

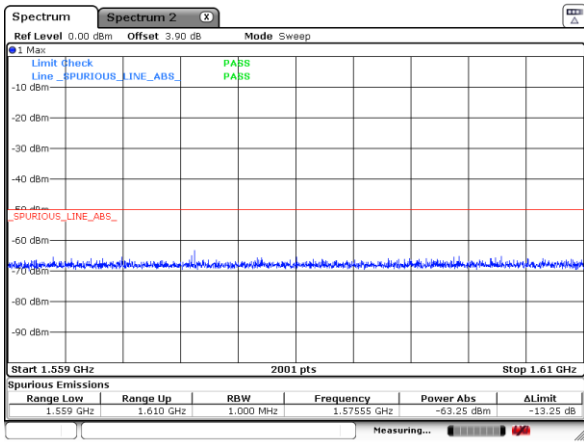


Emission limits for protection of aeronautical service

Band 23 SCS3.75KHz

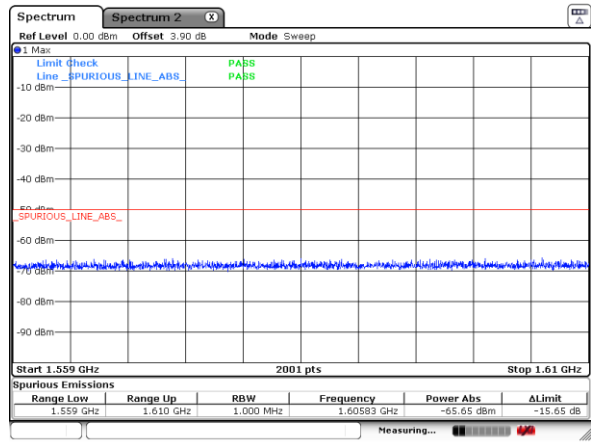
BPSK

Lowest Channel / 1SC1/ Carrier off



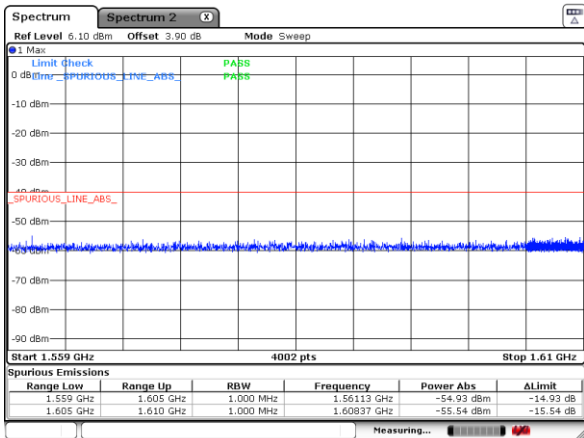
Date: 9.NOV.2023 12:52:21

Middle Channel / 1SC1/ Carrier off



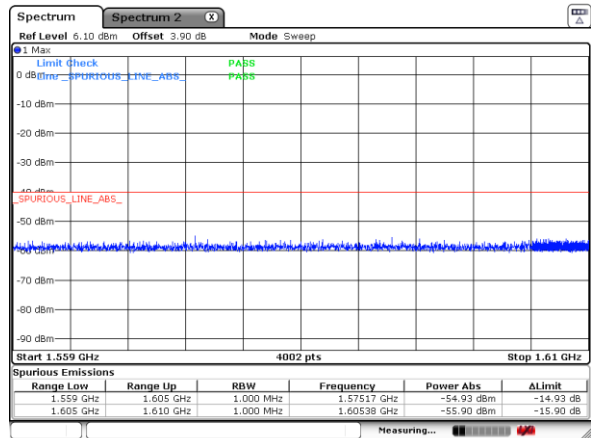
Date: 9.NOV.2023 12:53:02

Lowest Channel / 1SC1/ Carrier on

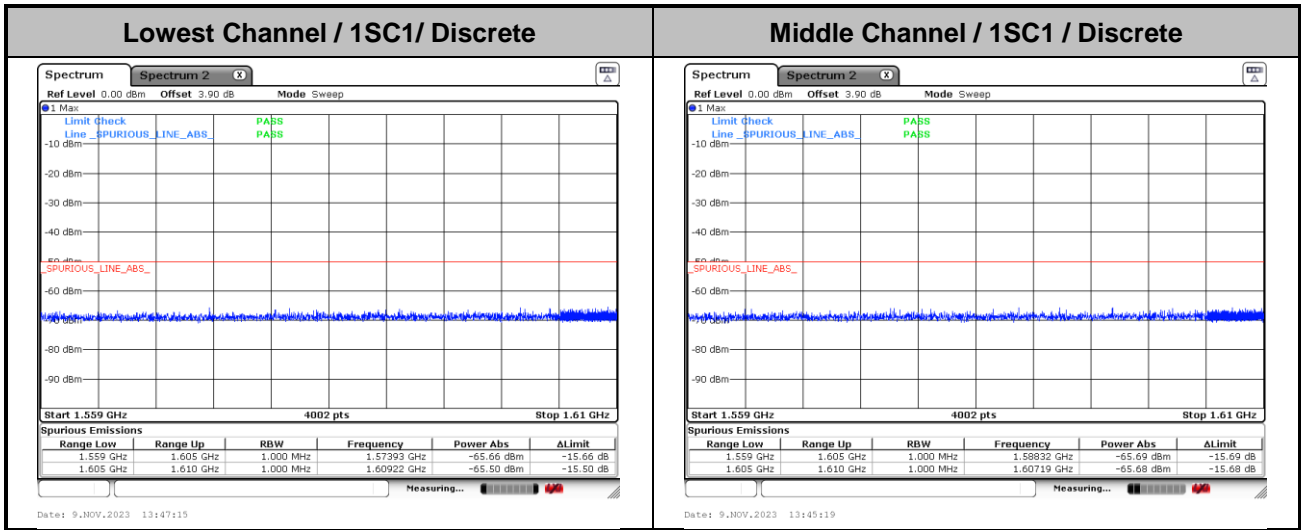


Date: 9.NOV.2023 13:37:30

Middle Channel / 1SC1 / Carrier on



Date: 9.NOV.2023 13:30:18



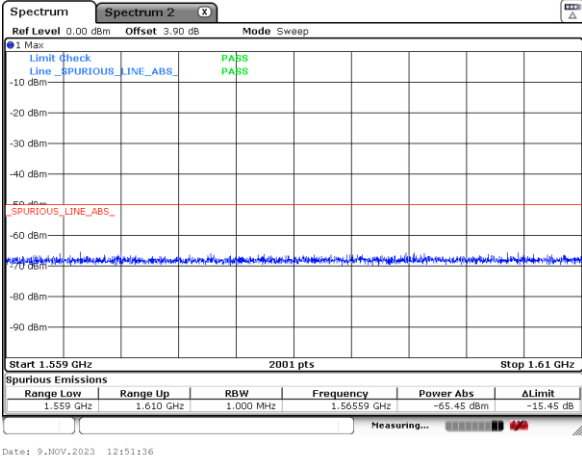


Band 23 SCS3.75KHz

BPSK

Highest Channel / 1SC1/ Carrier off

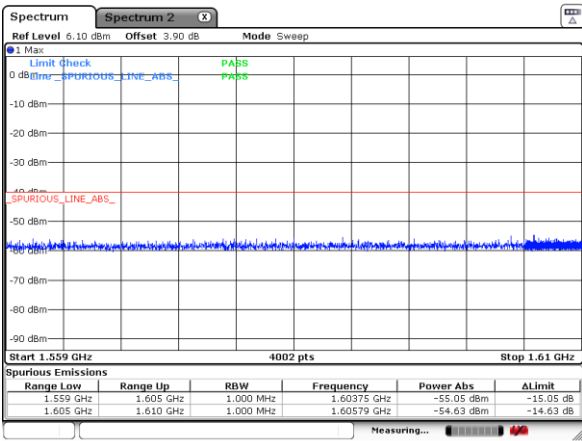
N/A



Date: 9.NOV.2023 12:51:36

Highest Channel / 1SC1/ Carrier on

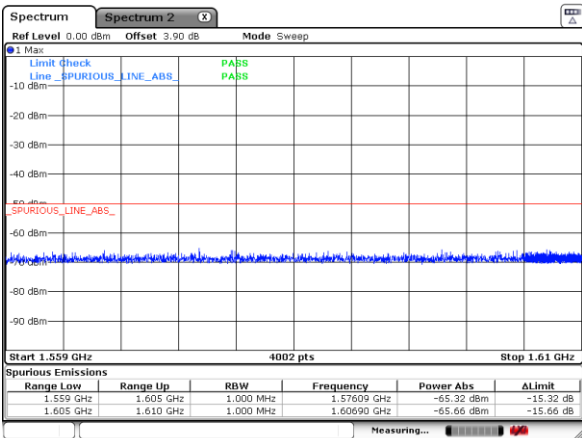
N/A



Date: 9.NOV.2023 13:28:07

Highest Channel / 1SC1/ Discrete

N/A



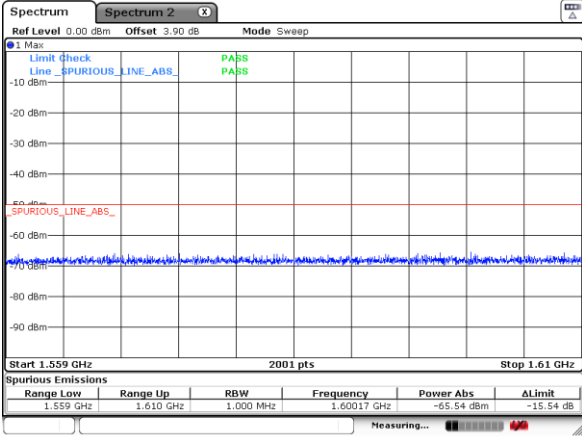
Date: 9.NOV.2023 13:46:10



Band 23 SCS3.75KHz

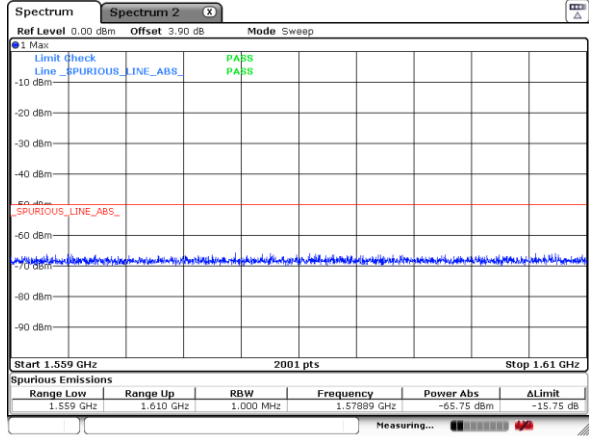
QPSK

Lowest Channel / 1SC1/ Carrier off



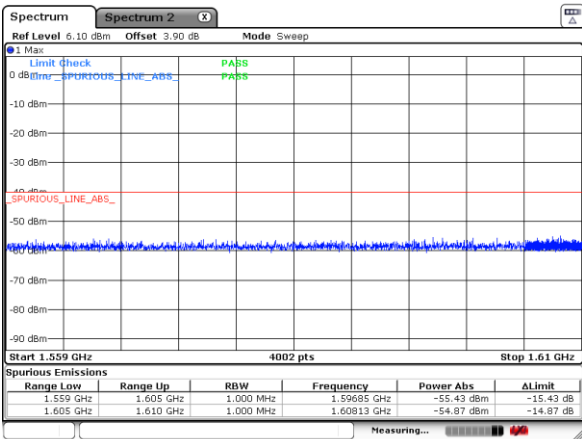
Date: 9.NOV.2023 12:52:132

Middle Channel / 1SC1/ Carrier off



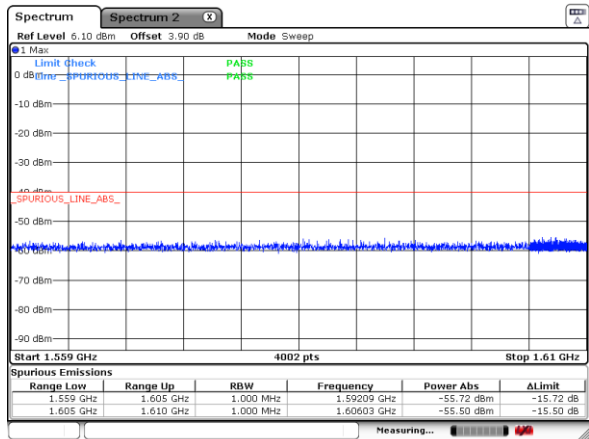
Date: 9.NOV.2023 12:53:13

Lowest Channel / 1SC1/ Carrier on



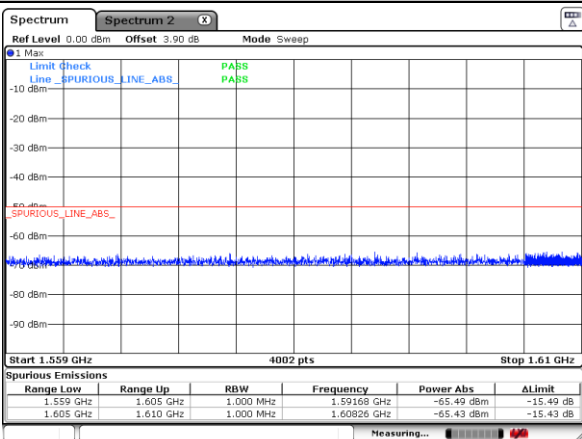
Date: 9.NOV.2023 13:16:23

Middle Channel / 1SC1 / Carrier on



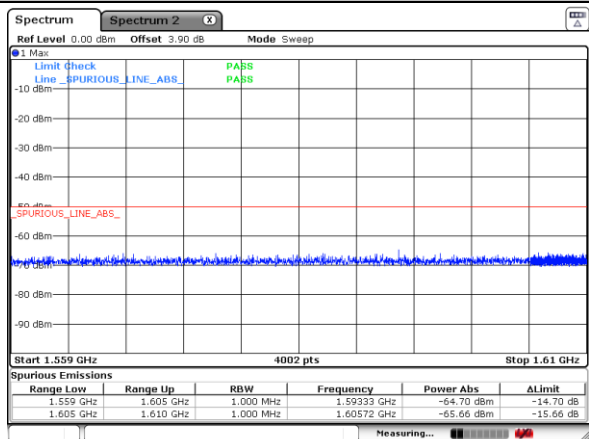
Date: 9.NOV.2023 13:30:43

Lowest Channel / 1SC1/ Discrete



Date: 9.NOV.2023 13:47:31

Middle Channel / 1SC1 / Discrete



Date: 9.NOV.2023 13:44:58

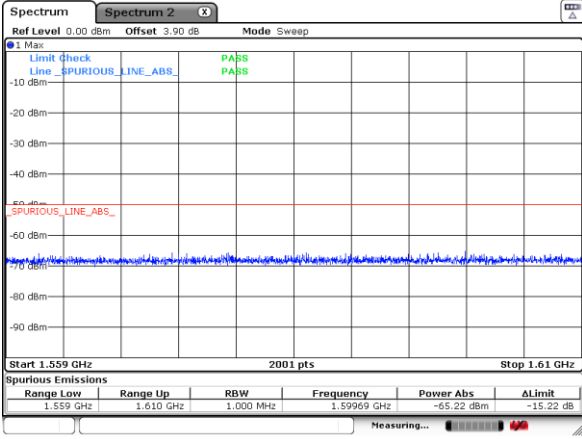


Band 23 SCS3.75KHz

QPSK

Highest Channel / 1SC1/ Carrier off

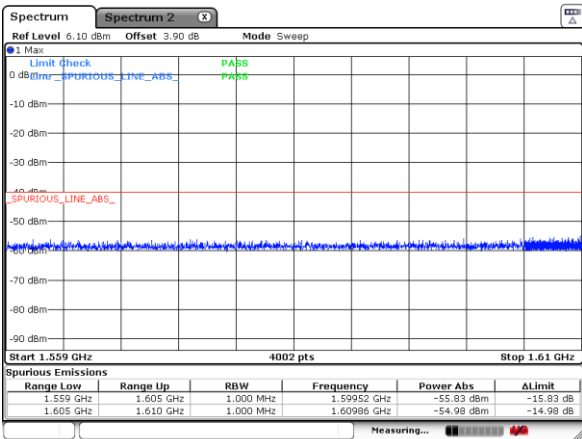
N/A



Date: 9.NOV.2023 12:51:48

Highest Channel / 1SC1/ Carrier on

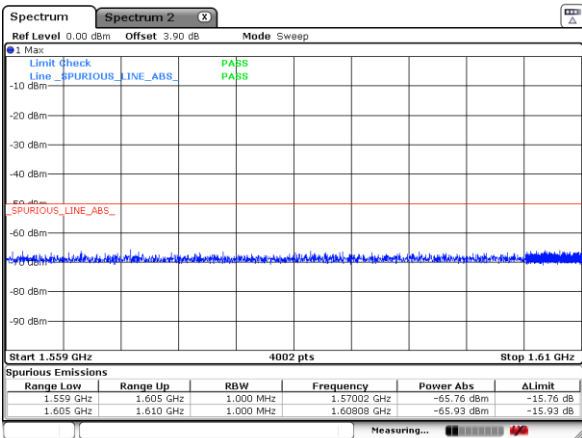
N/A



Date: 9.NOV.2023 13:27:30

Highest Channel / 1SC1/ Discrete

N/A



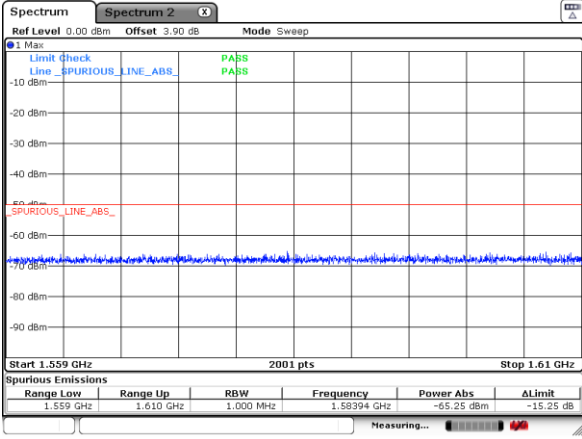
Date: 9.NOV.2023 13:46:27



Band 23 SCS15KHz

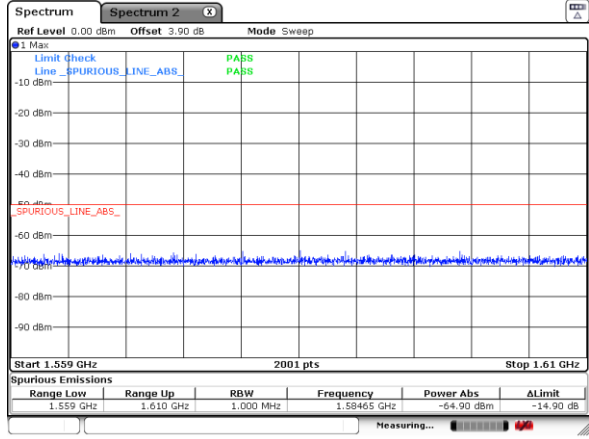
BPSK

Lowest Channel / 1SC1/ Carrier off



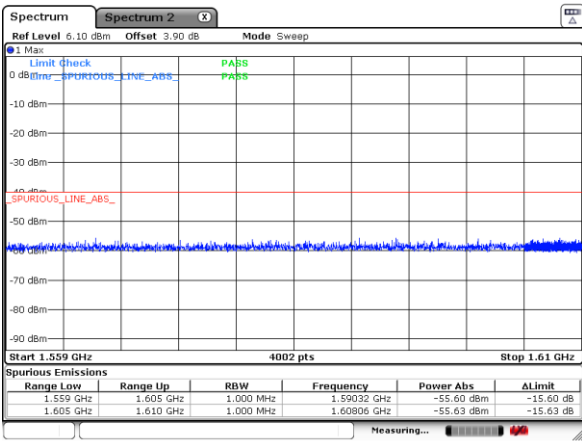
Date: 9.NOV.2023 12:51:59

Middle Channel / 1SC1/ Carrier off



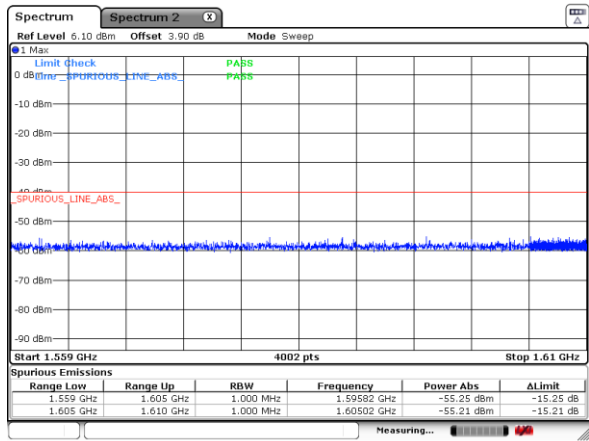
Date: 9.NOV.2023 12:52:40

Lowest Channel / 1SC1/ Carrier on



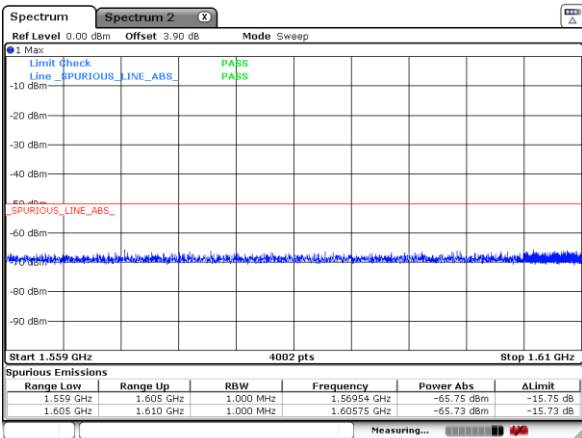
Date: 9.NOV.2023 13:34:53

Middle Channel / 1SC1 / Carrier on



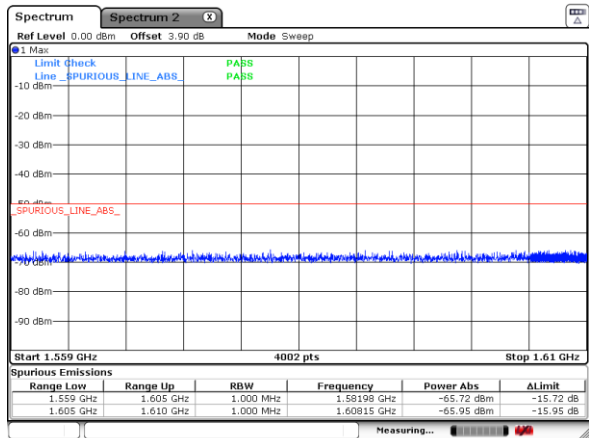
Date: 9.NOV.2023 13:32:48

Lowest Channel / 1SC1/ Discrete



Date: 9.NOV.2023 13:46:43

Middle Channel / 1SC1 / Discrete



Date: 9.NOV.2023 13:44:39

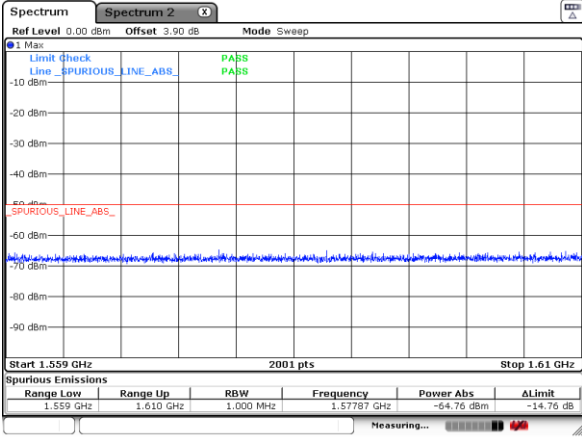


Band 23 SCS15KHz

BPSK

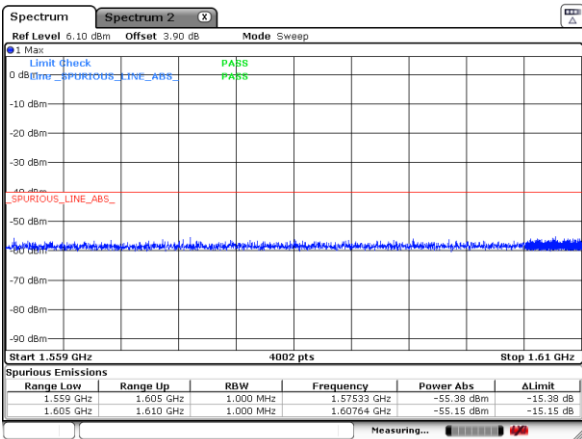
Highest Channel / 1SC1/ Carrier off

N/A



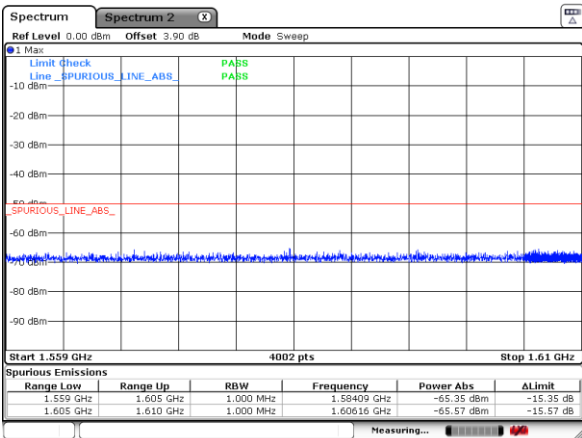
Highest Channel / 1SC1/ Carrier on

N/A



Highest Channel / 1SC1/ Discrete

N/A

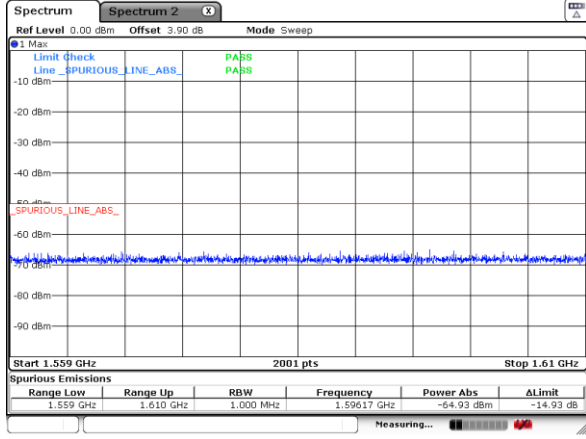




Band 23 SCS15KHz

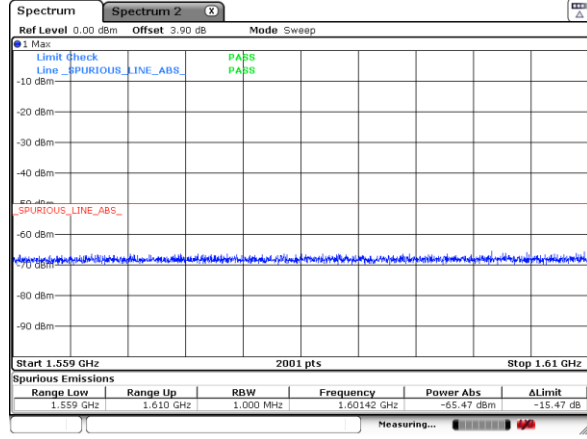
QPSK

Lowest Channel / 1SC1/ Carrier off



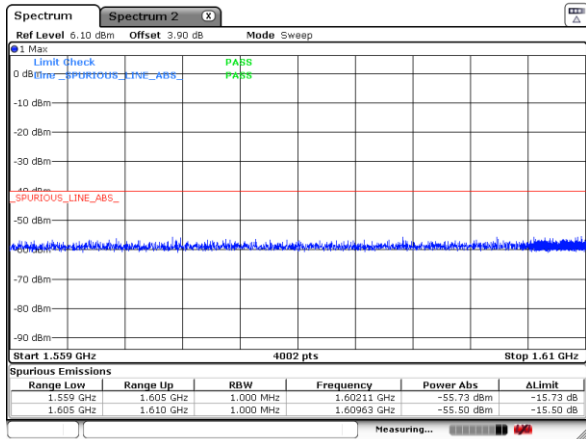
Date: 9.NOV.2023 12:52:09

Middle Channel / 1SC1/ Carrier off



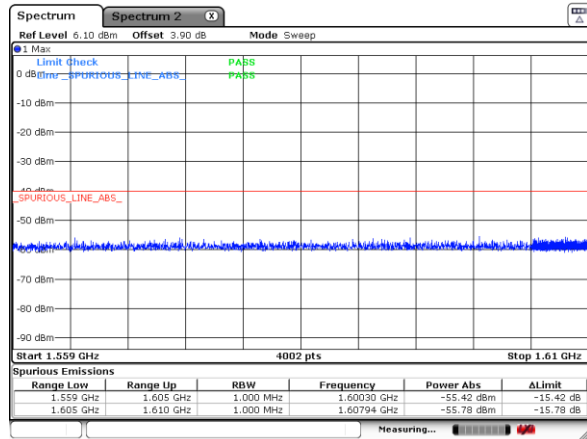
Date: 9.NOV.2023 12:52:12

Lowest Channel / 1SC1/ Carrier on



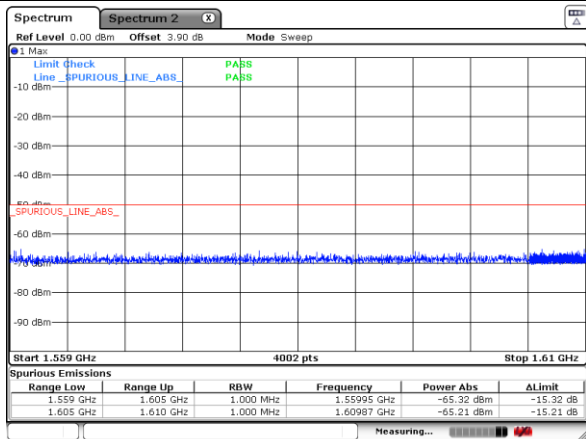
Date: 9.NOV.2023 13:35:17

Middle Channel / 1SC1 / Carrier on



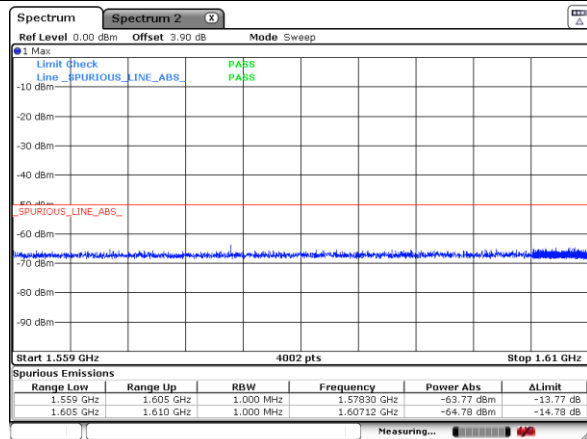
Date: 9.NOV.2023 13:32:19

Lowest Channel / 1SC1/ Discrete



Date: 9.NOV.2023 13:46:58

Middle Channel / 1SC1 / Discrete



Date: 9.NOV.2023 13:43:37

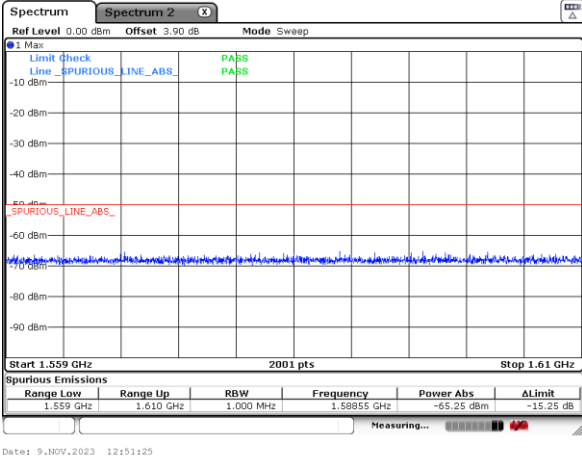


Band 23 SCS15KHz

QPSK

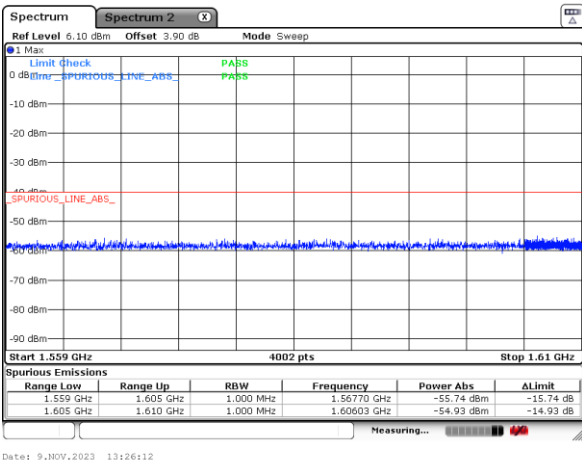
Highest Channel / 1SC1/ Carrier off

N/A



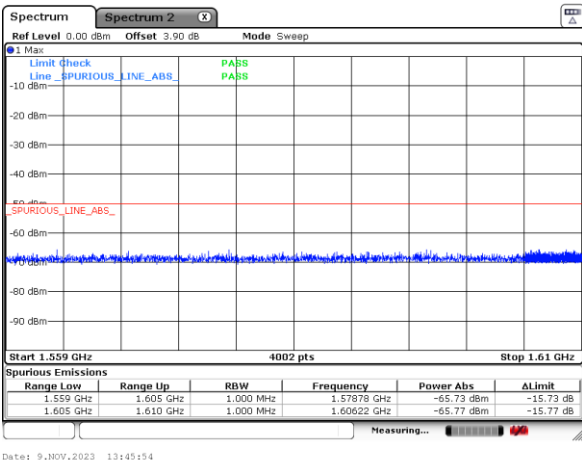
Highest Channel / 1SC1/ Carrier on

N/A



Highest Channel / 1SC1/ Discrete

N/A





Frequency Stability

Test Conditions		LTE Band 23 (QPSK) / Middle Channel	Result
Temperature (°C)	Voltage (Volt)	3.75 KHz Deviation (ppm)	
50	Normal Voltage	0.0017	PASS
40	Normal Voltage	0.0006	
30	Normal Voltage	0.0025	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0038	
0	Normal Voltage	0.0002	
-10	Normal Voltage	0.0013	
-20	Normal Voltage	0.0025	
-30	Normal Voltage	0.0004	
20	Maximum Voltage	0.0023	
20	Normal Voltage	0.0017	
20	Minimum Voltage	0.0026	

Note: Normal Voltage =7.74 V. ; Minimum Voltage =6.8 V. ; Maximum Voltage =8.9V



Band 255

Conducted Output Power (Average power) and EIRP

Band 255 SCS 3.75kHz							Limit	
Test Frequency (MHz)	SC Size	Conducted Power (dBm)		Antenna Gain (dBi)		EIRP Power (dBm)		Result
		BPSK	QPSK	BPSK	QPSK	BPSK	QPSK	
1626.6	1SC1	23.54	23.60	-2.5		21.04	21.10	PASS
	1SC46	23.55	23.56	-2.5		21.05	21.06	
1643.5	1SC1	24.01	24.11	-2.5		21.51	21.61	
	1SC46	24.00	24.09	-2.5		21.50	21.59	
1660.4	1SC1	24.33	24.38	-2.5		21.83	21.88	
	1SC46	24.33	24.37	-2.5		21.83	21.87	

Band 255 SCS 15kHz							Limit	
Test Frequency (MHz)	SC Size	Conducted Power (dBm)		Antenna Gain (dBi)		EIRP Power (dBm)		Result
		BPSK	QPSK	BPSK	QPSK	BPSK	QPSK	
1626.6	1SC1	21.61	21.81	-2.5		19.11	19.31	PASS
	1SC10	21.63	21.70	-2.5		19.13	19.20	
	3SC0	-	23.09	-2.5		-	20.59	
	3SC9	-	23.45	-2.5		-	20.95	
	6SC0	-	22.81	-2.5		-	20.31	
	6SC6	-	23.04	-2.5		-	20.54	
	12SC0	-	22.01	-2.5		-	19.51	
1643.5	1SC1	22.32	22.33	-2.5		19.82	19.83	
	1SC10	22.25	22.32	-2.5		19.75	19.82	
	3SC0	-	23.90	-2.5		-	21.40	
	3SC9	-	24.08	-2.5		-	21.58	
	6SC0	-	23.39	-2.5		-	20.89	
	6SC6	-	23.51	-2.5		-	21.01	
1660.4	12SC0	-	22.36	-2.5		-	19.86	
	1SC1	23.14	23.24	-2.5		20.64	20.74	
	1SC10	23.20	23.21	-2.5		20.70	20.71	
	3SC0	-	24.05	-2.5		-	21.55	
	3SC9	-	24.18	-2.5		-	21.68	
	6SC0	-	23.46	-2.5		-	20.96	
	6SC6	-	23.60	-2.5		-	21.10	
	12SC0	-	22.42	-2.5		-	19.92	



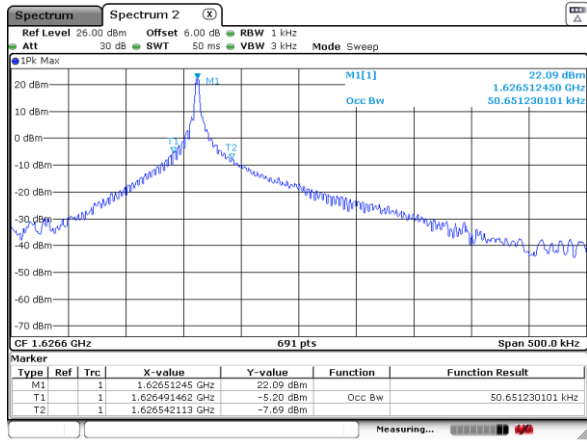
Occupied Bandwidth

Mode	LTE Band 255 : 99%OBW(kHz)												
SCS	3.75kHz				15kHz								
Mod.	BPSK	QPSK	BPSK	QPSK	BPSK	BPSK	QPSK	QPSK	QPSK	QPSK	QPSK	QPSK	QPSK
SC Size	1SC1	1SC1	1SC46	1SC46	1SC1	1SC10	1SC1	1SC10	3SC0	3SC9	6SC0	6SC6	12SC0
Lowest CH	50.651	51.375	49.928	51.375	104.920	106.368	102.750	104.920	109.986	108.538	139.653	140.376	180.897
Middle CH	50.651	51.375	50.651	50.651	108.538	112.156	104.197	104.197	107.091	104.920	133.140	131.693	180.174
Highest CH	50.651	52.098	49.928	50.651	113.603	115.774	111.433	112.156	105.644	105.644	133.1410	129.522	180.174



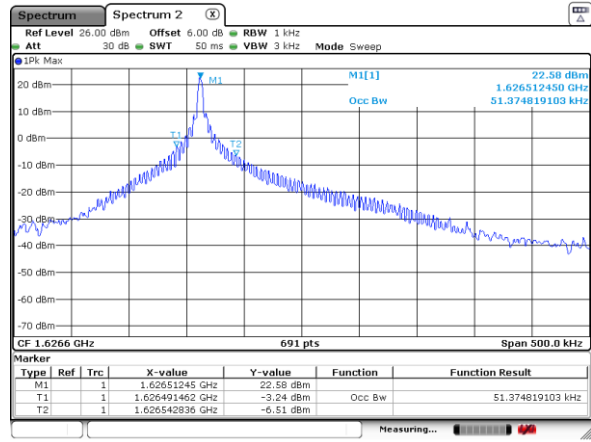
Band 255 SCS3.75KHz

Lowest Channel / 1SC1/ BPSK



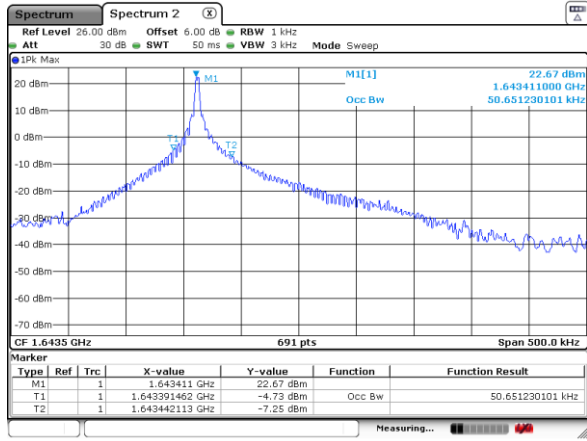
Date: 9,NOV,2023 08:54:59

Lowest Channel / 1SC1 / QPSK



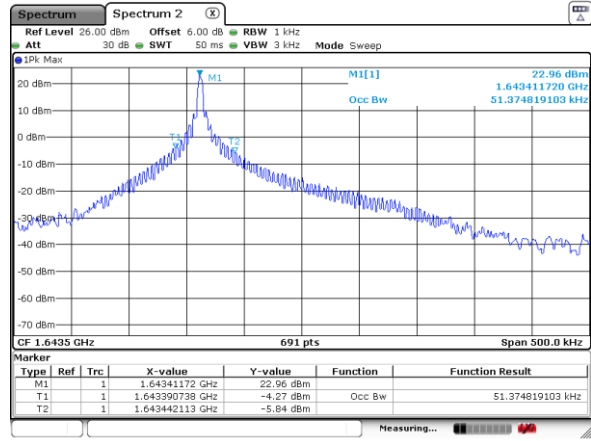
Date: 9,NOV,2023 08:54:35

Middle Channel / 1SC1/ BPSK



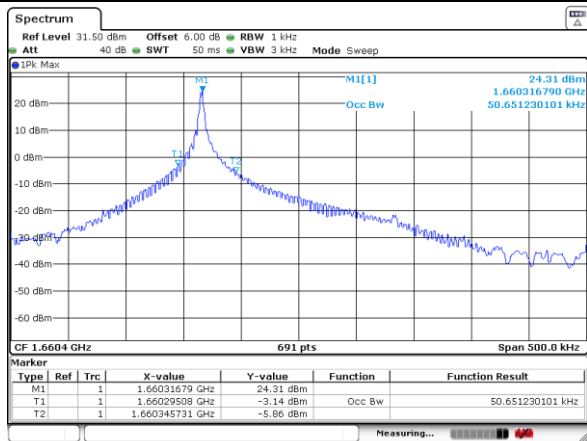
Date: 9,NOV,2023 09:26:26

Middle Channel / 1SC1 / QPSK



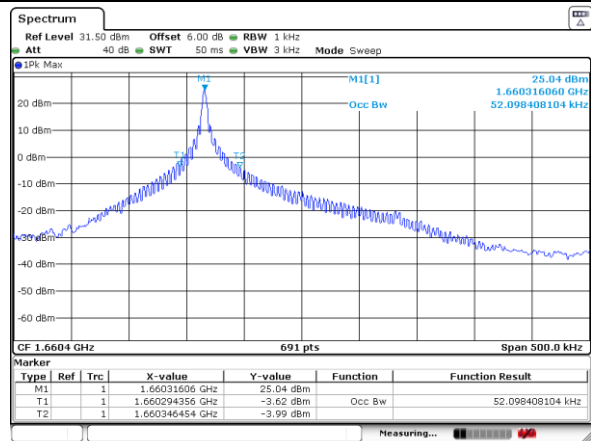
Date: 9,NOV,2023 09:27:52

Highest Channel / 1SC1/ BPSK



Date: 15,NOV,2023 01:15:44

Highest Channel / 1SC1 / QPSK

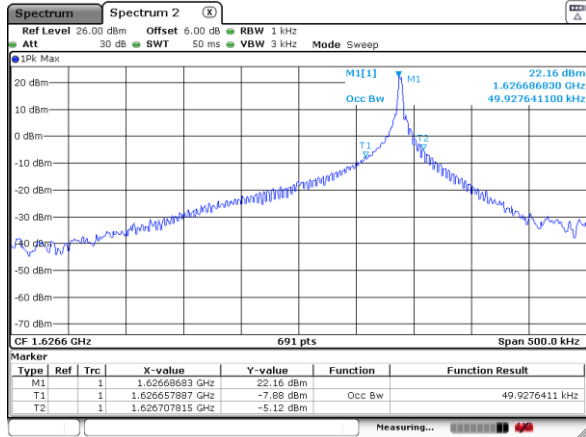


Date: 15,NOV,2023 01:13:55



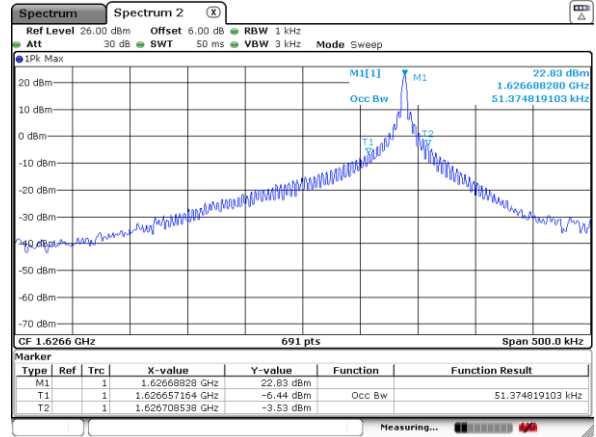
Band 255 SCS3.75KHz

Lowest Channel / 1SC46/ BPSK



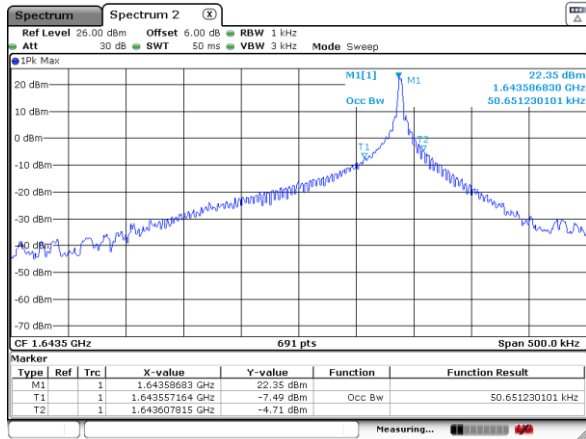
Date: 9,NOV,2023 08:55:34

Lowest Channel / 1SC46 / QPSK



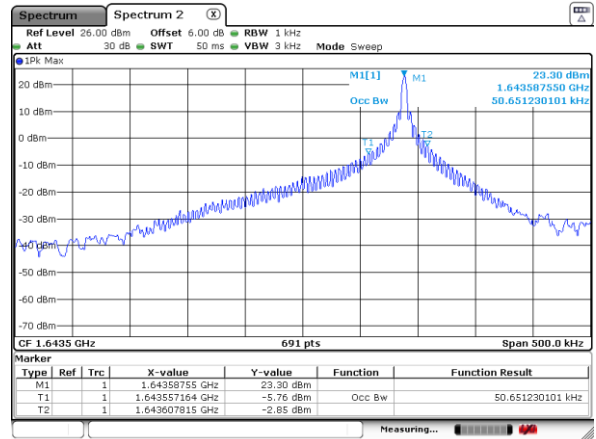
Date: 9,NOV,2023 08:56:05

Middle Channel / 1SC46/ BPSK



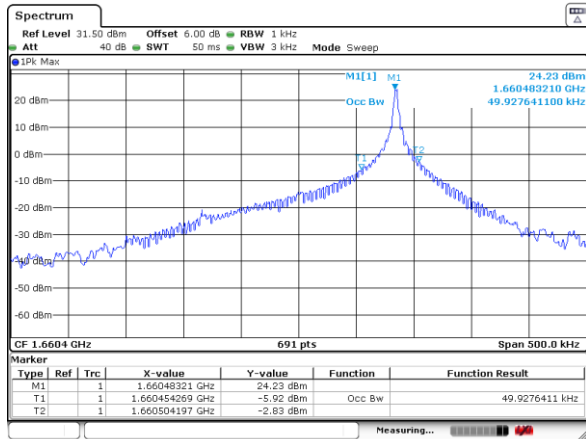
Date: 9,NOV,2023 09:27:04

Middle Channel / 1SC46 / QPSK



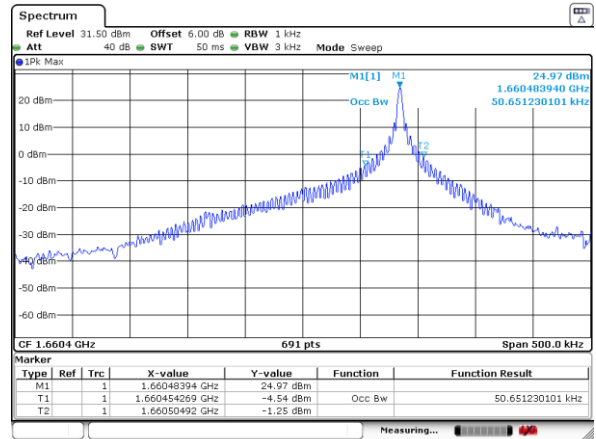
Date: 9,NOV,2023 09:27:30

Highest Channel / 1SC46/ BPSK



Date: 15,NOV,2023 01:18:32

Highest Channel / 1SC46 / QPSK

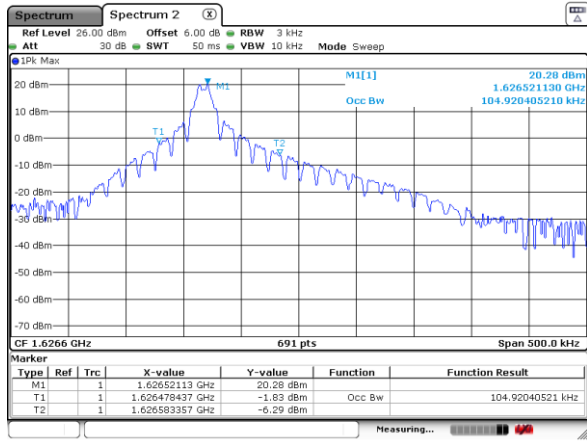


Date: 15,NOV,2023 01:19:00



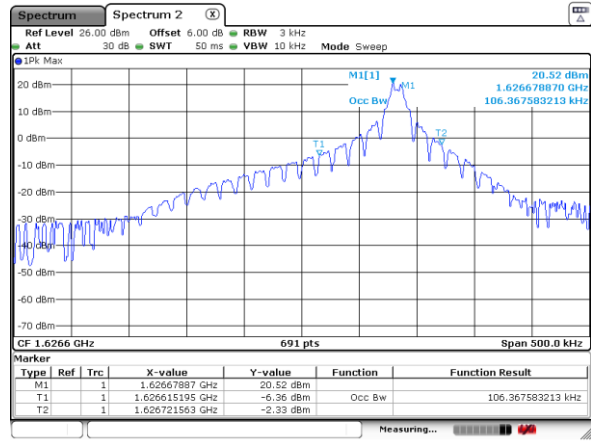
Band 255 SCS15KHz

Lowest Channel / 1SC1/ BPSK



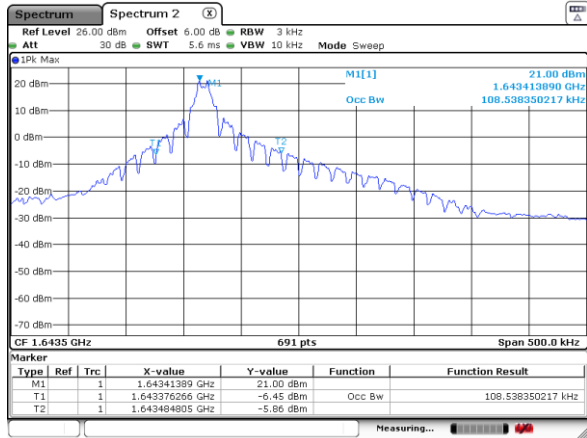
Date: 9.NOV.2023 08:15:46

Lowest Channel / 1SC10 / BPSK



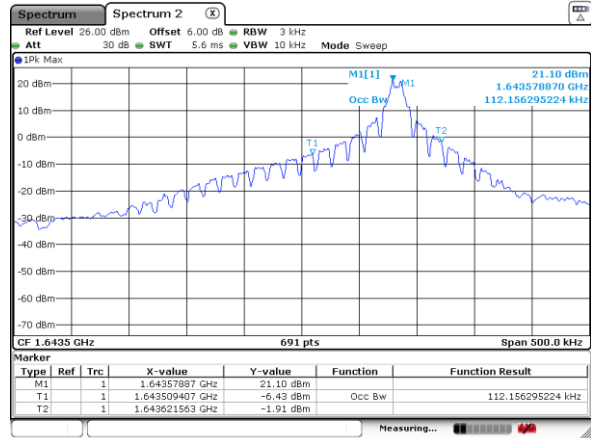
Date: 9.NOV.2023 09:00:34

Middle Channel / 1SC1/ BPSK



Date: 9.NOV.2023 09:18:07

Middle Channel / 1SC10 / BPSK



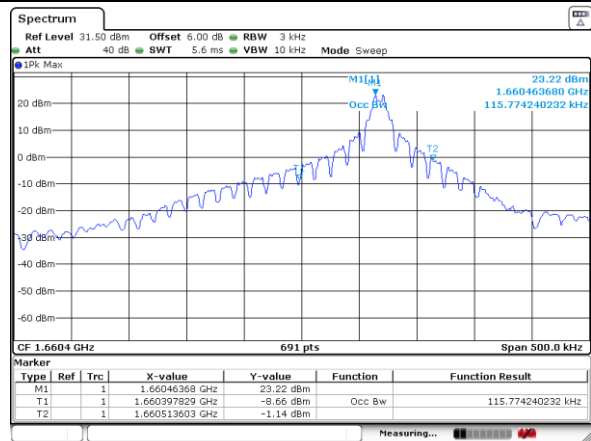
Date: 9.NOV.2023 09:21:35

Highest Channel / 1SC1/ BPSK



Date: 15.NOV.2023 01:22:26

Highest Channel / 1SC10 / BPSK

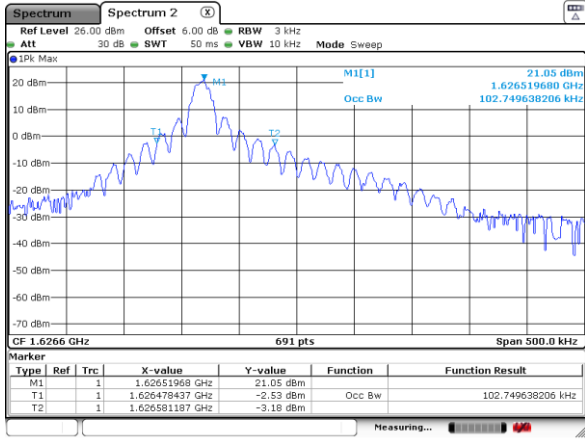


Date: 15.NOV.2023 01:23:01



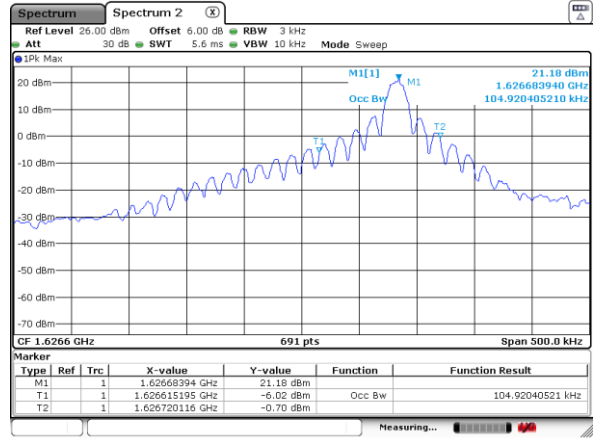
Band 255 SCS15KHz

Lowest Channel / 1SC1/ QPSK



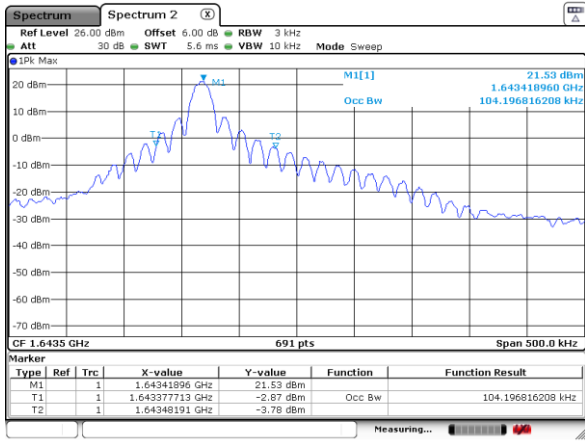
Date: 9.NOV.2023 08:58:57

Lowest Channel / 1SC10 / QPSK



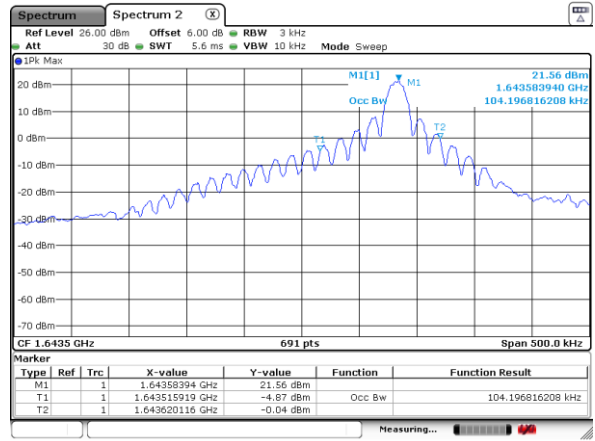
Date: 9.NOV.2023 09:01:11

Middle Channel / 1SC1/ QPSK



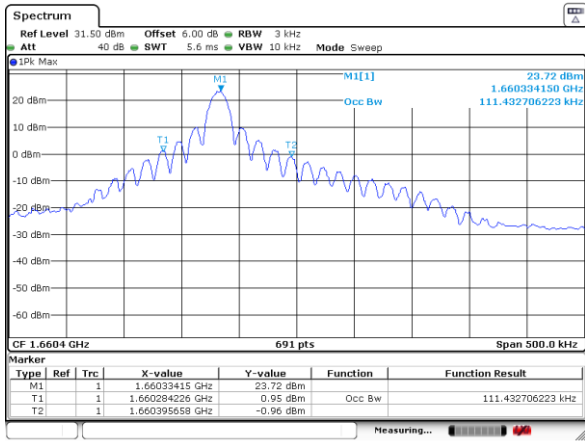
Date: 9.NOV.2023 09:20:31

Middle Channel / 1SC10 / QPSK



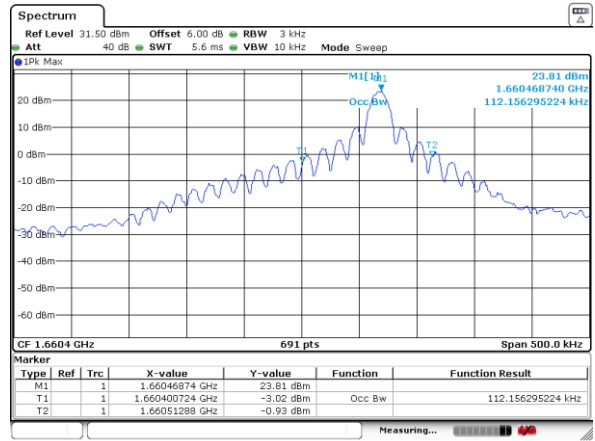
Date: 9.NOV.2023 09:21:07

Highest Channel / 1SC1/ QPSK



Date: 15.NOV.2023 01:21:10

Highest Channel / 1SC10 / QPSK

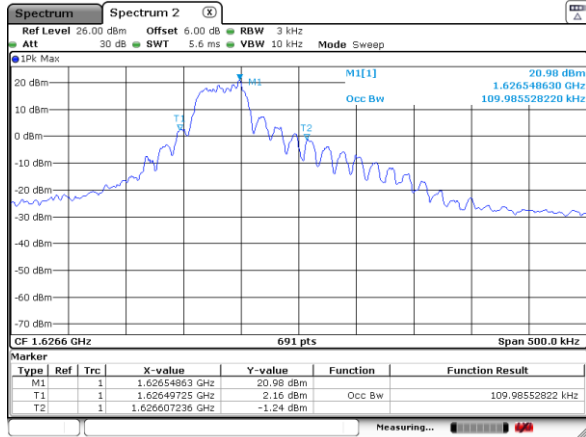


Date: 15.NOV.2023 01:23:28



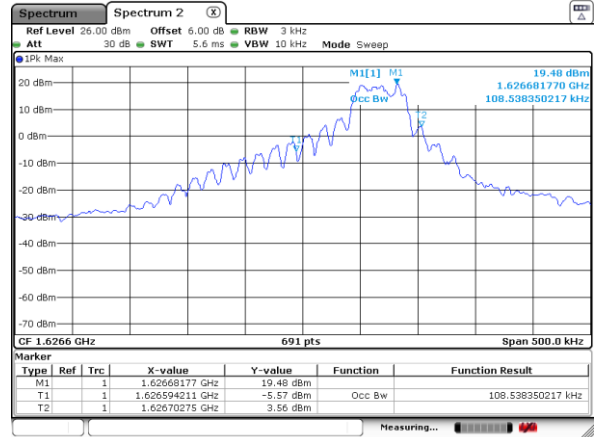
Band 255 SCS15KHz

Lowest Channel / 3SC0 / QPSK



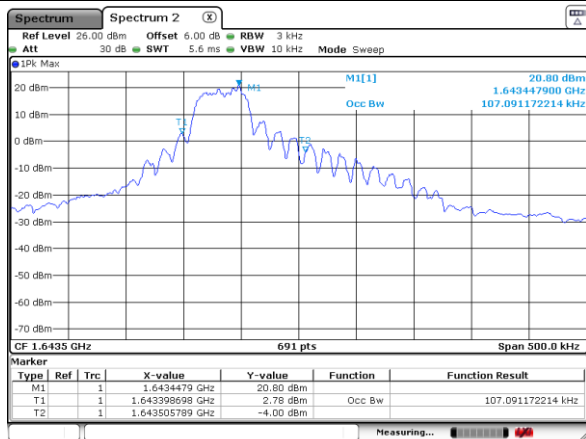
Date: 9.NOV.2023 09:10:155

Lowest Channel / 3SC9 / QPSK



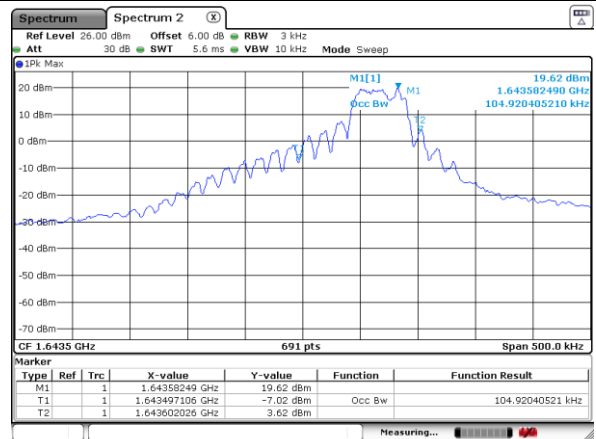
Date: 9.NOV.2023 09:10:233

Middle Channel / 3SC0 / QPSK



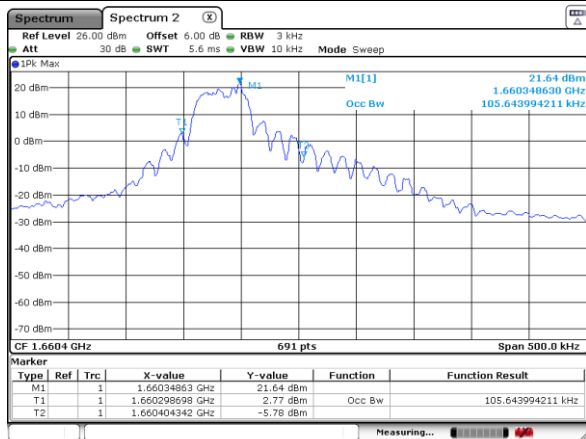
Date: 9.NOV.2023 09:22:16

Middle Channel / 3SC9 / QPSK



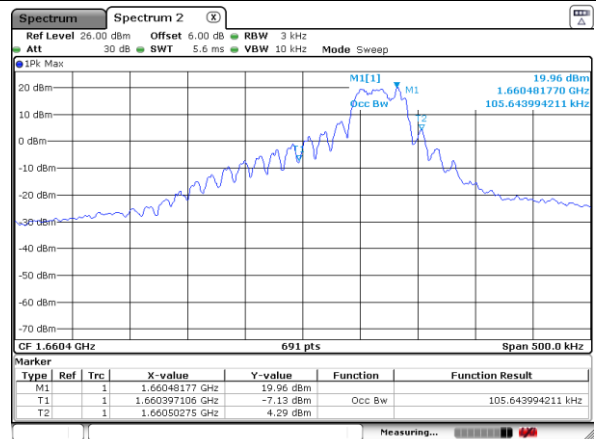
Date: 9.NOV.2023 09:22:150

Highest Channel / 3SC0 / QPSK



Date: 9.NOV.2023 09:44:159

Highest Channel / 3SC9 / QPSK

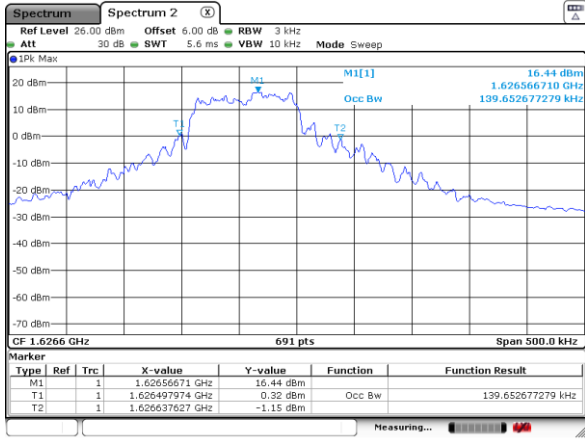


Date: 9.NOV.2023 09:44:134

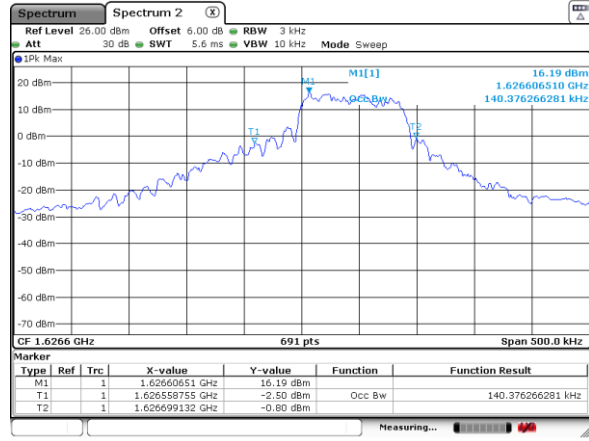


Band 255 SCS15KHz

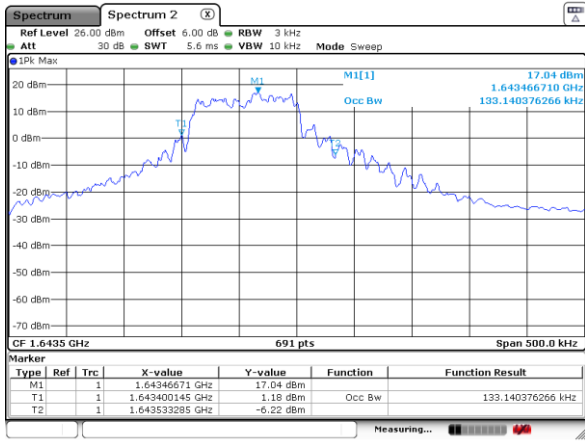
Lowest Channel / 6SC0/ QPSK



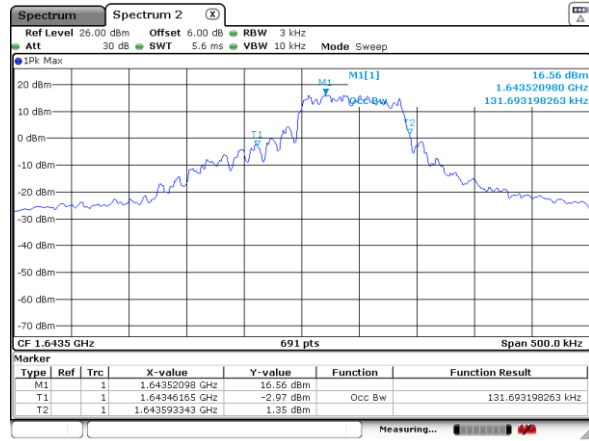
Lowest Channel / 6SC6 / QPSK



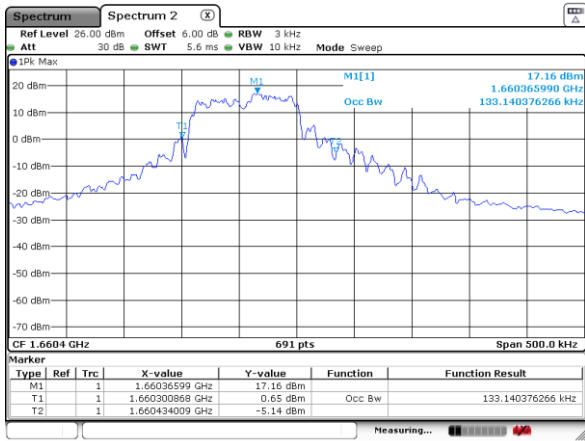
Middle Channel / 6SC0/ QPSK



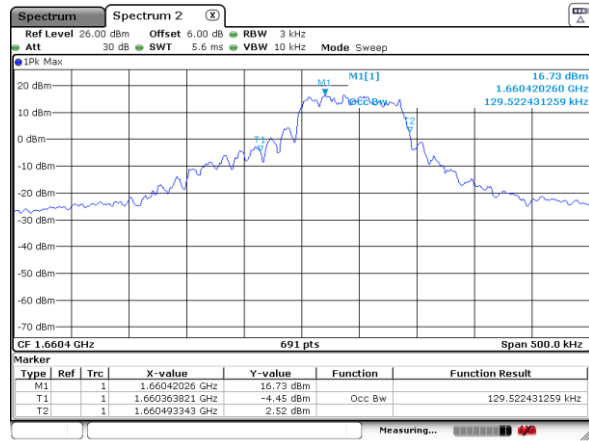
Middle Channel / 6SC6 / QPSK



Highest Channel / 6SC0/ QPSK



Highest Channel / 6SC6 / QPSK

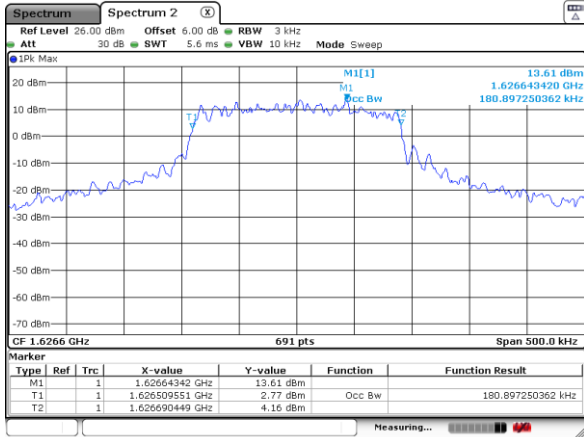




Band 255 SCS15KHz

Lowest Channel / 12SC0 / QPSK

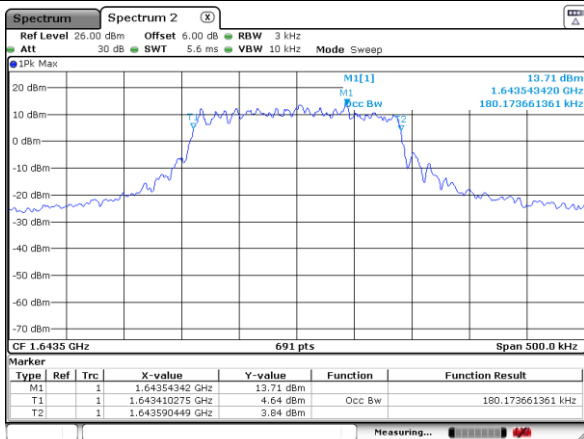
N/A



Date: 9.NOV.2023 09:10:105

Middle Channel /12SC0 / QPSK

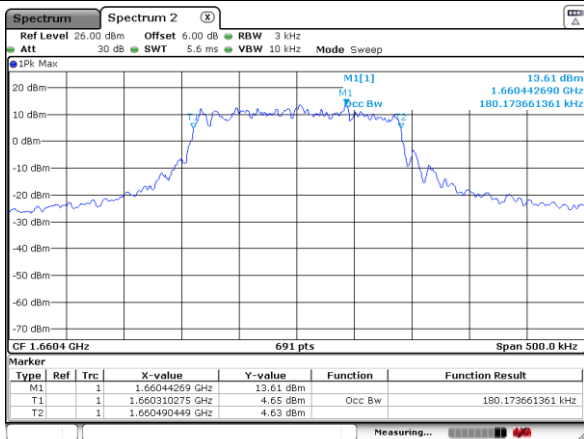
N/A



Date: 9.NOV.2023 09:24:10

Highest Channel /12SC0 / QPSK

N/A



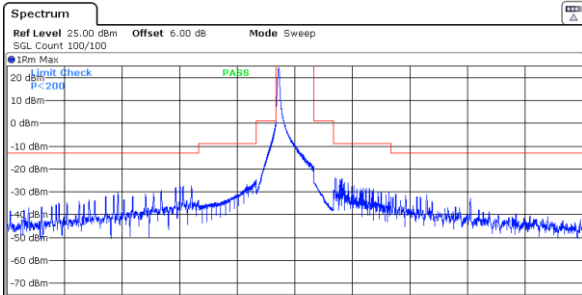
Date: 9.NOV.2023 09:46:40



Conducted Emissions Mask

Band 255 SCS3.75KHz

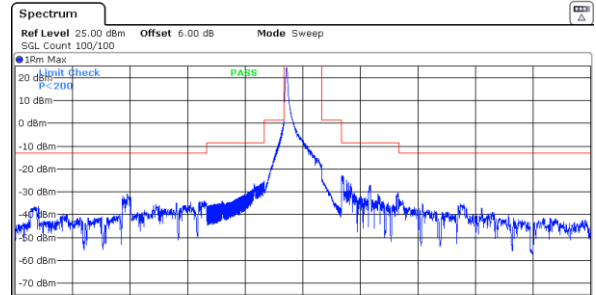
Lowest Channel / 1SC1/ BPSK



Spectrum Emission Mask		Standard: None		Tx Power 26.17 dBm		Tx Bandwidth 200.000 kHz		RBW 5.000 kHz	
Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit			
-1500 KHz	-500.000 KHz	5.000 KHz	1.62606 GHz	-27.41 dBm	-53.58 dB	-14.41 dB			
-500.000 KHz	-200.000 KHz	5.000 KHz	1.62640 GHz	-24.55 dBm	-50.72 dB	-15.72 dB			
-200.000 KHz	-100.000 KHz	5.000 KHz	1.62650 GHz	-0.55 dBm	-26.72 dB	-1.72 dB			
100.000 KHz	200.000 KHz	5.000 KHz	1.62670 GHz	-25.80 dBm	-51.97 dB	-26.97 dB			
200.000 KHz	500.000 KHz	5.000 KHz	1.62681 GHz	-23.76 dBm	-49.93 dB	-14.93 dB			
500.000 KHz	1500 KHz	5.000 KHz	1.62713 GHz	-31.06 dBm	-57.23 dB	-18.06 dB			

Date: 14.NOV.2023 21:36:09

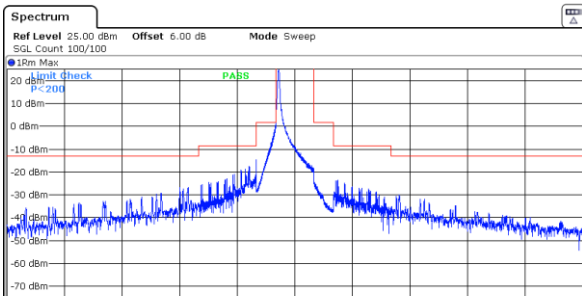
Lowest Channel / 1SC1 / QPSK



Spectrum Emission Mask		Standard: None		Tx Power 26.52 dBm		Tx Bandwidth 200.000 kHz		RBW 5.000 kHz	
Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit			
-1500 KHz	-500.000 KHz	5.000 KHz	1.62569 GHz	-31.05 dBm	-57.57 dB	-18.05 dB			
-500.000 KHz	-200.000 KHz	5.000 KHz	1.62640 GHz	-25.25 dBm	-51.76 dB	-16.76 dB			
-200.000 KHz	-100.000 KHz	5.000 KHz	1.62650 GHz	0.04 dBm	-26.48 dB	-1.48 dB			
100.000 KHz	200.000 KHz	5.000 KHz	1.62670 GHz	-24.46 dBm	-50.97 dB	-25.97 dB			
200.000 KHz	500.000 KHz	5.000 KHz	1.62681 GHz	-22.78 dBm	-48.50 dB	-14.50 dB			
500.000 KHz	1500 KHz	5.000 KHz	1.62710 GHz	-33.25 dBm	-59.77 dB	-20.25 dB			

Date: 14.NOV.2023 21:26:15

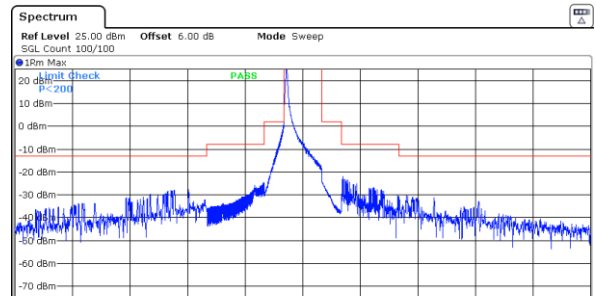
Middle Channel / 1SC1/ BPSK



Spectrum Emission Mask		Standard: None		Tx Power 26.60 dBm		Tx Bandwidth 200.000 kHz		RBW 5.000 kHz	
Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit			
-1500 KHz	-500.000 KHz	5.000 KHz	1.64290 GHz	-26.74 dBm	-53.34 dB	-13.74 dB			
-500.000 KHz	-200.000 KHz	5.000 KHz	1.64330 GHz	-14.59 dBm	-41.19 dB	-6.19 dB			
-200.000 KHz	-100.000 KHz	5.000 KHz	1.64340 GHz	0.40 dBm	-26.20 dB	-1.20 dB			
100.000 KHz	200.000 KHz	5.000 KHz	1.64360 GHz	-24.46 dBm	-51.06 dB	-26.06 dB			
200.000 KHz	500.000 KHz	5.000 KHz	1.64372 GHz	-23.66 dBm	-50.27 dB	-15.27 dB			
500.000 KHz	1500 KHz	5.000 KHz	1.64404 GHz	-29.89 dBm	-56.49 dB	-16.89 dB			

Date: 14.NOV.2023 20:58:50

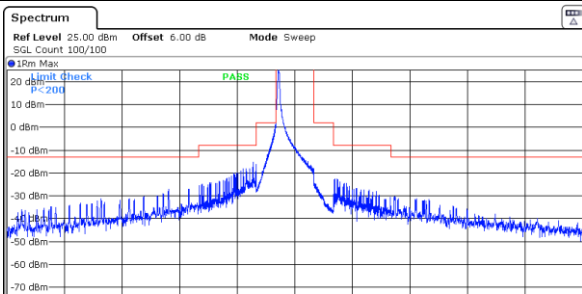
Middle Channel / 1SC1 / QPSK



Spectrum Emission Mask		Standard: None		Tx Power 26.95 dBm		Tx Bandwidth 200.000 kHz		RBW 5.000 kHz	
Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit			
-1500 KHz	-500.000 KHz	5.000 KHz	1.64290 GHz	-27.50 dBm	-54.54 dB	-14.50 dB			
-500.000 KHz	-200.000 KHz	5.000 KHz	1.64330 GHz	-24.40 dBm	-51.35 dB	-16.35 dB			
-200.000 KHz	-100.000 KHz	5.000 KHz	1.64340 GHz	-0.39 dBm	-26.55 dB	-1.55 dB			
100.000 KHz	200.000 KHz	5.000 KHz	1.64360 GHz	-24.07 dBm	-51.00 dB	-26.02 dB			
200.000 KHz	500.000 KHz	5.000 KHz	1.64371 GHz	-22.04 dBm	-48.98 dB	-13.98 dB			
500.000 KHz	1500 KHz	5.000 KHz	1.64404 GHz	-30.25 dBm	-57.19 dB	-17.25 dB			

Date: 14.NOV.2023 21:12:26

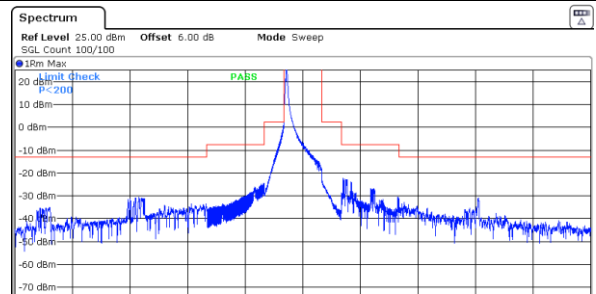
Highest Channel / 1SC1/ BPSK



Spectrum Emission Mask		Standard: None		Tx Power 26.95 dBm		Tx Bandwidth 200.000 kHz		RBW 5.000 kHz	
Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit			
-1500 KHz	-500.000 KHz	5.000 KHz	1.65974 GHz	-26.95 dBm	-53.90 dB	-13.95 dB			
-500.000 KHz	-200.000 KHz	5.000 KHz	1.66018 GHz	-15.38 dBm	-42.53 dB	-7.33 dB			
-200.000 KHz	-100.000 KHz	5.000 KHz	1.66030 GHz	0.91 dBm	-26.04 dB	-1.04 dB			
100.000 KHz	200.000 KHz	5.000 KHz	1.66050 GHz	-24.42 dBm	-51.36 dB	-26.36 dB			
200.000 KHz	500.000 KHz	5.000 KHz	1.66062 GHz	-22.59 dBm	-49.59 dB	-14.53 dB			
500.000 KHz	1500 KHz	5.000 KHz	1.66092 GHz	-30.12 dBm	-57.07 dB	-17.12 dB			

Date: 15.NOV.2023 00:23:06

Highest Channel / 1SC1 / QPSK



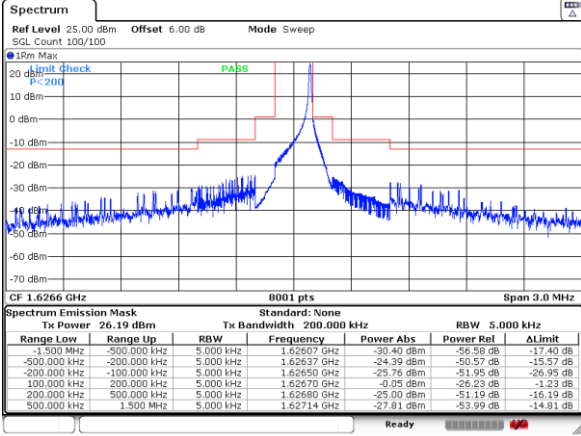
Spectrum Emission Mask		Standard: None		Tx Power 27.29 dBm		Tx Bandwidth 200.000 kHz		RBW 5.000 kHz	
Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit			
-1500 KHz	-500.000 KHz	5.000 KHz	1.65955 GHz	-30.72 dBm	-58.02 dB	-17.72 dB			
-500.000 KHz	-200.000 KHz	5.000 KHz	1.66020 GHz	-24.49 dBm	-51.78 dB	-16.78 dB			
-200.000 KHz	-100.000 KHz	5.000 KHz	1.66030 GHz	0.73 dBm	-26.56 dB	-1.56 dB			
100.000 KHz	200.000 KHz	5.000 KHz	1.66050 GHz	-23.64 dBm	-50.94 dB	-25.94 dB			
200.000 KHz	500.000 KHz	5.000 KHz	1.66061 GHz	-22.33 dBm	-49.62 dB	-14.62 dB			
500.000 KHz	1500 KHz	5.000 KHz	1.66131 GHz	-31.06 dBm	-58.36 dB	-18.06 dB			

Date: 15.NOV.2023 00:36:36



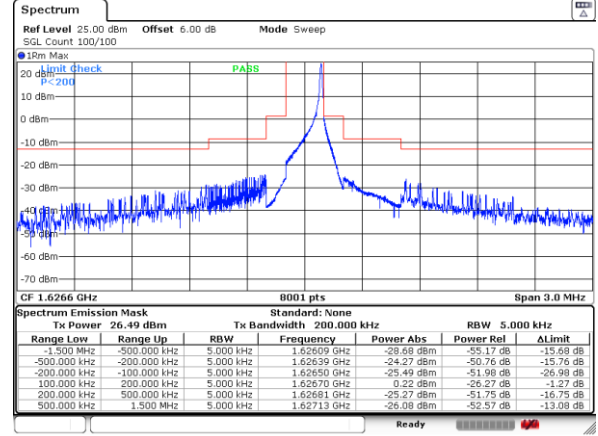
Band 255 SCS3.75KHz

Lowest Channel / 1SC46/ BPSK



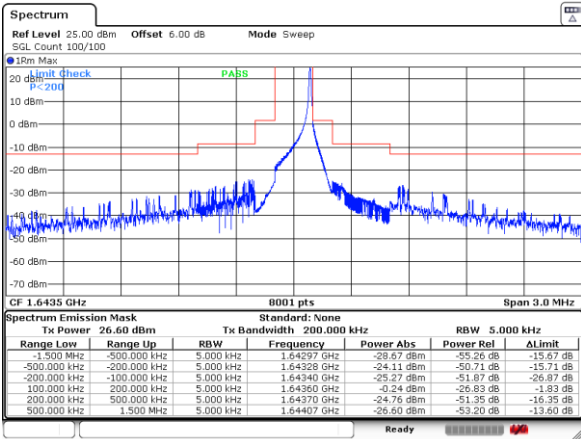
Date: 14.NOV.2023 21:48:40

Lowest Channel / 1SC46 / QPSK



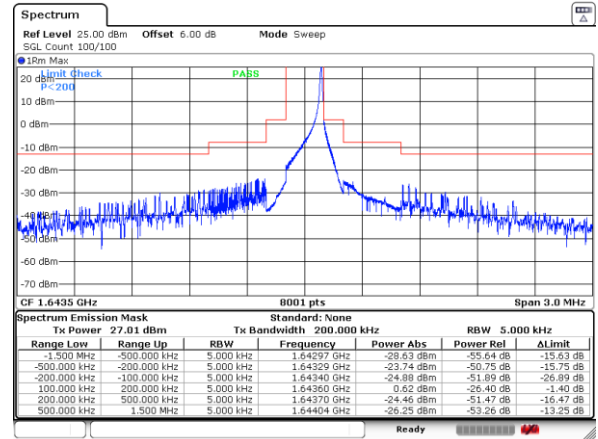
Date: 14.NOV.2023 21:58:22

Middle Channel / 1SC46/ BPSK



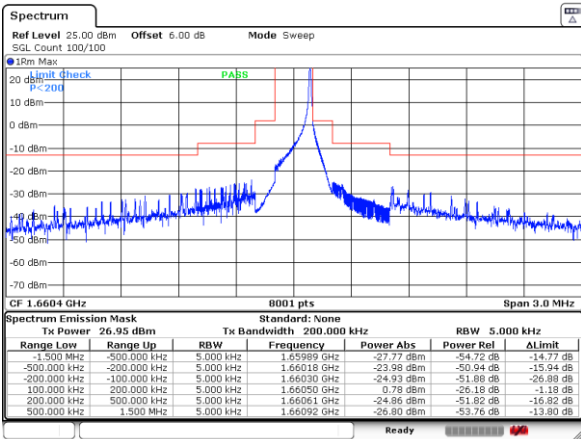
Date: 14.NOV.2023 20:52:54

Middle Channel / 1SC46 / QPSK



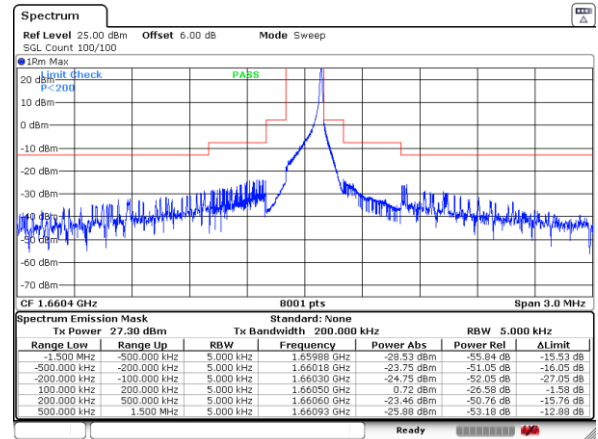
Date: 14.NOV.2023 20:43:21

Highest Channel / 1SC46/ BPSK



Date: 14.NOV.2023 23:45:40

Highest Channel / 1SC46 / QPSK

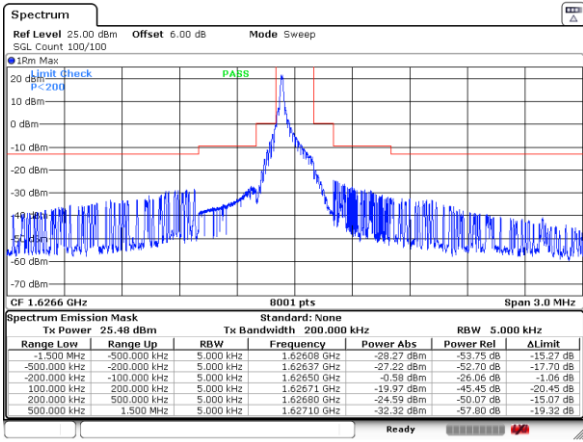


Date: 14.NOV.2023 23:35:42



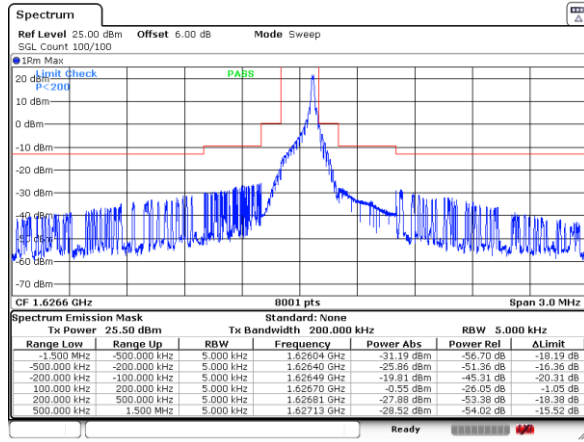
Band 255 SCS15KHz

Lowest Channel / 1SC1/ BPSK



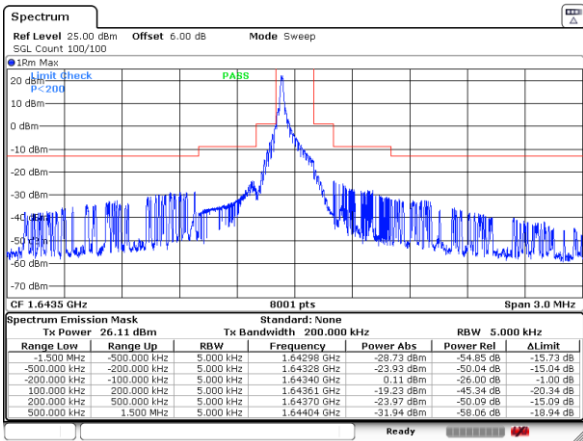
Date: 14.NOV.2023 22:30:02

Lowest Channel / 1SC10 / BPSK



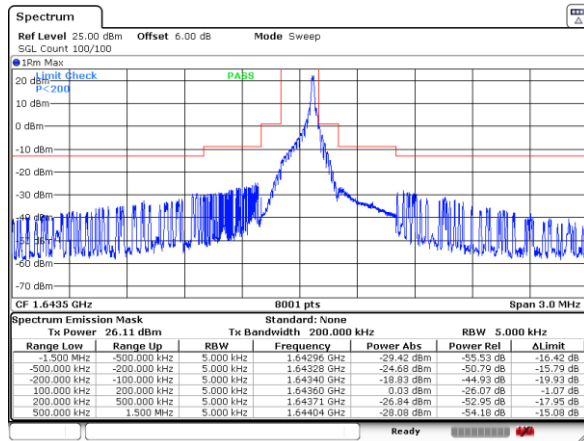
Date: 14.NOV.2023 22:19:00

Middle Channel / 1SC1/ BPSK



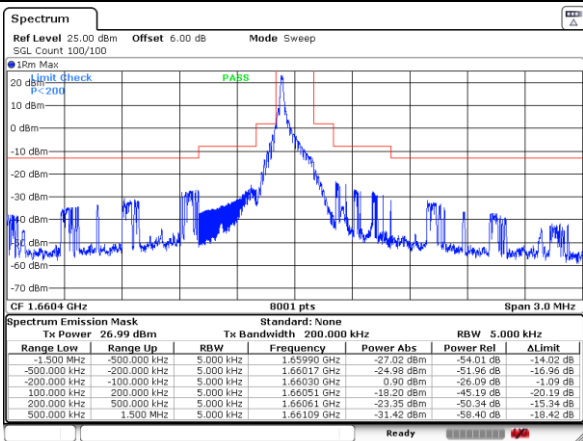
Date: 14.NOV.2023 19:44:09

Middle Channel / 1SC10 / BPSK



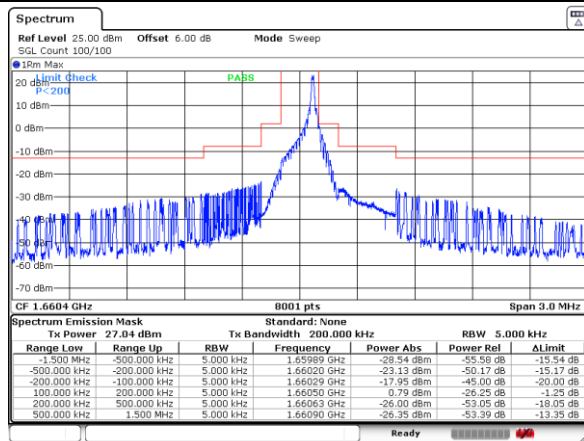
Date: 14.NOV.2023 19:15:03

Highest Channel / 1SC1/ BPSK



Date: 14.NOV.2023 23:04:07

Highest Channel / 1SC10 / BPSK

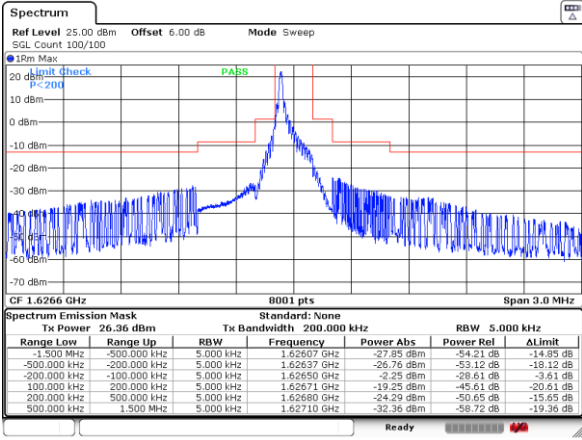


Date: 14.NOV.2023 23:15:27



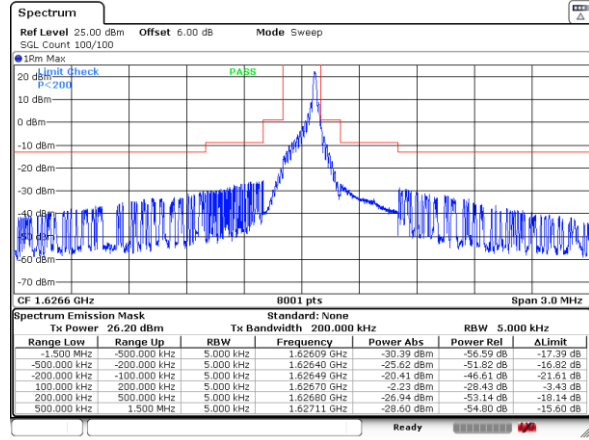
Band 255 SCS15KHz

Lowest Channel / 1SC1/ QPSK



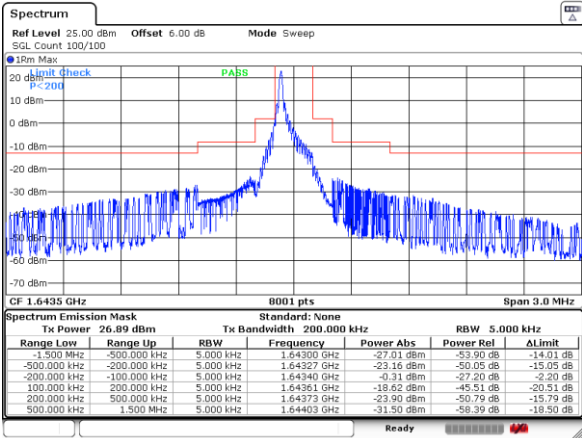
Date: 14.NOV.2023 22:40:15

Lowest Channel / 1SC10/ QPSK



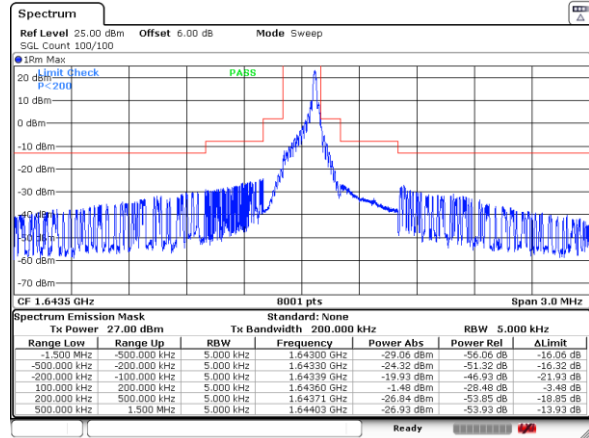
Date: 14.NOV.2023 22:09:19

Middle Channel / 1SC1/ QPSK



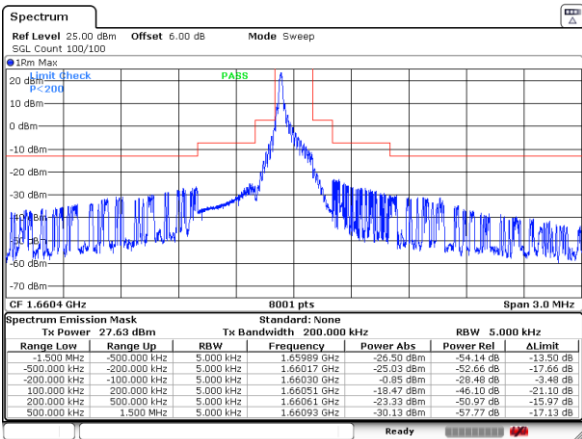
Date: 14.NOV.2023 19:32:15

Middle Channel / 1SC10/ QPSK



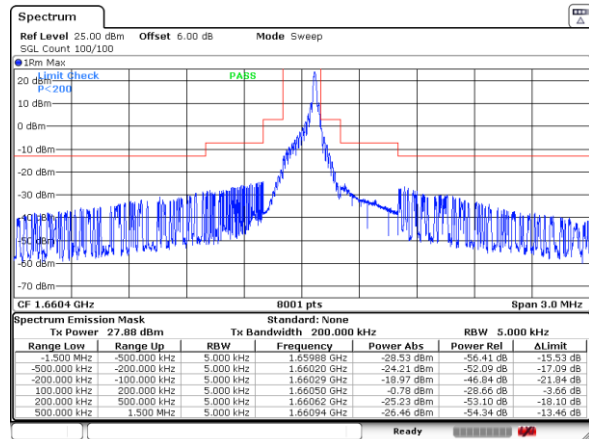
Date: 14.NOV.2023 20:33:03

Highest Channel / 1SC1/ QPSK



Date: 14.NOV.2023 22:54:12

Highest Channel / 1SC10/ QPSK

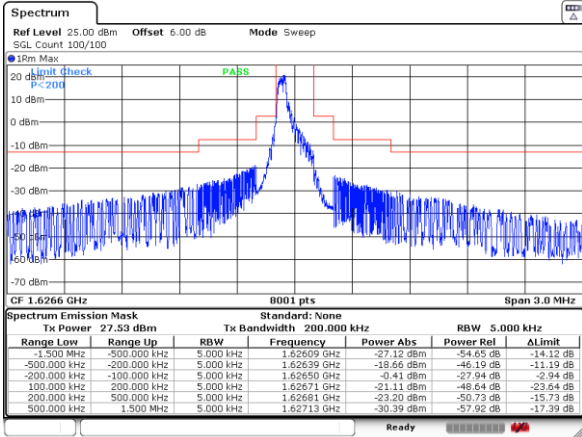


Date: 14.NOV.2023 23:24:51



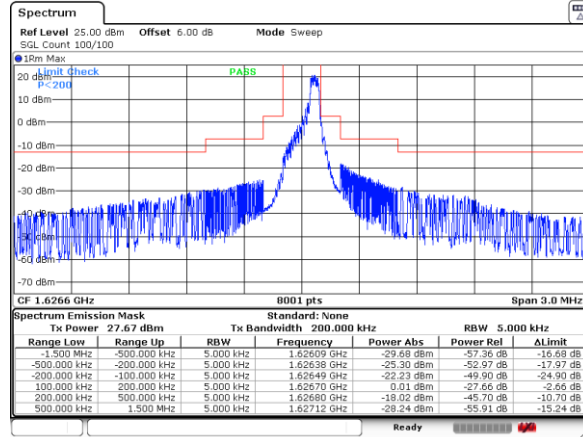
Band 255 SCS15KHz

Lowest Channel / 3SC0 / QPSK



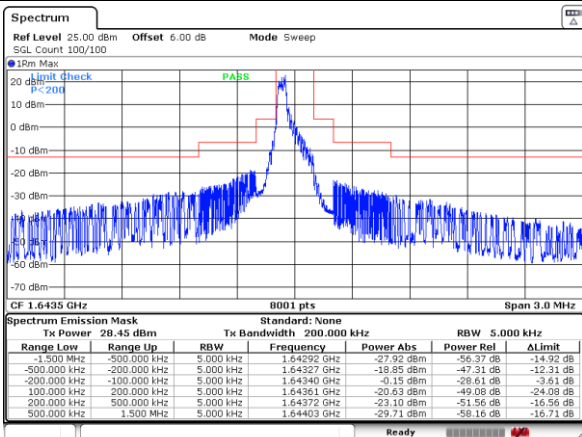
Date: 8.NOV.2023 18:14:48

Lowest Channel / 3SC9 / QPSK



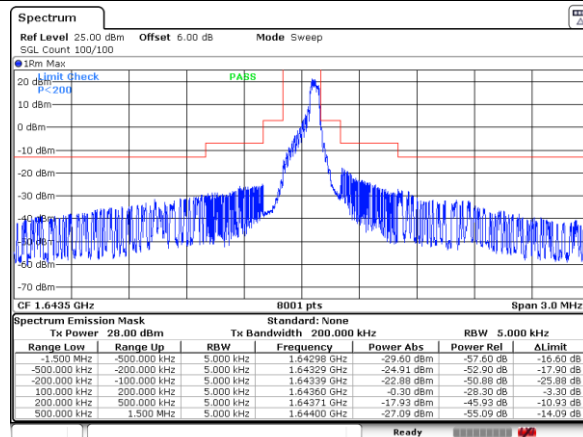
Date: 8.NOV.2023 18:19:18

Middle Channel / 3SC0 / QPSK



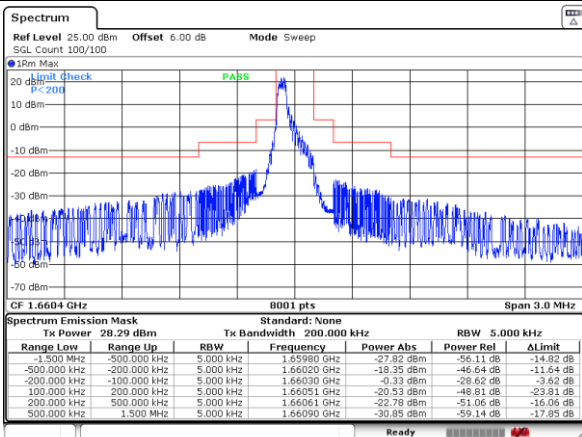
Date: 8.NOV.2023 15:34:43

Middle Channel / 3SC9 / QPSK



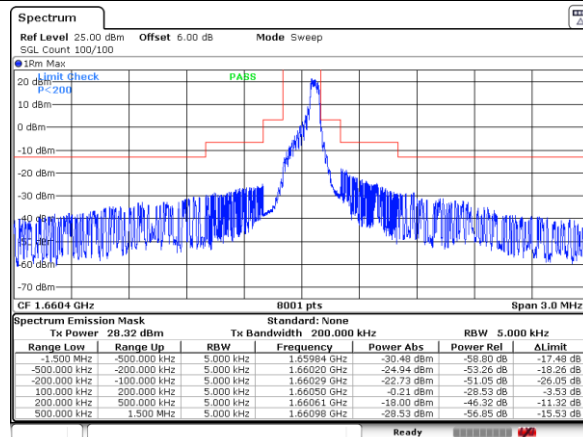
Date: 8.NOV.2023 15:39:26

Highest Channel / 3SC0 / QPSK



Date: 8.NOV.2023 17:29:06

Highest Channel / 3SC9 / QPSK



Date: 8.NOV.2023 17:34:00