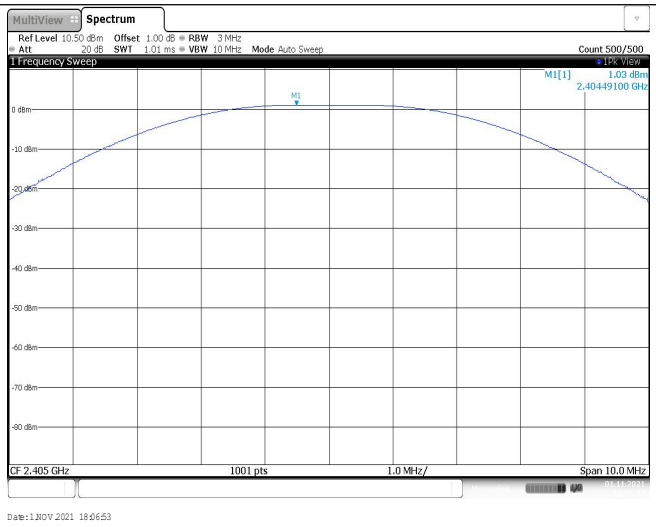
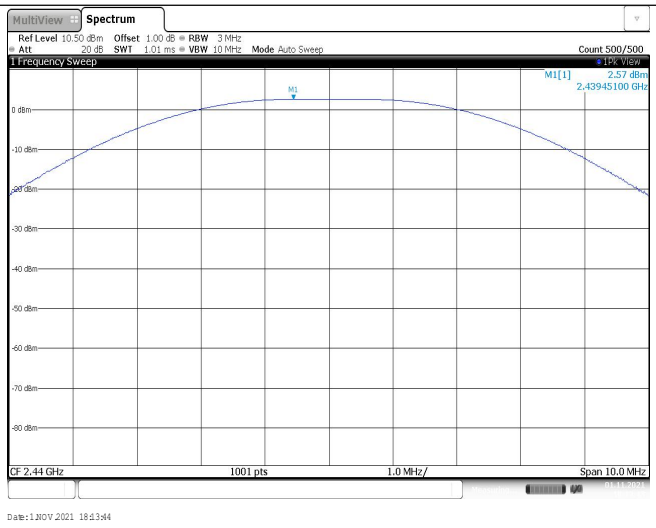
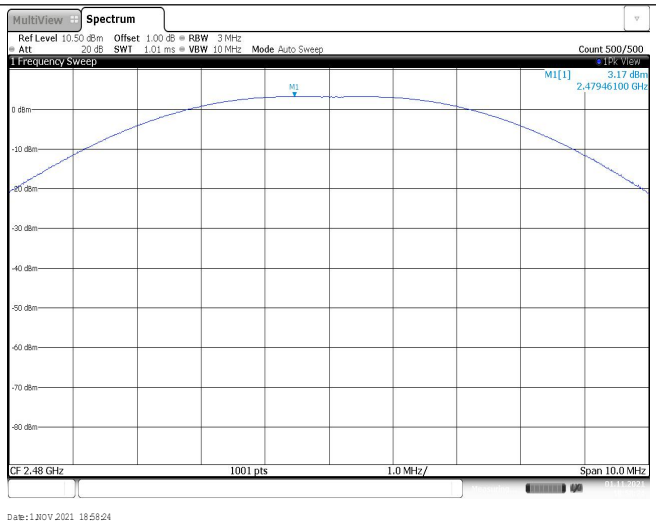
APPENDIX REPORT

Project No.	SHT2108113003EW	Radio Specification	Zigbee
Test sample No.	YPHT21081130007	Model No.	LW-Z5-MDQ-PR-Z
Start test date	2021-11-01	Finish date	2021-11-01
Temperature	25.3℃	Humidity	64%
Test Engineer	Weiyang Xiang	Auditor	Xiaodong Zhao

Appendix clause	Test item	Result
A	Peak Output Power	PASS
B	Power Spectral Density	PASS
C	6 dB Bandwidth	PASS
D	99% Occupied Bandwidth	PASS
E	Duty cycle	PASS
F	Band edge and Spurious Emissions (conducted)	PASS

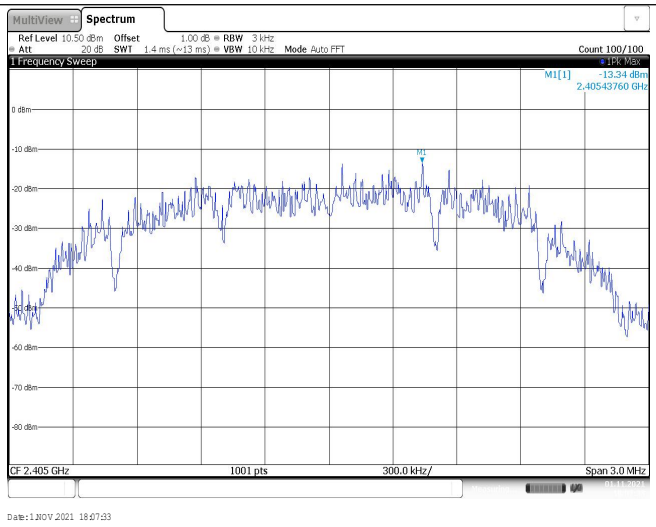
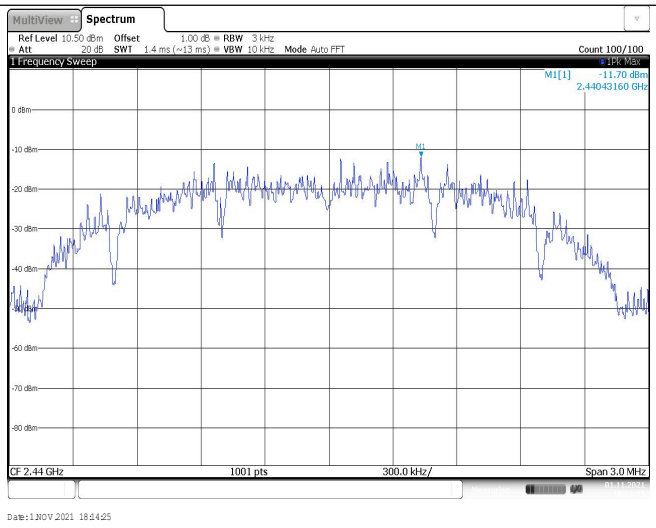
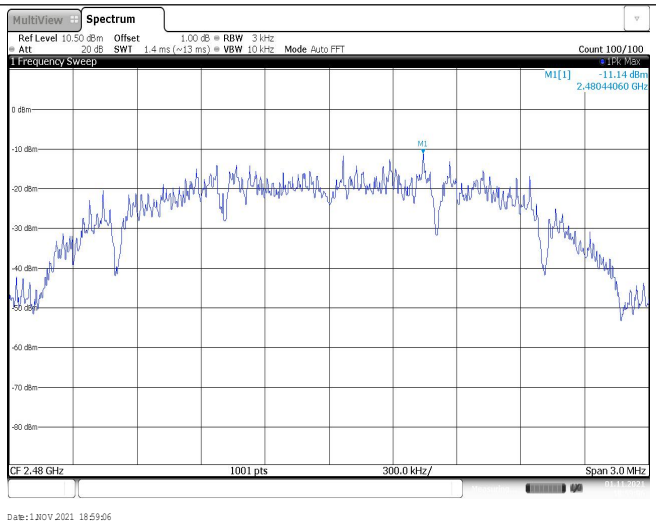
Appendix A：Peak Output Power

Channel	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
CH_L	1.03	1.01	≤ 30.00	Pass
CH_M	2.57	2.54		
CH_H	3.17	3.15		

CH_L	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 3 MHz Att 20 dB SWT 1.01 ms VBW 10 MHz Mode Auto Sweep Count 500/500 1 Frequency Sweep 1Pk View M1[1] 1.03 dBm 2.40449100 GHz CF 2.405 GHz 1001 pts 1.0 MHz/ Span 10.0 MHz Date: 1.NOV.2021 18:06:53
CH_M	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 3 MHz Att 20 dB SWT 1.01 ms VBW 10 MHz Mode Auto Sweep Count 500/500 1 Frequency Sweep 1Pk View M1[1] 2.57 dBm 2.43945100 GHz CF 2.44 GHz 1001 pts 1.0 MHz/ Span 10.0 MHz Date: 1.NOV.2021 18:13:44
CH_H	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 3 MHz Att 20 dB SWT 1.01 ms VBW 10 MHz Mode Auto Sweep Count 500/500 1 Frequency Sweep 1Pk View M1[1] 3.17 dBm 2.47946100 GHz CF 2.48 GHz 1001 pts 1.0 MHz/ Span 10.0 MHz Date: 1.NOV.2021 18:58:24

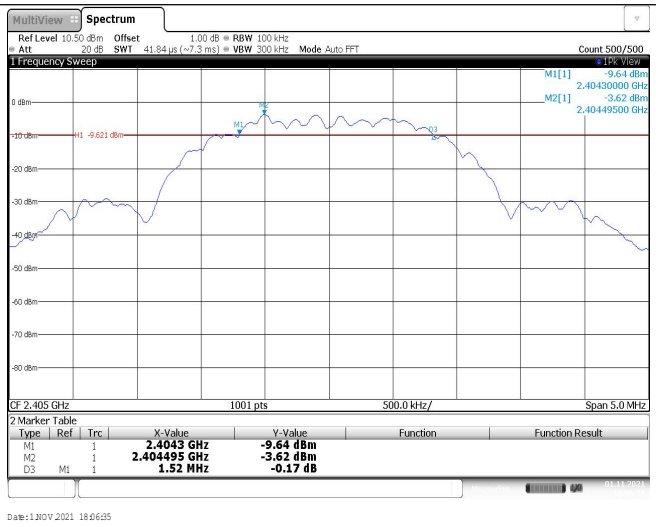
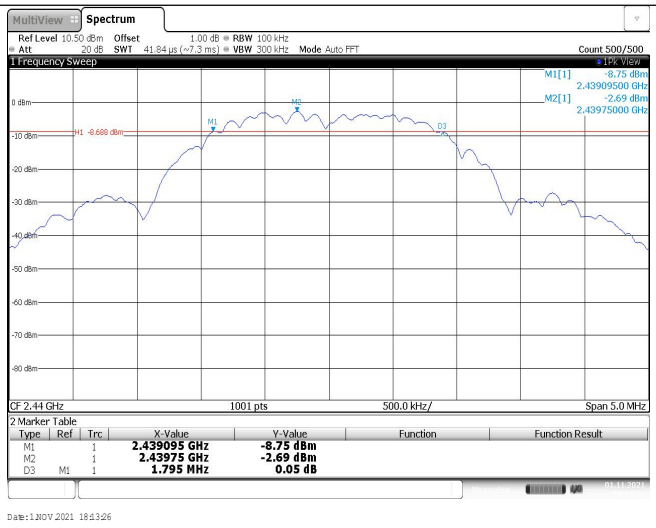
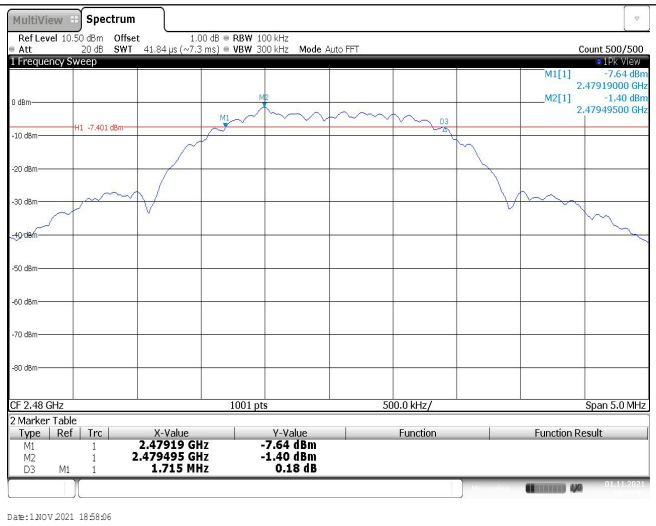
Appendix B：Power Spectral Density

Channel	Power Spectral Density(dBm/3KHz)	Limit (dBm/3KHz)	Result
CH_L	-13.34	≤8.00	Pass
CH_M	-11.70		
CH_H	-11.14		

CH_L	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 3 kHz Att 20 dB SWT 1.4 ms (~13 ms) VBW 10 kHz Mode Auto FFT Count 100/100 1 Frequency Sweep 1Pk Max M1[1] -13.34 dBm 2.40543760 GHz CF 2.405 GHz 1001 pts 300.0 kHz/ Span 3.0 MHz Date: 1.NOV.2021 18:07:03
CH_M	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 3 kHz Att 20 dB SWT 1.4 ms (~13 ms) VBW 10 kHz Mode Auto FFT Count 100/100 1 Frequency Sweep 1Pk Max M1[1] -11.70 dBm 2.44043160 GHz CF 2.44 GHz 1001 pts 300.0 kHz/ Span 3.0 MHz Date: 1.NOV.2021 18:14:25
CH_H	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 3 kHz Att 20 dB SWT 1.4 ms (~13 ms) VBW 10 kHz Mode Auto FFT Count 100/100 1 Frequency Sweep 1Pk Max M1[1] -11.14 dBm 2.48044060 GHz CF 2.48 GHz 1001 pts 300.0 kHz/ Span 3.0 MHz Date: 1.NOV.2021 18:59:06

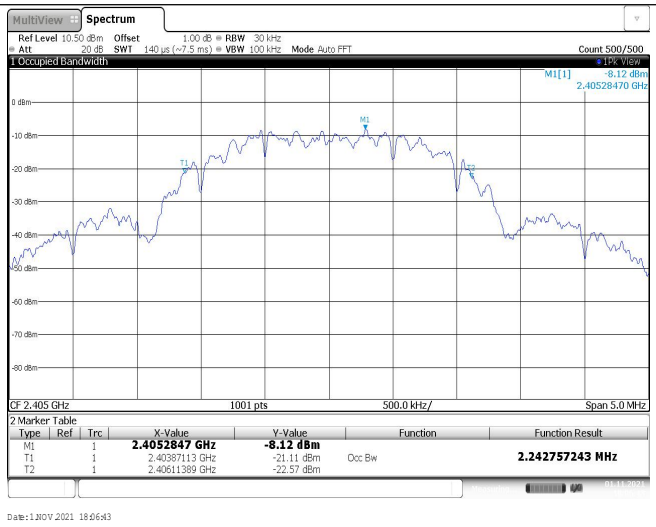
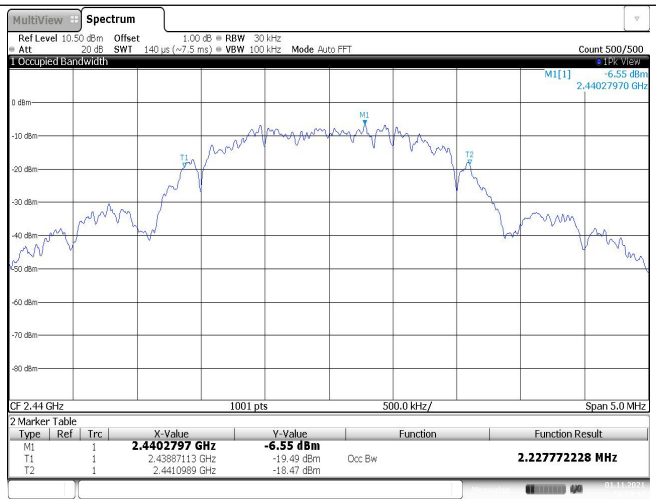
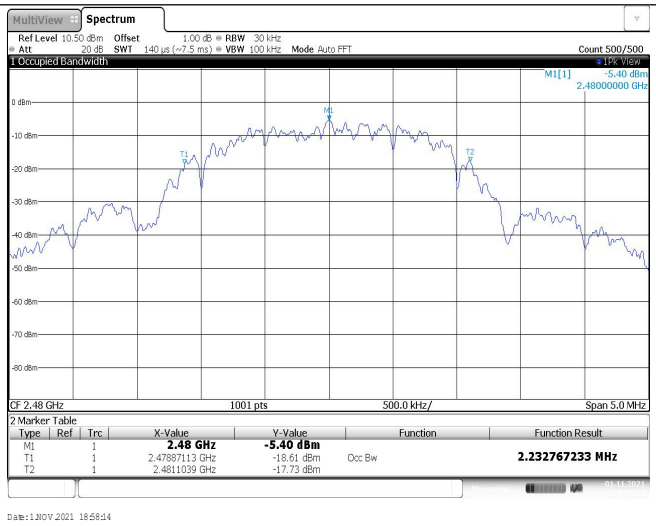
Appendix C：6dB bandwidth

Channel	6dB Bandwidth(kHz)	Limit (kHz)	Result
CH_L	1520.00	≥500	Pass
CH_M	1795.00		
CH_H	1715.00		

CH_L	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 100 kHz Att 20 dB SWT 41.84 µs (~7.3 ms) VBW 300 kHz Mode Auto FFT Count 500/500 1 Frequency Sweep 1Pk View M1[1] -9.64 dBm 2.40430000 GHz M2[1] -3.62 dBm 2.40449500 GHz CF 2.405 GHz 1001 pts 500.0 kHz/ Span 5.0 MHz 2 Marker Table Type Ref Trc X-Value Y-Value Function Function Result M1 1 2.4043 GHz -9.64 dBm M2 1 2.404495 GHz -3.62 dBm D3 M1 1 1.52 MHz -0.17 dB Date: 1.NOV.2021 18:06:35
CH_M	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 100 kHz Att 20 dB SWT 41.84 µs (~7.3 ms) VBW 300 kHz Mode Auto FFT Count 500/500 1 Frequency Sweep 1Pk View M1[1] -8.75 dBm 2.43909500 GHz M2[1] -2.69 dBm 2.43975000 GHz CF 2.44 GHz 1001 pts 500.0 kHz/ Span 5.0 MHz 2 Marker Table Type Ref Trc X-Value Y-Value Function Function Result M1 1 2.439095 GHz -8.75 dBm M2 1 2.43975 GHz -2.69 dBm D3 M1 1 1.795 MHz 0.05 dB Date: 1.NOV.2021 18:13:26
CH_H	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 100 kHz Att 20 dB SWT 41.84 µs (~7.3 ms) VBW 300 kHz Mode Auto FFT Count 500/500 1 Frequency Sweep 1Pk View M1[1] -7.64 dBm 2.47919000 GHz M2[1] -1.40 dBm 2.47949500 GHz CF 2.48 GHz 1001 pts 500.0 kHz/ Span 5.0 MHz 2 Marker Table Type Ref Trc X-Value Y-Value Function Function Result M1 1 2.47919 GHz -7.64 dBm M2 1 2.479495 GHz -1.40 dBm D3 M1 1 1.715 MHz 0.18 dB Date: 1.NOV.2021 18:58:06

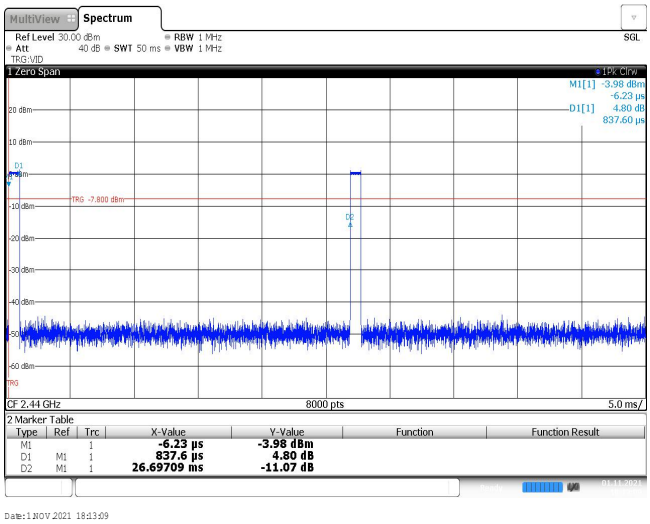
Appendix D：99% Occupied Bandwidth

Channel	99% Occupied Bandwidth(MHz)	Limit (kHz)	Result
CH_L	2.24	-	Pass
CH_M	2.23		
CH_H	2.23		

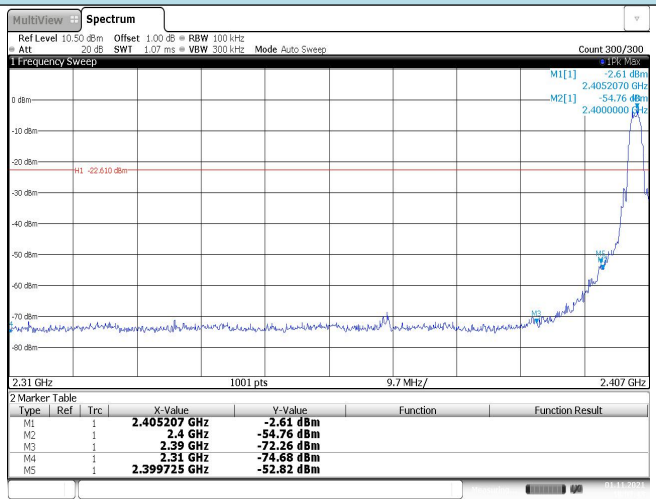
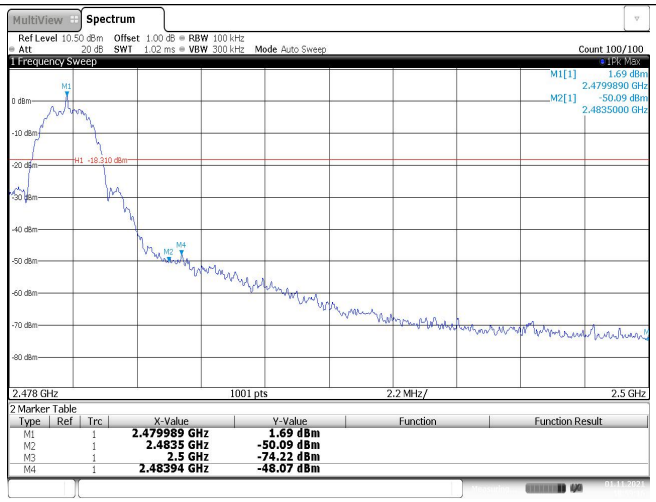
CH_L	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 30 kHz Att 20 dB SWT 140 µs (~7.5 ms) VBW 100 kHz Mode Auto FFT Count 500/500 1 Occupied Bandwidth Ipk View M1[1] -8.12 dBm 2.40528470 GHz CF 2.405 GHz 1001 pts 500.0 kHz/ Span 5.0 MHz 2 Marker Table Type Ref Trc X-Value Y-Value Function Function Result M1 1 2.4052847 GHz -8.12 dBm T1 1 2.40387113 GHz -21.11 dBm Occ Bw 2.242757243 MHz T2 1 2.40611389 GHz -22.57 dBm Date: 1.NOV.2021 18:06:43
CH_M	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 30 kHz Att 20 dB SWT 140 µs (~7.5 ms) VBW 100 kHz Mode Auto FFT Count 500/500 1 Occupied Bandwidth Ipk View M1[1] -6.55 dBm 2.44027970 GHz CF 2.44 GHz 1001 pts 500.0 kHz/ Span 5.0 MHz 2 Marker Table Type Ref Trc X-Value Y-Value Function Function Result M1 1 2.4402797 GHz -6.55 dBm T1 1 2.43887113 GHz -19.49 dBm Occ Bw 2.227772228 MHz T2 1 2.4410989 GHz -18.47 dBm Date: 1.NOV.2021 18:13:34
CH_H	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 30 kHz Att 20 dB SWT 140 µs (~7.5 ms) VBW 100 kHz Mode Auto FFT Count 500/500 1 Occupied Bandwidth Ipk View M1[1] -5.40 dBm 2.48000000 GHz CF 2.48 GHz 1001 pts 500.0 kHz/ Span 5.0 MHz 2 Marker Table Type Ref Trc X-Value Y-Value Function Function Result M1 1 2.48 GHz -5.40 dBm T1 1 2.47887113 GHz -18.61 dBm Occ Bw 2.232767233 MHz T2 1 2.4811039 GHz -17.73 dBm Date: 1.NOV.2021 18:58:14

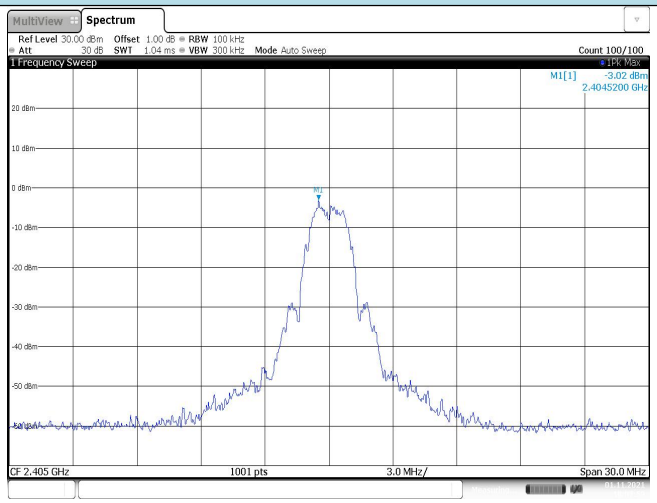
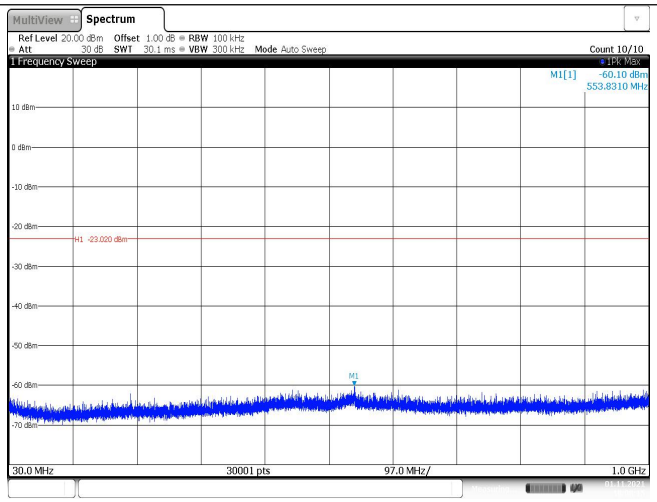
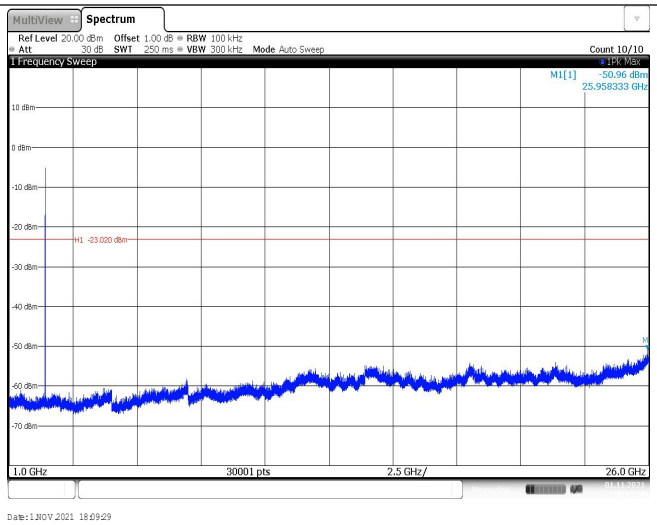
Appendix E：Duty cycle

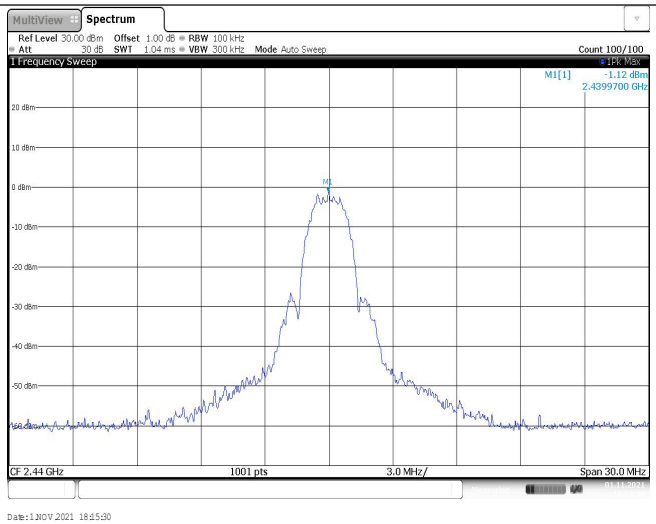
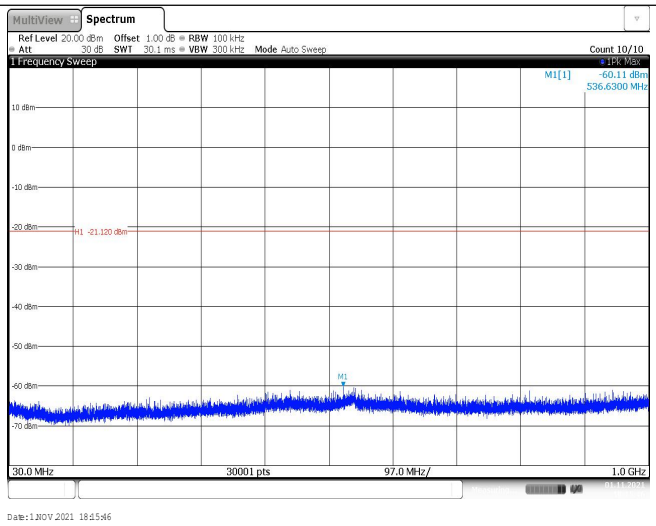
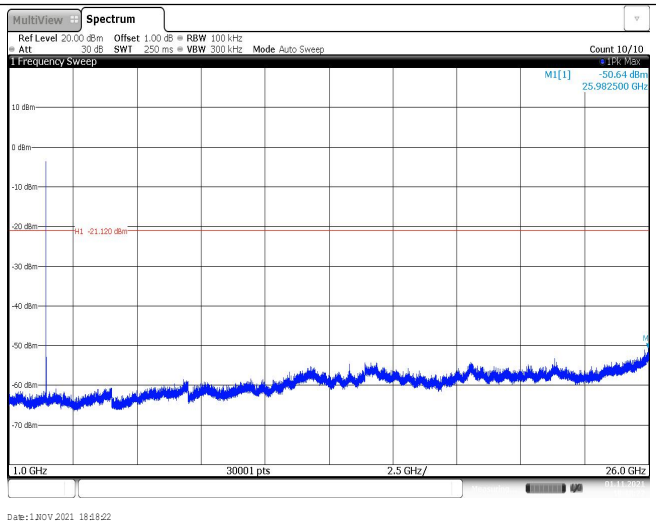
Test Frequency （MHz）	$T_{on\ time}$ for single burst (ms)	T_{period} (ms)	Duty cycle	$1/T_{on\ time}$ (kHz)
2440	0.84	26.70	3.1%	1.2

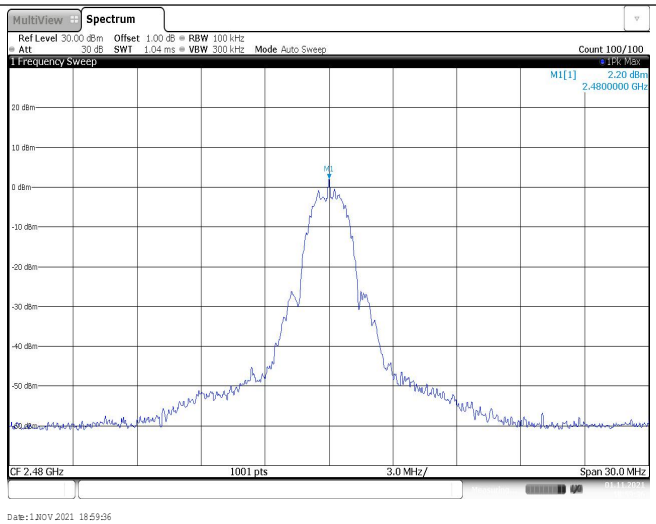
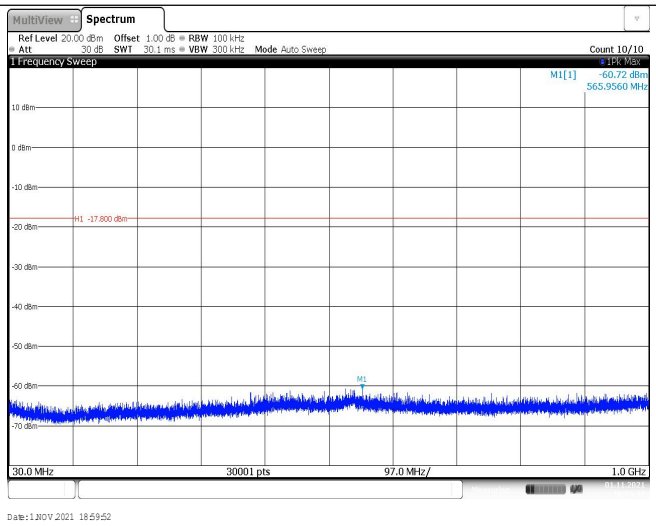
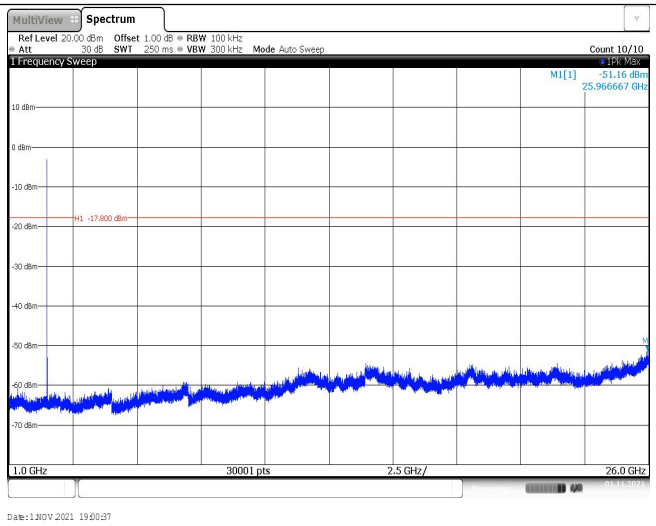


Appendix F：Band edge and Spurious Emissions (conducted)

Test Item:	Band edge
CH_L	
CH_H	

Test Item:	SE
CH_L Reference level	
CH_L 30MHz~1000MHz	
CH_L 1GHz~26GHz	

CH_M Reference level	
CH_M 30MHz~1000MHz	
CH_M 1GHz~26GHz	

CH_H Reference level	
CH_H 30MHz~1000MHz	
CH_H 1GHz~26GHz	

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