

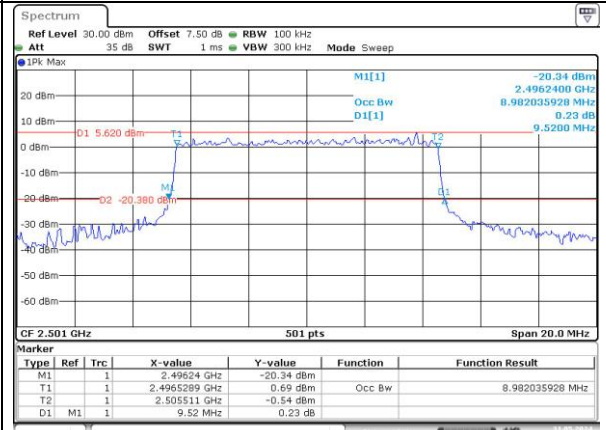
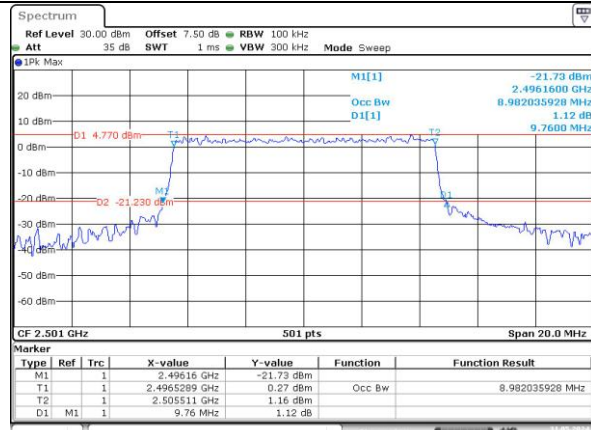
Occupied Bandwidth

Channel

10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

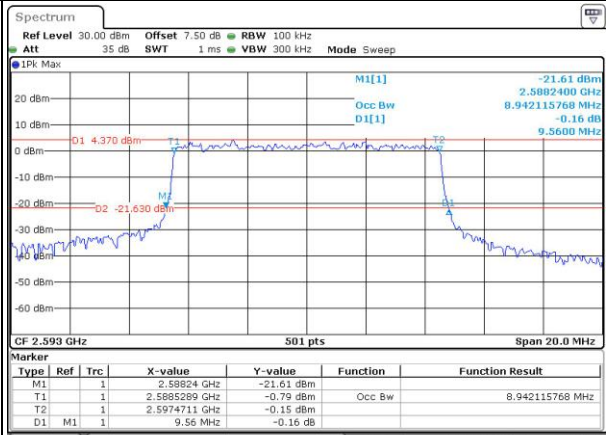
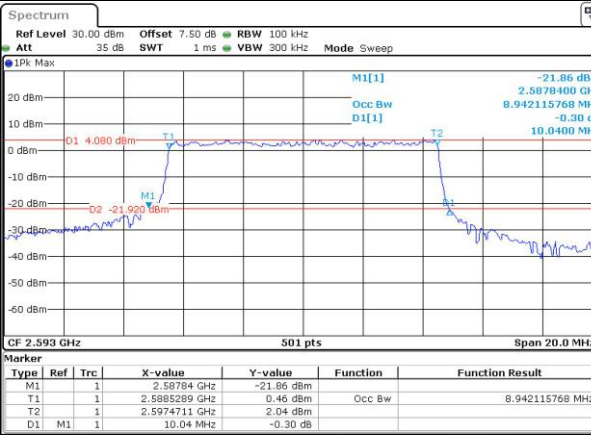
Lowest



ProjectNo.:2402S71481E Tester:Karl Liang
Date: 31.MAY.2024 21:17:01

ProjectNo.:2402S71481E Tester:Karl Liang
Date: 31.MAY.2024 21:17:38

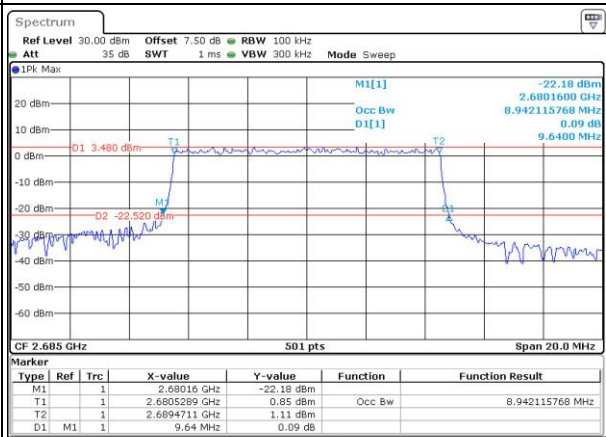
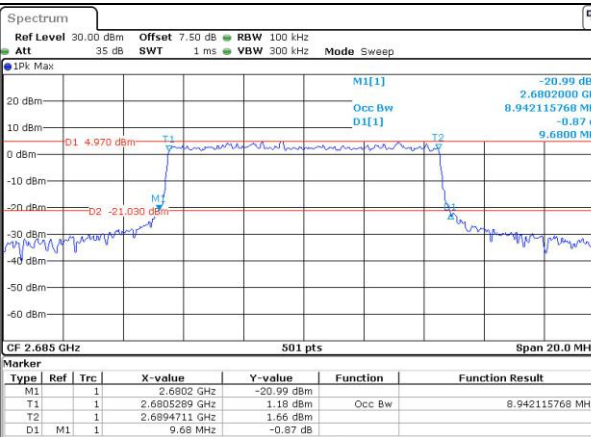
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Date: 31.MAY.2024 21:18:22

ProjectNo.:2402S71481E Tester:Karl Liang
Date: 31.MAY.2024 21:18:57

Highest



ProjectNo.:2402S71481E Tester:Karl Liang
Date: 31.MAY.2024 21:19:29

ProjectNo.:2402S71481E Tester:Karl Liang
Date: 31.MAY.2024 21:20:06

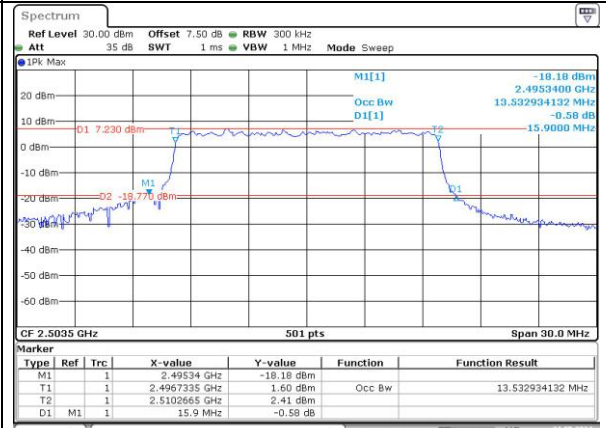
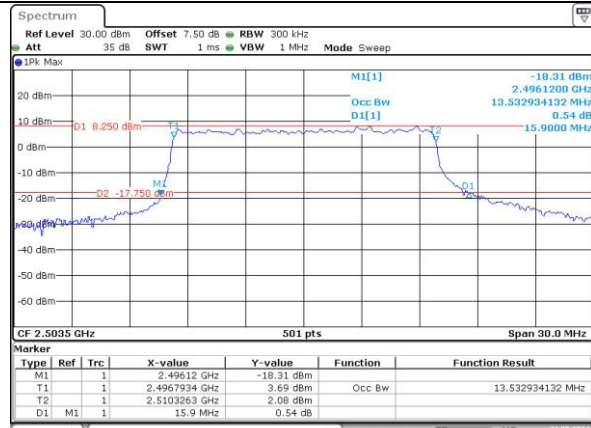
Occupied Bandwidth

Channel

15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

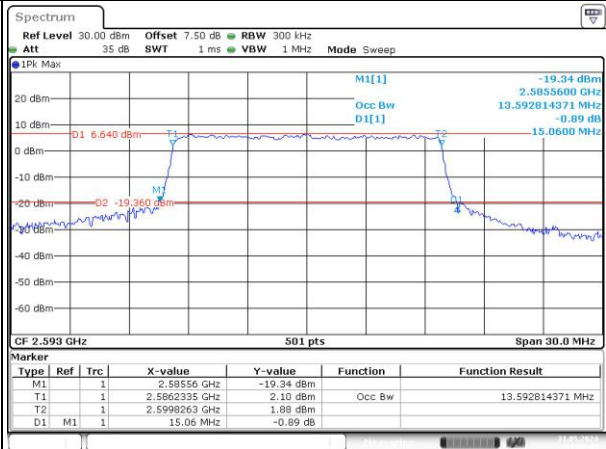
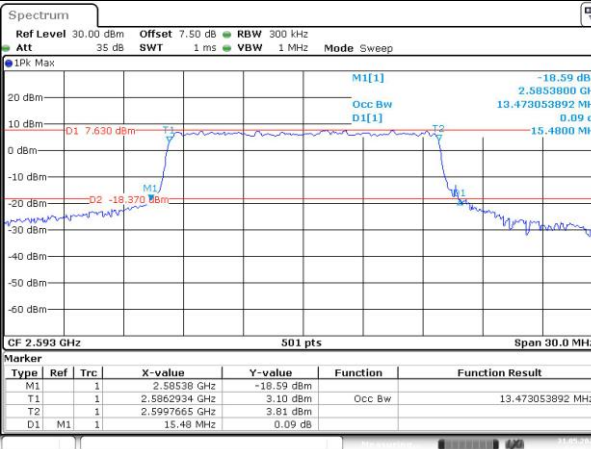
Lowest



ProjectNo.:2402S71481E Tester:Karl Liang
Date: 31.MAY.2024 21:21:22

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Date: 31.MAY.2024 21:21:47

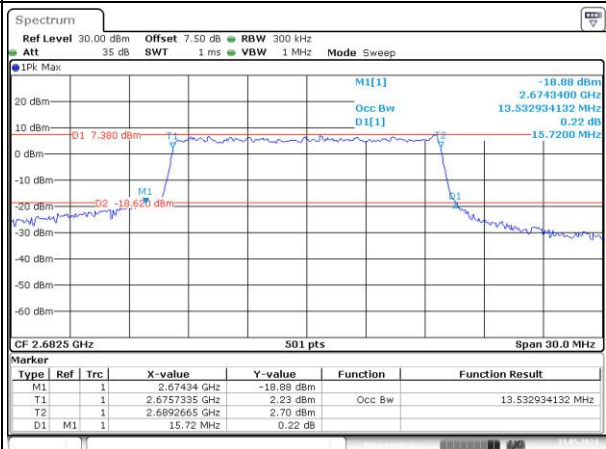
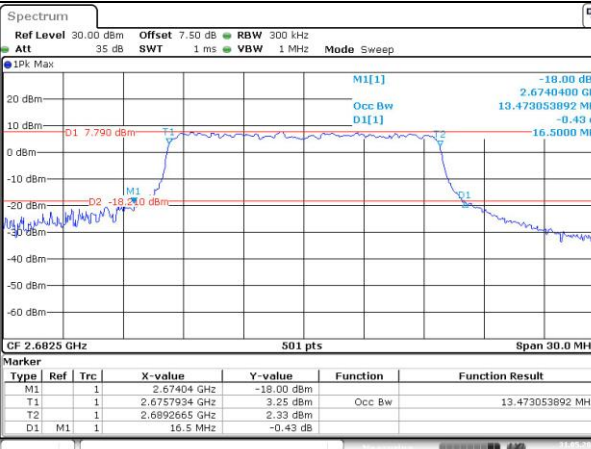
Middle



ProjectNo.:2402S71481E Tester:Karl Liang
Date: 31.MAY.2024 21:22:19

ProjectNo.:2402S71481E Tester:Karl Liang
Date: 31.MAY.2024 21:22:45

Highest



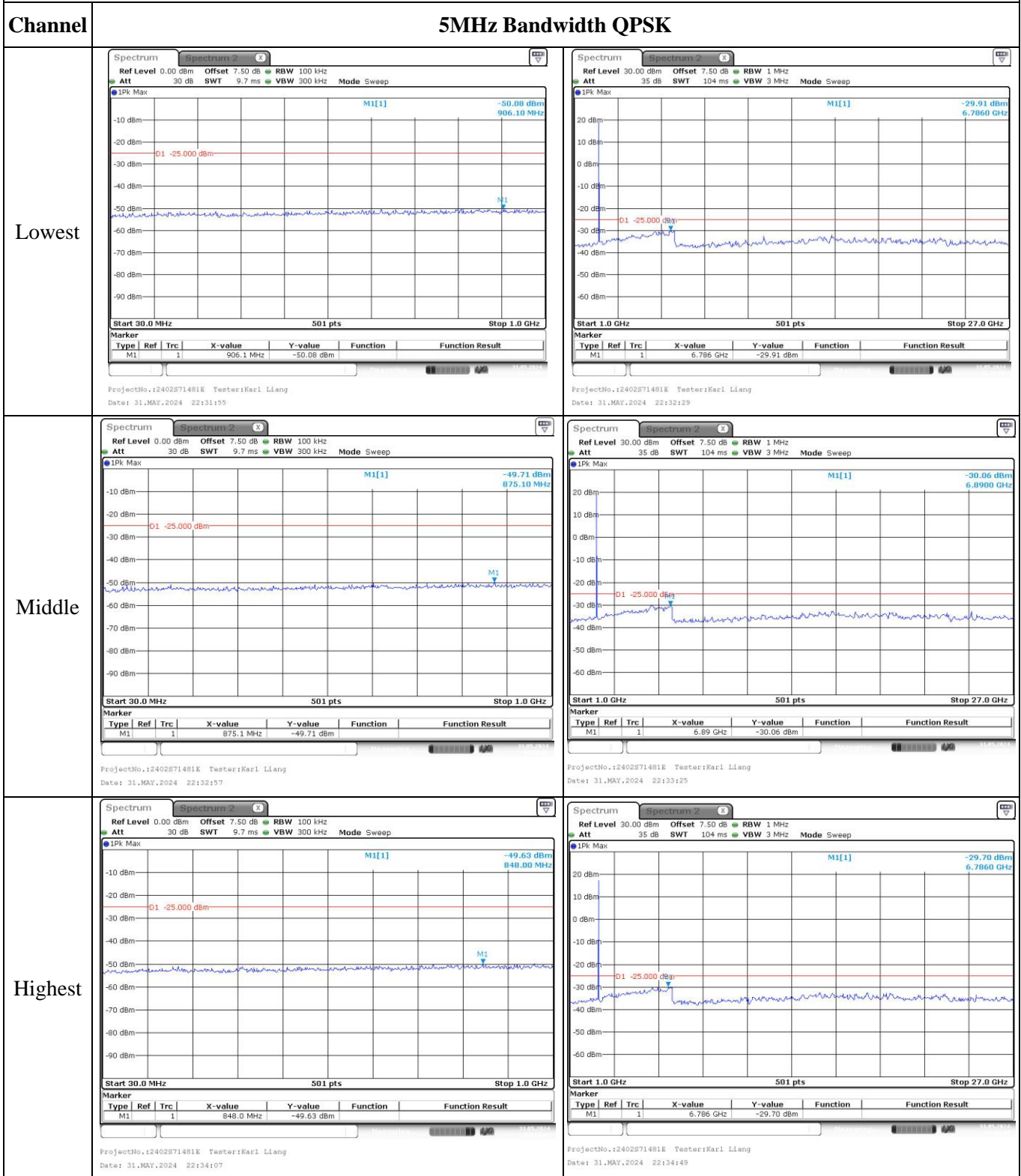
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Date: 31.MAY.2024 21:23:17

ProjectNo.:2402S71481E Tester:Karl Liang
Date: 31.MAY.2024 21:23:45

Occupied Bandwidth

Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM																																																																						
Lowest	<table border="1"> <thead> <tr> <th>Type</th> <th>Ref</th> <th>Trc</th> <th>X-value</th> <th>Y-value</th> <th>Function</th> <th>Function Result</th> </tr> </thead> <tbody> <tr> <td>M1</td> <td>1</td> <td></td> <td>2.49616 GHz</td> <td>-18.72 dBm</td> <td></td> <td></td> </tr> <tr> <td>T1</td> <td>1</td> <td></td> <td>2.4970579 GHz</td> <td>3.79 dBm</td> <td>Occ Bw</td> <td>17.964071856 MHz</td> </tr> <tr> <td>T2</td> <td>1</td> <td></td> <td>2.515022 GHz</td> <td>2.97 dBm</td> <td></td> <td></td> </tr> <tr> <td>D1</td> <td>M1</td> <td>1</td> <td>19.52 MHz</td> <td>-0.96 dB</td> <td></td> <td></td> </tr> </tbody> </table> <p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 21:26:17</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		2.49616 GHz	-18.72 dBm			T1	1		2.4970579 GHz	3.79 dBm	Occ Bw	17.964071856 MHz	T2	1		2.515022 GHz	2.97 dBm			D1	M1	1	19.52 MHz	-0.96 dB			<table border="1"> <thead> <tr> <th>Type</th> <th>Ref</th> <th>Trc</th> <th>X-value</th> <th>Y-value</th> <th>Function</th> <th>Function Result</th> </tr> </thead> <tbody> <tr> <td>M1</td> <td>1</td> <td></td> <td>2.49504 GHz</td> <td>-20.29 dBm</td> <td></td> <td></td> </tr> <tr> <td>T1</td> <td>1</td> <td></td> <td>2.4970579 GHz</td> <td>1.64 dBm</td> <td>Occ Bw</td> <td>17.964071856 MHz</td> </tr> <tr> <td>T2</td> <td>1</td> <td></td> <td>2.515022 GHz</td> <td>0.90 dBm</td> <td></td> <td></td> </tr> <tr> <td>D1</td> <td>M1</td> <td>1</td> <td>20.72 MHz</td> <td>-0.56 dB</td> <td></td> <td></td> </tr> </tbody> </table> <p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 21:26:51</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		2.49504 GHz	-20.29 dBm			T1	1		2.4970579 GHz	1.64 dBm	Occ Bw	17.964071856 MHz	T2	1		2.515022 GHz	0.90 dBm			D1	M1	1	20.72 MHz	-0.56 dB		
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Type	Ref	Trc	X-value	Y-value	Function	Function Result																																																																		
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Type	Ref	Trc	X-value	Y-value	Function	Function Result																																																																		
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Spurious Emissions at Antenna Terminal

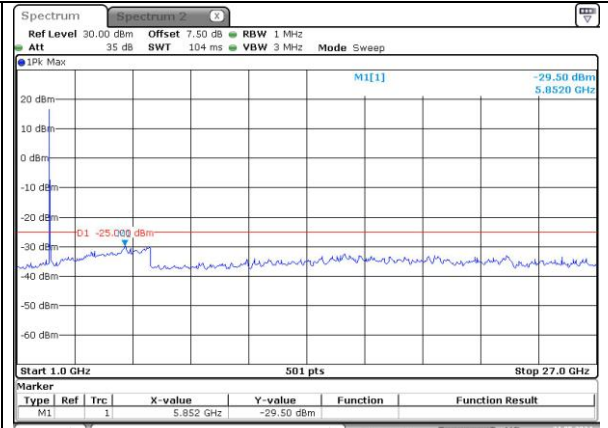
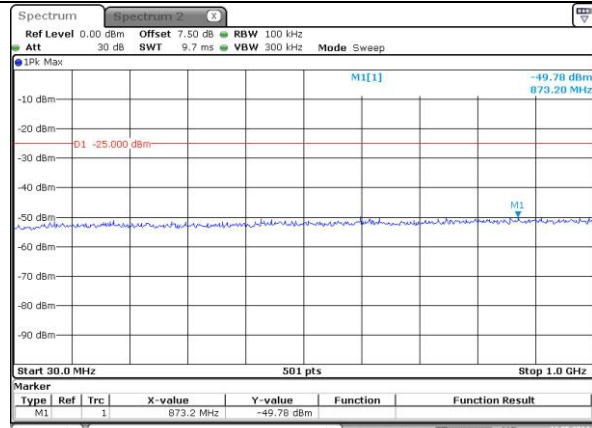


Spurious Emissions at Antenna Terminal

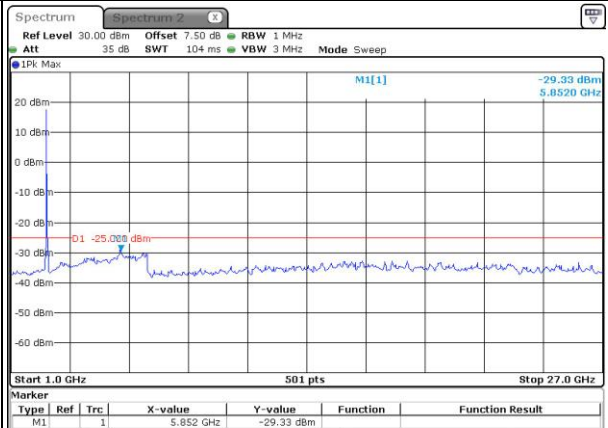
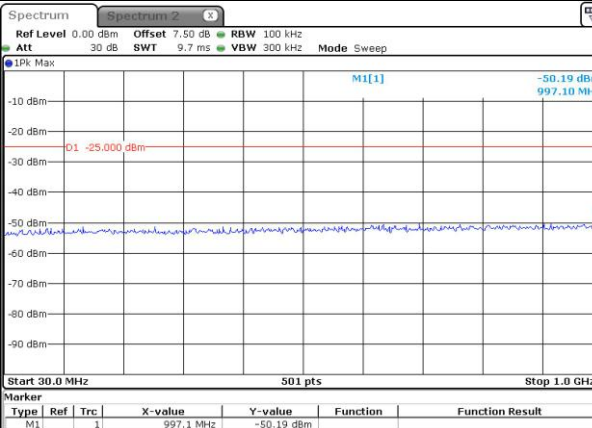
Channel

10MHz Bandwidth QPSK

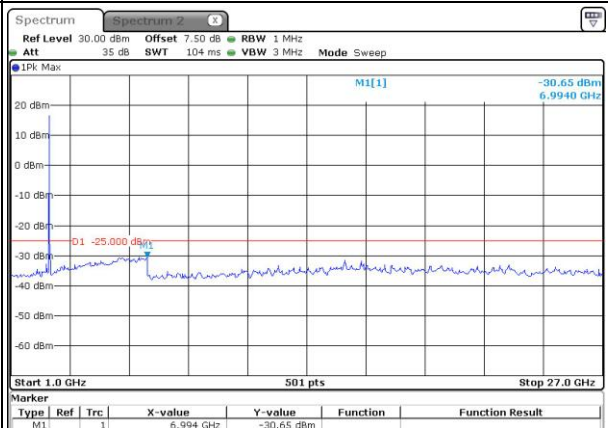
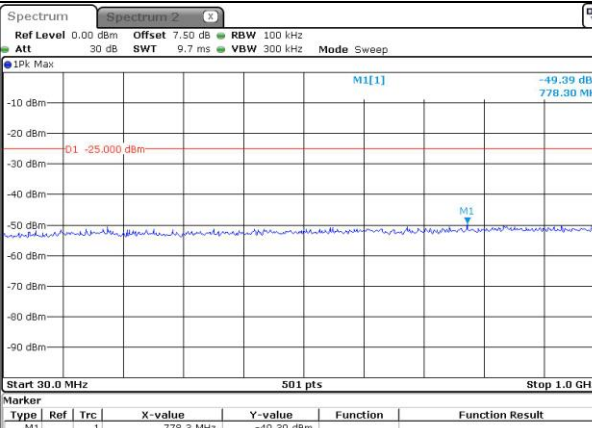
Lowest



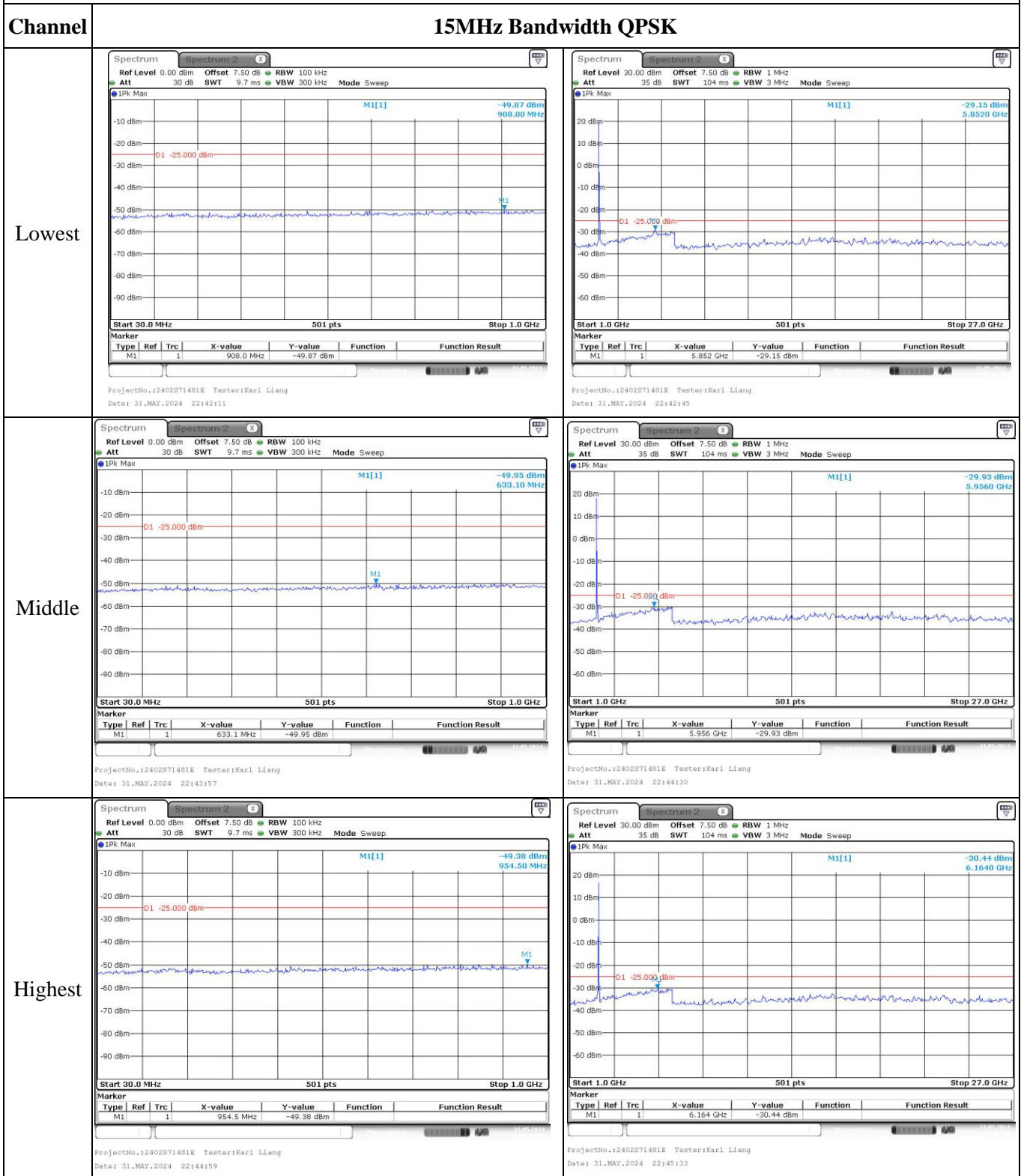
Middle



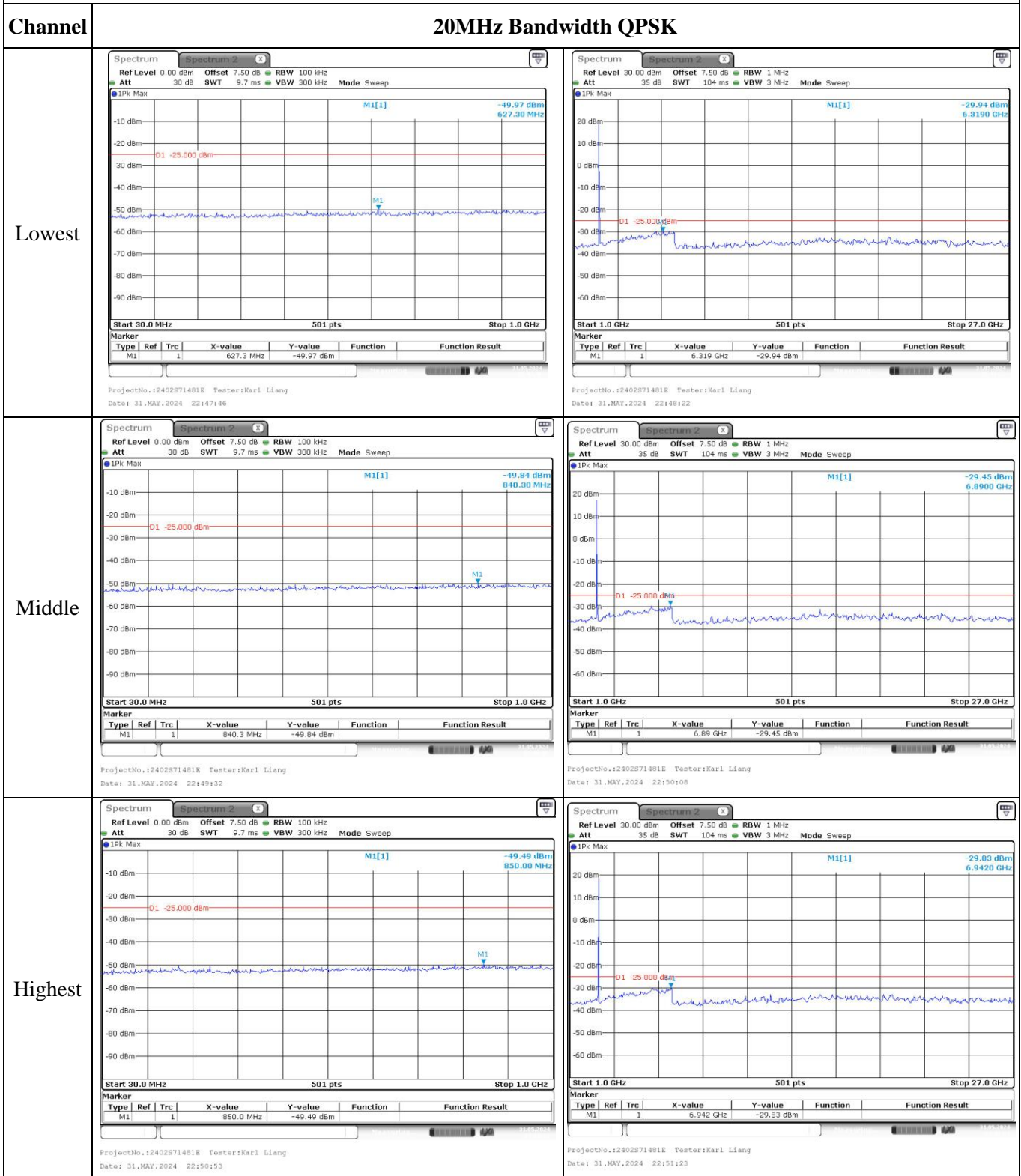
Highest



Spurious Emissions at Antenna Terminal



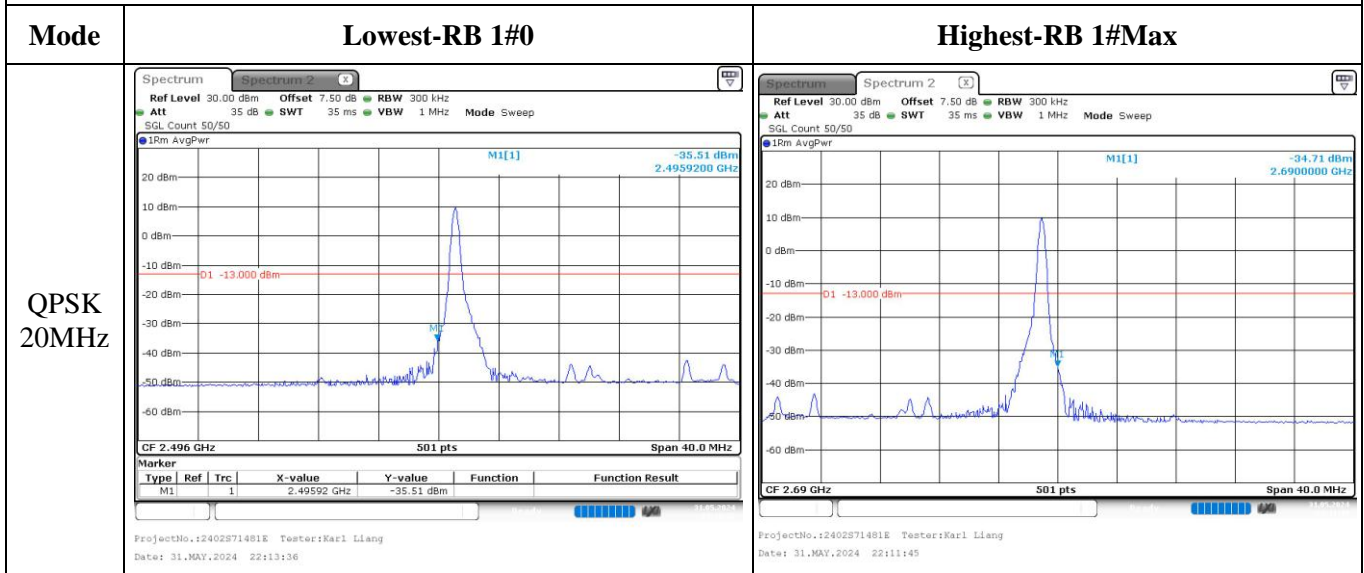
Spurious Emissions at Antenna Terminal



Out of band emission, Band Edge

Mode	Lowest-RB 1#0	Highest-RB 1#Max
QPSK 5MHz	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 22:22:15</p>	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 22:24:25</p>
QPSK 10MHz	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 22:19:22</p>	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 22:21:19</p>
QPSK 15MHz	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 22:15:54</p>	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 22:17:15</p>

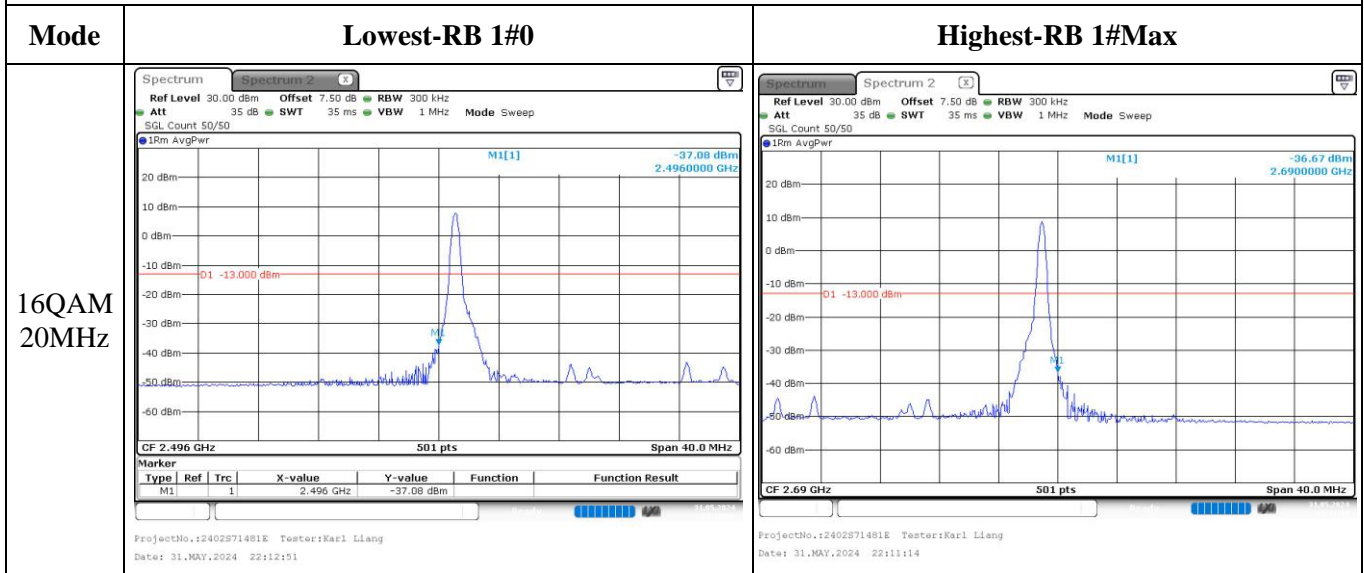
Out of band emission, Band Edge



Out of band emission, Band Edge

Mode	Lowest-RB 1#0	Highest-RB 1#Max
16QAM 5MHz	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 22:22:55</p>	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 22:24:05</p>
16QAM 10MHz	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 22:20:05</p>	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 22:20:55</p>
16QAM 15MHz	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 22:16:18</p>	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 22:17:53</p>

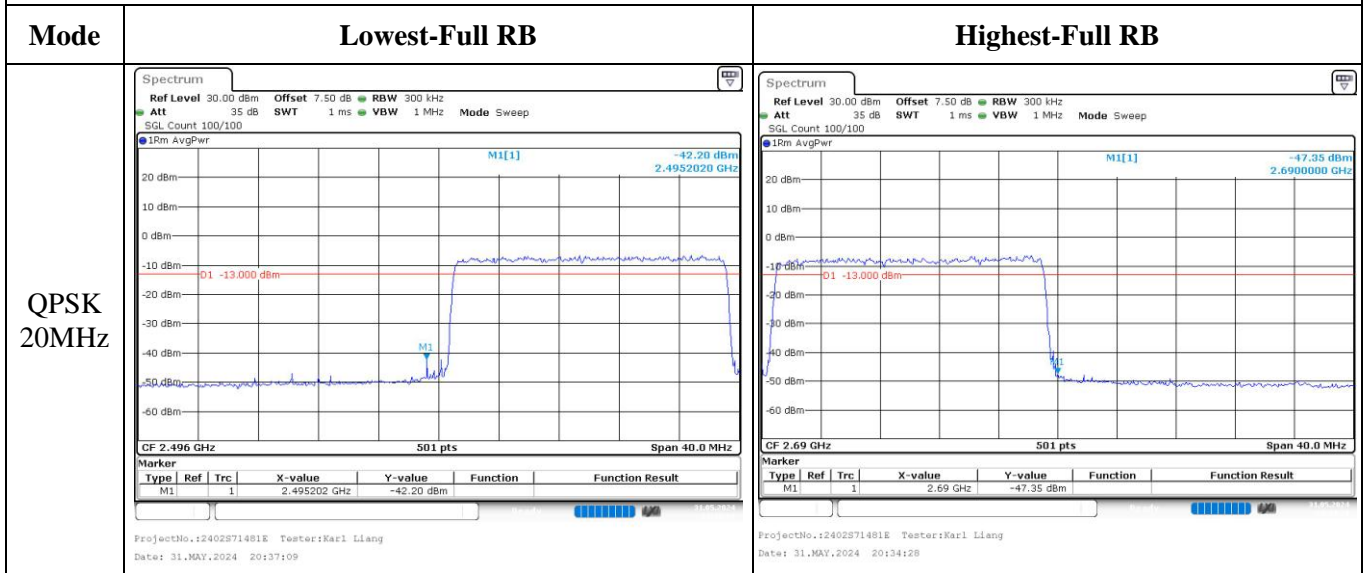
Out of band emission, Band Edge



Out of band emission, Band Edge

Mode	Lowest-Full RB	Highest-Full RB
QPSK 5MHz	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 22:28:00</p>	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 22:26:16</p>
QPSK 10MHz	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 21:50:01</p>	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 21:53:51</p>
QPSK 15MHz	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 20:30:29</p>	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 20:33:13</p>

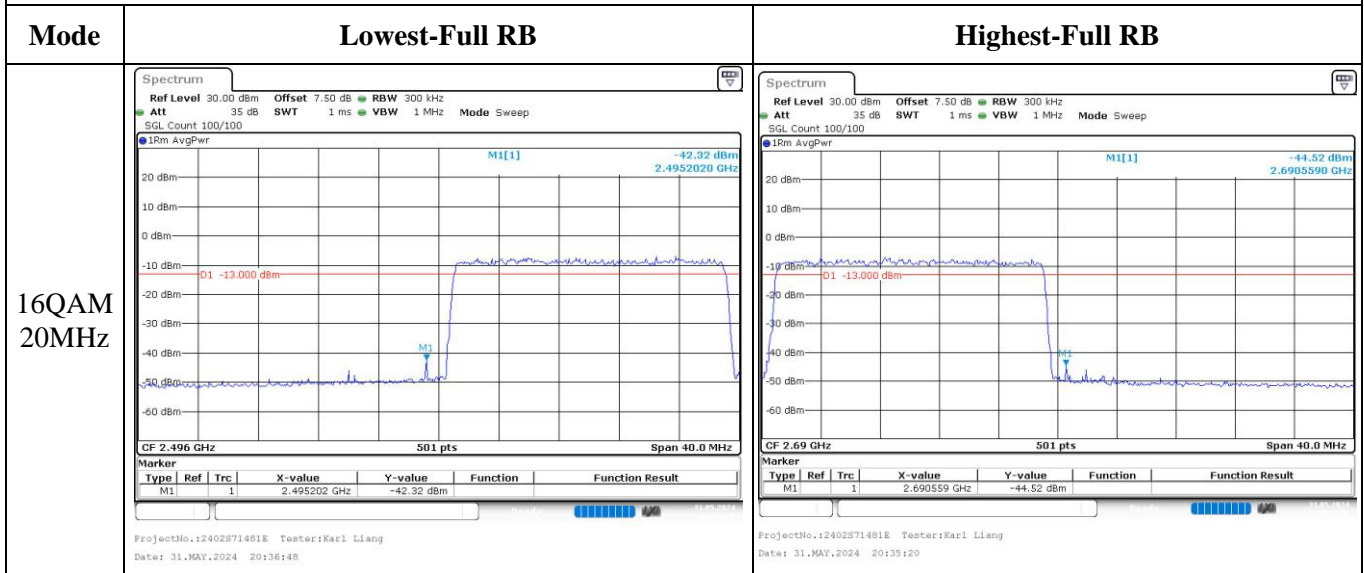
Out of band emission, Band Edge



Out of band emission, Band Edge

Mode	Lowest-Full RB	Highest-Full RB
16QAM 5MHz	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 22:27:23</p>	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 22:26:44</p>
16QAM 10MHz	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 21:53:06</p>	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 21:51:23</p>
16QAM 15MHz	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 20:31:07</p>	<p>ProjectNo.:2402S71481E Tester:Karl Liang Date: 31.MAY.2024 20:32:44</p>

Out of band emission, Band Edge



5.15 Antenna Port Test Data and Results for LTE Band 42

Serial Number:	OSEB119574-2	Test Date:	2024/4/26
Test Site:	RF	Test Mode:	Transmitting
Tester:	Karl Liang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.6	Relative Humidity: (%)	70	ATM Pressure: (kPa)	100.6
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101461	2023/11/27	2024/11/26
Micro-Coax	Coaxial Cable	UFB205A	323308-024	2024/1/2	2025/1/1
Eastsheep	Coaxial Attenuator	5W-N-JK-6G-10dB	F-08-EM502	2023/9/10	2024/9/9
Minl-Clrucuits	Coaxial Power Splitters & Combiner	ZFRSC-183-S+	SF448201614	2024/2/25	2025/2/24
R&S	Wideband Radio Communication Tester	CMW500	144976	2023/10/18	2024/10/17
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30173	2023/10/18	2024/10/17
All-sun	Clamp Meter	EM305A	8348897	2023/8/3	2024/8/2
TDK-Lambda	DC Power Supply	Z+60-14	F-08-EM038-1	N/A	N/A

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	3452.5	3500	3547.5
10MHz	3455	3500	3545
15MHz	3457.5	3500	3542.5
20MHz	3460	3500	3540

Test Data:

FCC §2.1046; § 27.50(k)(3)

RF Output Power:

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	15.25	15.38	15.58	14.92	30
	RB1#13	15.24	15.41	15.56		
	RB1#24	15.28	15.4	15.61		
	RB15#0	14.2	14.32	14.6		
	RB15#10	14.19	14.29	14.55		
	RB25#0	14.21	14.32	14.57		
5MHz 16QAM	RB1#0	14.47	14.37	14.67	13.98	30
	RB1#13	14.47	14.32	14.63		
	RB1#24	14.51	14.36	14.65		
	RB15#0	13.19	13.23	13.6		
	RB15#10	13.2	13.2	13.54		
	RB25#0	13.18	13.33	13.61		
10MHz QPSK	RB1#0	15.19	15.4	15.55	14.93	30
	RB1#25	15.26	15.41	15.62		
	RB1#49	15.2	15.38	15.56		
	RB25#0	14.14	14.26	14.52		
	RB25#25	14.2	14.24	14.57		
	RB50#0	14.17	14.29	14.58		
10MHz 16QAM	RB1#0	14.36	14.27	14.62	14	30
	RB1#25	14.43	14.3	14.69		
	RB1#49	14.43	14.26	14.66		
	RB25#0	13.16	13.29	13.55		
	RB25#25	13.19	13.31	13.57		
	RB50#0	13.15	13.26	13.59		
15MHz QPSK	RB1#0	15.11	15.29	15.37	14.78	30
	RB1#38	15.25	15.35	15.47		
	RB1#74	15.21	15.31	15.44		
	RB36#0	14.14	14.24	14.36		
	RB36#39	14.21	14.25	14.45		
	RB75#0	14.22	14.25	14.47		
15MHz 16QAM	RB1#0	14.35	14.47	14.29	13.87	30
	RB1#38	14.44	14.56	14.42		
	RB1#74	14.46	14.54	14.38		
	RB36#0	13.18	13.23	13.35		
	RB36#39	13.22	13.24	13.39		
	RB75#0	13.15	13.2	13.44		

20MHz QPSK	RB1#0	15.11	15.2	15.5	14.89	30	
	RB1#50	15.23	15.37	15.58			
	RB1#99	15.25	15.27	15.55			
	RB50#0	14.18	14.27	14.44			
	RB50#50	14.28	14.34	14.49			
	RB100#0	14.2	14.26	14.48			
20MHz 16QAM	RB1#0	14.21	14.17	14.68	14.04	30	
	RB1#50	14.32	14.35	14.71			
	RB1#99	14.27	14.26	14.73			
	RB50#0	13.14	13.28	13.44			
	RB50#50	13.24	13.39	13.45			
	RB100#0	13.16	13.25	13.44			
Note: EIRP=Conducted Power(dBm) - Lc(dB) + Gr(dBi)						Result:	Pass

Peak-to-average Ratio(PAR)					
Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	9.74	10.06	9.51	13
	RB100#0	8.58	8.61	8.58	13
20MHz 16QAM	RB1#0	10.64	10.49	10.26	13
	RB100#0	10.03	10.06	10.03	13
Result:					Pass

FCC §2.1049, §27.53:Occupied Bandwidth						
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
5MHz QPSK	4.491	4.531	4.511	5	5.02	5.2
5MHz 16QAM	4.491	4.491	4.511	4.96	4.98	4.96
10MHz QPSK	8.942	8.942	8.982	9.84	9.64	9.76
10MHz 16QAM	8.942	8.942	8.942	9.56	9.64	9.56
15MHz QPSK	13.473	13.533	13.533	15.42	16.14	16.56
15MHz 16QAM	13.593	13.533	13.533	15.42	16.14	15.42
20MHz QPSK	17.964	17.884	18.044	23.44	19.92	20.96
20MHz 16QAM	18.044	17.964	17.964	26.64	19.68	23.52
Note: The test plots please refer to the Plots of Occupied Bandwidth.						

FCC §2.1051, § 27.53:Spurious Emissions at Antenna Terminal	
Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.

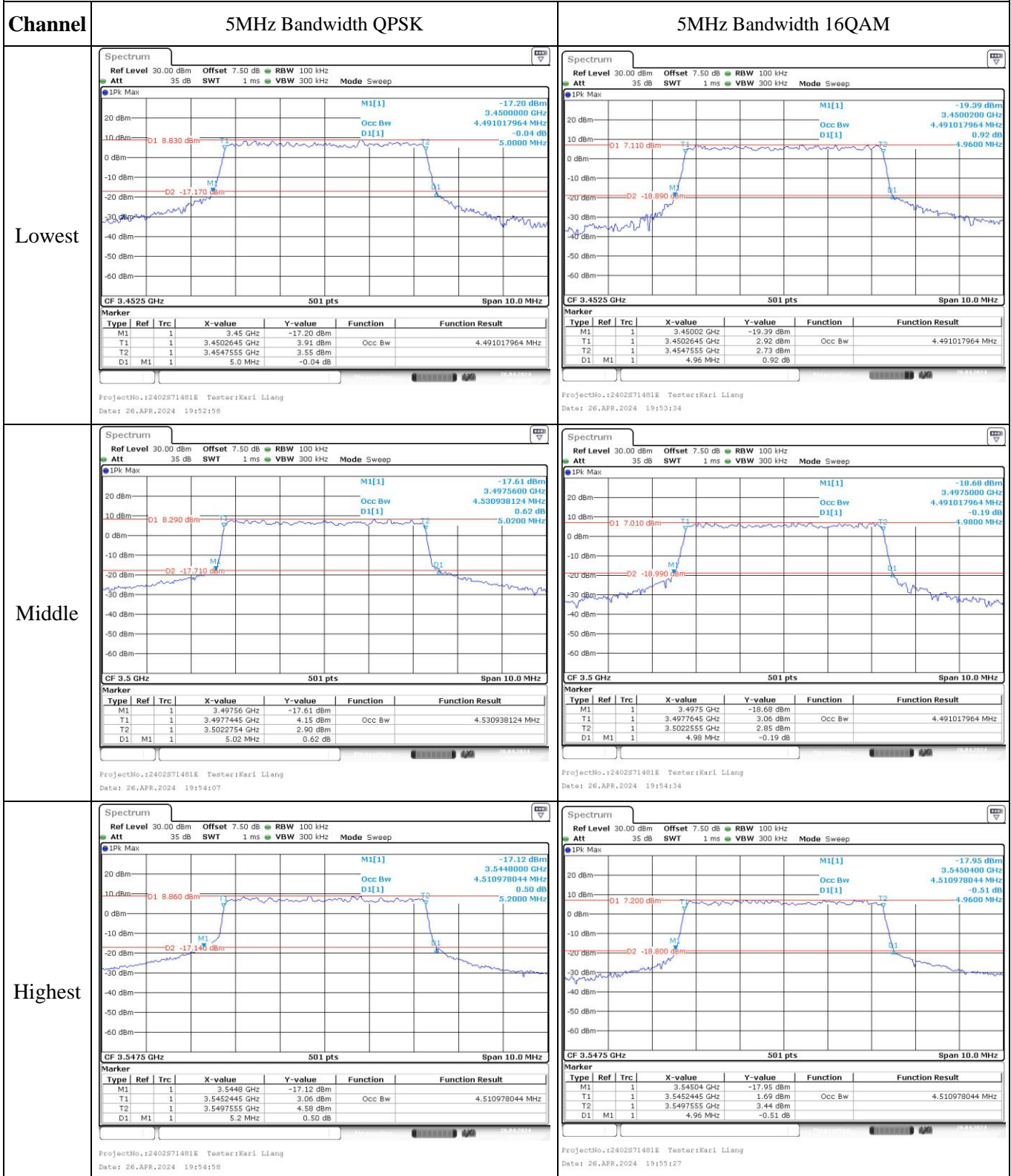
FCC §2.1051, § 27.53:Out of band emission, Band Edge	
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.

FCC §2.1055, §27.54: Frequency Stability						
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.91	3451.040	3450.00	3549.013	3550
	-20	3.91	3451.052	3450.00	3549.010	3550
	-10	3.91	3451.040	3450.00	3549.001	3550
	0	3.91	3451.055	3450.00	3548.995	3550
	10	3.91	3451.037	3450.00	3549.007	3550
	20	3.91	3451.058	3450.00	3549.022	3550
	30	3.91	3451.079	3450.00	3549.037	3550
	40	3.91	3451.064	3450.00	3549.040	3550
Frequency Stability vs. Voltage	50	3.91	3451.073	3450.00	3549.037	3550
	20	3.45	3451.076	3450.00	3549.028	3550
	20	4.5	3451.061	3450.00	3549.043	3550
					Result:	Pass

Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.91	3450.960	3450.00	3548.933	3550
	-20	3.91	3450.969	3450.00	3548.924	3550
	-10	3.91	3450.960	3450.00	3548.927	3550
	0	3.91	3450.975	3450.00	3548.939	3550
	10	3.91	3450.969	3450.00	3548.936	3550
	20	3.91	3450.978	3450.00	3548.942	3550
	30	3.91	3451.002	3450.00	3548.957	3550
	40	3.91	3450.990	3450.00	3548.969	3550
Frequency Stability vs. Voltage	50	3.91	3451.002	3450.00	3548.963	3550
	20	3.45	3450.996	3450.00	3548.954	3550
	20	4.5	3450.996	3450.00	3548.957	3550
					Result:	Pass

Test Plots:

Occupied Bandwidth



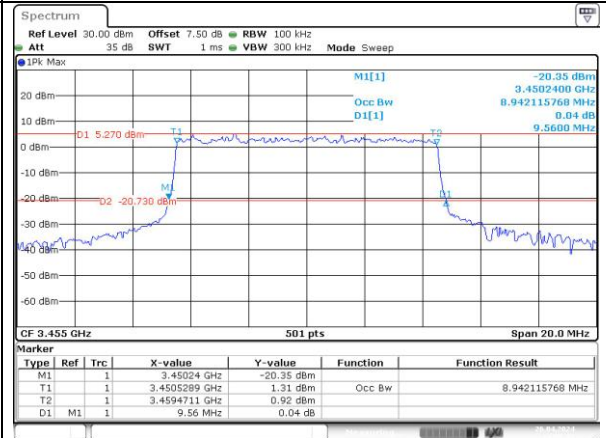
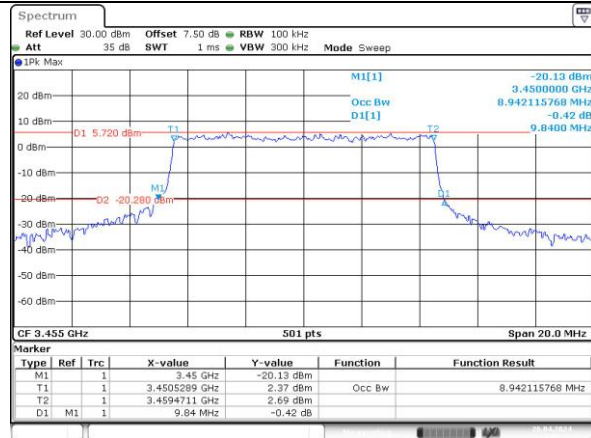
Occupied Bandwidth

Channel

10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

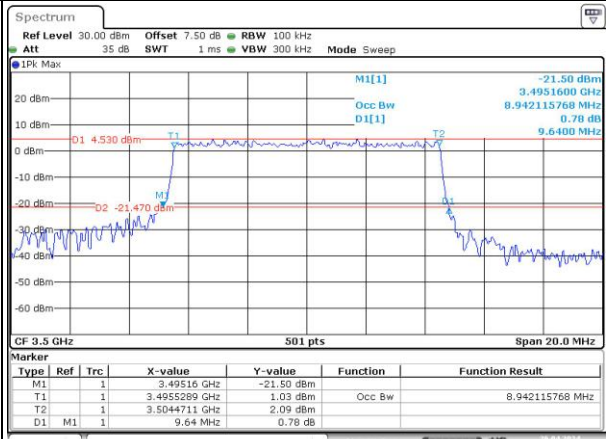
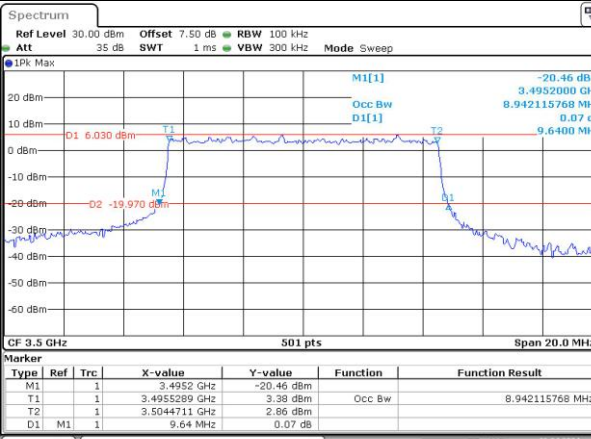
Lowest



ProjectNo.:2402S71481E Tester:Karl Liang
Date: 26.APR.2024 19:56:16

ProjectNo.:2402S71481E Tester:Karl Liang
Date: 26.APR.2024 19:56:59

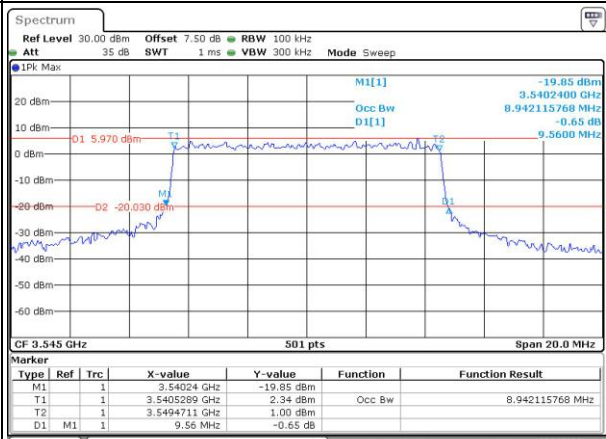
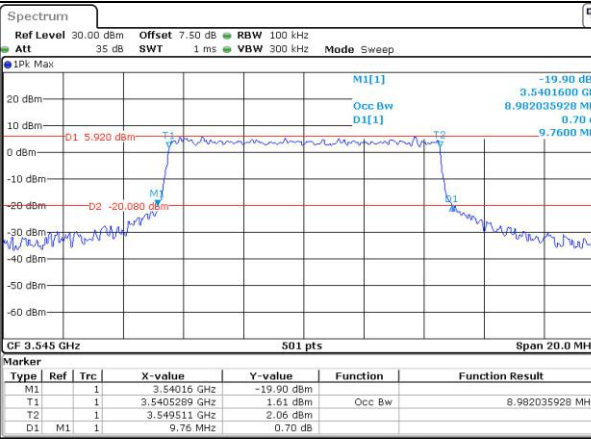
Middle



ProjectNo.:2402S71481E Tester:Karl Liang
Date: 26.APR.2024 19:57:32

ProjectNo.:2402S71481E Tester:Karl Liang
Date: 26.APR.2024 19:57:56

Highest



ProjectNo.:2402S71481E Tester:Karl Liang
Date: 26.APR.2024 19:58:33

ProjectNo.:2402S71481E Tester:Karl Liang
Date: 26.APR.2024 19:59:07

Occupied Bandwidth

Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM																																																																						
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