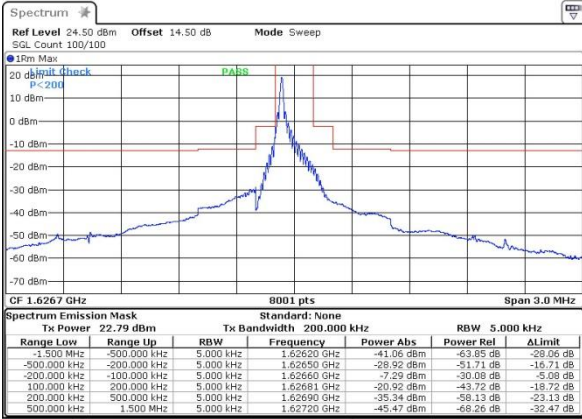




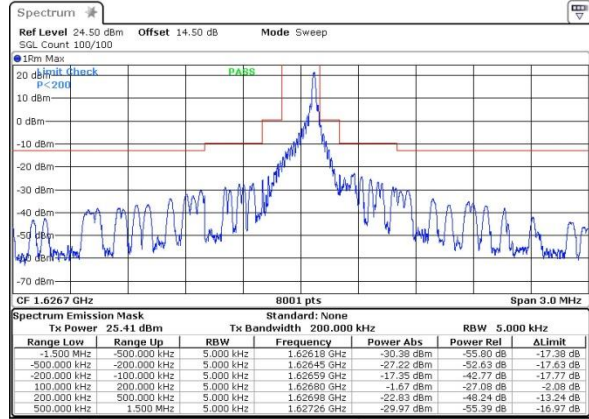
Band 255 SCS15kHz

Lowest Channel / 1SC1 / QPSK



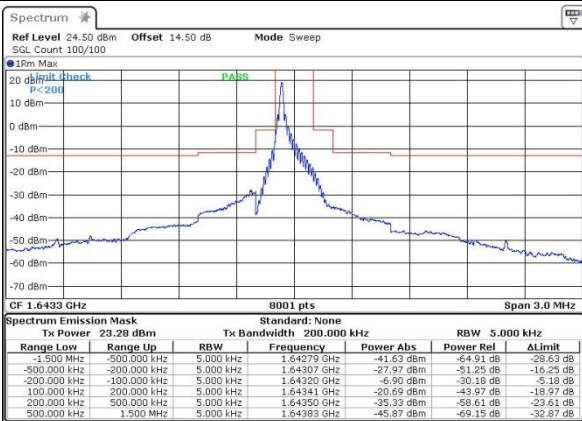
Date: 6 JAN 2023 14:42:01

Lowest Channel / 1SC10 / QPSK



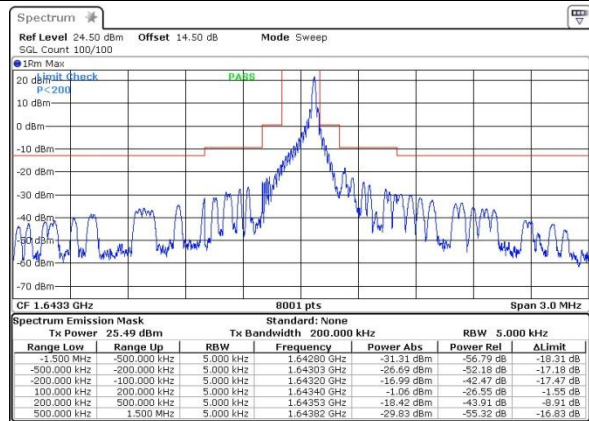
Date: 6 JAN 2023 14:45:52

Middle Channel / 1SC1 / QPSK



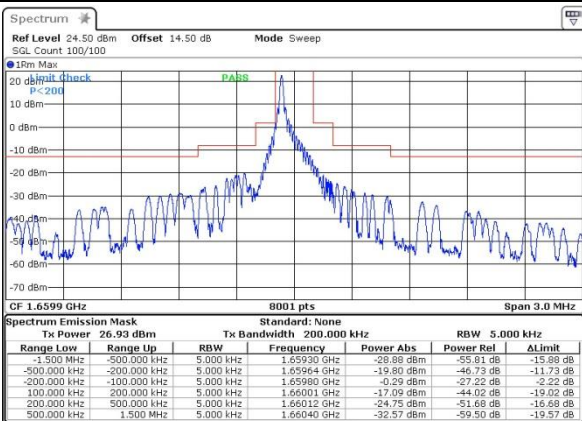
Date: 6 JAN 2023 15:32:36

Middle Channel / 1SC10 / QPSK



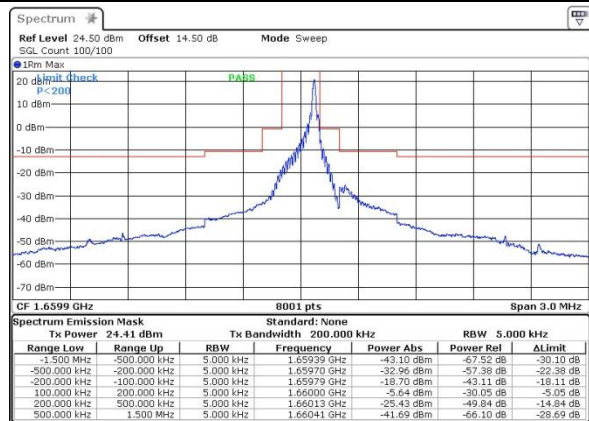
Date: 6 JAN 2023 15:35:24

Highest Channel / 1SC1 / QPSK



Date: 6 JAN 2023 15:41:49

Highest Channel / 1SC10 / QPSK

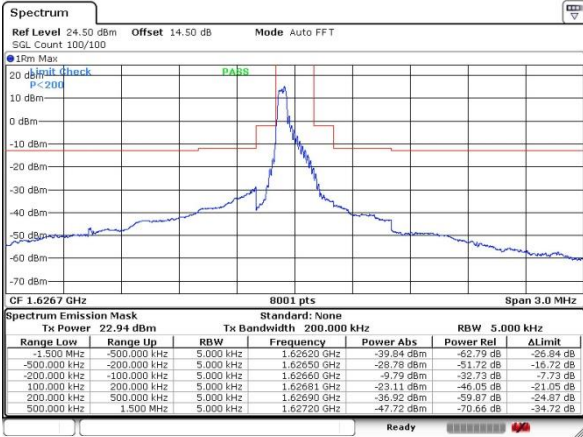


Date: 6 JAN 2023 15:39:01



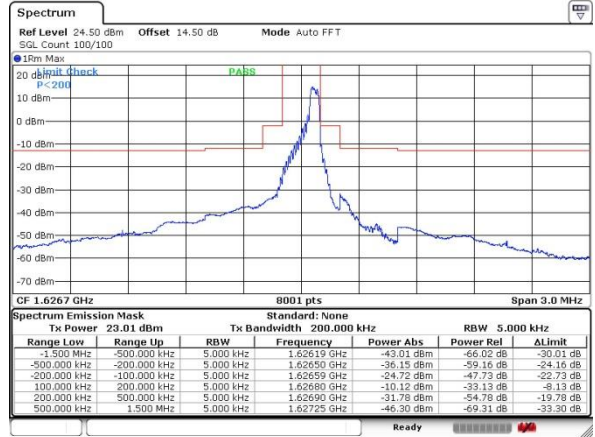
Band 255 SCS15kHz

Lowest Channel / 3SC0 / QPSK



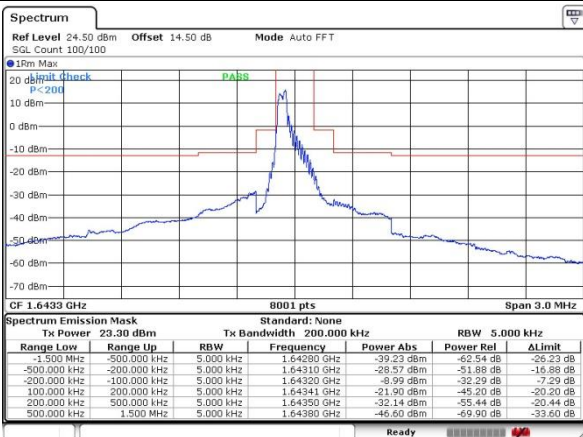
Date: 30, DEC, 2022 10:12:37

Lowest Channel / 3SC9 / QPSK



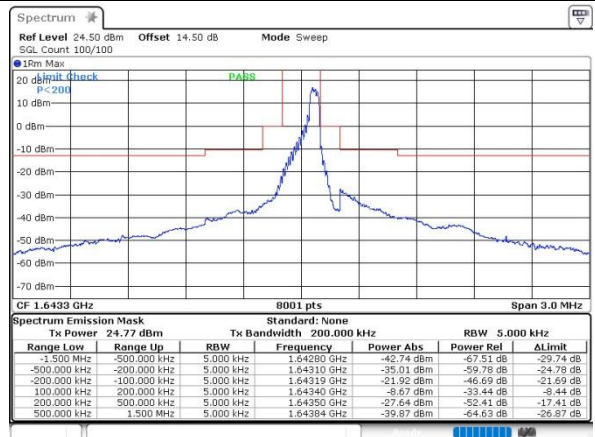
Date: 30, DEC, 2022 17:28:03

Middle Channel / 3SC0 / QPSK



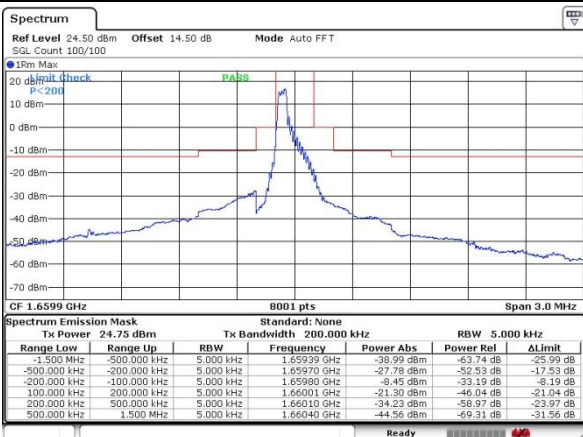
Date: 30, DEC, 2022 11:06:15

Middle Channel / 3SC9 / QPSK



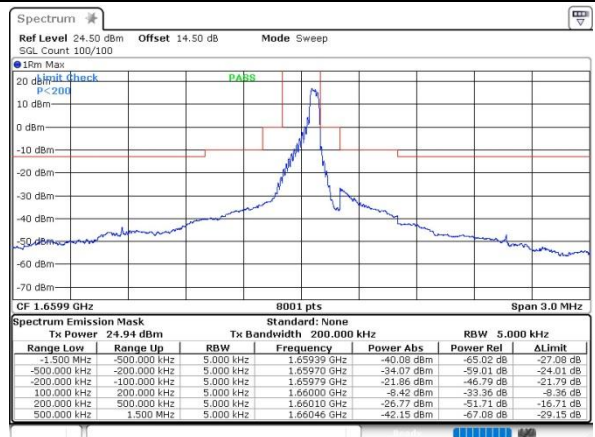
Date: 2, JAN, 2023 17:15:16

Highest Channel / 3SC0 / QPSK



Date: 30, DEC, 2022 11:37:40

Highest Channel / 3SC9 / QPSK

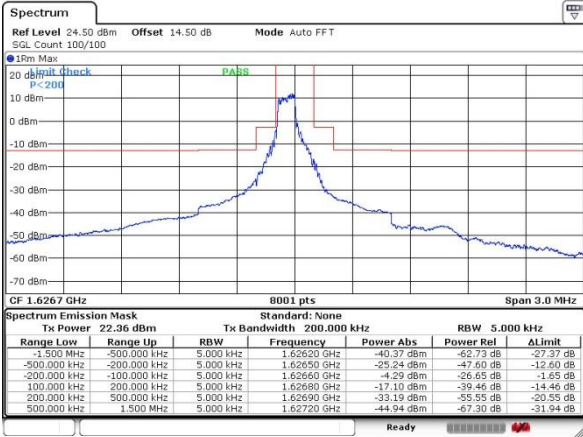


Date: 2, JAN, 2023 17:21:40



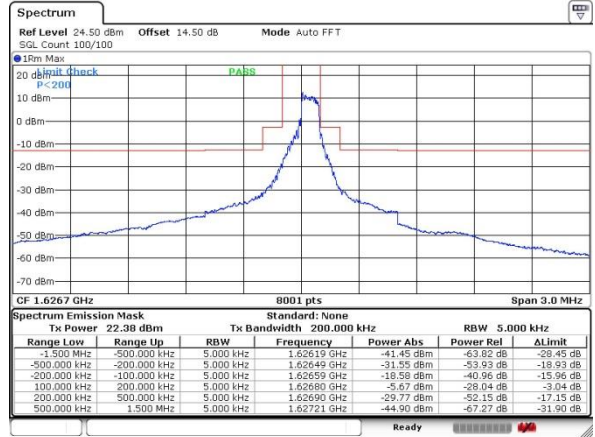
Band 255 SCS15kHz

Lowest Channel / 6SC0 / QPSK



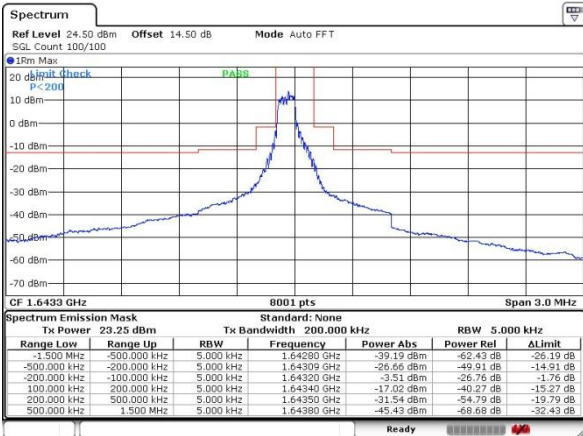
Date: 30, DEC, 2022 10:23:21

Lowest Channel / 6SC6 / QPSK



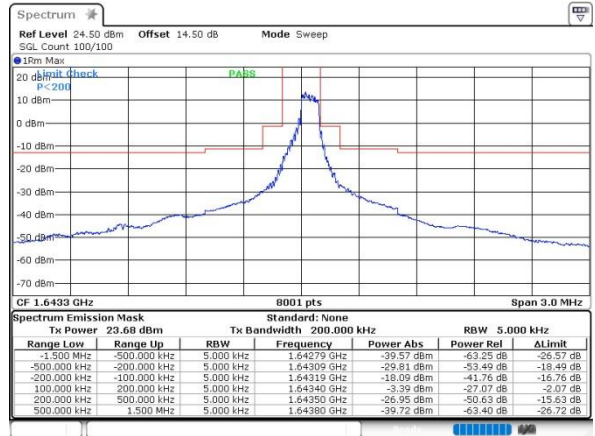
Date: 30, DEC, 2022 17:32:54

Middle Channel / 6SC0 / QPSK



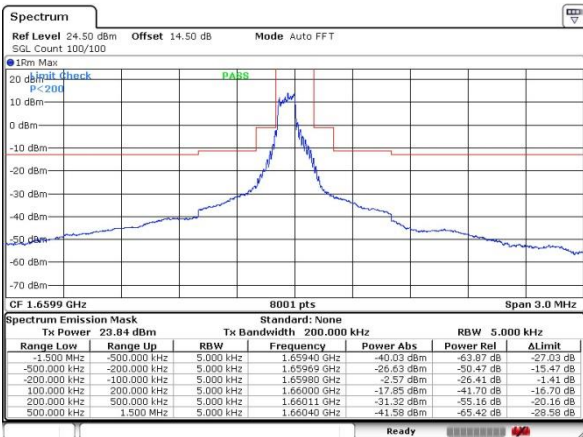
Date: 30, DEC, 2022 10:55:18

Middle Channel / 6SC6 / QPSK



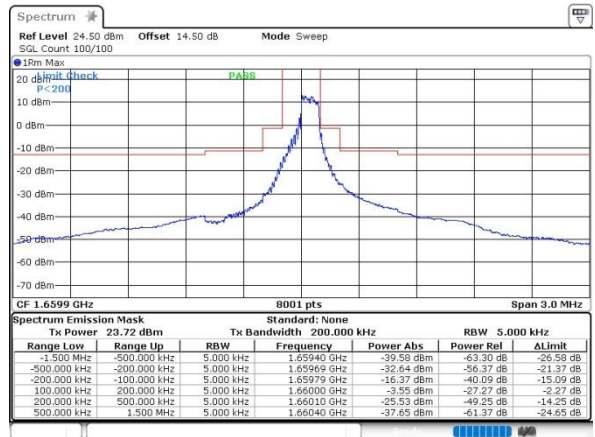
Date: 2, JAN, 2023 17:16:11

Highest Channel / 6SC0 / QPSK



Date: 30, DEC, 2022 11:25:48

Highest Channel / 6SC6 / QPSK



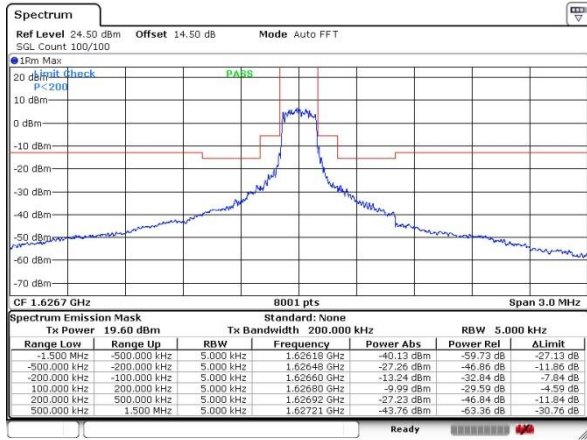
Date: 2, JAN, 2023 17:19:53



Band 255 SCS15kHz

Lowest Channel / 12SC0 / QPSK

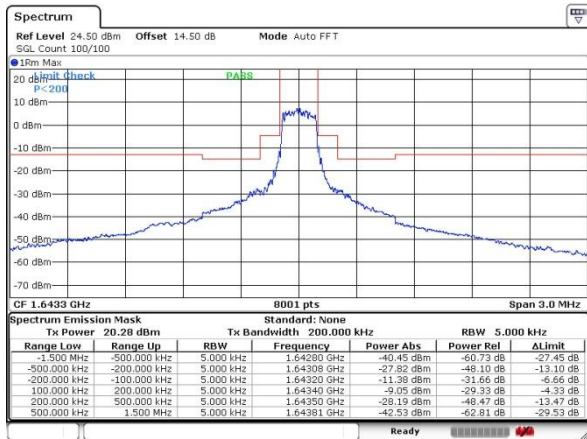
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Date: 30, DEC, 2022 10:34:24

Middle Channel / 12SC0 / QPSK

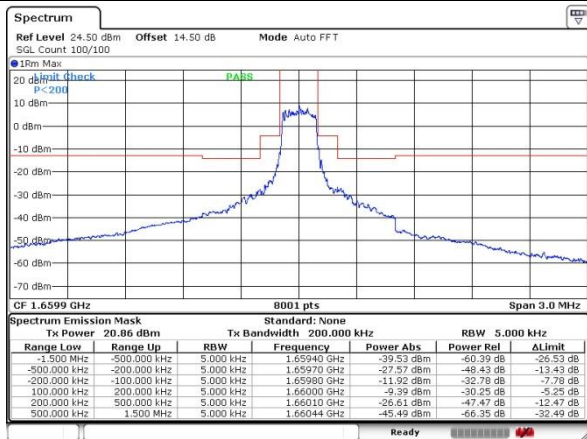
N/A



Date: 30, DEC, 2022 10:54:02

Highest Channel / 12SC0 / QPSK

N/A



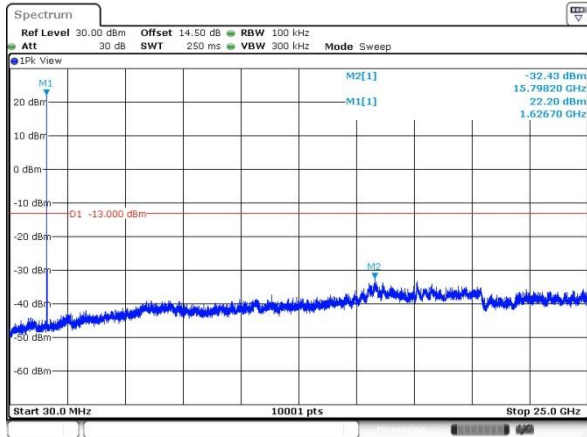
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Conducted Spurious Emission

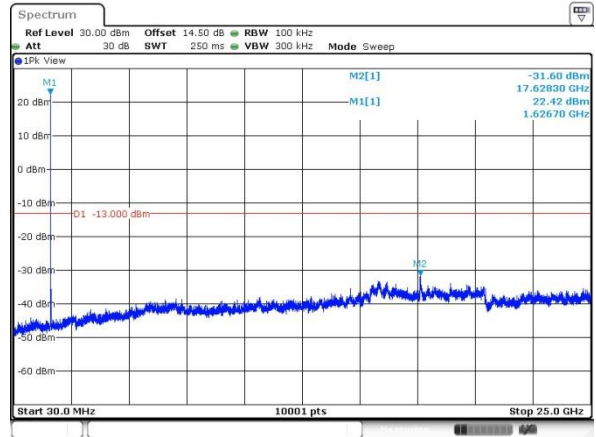
Band 255 SCS3.75kHz

Lowest Channel / 1SC1 / BPSK



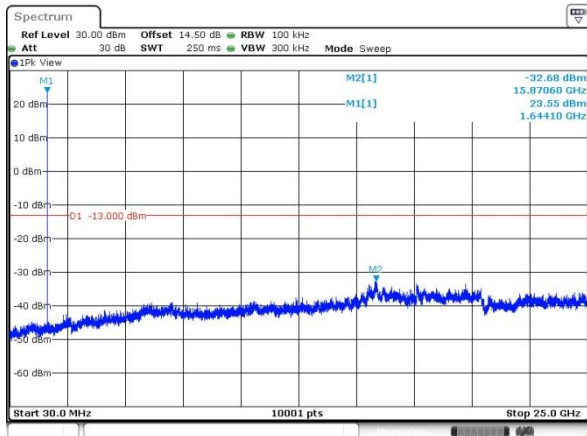
Date: 2, JAN, 2023 16:08:09

Lowest Channel / 1SC1 / QPSK



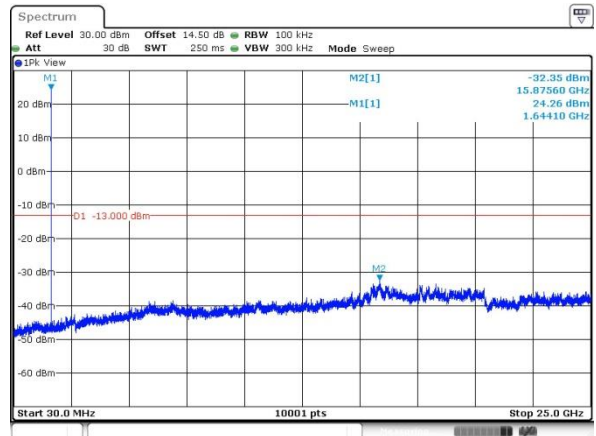
Date: 2, JAN, 2023 16:07:10

Middle Channel / 1SC1 / BPSK



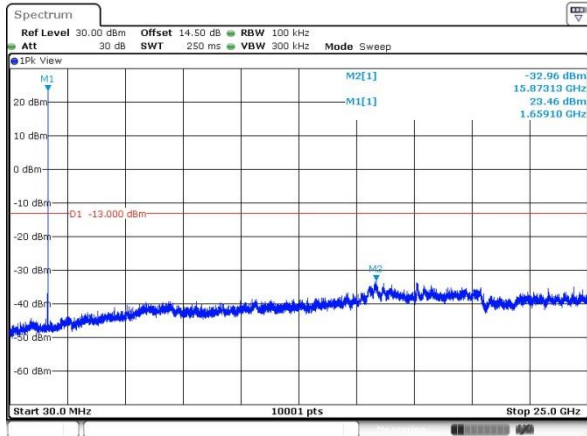
Date: 2, JAN, 2023 16:39:54

Middle Channel / 1SC1 / QPSK



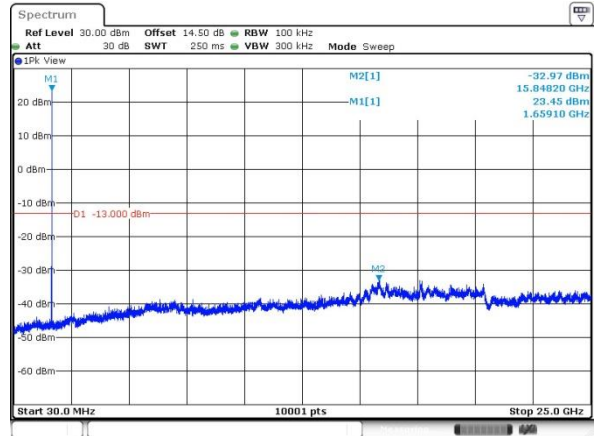
Date: 2, JAN, 2023 16:39:02

Highest Channel / 1SC1 / BPSK



Date: 3, JAN, 2023 08:57:03

Highest Channel / 1SC1 / QPSK

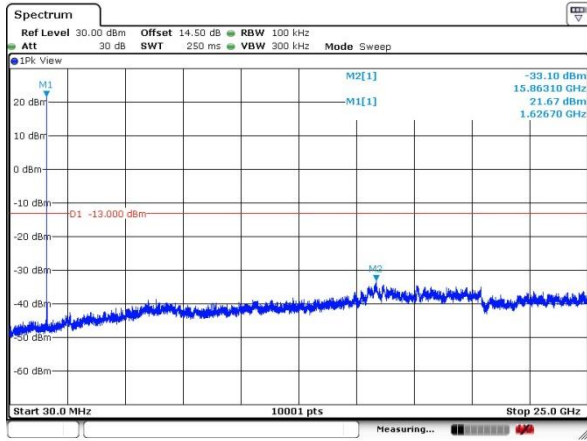


Date: 3, JAN, 2023 14:13:52



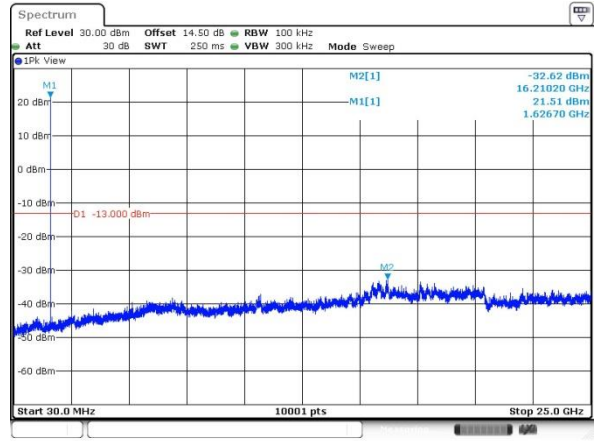
Band 255 SCS15kHz

Lowest Channel / 1SC1 / BPSK



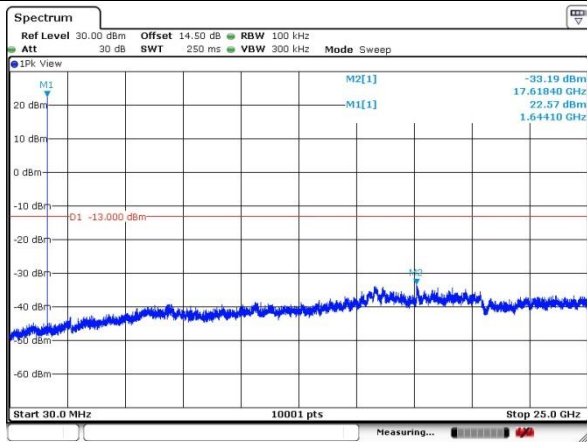
Date: 30, DEC, 2022 10:08:18

Lowest Channel / 1SC1 / QPSK



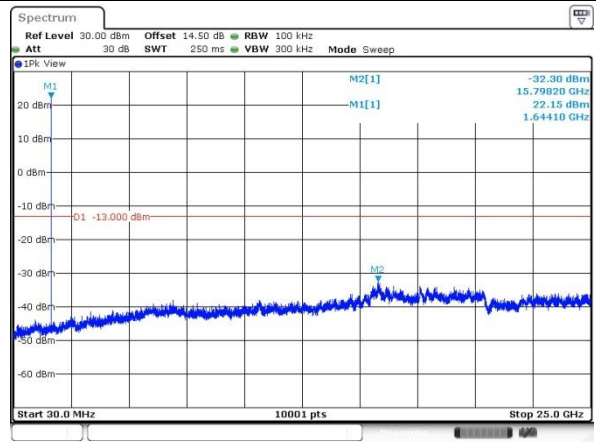
Date: 2, JAN, 2023 16:32:50

Middle Channel / 1SC1 / BPSK



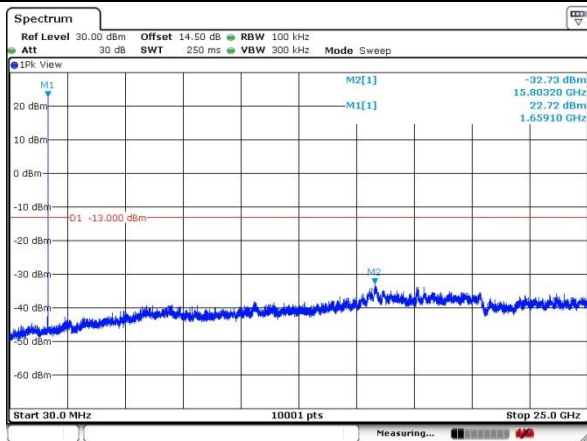
Date: 30, DEC, 2022 11:12:48

Middle Channel / 1SC1 / QPSK



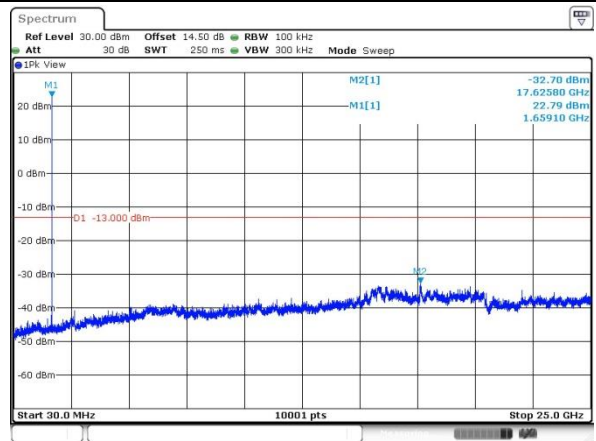
Date: 2, JAN, 2023 16:37:00

Highest Channel / 1SC1 / BPSK



Date: 30, DEC, 2022 11:42:16

Highest Channel / 1SC1 / QPSK



Date: 2, JAN, 2023 17:30:54

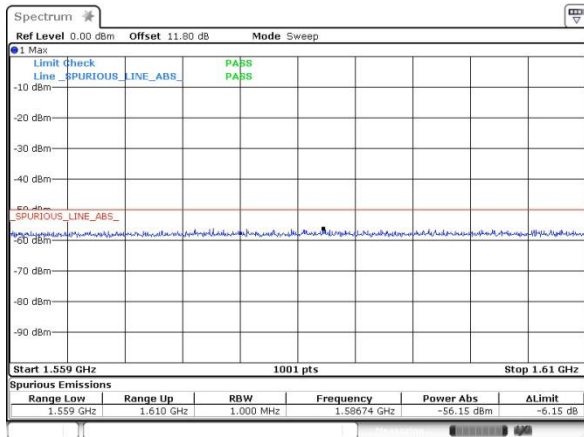


Emission limits for protection of aeronautical service

Band 255 SCS3.75kHz

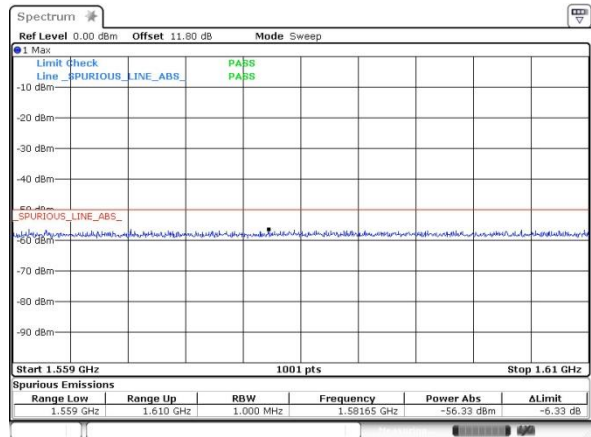
BPSK

Lowest Channel / 1SC1 Carrier off



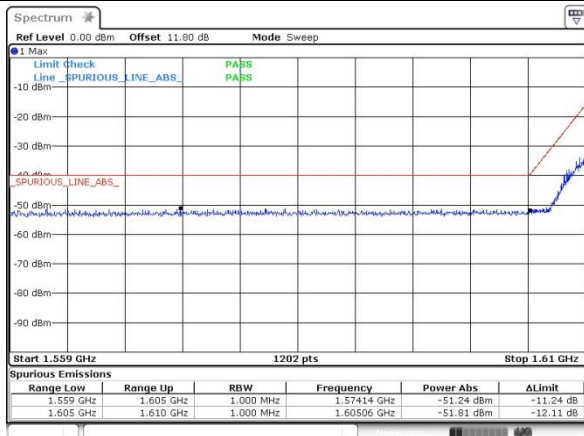
Date: 8 JAN 2023 10:51:22

Middle Channel / 1SC1 Carrier off



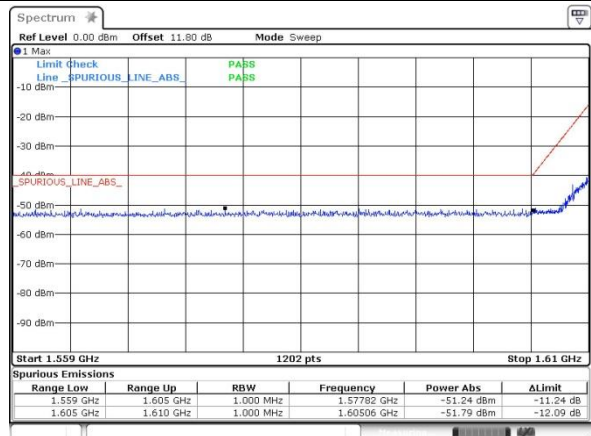
Date: 8 JAN 2023 10:10:24

Lowest Channel / 1SC1 Carrier on

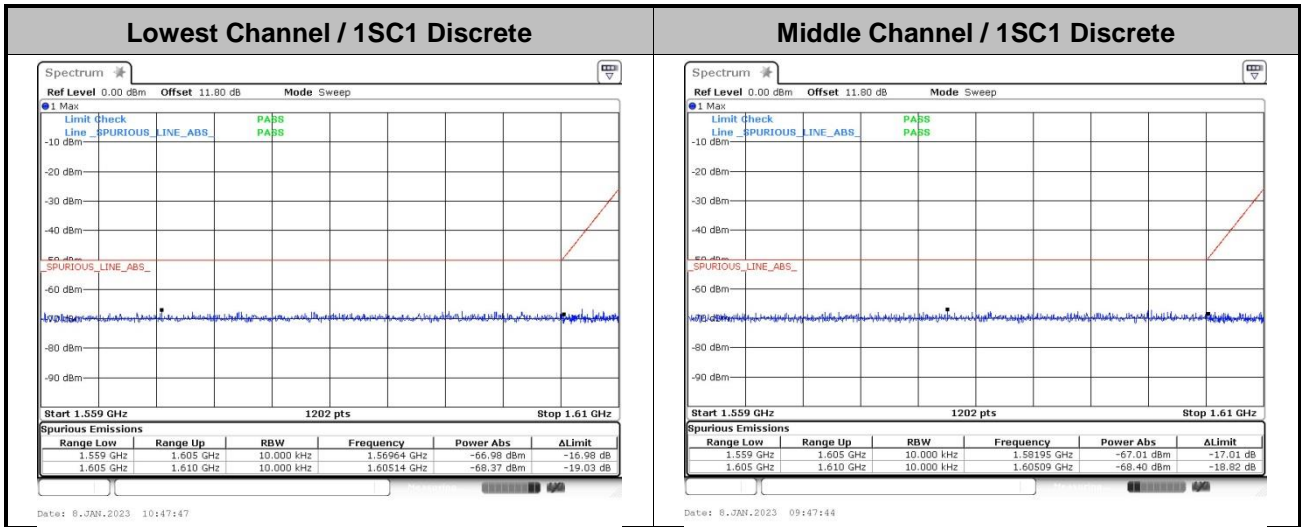


Date: 8 JAN 2023 10:48:48

Middle Channel / 1SC1 Carrier on



Date: 8 JAN 2023 09:49:04



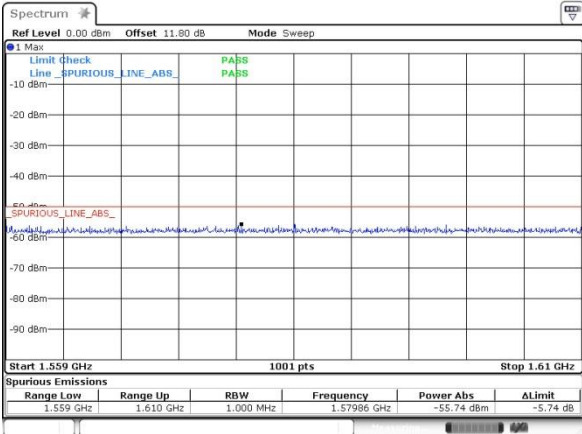


Band 255 SCS3.75kHz

BPSK

Highest Channel / 1SC1 Carrier off

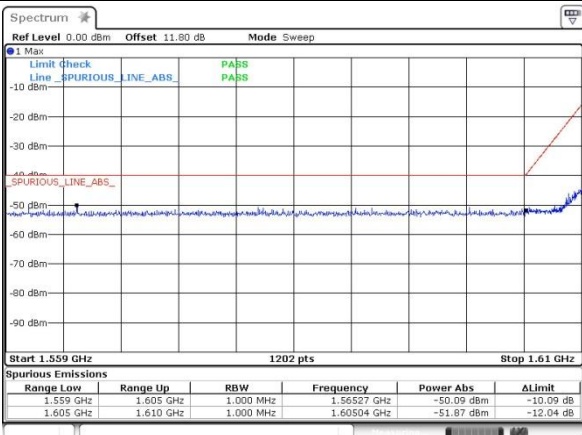
N/A



Date: 7-JAN-2023 16:51:42

Highest Channel / 1SC1 Carrier on

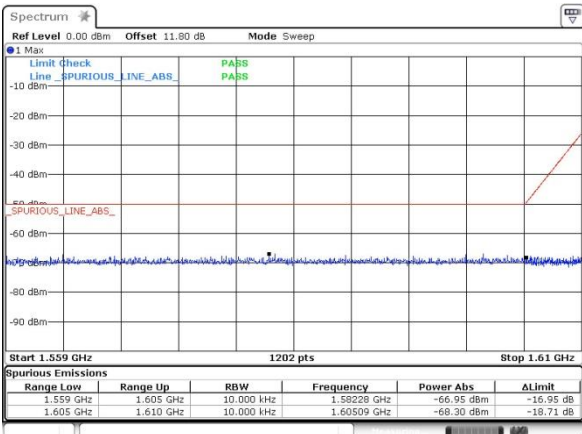
N/A



Date: 7-JAN-2023 16:52:29

Highest Channel / 1SC1 Discrete

N/A



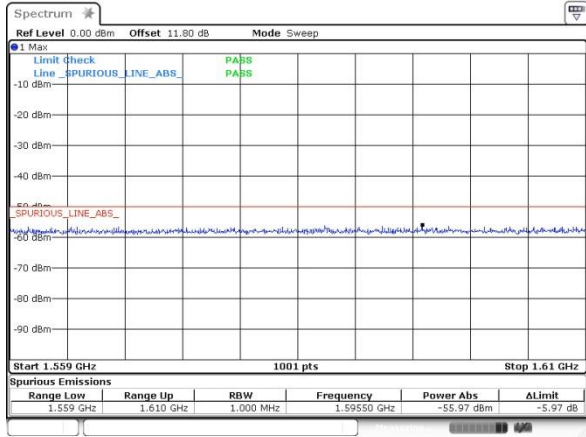
Date: 7-JAN-2023 16:53:39



Band 255 SCS15kHz

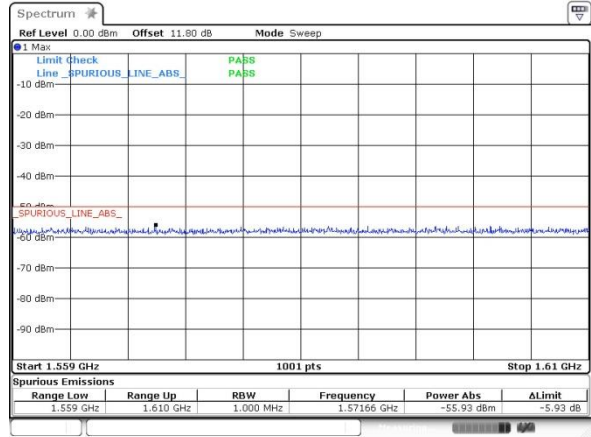
BPSK

Lowest Channel / 1SC1 Carrier off



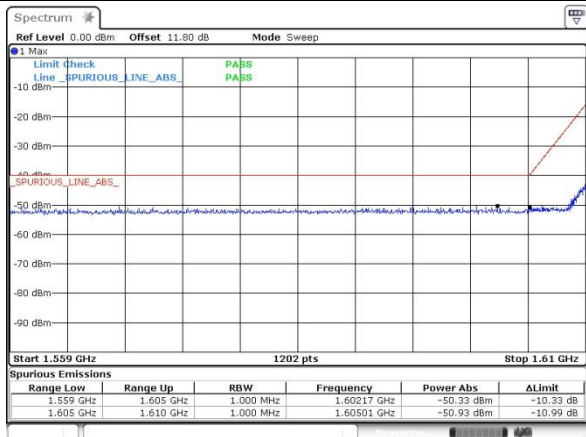
Date: 8-JAN-2023 10:53:00

Middle Channel / 1SC1 Carrier off



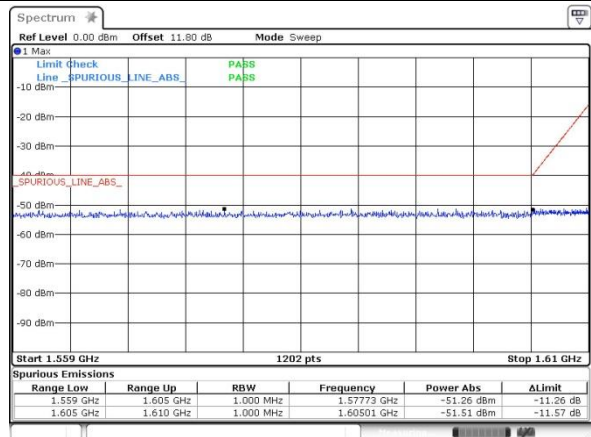
Date: 8-JAN-2023 09:42:29

Lowest Channel / 1SC1 Carrier on



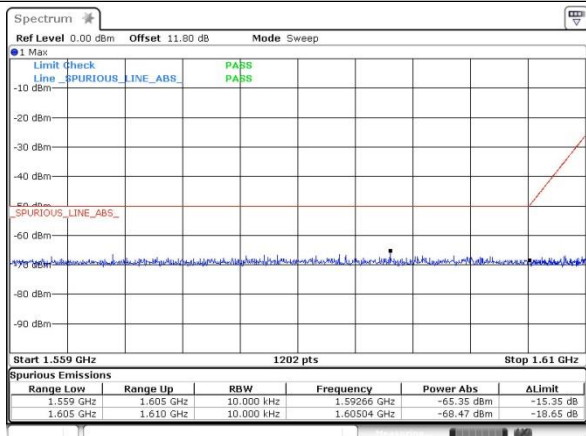
Date: 8-JAN-2023 10:56:17

Middle Channel / 1SC1 Carrier on



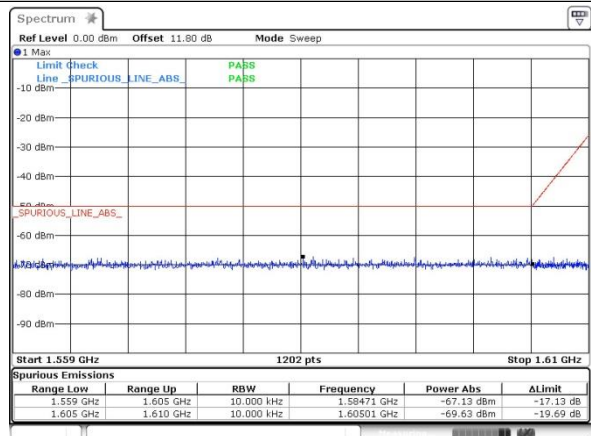
Date: 8-JAN-2023 09:43:00

Lowest Channel / 1SC1 Discrete



Date: 8-JAN-2023 10:57:54

Middle Channel / 1SC1 Discrete



Date: 8-JAN-2023 09:43:38

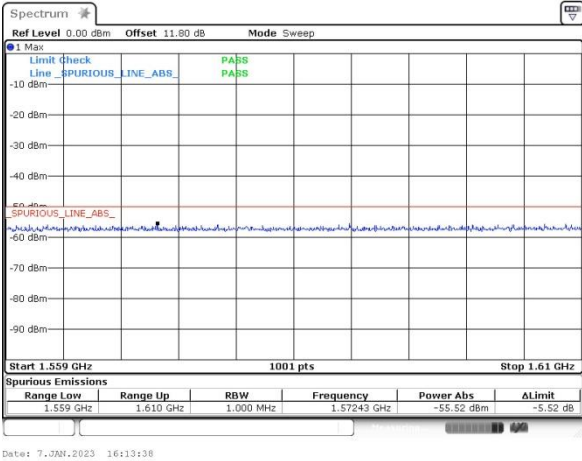


Band 255 SCS15kHz

BPSK

Highest Channel / 1SC1 Carrier off

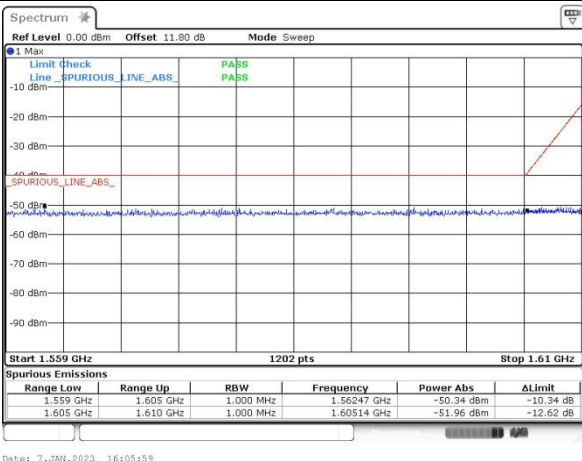
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Date: 7-JAN-2023 16:13:38

Highest Channel / 1SC1 Carrier on

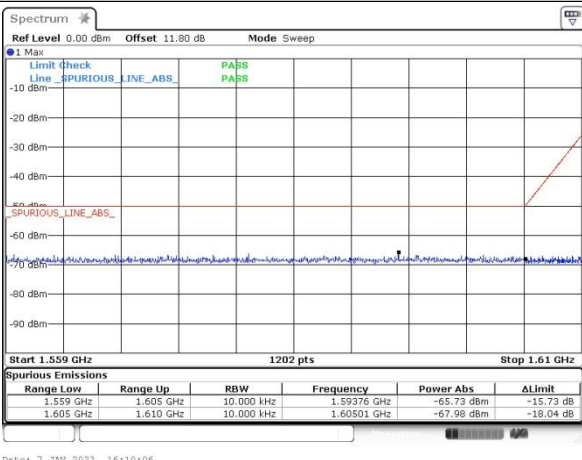
N/A



Date: 7-JAN-2023 16:05:59

Highest Channel / 1SC1 Discrete

N/A



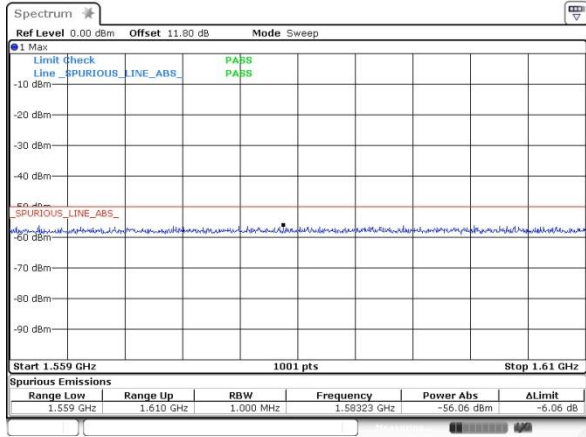
Date: 7-JAN-2023 16:10:06



Band 255 SCS3.75kHz

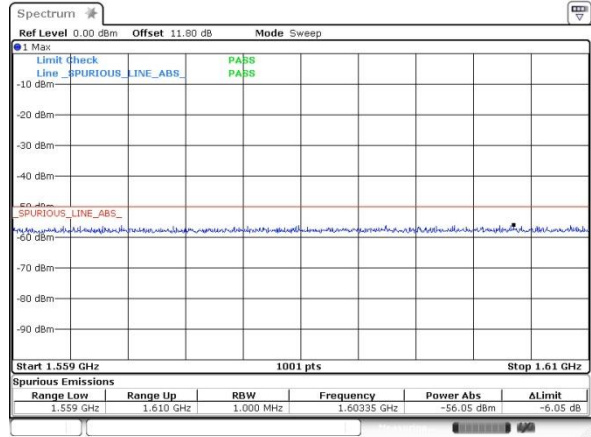
QPSK

Lowest Channel / 1SC1 Carrier off



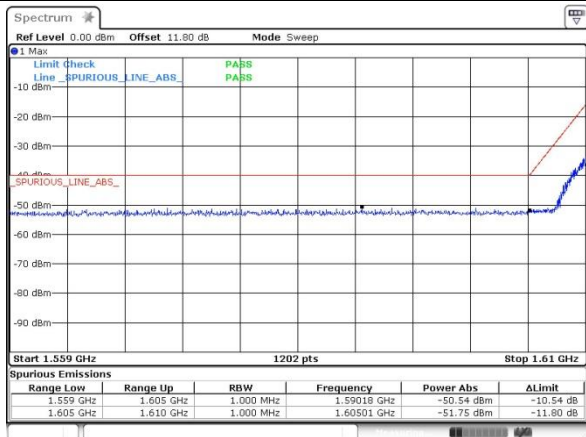
Date: 8-JAN-2023 10:23:38

Middle Channel / 1SC1 Carrier off



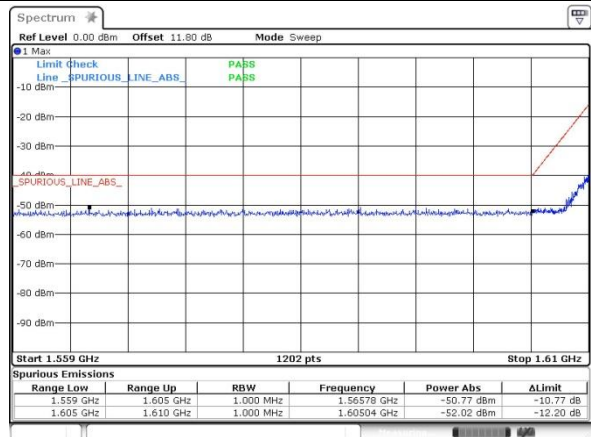
Date: 8-JAN-2023 10:18:16

Lowest Channel / 1SC1 Carrier on



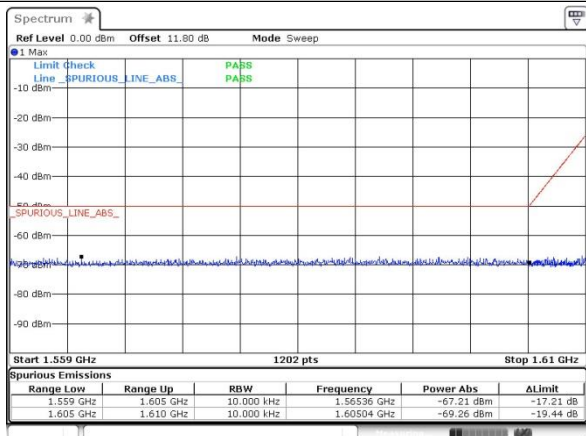
Date: 8-JAN-2023 10:24:58

Middle Channel / 1SC1 Carrier on



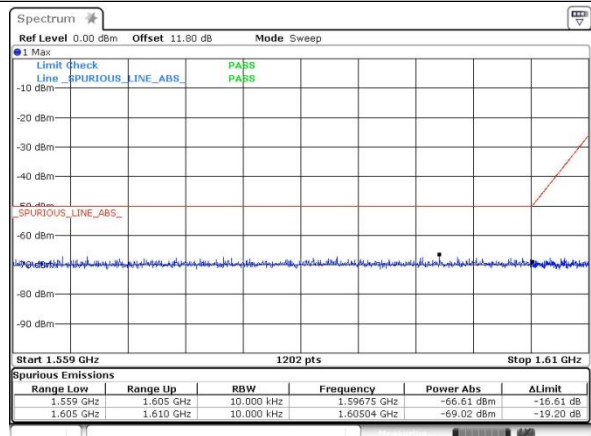
Date: 8-JAN-2023 10:19:16

Lowest Channel / 1SC1 Discrete



Date: 8-JAN-2023 10:26:24

Middle Channel / 1SC1 Discrete



Date: 8-JAN-2023 10:20:14



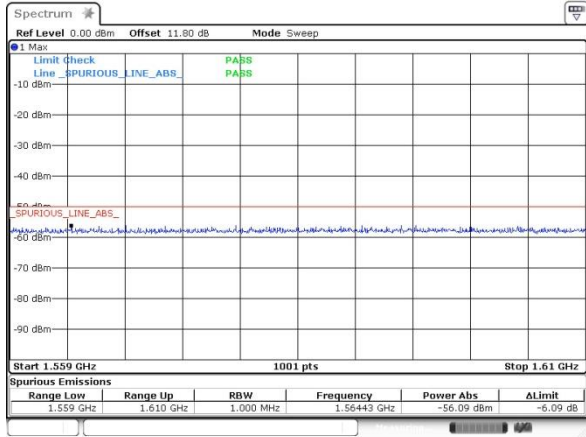
Band 255 SCS3.75kHz																			
QPSK																			
Highest Channel / 1SC1 Carrier off	N/A																		
<table border="1"> <thead> <tr> <th>Range Low</th> <th>Range Up</th> <th>RBW</th> <th>Frequency</th> <th>Power Abs</th> <th>ΔLimit</th> </tr> </thead> <tbody> <tr> <td>1.559 GHz</td> <td>1.610 GHz</td> <td>1.000 MHz</td> <td>1.60299 GHz</td> <td>-55.75 dBm</td> <td>-5.75 dB</td> </tr> </tbody> </table> <p>Date: 7-JAN-2023 16:42:23</p>	Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit	1.559 GHz	1.610 GHz	1.000 MHz	1.60299 GHz	-55.75 dBm	-5.75 dB							
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit														
1.559 GHz	1.610 GHz	1.000 MHz	1.60299 GHz	-55.75 dBm	-5.75 dB														
Highest Channel / 1SC1 Carrier on	N/A																		
<table border="1"> <thead> <tr> <th>Range Low</th> <th>Range Up</th> <th>RBW</th> <th>Frequency</th> <th>Power Abs</th> <th>ΔLimit</th> </tr> </thead> <tbody> <tr> <td>1.559 GHz</td> <td>1.605 GHz</td> <td>1.000 MHz</td> <td>1.57736 GHz</td> <td>-50.69 dBm</td> <td>-10.69 dB</td> </tr> <tr> <td>1.605 GHz</td> <td>1.610 GHz</td> <td>1.000 MHz</td> <td>1.60506 GHz</td> <td>-52.10 dBm</td> <td>-12.40 dB</td> </tr> </tbody> </table> <p>Date: 7-JAN-2023 16:41:39</p>	Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit	1.559 GHz	1.605 GHz	1.000 MHz	1.57736 GHz	-50.69 dBm	-10.69 dB	1.605 GHz	1.610 GHz	1.000 MHz	1.60506 GHz	-52.10 dBm	-12.40 dB	
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit														
1.559 GHz	1.605 GHz	1.000 MHz	1.57736 GHz	-50.69 dBm	-10.69 dB														
1.605 GHz	1.610 GHz	1.000 MHz	1.60506 GHz	-52.10 dBm	-12.40 dB														
Highest Channel / 1SC1 Discrete	N/A																		
<table border="1"> <thead> <tr> <th>Range Low</th> <th>Range Up</th> <th>RBW</th> <th>Frequency</th> <th>Power Abs</th> <th>ΔLimit</th> </tr> </thead> <tbody> <tr> <td>1.559 GHz</td> <td>1.605 GHz</td> <td>10.000 kHz</td> <td>1.59280 GHz</td> <td>-66.56 dBm</td> <td>-16.56 dB</td> </tr> <tr> <td>1.605 GHz</td> <td>1.610 GHz</td> <td>10.000 kHz</td> <td>1.60504 GHz</td> <td>-68.28 dBm</td> <td>-18.46 dB</td> </tr> </tbody> </table> <p>Date: 7-JAN-2023 16:40:38</p>	Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit	1.559 GHz	1.605 GHz	10.000 kHz	1.59280 GHz	-66.56 dBm	-16.56 dB	1.605 GHz	1.610 GHz	10.000 kHz	1.60504 GHz	-68.28 dBm	-18.46 dB	
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit														
1.559 GHz	1.605 GHz	10.000 kHz	1.59280 GHz	-66.56 dBm	-16.56 dB														
1.605 GHz	1.610 GHz	10.000 kHz	1.60504 GHz	-68.28 dBm	-18.46 dB														



Band 255 SCS15kHz

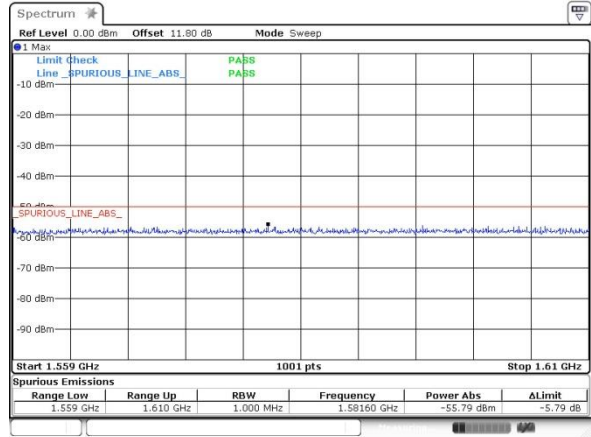
QPSK

Lowest Channel / 1SC1 Carrier off



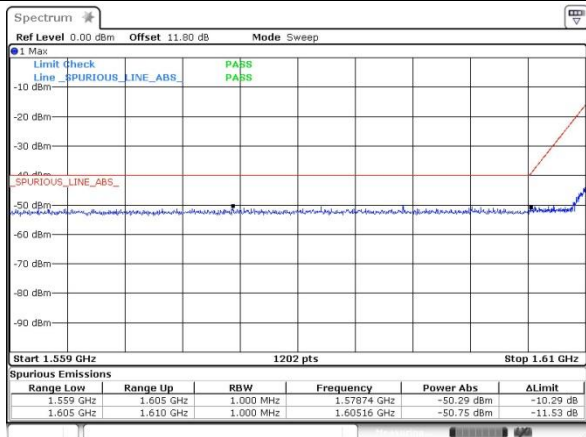
Date: 8-JAN-2023 11:11:06

Middle Channel / 1SC1 Carrier off



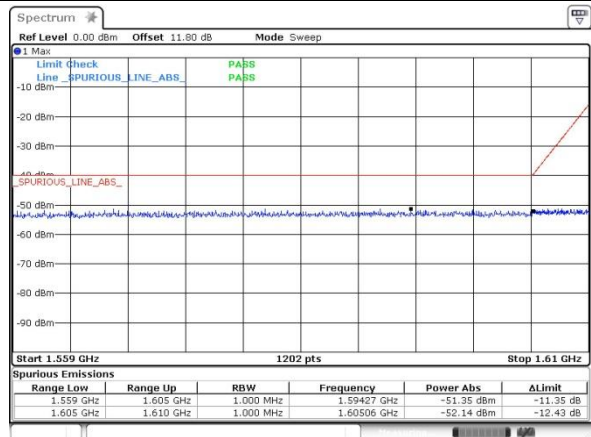
Date: 8-JAN-2023 09:31:32

Lowest Channel / 1SC1 Carrier on



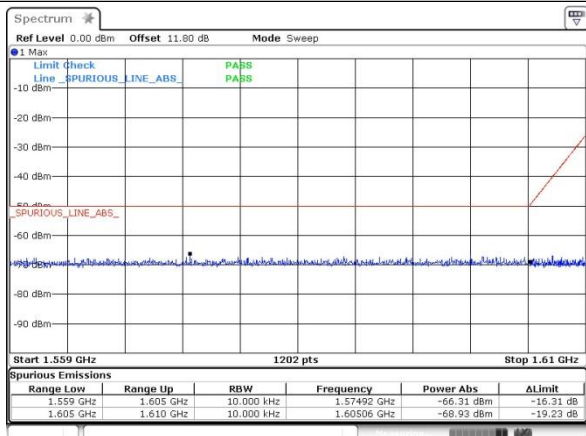
Date: 8-JAN-2023 11:10:01

Middle Channel / 1SC1 Carrier on



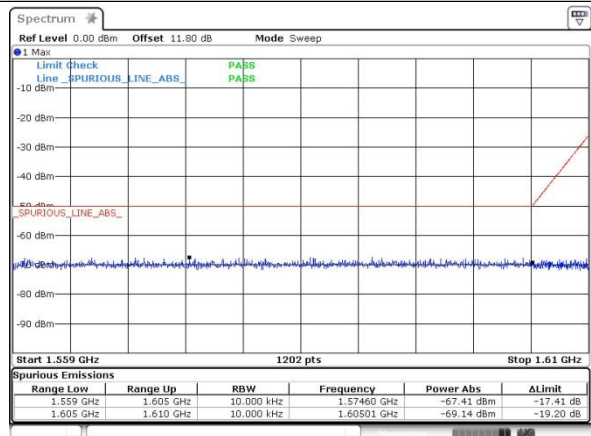
Date: 8-JAN-2023 09:32:11

Lowest Channel / 1SC1 Discrete



Date: 8-JAN-2023 11:07:37

Middle Channel / 1SC1 Discrete



Date: 8-JAN-2023 09:32:45



Band 255 SCS15kHz																			
QPSK																			
Highest Channel / 1SC1 Carrier off	N/A																		
<table border="1"> <thead> <tr> <th>Range Low</th> <th>Range Up</th> <th>RBW</th> <th>Frequency</th> <th>Power Abs</th> <th>ΔLimit</th> </tr> </thead> <tbody> <tr> <td>1.559 GHz</td> <td>1.610 GHz</td> <td>1.000 MHz</td> <td>1.57034 GHz</td> <td>-56.26 dBm</td> <td>-6.26 dB</td> </tr> </tbody> </table> <p>Date: 7-JAN-2023 16:21:50</p>	Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit	1.559 GHz	1.610 GHz	1.000 MHz	1.57034 GHz	-56.26 dBm	-6.26 dB							
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit														
1.559 GHz	1.610 GHz	1.000 MHz	1.57034 GHz	-56.26 dBm	-6.26 dB														
Highest Channel / 1SC1 Carrier on	N/A																		
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Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit														
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Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit														
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Frequency Stability

Test Conditions		Band 255(QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	SCS15kHz	10ppm
		Deviation (ppm)	Result
50	Normal Voltage	0.0001	PASS
40	Normal Voltage	0.0007	
30	Normal Voltage	0.0007	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0013	
0	Normal Voltage	0.0005	
-10	Normal Voltage	0.0001	
-20	Normal Voltage	0.0004	
-30	Normal Voltage	0.0005	
20	Maximum Voltage	0.0001	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0007	

Note: Normal Voltage =3.87 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.4 V.



Appendix C. Test Results of Radiated Test

Radiated Spurious Emission

Test Engineer :	HuaCong Liang	Temperature :	22~25°C
		Relative Humidity :	48~52%

Pre-scanned harmonic for SCS3.75kHz and SCS15kHz testing, we choose the worst mode to test.

NTN Band 23 / SCS 3.75kHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	4000.03	-51.11	-13	-38.11	-66.27	-57.86	5.85	12.60	H
	6000.05	-53.00	-13	-40.00	-71.59	-58.80	7.30	13.10	H
	8000.06	-55.90	-13	-42.90	-79.63	-59.05	8.35	11.50	H
	4000.03	-53.05	-13	-40.05	-68.11	-59.80	5.85	12.60	V
	6000.05	-52.13	-13	-39.13	-70.82	-57.93	7.30	13.10	V
	8000.06	-54.00	-13	-41.00	-77.79	-57.15	8.35	11.50	V
Middle	4019.83	-55.49	-13	-42.49	-70.68	-62.24	5.85	12.60	H
	6029.75	-52.33	-13	-39.33	-71.01	-58.13	7.30	13.10	H
	8039.66	-54.78	-13	-41.78	-78.26	-57.93	8.35	11.50	H
	4019.83	-52.82	-13	-39.82	-67.94	-59.57	5.85	12.60	V
	6029.75	-48.29	-13	-35.29	-67.02	-54.09	7.30	13.10	V
Highest	8039.66	-54.37	-13	-41.37	-77.91	-57.52	8.35	11.50	V
	4039.63	-52.02	-13	-39.02	-67.25	-58.77	5.85	12.60	H
	6059.45	-47.20	-13	-34.20	-65.97	-53.00	7.30	13.10	H
	8079.26	-53.40	-13	-40.40	-76.64	-56.55	8.35	11.50	H
	4039.63	-49.59	-13	-36.59	-64.79	-56.34	5.85	12.60	V
	6059.45	-43.33	-13	-30.33	-62.11	-49.13	7.30	13.10	V
8079.26	-53.52	-13	-40.52	-76.82	-56.67	8.35	11.50	V	

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



NTN Band 255 / SCS 3.75kHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3253.23	-61.71	-13	-48.71	-74.28	-68.47	5.82	12.58	H
	4879.85	-61.36	-13	-48.36	-79.02	-67.08	7.28	13.00	H
	6506.46	-60.49	-13	-47.49	-79.66	-63.65	8.32	11.48	H
	3253.23	-62.92	-13	-49.92	-76.02	-69.68	5.82	12.58	V
	4879.85	-61.24	-13	-48.24	-78.92	-66.96	7.28	13.00	V
	6506.46	-60.24	-13	-47.24	-79.25	-63.40	8.32	11.48	V
Middle	3286.43	-62.33	-13	-49.33	-74.63	-69.08	5.85	12.60	H
	4929.65	-61.50	-13	-48.50	-79.08	-67.30	7.30	13.10	H
	6572.86	-59.53	-13	-46.53	-78.72	-62.68	8.35	11.50	H
	3286.43	-62.66	-13	-49.66	-75.44	-69.41	5.85	12.60	V
	4929.65	-61.55	-13	-48.55	-79.11	-67.35	7.30	13.10	V
	6572.86	-60.20	-13	-47.20	-79.2	-63.35	8.35	11.50	V
Highest	3319.63	-63.57	-13	-50.57	-75.60	-70.31	5.88	12.62	H
	4979.45	-61.51	-13	-48.51	-79.00	-67.32	7.32	13.13	H
	6639.26	-60.77	-13	-47.77	-80.11	-63.93	8.38	11.54	H
	3319.63	-62.81	-13	-49.81	-75.26	-69.55	5.88	12.62	V
	4979.45	-62.84	-13	-49.84	-80.27	-68.65	7.32	13.13	V
	6639.26	-59.52	-13	-46.52	-78.63	-62.68	8.38	11.54	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.