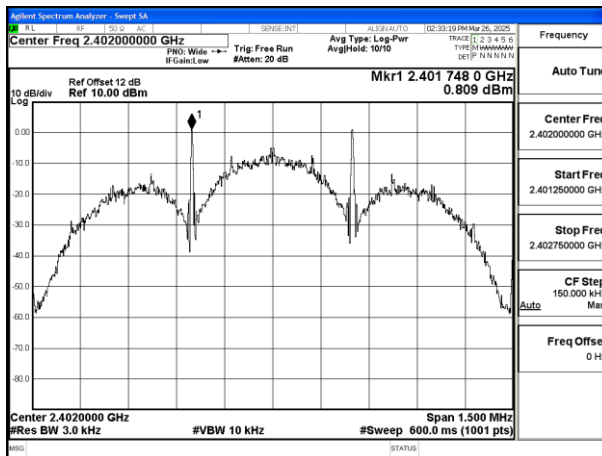
Test Mode:GFSK (LE 2Mbps) 2480MHz



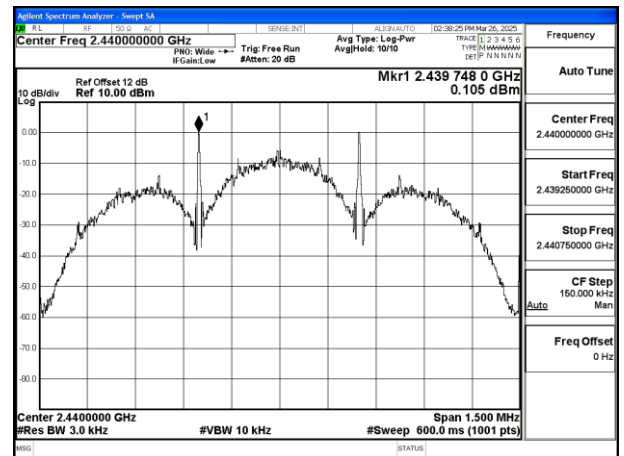
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Test Report No.: PSU-NQN2504150110RF07

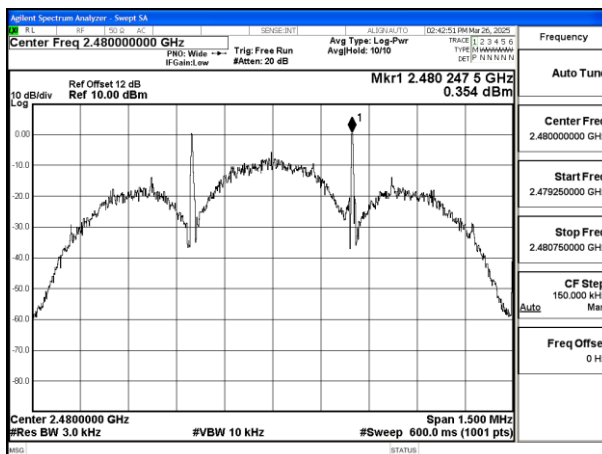
Test Mode: Coded 125K



Test Mode:Coded 125K 2402MHz



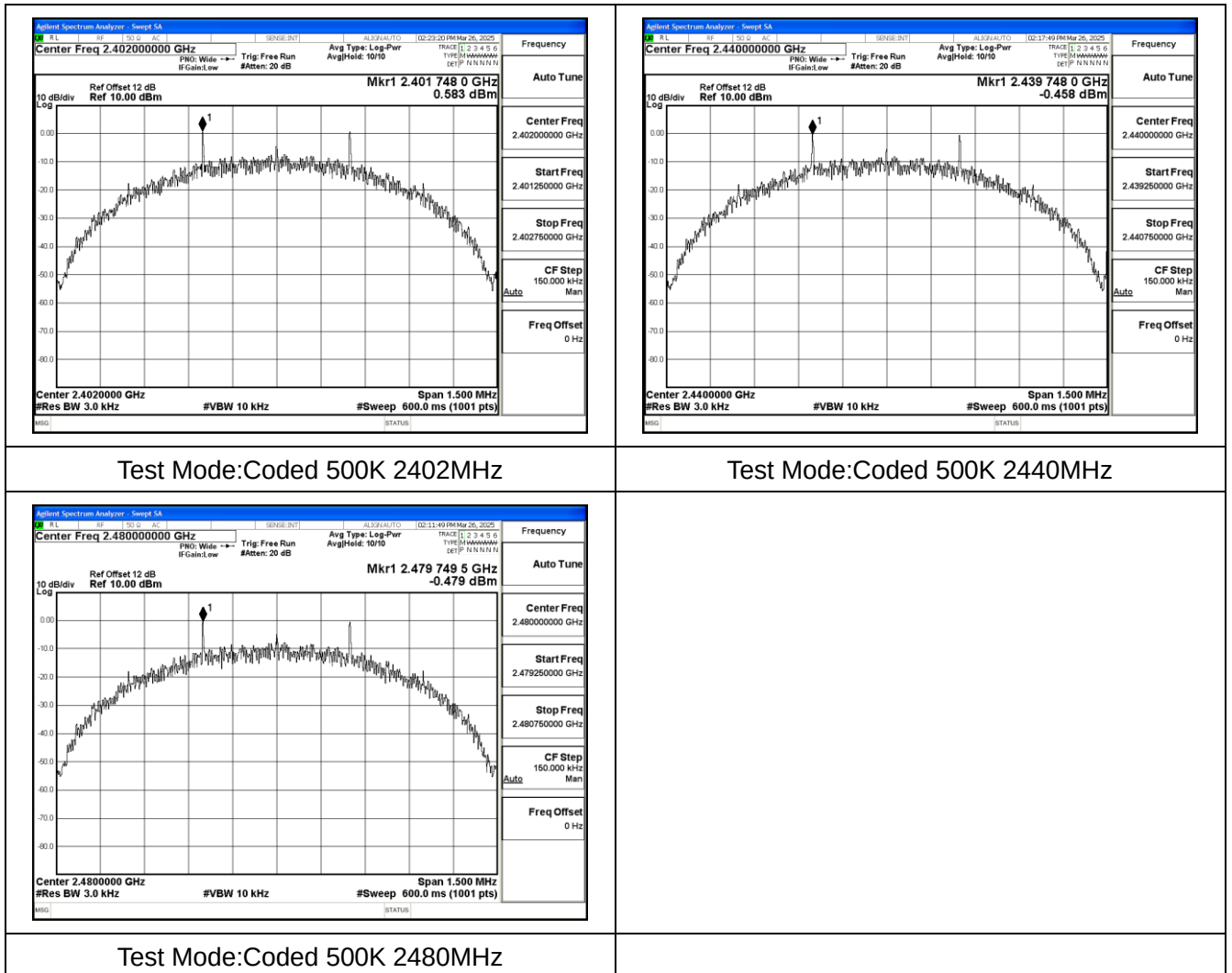
Test Mode:Coded 125K 2440MHz



Test Mode:Coded 125K 2480MHz



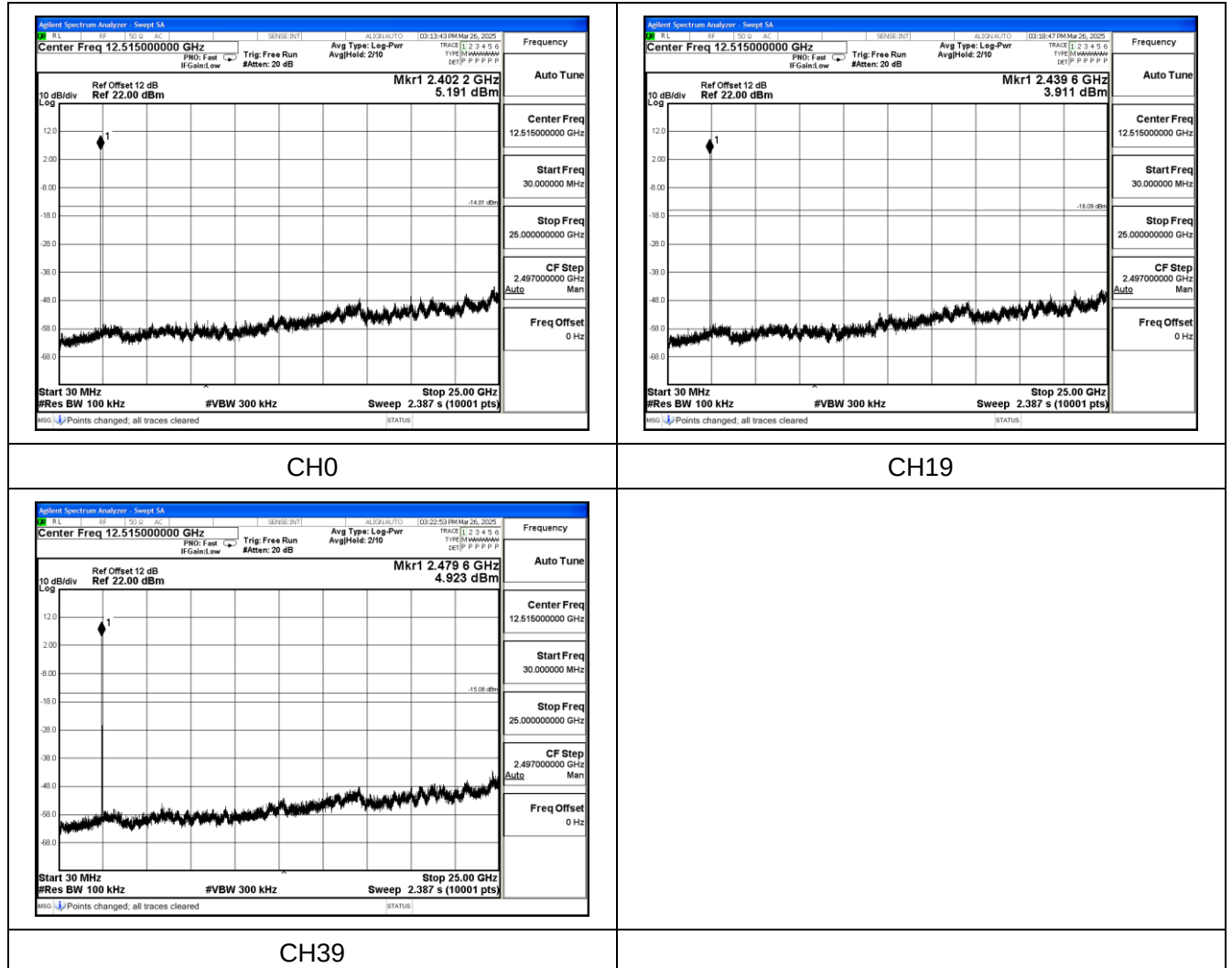
Test Mode: Coded 500K



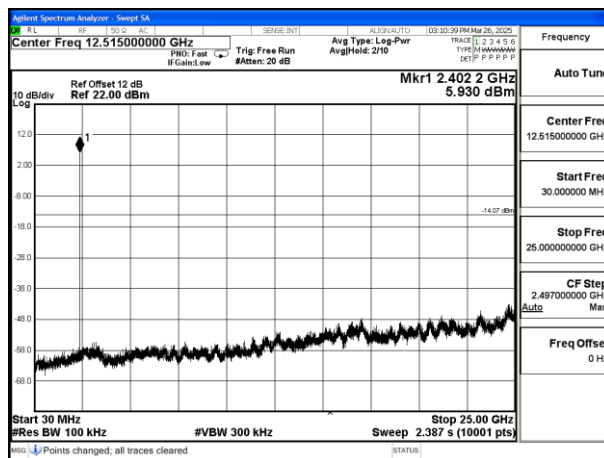


5 Conducted Out of band emission measurement

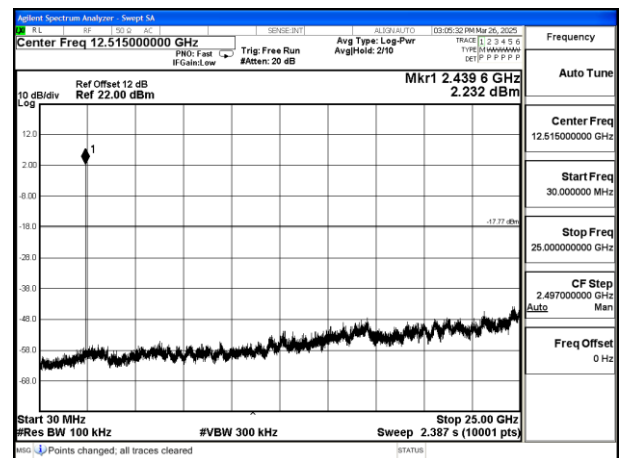
Test Mode: GFSK (LE 1Mbps)



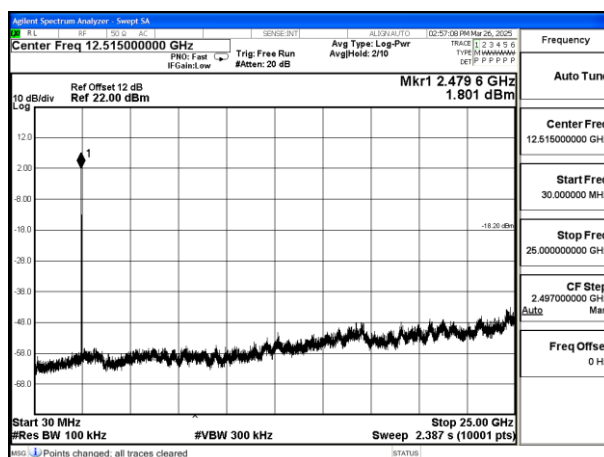
Test Mode: GFSK (LE 2Mbps)



CH0



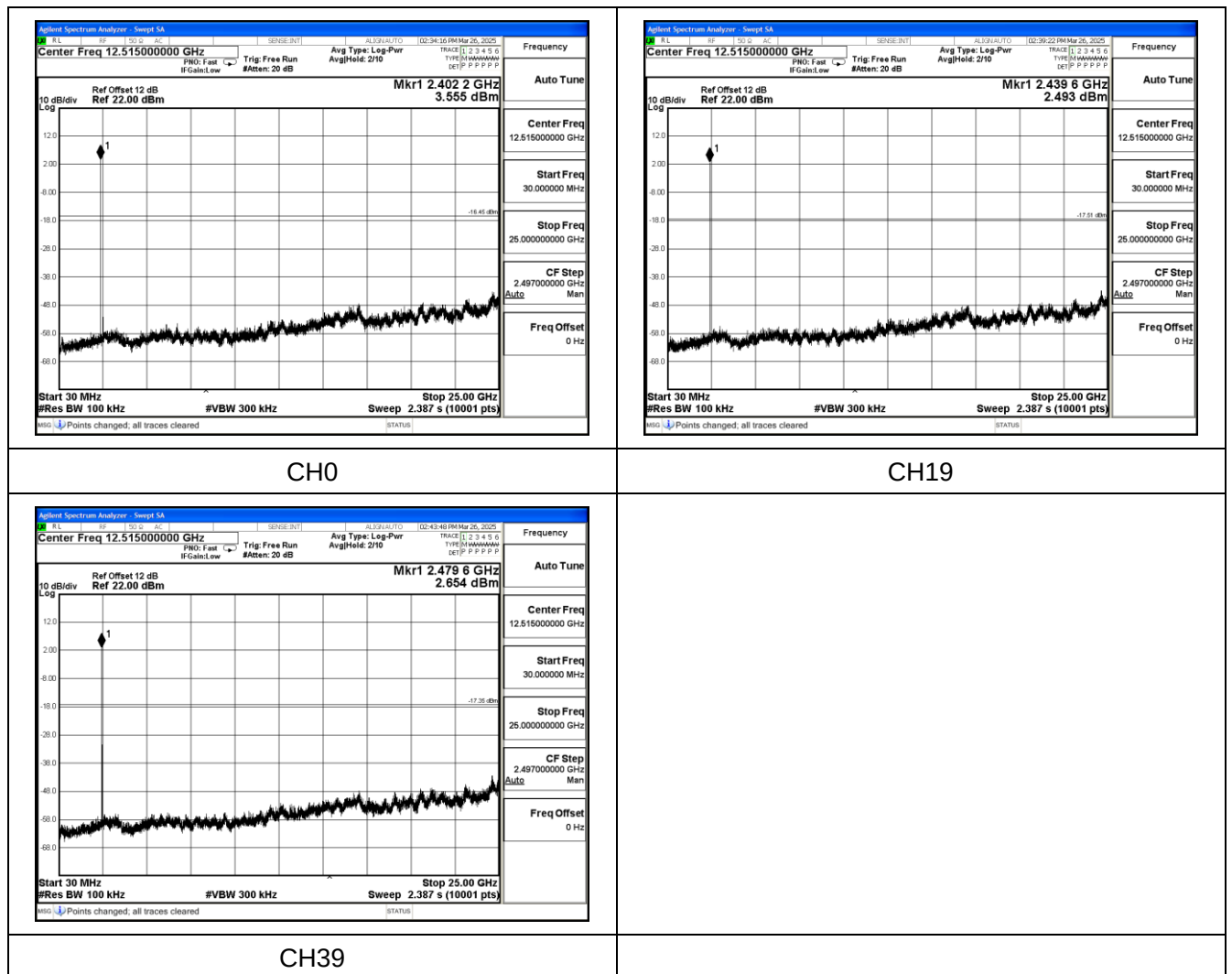
CH19



CH39

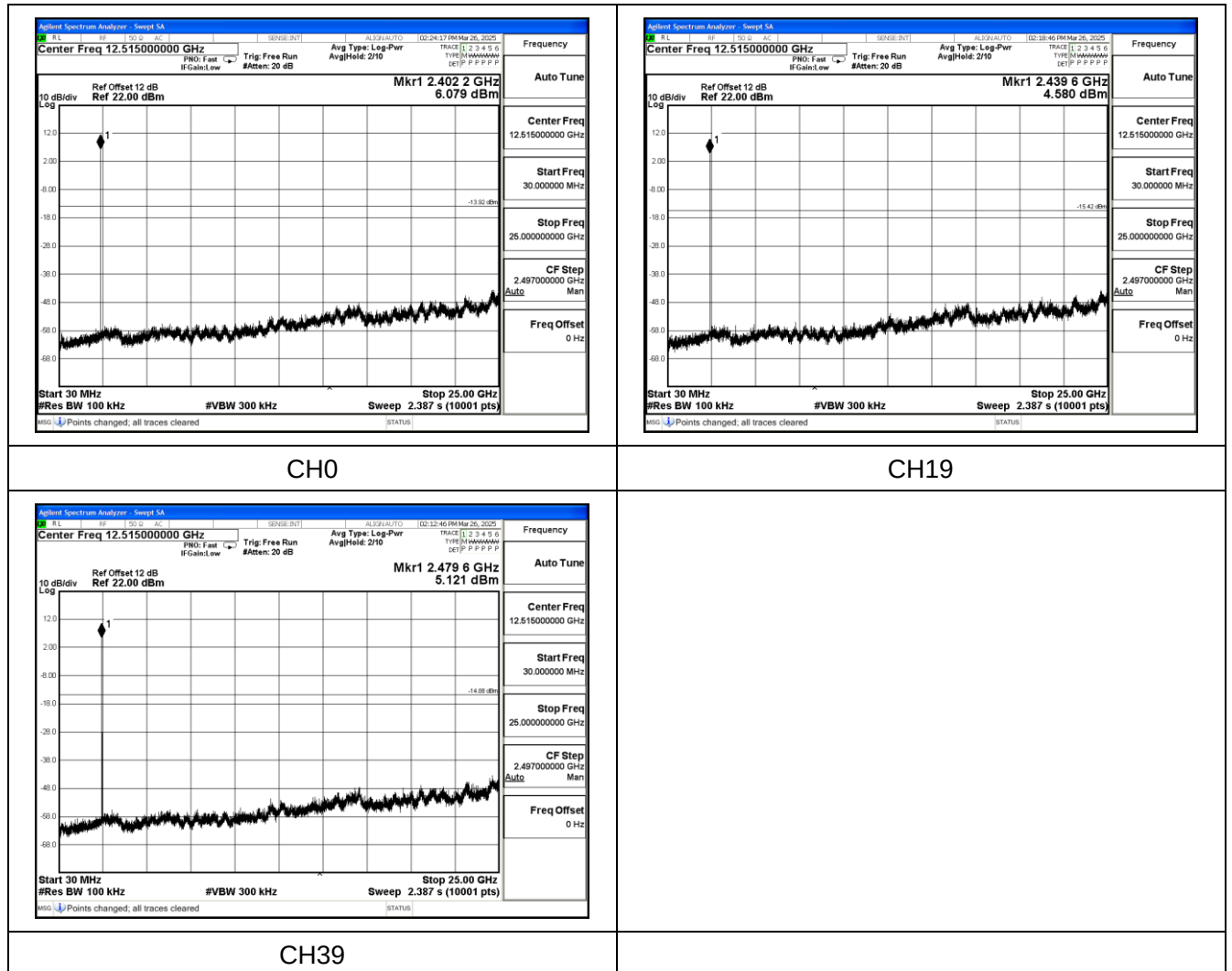


Test Mode: Coded 125K





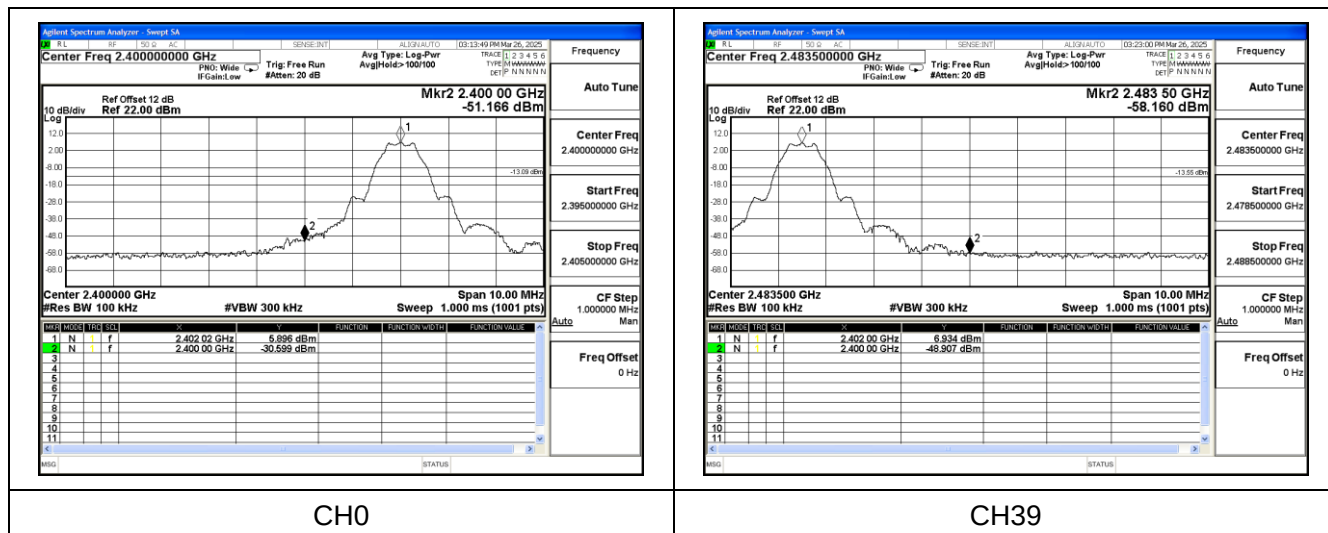
Test Mode: Coded 500K



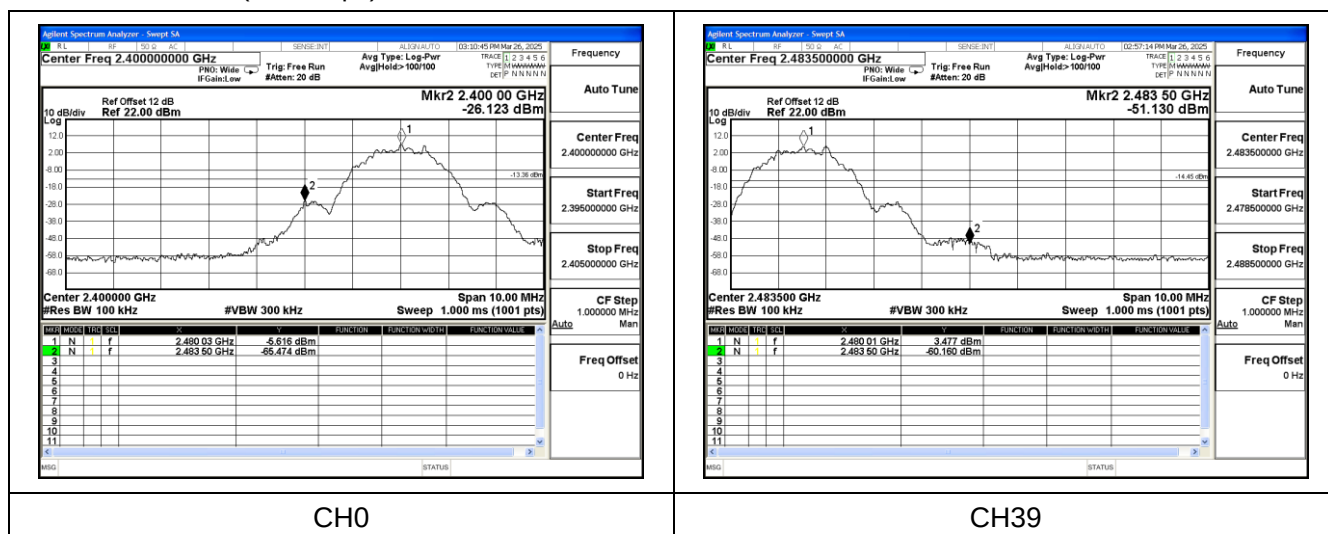


6 Band Edge measurement

Test Mode: GFSK (LE 1Mbps)

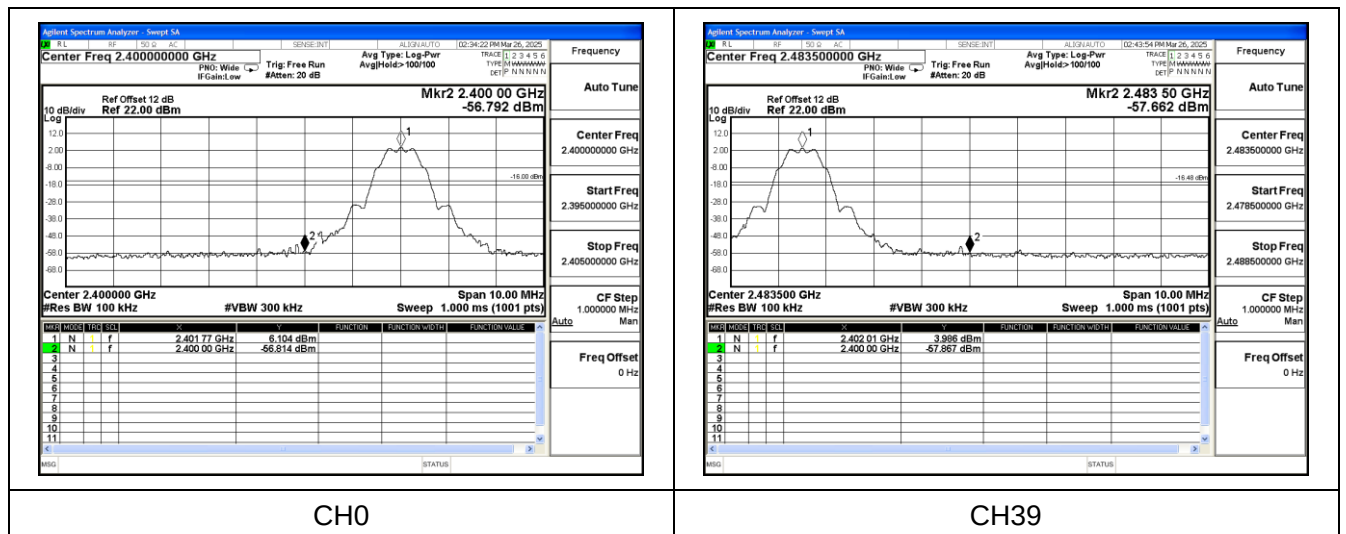


Test Mode: GFSK (LE 2Mbps)

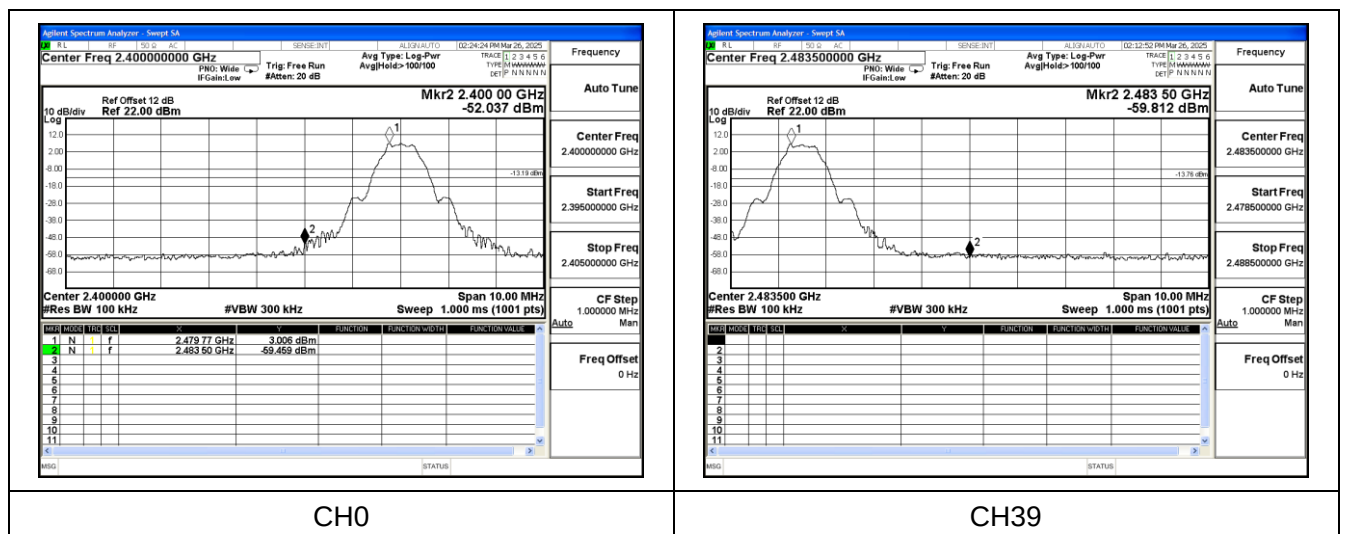




Test Mode: Coded 125K



Test Mode: Coded 500K



**BLE ANT8****7 Duty Cycle and Antenna Gain**

Test Mode	Frequency (MHz)	Plot	Duty Cycle	Correction Factor(dB)	Antenna Gain(dBi)
GFSK (LE 1Mbps)	2402	Fig.1	64.80%	1.88	0.40

Note: Correction Factor= $10 \cdot \log(1/\text{Duty Cycle})$

Test Mode	Frequency (MHz)	Plot	Duty Cycle	Correction Factor(dB)	Antenna Gain(dBi)
GFSK (LE 2Mbps)	2402	Fig.2	59.00%	2.29	0.40

Note: Correction Factor= $10 \cdot \log(1/\text{Duty Cycle})$

Test Mode	Frequency (MHz)	Plot	Duty Cycle	Correction Factor(dB)	Antenna Gain(dBi)
Coded 125K	2402	Fig.3	97.60%	0.11	0.40

Note: Correction Factor= $10 \cdot \log(1/\text{Duty Cycle})$

Test Mode	Frequency (MHz)	Plot	Duty Cycle	Correction Factor(dB)	Antenna Gain(dBi)
Coded 500K	2402	Fig.4	91.50%	0.39	0.40

Note: Correction Factor= $10 \cdot \log(1/\text{Duty Cycle})$



Test Mode: GFSK (LE 1Mbps)

Test Mode: GFSK (LE 2Mbps)

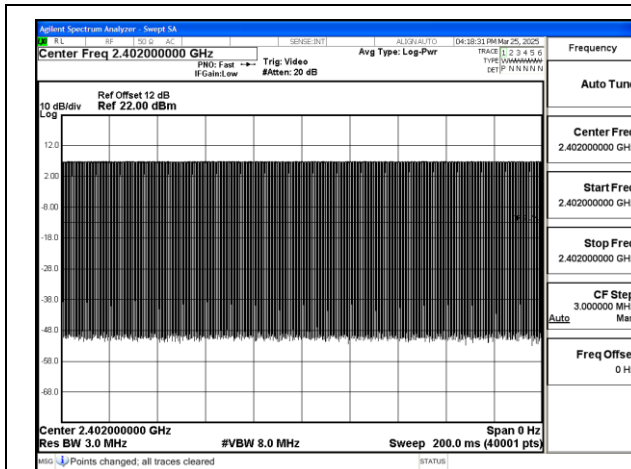


Fig.1

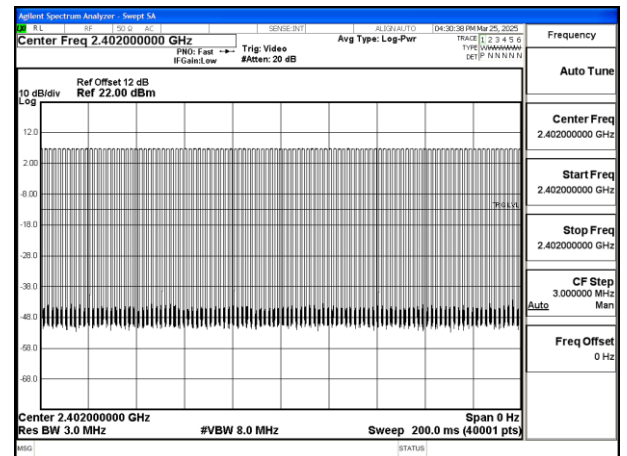


Fig.2

Test Mode: Coded 125K

Test Mode: Coded 500K

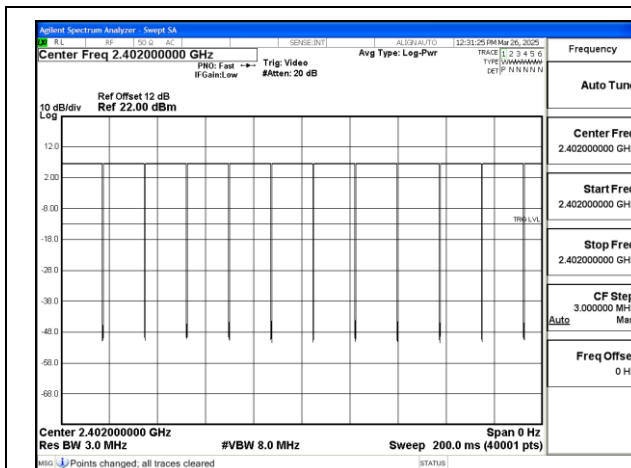


Fig.3

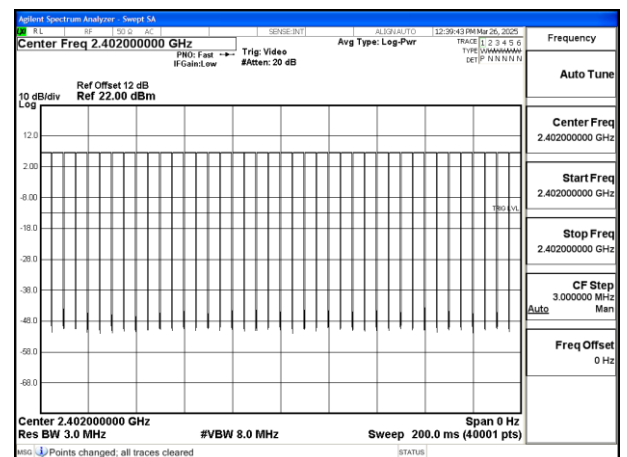


Fig.4

**8 EIRP****Conducted Power**

Modulation type	Conducted Peak Power(dBm)		
	2402MHz	2440MHz	2480MHz
GFSK (LE 1Mbps)	6.75	6.40	6.47
GFSK (LE 2Mbps)	6.77	6.40	6.47
Coded 125K	6.63	6.32	6.40
Coded 500K	6.63	6.44	6.44

Modulation type	Conducted Average Power(dBm)		
	2402MHz	2440MHz	2480MHz
GFSK (LE 1Mbps)	6.55	6.21	5.63
GFSK (LE 2Mbps)	5.99	6.17	6.00
Coded 125K	5.80	6.09	6.29
Coded 500K	5.76	5.54	6.35

EIRP

Modulation type	Peak EIRP(dBm)		
	2402MHz	2440MHz	2480MHz
GFSK (LE 1Mbps)	7.15	6.80	6.87
GFSK (LE 2Mbps)	7.17	6.80	6.87
Coded 125K	7.03	6.72	6.80
Coded 500K	7.03	6.84	6.84

Modulation type	Average EIRP(dBm)		
	2402MHz	2440MHz	2480MHz
GFSK (LE 1Mbps)	6.95	6.61	6.03
GFSK (LE 2Mbps)	6.39	6.57	6.40
Coded 125K	6.20	6.49	6.69
Coded 500K	6.16	5.94	6.75

EIRP (dBm)=Conducted Power(dBm)+Antenna Gain(dBi)

**9 Occupied Bandwidth****6dB Bandwidth**

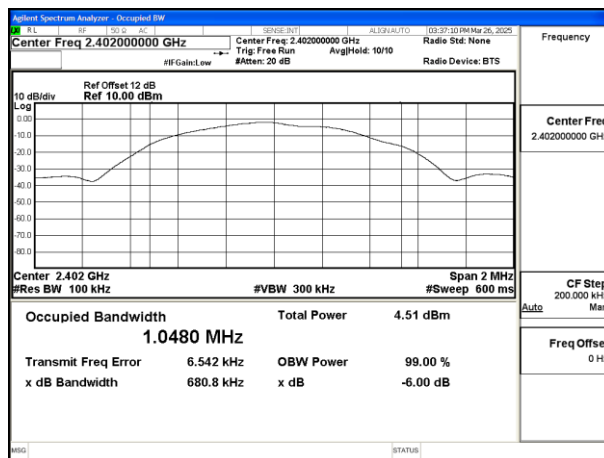
Test Mode	Carrier frequency (MHz)	6dB Bandwidth(KHz)
GFSK (LE 1Mbps)	2402	680.8
GFSK (LE 1Mbps)	2440	678.7
GFSK (LE 1Mbps)	2480	682.2

Test Mode	Carrier frequency (MHz)	6dB Bandwidth(KHz)
GFSK (LE 2Mbps)	2402	1297.8
GFSK (LE 2Mbps)	2440	1315.2
GFSK (LE 2Mbps)	2480	1317.3

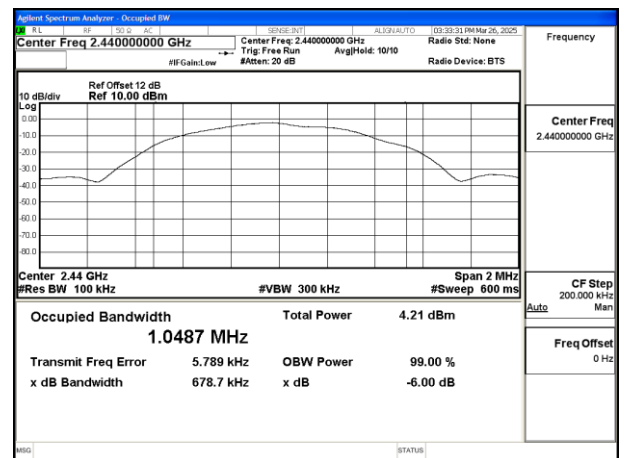
Test Mode	Carrier frequency (MHz)	6dB Bandwidth(KHz)
Coded 125K	2402	650.8
Coded 125K	2440	649.3
Coded 125K	2480	647.7

Test Mode	Carrier frequency (MHz)	6dB Bandwidth(KHz)
Coded 500K	2402	713.1
Coded 500K	2440	686.4
Coded 500K	2480	713.4

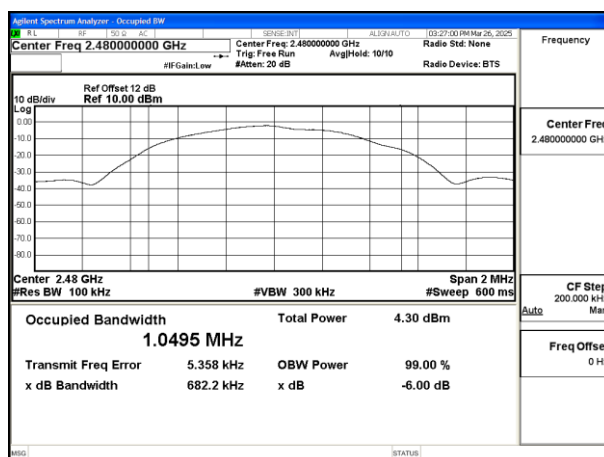
Test Mode: GFSK (LE 1Mbps)



Test Mode:GFSK (LE 1Mbps) 2402MHz

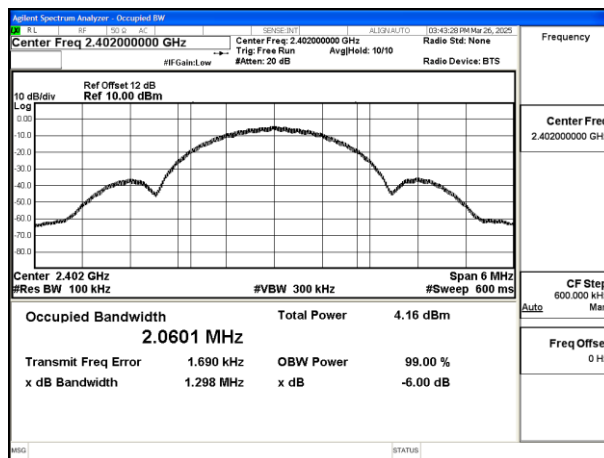


Test Mode:GFSK (LE 1Mbps) 2440MHz

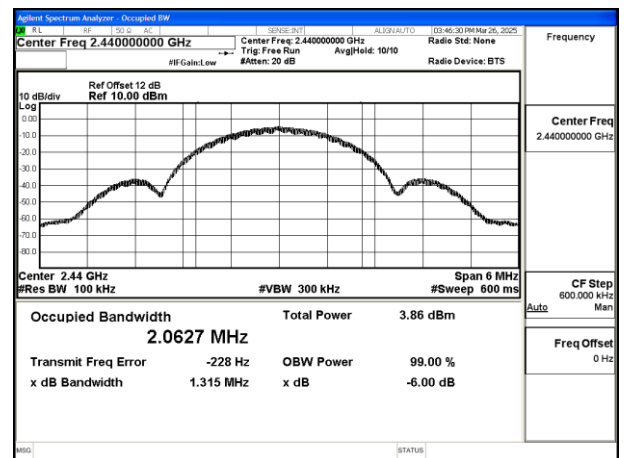


Test Mode:GFSK (LE 1Mbps) 2480MHz

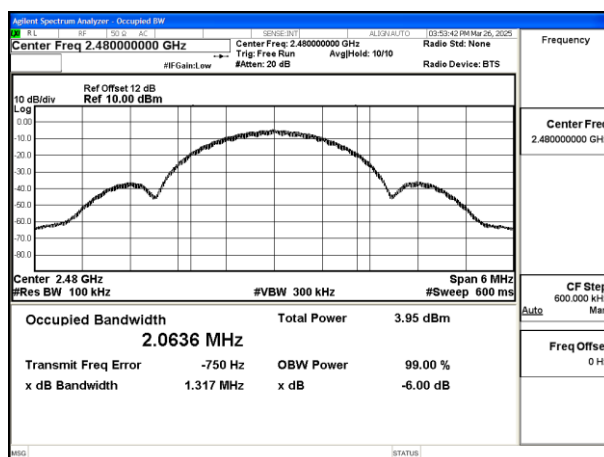
Test Mode: GFSK (LE 2Mbps)



Test Mode:GFSK (LE 2Mbps) 2402MHz



Test Mode:GFSK (LE 2Mbps) 2440MHz



Test Mode:GFSK (LE 2Mbps) 2480MHz



BUREAU
VERITAS

Test Report No.: PSU-NQN2504150110RF07

Test Mode: Coded 125K

Adjust Spectrum Analyzer - Occupied BW Center Freq 2.402000000 GHz Ref Offset 12 dB Ref 10.00 dBm Center Freq 2.402000000 GHz Tripp: Free Run #F Gain: Low #Aver: 20 dB AvgHeld: 10/10 Radio Std: None Radio Device: BTS Frequency Center Freq 2.402000000 GHz 10 dB/div Log Center 2.402 GHz #Res BW 100 kHz #VBW 300 kHz #Sweep 600 ms CF Step 600.000 kHz Auto Man Occupied Bandwidth 1.0442 MHz Total Power 6.36 dBm Transmit Freq Error -1.764 kHz OBW Power 99.00 % x dB Bandwidth 650.8 kHz x dB -6.00 dB Freq Offset 0 Hz MSO STATUS	Adjust Spectrum Analyzer - Occupied BW Center Freq 2.440000000 GHz Ref Offset 12 dB Ref 10.00 dBm Center Freq 2.440000000 GHz Tripp: Free Run #F Gain: Low #Aver: 20 dB AvgHeld: 10/10 Radio Std: None Radio Device: BTS Frequency Center Freq 2.440000000 GHz 10 dB/div Log Center 2.44 GHz #Res BW 100 kHz #VBW 300 kHz #Sweep 600 ms CF Step 600.000 kHz Auto Man Occupied Bandwidth 1.0447 MHz Total Power 6.05 dBm Transmit Freq Error -2.583 kHz OBW Power 99.00 % x dB Bandwidth 649.3 kHz x dB -6.00 dB Freq Offset 0 Hz MSO STATUS
Test Mode:Coded 125K 2402MHz	Test Mode:Coded 125K 2440MHz
Adjust Spectrum Analyzer - Occupied BW Center Freq 2.480000000 GHz Ref Offset 12 dB Ref 10.00 dBm Center Freq 2.480000000 GHz Tripp: Free Run #F Gain: Low #Aver: 20 dB AvgHeld: 10/10 Radio Std: None Radio Device: BTS Frequency Center Freq 2.480000000 GHz 10 dB/div Log Center 2.48 GHz #Res BW 100 kHz #VBW 300 kHz #Sweep 600 ms CF Step 600.000 kHz Auto Man Occupied Bandwidth 1.0448 MHz Total Power 6.15 dBm Transmit Freq Error -2.799 kHz OBW Power 99.00 % x dB Bandwidth 647.7 kHz x dB -6.00 dB Freq Offset 0 Hz MSO STATUS	
Test Mode:Coded 125K 2480MHz	



BUREAU
VERITAS

Test Report No.: PSU-NQN2504150110RF07

Test Mode: Coded 500K

Agilent Spectrum Analyzer - Occupied BW Center Freq 2.402000000 GHz Ref Offset 12 dB Ref 10.00 dBm Center 2.402 GHz #Res BW 100 kHz #VBW 300 kHz #Sweep 600 ms Occupied Bandwidth 1.0529 MHz Total Power 6.09 dBm Transmit Freq Error -1.778 kHz OBW Power 99.00 % x dB Bandwidth 713.1 kHz x dB -6.00 dB CF Step 600.000 kHz Auto Man Freq Offset 0 Hz	Agilent Spectrum Analyzer - Occupied BW Center Freq 2.440000000 GHz Ref Offset 12 dB Ref 10.00 dBm Center 2.44 GHz #Res BW 100 kHz #VBW 300 kHz #Sweep 600 ms Occupied Bandwidth 1.0535 MHz Total Power 5.79 dBm Transmit Freq Error -2.378 kHz OBW Power 99.00 % x dB Bandwidth 686.4 kHz x dB -6.00 dB CF Step 600.000 kHz Auto Man Freq Offset 0 Hz
Test Mode:Coded 500K 2402MHz	Test Mode:Coded 500K 2440MHz
Agilent Spectrum Analyzer - Occupied BW Center Freq 2.480000000 GHz Ref Offset 12 dB Ref 10.00 dBm Center 2.48 GHz #Res BW 100 kHz #VBW 300 kHz #Sweep 600 ms Occupied Bandwidth 1.0549 MHz Total Power 5.88 dBm Transmit Freq Error -1.880 kHz OBW Power 99.00 % x dB Bandwidth 713.4 kHz x dB -6.00 dB CF Step 600.000 kHz Auto Man Freq Offset 0 Hz	
Test Mode:Coded 500K 2480MHz	

**99% Bandwidth**

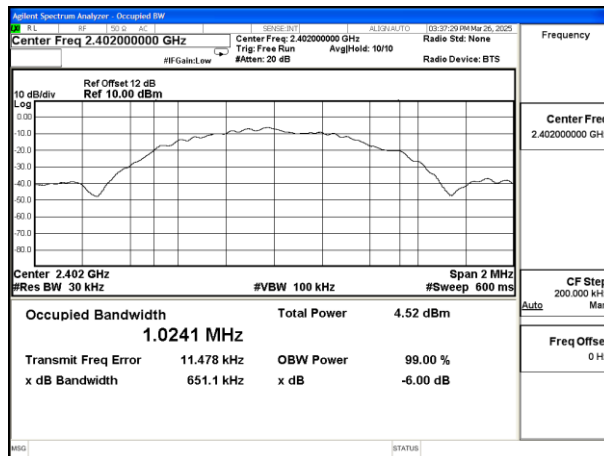
Test Mode	Carrier frequency (MHz)	99% Bandwidth(kHz)
GFSK (LE 1Mbps)	2402	1024.1
GFSK (LE 1Mbps)	2440	1024.9
GFSK (LE 1Mbps)	2480	1025.4

Test Mode	Carrier frequency (MHz)	99% Bandwidth(kHz)
GFSK (LE 2Mbps)	2402	2051.8
GFSK (LE 2Mbps)	2440	2051.4
GFSK (LE 2Mbps)	2480	2052.5

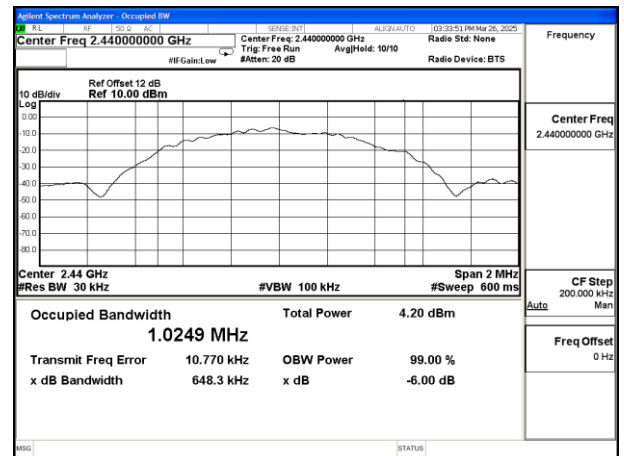
Test Mode	Carrier frequency (MHz)	99% Bandwidth(kHz)
Coded 125K	2402	1022.8
Coded 125K	2440	1023.0
Coded 125K	2480	1024.2

Test Mode	Carrier frequency (MHz)	99% Bandwidth(kHz)
Coded 500K	2402	1029.9
Coded 500K	2440	1031.4
Coded 500K	2480	1030.9

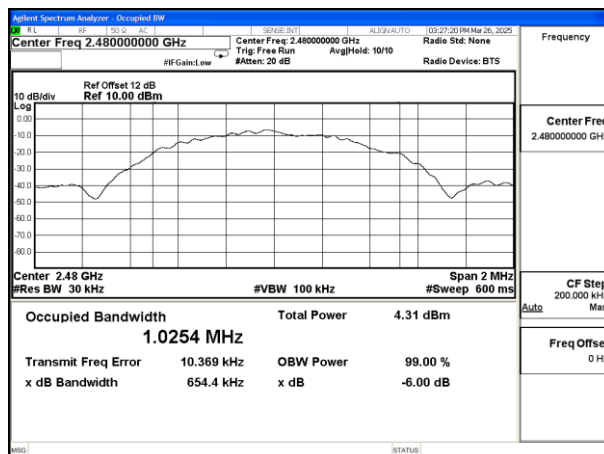
Test Mode: GFSK (LE 1Mbps)



Test Mode:GFSK (LE 1Mbps) 2402MHz



Test Mode:GFSK (LE 1Mbps) 2440MHz



Test Mode:GFSK (LE 1Mbps) 2480MHz