

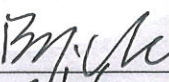
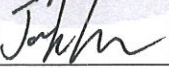


ETSI EN301 908-1 ETSI EN301 908-13 RADIO TEST REPORT

Product Name:	Version C multi function controller for chain stores
Model Number:	BV-C3200
Applicant:	Blueview Elec-optic Tech Co., Ltd.

KeySense Testing & Certification International Co., Ltd.
1-3F, Lab Building, No.29 District, ZhongKai Hi-Tech Industrial Development Park,
Huizhou, Guangdong, China



Test Report Verification			
Product name	Version C multi function controller for chain stores		
Model number	BV-C3200		
Applicant	Name	Blueview Elec-optic Tech Co., Ltd.	
	Address	No.1000, Section 2, 2nd Konggang Road, Southwest Aviation Industrial Development Zone, Shuangliu District, Chengdu City, Sichuan Province, P.R.China	
Manufacturer	Name	Blueview Elec-optic Tech Co., Ltd.	
	Address	No.1000, Section 2, 2nd Konggang Road, Southwest Aviation Industrial Development Zone, Shuangliu District, Chengdu City, Sichuan Province, P.R.China	
Factory	Name	Blueview Elec-optic Tech Co., Ltd.	
	Address	No.1000, Section 2, 2nd Konggang Road, Southwest Aviation Industrial Development Zone, Shuangliu District, Chengdu City, Sichuan Province, P.R.China	
Trade Name			
Receipt date	Mar 22, 2022	Quantity	1
Standard	ETSI EN 301 908-1 V15.1.1 ETSI EN 301 908-13 V13.2.1		
Test period	Mar 23, 2022- Apr 07, 2022	Issue Date	Apr 20, 2022
Test result	The device described above is tested by KeySense Testing & Certification International Co., Ltd. The measurement results were contained in this test report and KeySense Testing & Certification International Co., Ltd. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the standards requirements. This report applies to above tested sample only and shall not be reproduced in part without written approval of KeySense Testing & Certification International Co., Ltd.		
Tested by: Bing.He	Sign: 	Date: 2022.4.20	
Reviewed by: Jack. Li	Sign: 	Date: 2022.4.20 (Stamp)	
Approved by: Tony Xu (General Manager)	Sign: 	Date: 2022.4.20	

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1. SUMMARY OF MEASUREMENTS AND RESULTS

Harmonized Standard EN301 893-13				
The following essential requirements and test specifications are relevant to the presumption of conformity under Article 3.2 of the Radio Equipment Directive 2014/53/EU				
No	Test Parameter	Clause No	Condition	Results
1	Transmitter maximum output power	5.3.1	Applicable	PASS
2	Transmitter Spectrum Emissions Mask	5.3.2	Applicable	PASS
3	Transmitter Spurious Emissions	5.3.3	Applicable	PASS
4	Transmitter Minimum Output Power	5.3.4	Applicable	PASS
5	Receiver Adjacent Channel Selectivity	5.3.5	Applicable	PASS
6	Receiver blocking characteristics	5.3.6	Applicable	PASS
7	Receiver Spurious Response	5.3.7	Applicable	PASS
8	Receiver Intermodulation Characteristics	5.3.8	Applicable	PASS
9	Receiver Spurious Emissions	5.3.9	Applicable	PASS
10	Transmitter adjacent channel leakage power ratio	5.3.10	Applicable	PASS
11	Receiver Reference Sensitivity Level	5.3.11	Applicable	PASS
Note: N/A is an abbreviation for Not Applicable and means this test item is not applicable for this device according to the technology characteristic of device.				

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Product Name	Version C multi function controller for chain stores				
Model Number	BV-C3200				
Power Supply	Adapter	Input: AC 180-235V Output: AC 235V Max power:3.2kW			
	Battery	N/A			
Operate Band	Band	Channel Bandwidth	UL Frequency (MHz)	DL Frequency (MHz)	Modulation
	Band 1	5, 10, 15, 20MHz	1920 ~ 1980	2110 ~ 2170	QPSK,16-QAM
	Band 3	1.4, 3, 5, 10, 15, 20 MHz	1710 ~ 1785	1805 ~ 1880	QPSK,16-QAM
	Band 7	5, 10, 15, 20 MHz	2500 ~ 2570	2620 ~ 2690	QPSK,16-QAM
	Band 8	1.4, 3, 5, 10, MHz	880 ~ 915	925 ~ 960	QPSK,16-QAM
	Band 20	5, 10, 15, 20 MHz	832 ~ 862	791 ~ 821	QPSK,16-QAM
	Band 28	3, 5, 10, 15, 20 MHz	703~ 748	758 ~ 803	QPSK,16-QAM
IMEI No.	861193046580941				
Antenna Type	External antenna				
Antenna Gain(G)	5.8dB				

2.2. Measurement Uncertainty

Test Item	Uncertainty
Uncertainty for Conduction emission test	$\pm 3.48\text{dB}$
Uncertainty for spurious emissions test (30MHz-1GHz)	$\pm 4.60\text{ dB(Polarize: H)}$
	$\pm 4.68\text{ dB(Polarize: V)}$
Uncertainty for spurious emissions test (1GHz to 18GHz)	$\pm 4.96\text{dB}$
Uncertainty for radio frequency	7×10^{-8}
Uncertainty for conducted RF Power	0.20dB
Uncertainty for Power density test	0.26dB

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

2.3. Test Site Environment

Test Setting Condition		
L.V.	Low Voltage	AC 207V
N.V.	Normal Voltage	AC 230V
H.V.	High Voltage	AC 253V
L.T.	Low Temperature	-10°C
N.T.	Normal Temperature	25°C
H.T.	High Temperature	+55°C

2.4. Test Equipment List

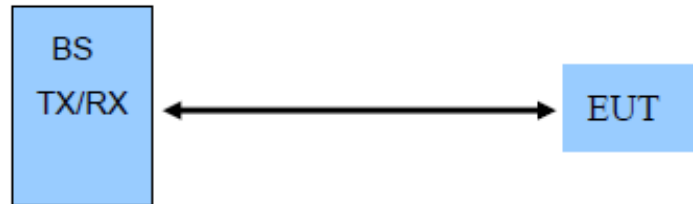
For Connect EUT Antenna Terminal Test					
Equipment	Manufacturer	Model No.	Serial No.	Calibration Body	Last Cal.
Spectrum	Rohde & Schwarz	FSV	1602-1820	Dec 06,2021	1 Year
Vector signal source	Agilent	N5182A	P8369229829767	Dec 06,2021	1 Year
Analog signal source	Rohde & Schwarz	SMB 100A	179706	Dec 06,2021	1 Year
Comprehensive measuring instrument	Rohde & Schwarz	CMW 500	158242	Dec 06,2021	1 Year
control unit	MWRF	MW100-RFC B	10165	Dec 06,2021	1 Year
Testing software	SKET	MTS-8310	10165	Dec 06,2021	1 Year
Trilog-boardband antenna	Schwarzbeck	VULB 9163D	9163-961	Dec 28,2021	3 years
Horn antenna	Schwarzbeck	BBHA 9120D	9120D-1590	Dec 28,2021	3 years
Pre-amplifier (Low Freq)	Clavio	BDLNA-0001-272007	1600015	Sep 02,2019	3 years
Pre-amplifier (High Freq)	Clavio	BDLNA-0118-352810	1600019	Sep 02,2019	3 years
Pre-amplifier (High Freq)	Clavio	BDLNA-1826-483105	1600013	Sep 02,2019	3 years

3. TRANSMITTER MAXIMUM OUTPUT POWER

3.1. Limit

E-UTRA Band	Power Class 3 (dBm)	Tolerance (dB)
1	23	± 2.7
3	23	± 2.7 (see note)
7	23	± 2.7 (see note)
8	23	± 2.7 (see note)
20	23	± 2.7 (see note)
22	23	+3.0/-4.5
28	23	+2.7/-3.2
33	23	± 2.7
34	23	± 2.7
38	23	± 2.7
40	23	± 2.7
42	23	+3.0/-4.0
43	23	+3.0/-4.0
NOTE: For transmission bandwidths (ETSI TS 136 521-1 [1], clause 5) confined within F_{UL_low} and $F_{UL_low} + 4$ MHz or $F_{UL_high} - 4$ MHz and F_{UL_high}, the maximum output power requirement is relaxed by reducing the lower tolerance limit by 1,5 dB (tolerance = +2,7/-4,2).		

3.2. Test Setup



3.3. Test Procedure

According to EN 301 908-13 , section 5.3.1

- a) Connect the SS to the UE antenna connectors.
- b) SS sends uplink scheduling information for each UL HARQ process via PDCCH DCI format 0 for C_RNTI to schedule the UL RMC according to table 6.2.2.1.4.1-1 of TS 136 521-1 [1]. Since the UE has no payload and no loopback data to send the UE sends uplink MAC padding bits on the ULRMC.
- c) Send continuously uplink power control "up" commands in every uplink scheduling information to the UE; allow at least 200 ms for the UE to reach PUMAX level.
- d) Measure the mean power of the UE in a bandwidth of at least $(1+x)$ times the channel bandwidth of the radio access mode. The period of measurement shall be at least one (timeslot/frame/TTI).
- e) Repeat for applicable test frequencies, channel bandwidths, operating band combinations and environmental conditions.

3.4. Test Result

Test Mode		Band 1				
Test Environment		Normal, TL/VL, TL/VH, TH/VL, TH/VH				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		5MHz, Highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
5MHz	N/A for Max UE output power testing			QPSK	1	PASS
5MHz				QPSK	8	PASS
20MHz				QPSK	1	PASS
20MHz				QPSK	18	PASS

Test Mode		Band 3				
Test Environment		Normal, TL/VL, TL/VH, TH/VL, TH/VH				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		Lowest,5MHz, Highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
1.4MHz	N/A for Max UE output power testing			QPSK	1	PASS
1.4MHz				QPSK	5	PASS
5MHz				QPSK	1	PASS
5MHz				QPSK	8	PASS
20MHz				QPSK	1	PASS
20MHz				QPSK	18	PASS

Test Mode		Band 7				
Test Environment		Normal, TL/VL, TL/VH, TH/VL, TH/VH				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		5MHz, Highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
5MHz	N/A for Max UE output power testing			QPSK	1	PASS
5MHz				QPSK	8	PASS
20MHz				QPSK	1	PASS
20MHz				QPSK	18	PASS

Test Mode		Band 8				
Test Environment		Normal, TL/VL, TL/VH, TH/VL, TH/VH				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		Lowest,5MHz, Highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
1.4MHz	N/A for Max UE output power testing			QPSK	1	PASS
1.4MHz				QPSK	5	PASS
5MHz				QPSK	1	PASS
5MHz				QPSK	8	PASS
10MHz				QPSK	1	PASS
10MHz				QPSK	12	PASS

Test Mode		Band 20				
Test Environment		Normal, TL/VL, TL/VH, TH/VL, TH/VH				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		Lowest,5MHz, Highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
5MHz	N/A for Max UE output power testing			QPSK	1	PASS
5MHz				QPSK	8	PASS
20MHz				QPSK	1	PASS
20MHz				QPSK	18	PASS

Test Mode		Band 28				
Test Environment		Normal, TL/VL, TL/VH, TH/VL, TH/VH				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		Lowest,5MHz, Highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
3MHz	N/A for Max UE output power testing			QPSK	1	PASS
3MHz				QPSK	4	PASS
5MHz				QPSK	1	PASS
5MHz				QPSK	8	PASS
20MHz				QPSK	1	PASS
20MHz				QPSK	18	PASS

antenna A Band 1 Normal Environment

6.2.2 Maximum Output Power @ Band1				
UE Maximum OutputPower: :@ULCH: 18025, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.82	dBm
UE Maximum OutputPower: :@ULCH: 18025, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 8 (RB_Pos:LOW)	20.30	25.70	20.58	dBm
UE Maximum OutputPower: :@ULCH: 18300, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	21.36	dBm
UE Maximum OutputPower: :@ULCH: 18300, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 8 (RB_Pos:LOW)	20.30	25.70	20.88	dBm
UE Maximum OutputPower: :@ULCH: 18575, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	22.49	dBm
UE Maximum OutputPower: :@ULCH: 18575, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 8 (RB_Pos:HIGH)	20.30	25.70	22.28	dBm
UE Maximum OutputPower: :@ULCH: 18100, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.99	dBm
UE Maximum OutputPower: :@ULCH: 18100, BW: 20 MHz ; UL_MOD_RB: QPSK, 18 (RB_Pos:LOW)	20.30	25.70	20.86	dBm
UE Maximum OutputPower: :@ULCH: 18300, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	22.24	dBm
UE Maximum OutputPower: :@ULCH: 18300, BW: 20 MHz ; UL_MOD_RB: QPSK, 18 (RB_Pos:LOW)	20.30	25.70	21.87	dBm
UE Maximum OutputPower: :@ULCH: 18500, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	23.08	dBm
UE Maximum OutputPower: :@ULCH: 18500, BW: 20 MHz ; UL_MOD_RB: QPSK, 18 (RB_Pos:HIGH)	20.30	25.70	22.50	dBm

antenna A Band 3 Normal Environment

6.2.2 Maximum Output Power	Limit Low	Limit High	Measured	Unit
6.2.2 Maximum Output Power @ Band3				
UE Maximum OutputPower: :@ULCH: 19207, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	20.11	dBm
UE Maximum OutputPower: :@ULCH: 19575, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	21.67	dBm
UE Maximum OutputPower: :@ULCH: 19575, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 5 (RB_Pos:LOW)	20.30	25.70	21.49	dBm
UE Maximum OutputPower: :@ULCH: 19943, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	20.81	dBm
UE Maximum OutputPower: :@ULCH: 19225, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	20.17	dBm
UE Maximum OutputPower: :@ULCH: 19225, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	21.06	dBm

UE Maximum OutputPower: :@ULCH: 19575, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	21.59	dBm
UE Maximum OutputPower: :@ULCH: 19575, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	21.23	dBm
UE Maximum OutputPower: :@ULCH: 19575, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 8 (RB_Pos:LOW)	20.30	25.70	21.11	dBm
UE Maximum OutputPower: :@ULCH: 19925, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.78	dBm
UE Maximum OutputPower: :@ULCH: 19925, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	18.80	25.70	20.80	dBm
UE Maximum OutputPower: :@ULCH: 19300, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	20.58	dBm
UE Maximum OutputPower: :@ULCH: 19300, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	21.80	dBm
UE Maximum OutputPower: :@ULCH: 19575, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	21.53	dBm
UE Maximum OutputPower: :@ULCH: 19575, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	21.93	dBm
UE Maximum OutputPower: :@ULCH: 19575, BW: 20 MHz ; UL_MOD_RB: QPSK, 18 (RB_Pos:LOW)	20.30	25.70	21.27	dBm
UE Maximum OutputPower: :@ULCH: 19850, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	21.32	dBm
UE Maximum OutputPower: :@ULCH: 19850, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	18.80	25.70	21.09	dBm

antenna A Band 7 Normal Environment

6.2.2 Maximum Output Power	Limit Low	Limit High	Measured	Unit
6.2.2 Maximum Output Power @ Band7				
UE Maximum OutputPower: :@ULCH: 20775, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	19.17	dBm
UE Maximum OutputPower: :@ULCH: 20775, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	20.74	dBm
UE Maximum OutputPower: :@ULCH: 21100, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.50	dBm
UE Maximum OutputPower: :@ULCH: 21100, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	20.40	dBm
UE Maximum OutputPower: :@ULCH: 21100, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 8 (RB_Pos:LOW)	20.30	25.70	20.82	dBm
UE Maximum OutputPower: :@ULCH: 21425, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.56	dBm
UE Maximum OutputPower: :@ULCH: 21425, BW: 5.0 MHz ;	18.80	25.70	19.86	dBm
UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)				
UE Maximum OutputPower: :@ULCH: 20850, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	19.51	dBm
UE Maximum OutputPower: :@ULCH: 20850, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	20.48	dBm
UE Maximum OutputPower: :@ULCH: 21100, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.60	dBm
UE Maximum OutputPower: :@ULCH: 21100, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	20.72	dBm
UE Maximum OutputPower: :@ULCH: 21100, BW: 20 MHz ; UL_MOD_RB: QPSK, 18 (RB_Pos:LOW)	20.30	25.70	20.47	dBm
UE Maximum OutputPower: :@ULCH: 21350, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.48	dBm
UE Maximum OutputPower: :@ULCH: 21350, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	18.80	25.70	20.37	dBm

antenna A Band 8 Normal Environment

6.2.2 Maximum Output Power	Limit Low	Limit High	Measured	Unit
6.2.2 Maximum Output Power @ Band8				
UE Maximum OutputPower: :@ULCH: 21457, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	20.55	dBm
UE Maximum OutputPower: :@ULCH: 21625, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.90	dBm
UE Maximum OutputPower: :@ULCH: 21625, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 5 (RB_Pos:LOW)	20.30	25.70	20.88	dBm
UE Maximum OutputPower: :@ULCH: 21793, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	21.61	dBm
UE Maximum OutputPower: :@ULCH: 21475, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	20.63	dBm
UE Maximum OutputPower: :@ULCH: 21475, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	20.95	dBm
UE Maximum OutputPower: :@ULCH: 21625, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.86	dBm
UE Maximum OutputPower: :@ULCH: 21625, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	21.52	dBm
UE Maximum OutputPower: :@ULCH: 21625, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 8 (RB_Pos:LOW)	20.30	25.70	20.57	dBm
UE Maximum OutputPower: :@ULCH: 21775, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.53	dBm
UE Maximum OutputPower: :@ULCH: 21775, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	18.80	25.70	20.81	dBm

UE Maximum OutputPower: :@ULCH: 21500, BW: 10 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	21.24	dBm
UE Maximum OutputPower: :@ULCH: 21500, BW: 10 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	20.63	dBm
UE Maximum OutputPower: :@ULCH: 21625, BW: 10 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.91	dBm
UE Maximum OutputPower: :@ULCH: 21625, BW: 10 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	21.99	dBm
UE Maximum OutputPower: :@ULCH: 21625, BW: 10 MHz ; UL_MOD_RB: QPSK, 12 (RB_Pos:LOW)	20.30	25.70	20.39	dBm
UE Maximum OutputPower: :@ULCH: 21750, BW: 10 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.61	dBm
UE Maximum OutputPower: :@ULCH: 21750, BW: 10 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	18.80	25.70	21.92	dBm



antenna A Band 20 Normal Environment

6.2.2 Maximum Output Power	Limit Low	Limit High	Measured	Unit
6.2.2 Maximum Output Power @ Band20				
UE Maximum OutputPower: :@ULCH: 24175, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	19.48	dBm
UE Maximum OutputPower: :@ULCH: 24175, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	20.89	dBm
UE Maximum OutputPower: :@ULCH: 24300, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.59	dBm
UE Maximum OutputPower: :@ULCH: 24300, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	20.37	dBm
UE Maximum OutputPower: :@ULCH: 24300, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 8 (RB_Pos:LOW)	20.30	25.70	20.45	dBm
UE Maximum OutputPower: :@ULCH: 24425, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	21.16	dBm
UE Maximum OutputPower: :@ULCH: 24425, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	18.80	25.70	19.37	dBm
UE Maximum OutputPower: :@ULCH: 24250, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	20.02	dBm
UE Maximum OutputPower: :@ULCH: 24250, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	20.58	dBm
UE Maximum OutputPower: :@ULCH: 24300, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	21.56	dBm
UE Maximum OutputPower: :@ULCH: 24300, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	21.86	dBm
UE Maximum OutputPower: :@ULCH: 24300, BW: 20 MHz ;	20.30	25.70	21.14	dBm
UL_MOD_RB: QPSK, 18 (RB_Pos:LOW)				
UE Maximum OutputPower: :@ULCH: 24350, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.59	dBm
UE Maximum OutputPower: :@ULCH: 24350, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	18.80	25.70	19.92	dBm

antenna A Band 28 Normal Environment

6.2.2 Maximum Output Power	Limit Low	Limit High	Measured	Unit
6.2.2 Maximum Output Power @ Band28				
UE Maximum OutputPower: :@ULCH: 27225, BW: 3.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	19.80	25.70	19.90	dBm
UE Maximum OutputPower: :@ULCH: 27225, BW: 3.0 MHz ; UL_MOD_RB: QPSK, 4 (RB_Pos:LOW)	19.80	25.70	20.63	dBm
UE Maximum OutputPower: :@ULCH: 27375, BW: 3.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	19.80	25.70	20.35	dBm
UE Maximum OutputPower: :@ULCH: 27375, BW: 3.0 MHz ; UL_MOD_RB: QPSK, 4 (RB_Pos:LOW)	19.80	25.70	20.04	dBm
UE Maximum OutputPower: :@ULCH: 27645, BW: 3.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	19.80	25.70	20.41	dBm
UE Maximum OutputPower: :@ULCH: 27645, BW: 3.0 MHz ; UL_MOD_RB: QPSK, 4 (RB_Pos:HIGH)	19.80	25.70	19.97	dBm
UE Maximum OutputPower: :@ULCH: 27235, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	19.80	25.70	20.02	dBm
UE Maximum OutputPower: :@ULCH: 27235, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 8 (RB_Pos:LOW)	19.80	25.70	19.95	dBm
UE Maximum OutputPower: :@ULCH: 27385, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	19.80	25.70	20.33	dBm
UE Maximum OutputPower: :@ULCH: 27385, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 8 (RB_Pos:LOW)	19.80	25.70	20.26	dBm
UE Maximum OutputPower: :@ULCH: 27635, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	19.80	25.70	19.92	dBm
UE Maximum OutputPower: :@ULCH: 27635, BW: 5.0 MHz ;	19.80	25.70	20.12	dBm
UE Maximum OutputPower: :@ULCH: 27310, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	19.80	25.70	20.66	dBm
UE Maximum OutputPower: :@ULCH: 27310, BW: 20 MHz ; UL_MOD_RB: QPSK, 18 (RB_Pos:LOW)	19.80	25.70	21.09	dBm
UE Maximum OutputPower: :@ULCH: 27460, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	19.80	25.70	20.39	dBm
UE Maximum OutputPower: :@ULCH: 27460, BW: 20 MHz ; UL_MOD_RB: QPSK, 18 (RB_Pos:LOW)	19.80	25.70	20.78	dBm

UE Maximum OutputPower: :@ULCH: 27560, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	19.80	25.70	20.00	dBm
UE Maximum OutputPower: :@ULCH: 27560, BW: 20 MHz ; UL_MOD_RB: QPSK, 18 (RB_Pos:HIGH)	19.80	25.70	20.25	dBm



antenna B Band 1 Normal Environment

6.2.2 Maximum Output Power @ Band1				
UE Maximum OutputPower: :@ULCH: 18025, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.74	dBm
UE Maximum OutputPower: :@ULCH: 18025, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 8 (RB_Pos:LOW)	20.30	25.70	20.47	dBm
UE Maximum OutputPower: :@ULCH: 18300, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	21.15	dBm
UE Maximum OutputPower: :@ULCH: 18300, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 8 (RB_Pos:LOW)	20.30	25.70	20.64	dBm
UE Maximum OutputPower: :@ULCH: 18575, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	22.18	dBm
UE Maximum OutputPower: :@ULCH: 18575, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 8 (RB_Pos:HIGH)	20.30	25.70	21.98	dBm
UE Maximum OutputPower: :@ULCH: 18100, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.68	dBm
UE Maximum OutputPower: :@ULCH: 18100, BW: 20 MHz ; UL_MOD_RB: QPSK, 18 (RB_Pos:LOW)	20.30	25.70	20.59	dBm
UE Maximum OutputPower: :@ULCH: 18300, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	21.88	dBm
UE Maximum OutputPower: :@ULCH: 18300, BW: 20 MHz ; UL_MOD_RB: QPSK, 18 (RB_Pos:LOW)	20.30	25.70	21.53	dBm
UE Maximum OutputPower: :@ULCH: 18500, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	22.71	dBm
UE Maximum OutputPower: :@ULCH: 18500, BW: 20 MHz ; UL_MOD_RB: QPSK, 18 (RB_Pos:HIGH)	20.30	25.70	22.16	dBm

antenna B Band 3 Normal Environment

6.2.2 Maximum Output Power @ Band3				
UE Maximum OutputPower: :@ULCH: 19207, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	19.91	dBm
UE Maximum OutputPower: :@ULCH: 19575, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	21.42	dBm
UE Maximum OutputPower: :@ULCH: 19575, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 5 (RB_Pos:LOW)	20.30	25.70	21.19	dBm
UE Maximum OutputPower: :@ULCH: 19943, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	20.55	dBm
UE Maximum OutputPower: :@ULCH: 19225, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	19.96	dBm
UE Maximum OutputPower: :@ULCH: 19225, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	20.82	dBm
UE Maximum OutputPower: :@ULCH: 19575, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	21.29	dBm
UE Maximum OutputPower: :@ULCH: 19575, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	20.95	dBm
UE Maximum OutputPower: :@ULCH: 19575, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 8 (RB_Pos:LOW)	20.30	25.70	20.78	dBm
UE Maximum OutputPower: :@ULCH: 19925, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.55	dBm
UE Maximum OutputPower: :@ULCH: 19925, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	18.80	25.70	20.40	dBm
UE Maximum OutputPower: :@ULCH: 19300, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	20.33	dBm
UE Maximum OutputPower: :@ULCH: 19300, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	21.37	dBm
UE Maximum OutputPower: :@ULCH: 19575, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	21.15	dBm
UE Maximum OutputPower: :@ULCH: 19575, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	21.68	dBm
UE Maximum OutputPower: :@ULCH: 19575, BW: 20 MHz ; UL_MOD_RB: QPSK, 18 (RB_Pos:LOW)	20.30	25.70	20.92	dBm
UE Maximum OutputPower: :@ULCH: 19850, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.85	dBm
UE Maximum OutputPower: :@ULCH: 19850, BW: 20 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	18.80	25.70	20.69	dBm

antenna B Band 7 Normal Environment

6.2.2 Maximum Output Power	Limit Low	Limit High	Measured	Unit
6.2.2 Maximum Output Power @ Band7				
UE Maximum OutputPower: :@ULCH: 20775, BW: 5.0 MHz ; UL MOD RB: QPSK, 1 (RB Pos:LOW)	18.80	25.70	19.00	dBm
UE Maximum OutputPower: :@ULCH: 20775, BW: 5.0 MHz ; UL MOD RB: QPSK, 1 (RB Pos:HIGH)	20.30	25.70	20.51	dBm
UE Maximum OutputPower: :@ULCH: 21100, BW: 5.0 MHz ; UL MOD RB: QPSK, 1 (RB Pos:LOW)	20.30	25.70	20.70	dBm
UE Maximum OutputPower: :@ULCH: 21100, BW: 5.0 MHz ; UL MOD RB: QPSK, 1 (RB Pos:HIGH)	20.30	25.70	20.84	dBm
UE Maximum OutputPower: :@ULCH: 21100, BW: 5.0 MHz ; UL MOD RB: QPSK, 8 (RB Pos:LOW)	20.30	25.70	20.60	dBm
UE Maximum OutputPower: :@ULCH: 21425, BW: 5.0 MHz ; UL MOD RB: QPSK, 1 (RB Pos:LOW)	20.30	25.70	20.82	dBm
UE Maximum OutputPower: :@ULCH: 21425, BW: 5.0 MHz ; UL MOD RB: QPSK, 1 (RB Pos:HIGH)	18.80	25.70	19.59	dBm
UE Maximum OutputPower: :@ULCH: 20850, BW: 20 MHz ; UL MOD RB: QPSK, 1 (RB Pos:LOW)	18.80	25.70	19.38	dBm
UE Maximum OutputPower: :@ULCH: 20850, BW: 20 MHz ; UL MOD RB: QPSK, 1 (RB Pos:HIGH)	20.30	25.70	20.51	dBm
UE Maximum OutputPower: :@ULCH: 21100, BW: 20 MHz ; UL MOD RB: QPSK, 1 (RB Pos:LOW)	20.30	25.70	20.38	dBm
UE Maximum OutputPower: :@ULCH: 21100, BW: 20 MHz ; UL MOD RB: QPSK, 1 (RB Pos:HIGH)	20.30	25.70	20.61	dBm
UE Maximum OutputPower: :@ULCH: 21100, BW: 20 MHz ; UL MOD RB: QPSK, 18 (RB Pos:LOW)	20.30	25.70	20.46	dBm
UE Maximum OutputPower: :@ULCH: 21350, BW: 20 MHz ; UL MOD RB: QPSK, 1 (RB Pos:LOW)	20.30	25.70	20.87	dBm
UE Maximum OutputPower: :@ULCH: 21350, BW: 20 MHz ; UL MOD RB: QPSK, 1 (RB Pos:HIGH)	18.80	25.70	20.22	dBm

antenna B Band 8 Normal Environment

6.2.2 Maximum Output Power	Limit Low	Limit High	Measured	Unit
6.2.2 Maximum Output Power @ Band8				
UE Maximum OutputPower: :@ULCH: 21457, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	20.38	dBm
UE Maximum OutputPower: :@ULCH: 21625, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.75	dBm
UE Maximum OutputPower: :@ULCH: 21625, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 5 (RB_Pos:LOW)	20.30	25.70	20.74	dBm
UE Maximum OutputPower: :@ULCH: 21793, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	21.39	dBm
UE Maximum OutputPower: :@ULCH: 21475, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	20.52	dBm
UE Maximum OutputPower: :@ULCH: 21475, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	20.82	dBm
UE Maximum OutputPower: :@ULCH: 21625, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.70	dBm
UE Maximum OutputPower: :@ULCH: 21625, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	21.28	dBm
UE Maximum OutputPower: :@ULCH: 21625, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 8 (RB_Pos:LOW)	20.30	25.70	20.42	dBm
UE Maximum OutputPower: :@ULCH: 21775, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.77	dBm
UE Maximum OutputPower: :@ULCH: 21775, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	18.80	25.70	20.61	dBm
UE Maximum OutputPower: :@ULCH: 21500, BW: 10 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	18.80	25.70	21.12	dBm
UE Maximum OutputPower: :@ULCH: 21500, BW: 10 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	20.46	dBm
UE Maximum OutputPower: :@ULCH: 21625, BW: 10 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.73	dBm
UE Maximum OutputPower: :@ULCH: 21625, BW: 10 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	20.30	25.70	21.81	dBm
UE Maximum OutputPower: :@ULCH: 21625, BW: 10 MHz ; UL_MOD_RB: QPSK, 12 (RB_Pos:LOW)	20.30	25.70	20.62	dBm
UE Maximum OutputPower: :@ULCH: 21750, BW: 10 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:LOW)	20.30	25.70	20.37	dBm
UE Maximum OutputPower: :@ULCH: 21750, BW: 10 MHz ; UL_MOD_RB: QPSK, 1 (RB_Pos:HIGH)	18.80	25.70	21.69	dBm

antenna B Band 20 Normal Environment

6.2.2 Maximum Output Power	Limit Low	Limit High	Measured	Unit
6.2.2 Maximum Output Power @ Band20				
UE Maximum OutputPower: :@ULCH: 24175, BW: 5.0 MHz ; UL MOD RB: QPSK, 1 (RB Pos:LOW)	18.80	25.70	19.31	dBm
UE Maximum OutputPower: :@ULCH: 24175, BW: 5.0 MHz ; UL MOD RB: QPSK, 1 (RB Pos:HIGH)	20.30	25.70	20.74	dBm
UE Maximum OutputPower: :@ULCH: 24300, BW: 5.0 MHz ; UL MOD RB: QPSK, 1 (RB Pos:LOW)	20.30	25.70	20.49	dBm
UE Maximum OutputPower: :@ULCH: 24300, BW: 5.0 MHz ; UL MOD RB: QPSK, 1 (RB Pos:HIGH)	20.30	25.70	20.64	dBm
UE Maximum OutputPower: :@ULCH: 24300, BW: 5.0 MHz ; UL MOD RB: QPSK, 8 (RB Pos:LOW)	20.30	25.70	20.51	dBm
UE Maximum OutputPower: :@ULCH: 24425, BW: 5.0 MHz ; UL MOD RB: QPSK, 1 (RB Pos:LOW)	20.30	25.70	20.91	dBm
UE Maximum OutputPower: :@ULCH: 24425, BW: 5.0 MHz ; UL MOD RB: QPSK, 1 (RB Pos:HIGH)	18.80	25.70	19.16	dBm
UE Maximum OutputPower: :@ULCH: 24250, BW: 20 MHz ; UL MOD RB: QPSK, 1 (RB Pos:LOW)	18.80	25.70	20.21	dBm
UE Maximum OutputPower: :@ULCH: 24250, BW: 20 MHz ; UL MOD RB: QPSK, 1 (RB Pos:HIGH)	20.30	25.70	20.32	dBm
UE Maximum OutputPower: :@ULCH: 24300, BW: 20 MHz ; UL MOD RB: QPSK, 1 (RB Pos:LOW)	20.30	25.70	21.65	dBm
UE Maximum OutputPower: :@ULCH: 24300, BW: 20 MHz ; UL MOD RB: QPSK, 1 (RB Pos:HIGH)	20.30	25.70	21.94	dBm
UE Maximum OutputPower: :@ULCH: 24300, BW: 20 MHz ; UL MOD RB: QPSK, 18 (RB Pos:LOW)	20.30	25.70	21.22	dBm
UE Maximum OutputPower: :@ULCH: 24350, BW: 20 MHz ; UL MOD RB: QPSK, 1 (RB Pos:LOW)	20.30	25.70	20.61	dBm
UE Maximum OutputPower: :@ULCH: 24350, BW: 20 MHz ; UL MOD RB: QPSK, 1 (RB Pos:HIGH)	18.80	25.70	19.87	dBm

antenna B Band 28 Normal Environment

6.2.2 Maximum Output Power	Limit Low	Limit High	Measured	Unit
6.2.2 Maximum Output Power @ Band28				
UE Maximum OutputPower: :@ULCH: 27225, BW: 3.0 MHz ; UL MOD RB: QPSK, 1 (RB Pos:LOW)	19.80	25.70	19.82	dBm
UE Maximum OutputPower: :@ULCH: 27225, BW: 3.0 MHz ; UL MOD RB: QPSK, 4 (RB Pos:LOW)	19.80	25.70	20.58	dBm
UE Maximum OutputPower: :@ULCH: 27375, BW: 3.0 MHz ; UL MOD RB: QPSK, 1 (RB Pos:LOW)	19.80	25.70	20.36	dBm
UE Maximum OutputPower: :@ULCH: 27375, BW: 3.0 MHz ; UL MOD RB: QPSK, 4 (RB Pos:LOW)	19.80	25.70	19.93	dBm
UE Maximum OutputPower: :@ULCH: 27645, BW: 3.0 MHz ; UL MOD RB: QPSK, 1 (RB Pos:HIGH)	19.80	25.70	20.22	dBm
UE Maximum OutputPower: :@ULCH: 27645, BW: 3.0 MHz ; UL MOD RB: QPSK, 4 (RB Pos:HIGH)	19.80	25.70	19.86	dBm
UE Maximum OutputPower: :@ULCH: 27235, BW: 5.0 MHz ; UL MOD RB: QPSK, 1 (RB Pos:LOW)	19.80	25.70	19.95	dBm
UE Maximum OutputPower: :@ULCH: 27235, BW: 5.0 MHz ; UL MOD RB: QPSK, 8 (RB Pos:LOW)	19.80	25.70	19.90	dBm
UE Maximum OutputPower: :@ULCH: 27385, BW: 5.0 MHz ; UL MOD RB: QPSK, 1 (RB Pos:LOW)	19.80	25.70	20.28	dBm
UE Maximum OutputPower: :@ULCH: 27385, BW: 5.0 MHz ; UL MOD RB: QPSK, 8 (RB Pos:LOW)	19.80	25.70	20.17	dBm
UE Maximum OutputPower: :@ULCH: 27635, BW: 5.0 MHz ; UL MOD RB: QPSK, 1 (RB Pos:HIGH)	19.80	25.70	20.20	dBm
UE Maximum OutputPower: :@ULCH: 27635, BW: 5.0 MHz ; UL MOD RB: QPSK, 8 (RB Pos:HIGH)	19.80	25.70	20.99	dBm
UE Maximum OutputPower: :@ULCH: 27310, BW: 20 MHz ; UL MOD RB: QPSK, 1 (RB Pos:LOW)	19.80	25.70	20.58	dBm
UE Maximum OutputPower: :@ULCH: 27310, BW: 20 MHz ; UL MOD RB: QPSK, 18 (RB Pos:LOW)	19.80	25.70	21.01	dBm
UE Maximum OutputPower: :@ULCH: 27460, BW: 20 MHz ; UL MOD RB: QPSK, 1 (RB Pos:LOW)	19.80	25.70	20.19	dBm
UE Maximum OutputPower: :@ULCH: 27460, BW: 20 MHz ; UL MOD RB: QPSK, 18 (RB Pos:LOW)	19.80	25.70	20.67	dBm
UE Maximum OutputPower: :@ULCH: 27560, BW: 20 MHz ; UL MOD RB: QPSK, 1 (RB Pos:HIGH)	19.80	25.70	19.83	dBm
UE Maximum OutputPower: :@ULCH: 27560, BW: 20 MHz ; UL MOD RB: QPSK, 18 (RB Pos:HIGH)	19.80	25.70	20.04	dBm

4. TRANSMITTER SPECTRUM EMISSION MASK

4.1. Limit

the power of any UE emission shall fulfil requirements in below table, E UTRA bands ≤ 3 GHz

Δf_{OEB} (MHz)	1,4 MHz	3,0 MHz	5 MHz	10MHz	15 MHz	20 MHz	Measurement bandwidth
0 to 1	-8,5	-11,5	-13,5	-16,5	-18,5	-19,5	30 kHz
1 to 2,5	-8,5	-8,5	-8,5	-8,5	-8,5	-8,5	1 MHz
2,5 to 2,8	-23,5	-8,5	-8,5	-8,5	-8,5	-8,5	1 MHz
2,8 to 5		-8,5	-8,5	-8,5	-8,5	-8,5	1 MHz
5 to 6		-23,5	-11,5	-11,5	-11,5	-11,5	1 MHz
6 to 10			-23,5	-11,5	-11,5	-11,5	1 MHz
10 to 15				-23,5	-11,5	-11,5	1 MHz
15 to 20					-23,5	-11,5	1 MHz
20 to 25						-23,5	1 MHz

NOTE 1: The first and last measurement position with a 30 kHz filter is at Δf_{OEB} equals to 0,015 MHz and 0,985MHz.

NOTE 2: The first and last measurement position with a 1 MHz filter for 1 MHz - 2,5 MHz offset range is at Δf_{OEB} equals to 1,5 MHz and 2,0MHz. Similarly for other Δf_{OEB} ranges.

NOTE 3: The measurements shall be performed above the upper edge of the channel and below the lower edge of the channel.

NOTE 4: For the 2,5 MHz - 2,8 MHz offset range with 1,4 MHz channel bandwidth, the measurement position is at Δf_{OEB} equals to 3MHz.

The power of any UE emission shall fulfil requirements in below table, 3 GHz < E-UTRA bands $\leq$ 4,2GHz

Δf_{OOB} (MHz)	1,4 MHz	3,0 MHz	5 MHz	10MHz	15 MHz	20 MHz	Measurement bandwidth
0 to 1	-8,2	-11,2	-13,2	-16,2	-18,2	-19,2	30 kHz
1 to 2,5	-8,2	-8,2	-8,2	-8,2	-8,2	-8,2	1 MHz
2,5 to 2,8	-23,2						1 MHz
2,8 to 5							1 MHz
5 to 6		-23,2	-11,2	-11,2	-11,2	-11,2	1 MHz
6 to 10			-23,2				1 MHz
10 to 15							1 MHz
15 to 20					-23,2		1 MHz
20 to 25						-23,2	1 MHz

NOTE 1: The first and last measurement position with a 30 kHz filter is at Δf_{OOB} equals to 0,015 MHz and 0,985MHz.

NOTE 2: At the boundary of spectrum emission limit, the first and last measurement position with a 1 MHz filter is the inside of +0,5 MHz and -0,5 MHz, respectively.

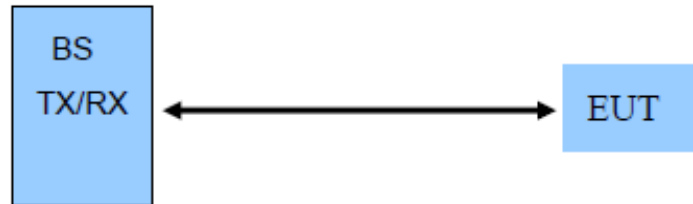
NOTE 3: The measurements shall be performed above the upper edge of the channel and below the lower edge of the channel.

NOTE 4: For the 2,5 MHz - 2,8 MHz offset range with 1,4 MHz channel bandwidth, the measurement position is at Δf_{OOB} equals to 3MHz.

The power of any UE emission shall fulfil requirements in below table, Additional spectrum emission mask (network signalled value "NS_01")

E-UTRA band	Frequency range	Channel Bandwidth	Spectrum emission limit (dBm)	Measurement bandwidth
20	$863\text{MHz} \leq f \leq 867\text{ MHz}$	10 MHz (note 2)	-11,5	1 MHz
	$867\text{MHz} \leq f \leq 870\text{ MHz}$	10 MHz (note 2)	14,5	1 MHz

4.2. Test Setup



4.3. Test Procedure

According to EN 301 908-13 , section 5.3.2

- a) Connect the SS to the UE antenna connectors.
- b) SS sends uplink scheduling information for each UL HARQ process via PDCCH DCI format 0 for C_RNTI to schedule the UL RMC according to table 6.2.2.1.4.1-1 of TS 136 521-1 [1]. Since the UE has no payload and no loopback data to send the UE sends uplink MAC padding bits on the ULRMC.
- c) Send continuously uplink power control "up" commands in the uplink scheduling information to the UE until the UE transmits at PUMAX level.
- d) Measure the power of the transmitted signal with a measurement filter of bandwidths according to TS 136 521-1 [1], tables 4.2.3.1.2-1 or 4.2.3.1.2-2 or 4.2.3.1.2-3, as applicable. The center frequency of the filter shall be stepped in continuous steps according to the same table. The measured power shall be recorded for each step. The measurement period shall capture the active TSs.
- e) Repeat for applicable test frequencies, channel bandwidths and operating bands.

4.4. Test Result

Test Mode		Band 1				
Test Environment		Normal				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz, 10 MHz and highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
5MHz	N/A for Max UE output power testing			QPSK	25	PASS
5MHz				QPSK	8	PASS
5MHz				16QAM	8	PASS
5MHz				16QAM	25	PASS
10MHz				QPSK	50	PASS
10MHz				QPSK	12	PASS
10MHz				16QAM	12	PASS
10MHz				16QAM	50	PASS
20MHz				QPSK	100	PASS
20MHz				QPSK	18	PASS
20MHz				16QAM	18	PASS
20MHz				16QAM	100	PASS

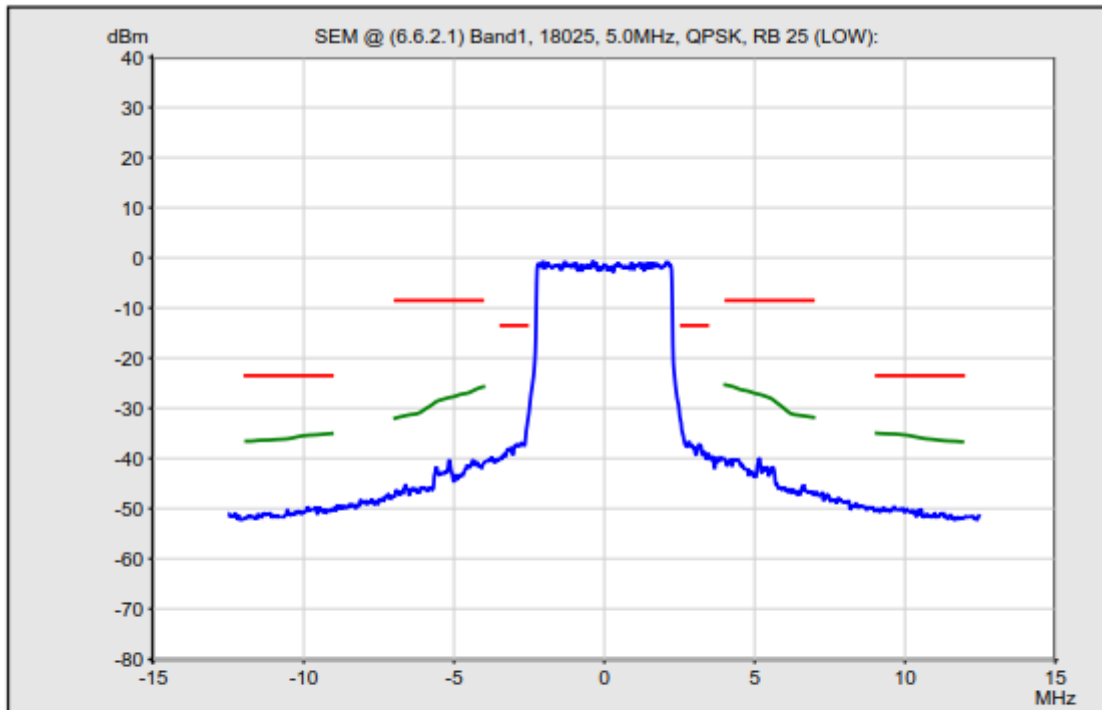
Test Mode		Band 3				
Test Environment		Normal				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz, 10 MHz and highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
1.4MHz	N/A for Max UE output power testing			QPSK	6	PASS
1.4MHz				QPSK	5	PASS
1.4MHz				16QAM	5	PASS
1.4MHz				16QAM	6	PASS
5MHz				QPSK	25	PASS
5MHz				QPSK	5	PASS
5MHz				16QAM	5	PASS
5MHz				16QAM	25	PASS
10MHz				QPSK	50	PASS
10MHz				QPSK	12	PASS
10MHz				16QAM	12	PASS
10MHz				16QAM	50	PASS
20MHz				QPSK	100	PASS
20MHz				QPSK	18	PASS
20MHz				16QAM	18	PASS
20MHz				16QAM	100	PASS

Test Mode		Band 7				
Test Environment		Normal				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz, 10 MHz and highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
5MHz	N/A for Max UE output power testing			QPSK	25	PASS
5MHz				QPSK	8	PASS
5MHz				16QAM	8	PASS
5MHz				16QAM	25	PASS
10MHz				QPSK	50	PASS
10MHz				QPSK	12	PASS
10MHz				16QAM	12	PASS
10MHz				16QAM	50	PASS
20MHz				QPSK	100	PASS
20MHz				QPSK	18	PASS
20MHz				16QAM	18	PASS
20MHz				16QAM	100	PASS

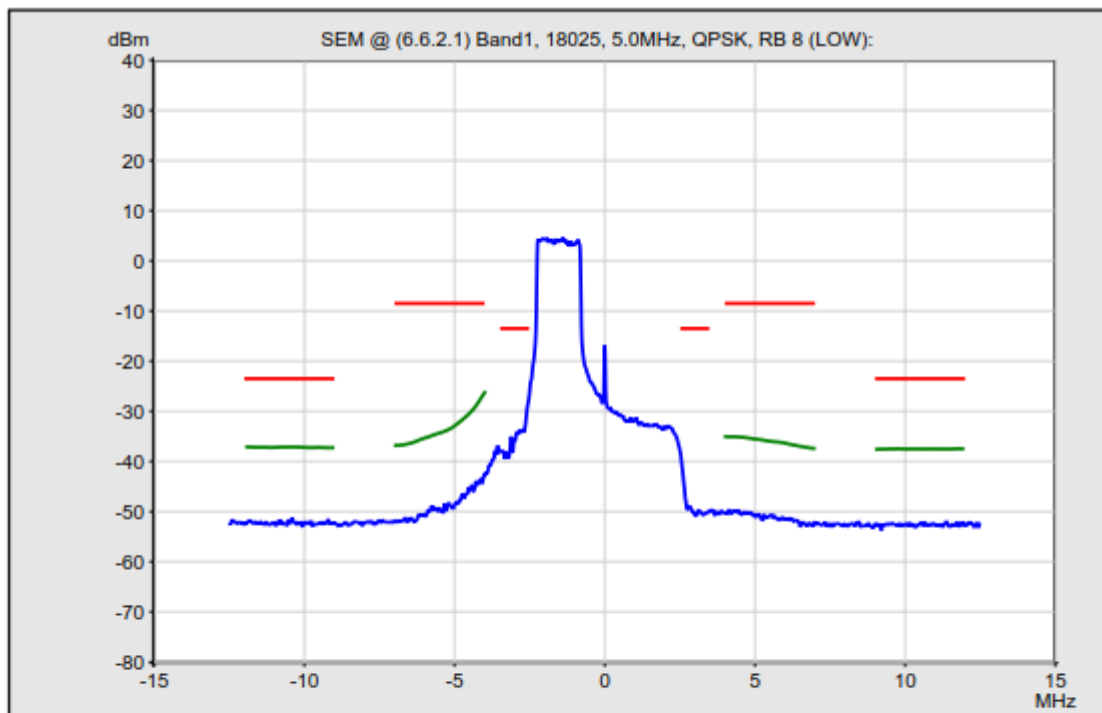
Test Mode		Band 8				
Test Environment		Normal				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz, 10 MHz and highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
1.4MHz	N/A for Max UE output power testing			QPSK	6	PASS
1.4MHz				QPSK	5	PASS
1.4MHz				16QAM	5	PASS
1.4MHz				16QAM	6	PASS
5MHz				QPSK	25	PASS
5MHz				QPSK	5	PASS
5MHz				16QAM	5	PASS
5MHz				16QAM	25	PASS
10MHz				QPSK	50	PASS
10MHz				QPSK	12	PASS
10MHz				16QAM	12	PASS
10MHz				16QAM	50	PASS

Test Mode		Band 20				
Test Environment		Normal				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz, 10 MHz and highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
5MHz	N/A for Max UE output power testing			QPSK	25	PASS
5MHz				QPSK	8	PASS
5MHz				16QAM	8	PASS
5MHz				16QAM	25	PASS
10MHz				QPSK	50	PASS
10MHz				QPSK	12	PASS
10MHz				16QAM	12	PASS
10MHz				16QAM	50	PASS
20MHz				QPSK	100	PASS
20MHz				QPSK	18	PASS
20MHz				16QAM	18	PASS
20MHz				16QAM	100	PASS

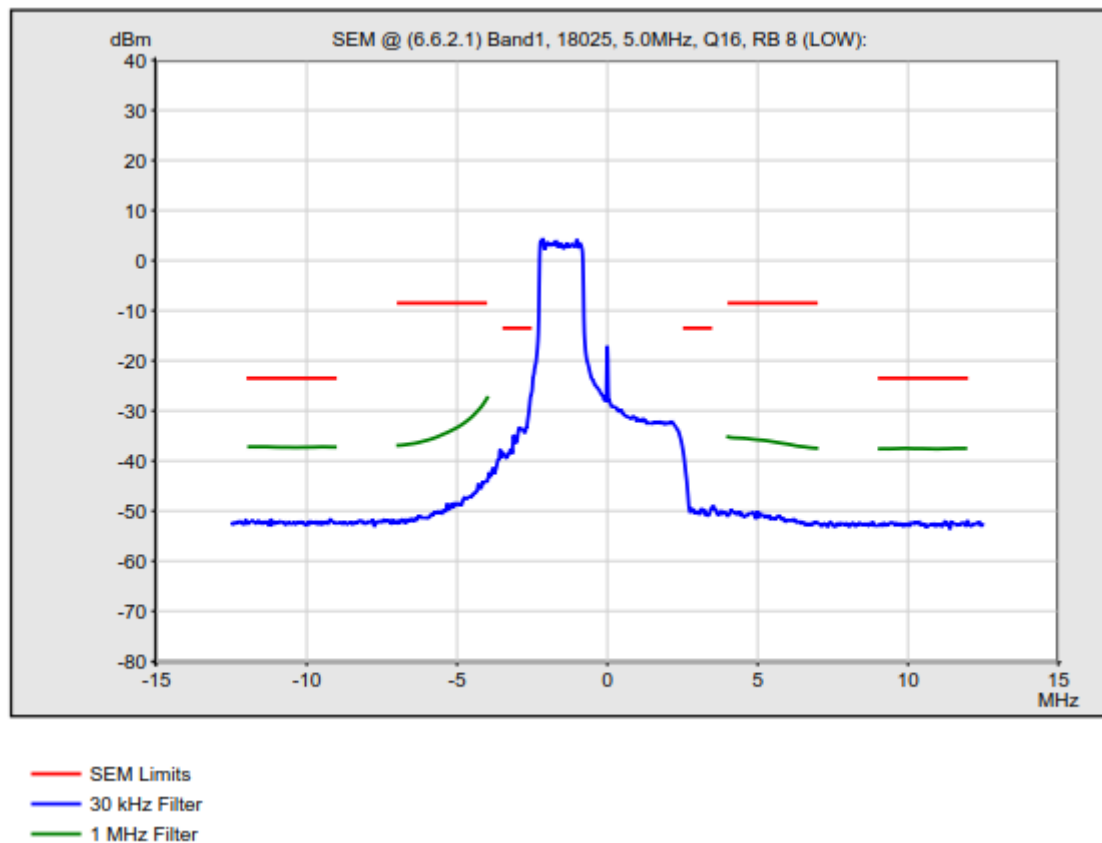
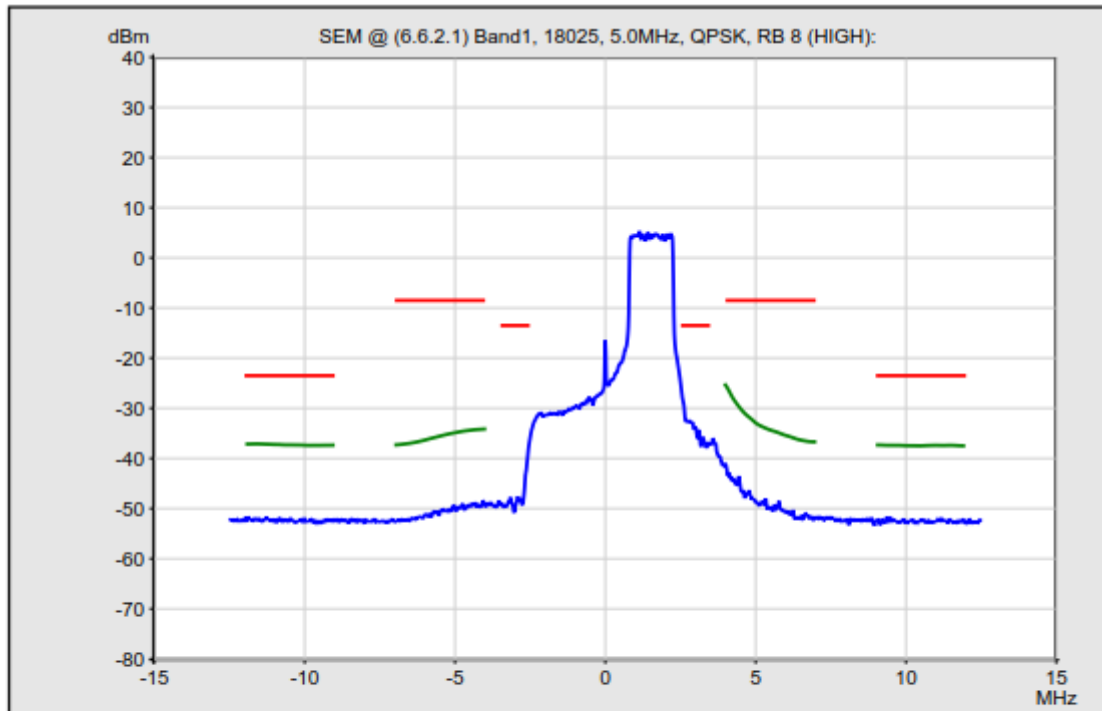
Test Mode		Band 28				
Test Environment		Normal				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz, 10 MHz and highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
3MHz	N/A for Max UE output power testing			QPSK	15	PASS
3MHz				QPSK	4	PASS
3MHz				16QAM	4	PASS
3MHz				16QAM	15	PASS
5MHz				QPSK	25	PASS
5MHz				QPSK	5	PASS
5MHz				16QAM	5	PASS
5MHz				16QAM	25	PASS
10MHz				QPSK	50	PASS
10MHz				QPSK	12	PASS
10MHz				16QAM	12	PASS
10MHz				16QAM	50	PASS
20MHz				QPSK	100	PASS
20MHz				QPSK	18	PASS
20MHz				16QAM	18	PASS
20MHz				16QAM	100	PASS

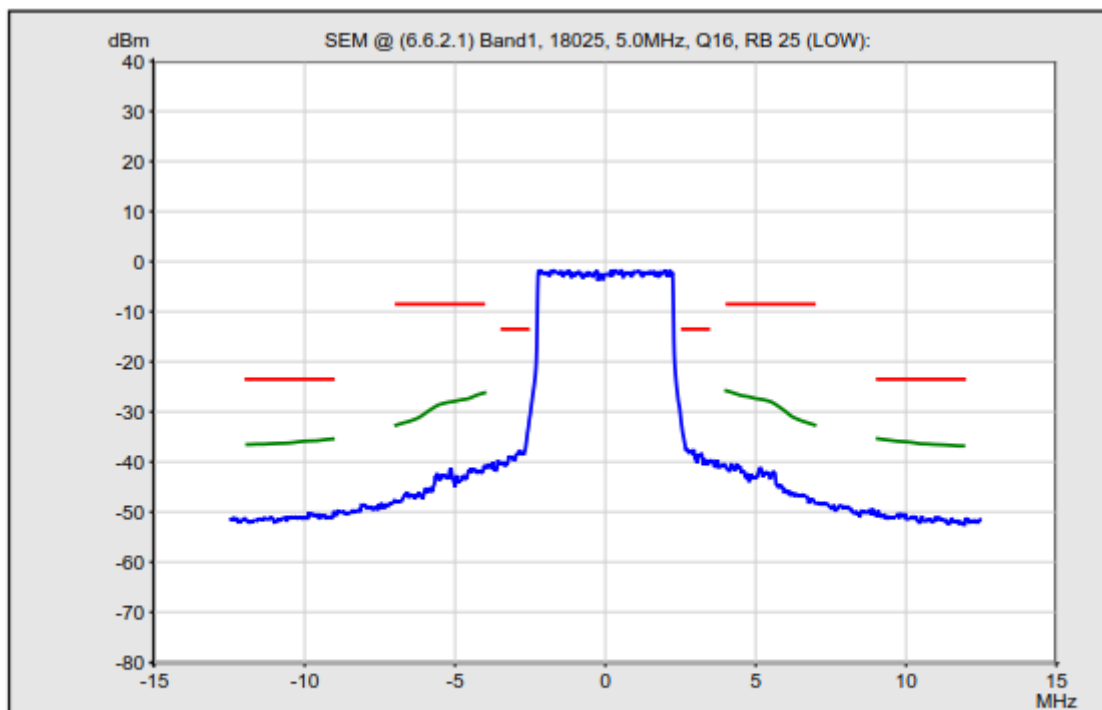
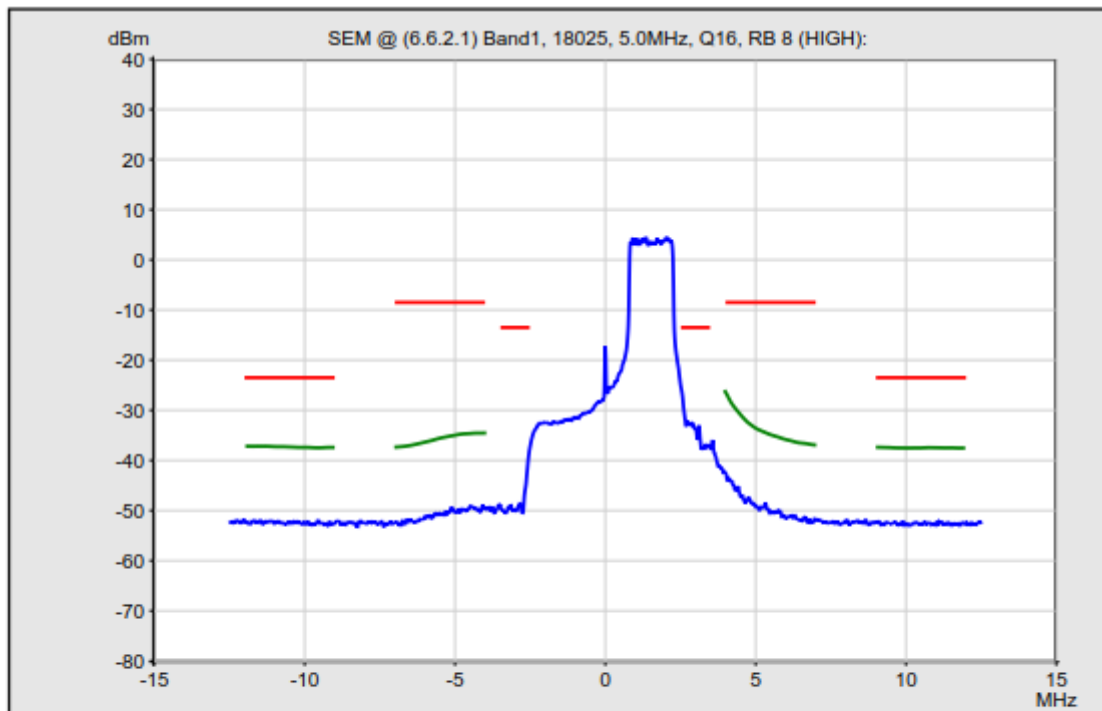


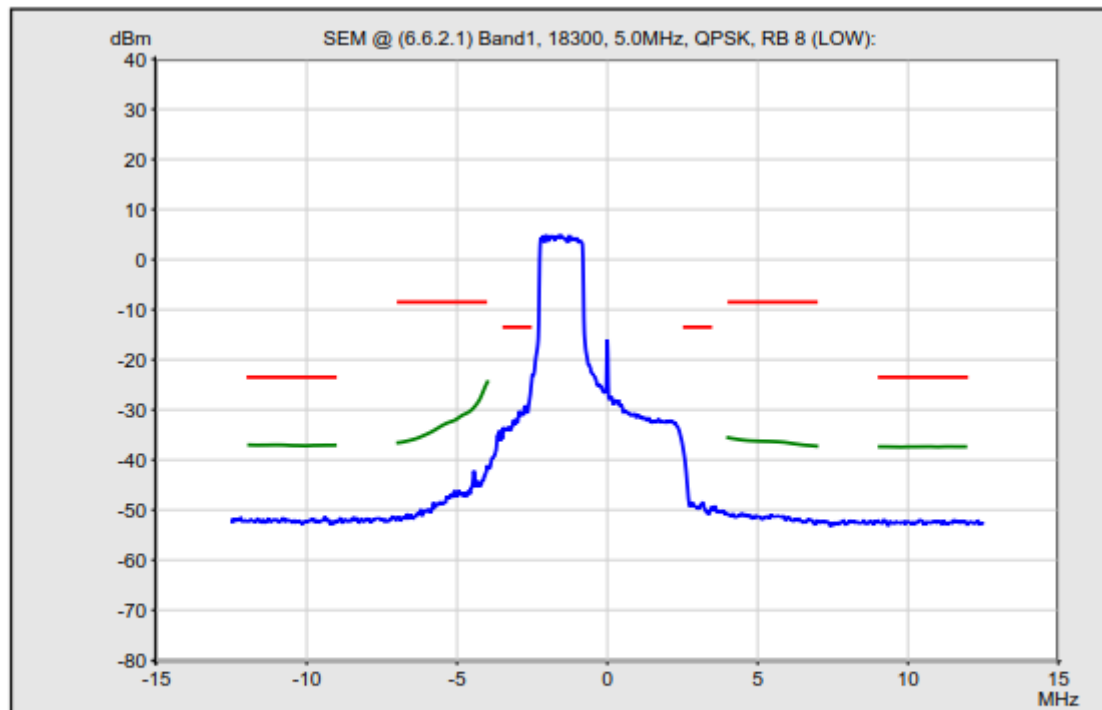
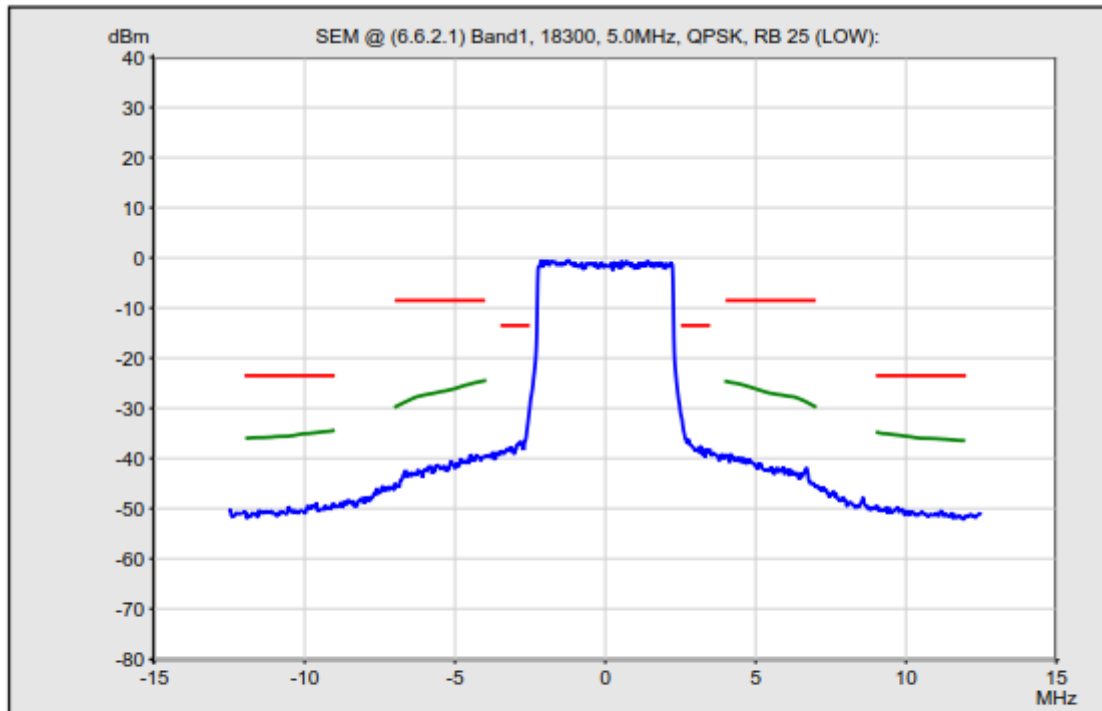
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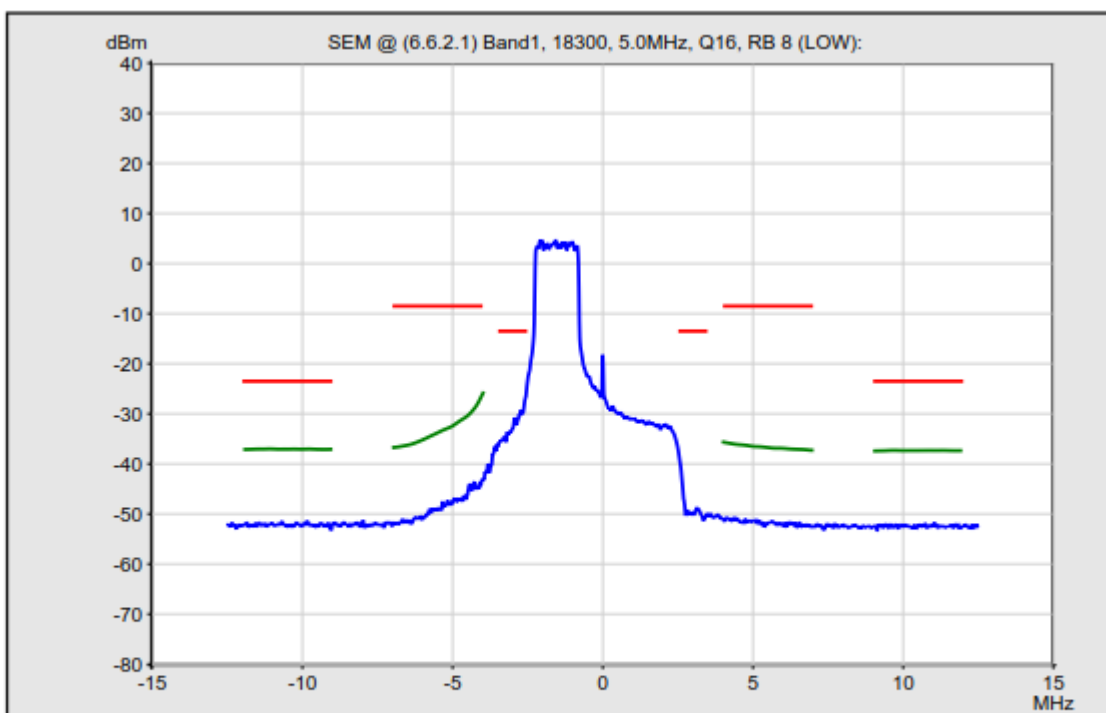
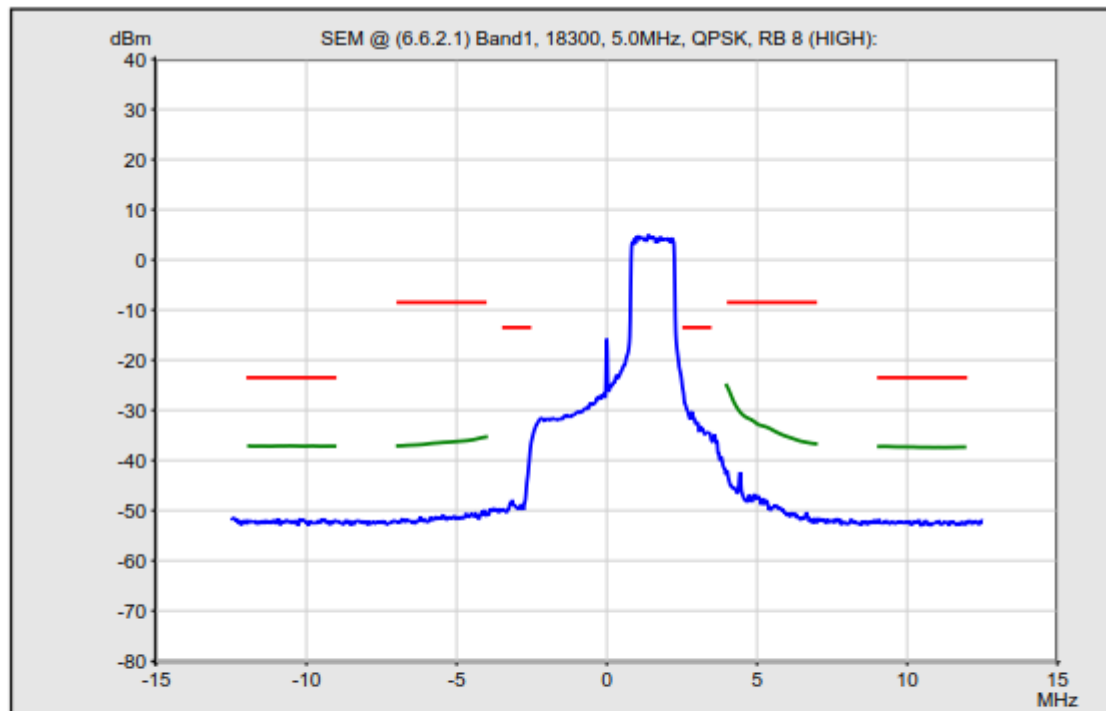


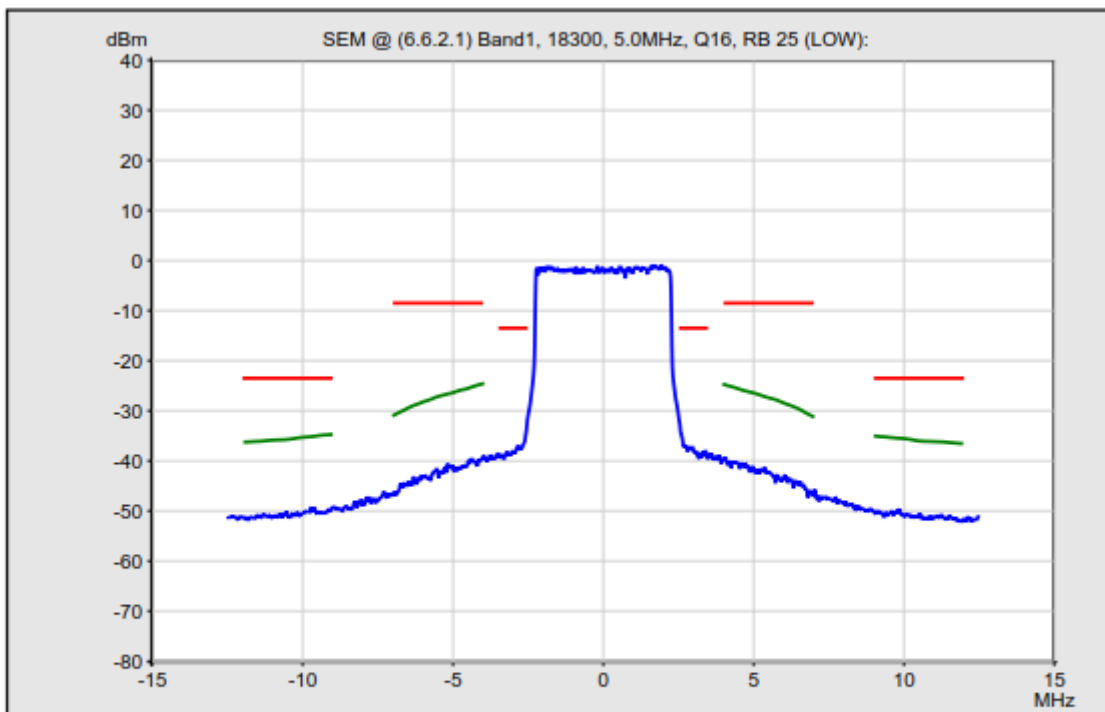
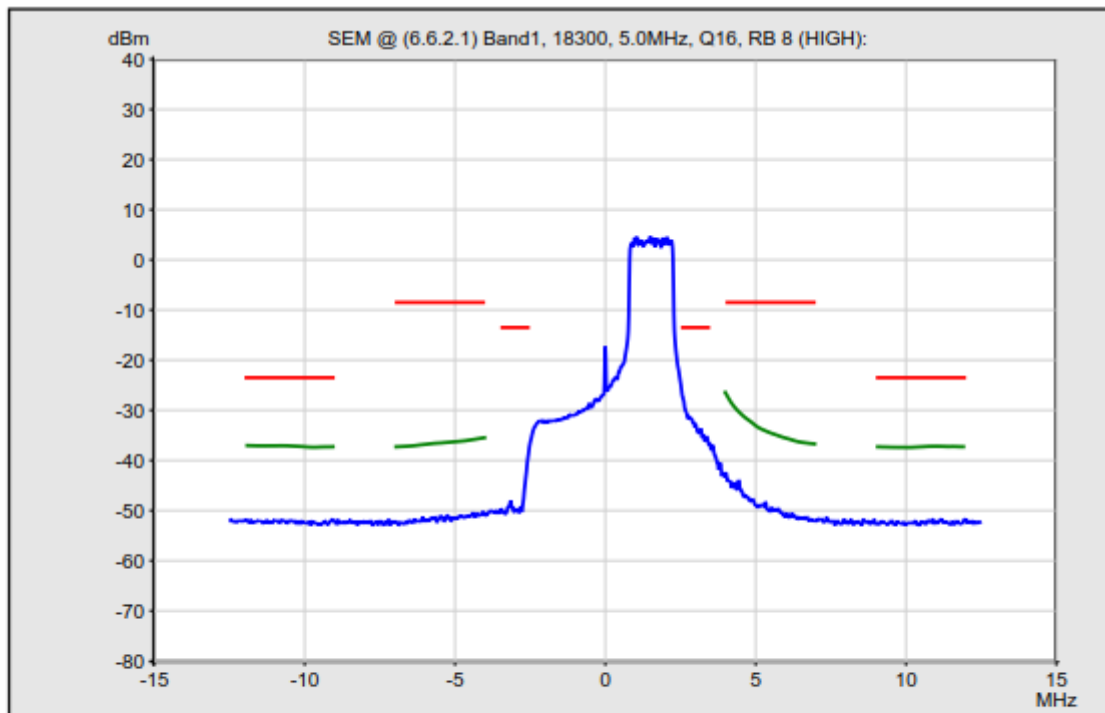
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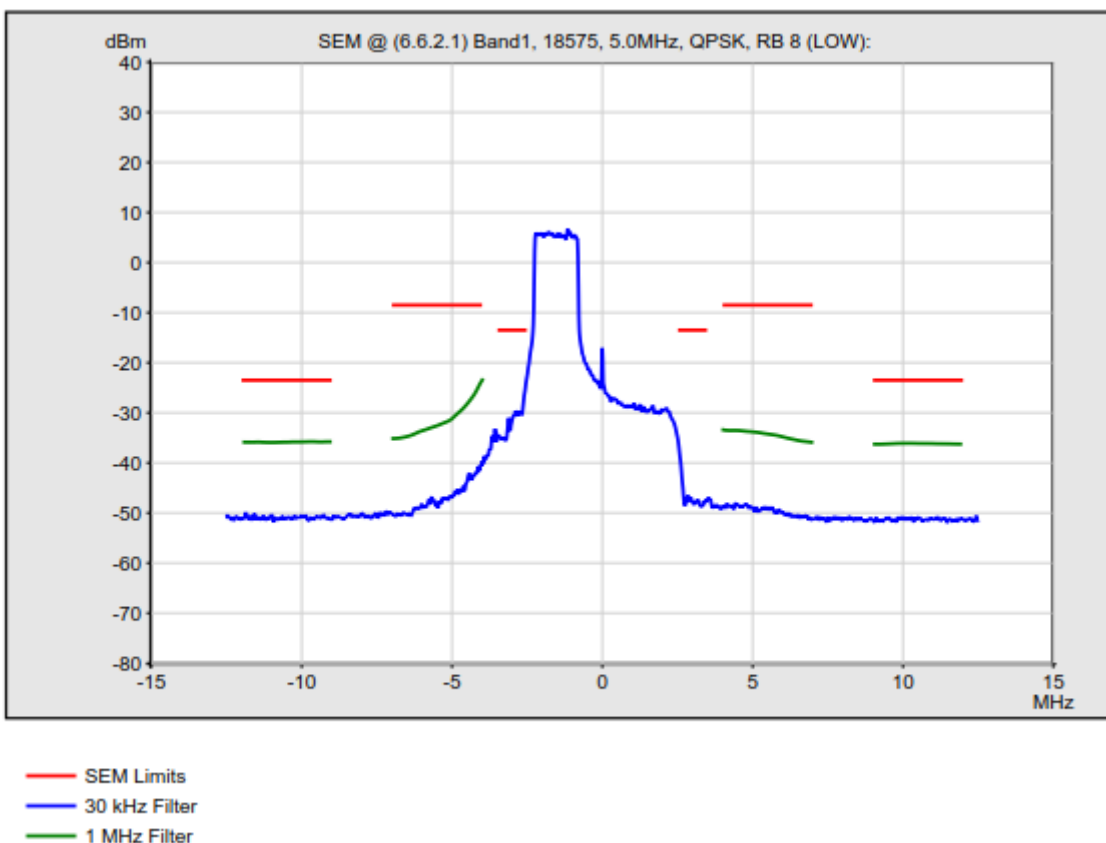
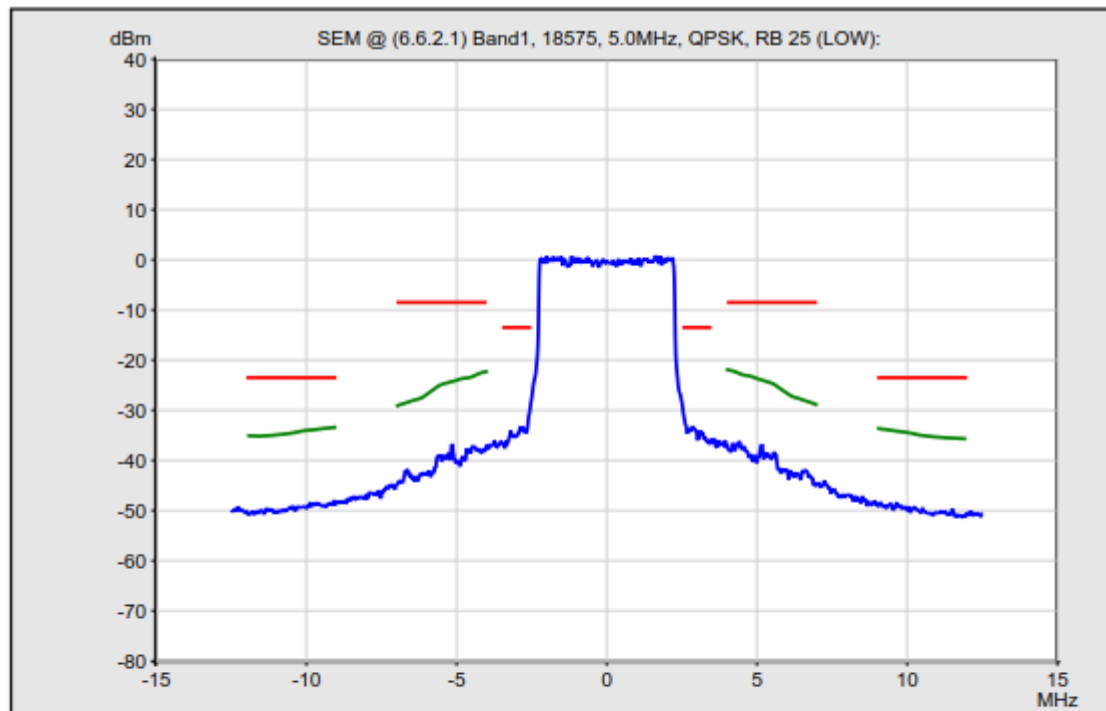


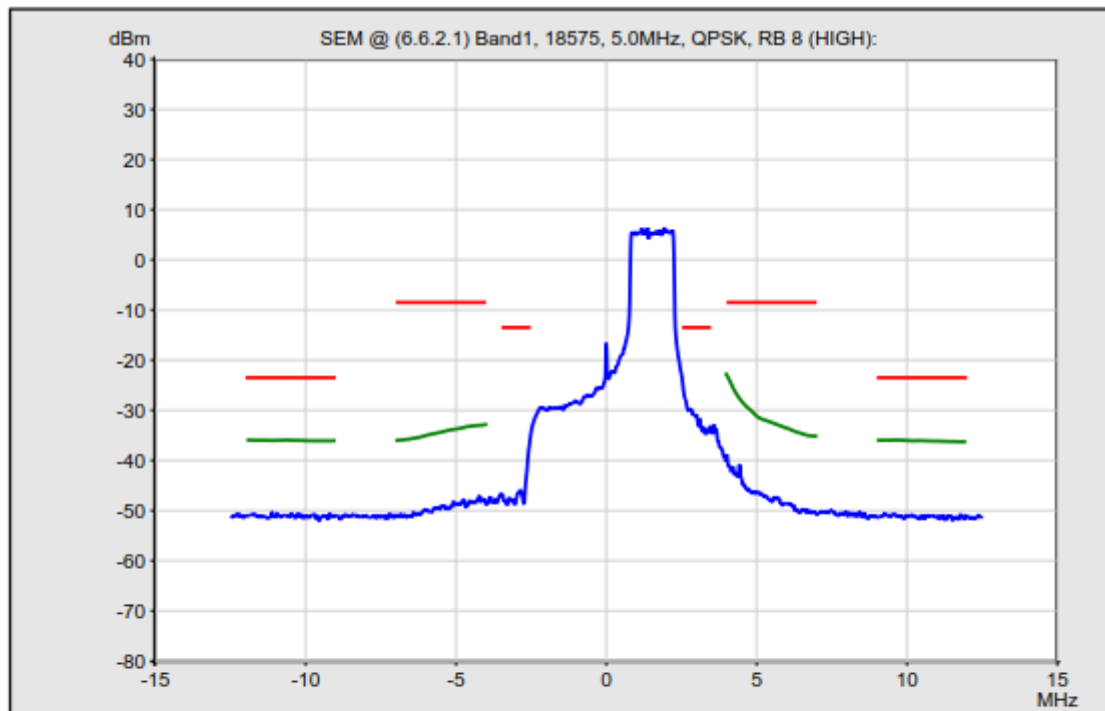




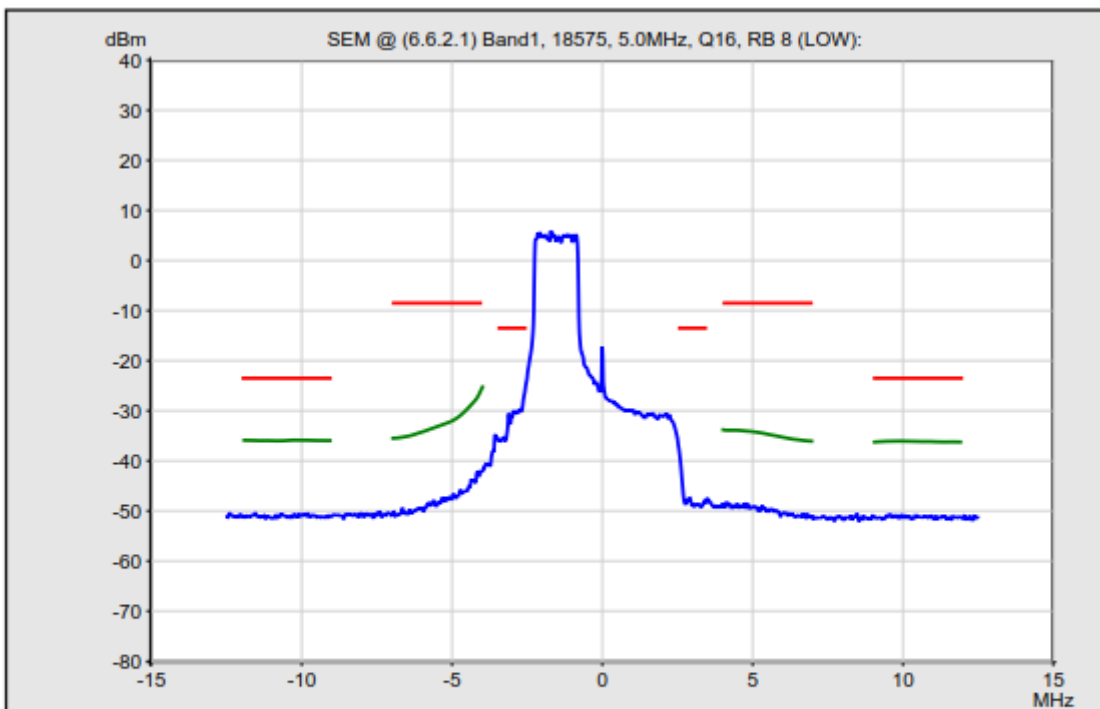




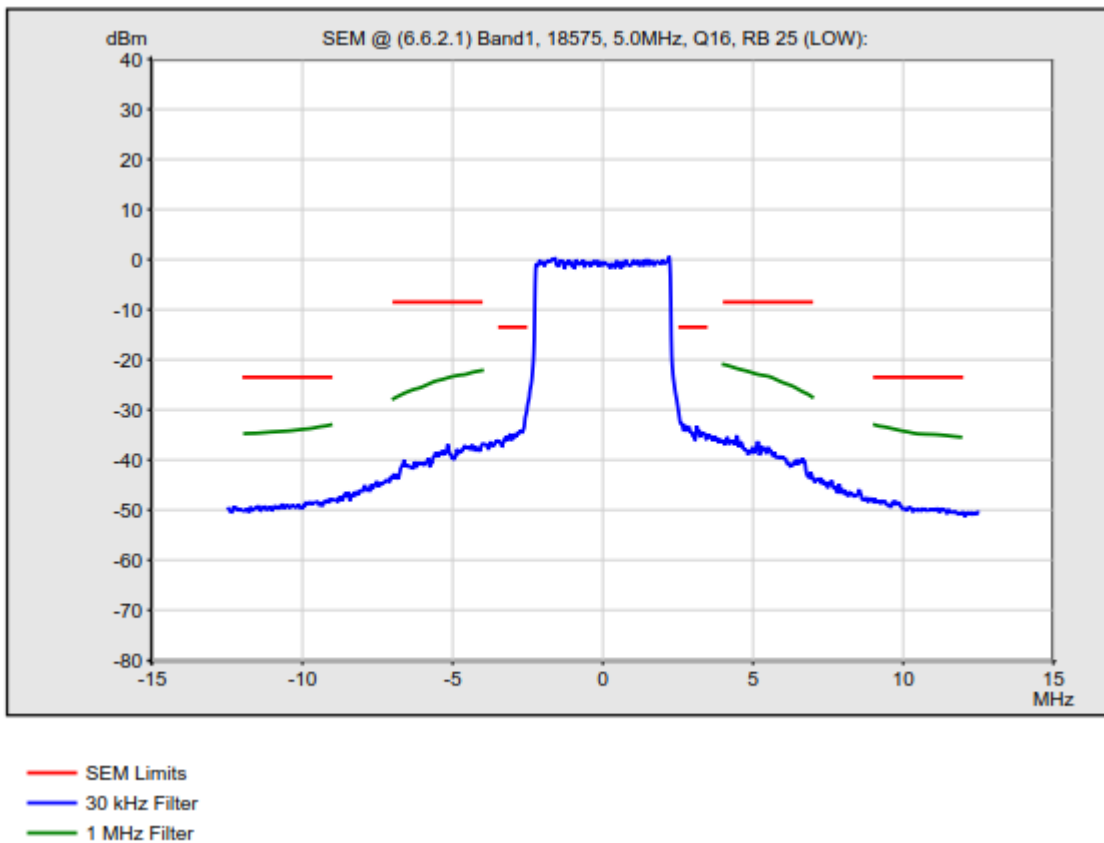
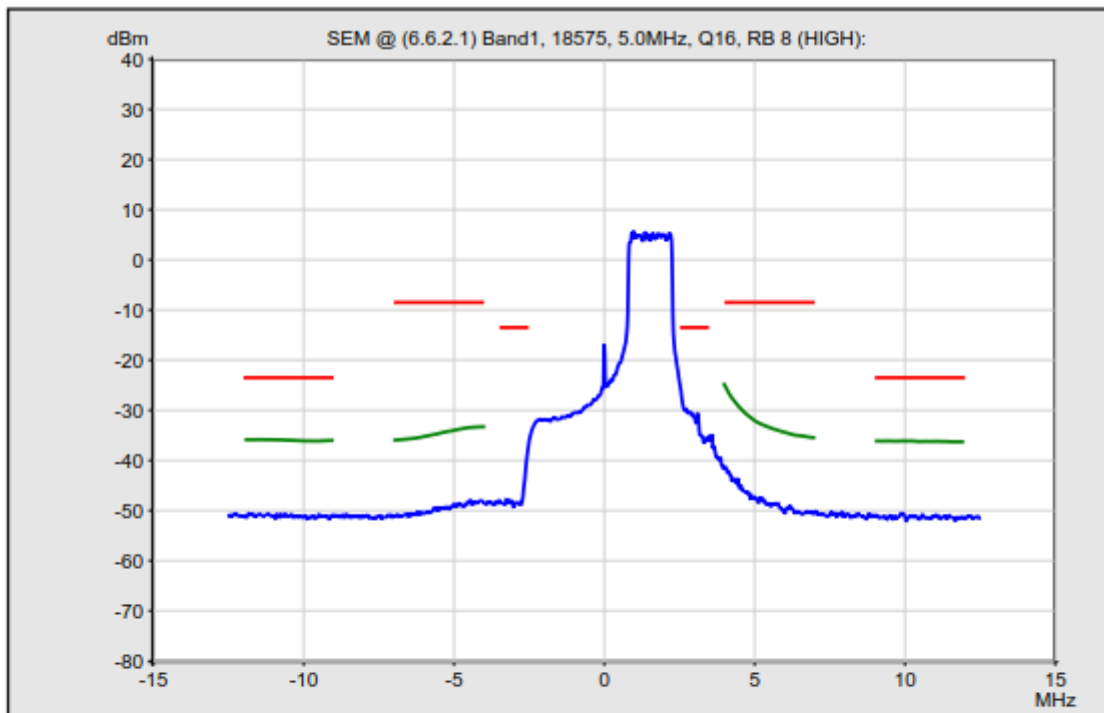


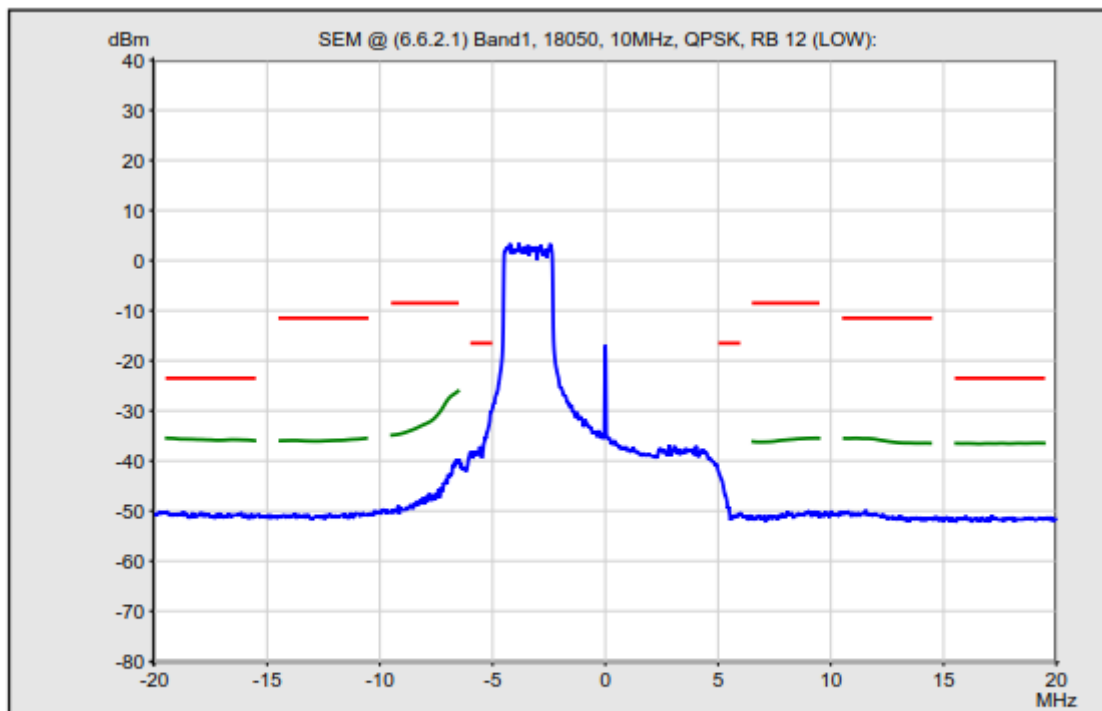
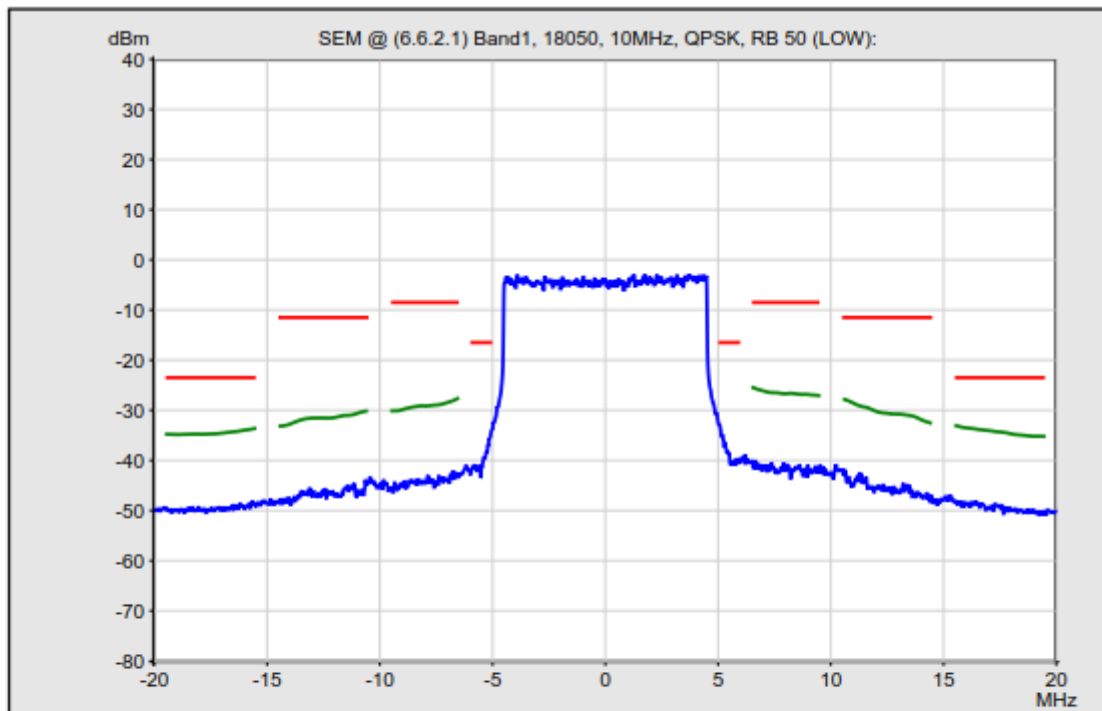


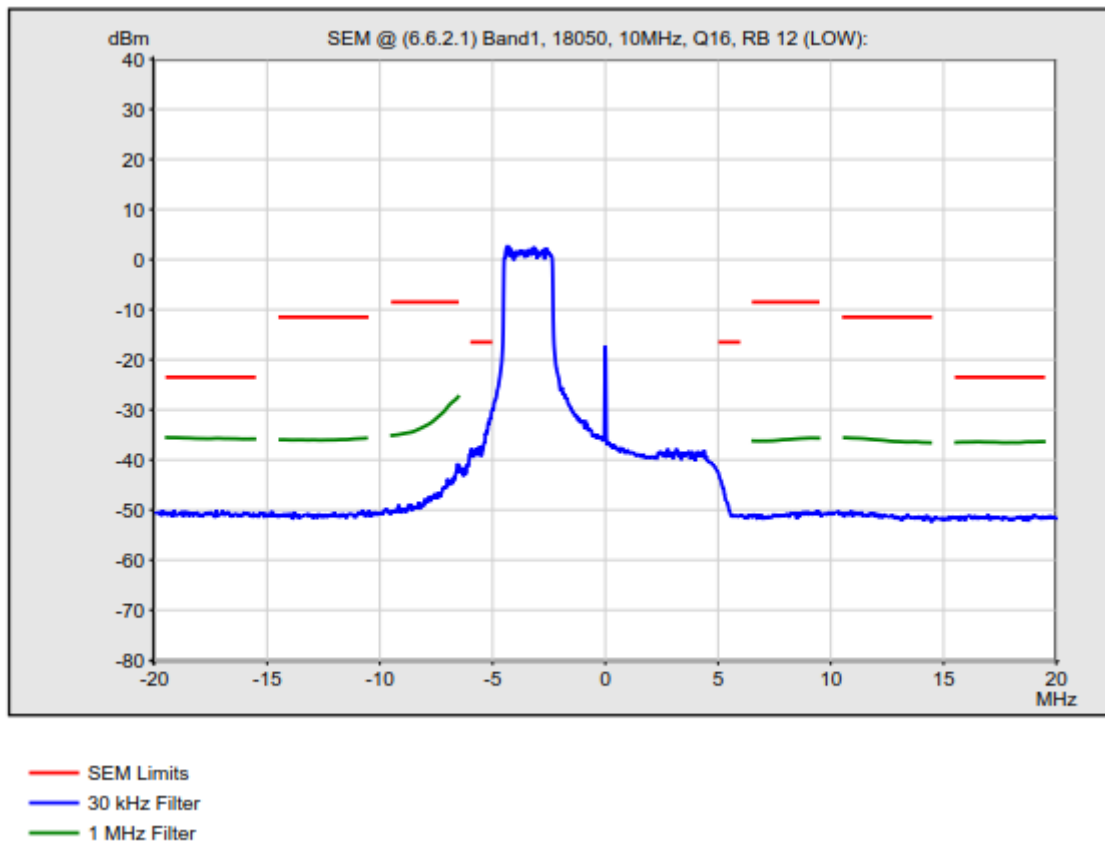
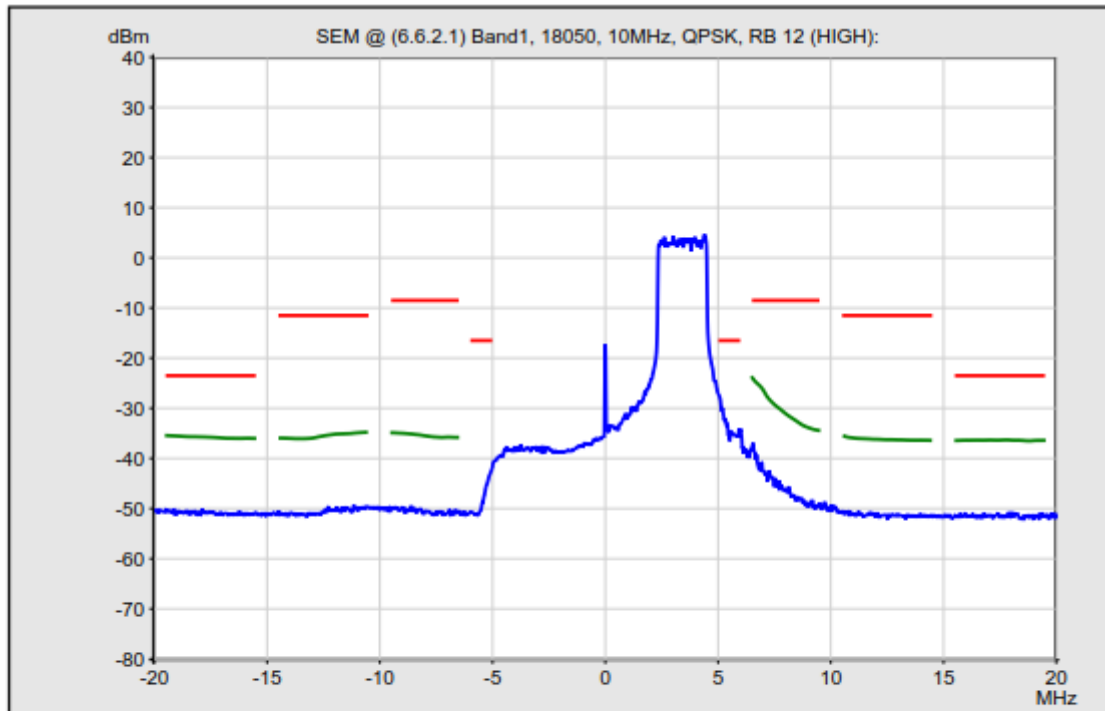
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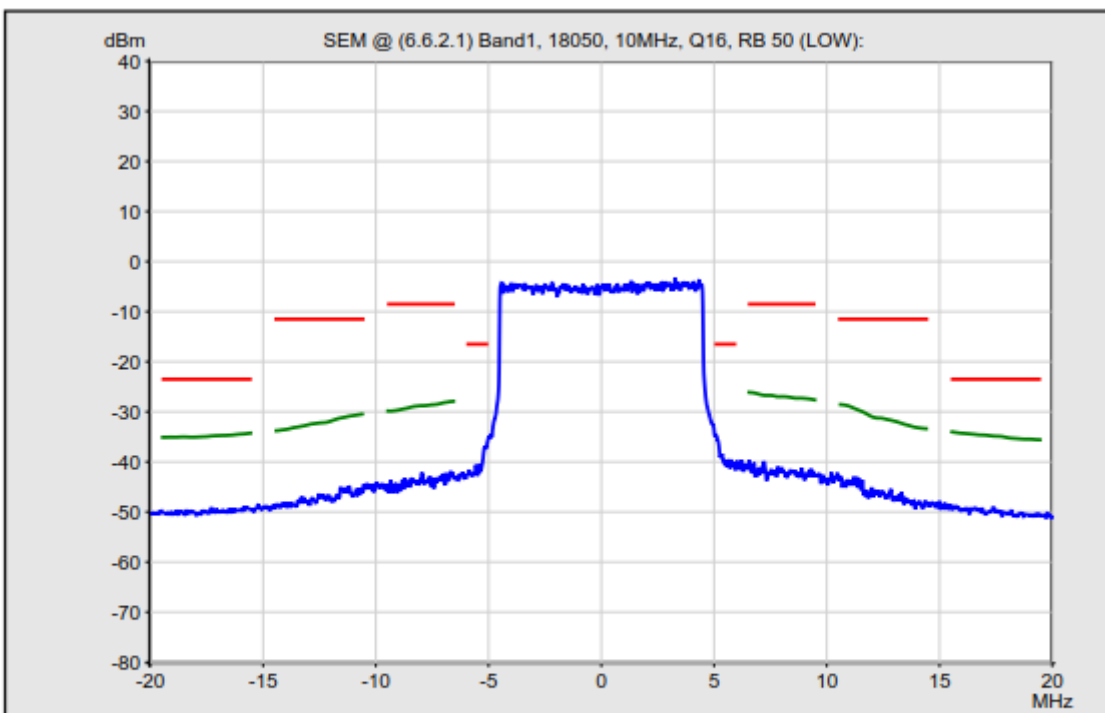
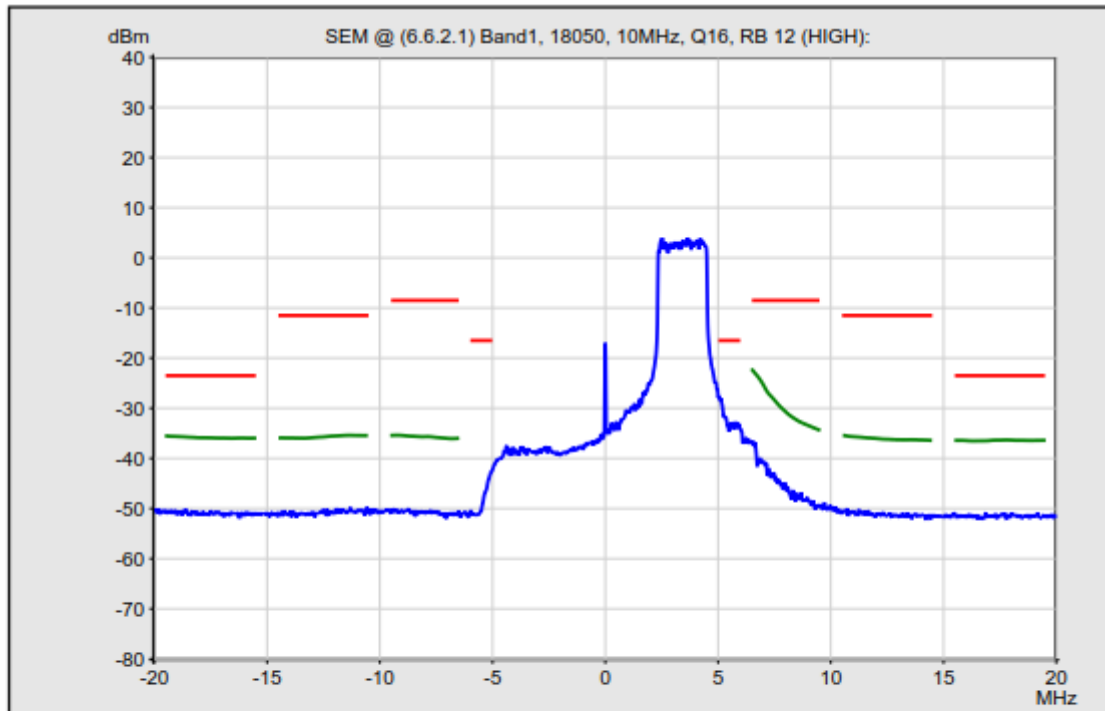


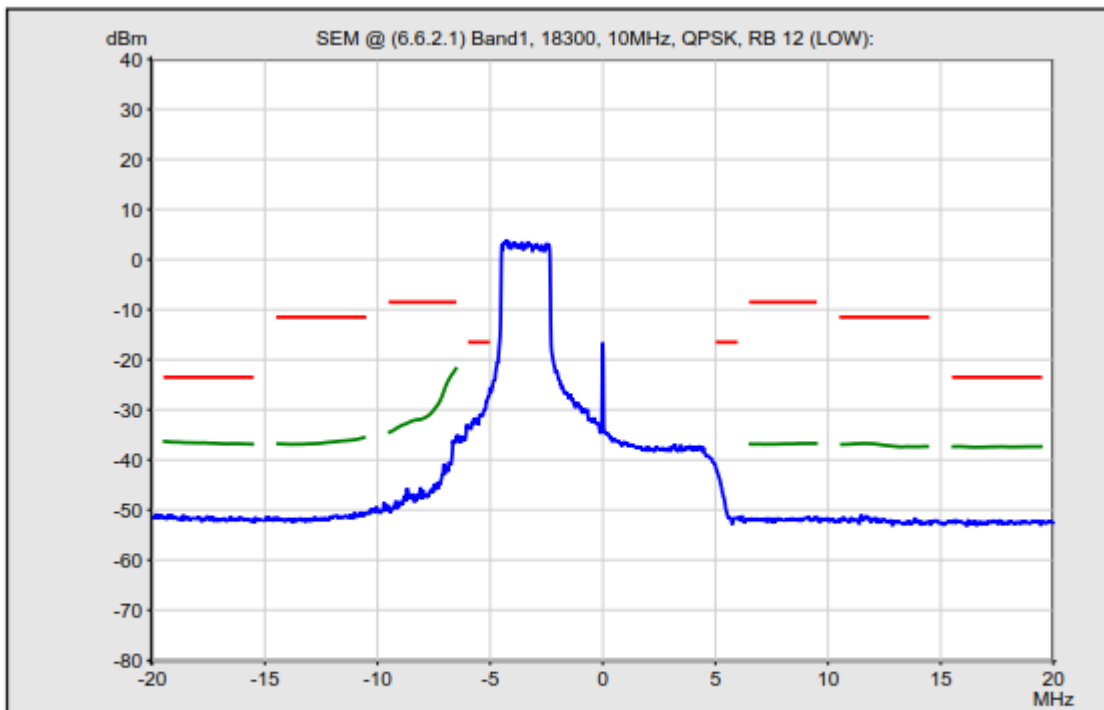
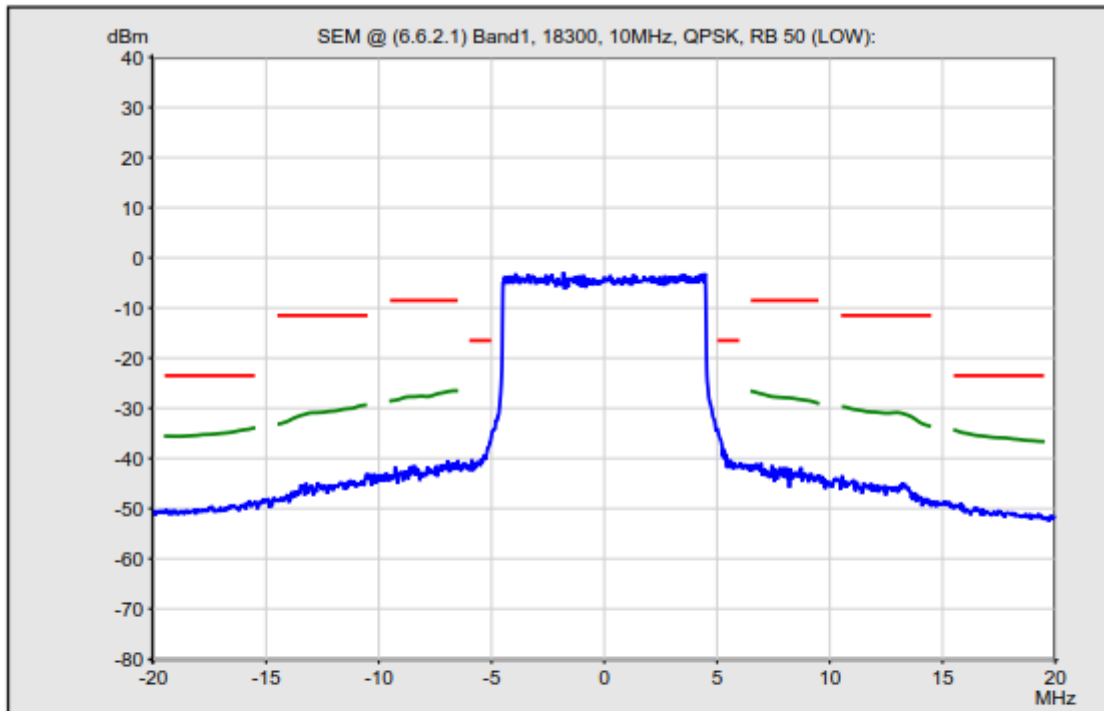
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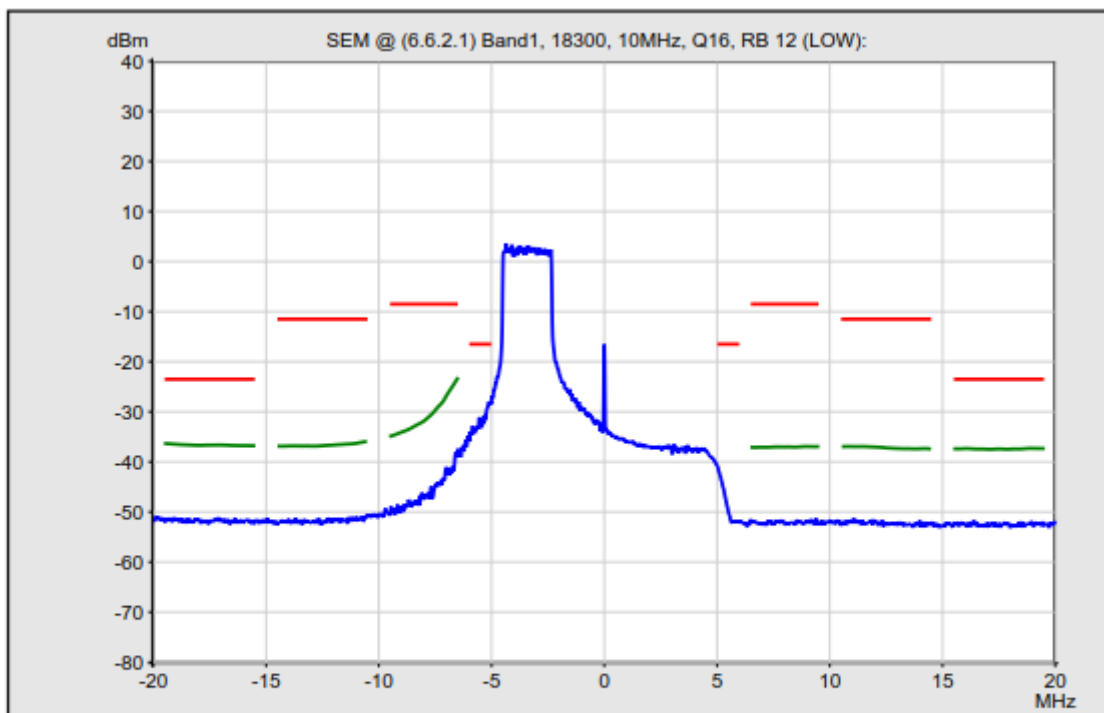
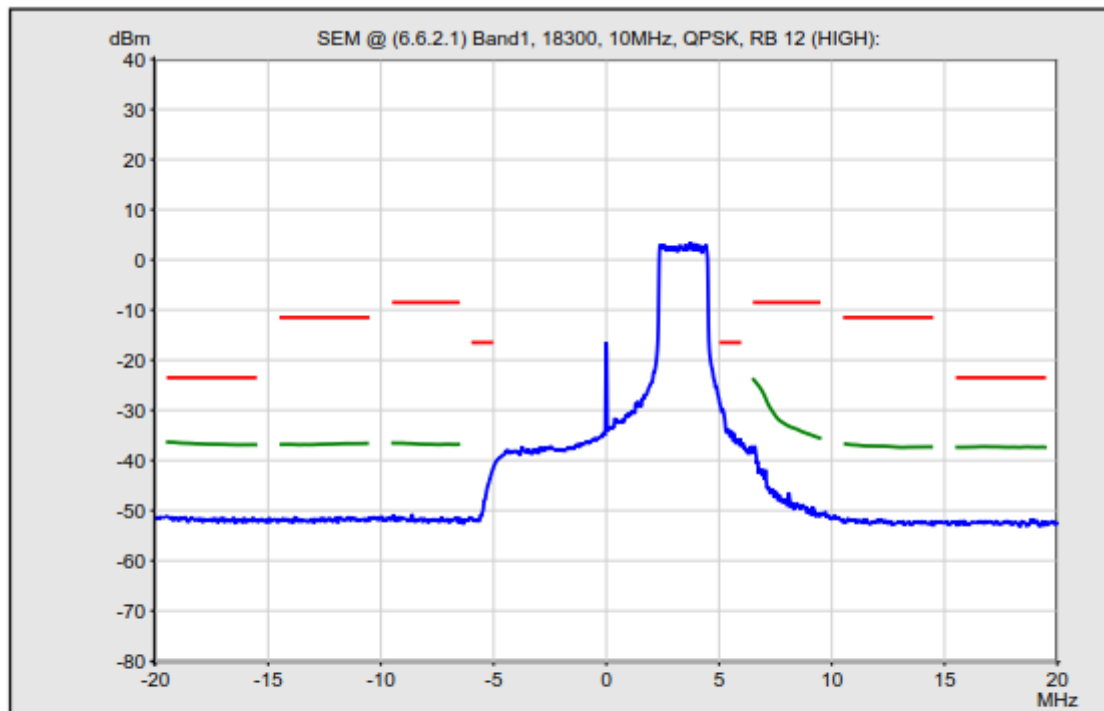


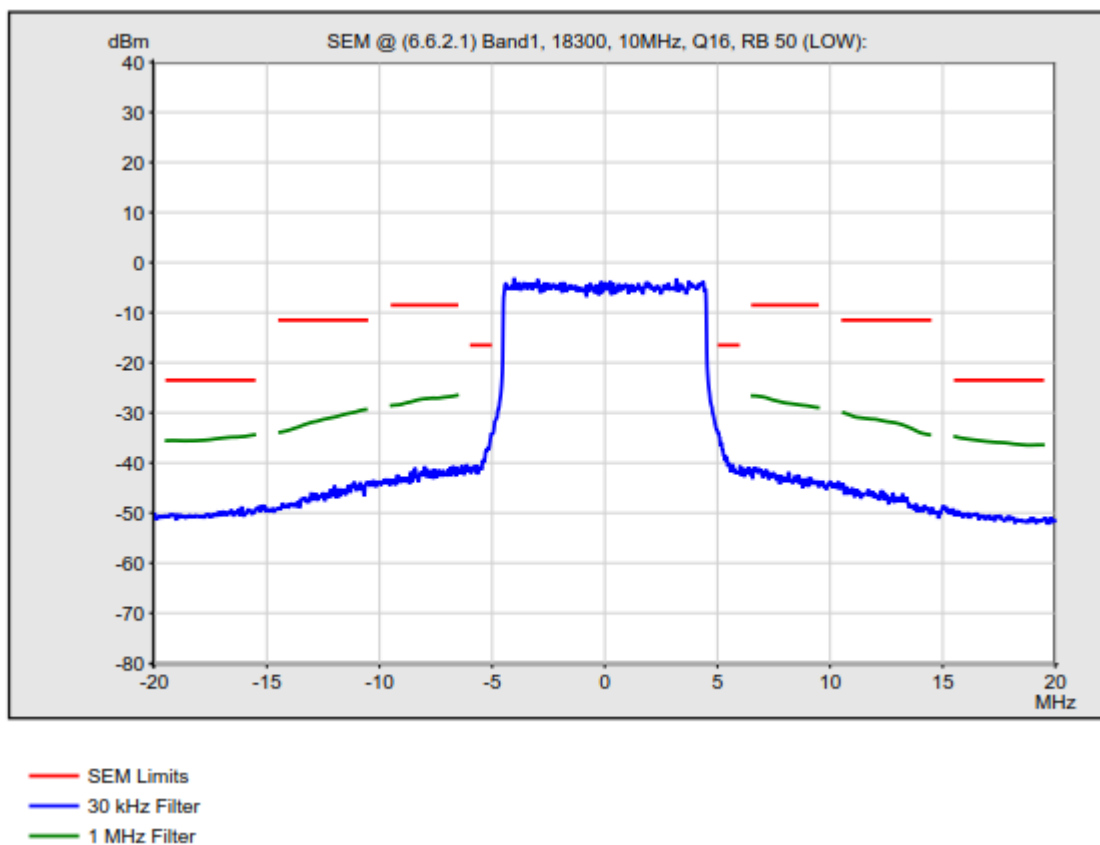
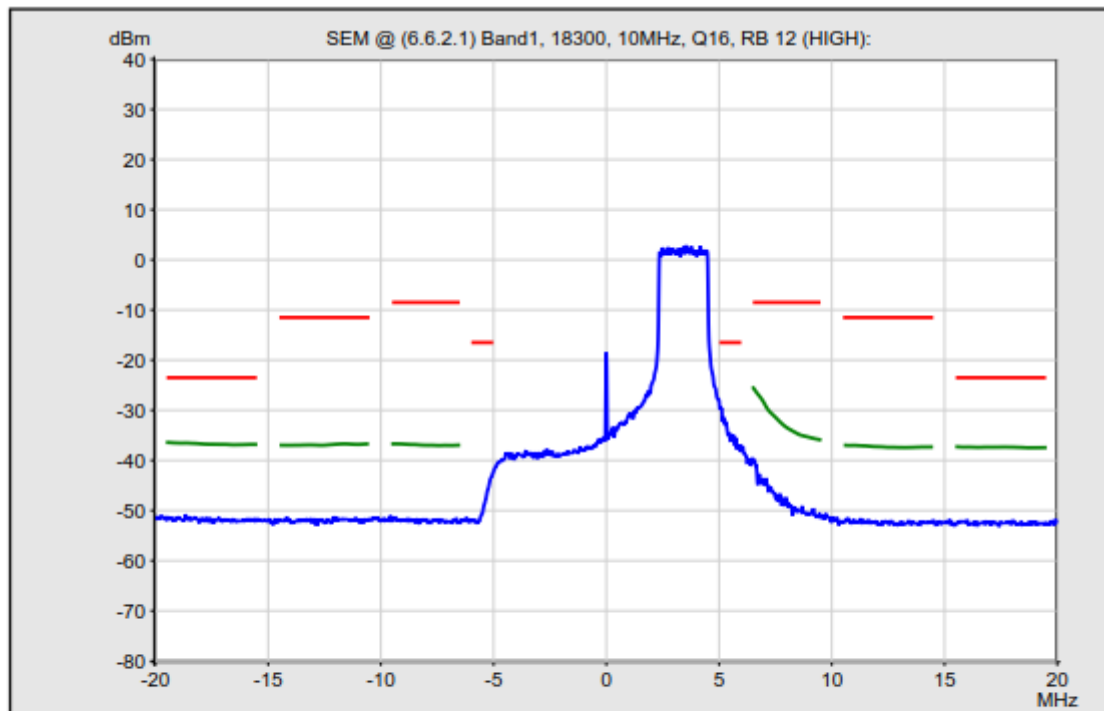


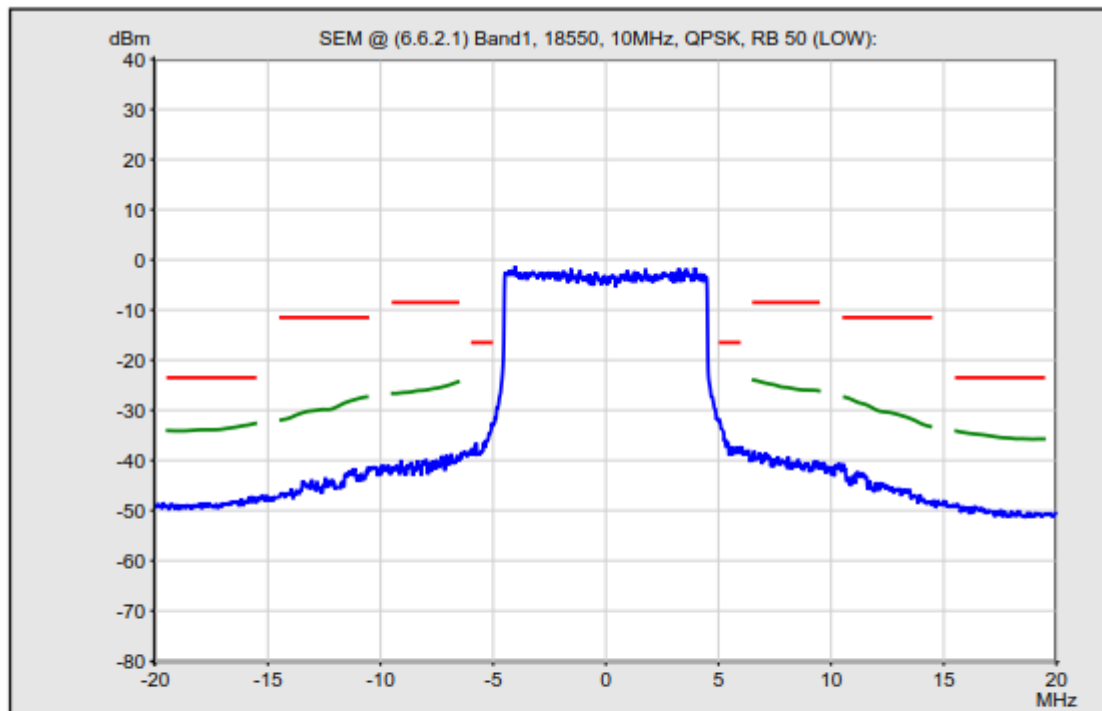




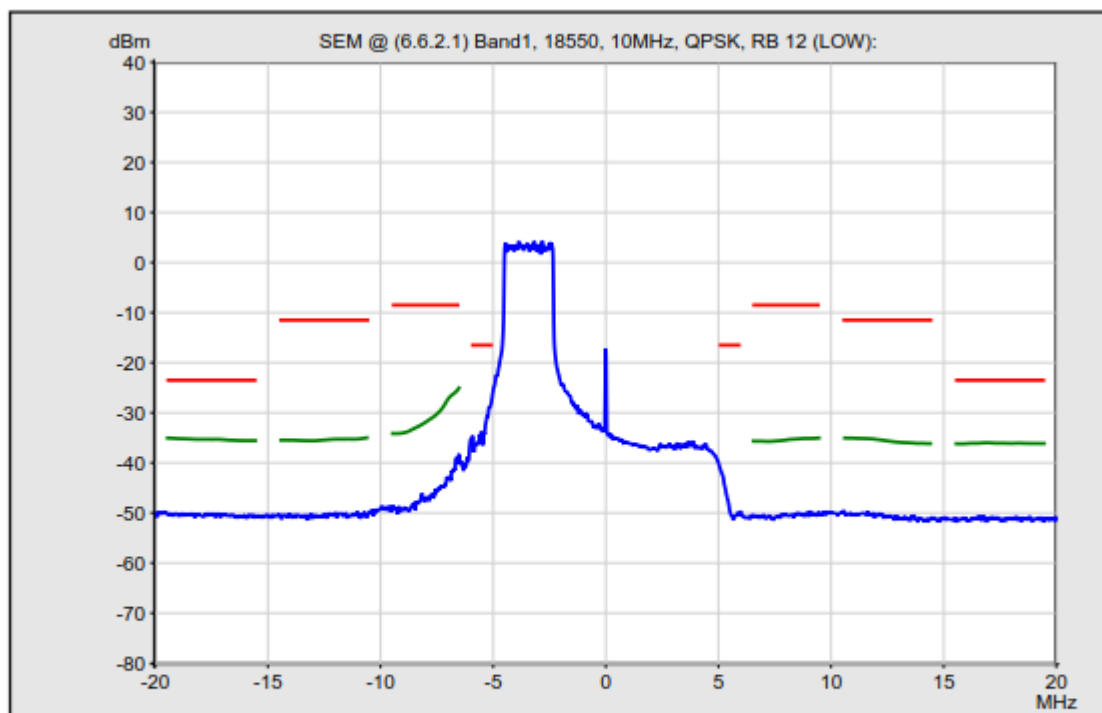




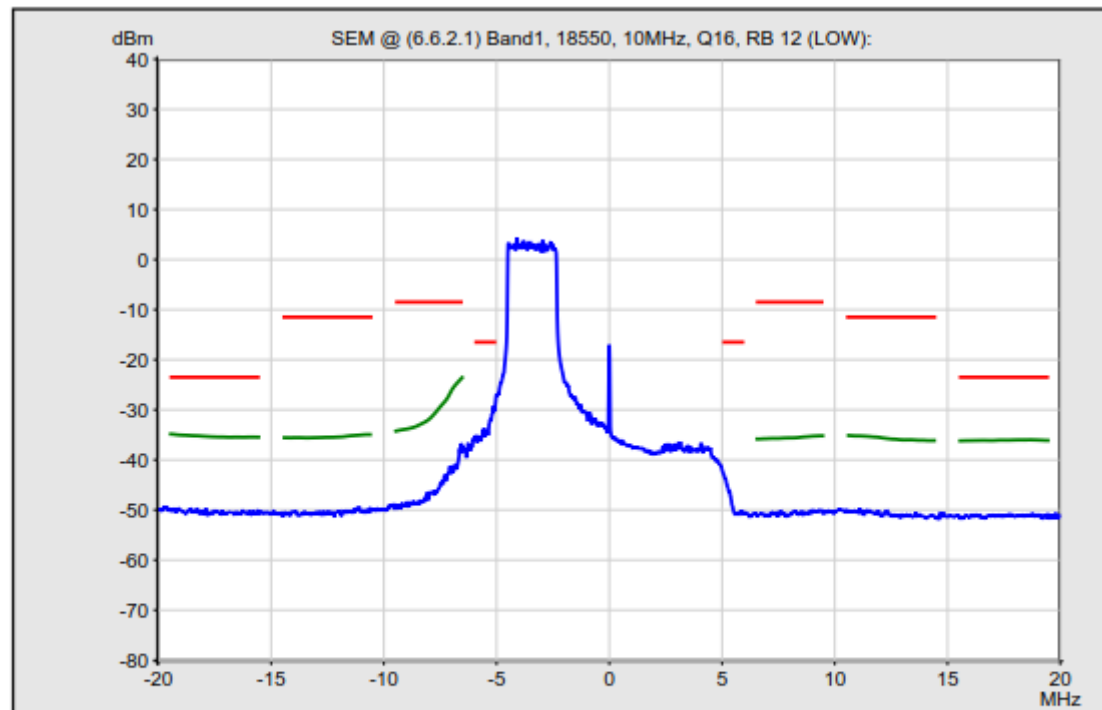
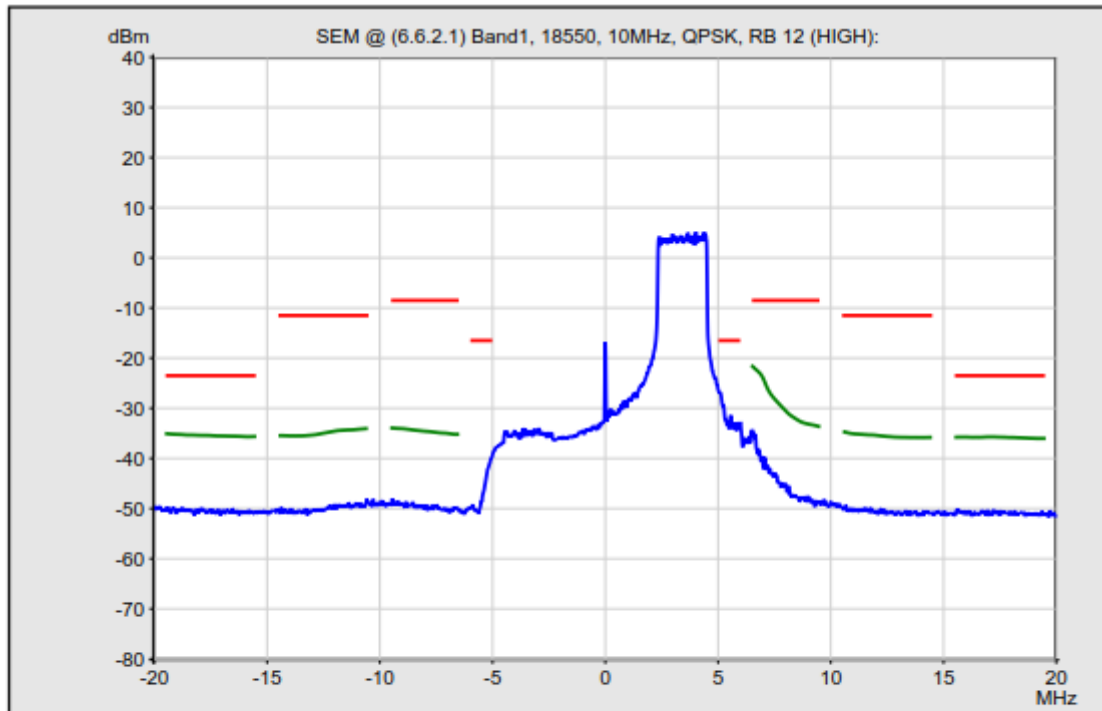


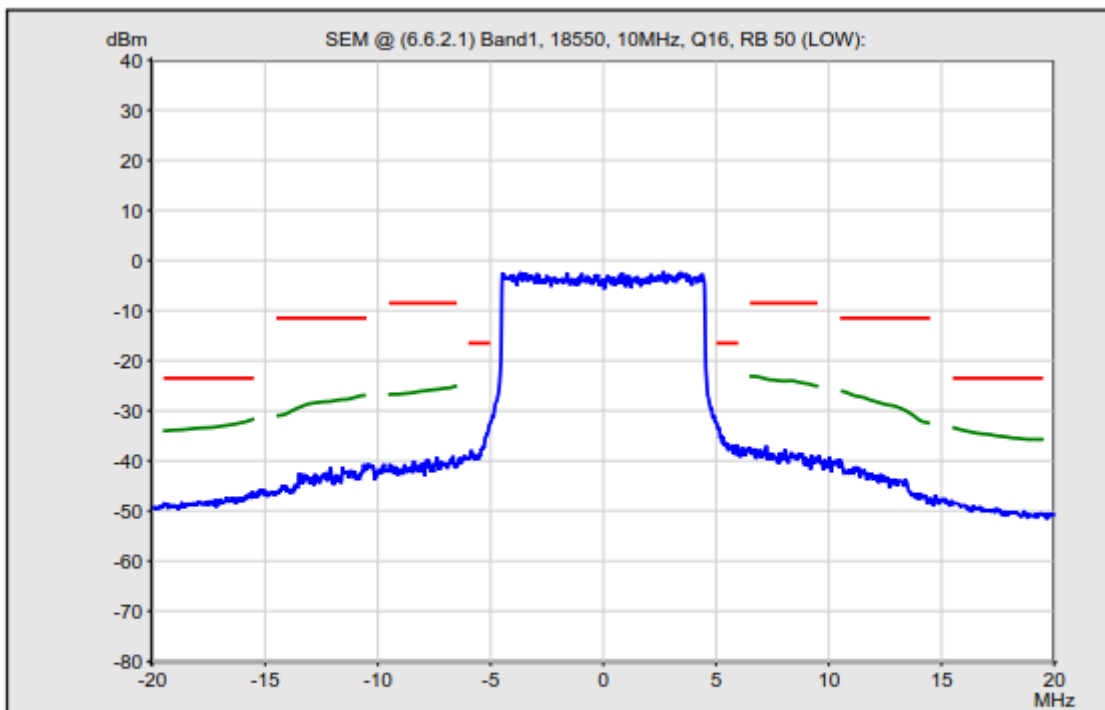
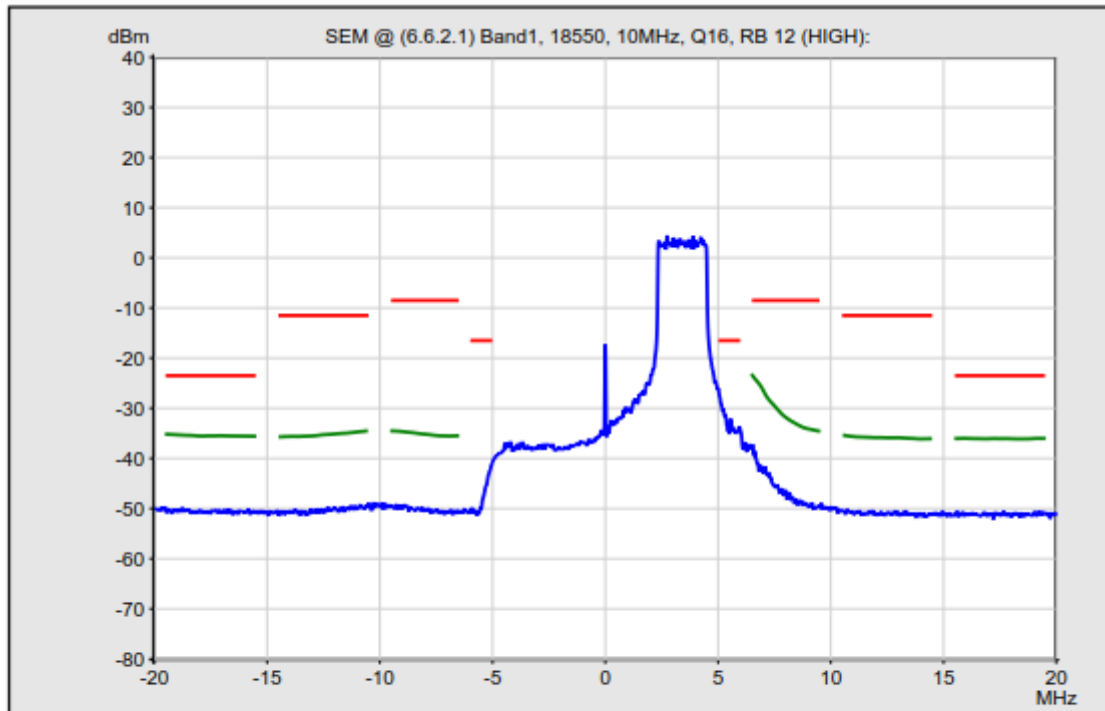


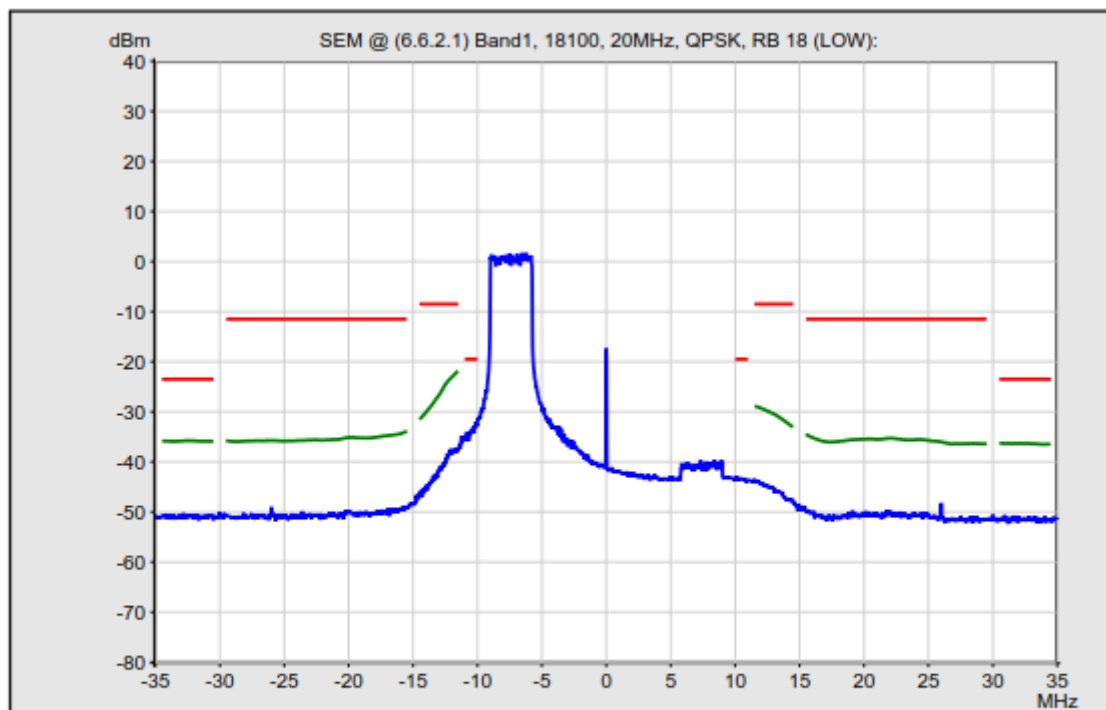
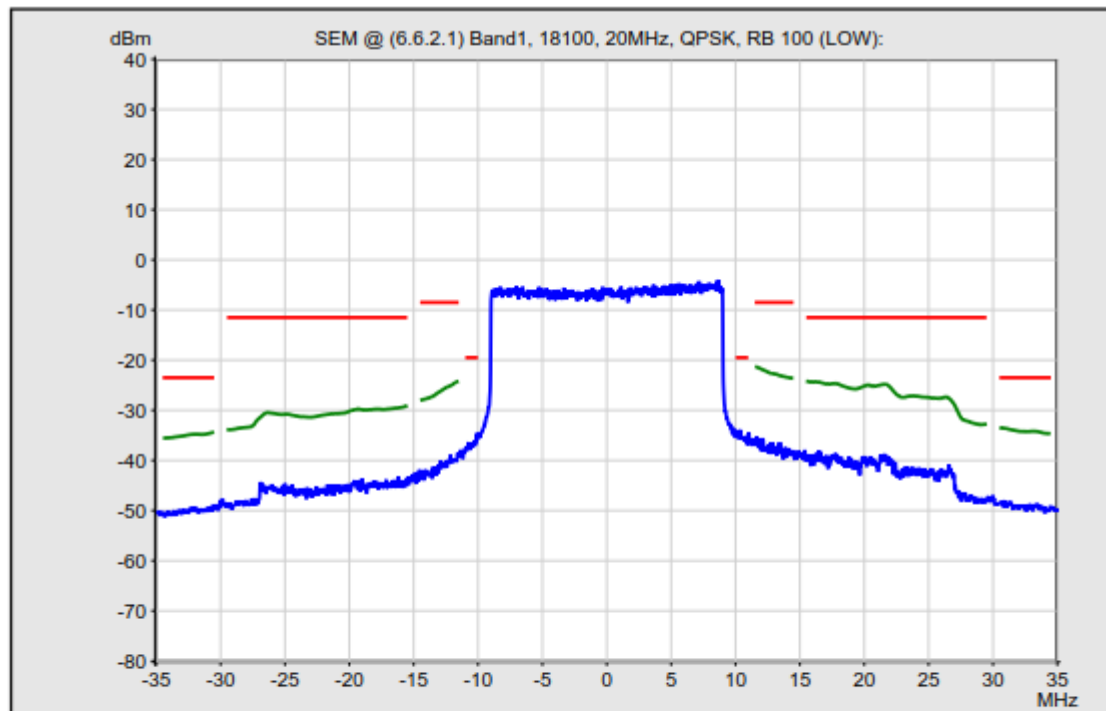
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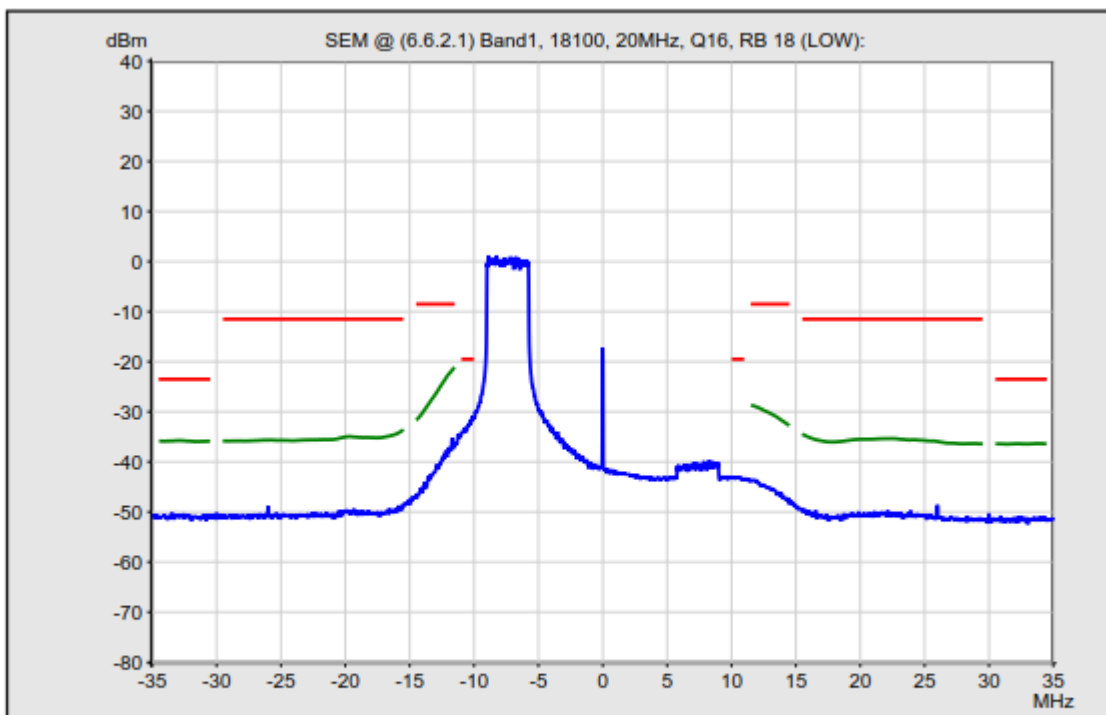
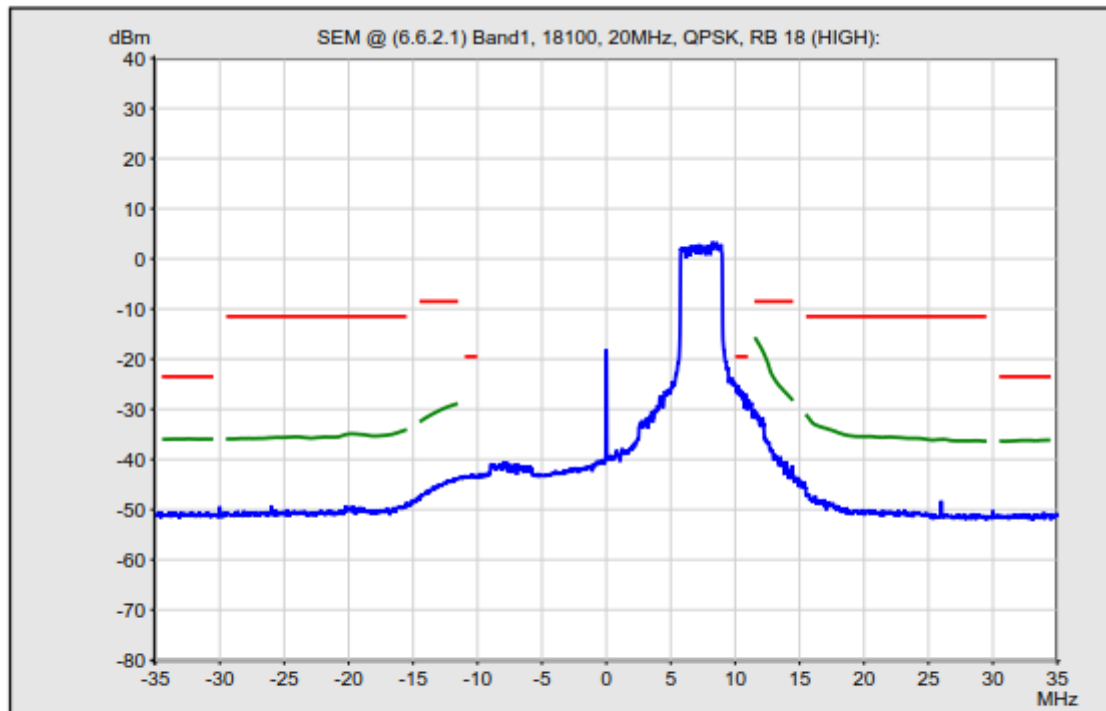


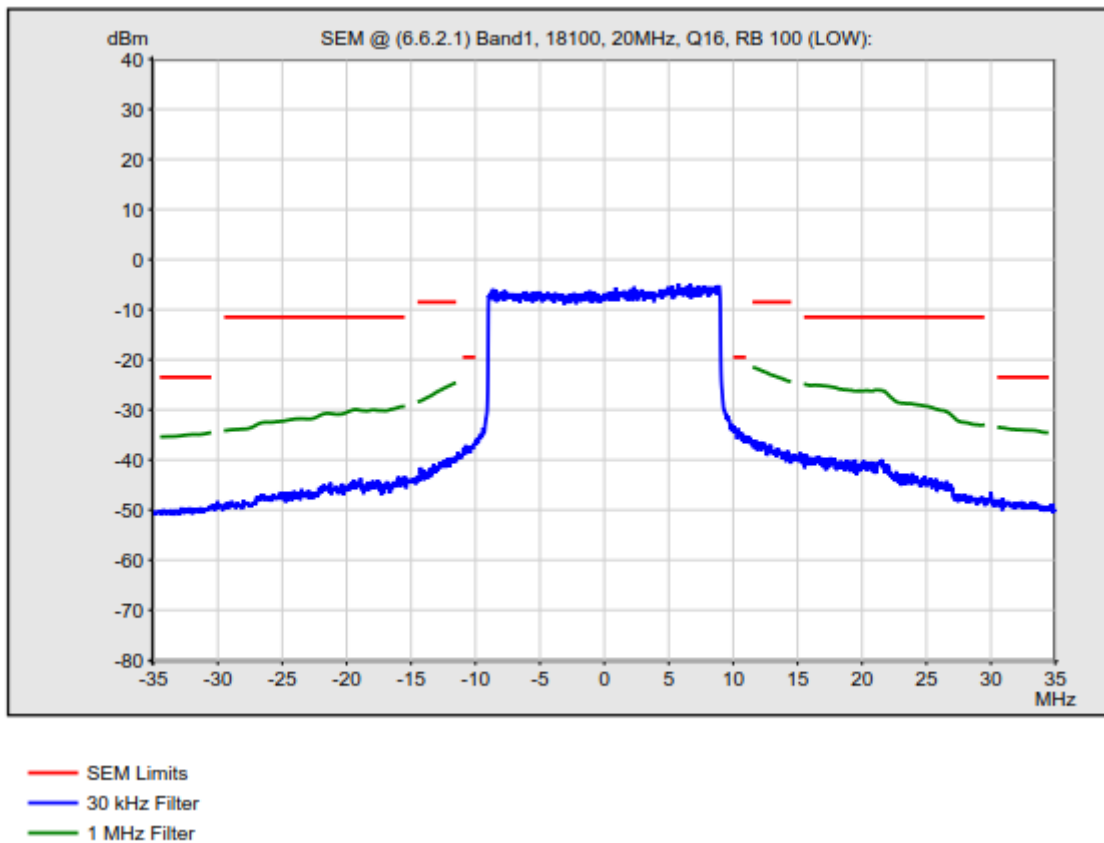
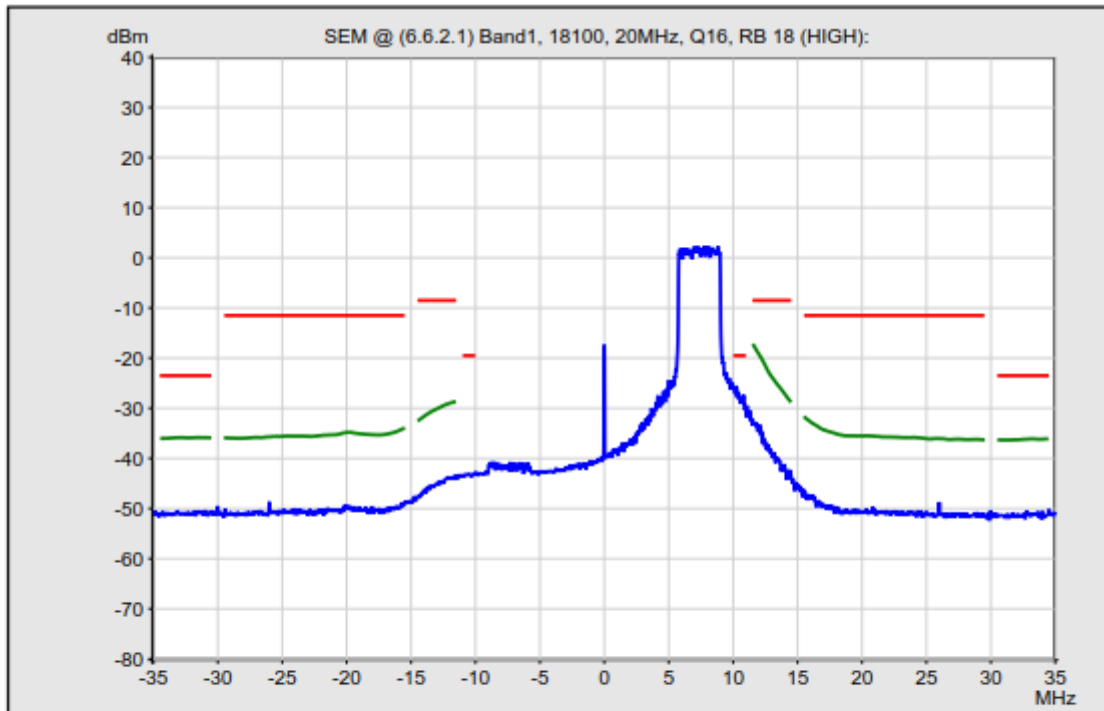
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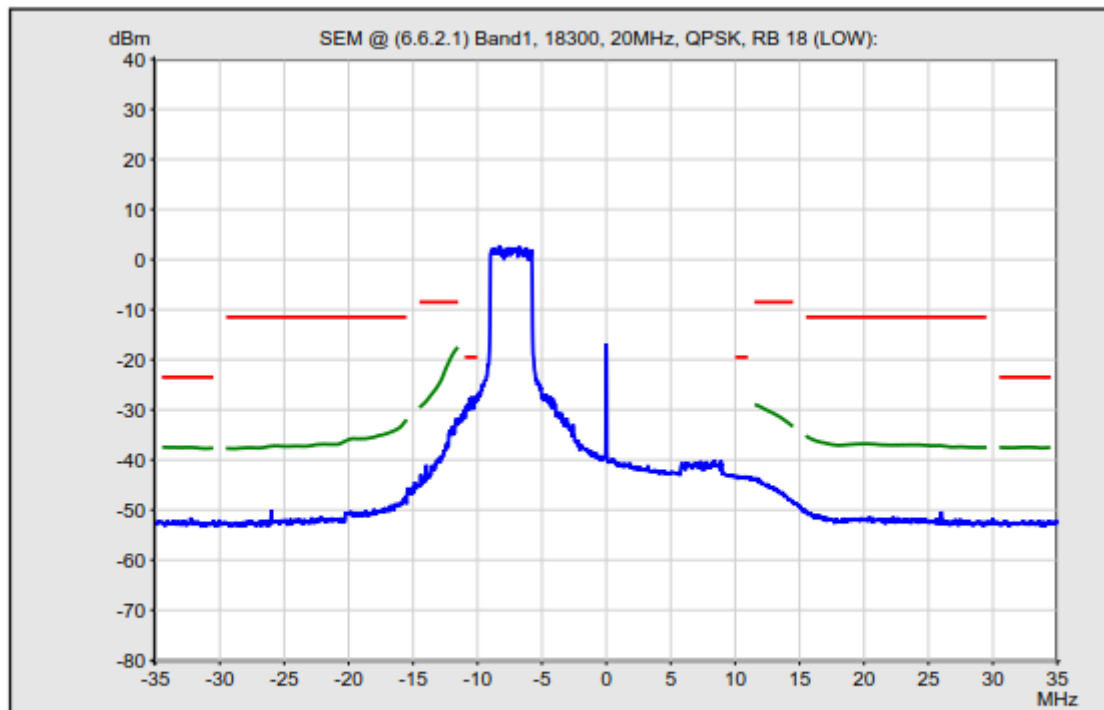
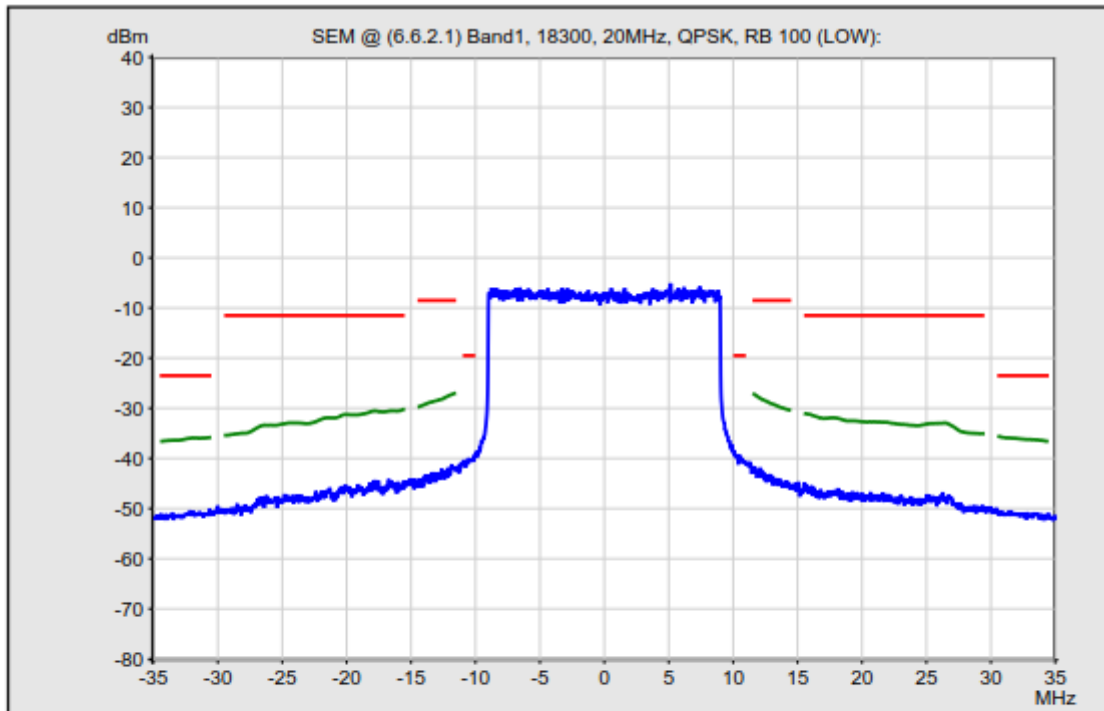


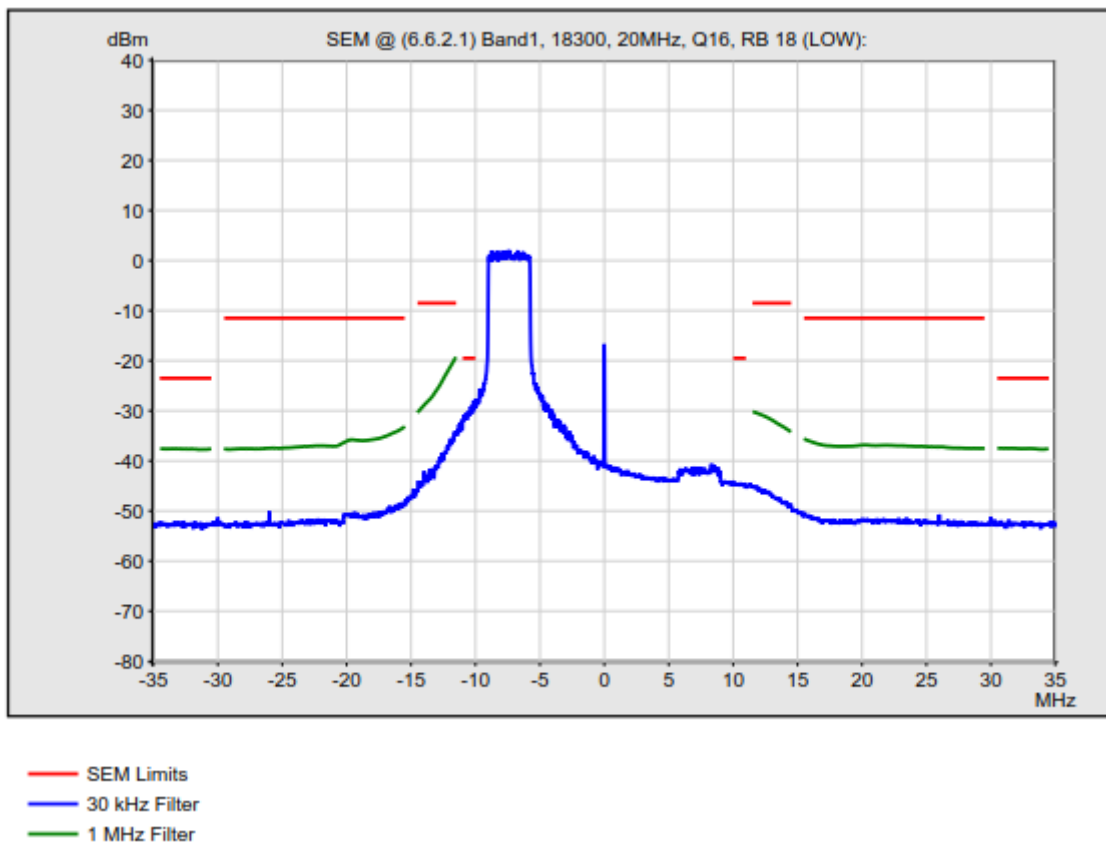
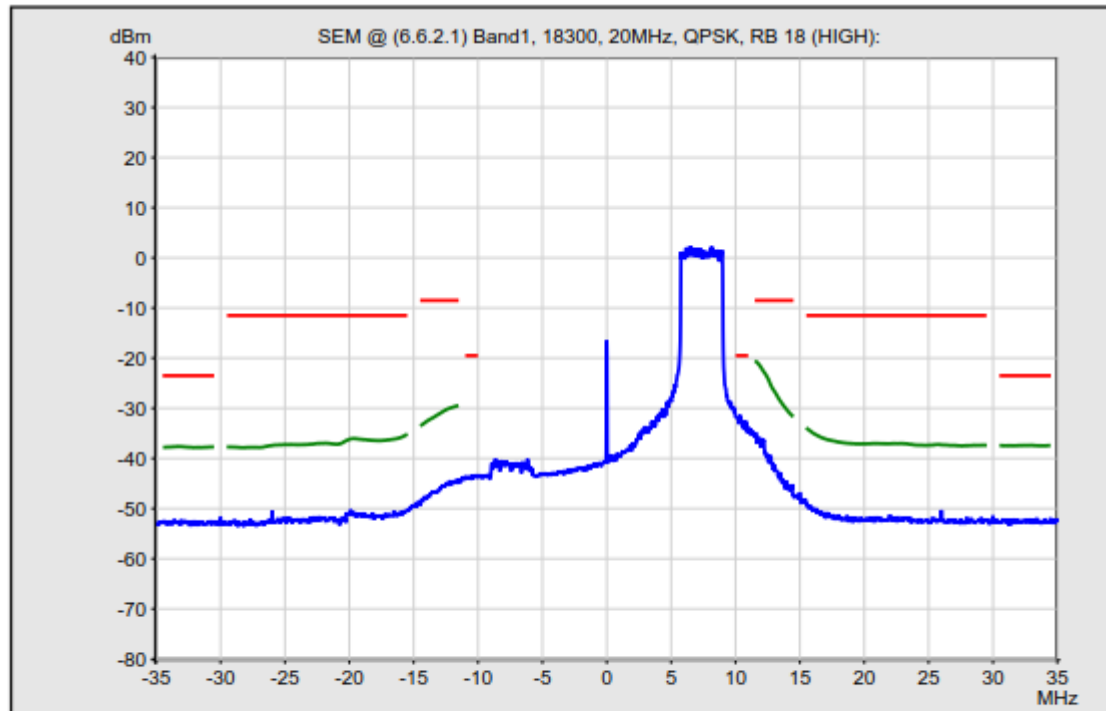


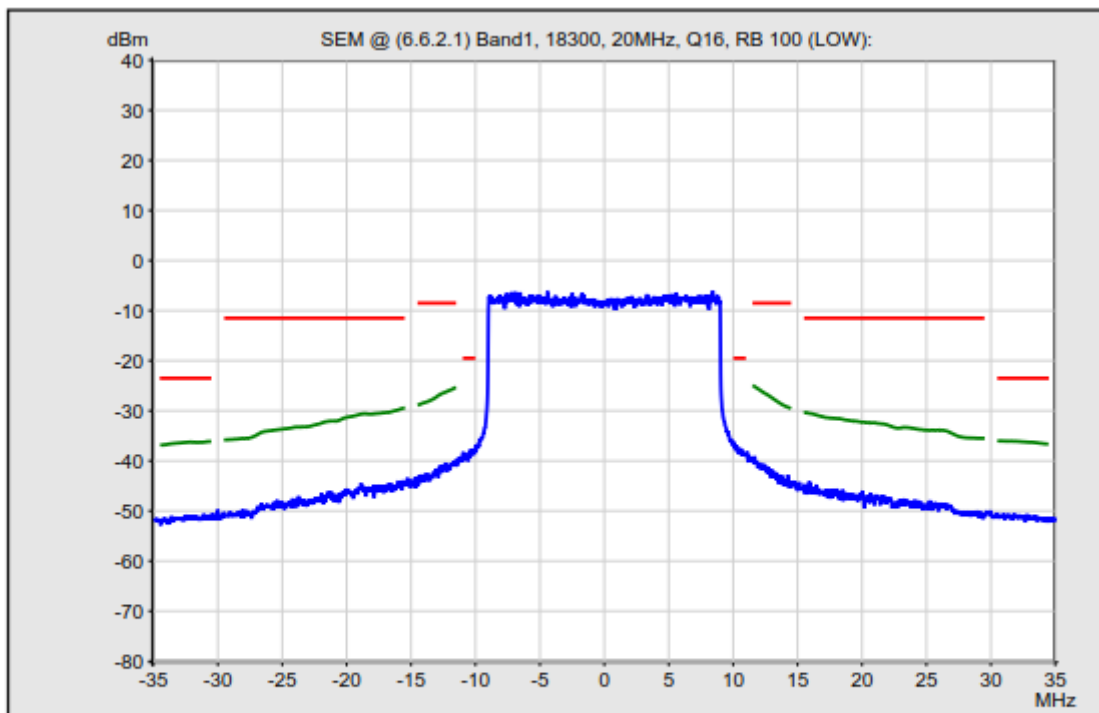
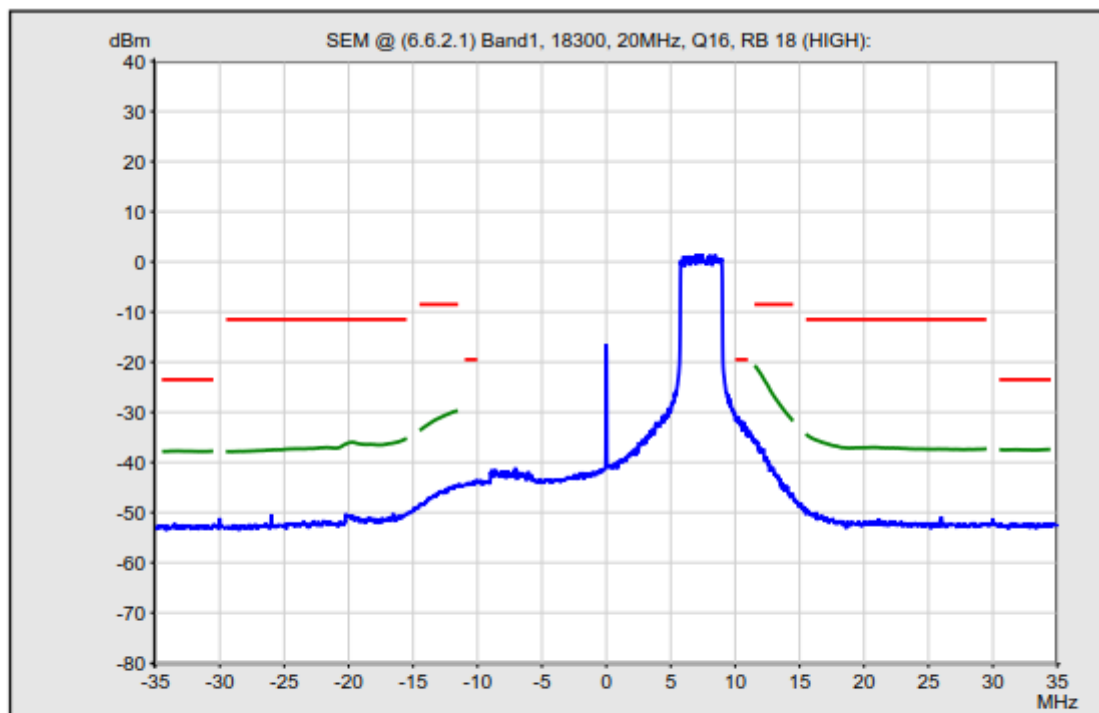


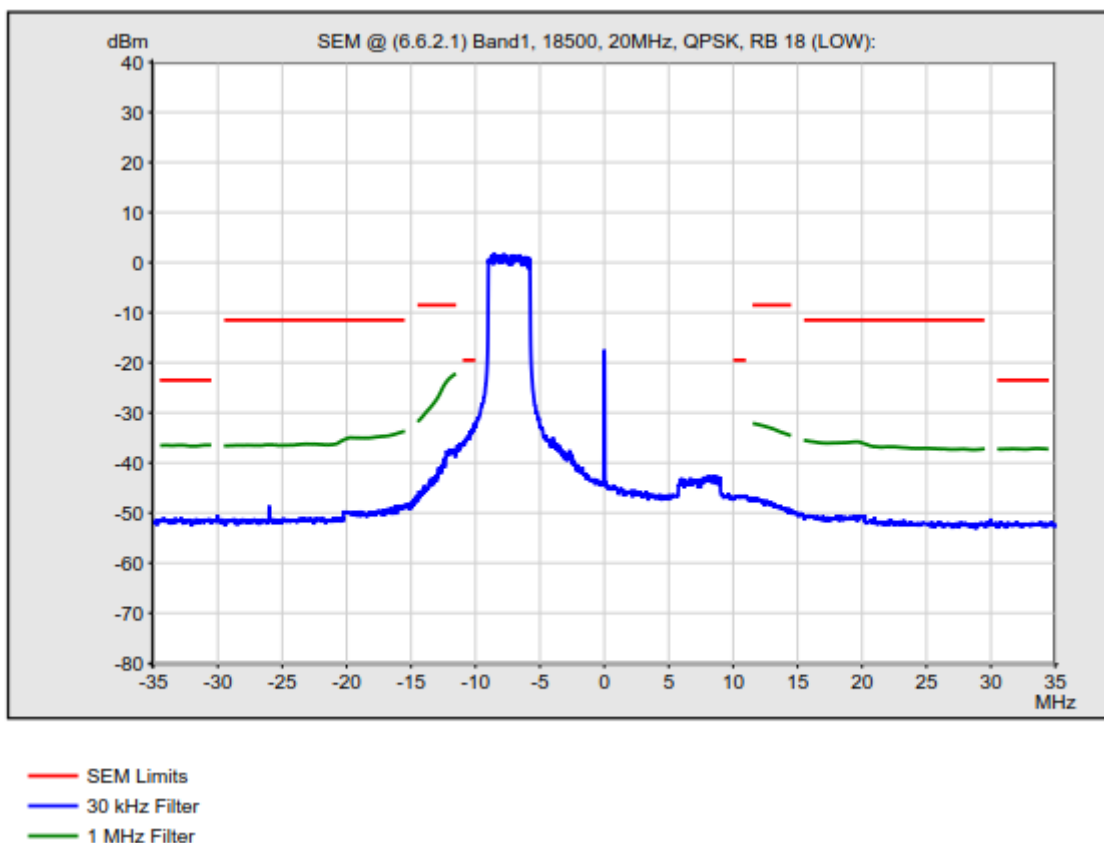
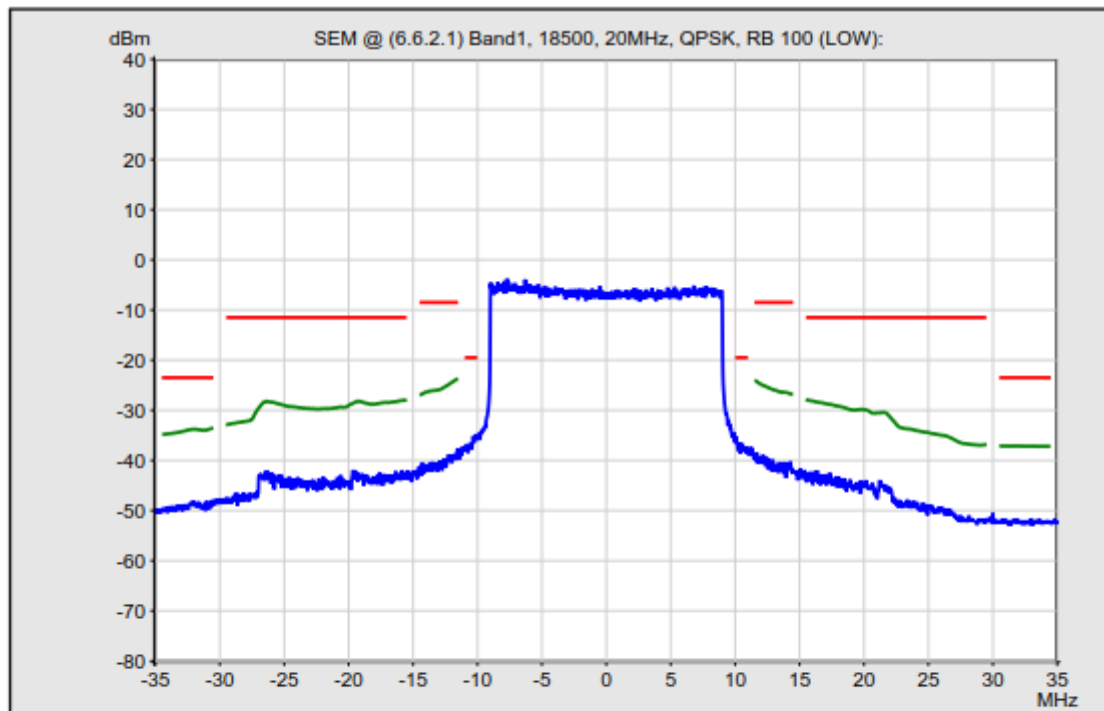


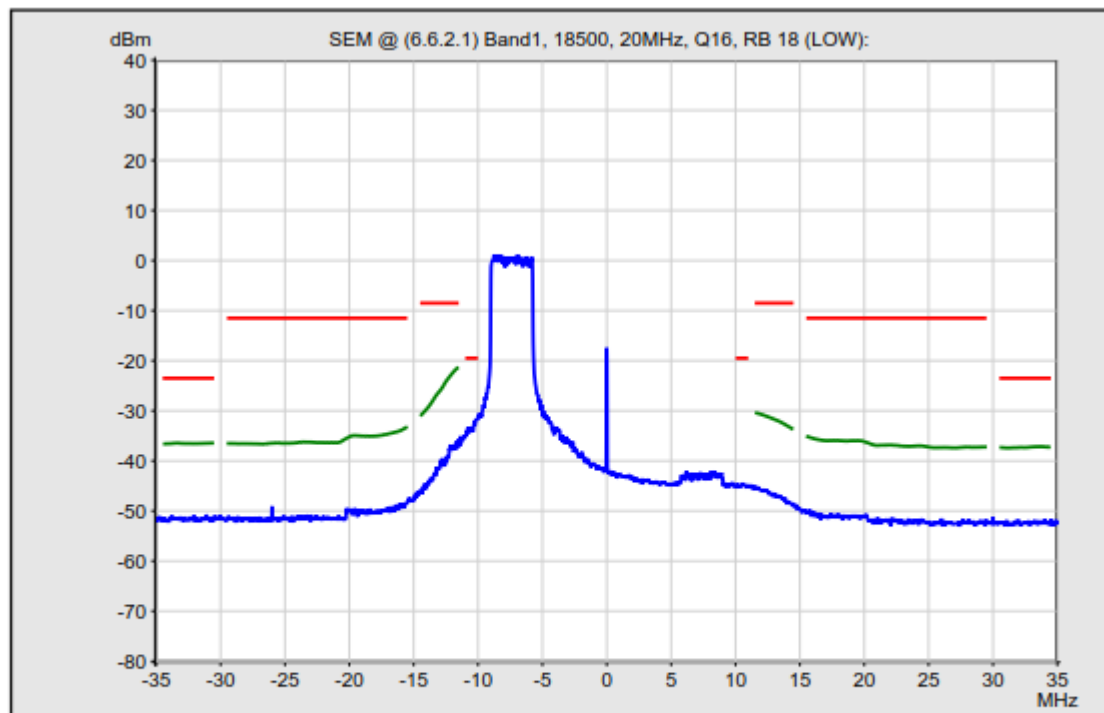
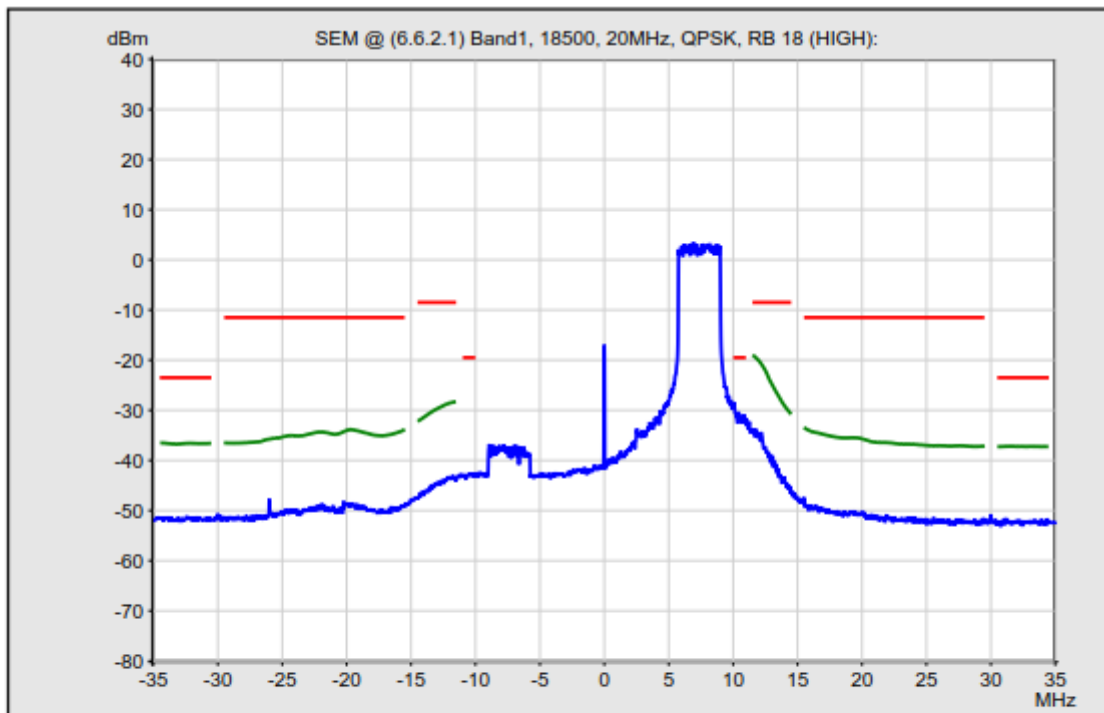


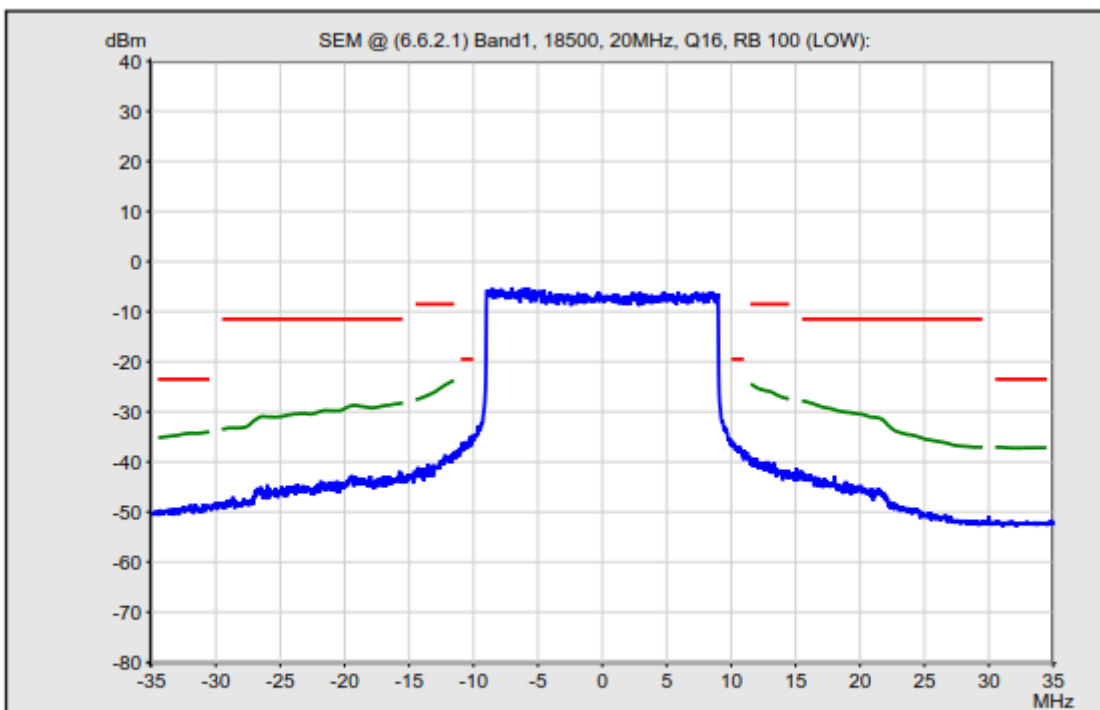
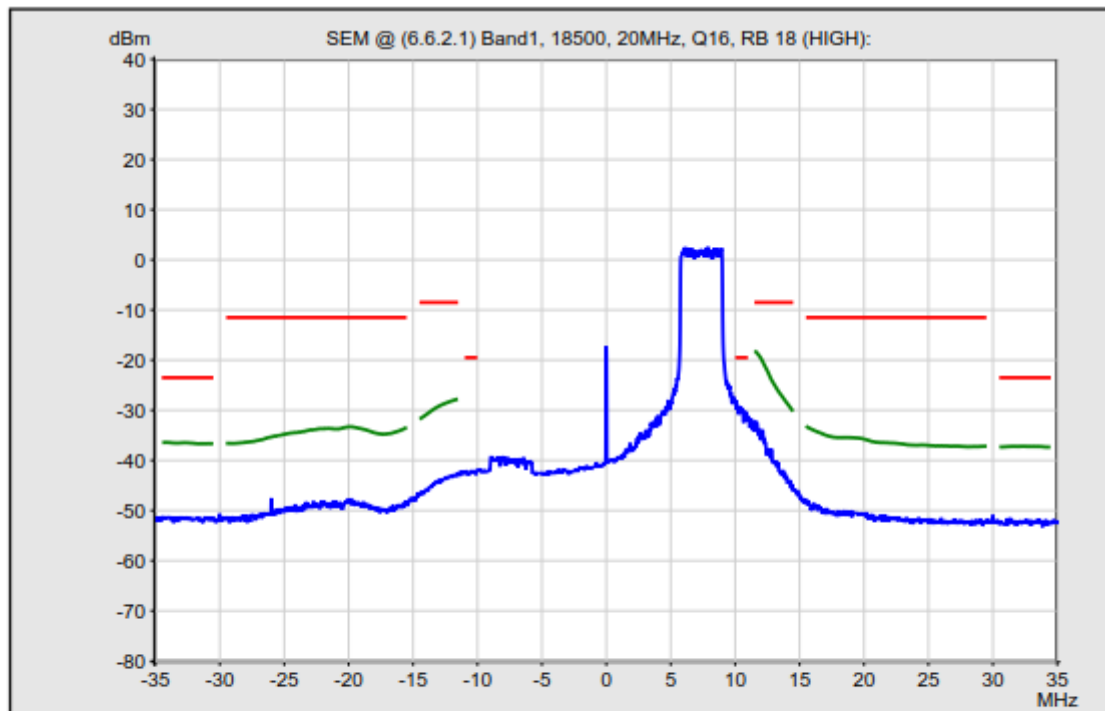




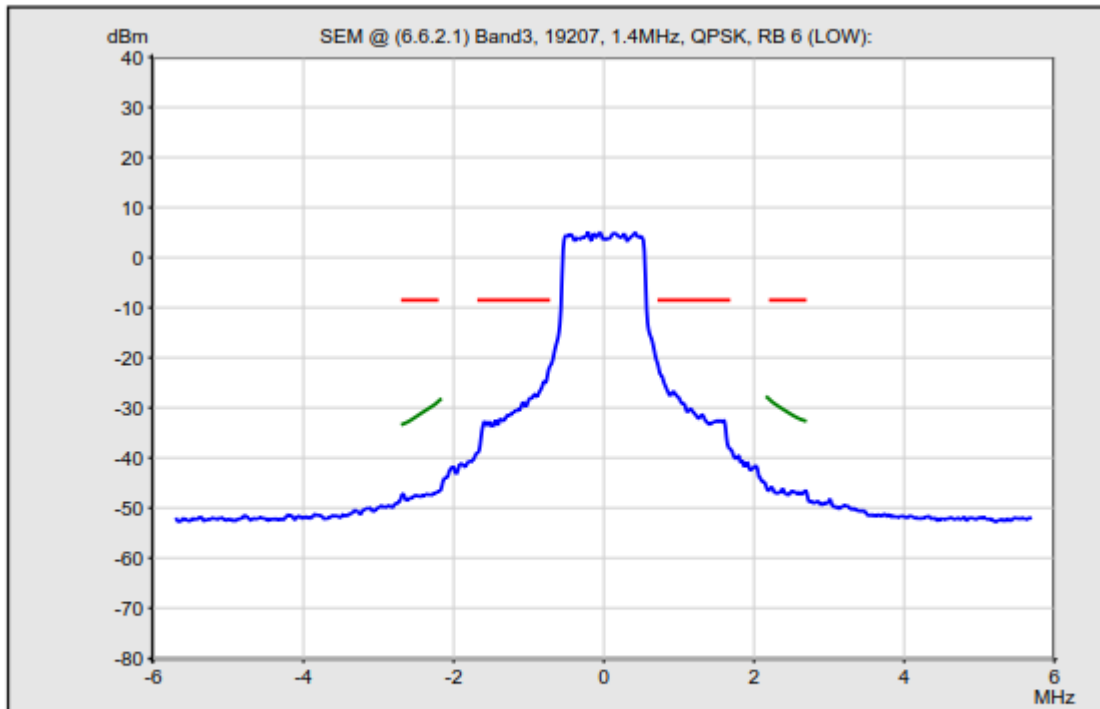




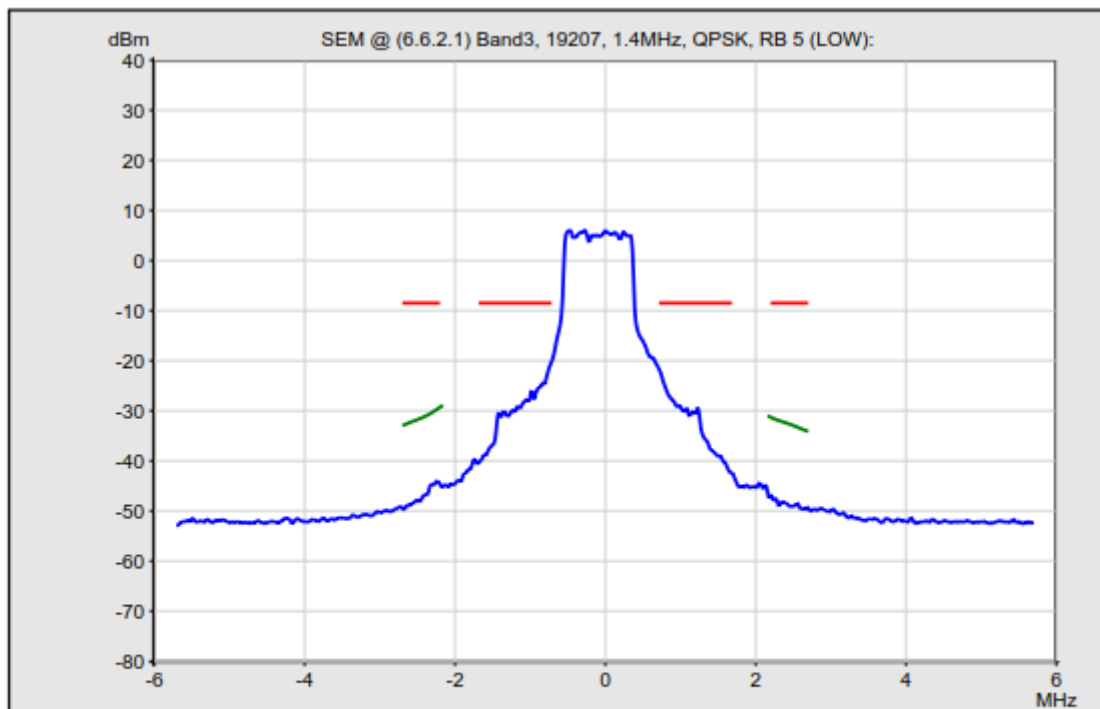




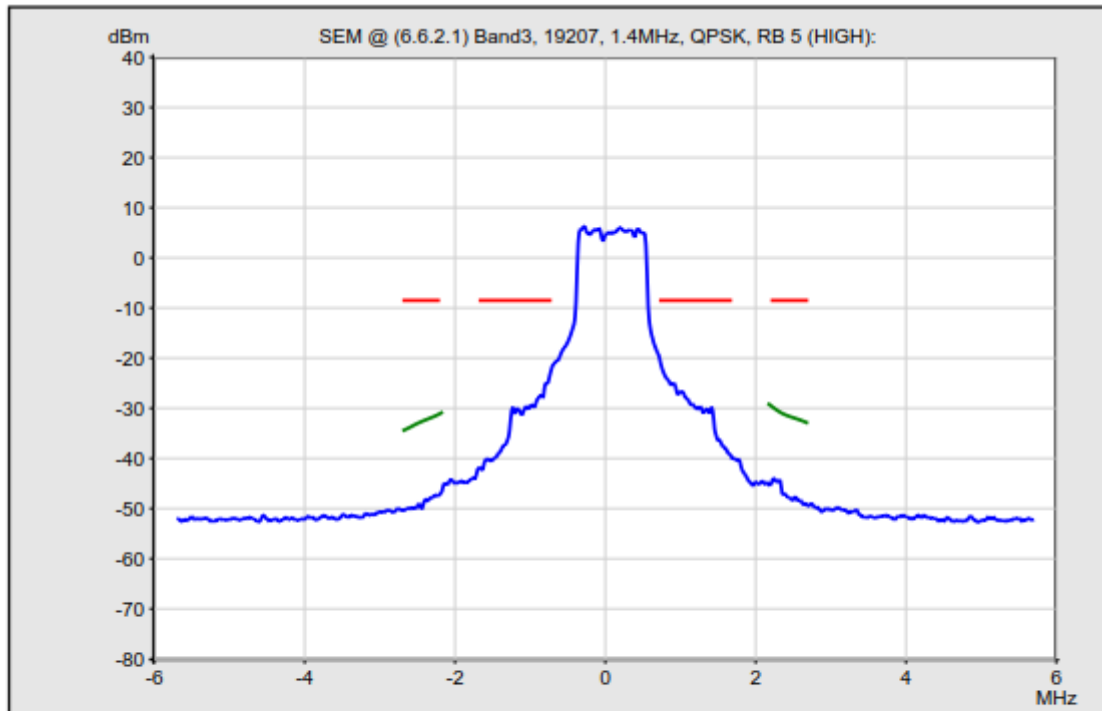
Band 3



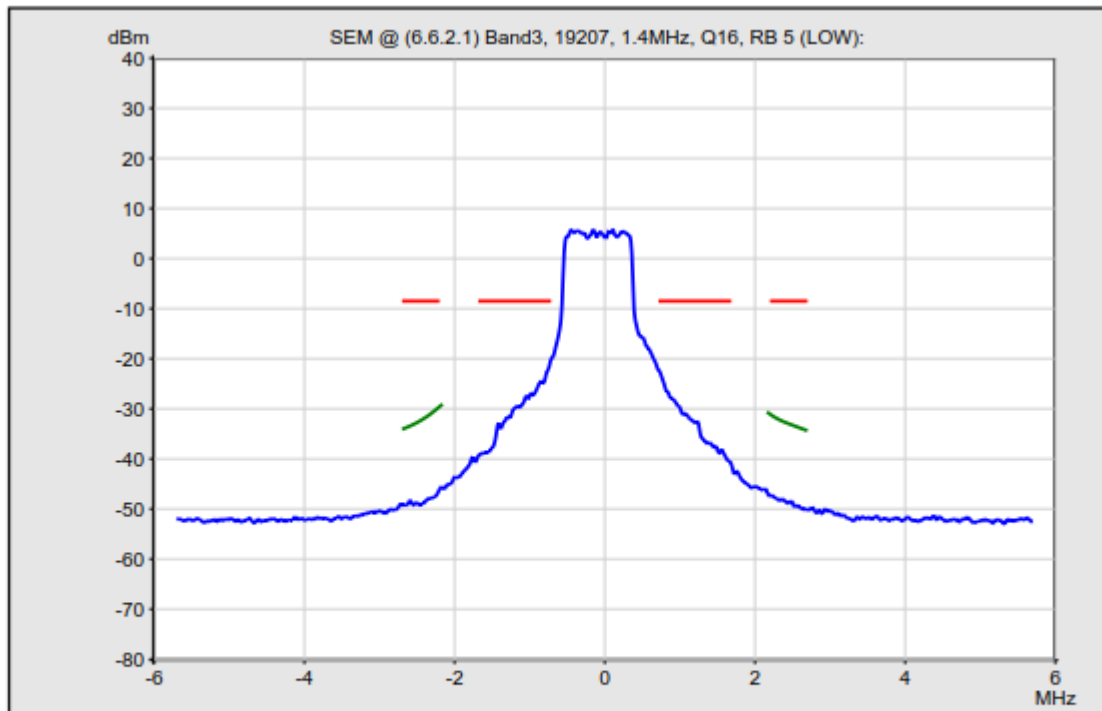
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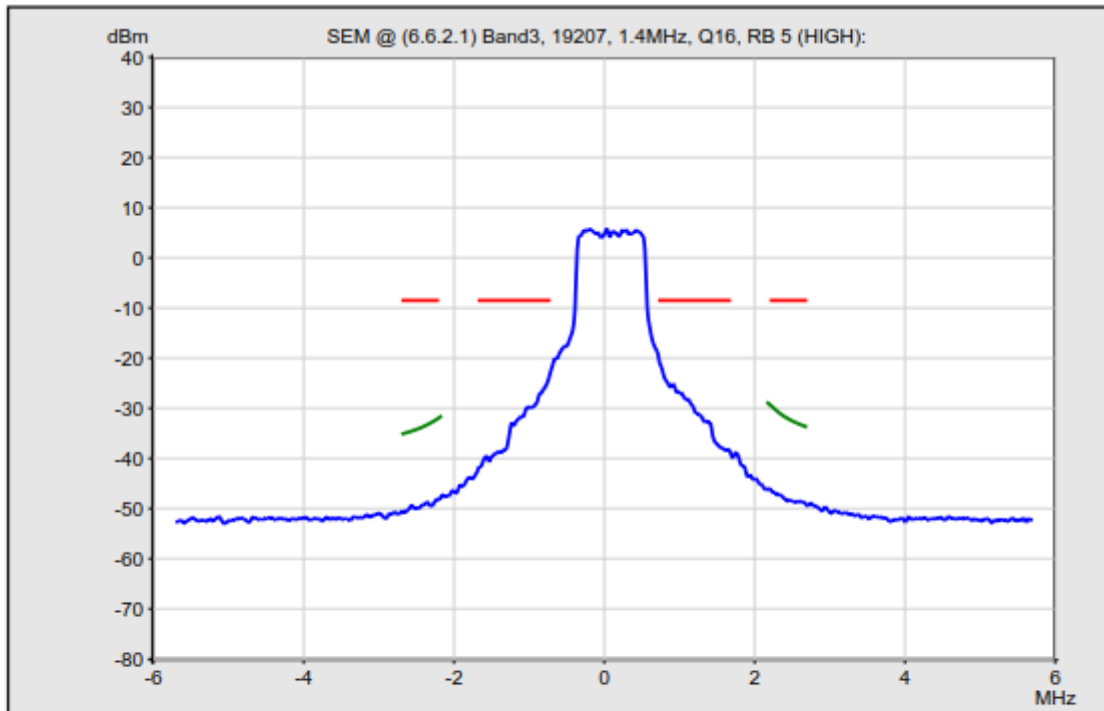
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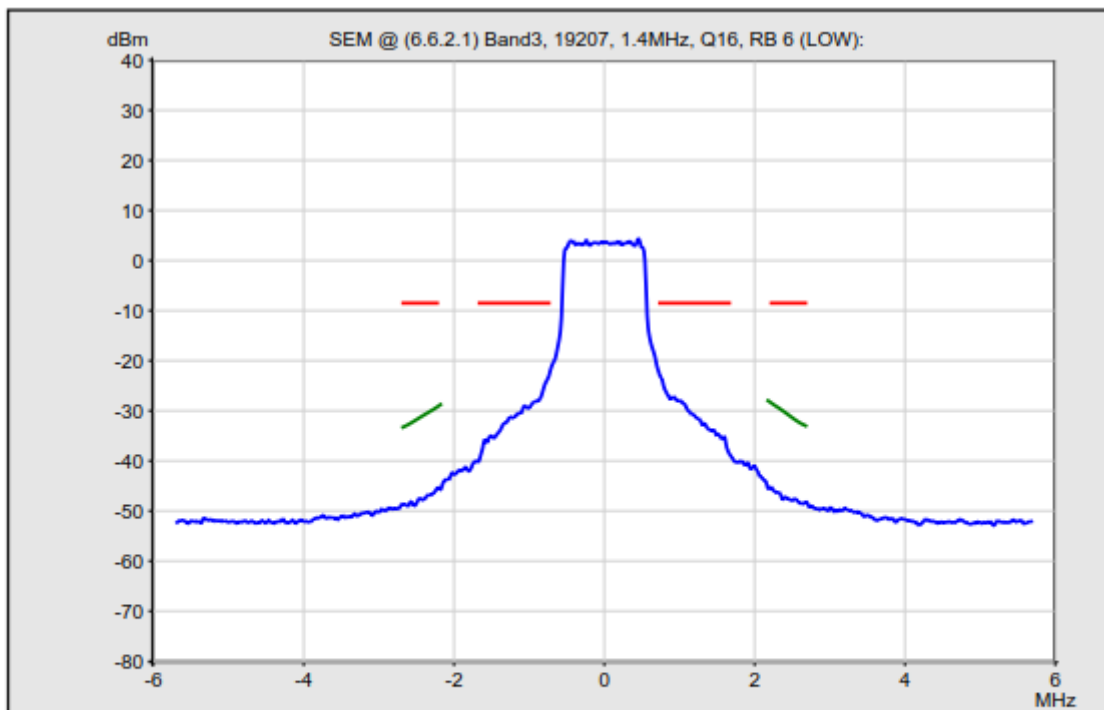
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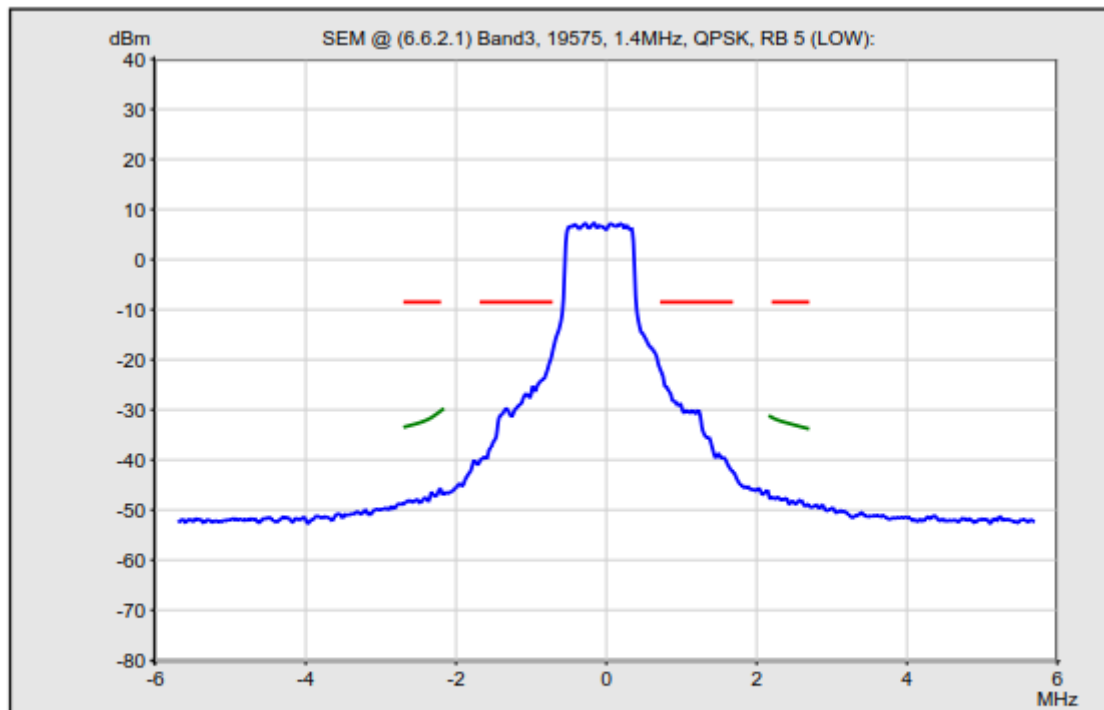
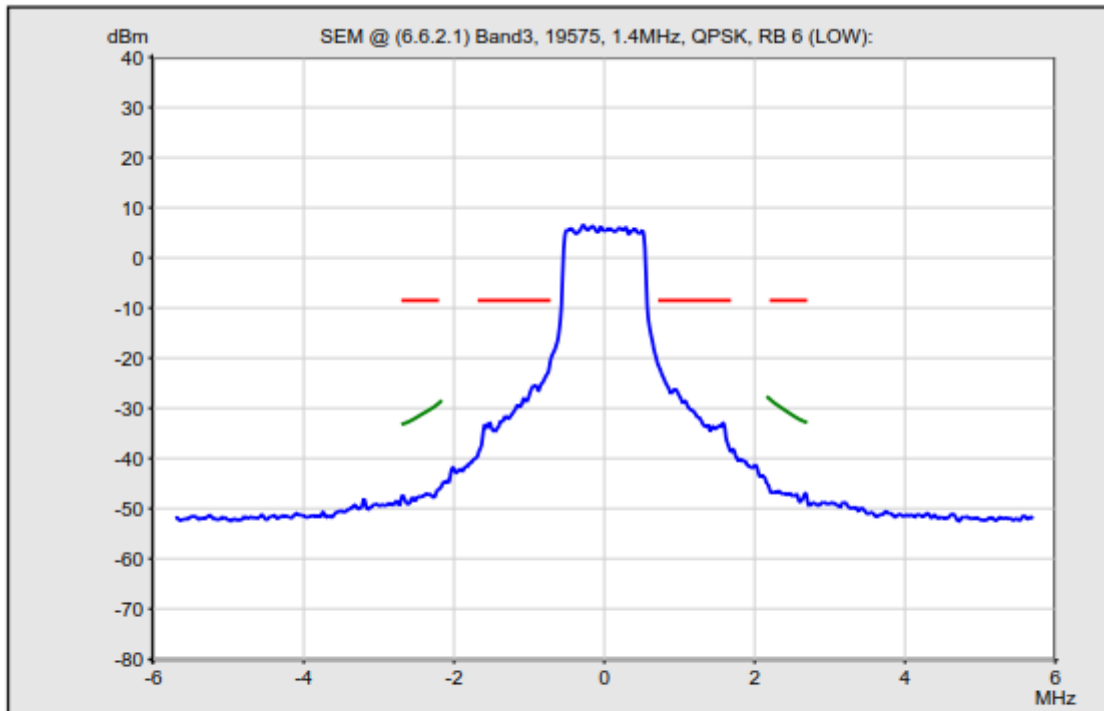
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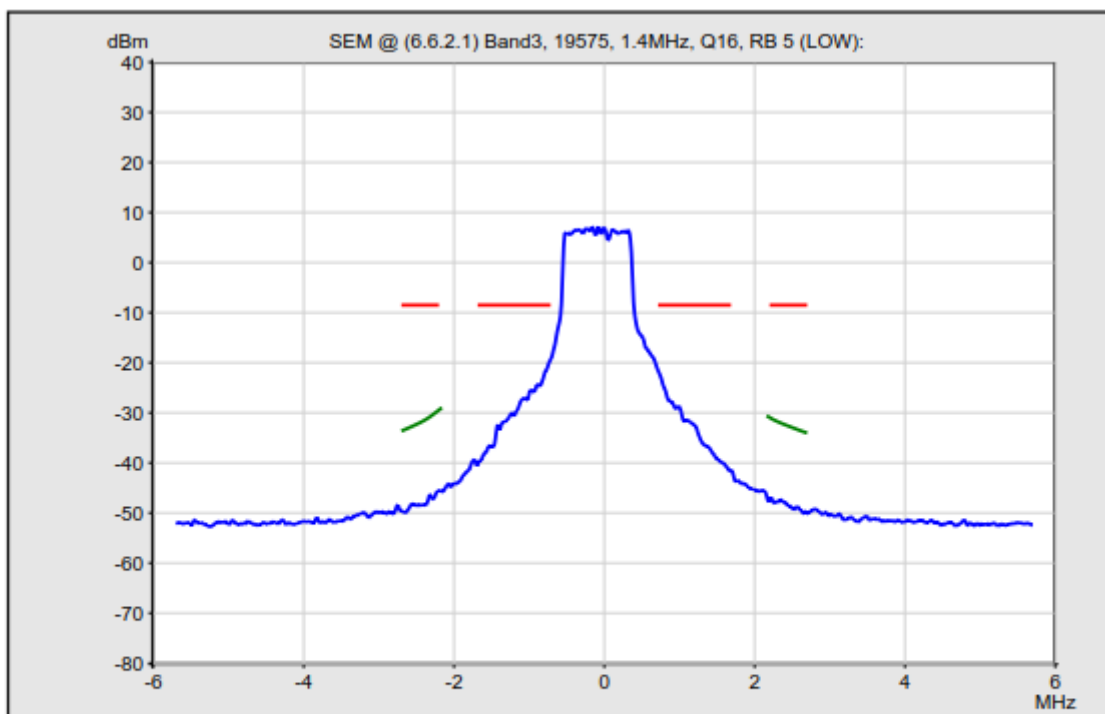
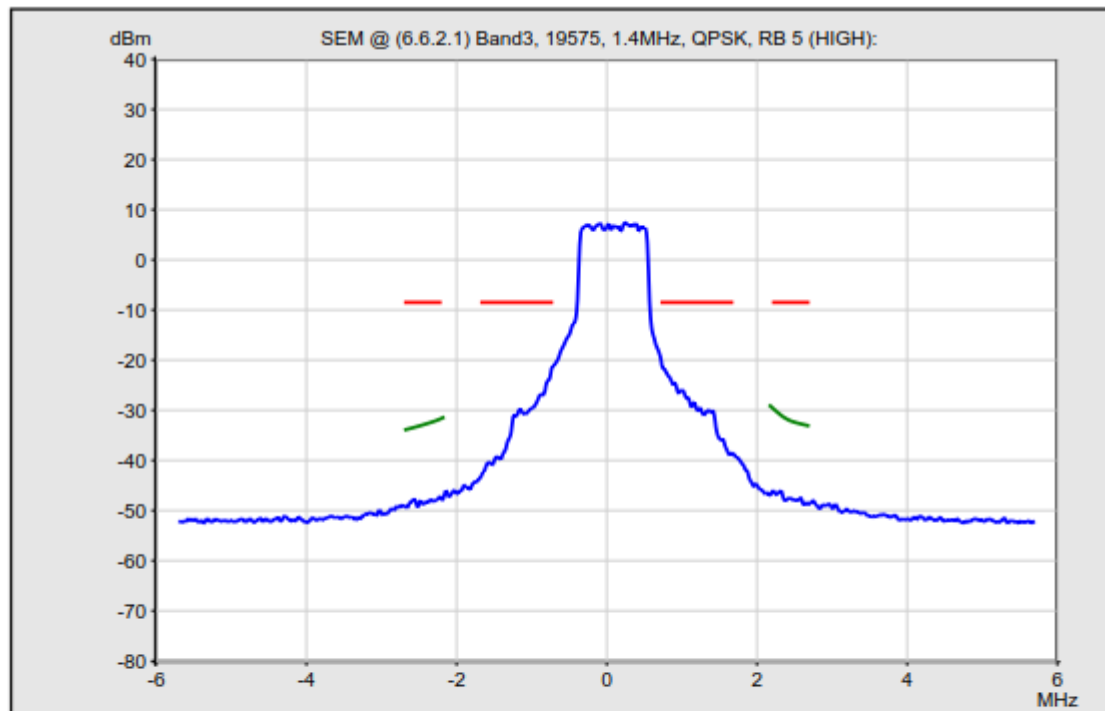


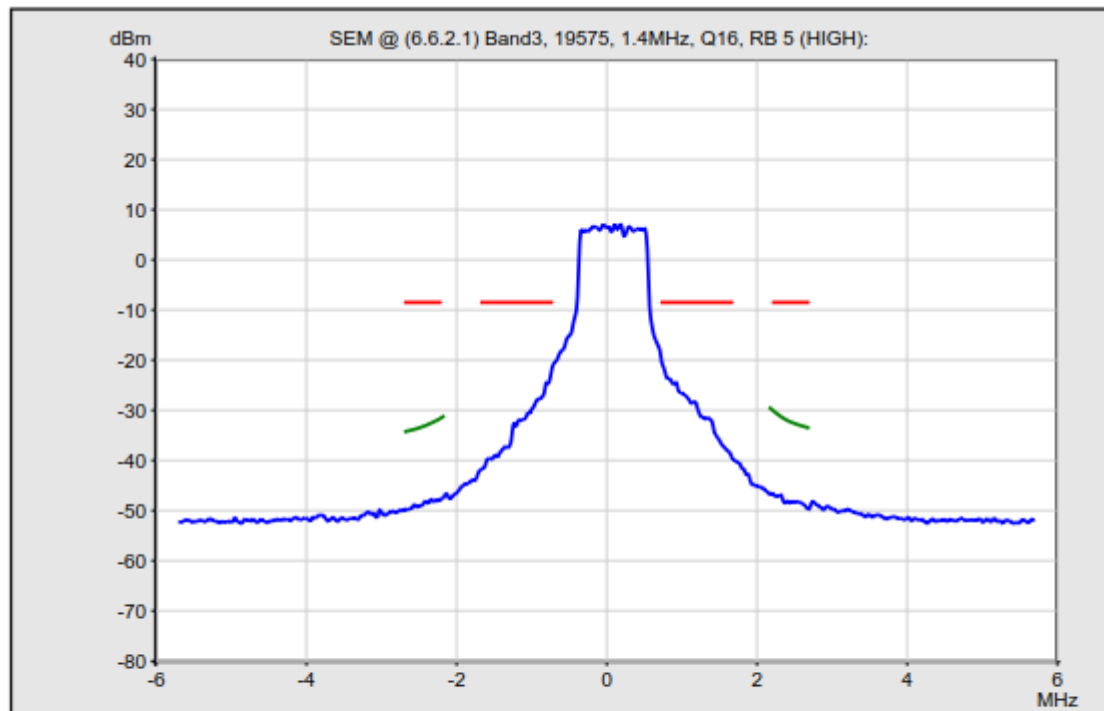
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— 30 kHz Filter
— 1 MHz Filter



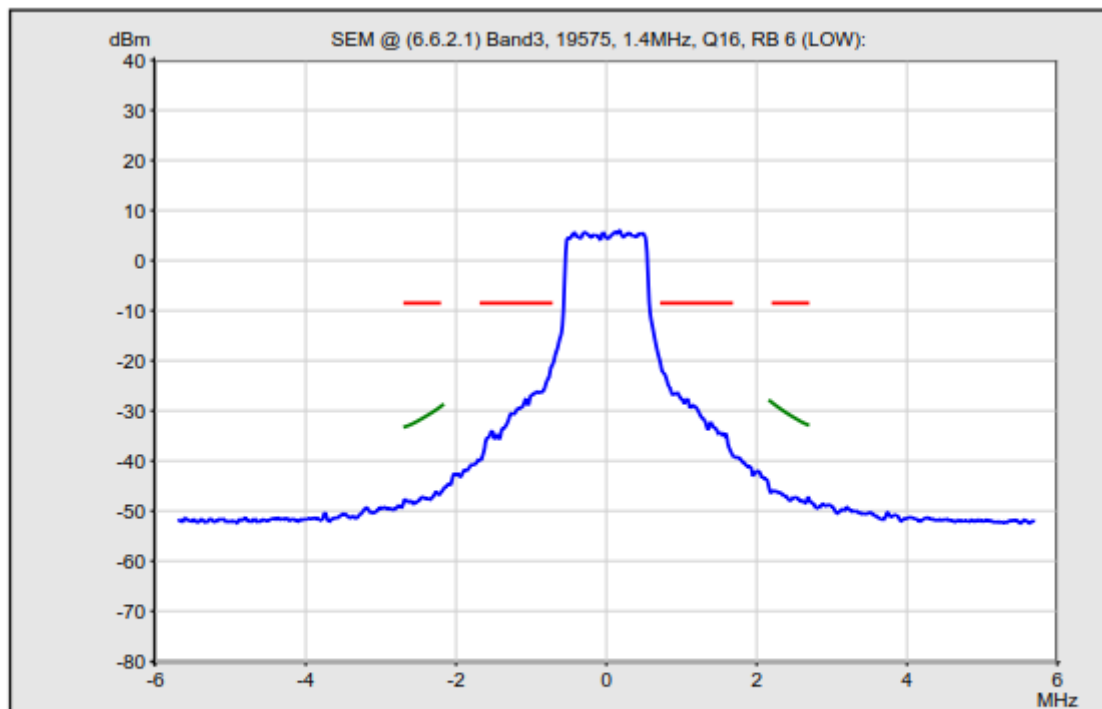
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— 30 kHz Filter
— 1 MHz Filter



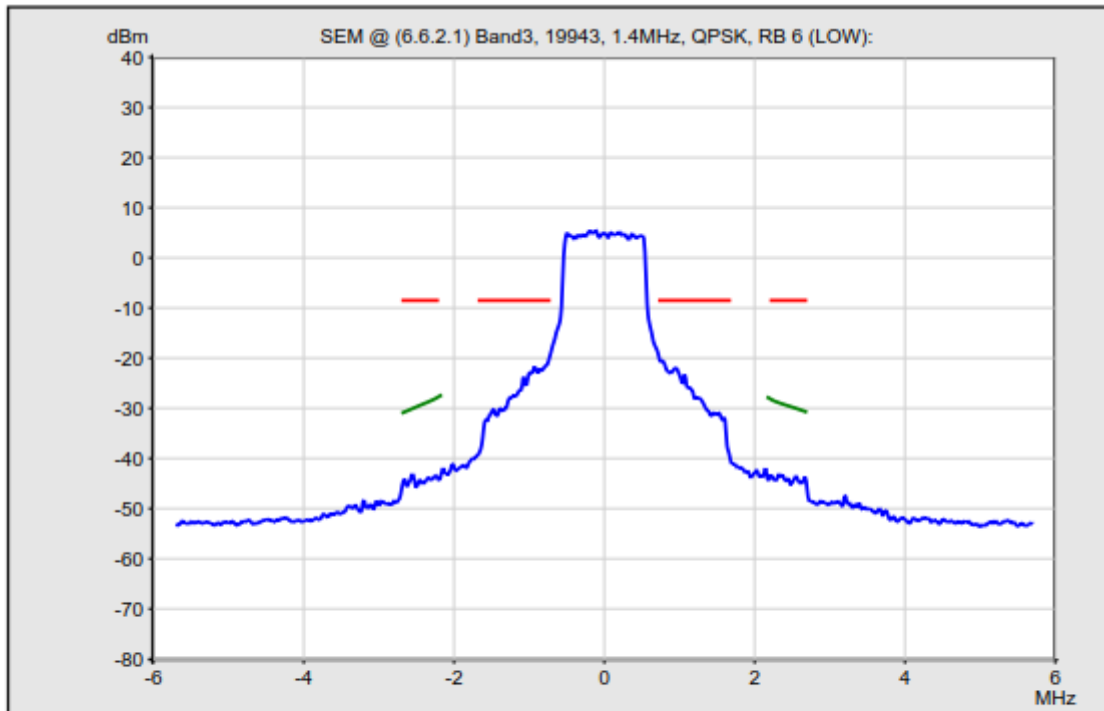




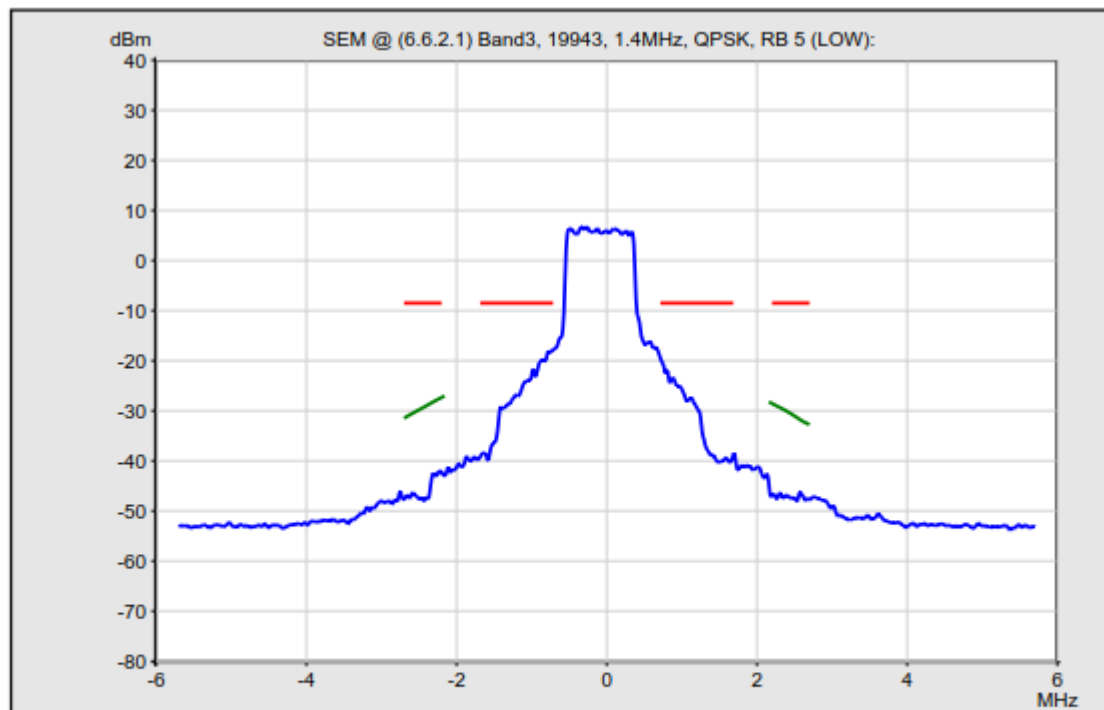
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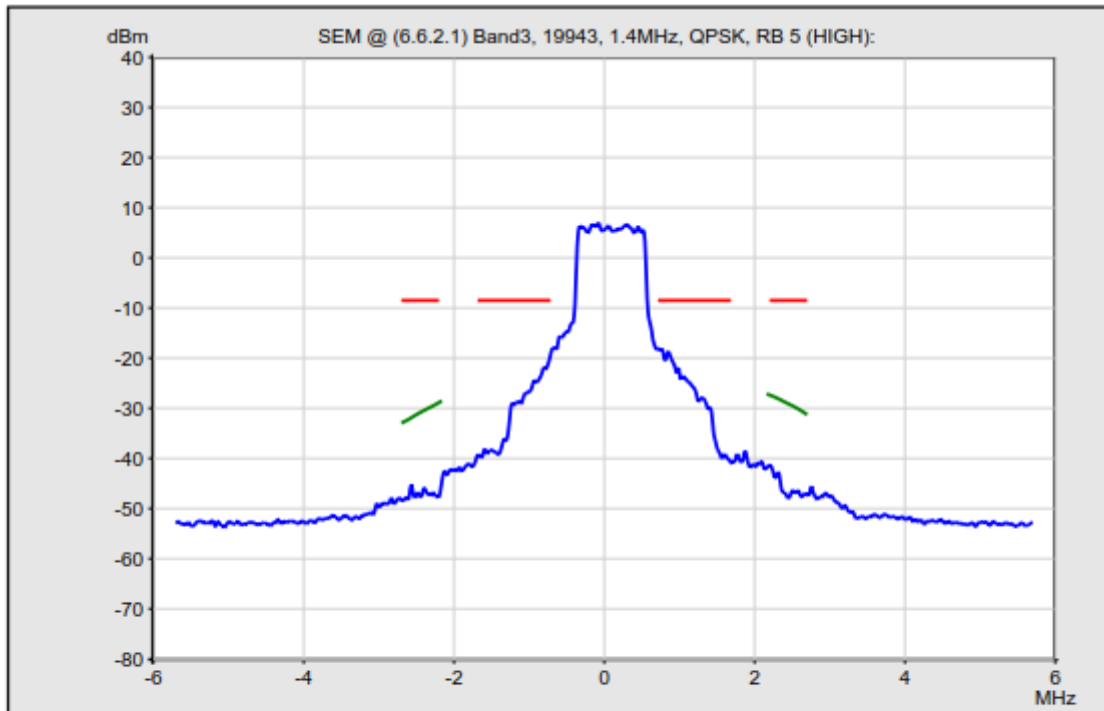
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— 30 kHz Filter
— 1 MHz Filter



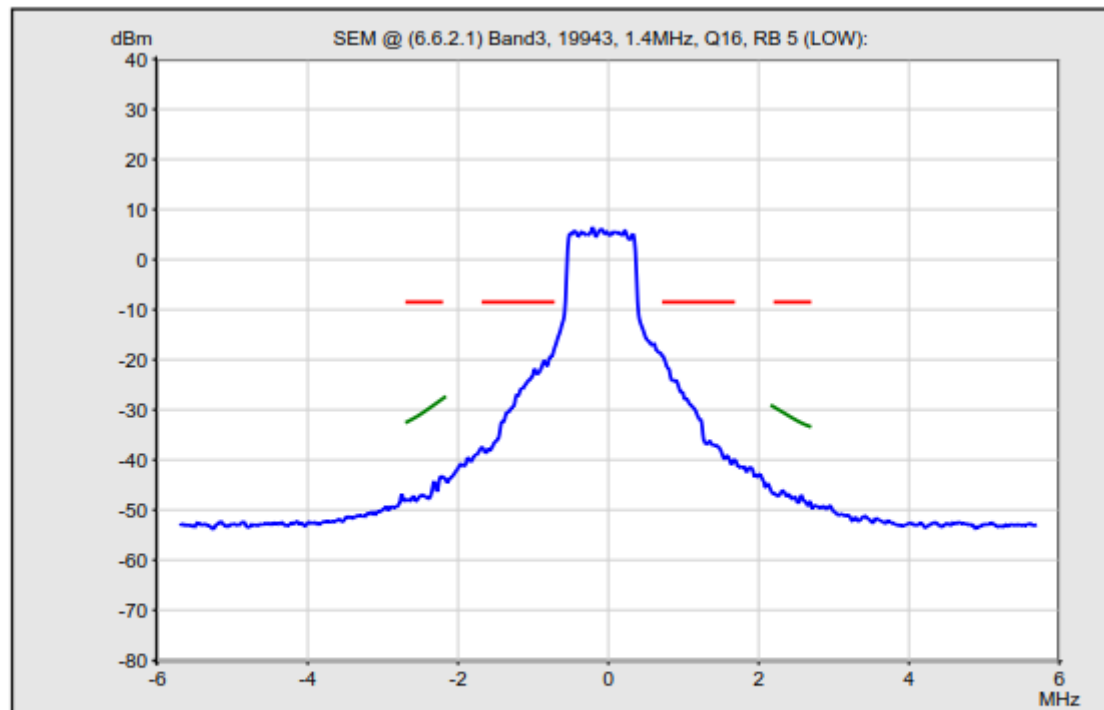
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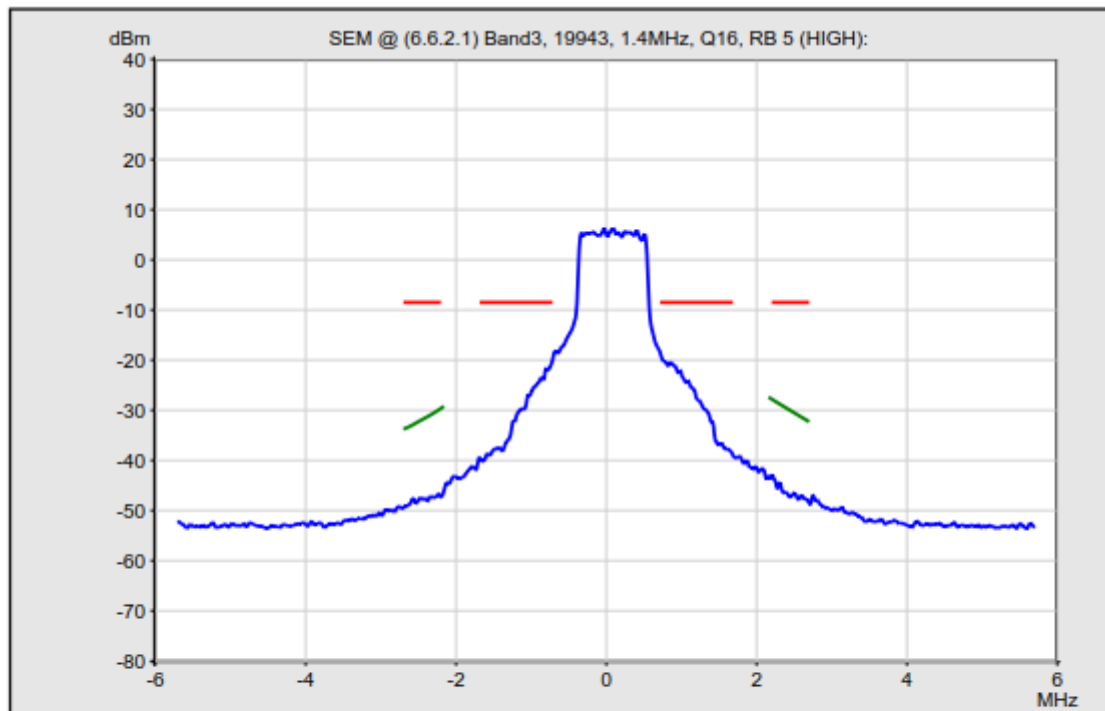
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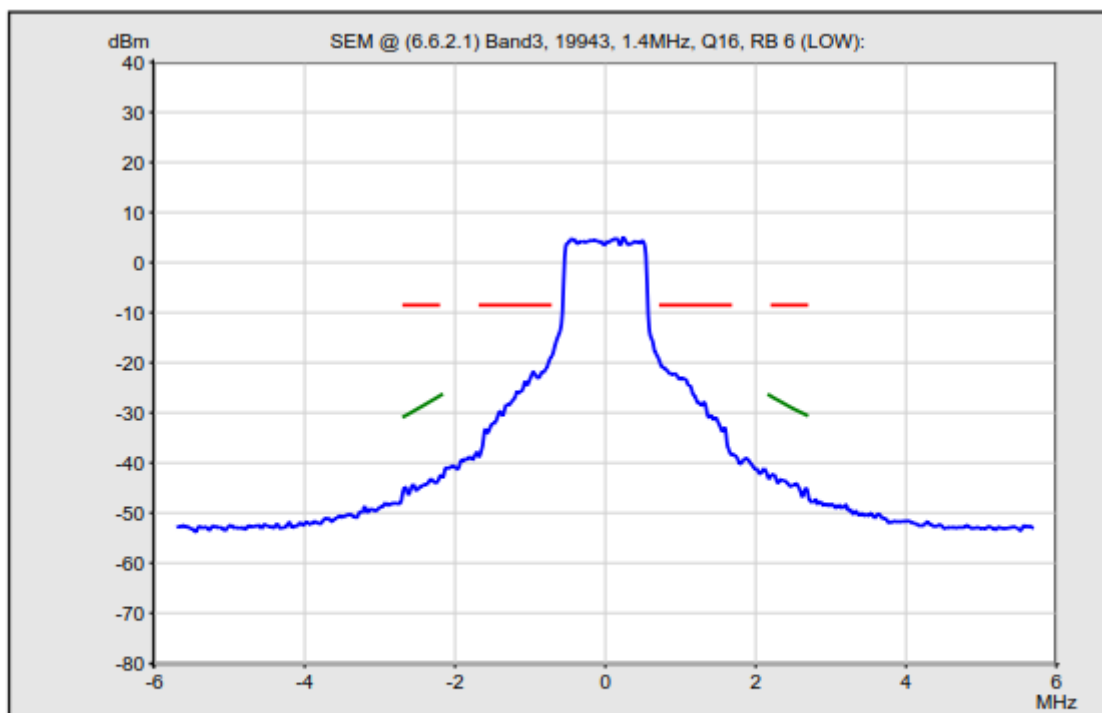
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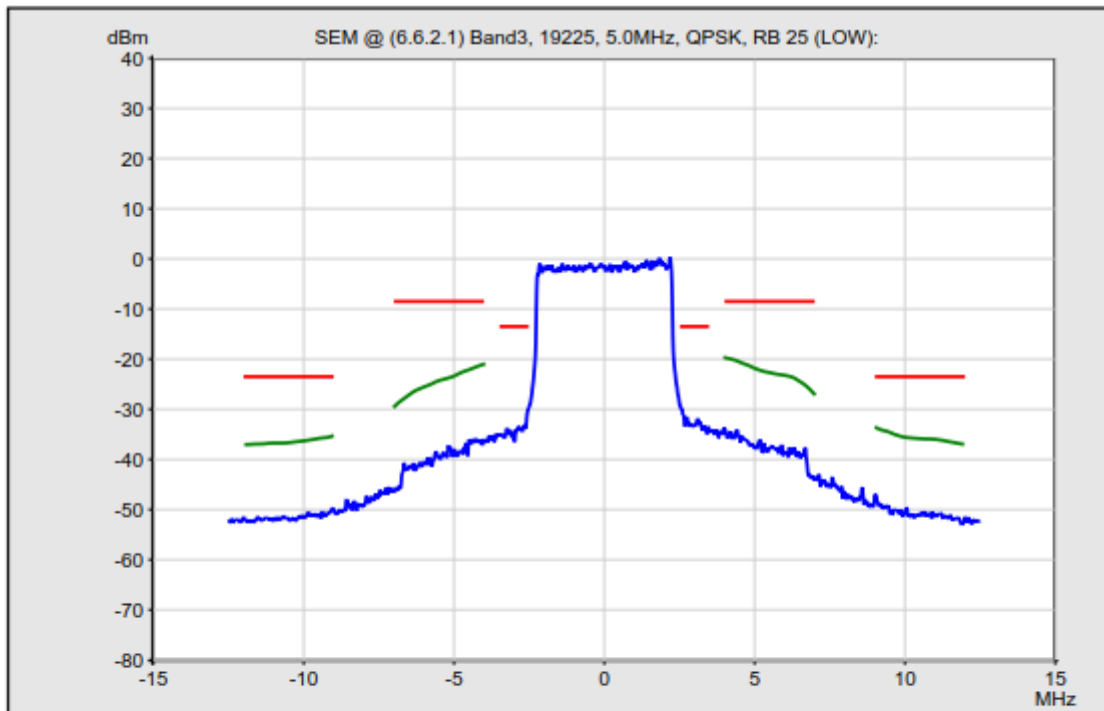
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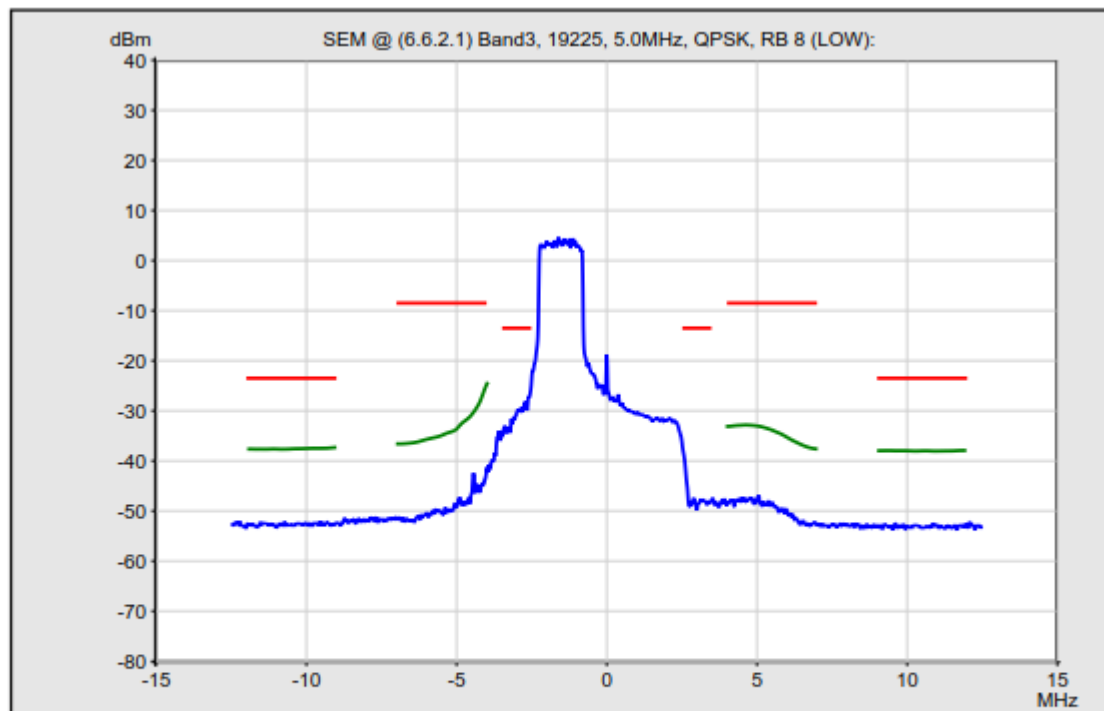
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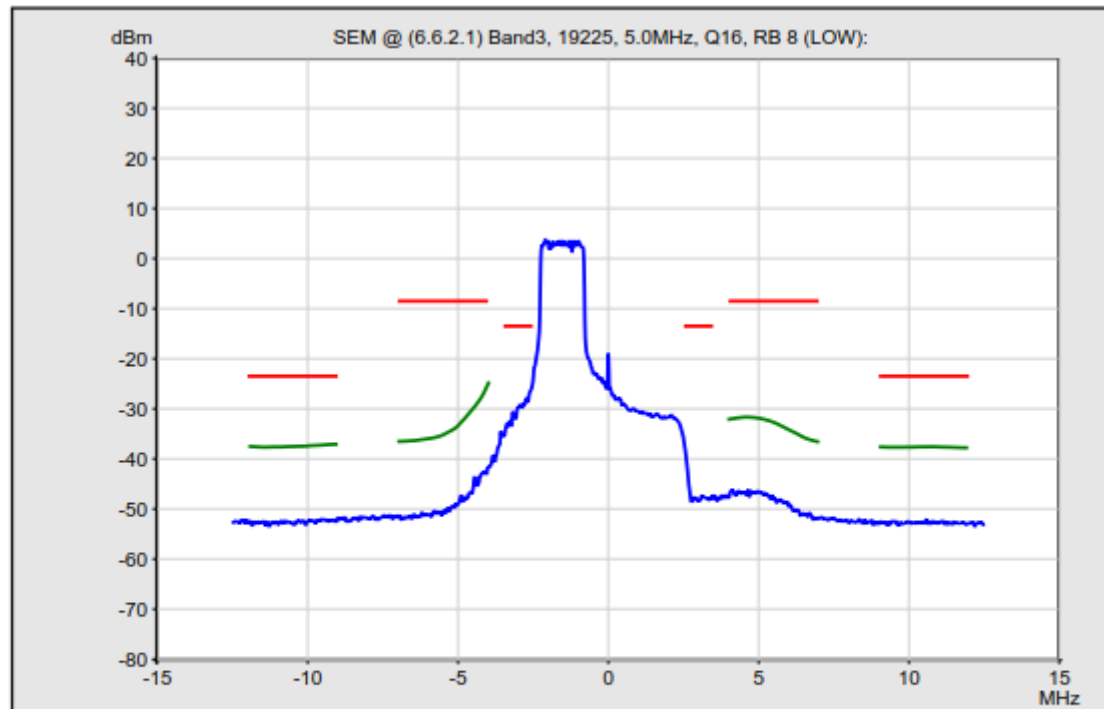
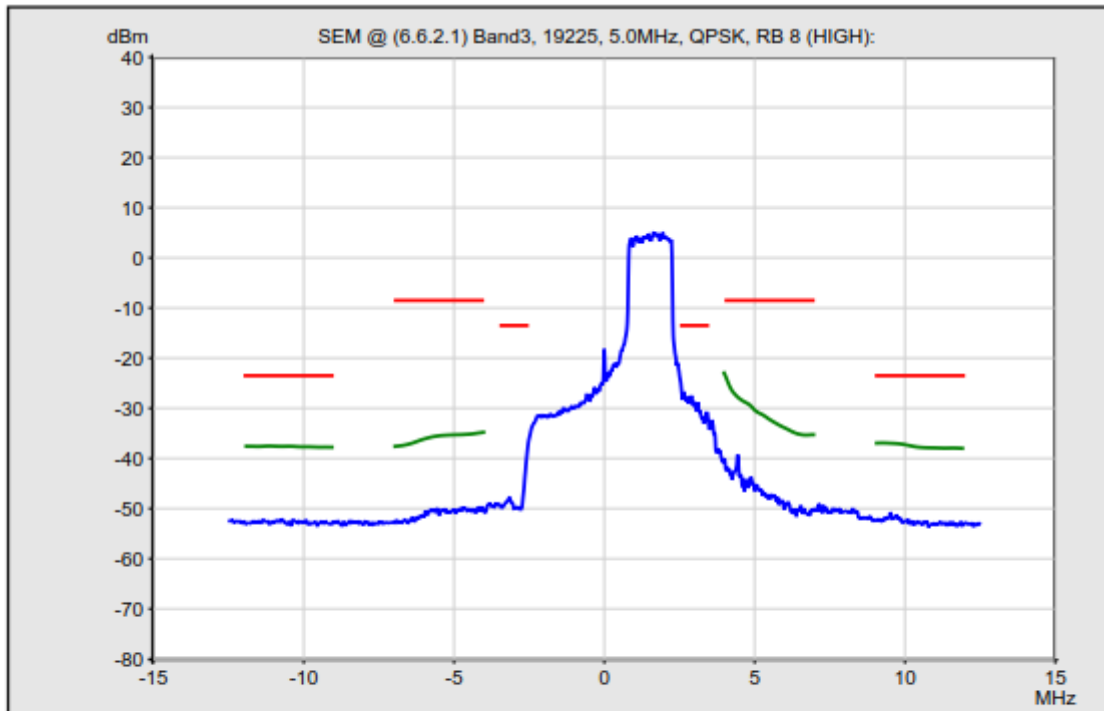
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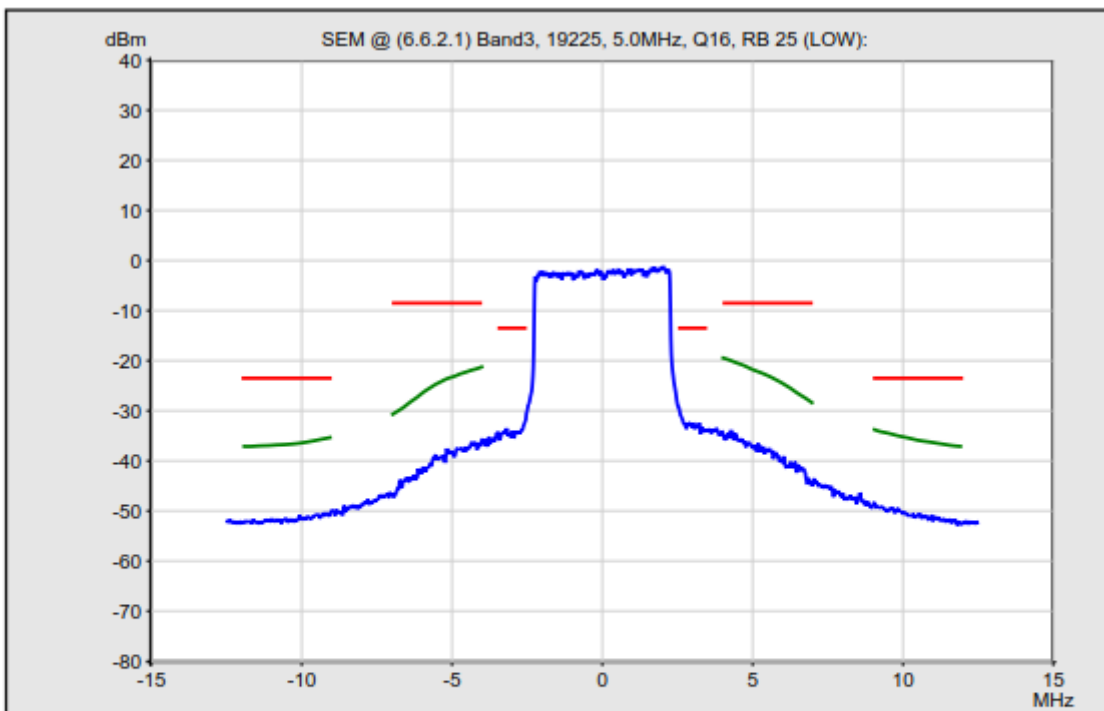
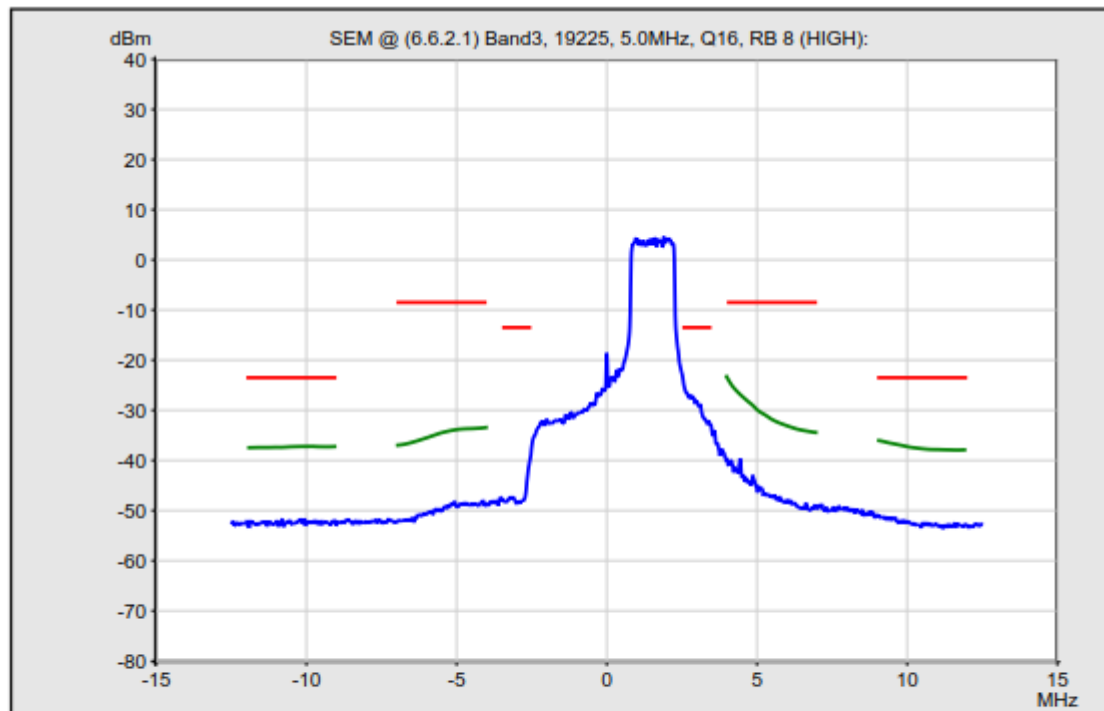


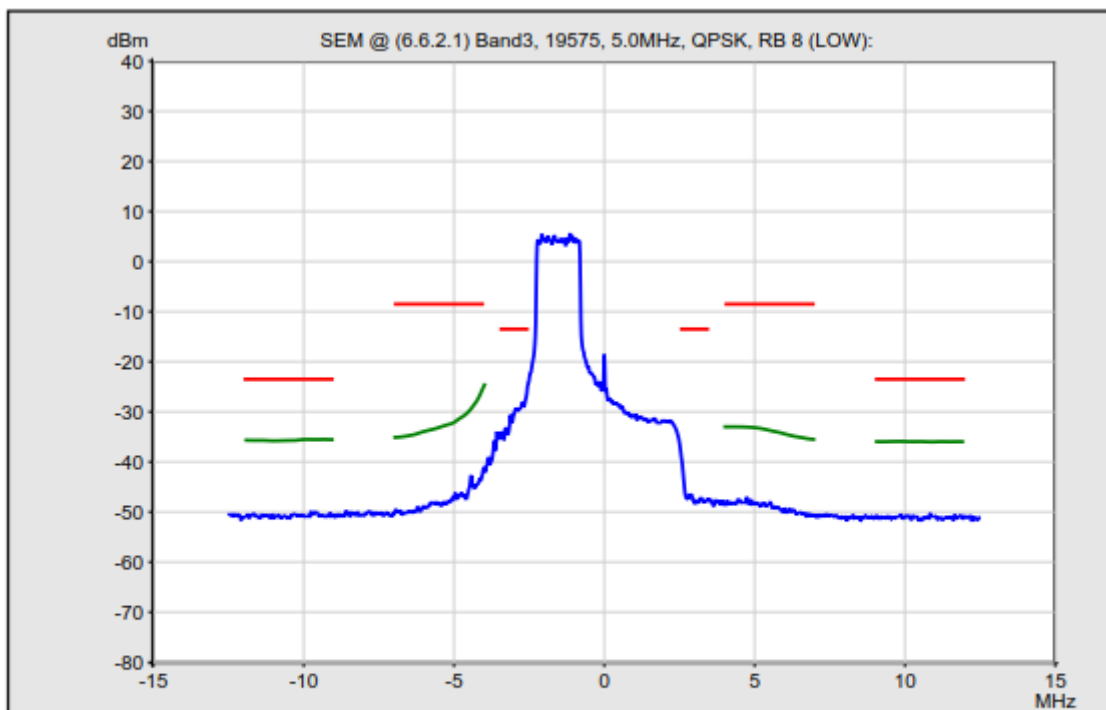
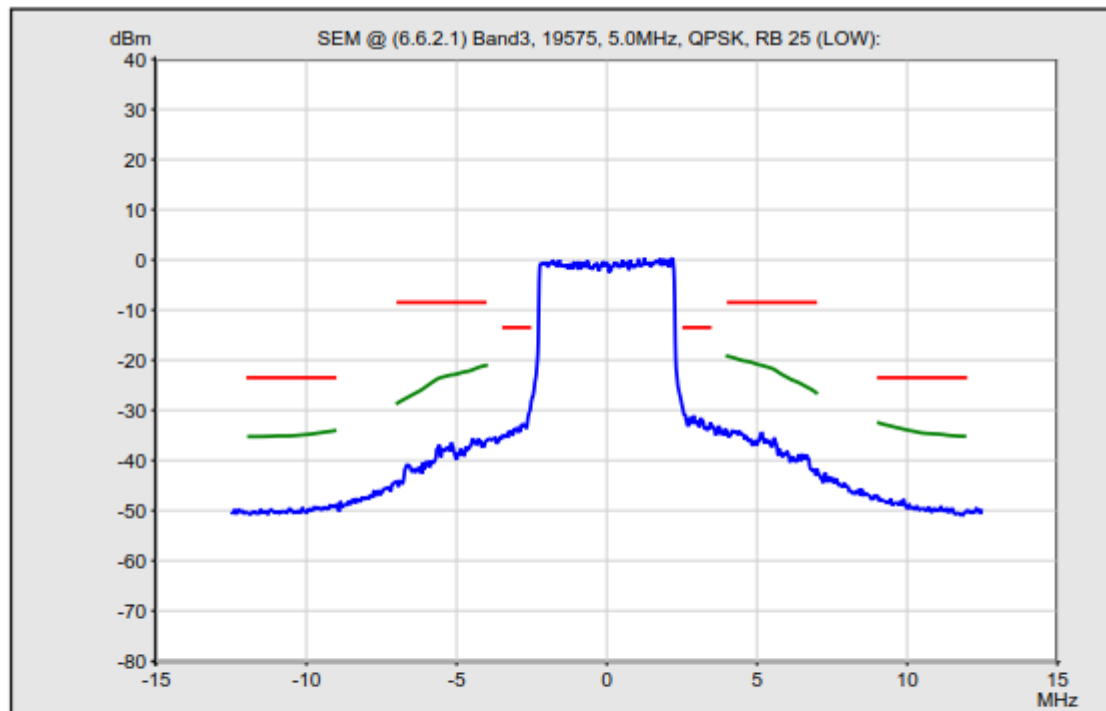
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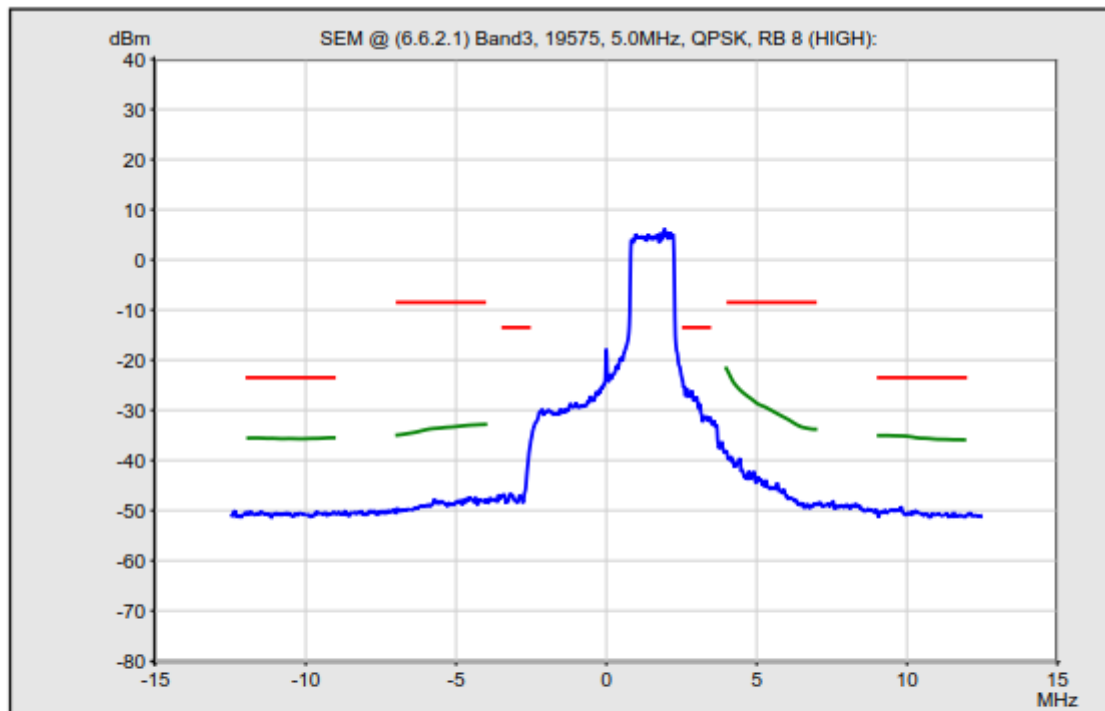


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— 30 kHz Filter
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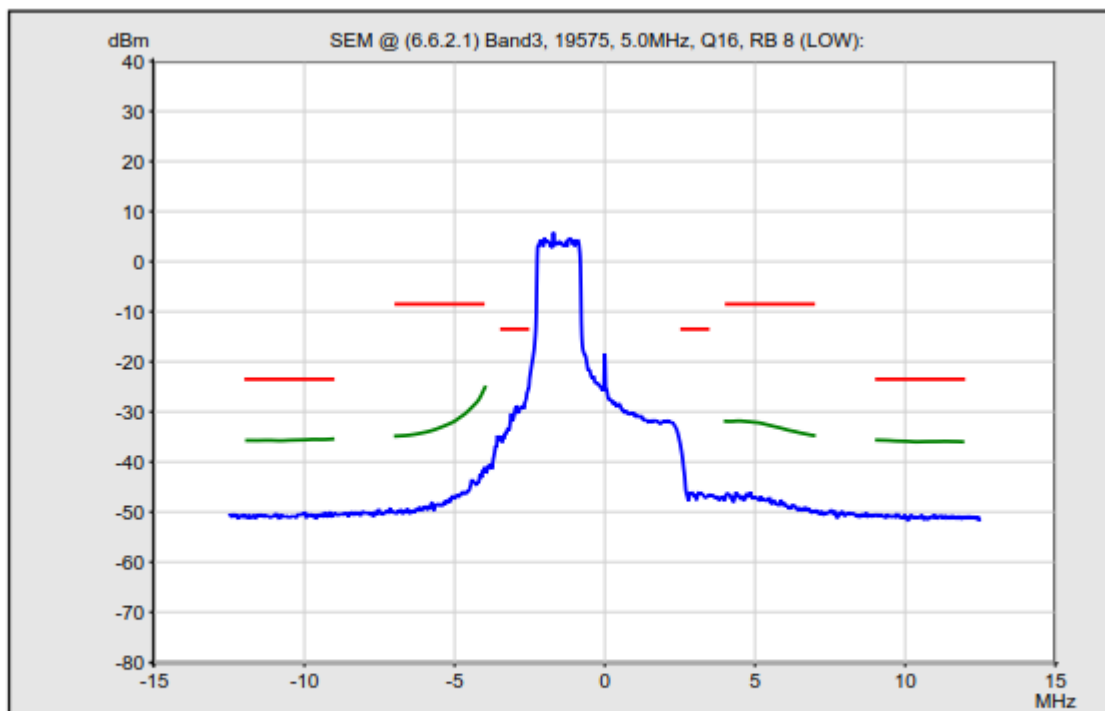




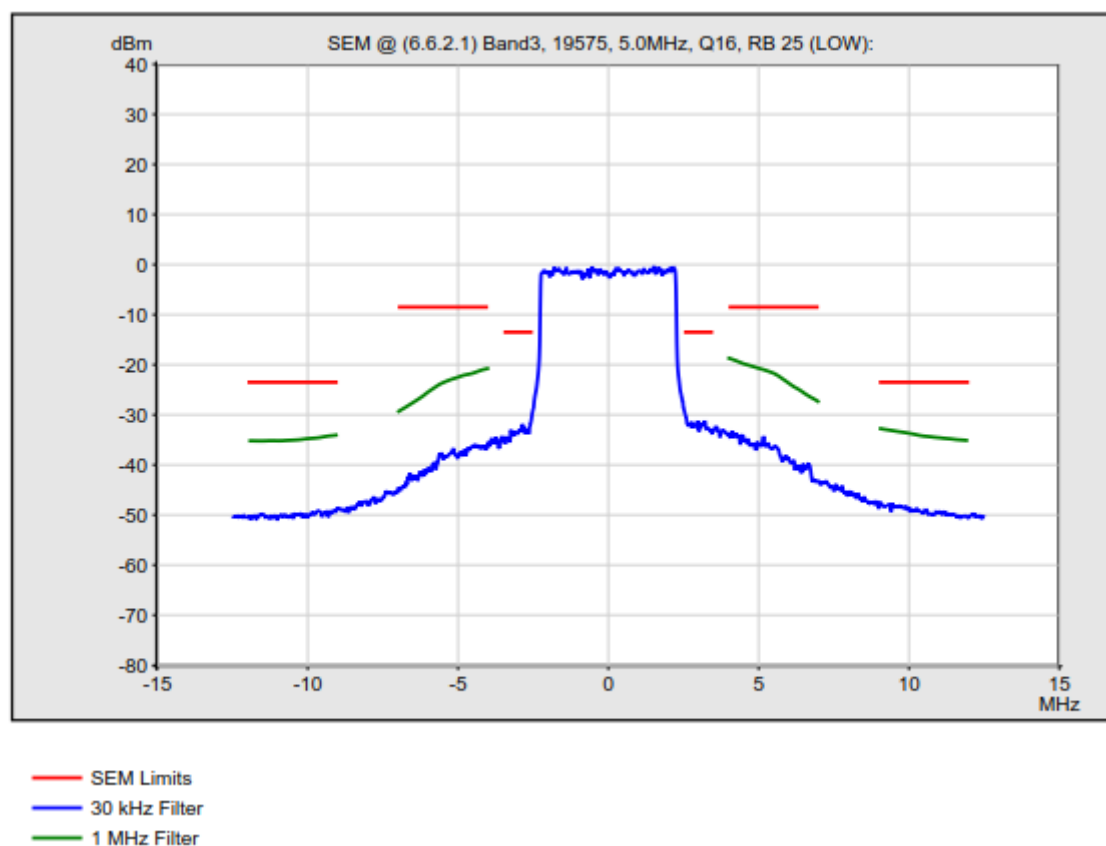
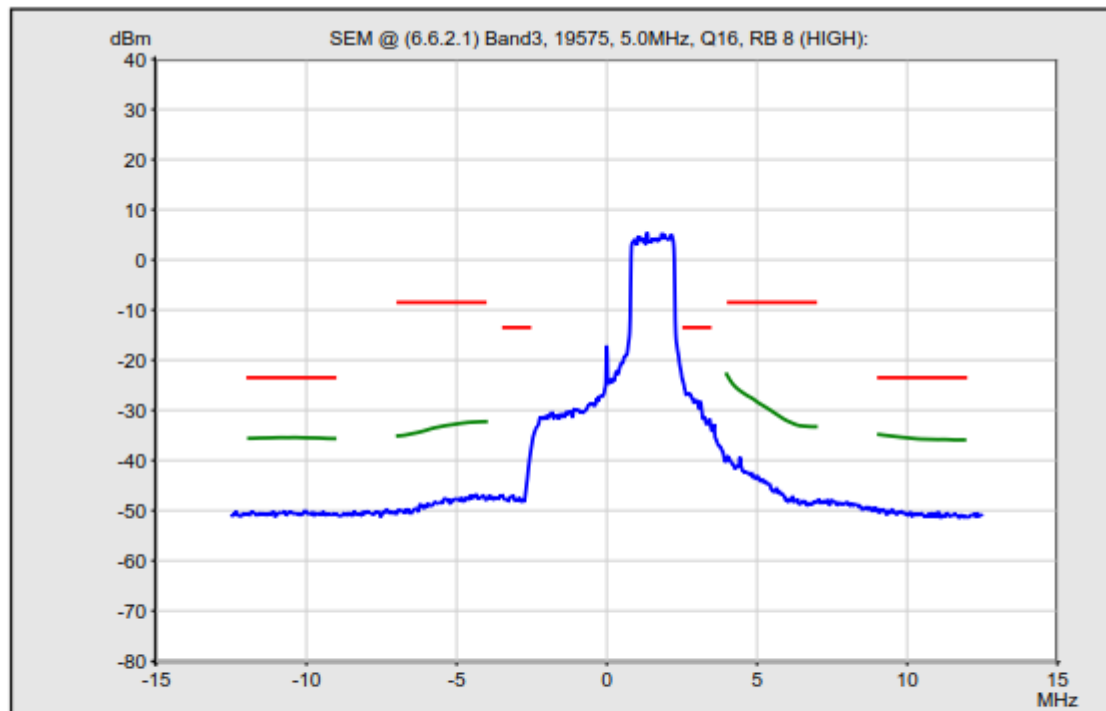


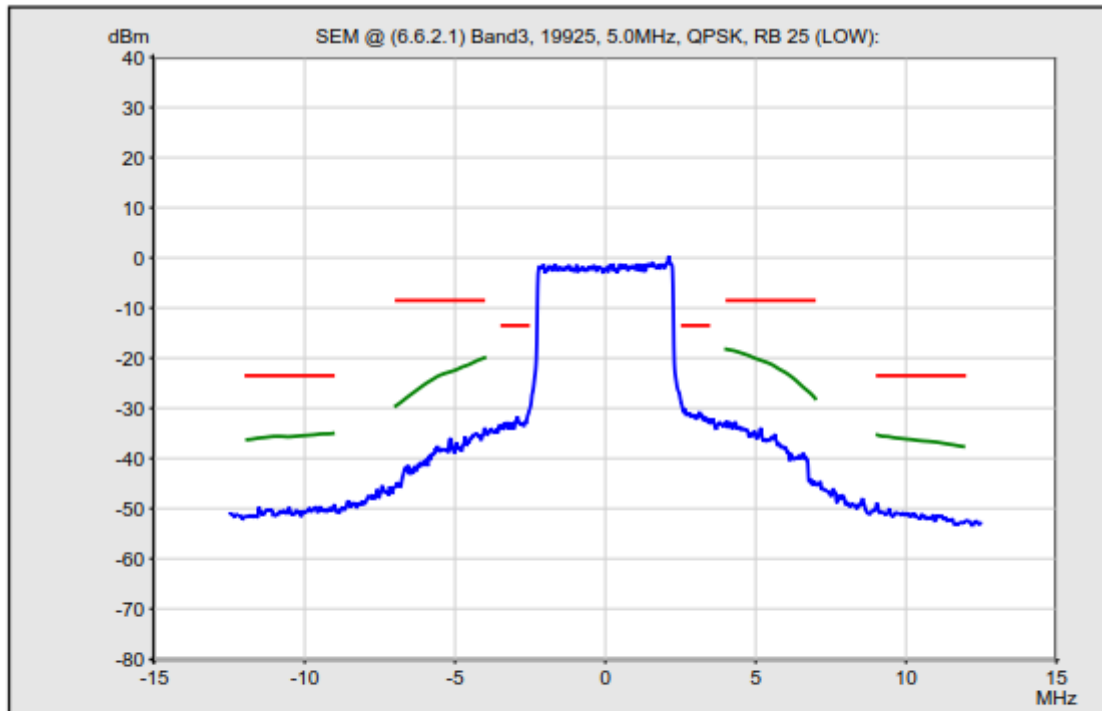


— SEM Limits
— 30 kHz Filter
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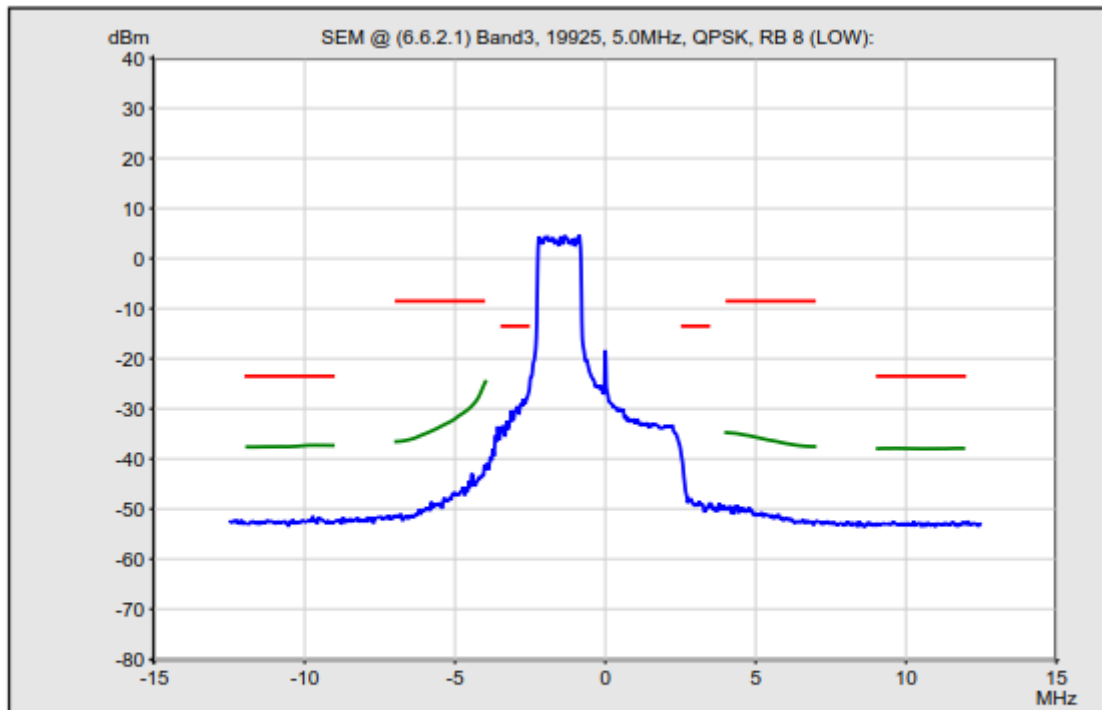


— SEM Limits
— 30 kHz Filter
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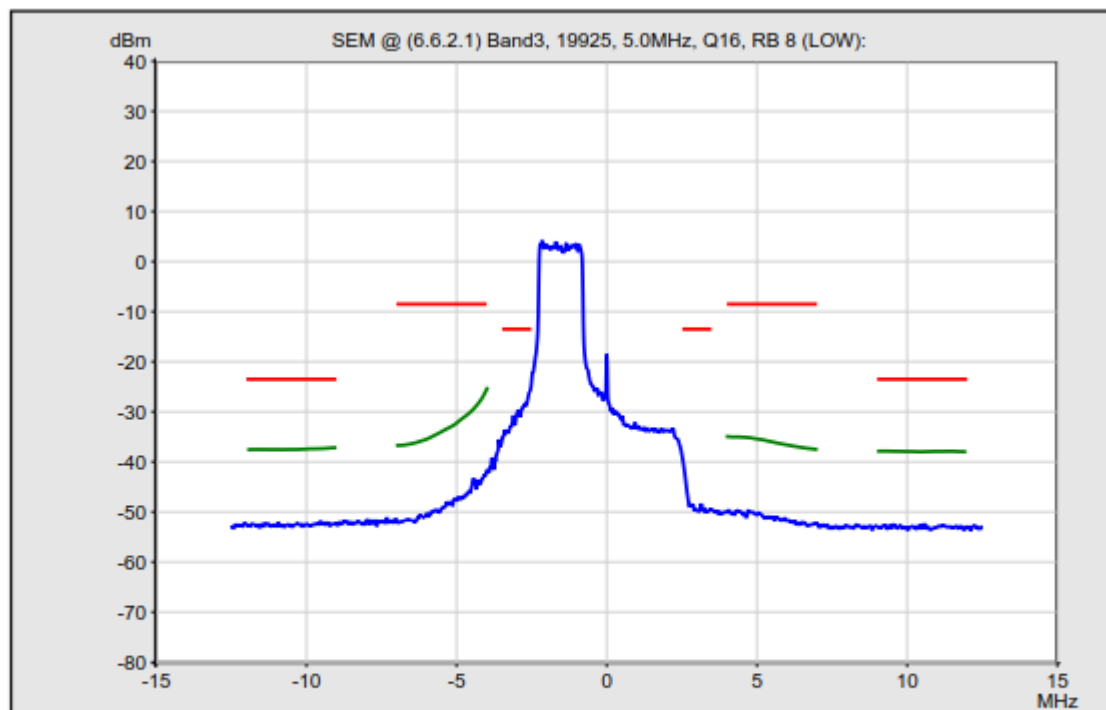
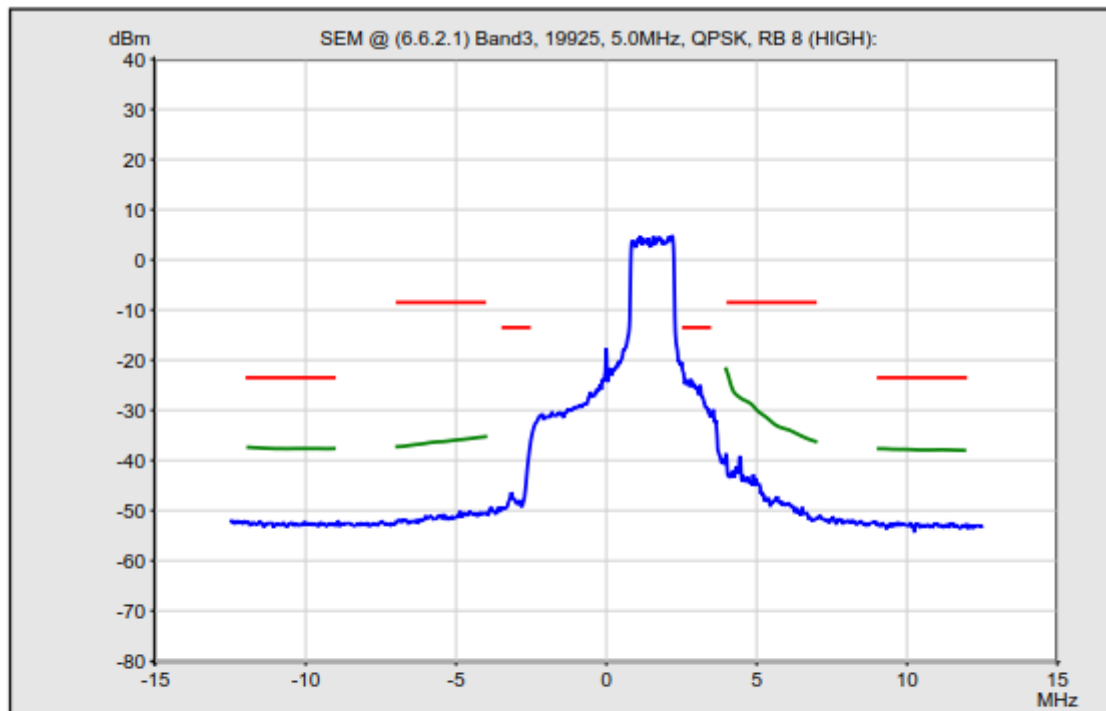


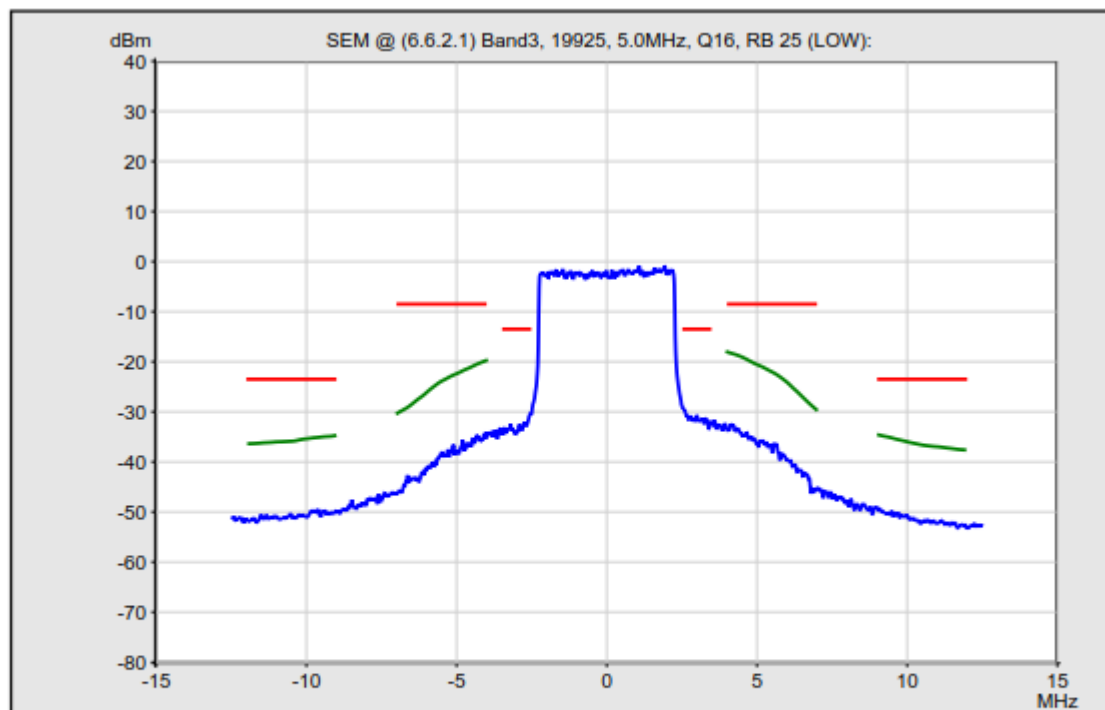
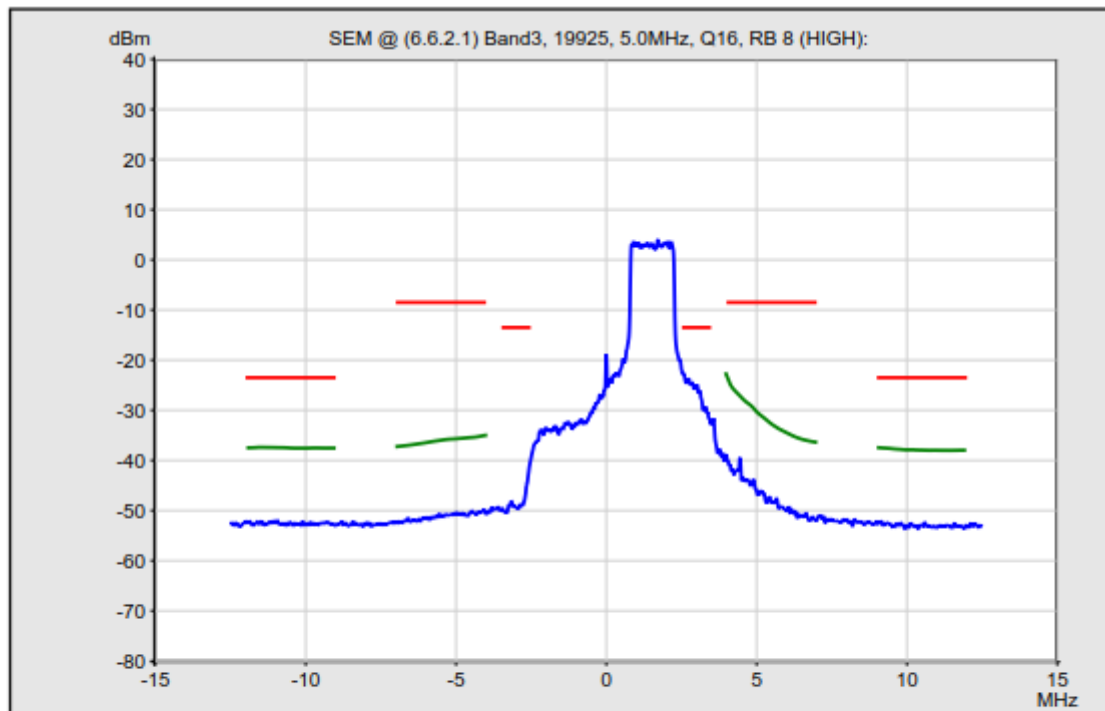


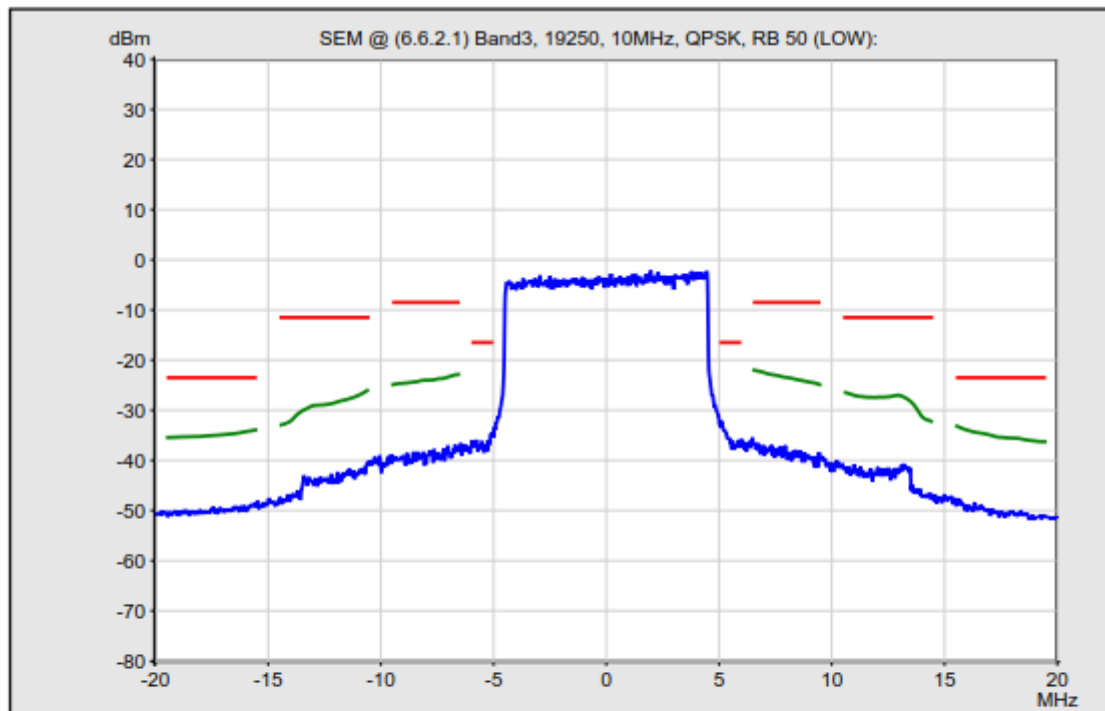
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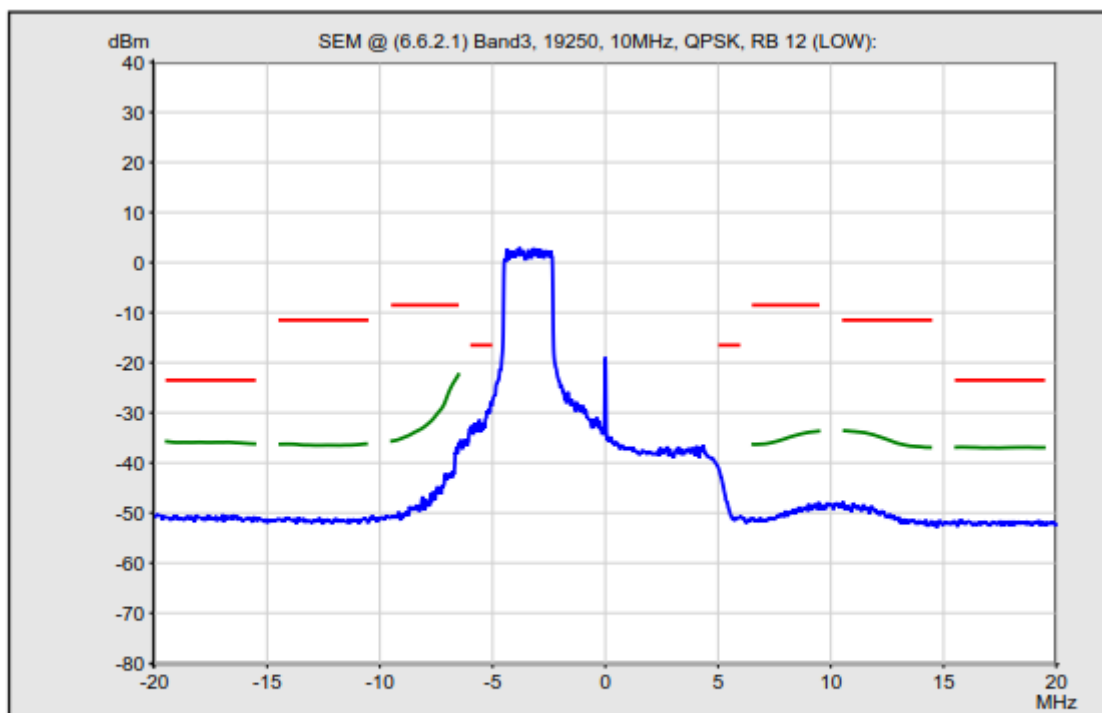
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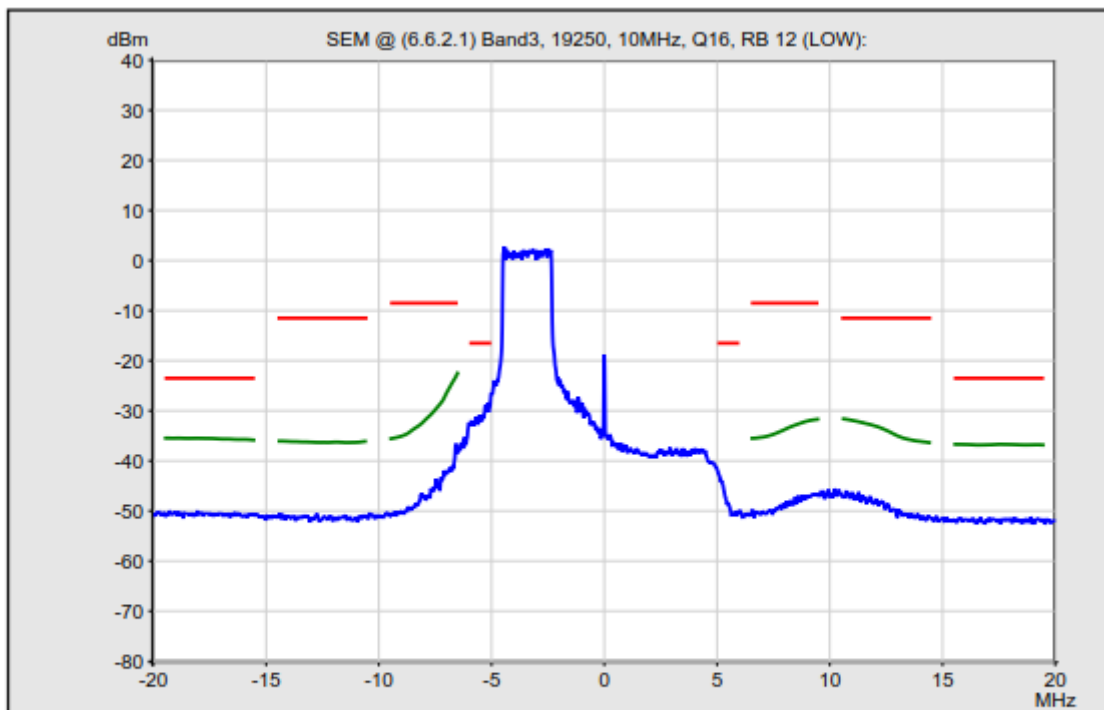
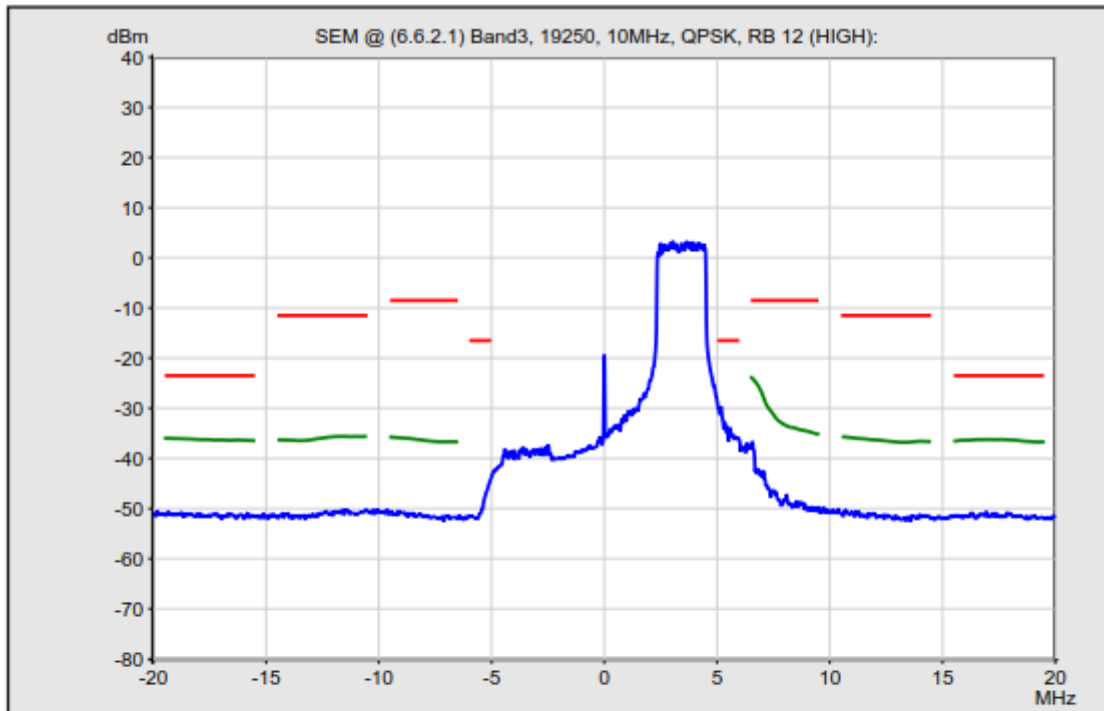


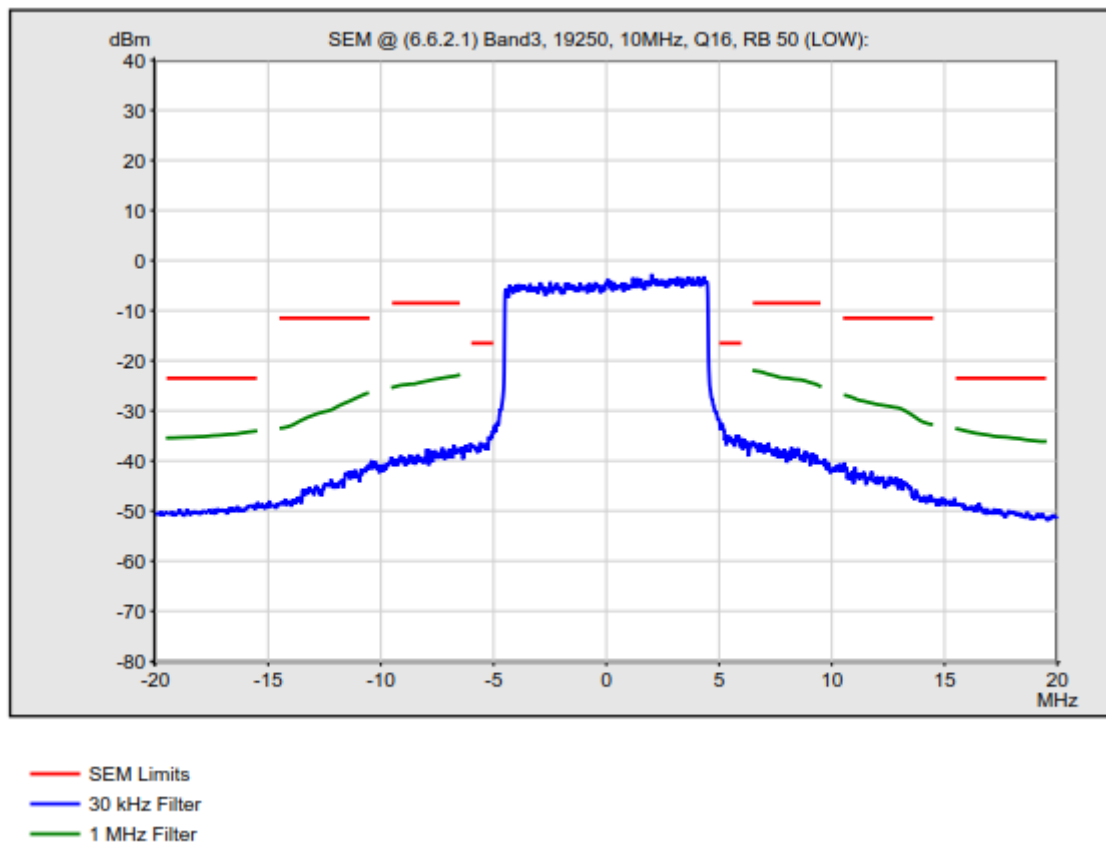
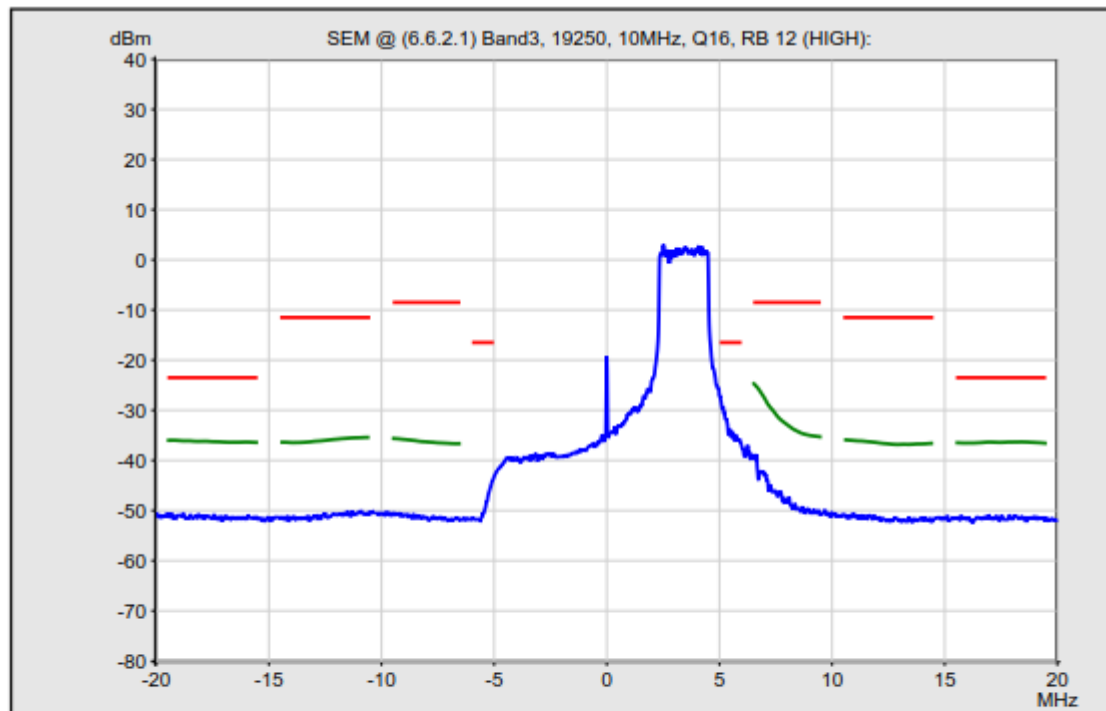


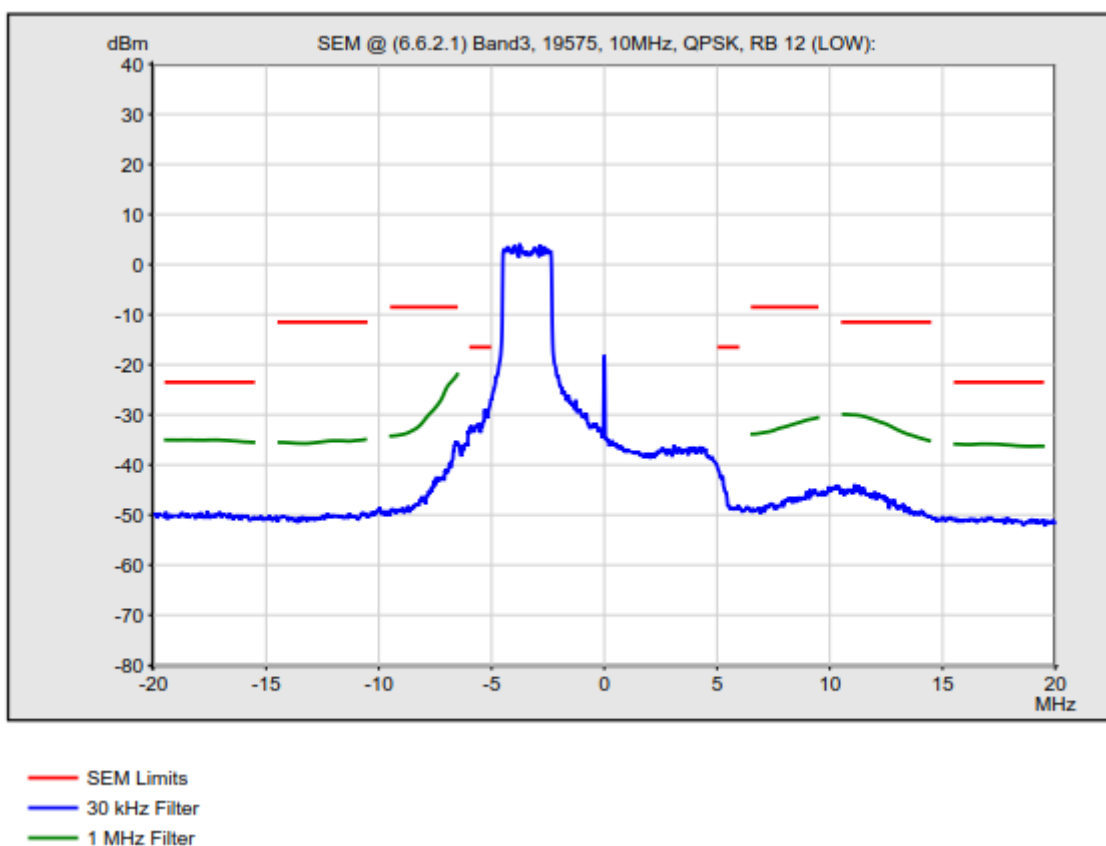
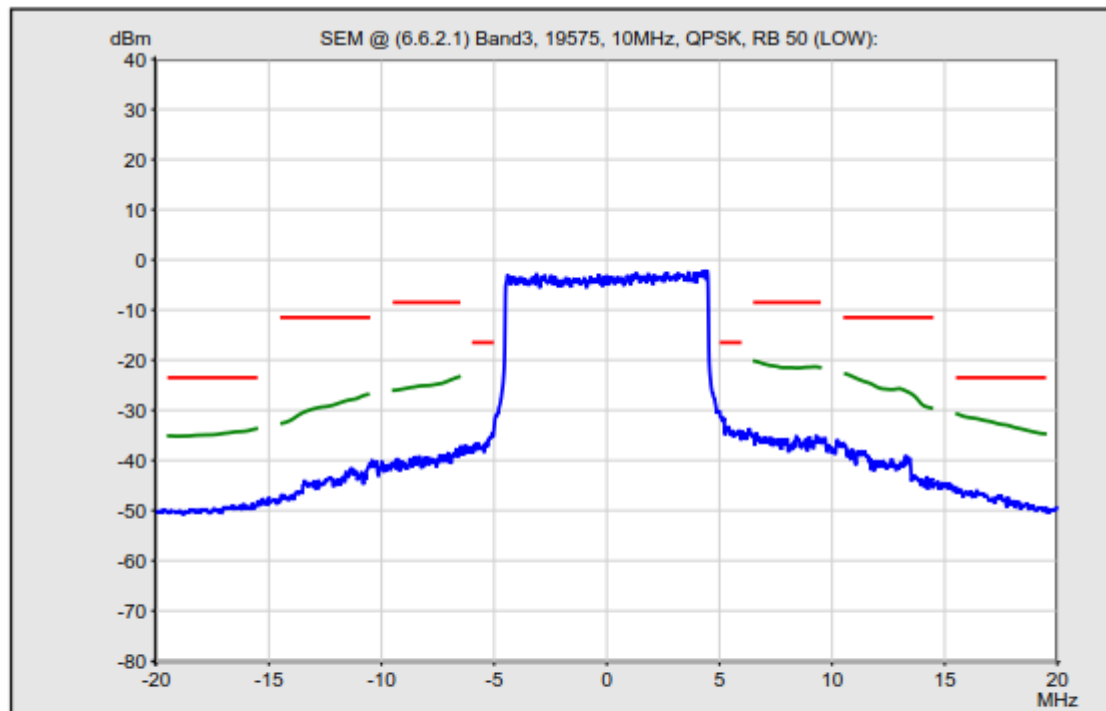
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— 30 kHz Filter
— 1 MHz Filter

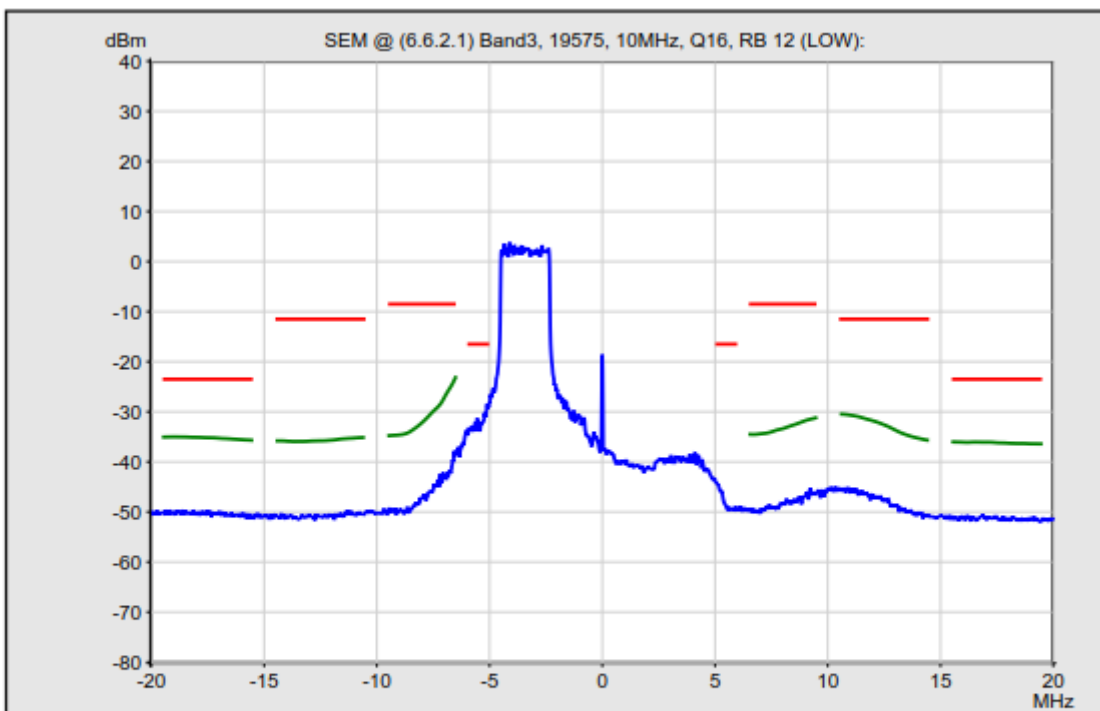
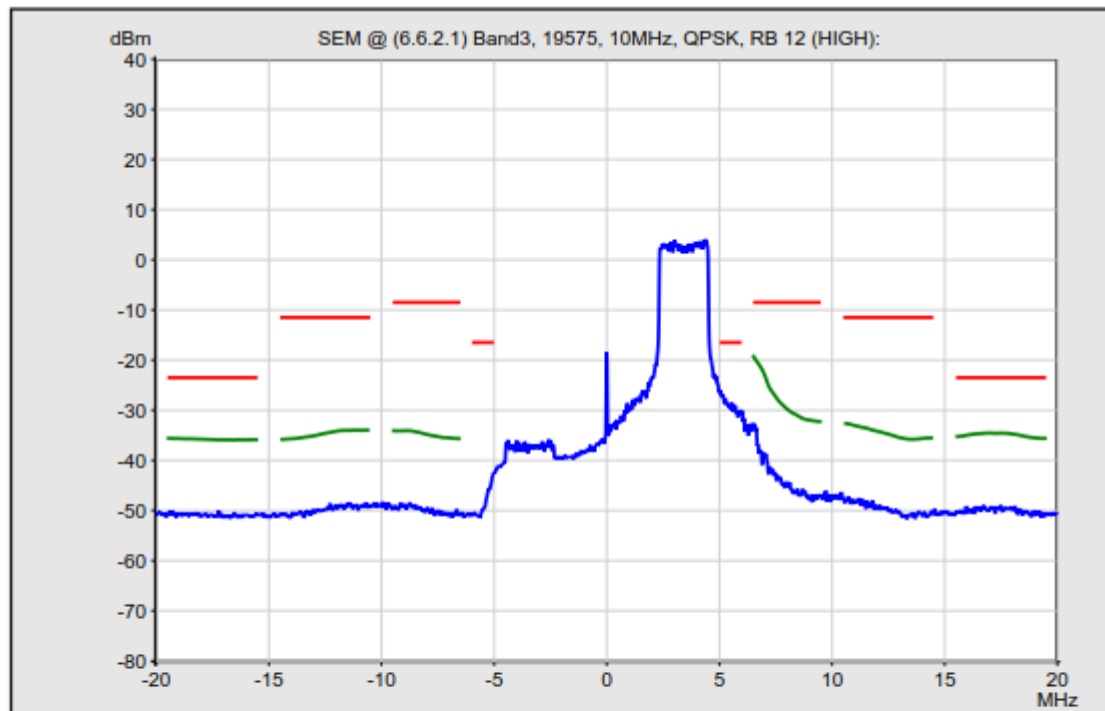


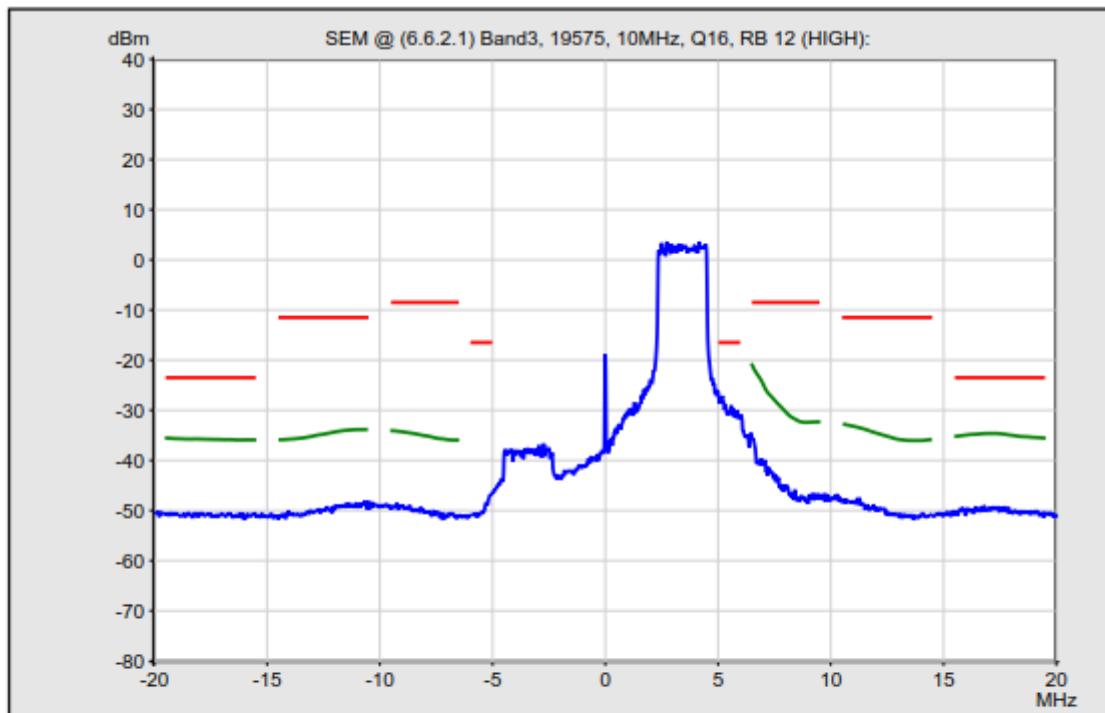
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— 30 kHz Filter
— 1 MHz Filter







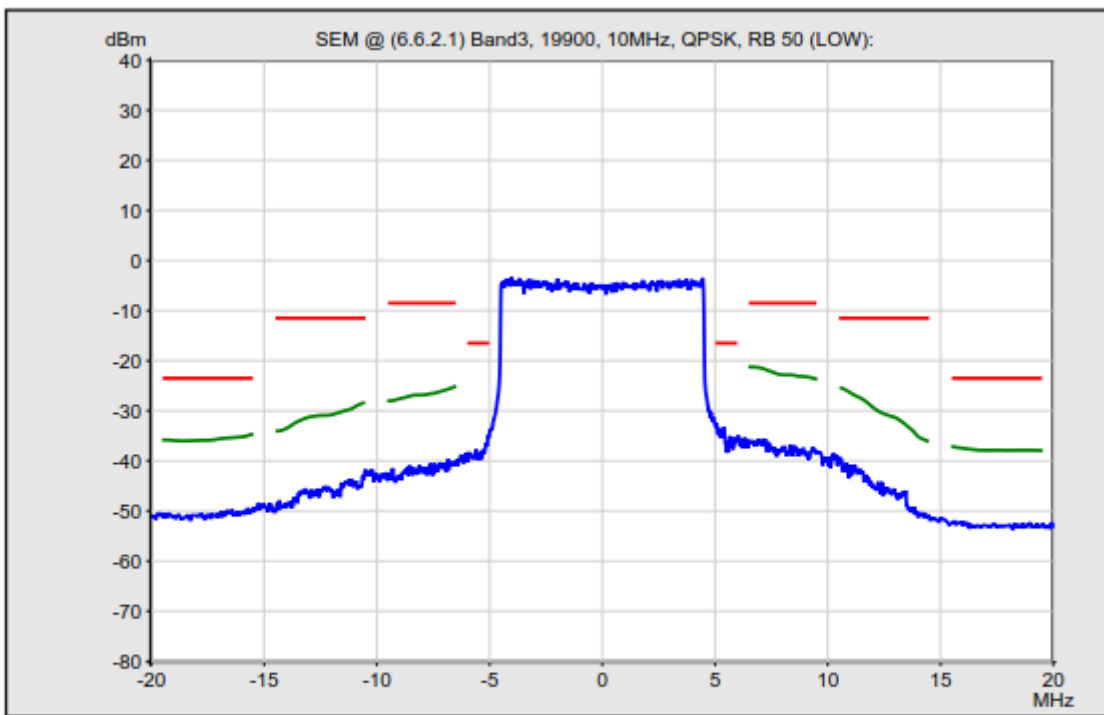
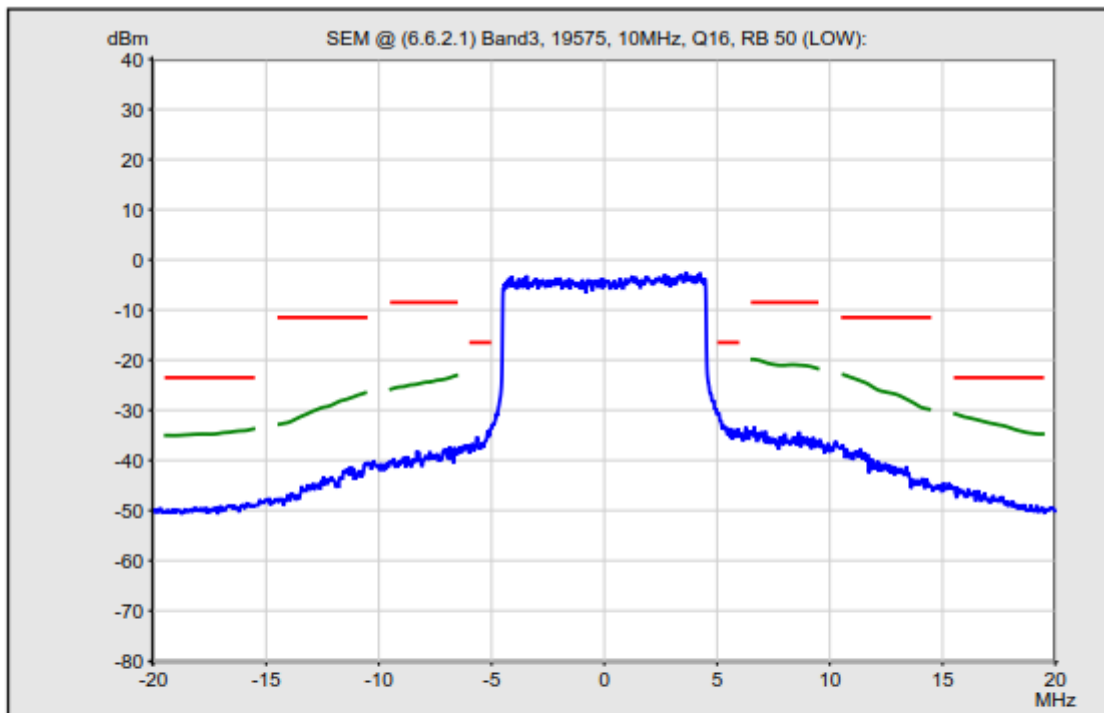


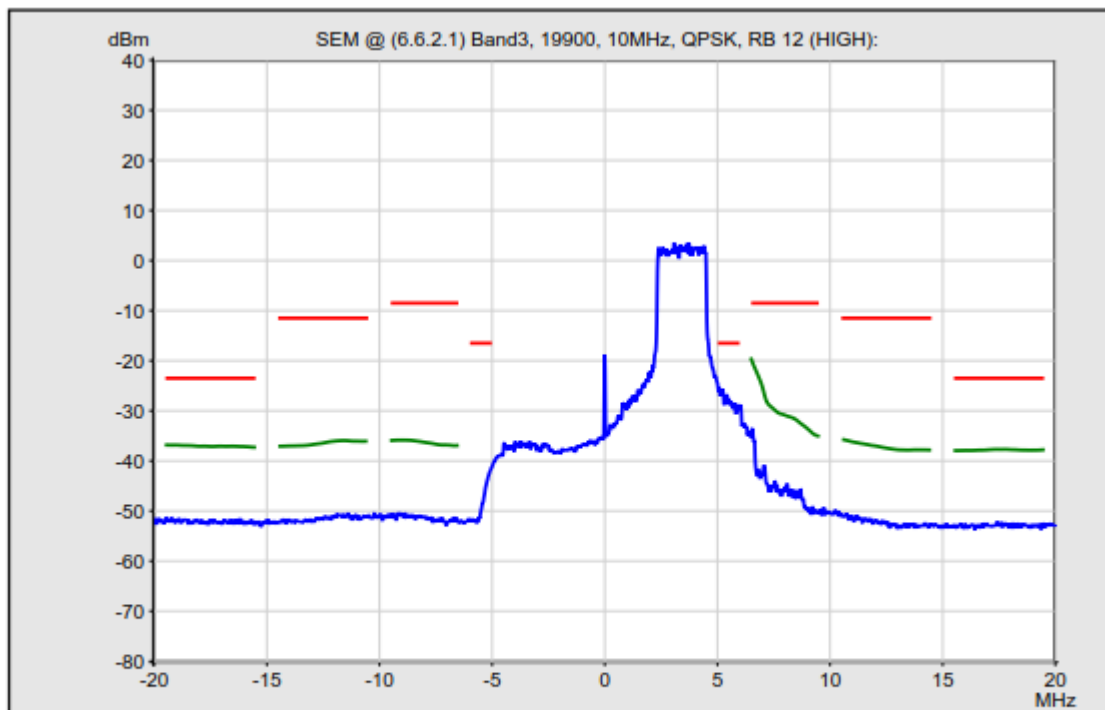
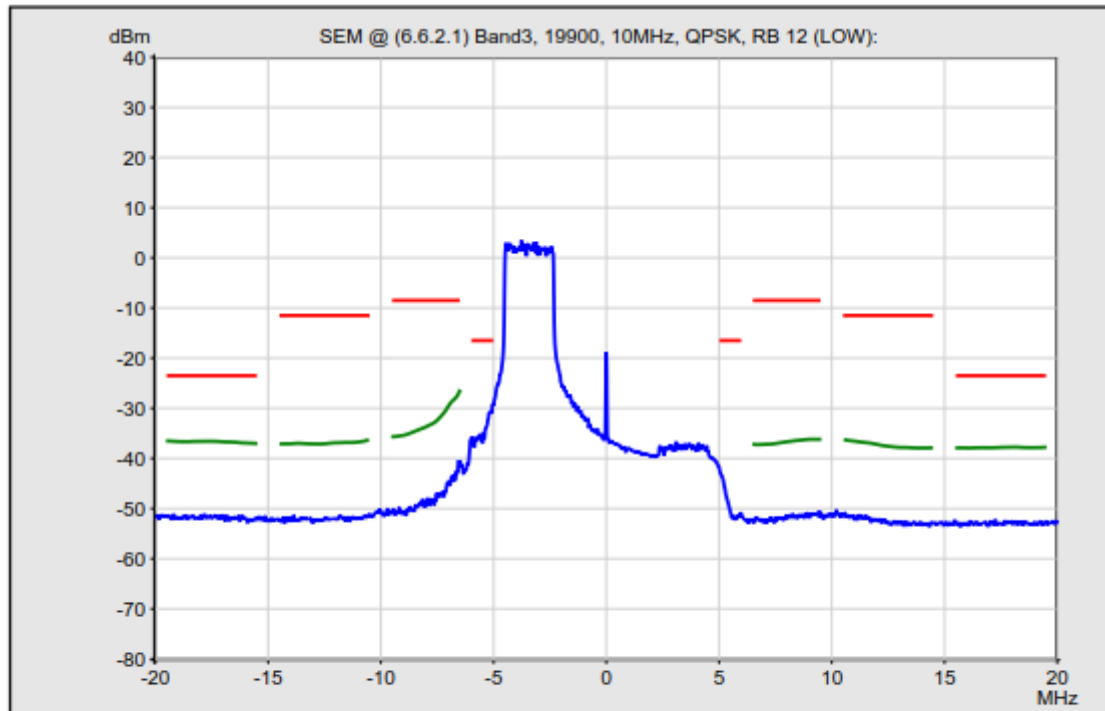


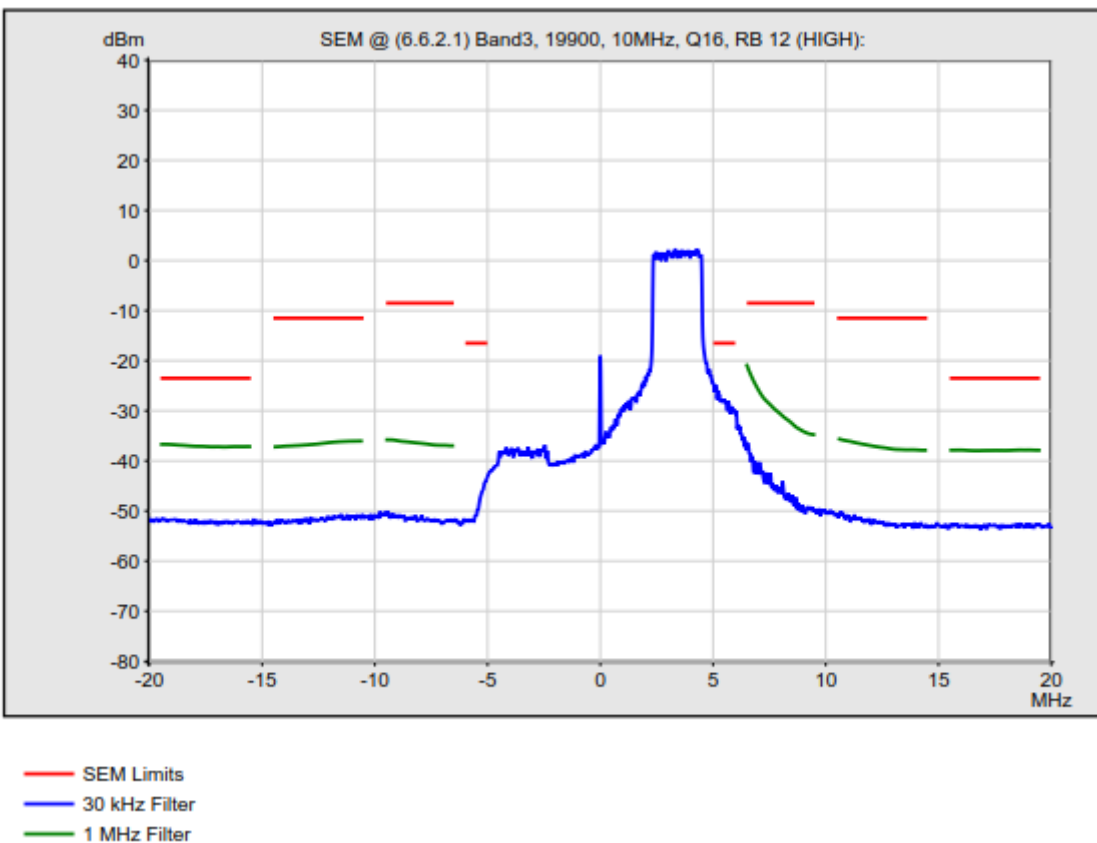
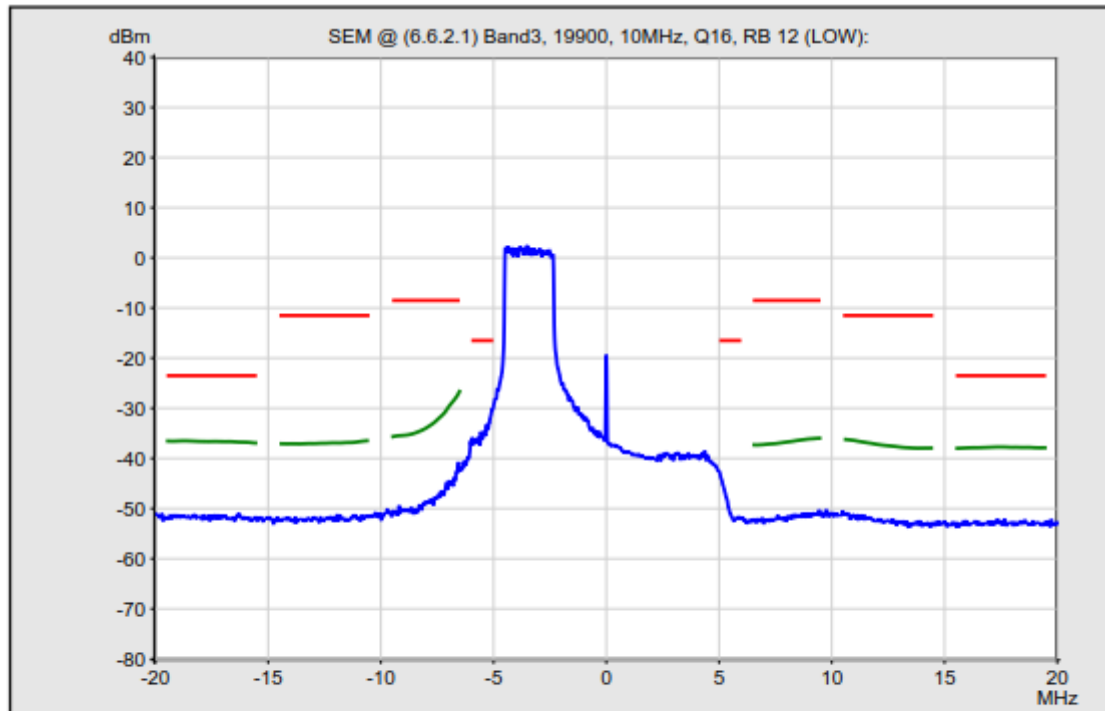
— SEM Limits

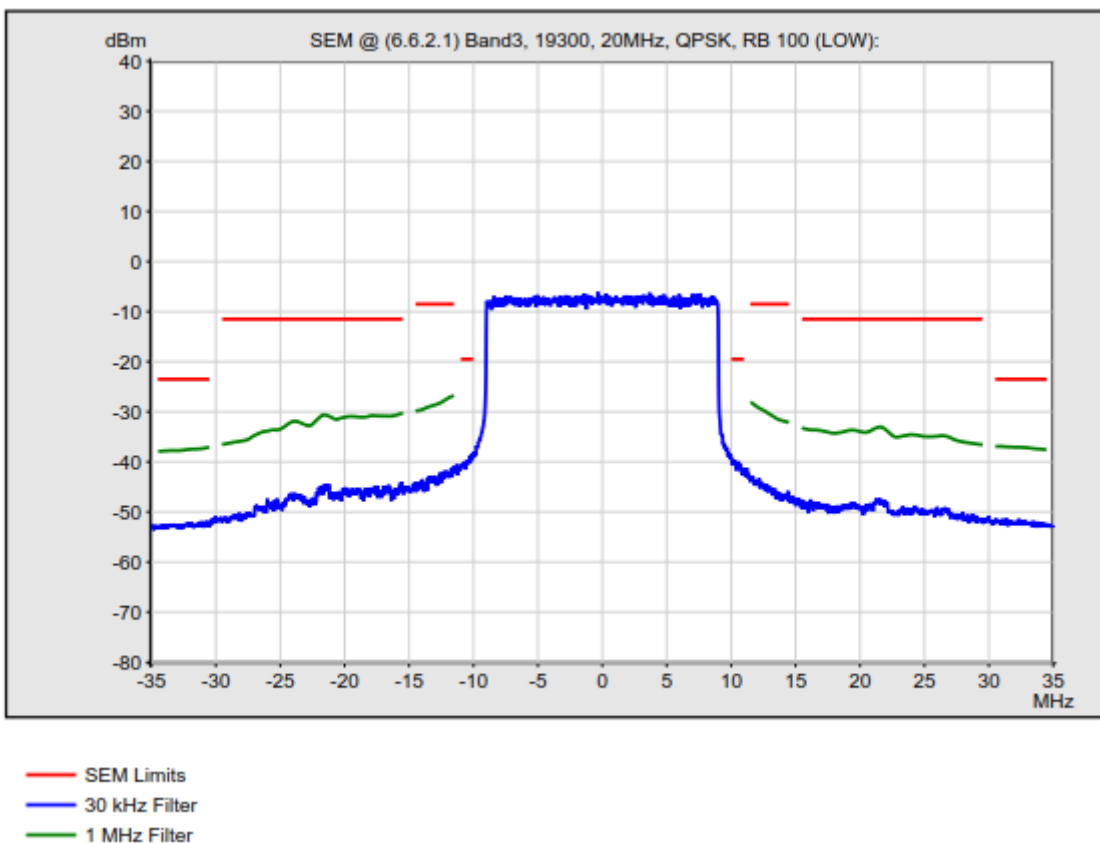
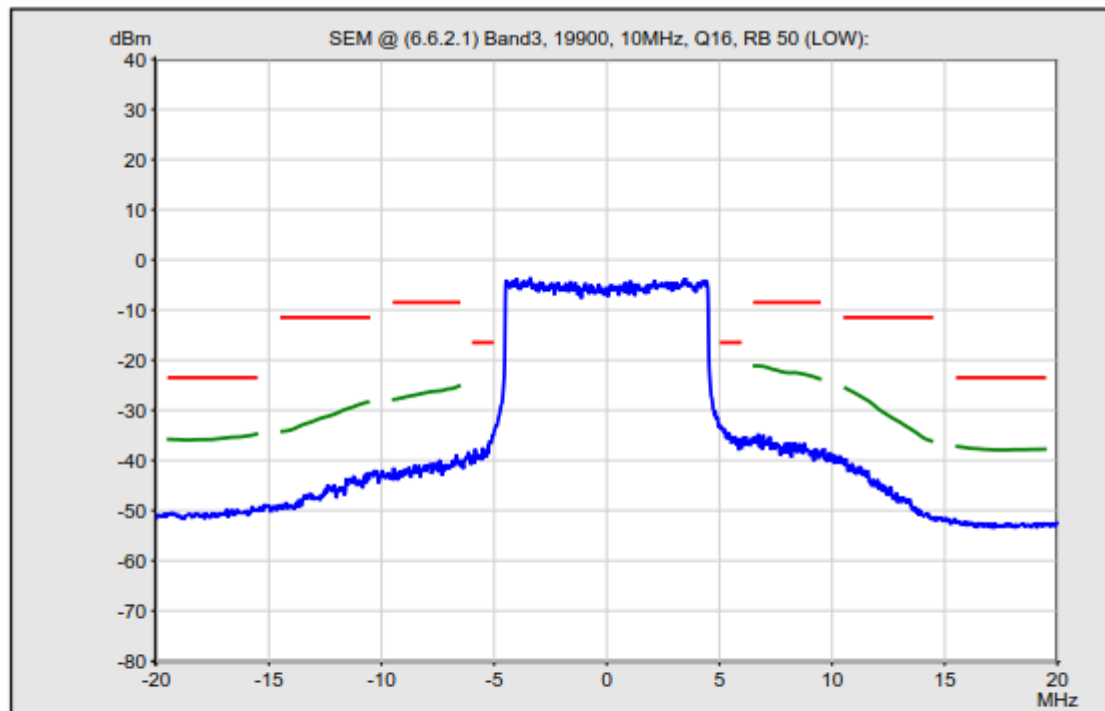
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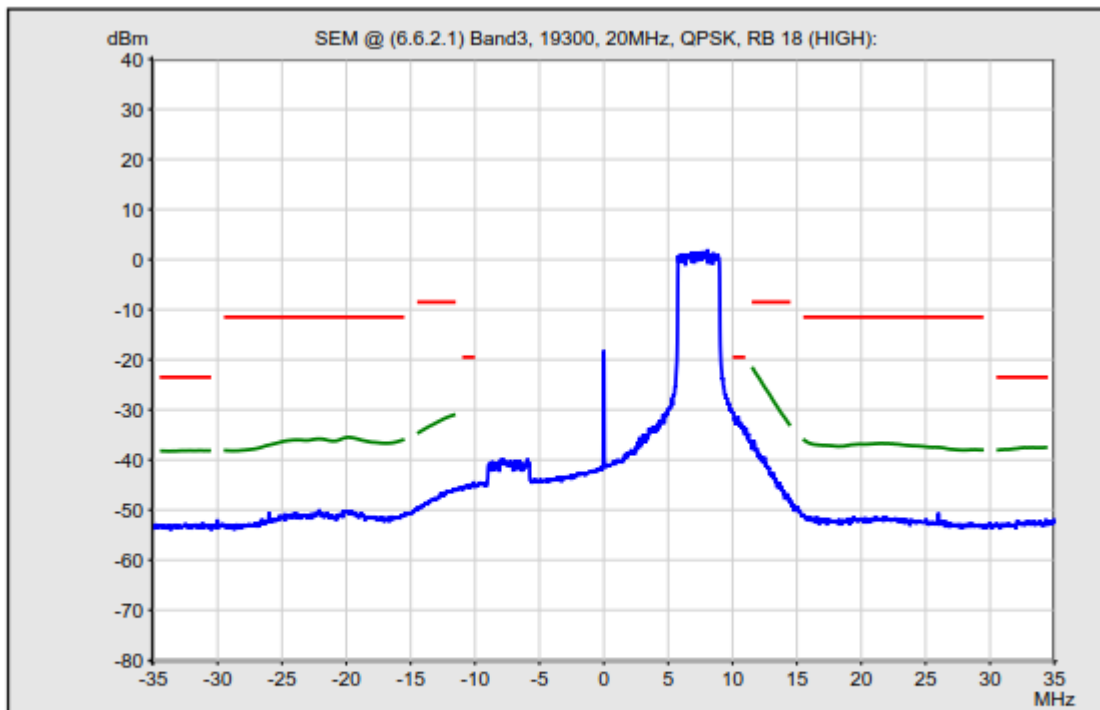
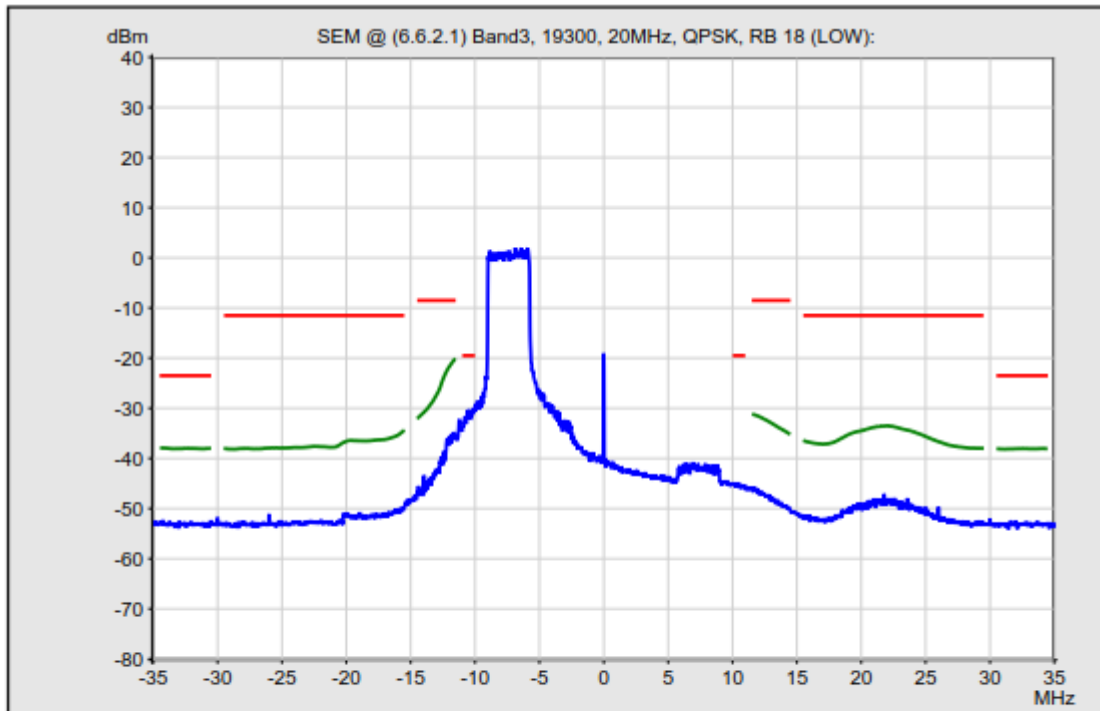
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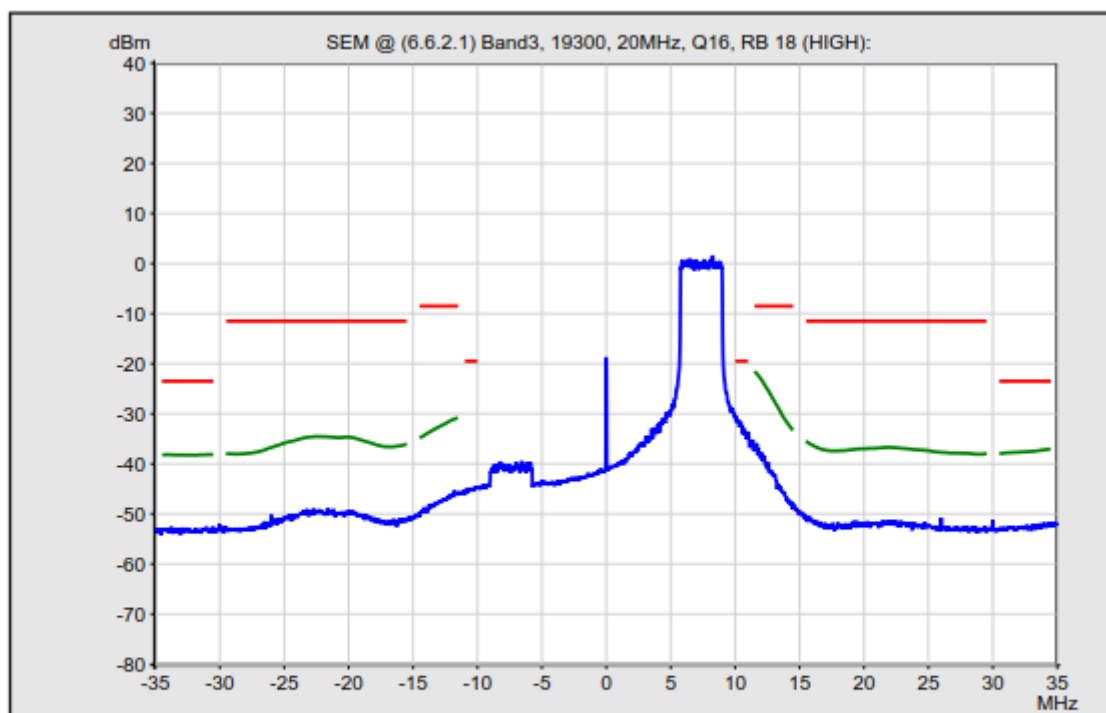
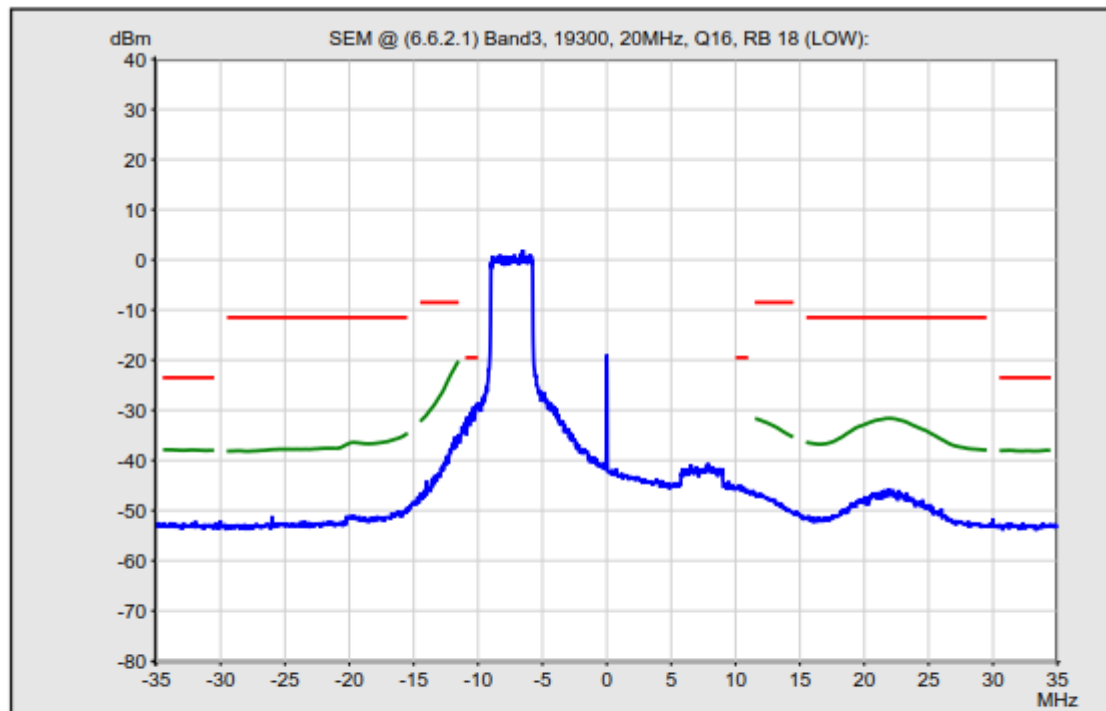


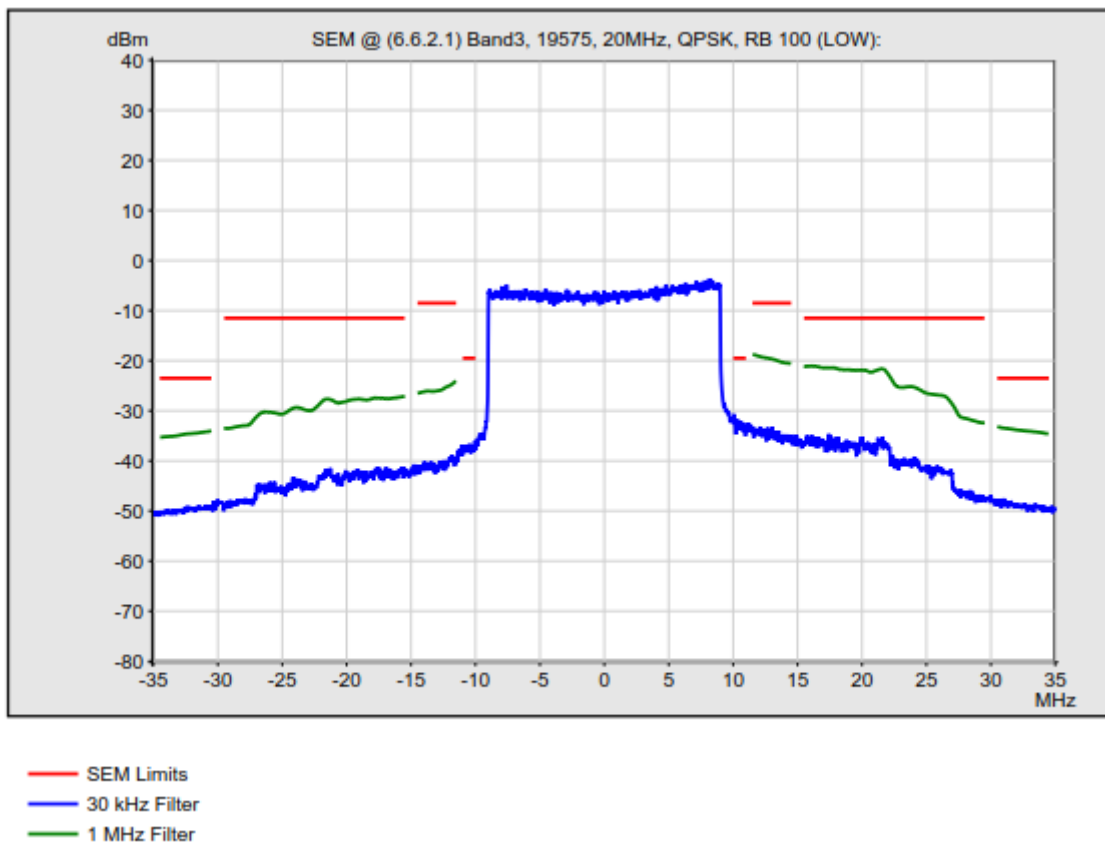
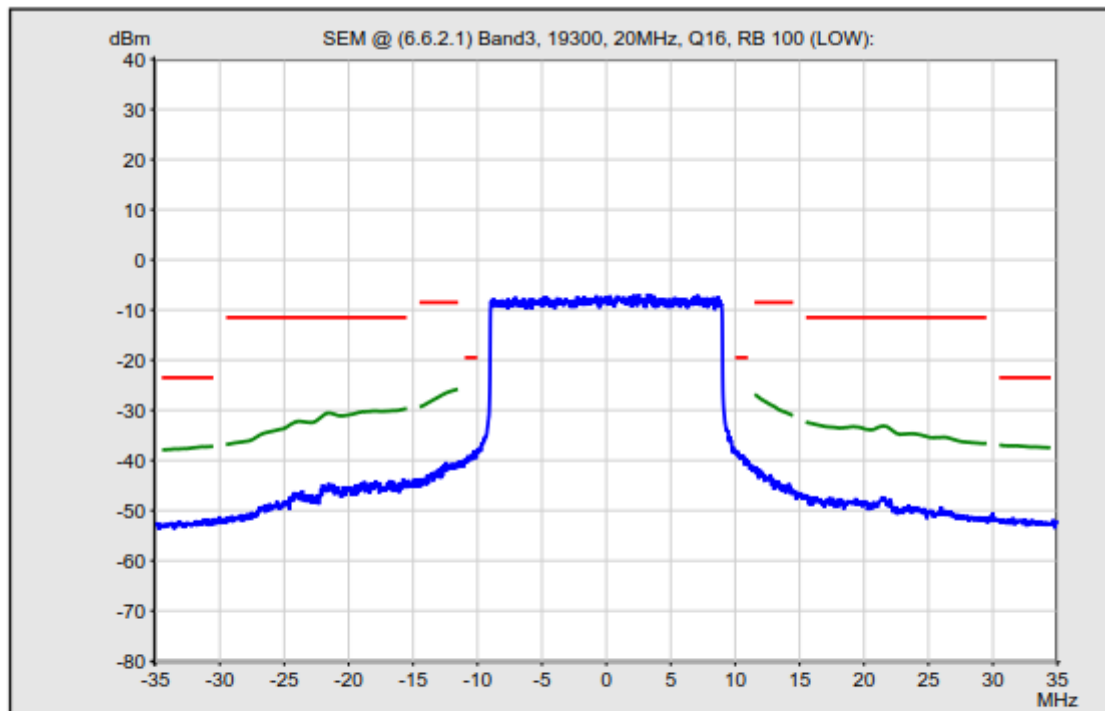


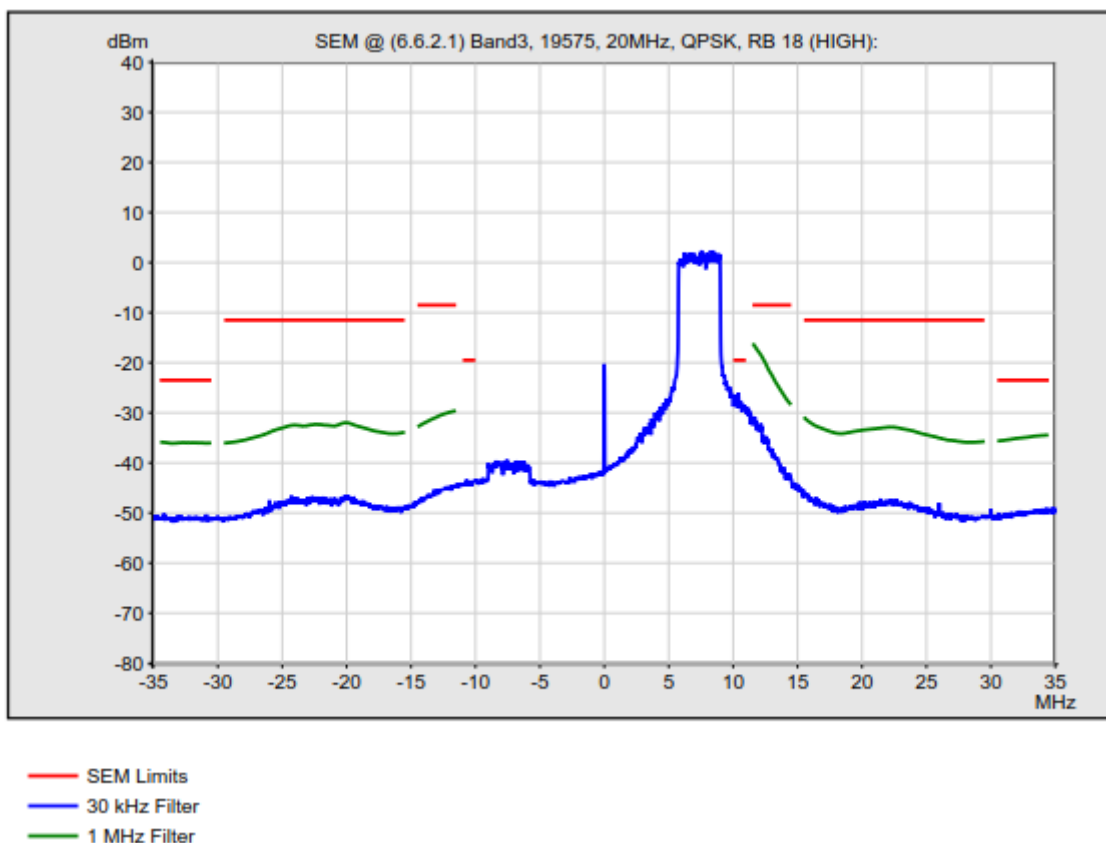
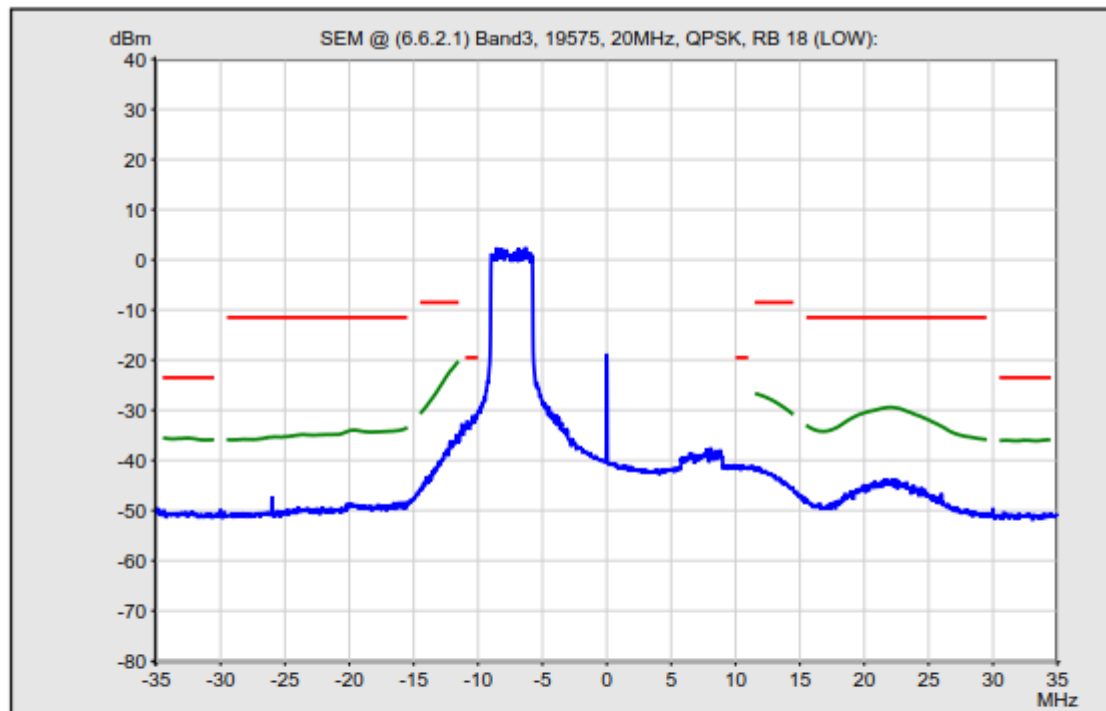


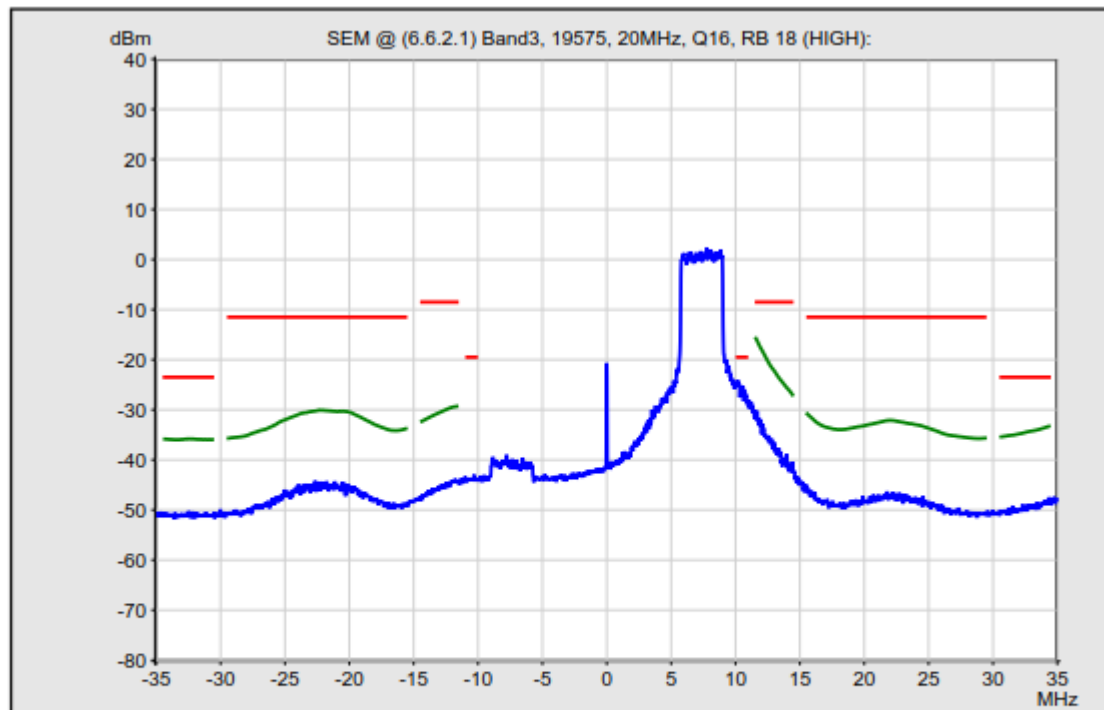
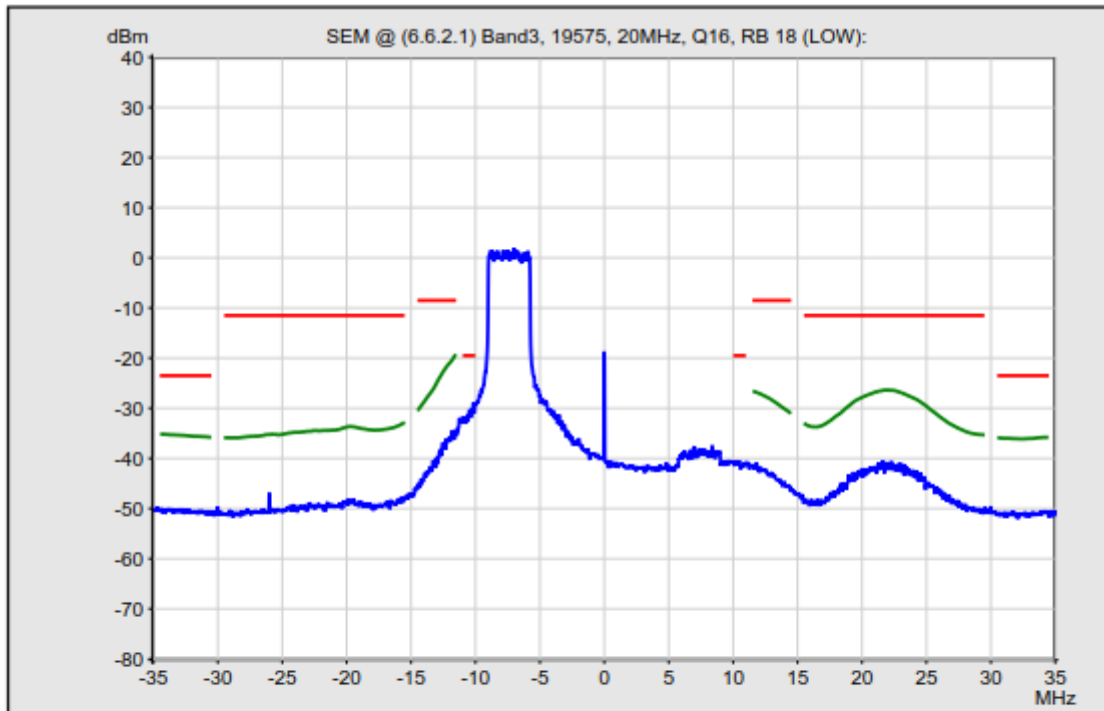


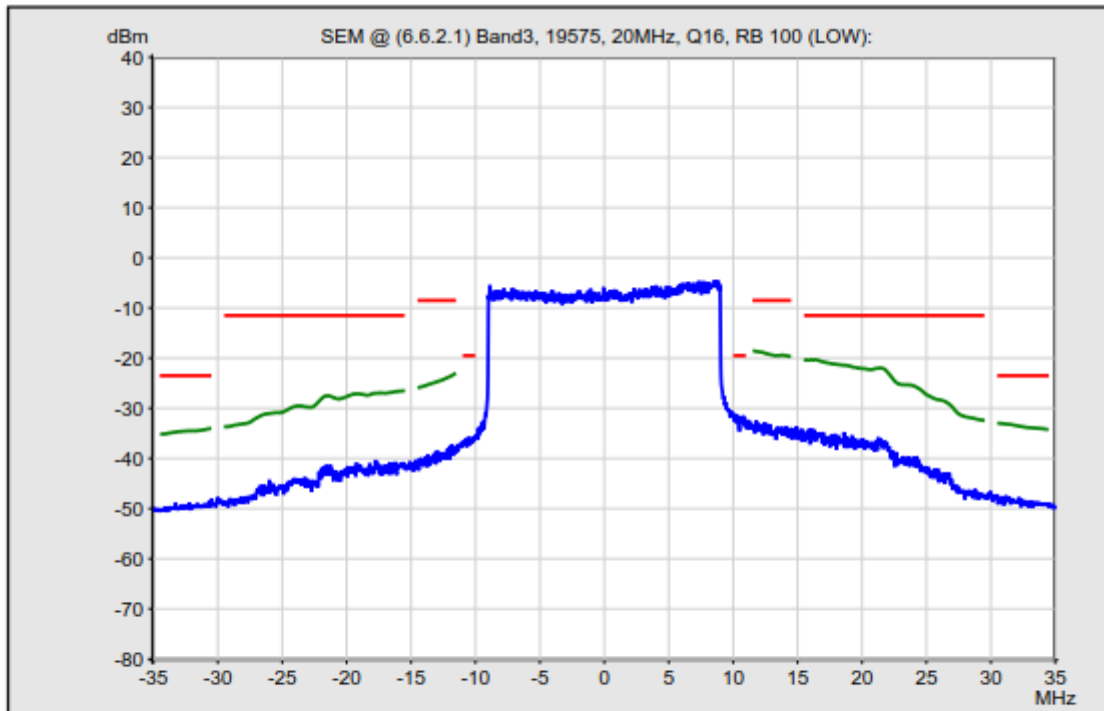




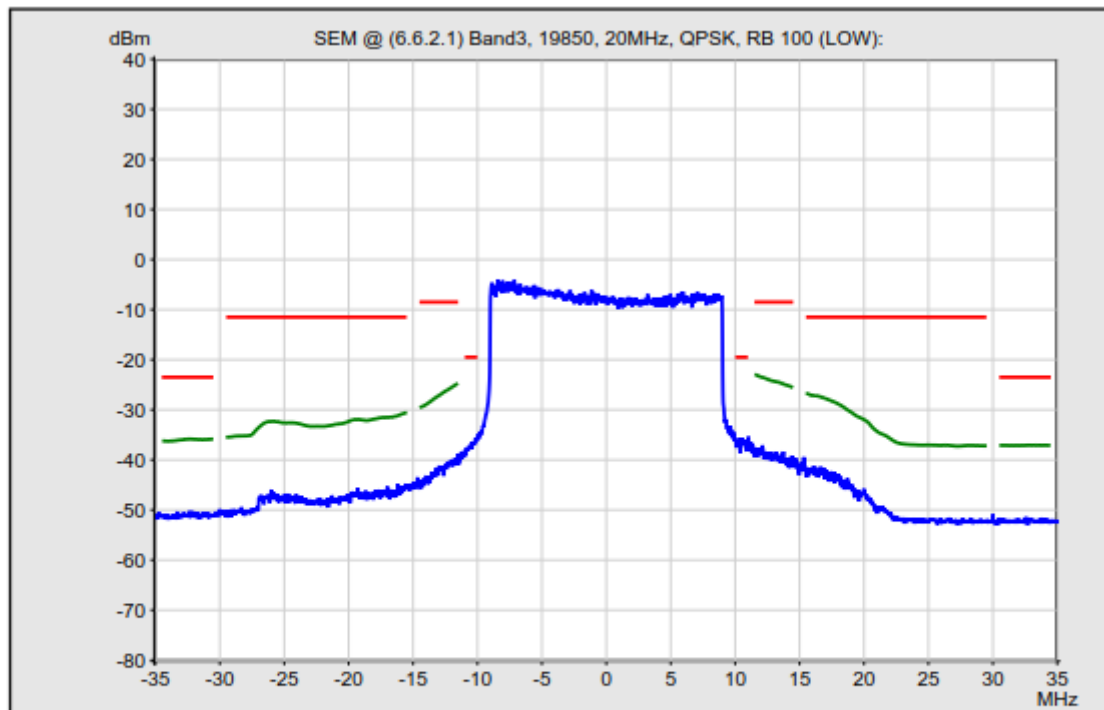




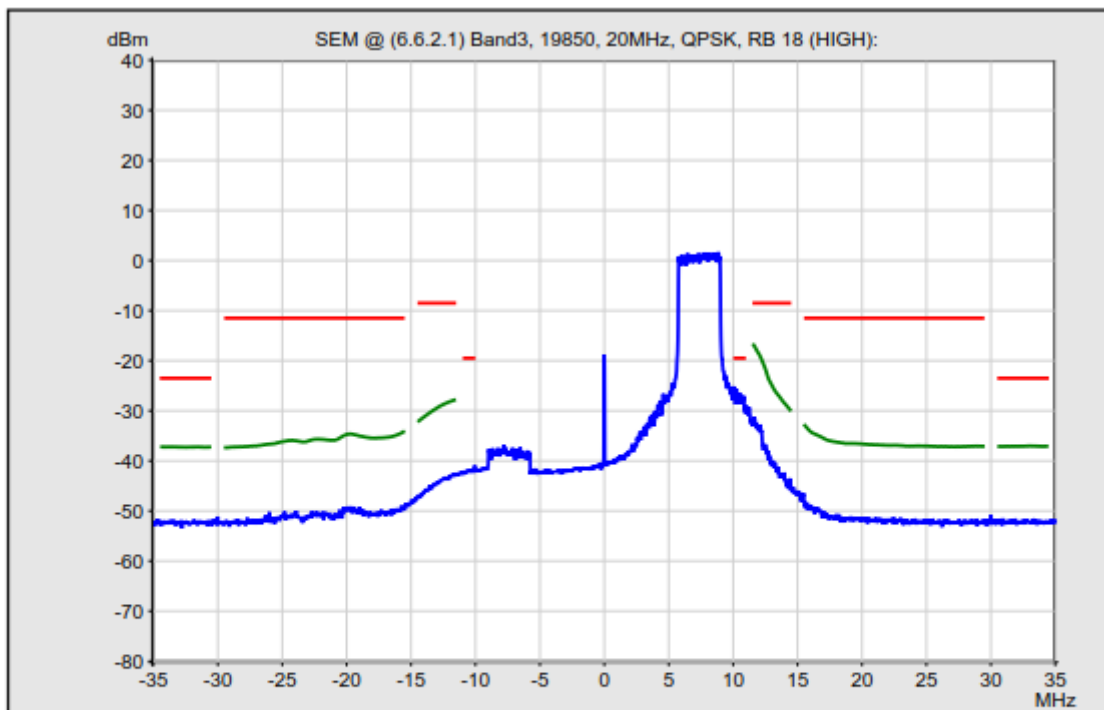
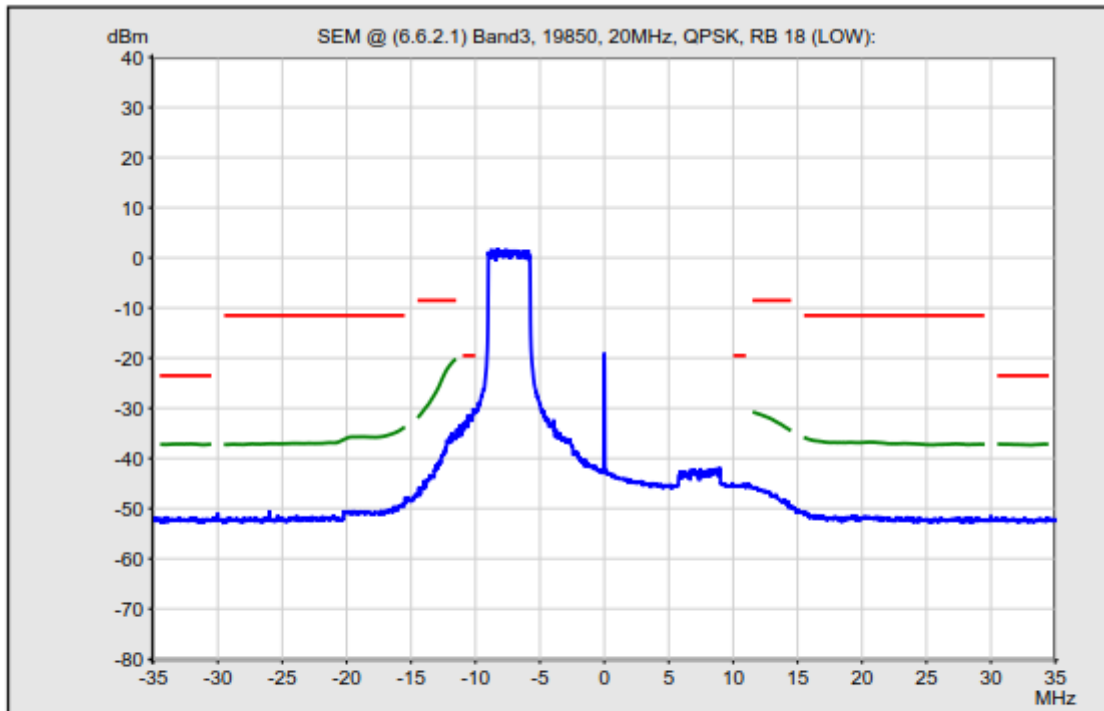


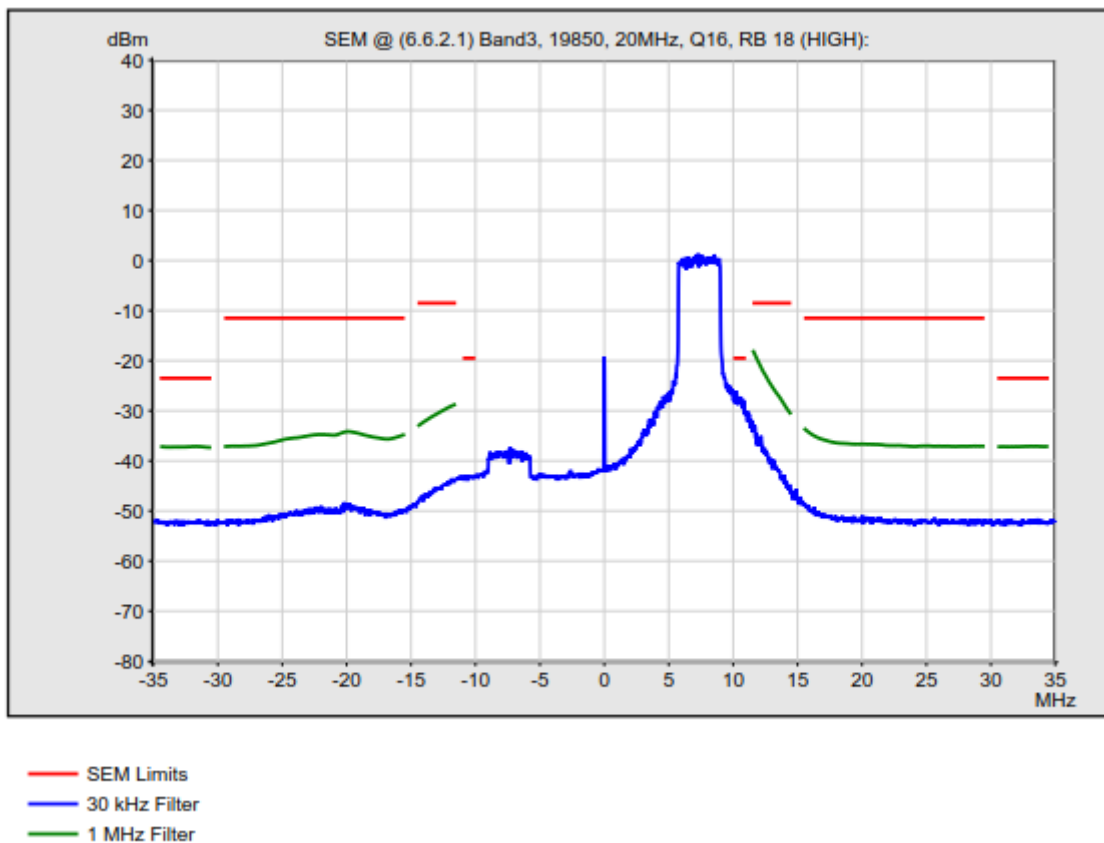
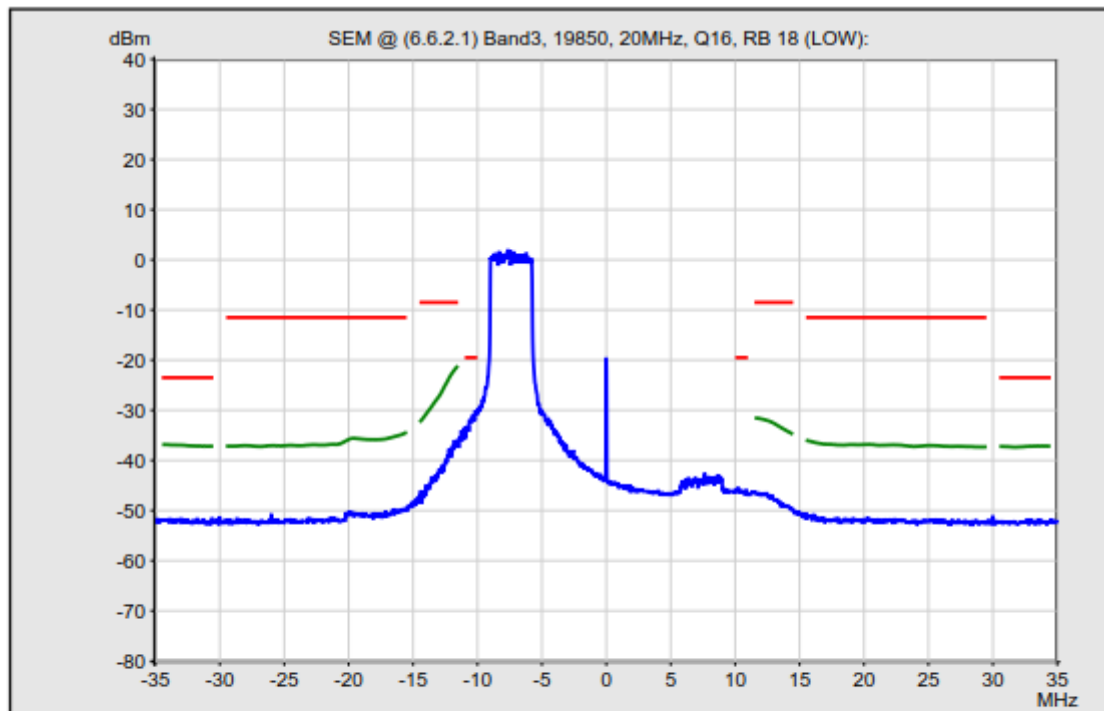


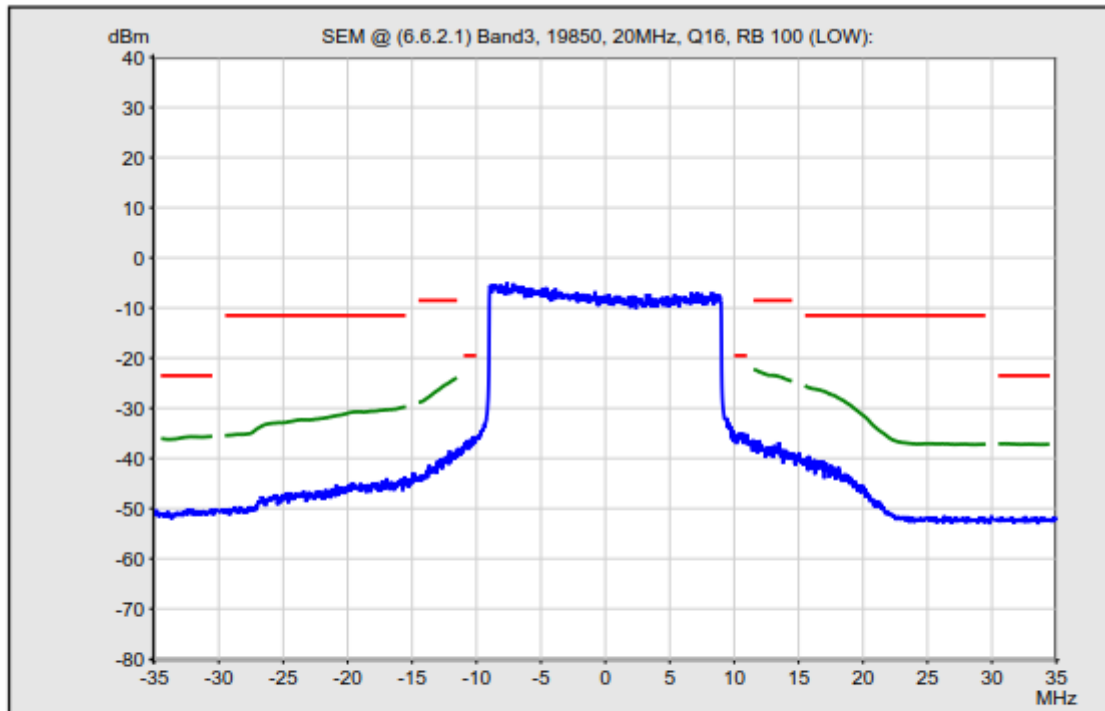
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter



— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

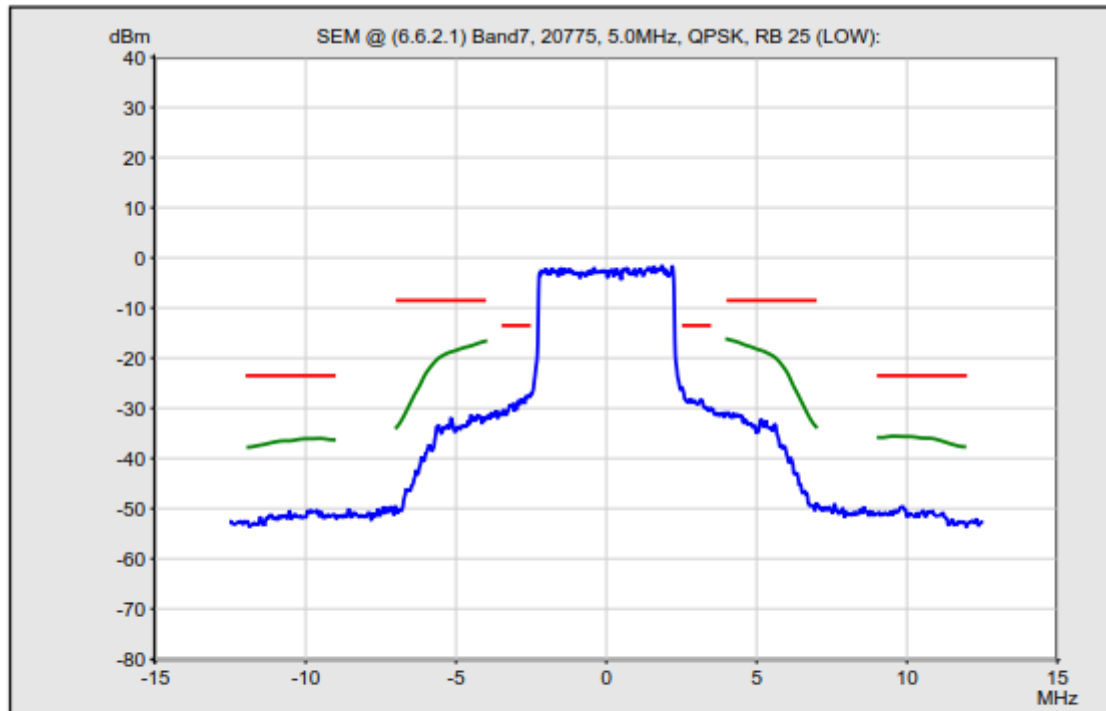




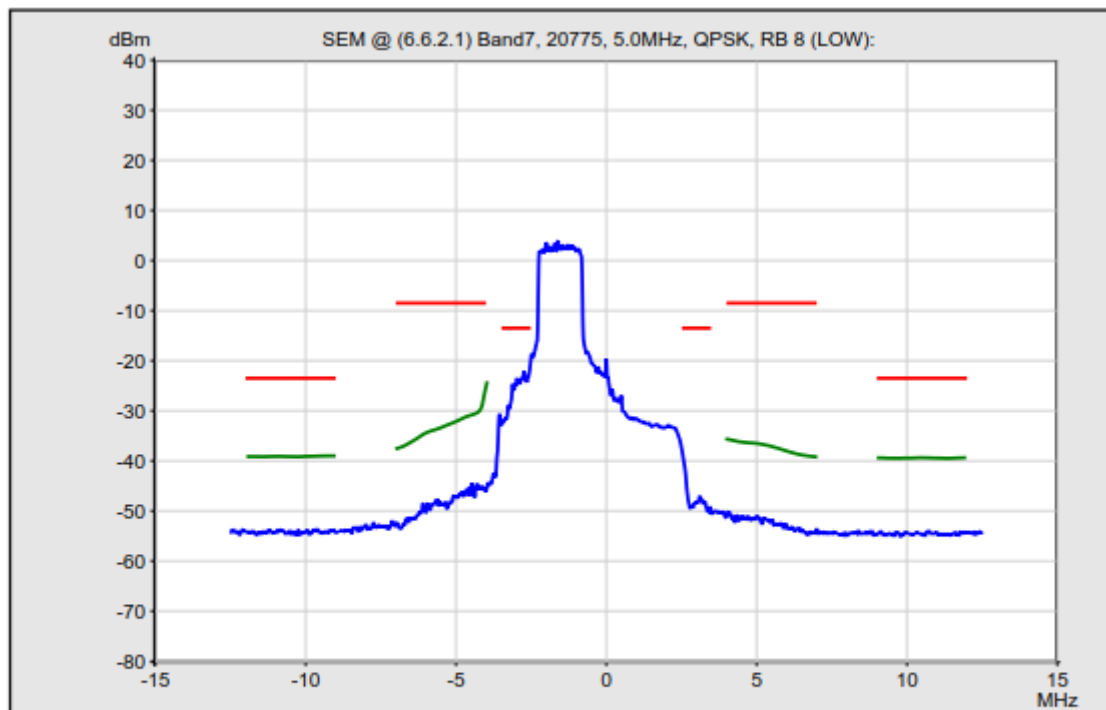


— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

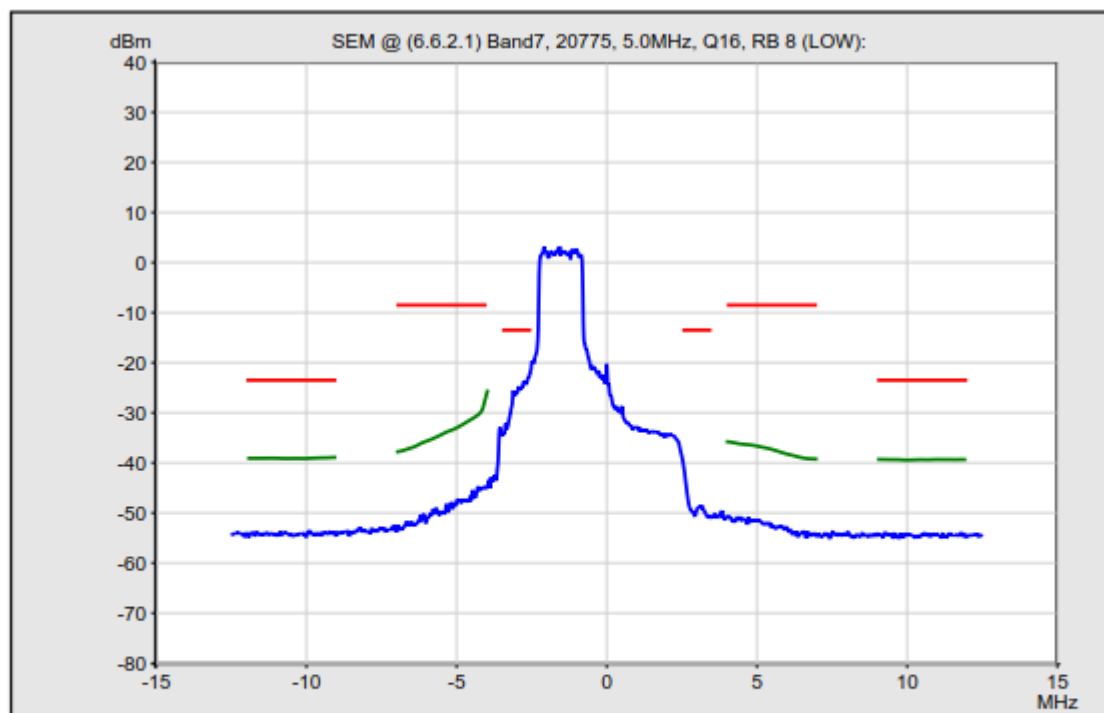
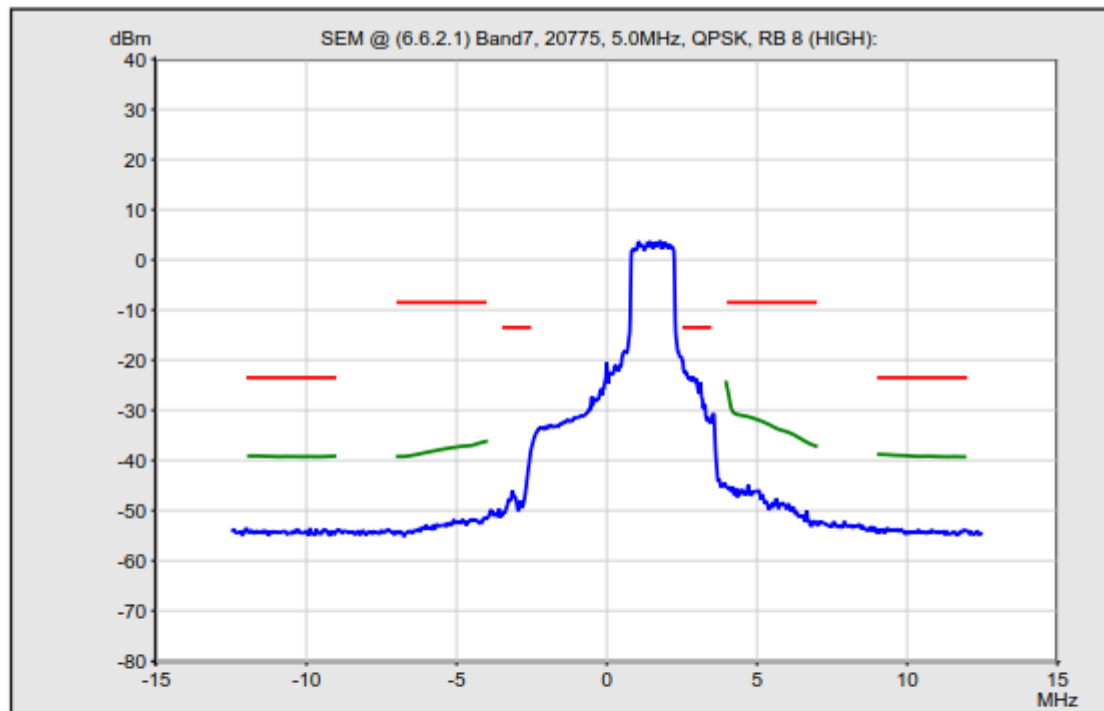
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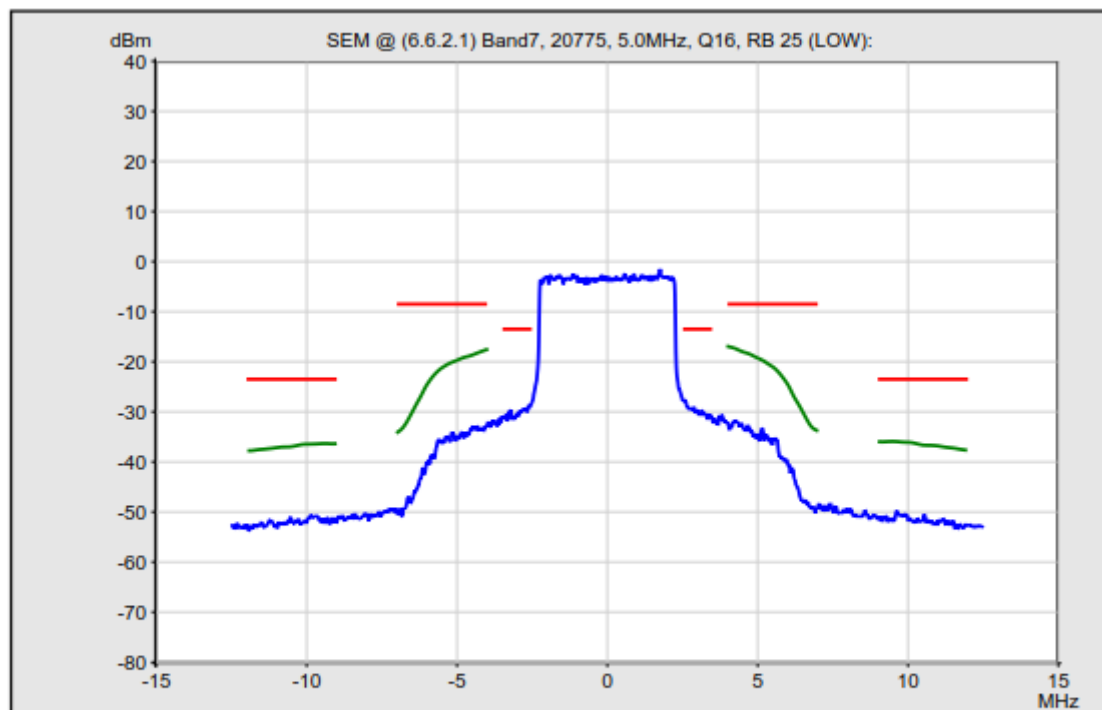
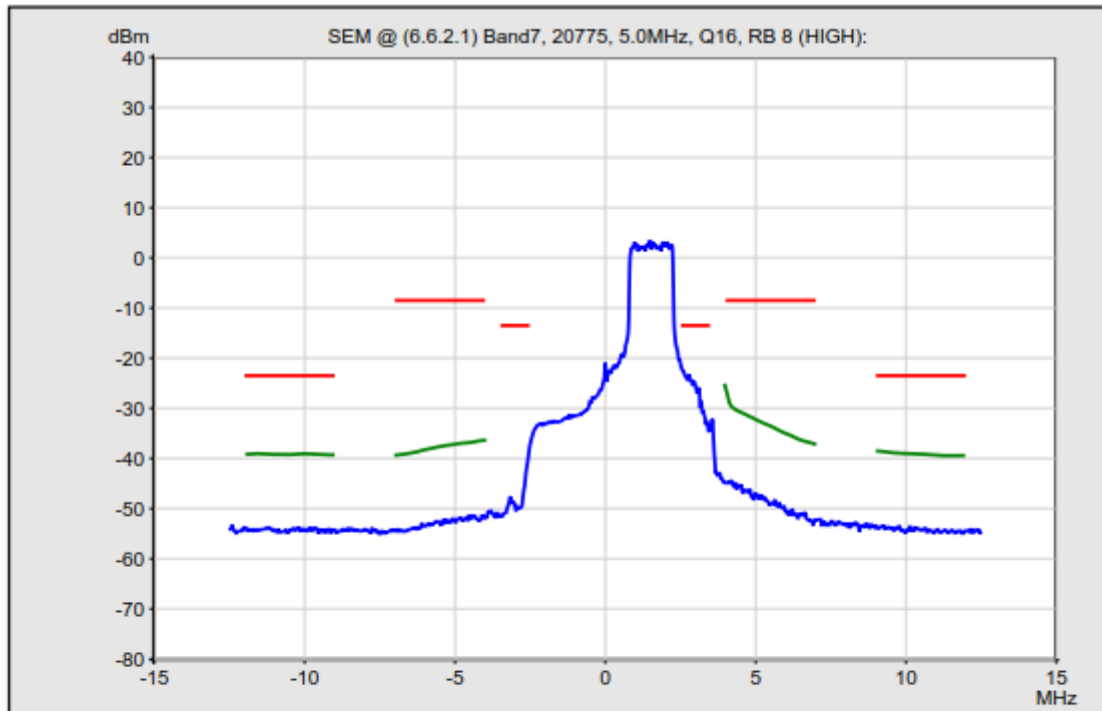


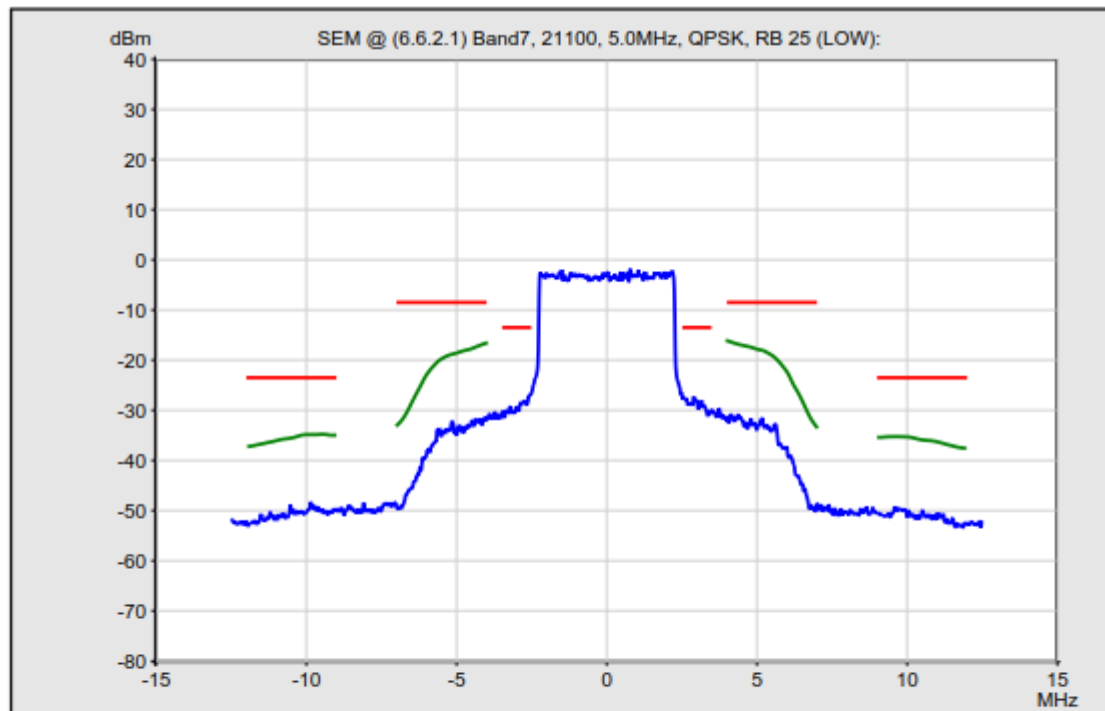
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— 30 kHz Filter
— 1 MHz Filter



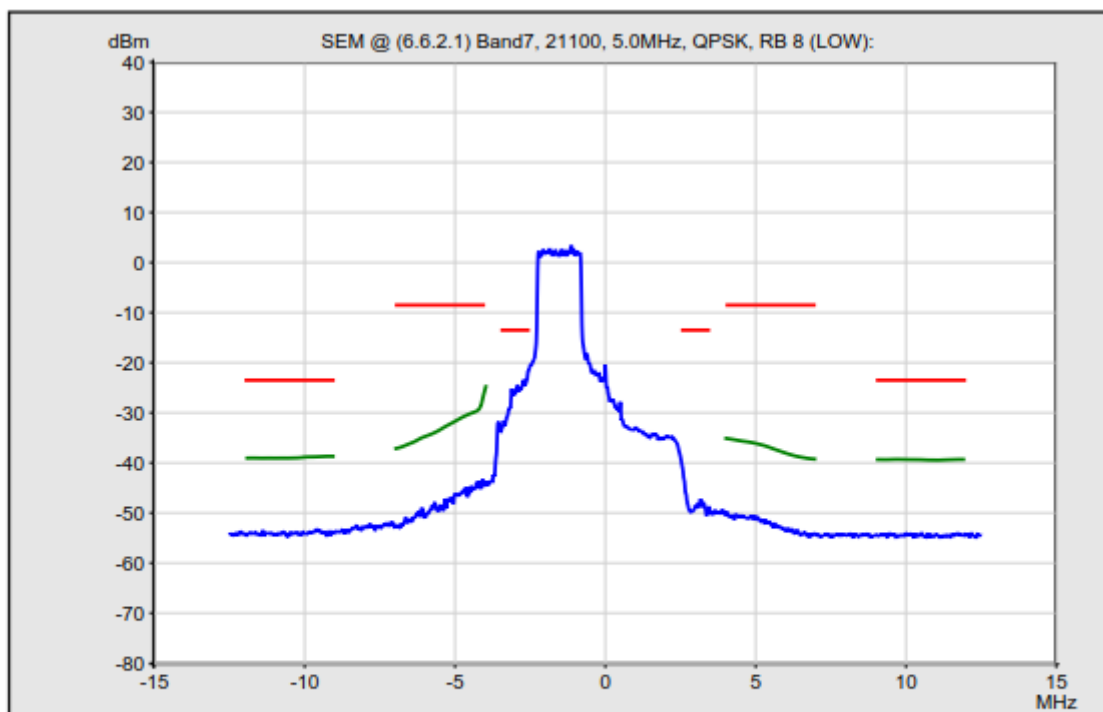
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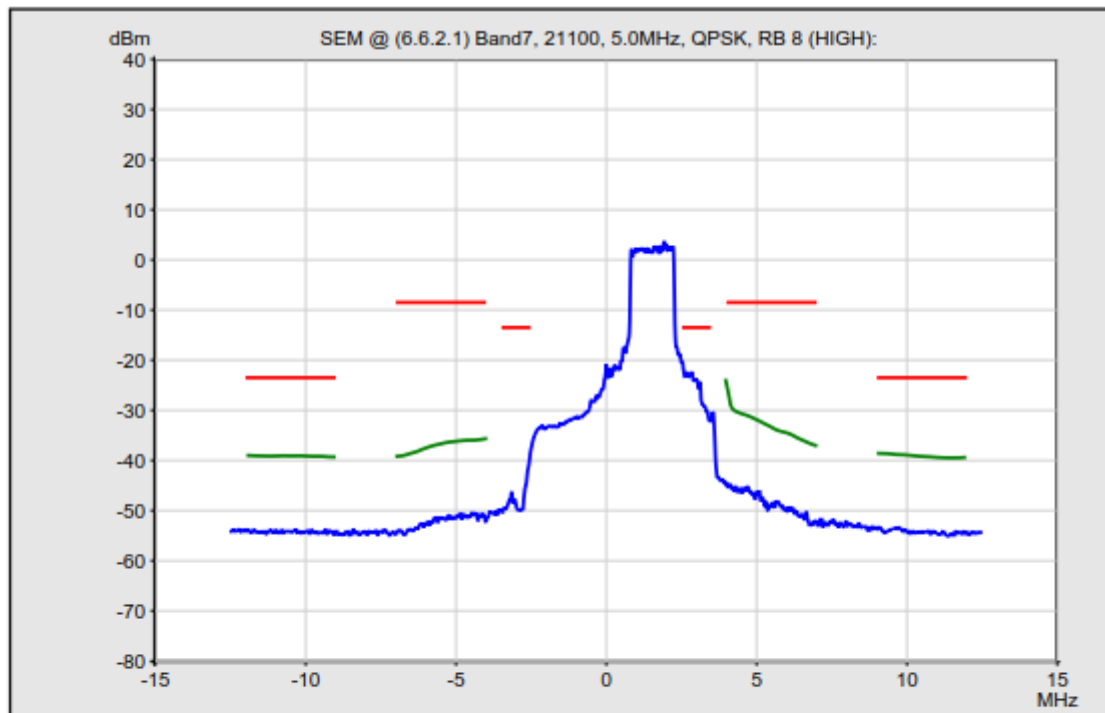




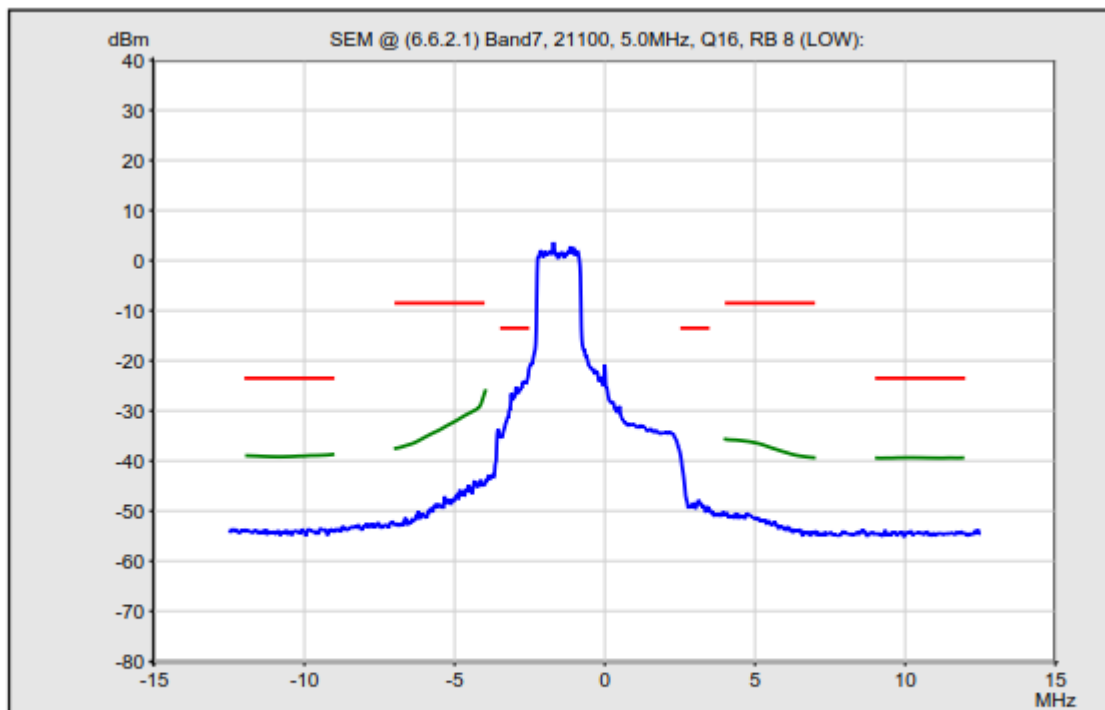
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— 30 kHz Filter
— 1 MHz Filter



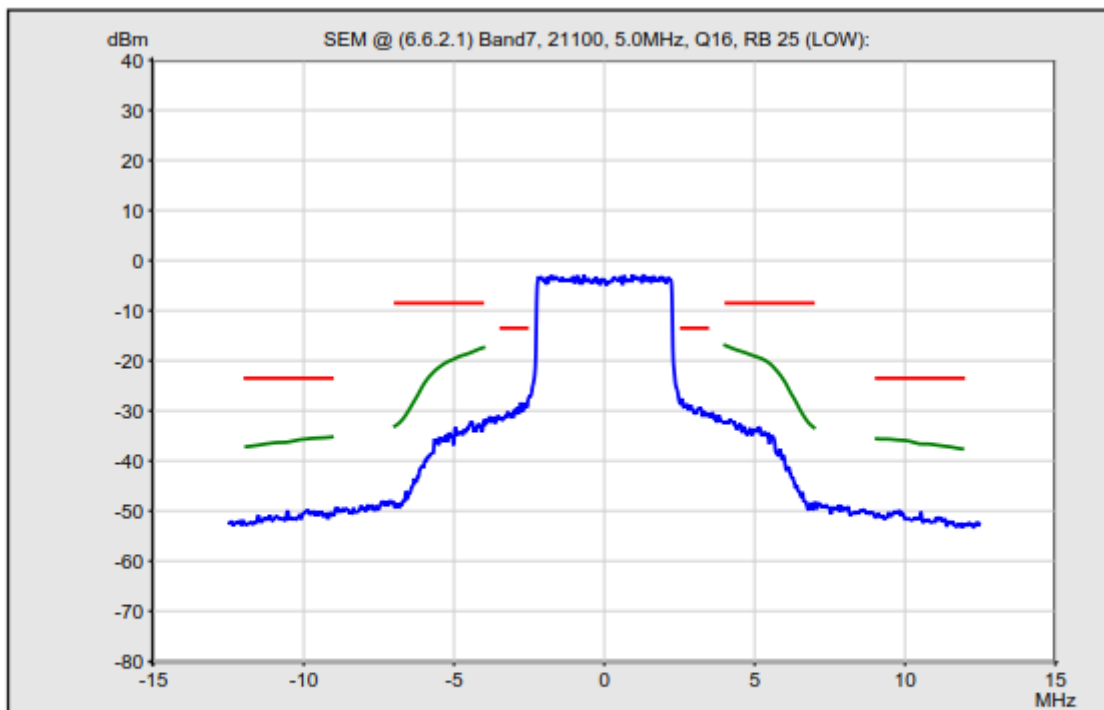
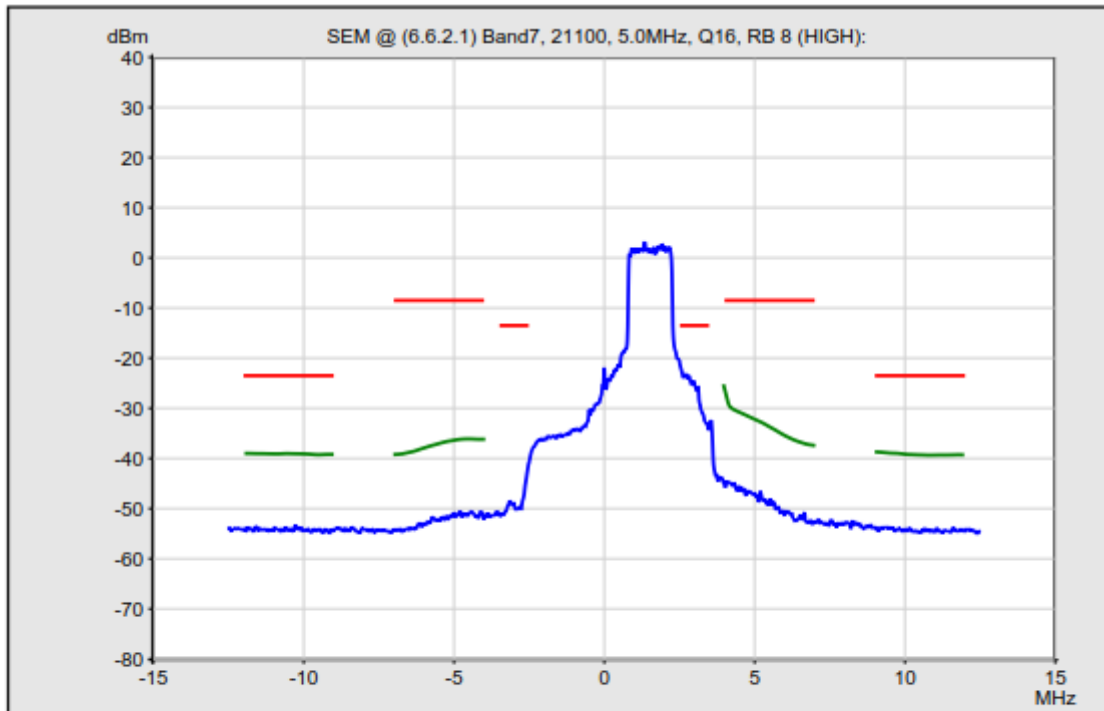
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

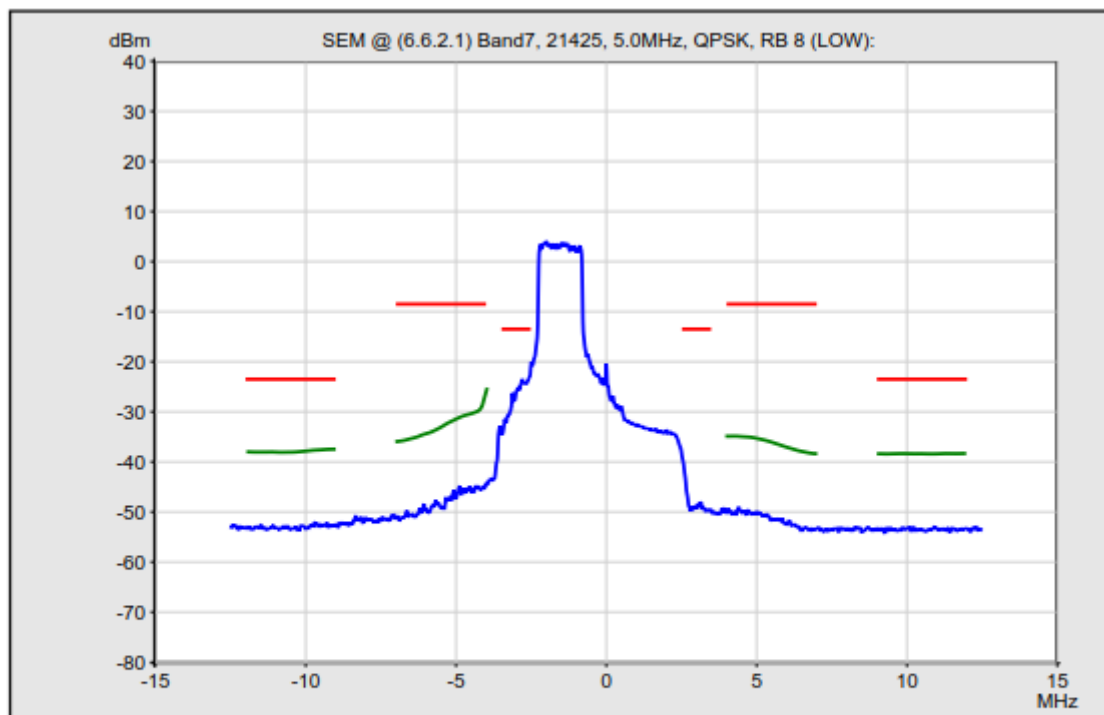
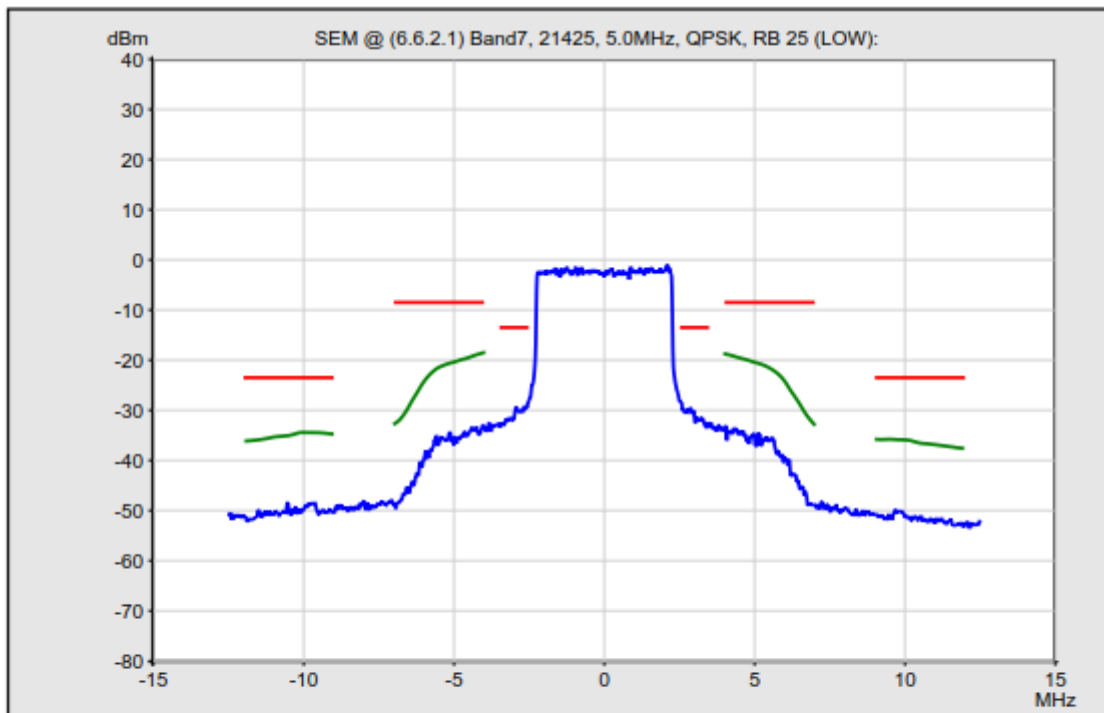


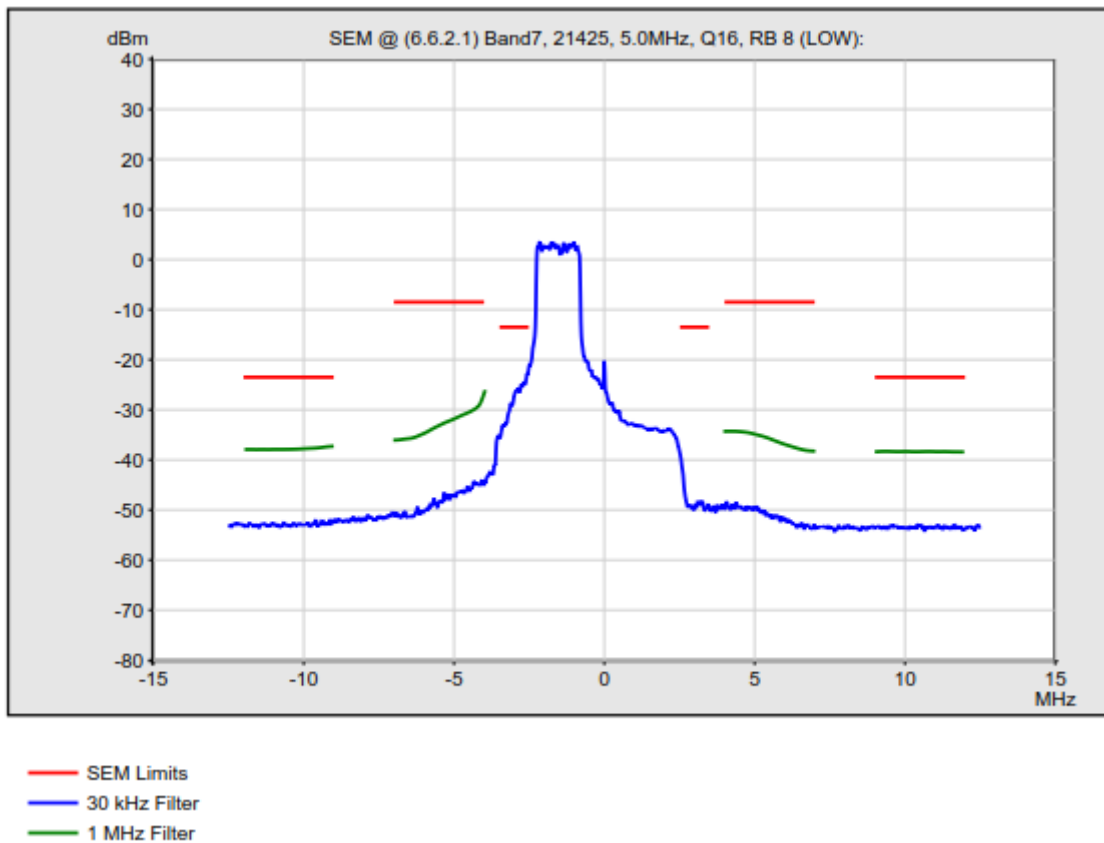
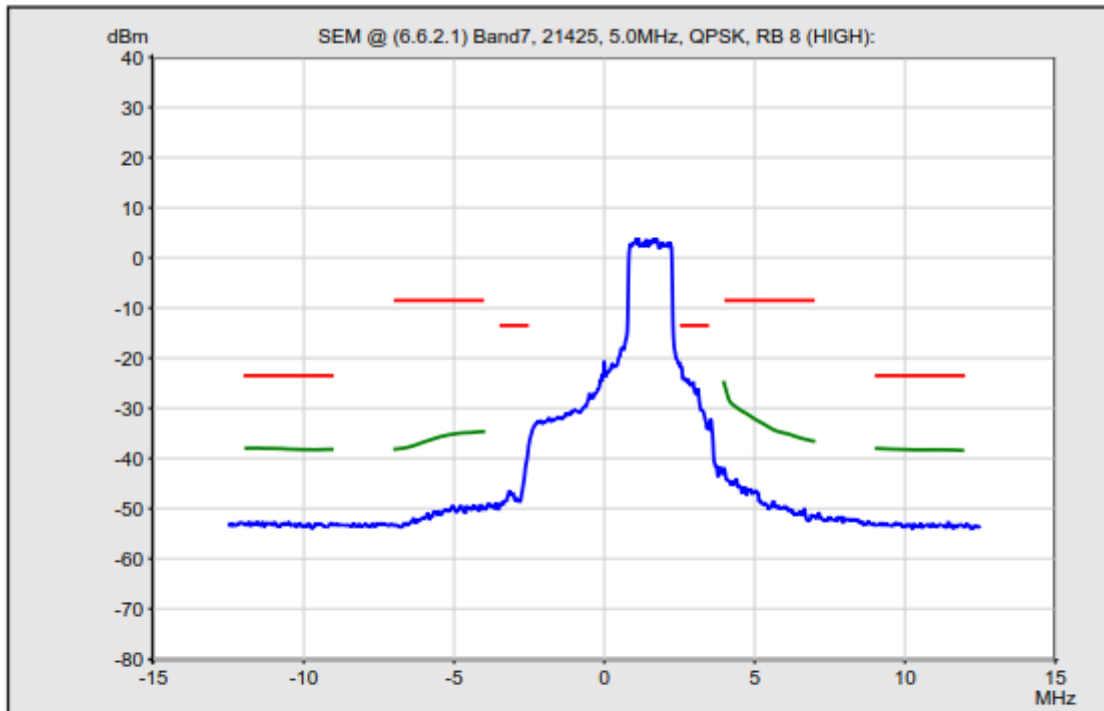
— SEM Limits
— 30 kHz Filter
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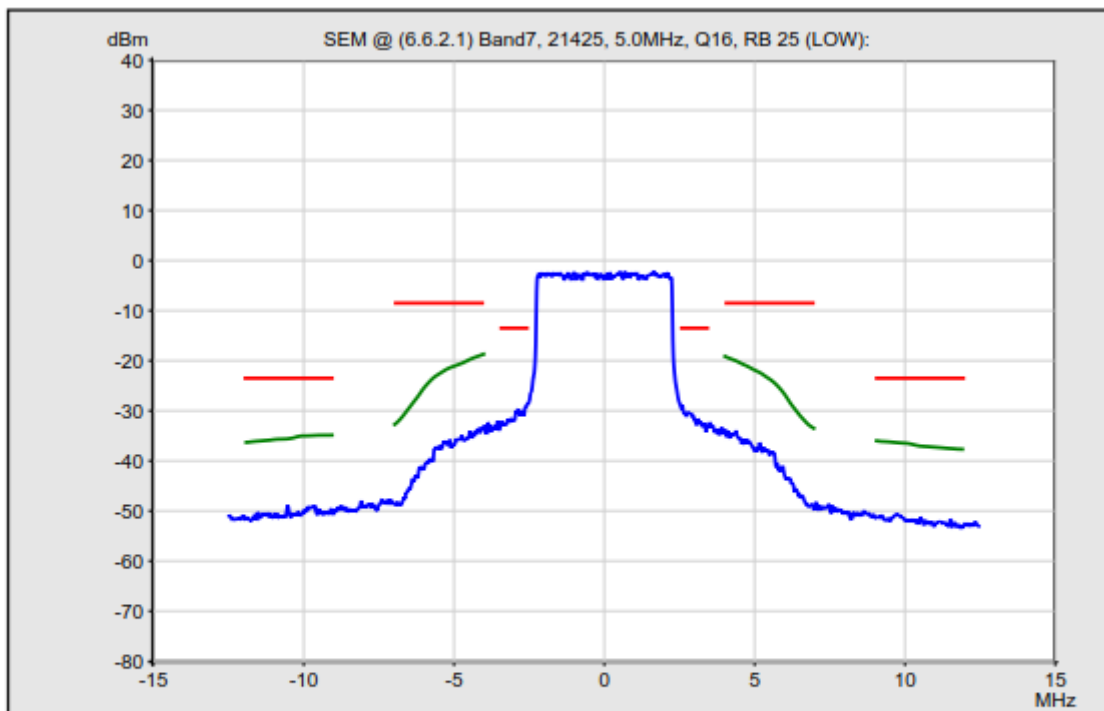
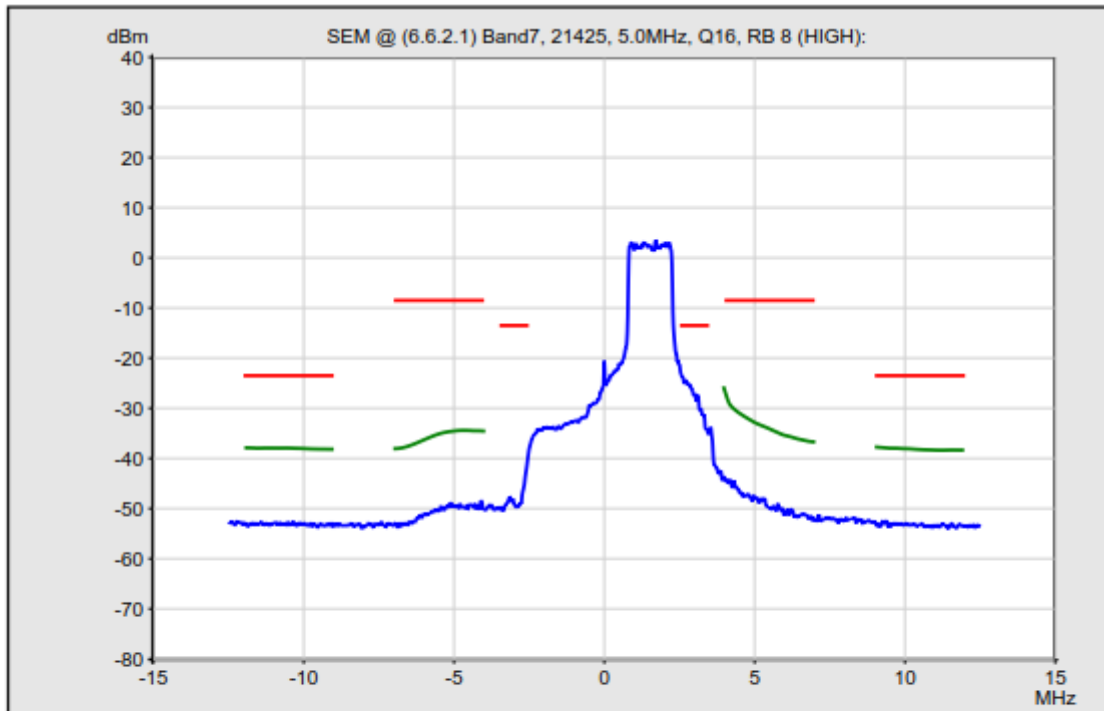


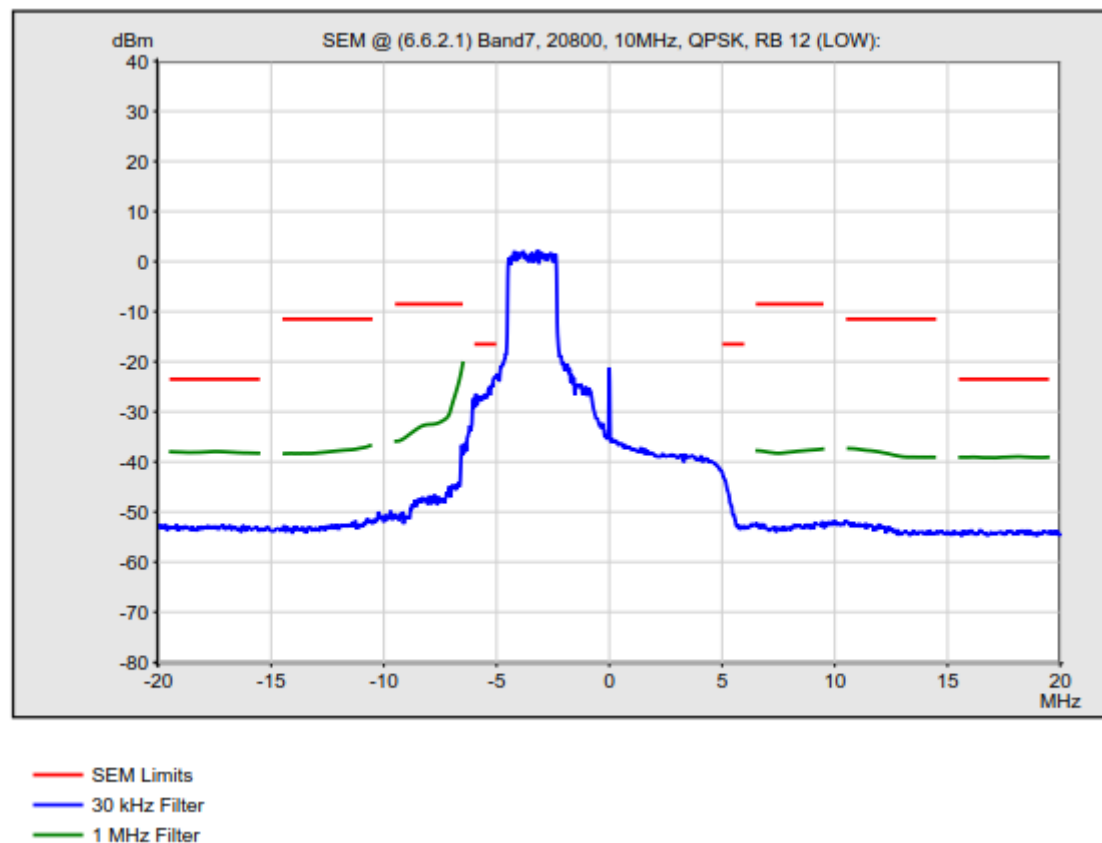
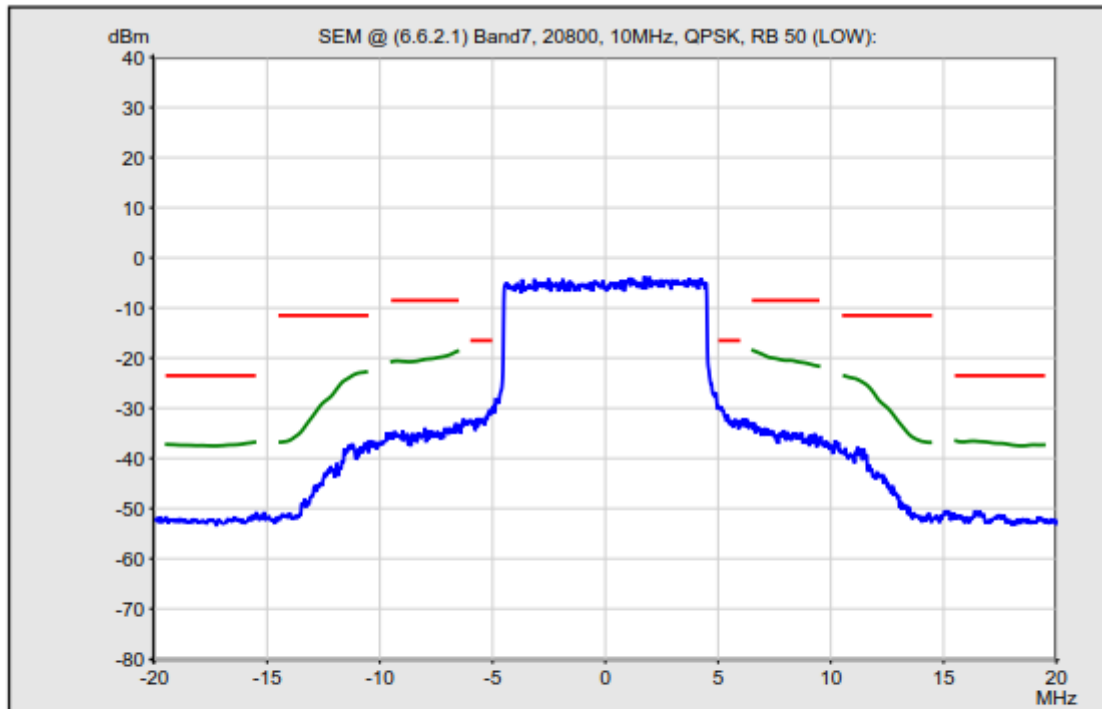
— SEM Limits
— 30 kHz Filter
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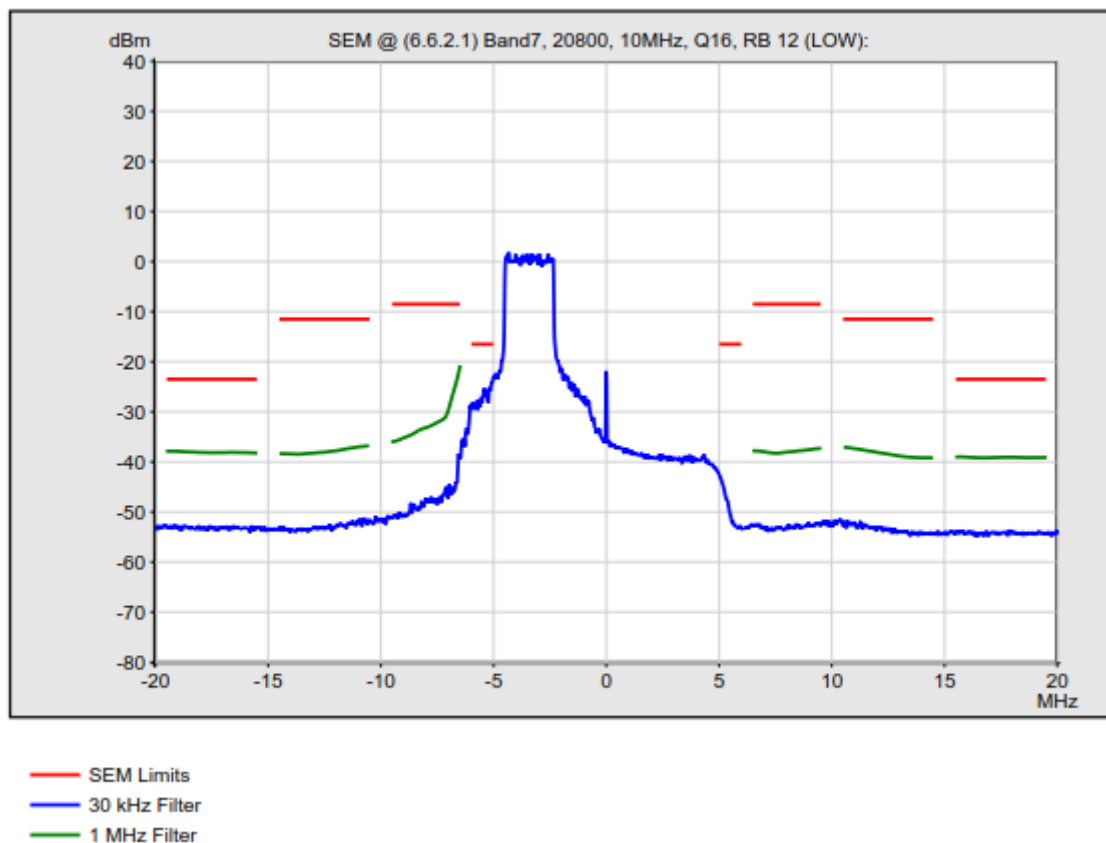
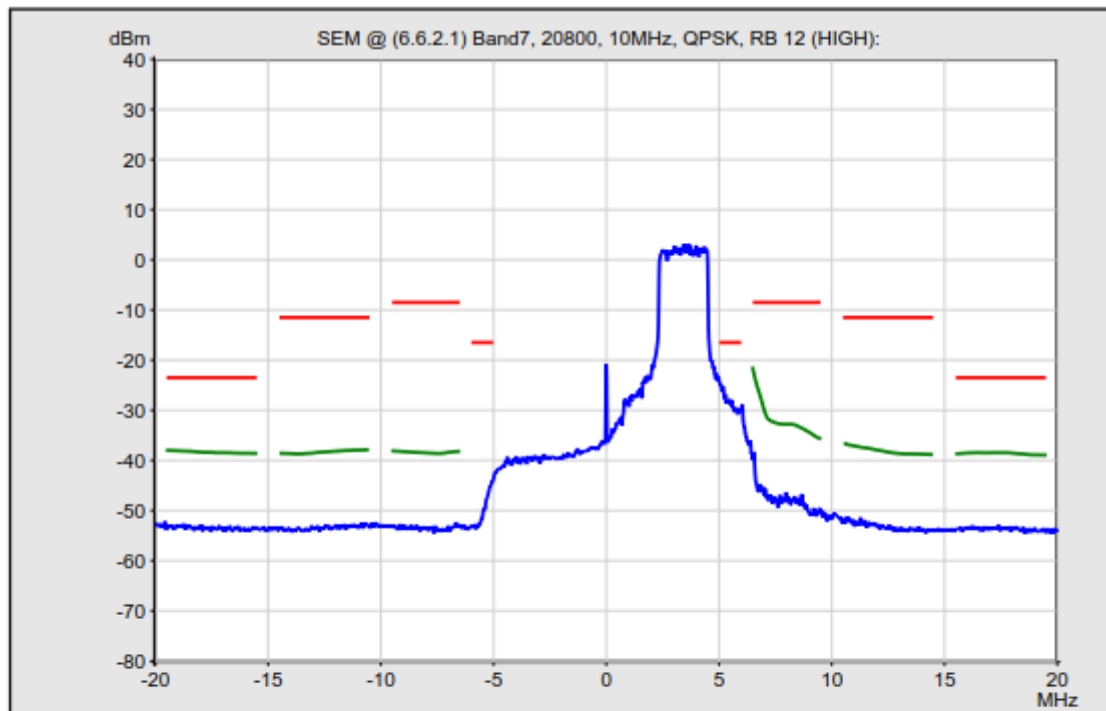


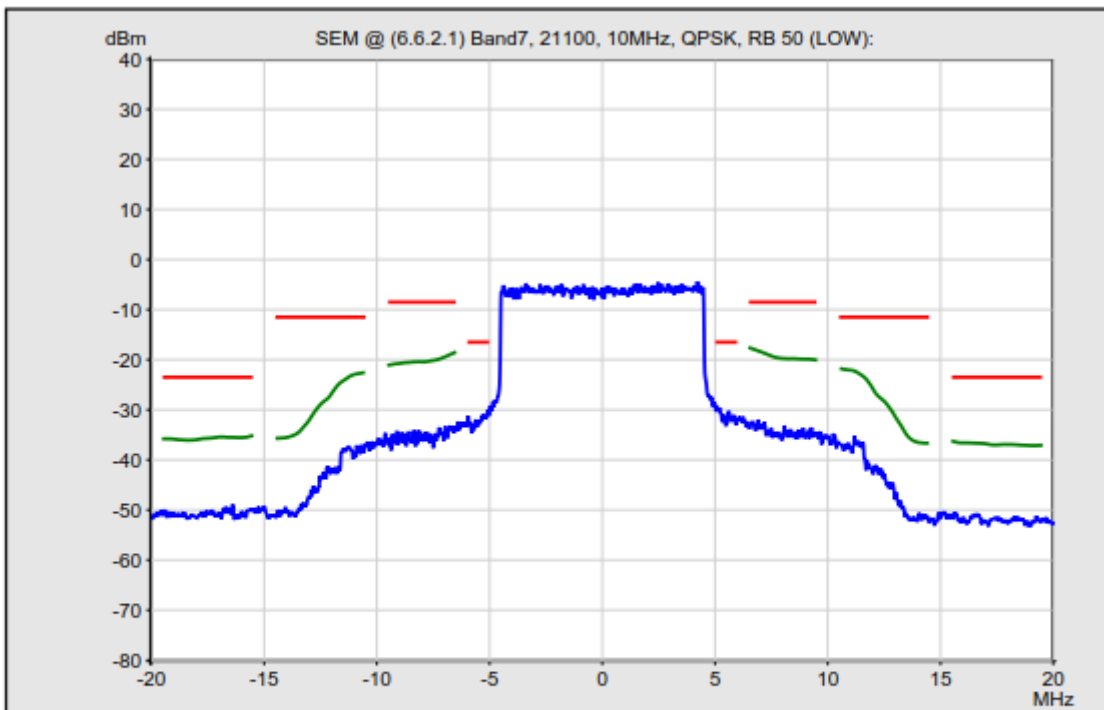
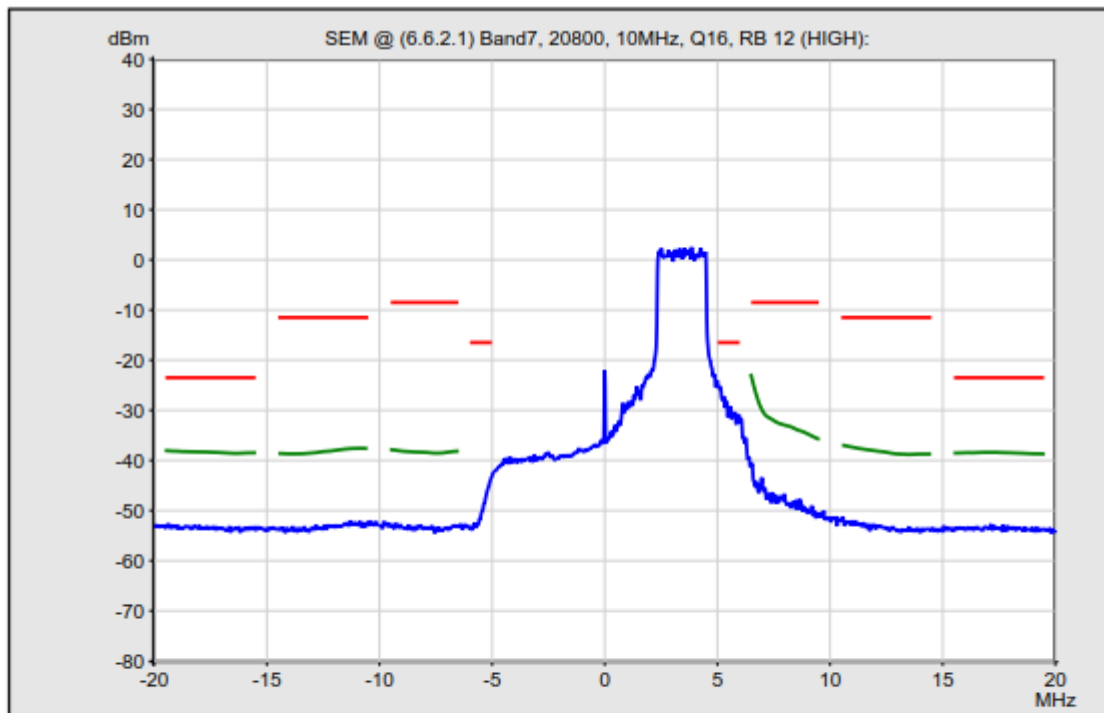


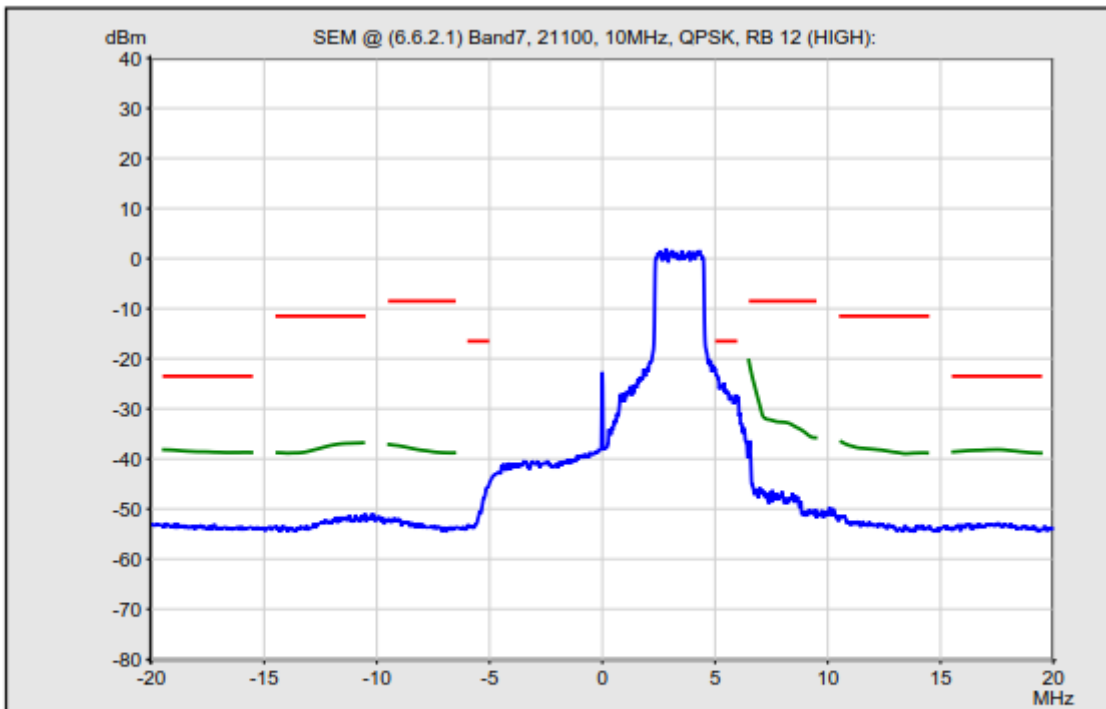
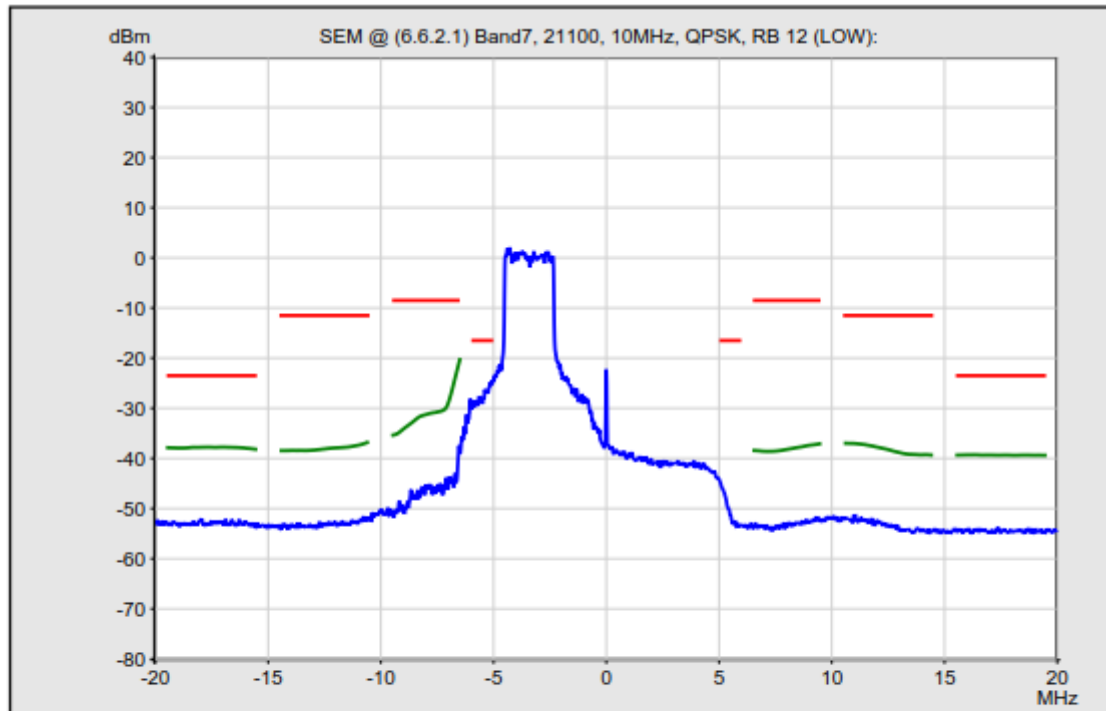


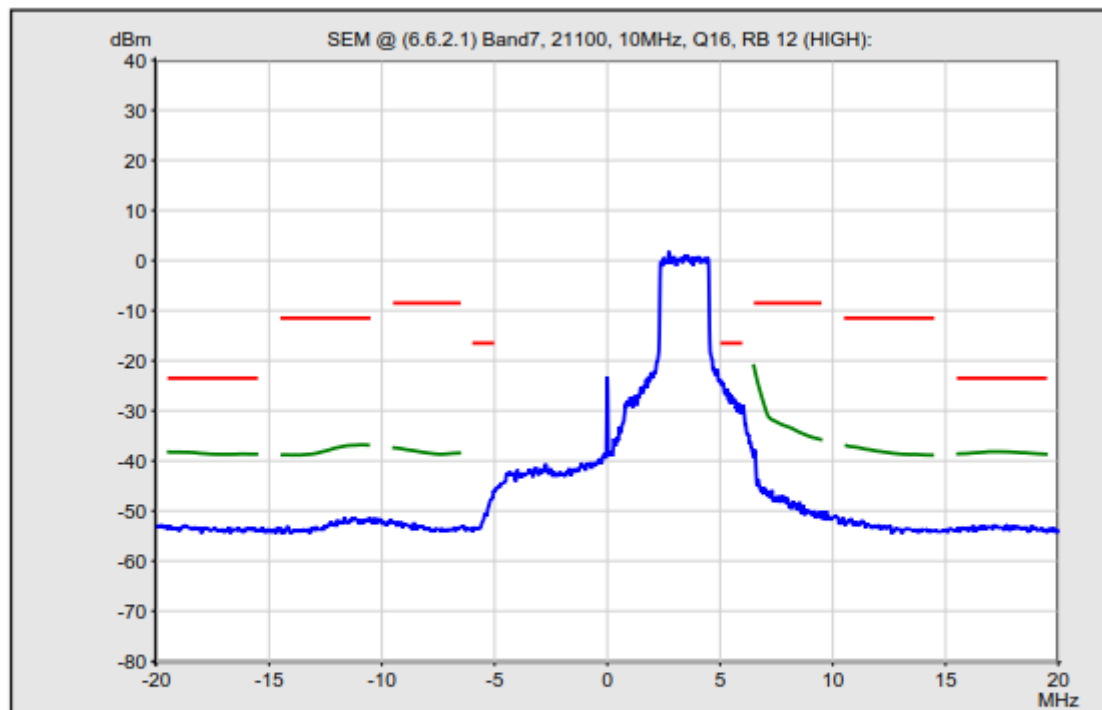
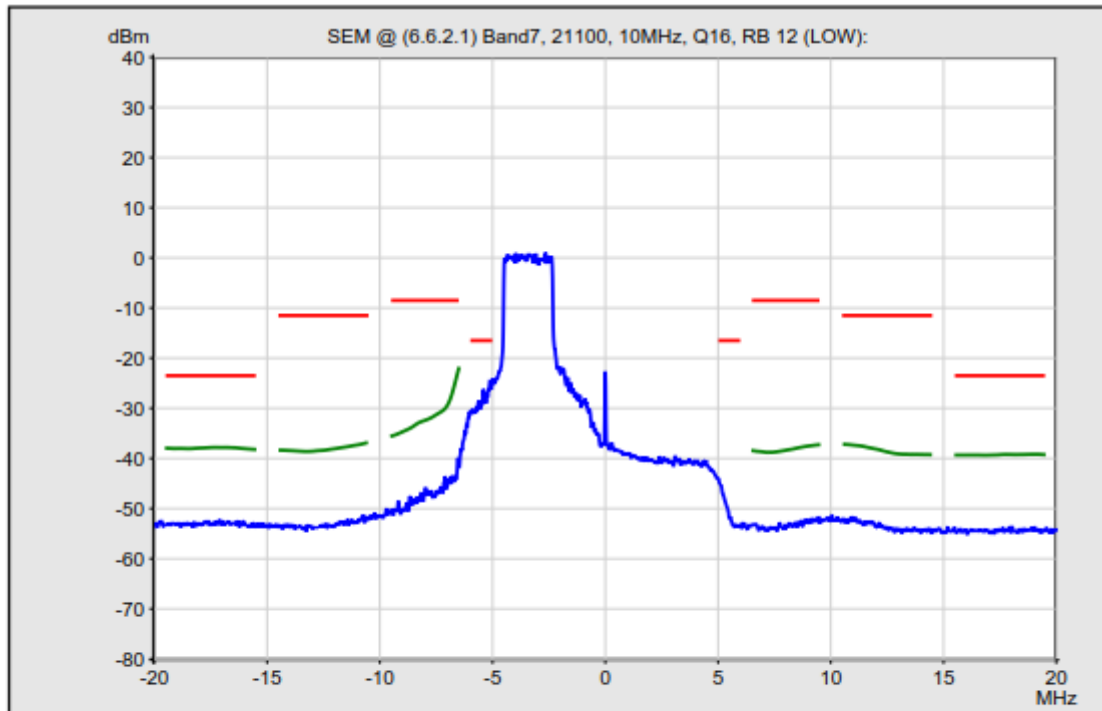


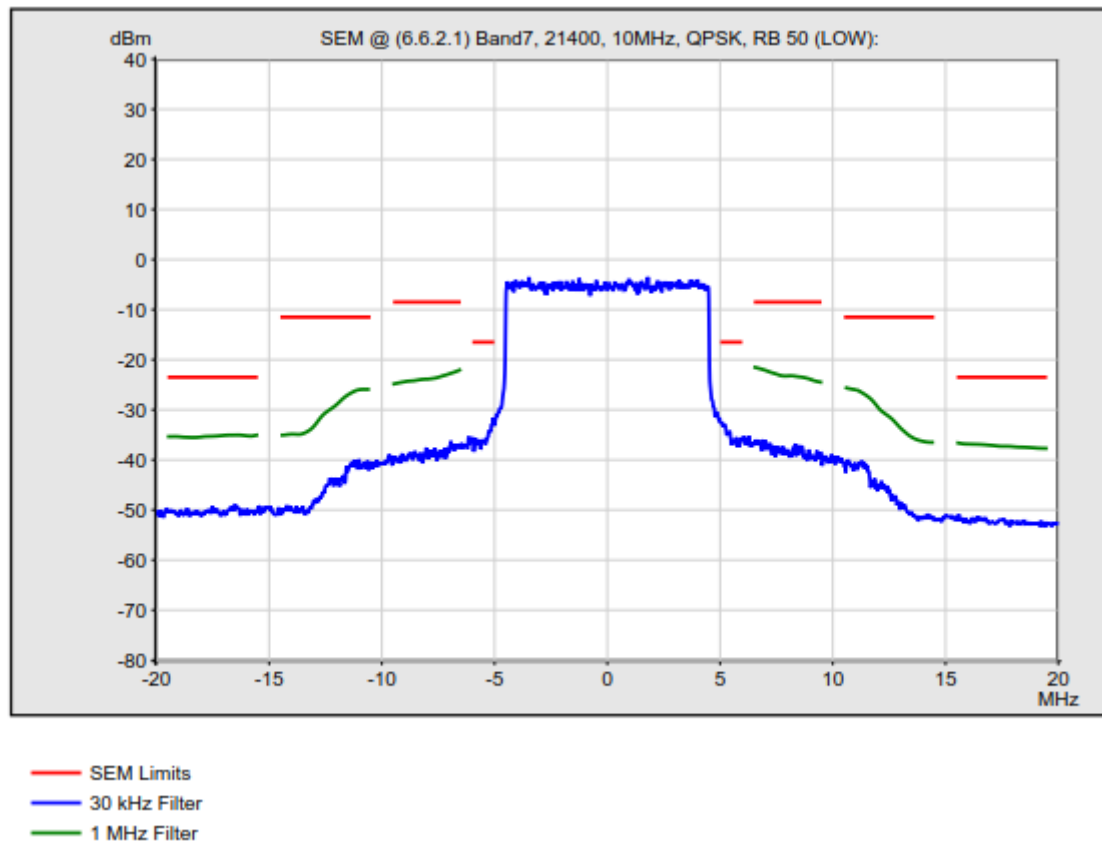
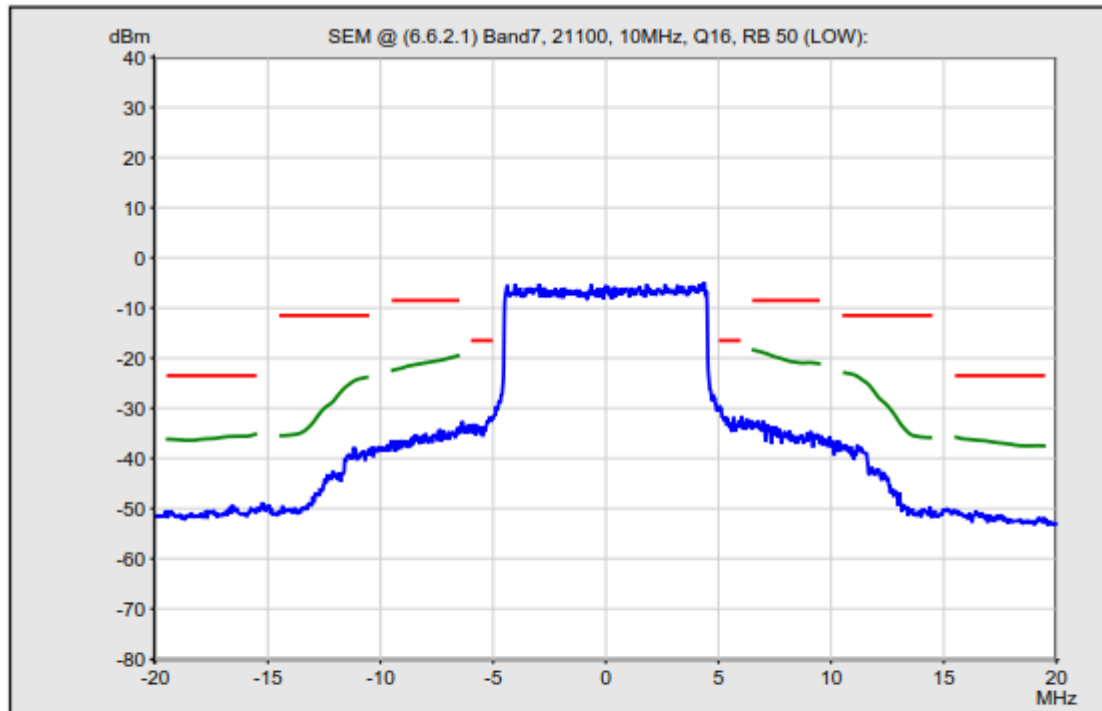


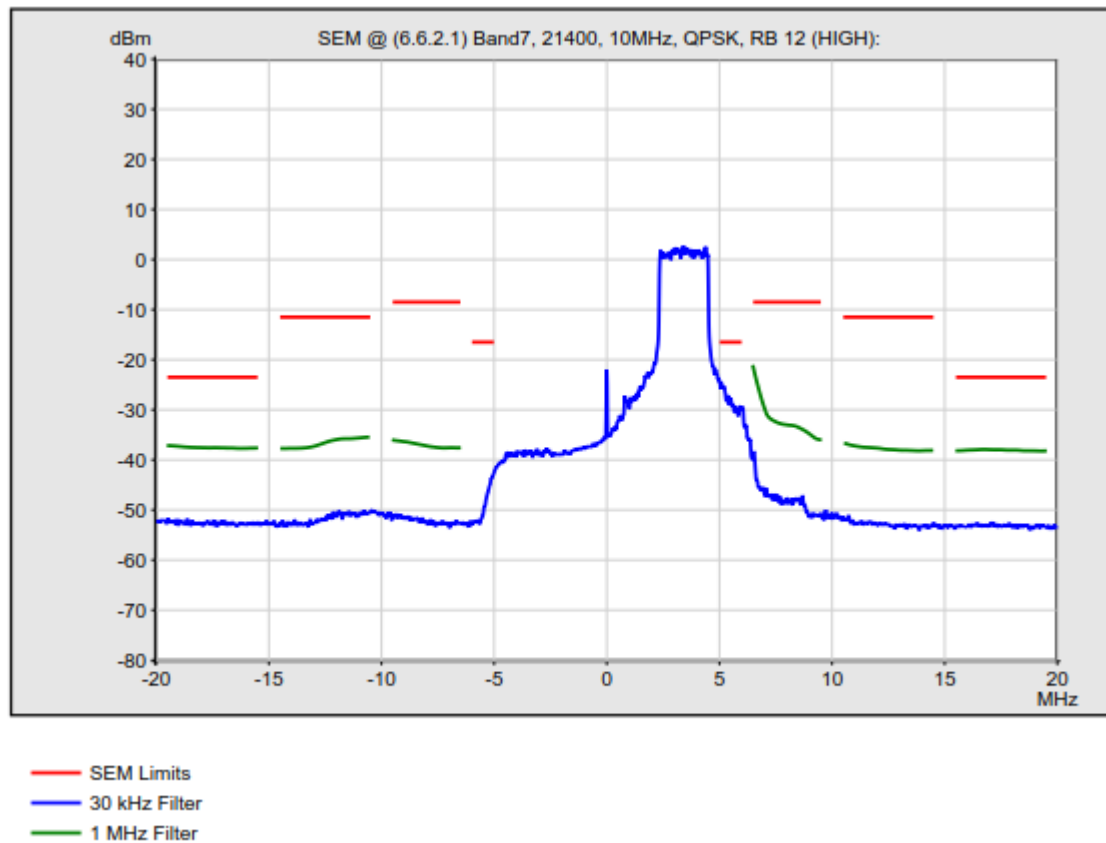
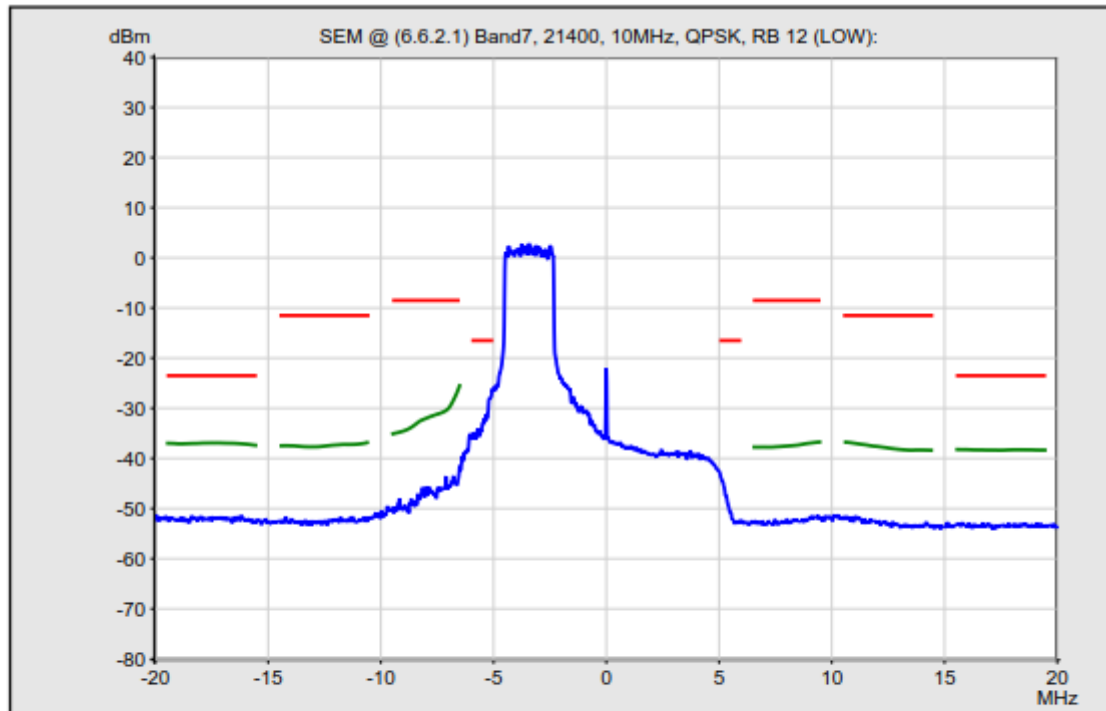


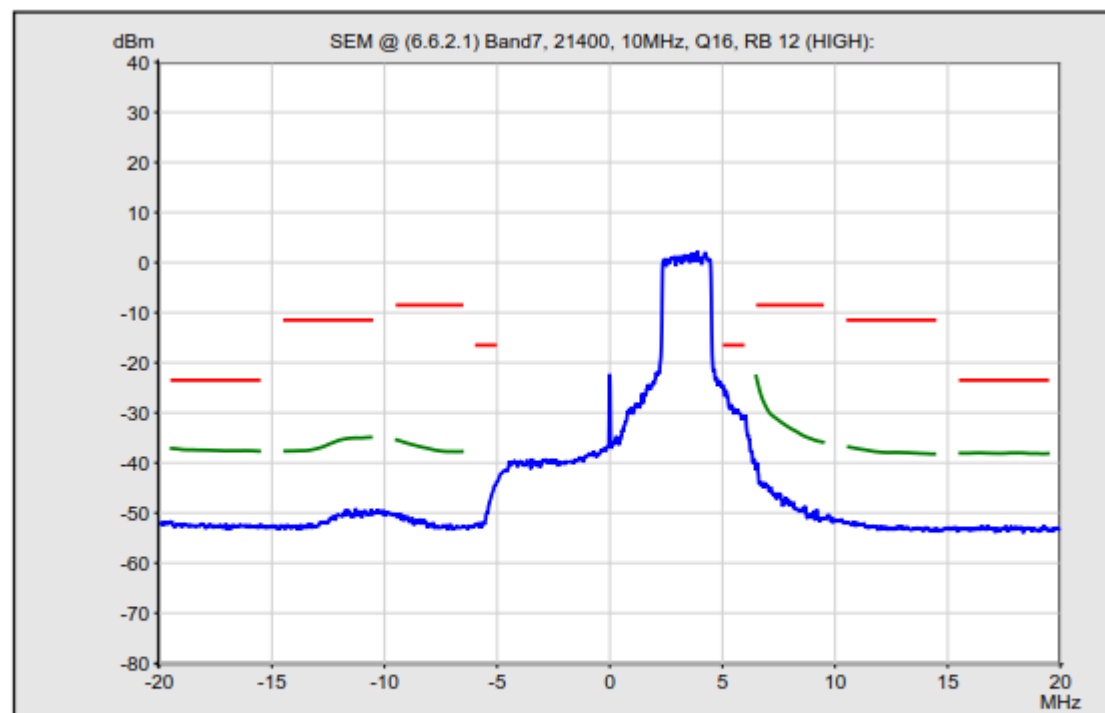
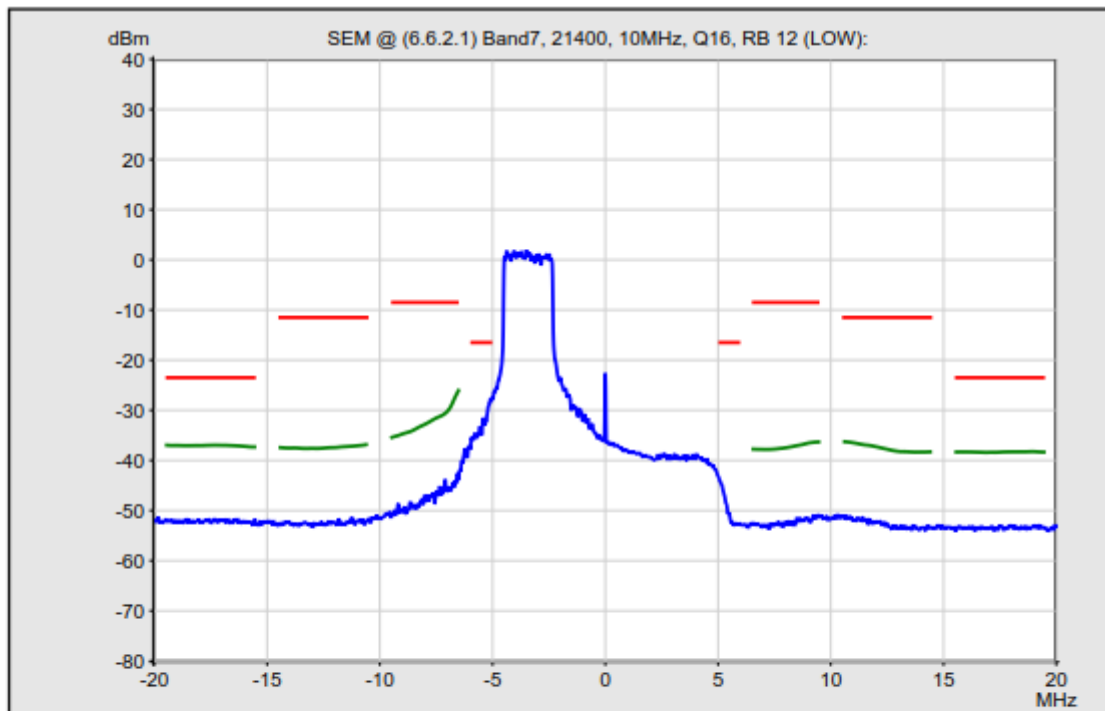


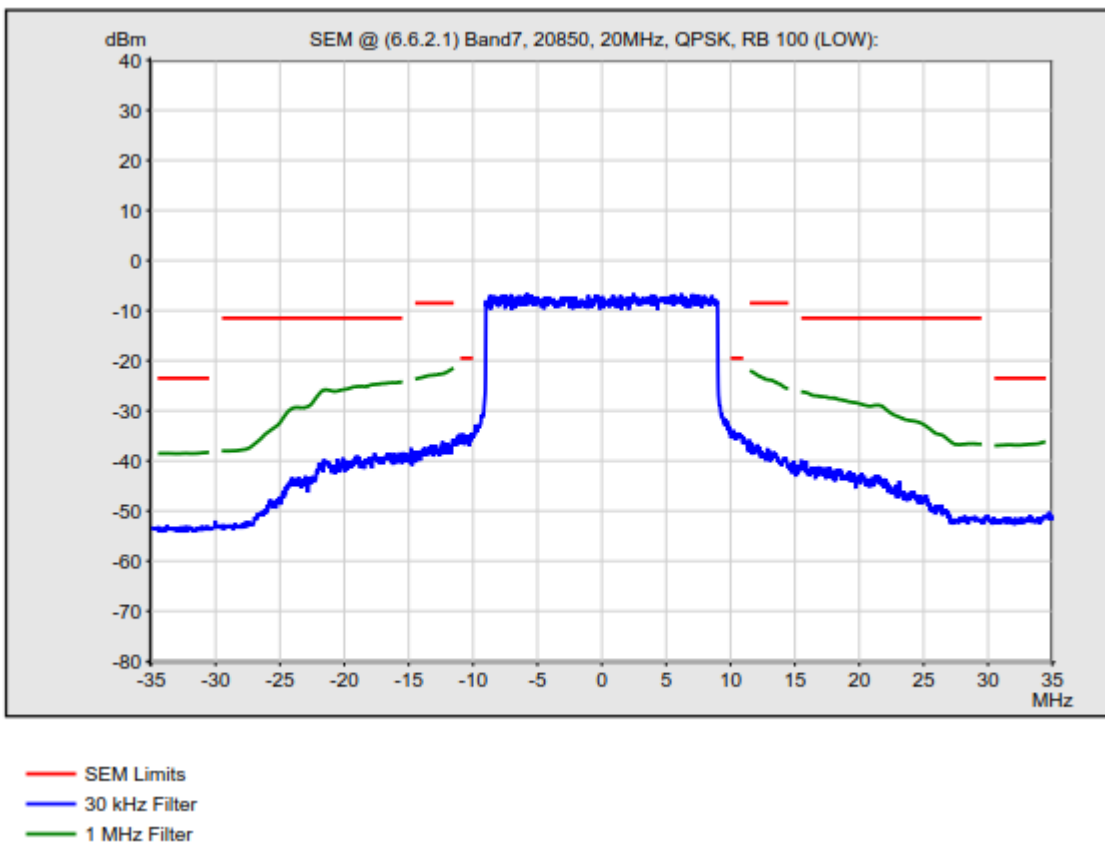
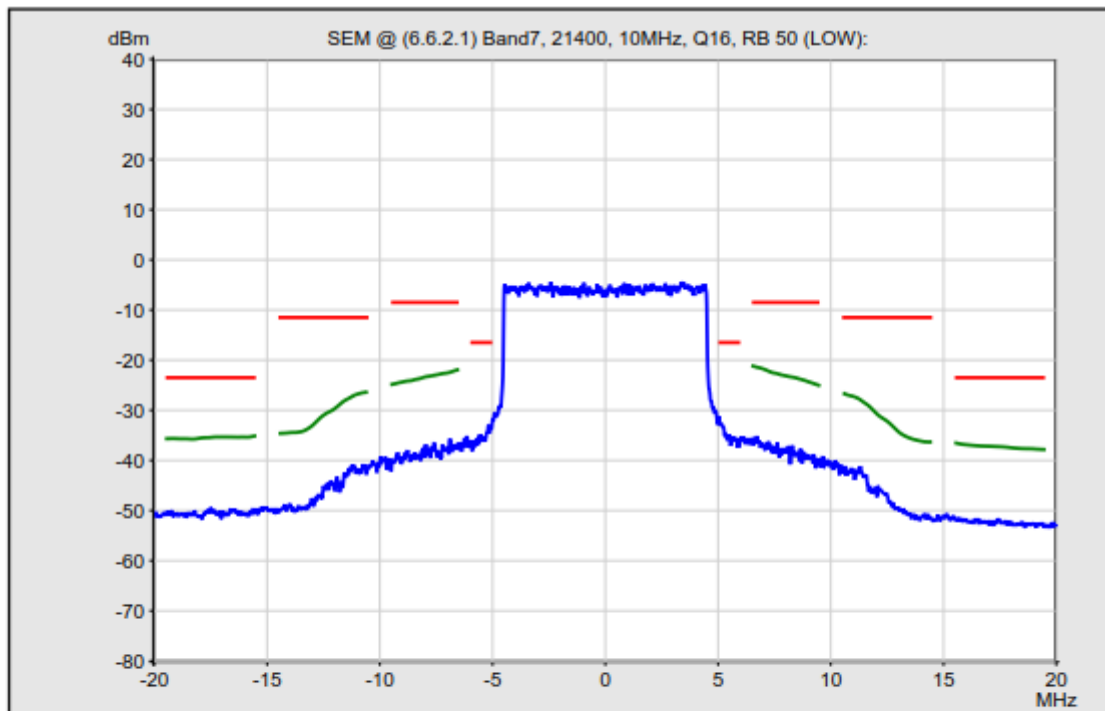


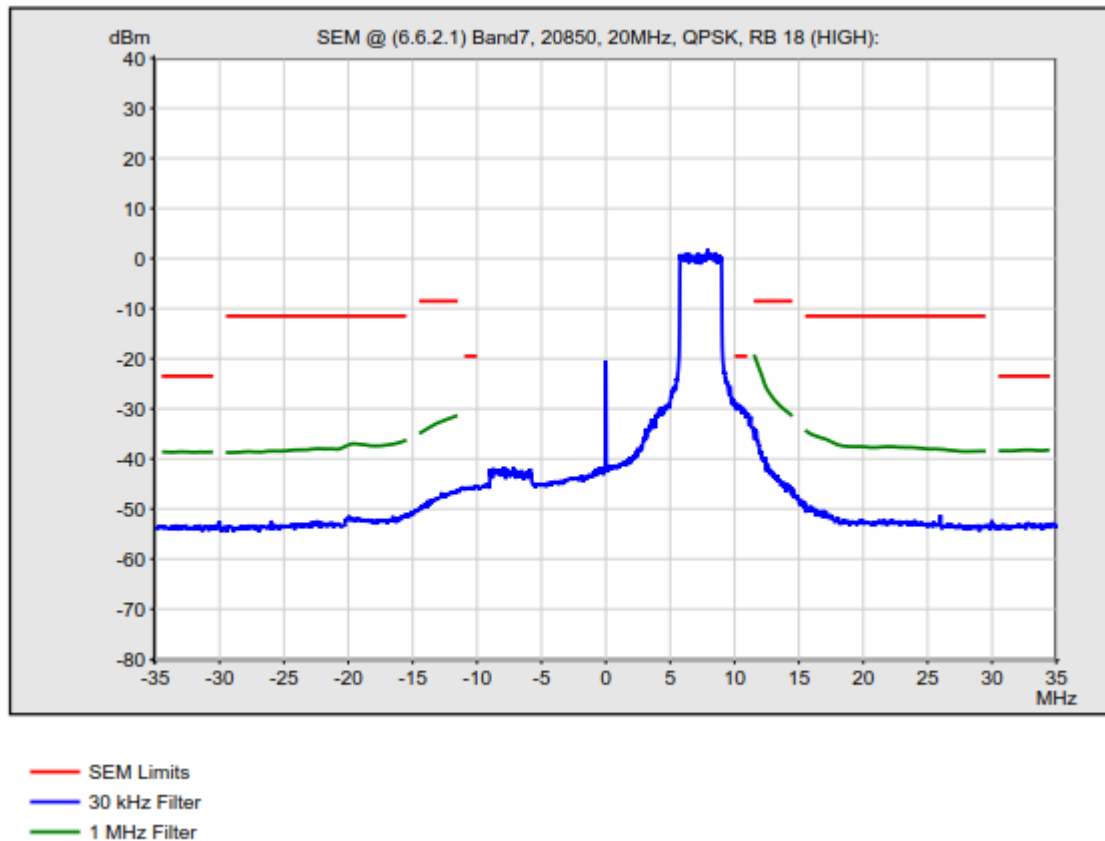
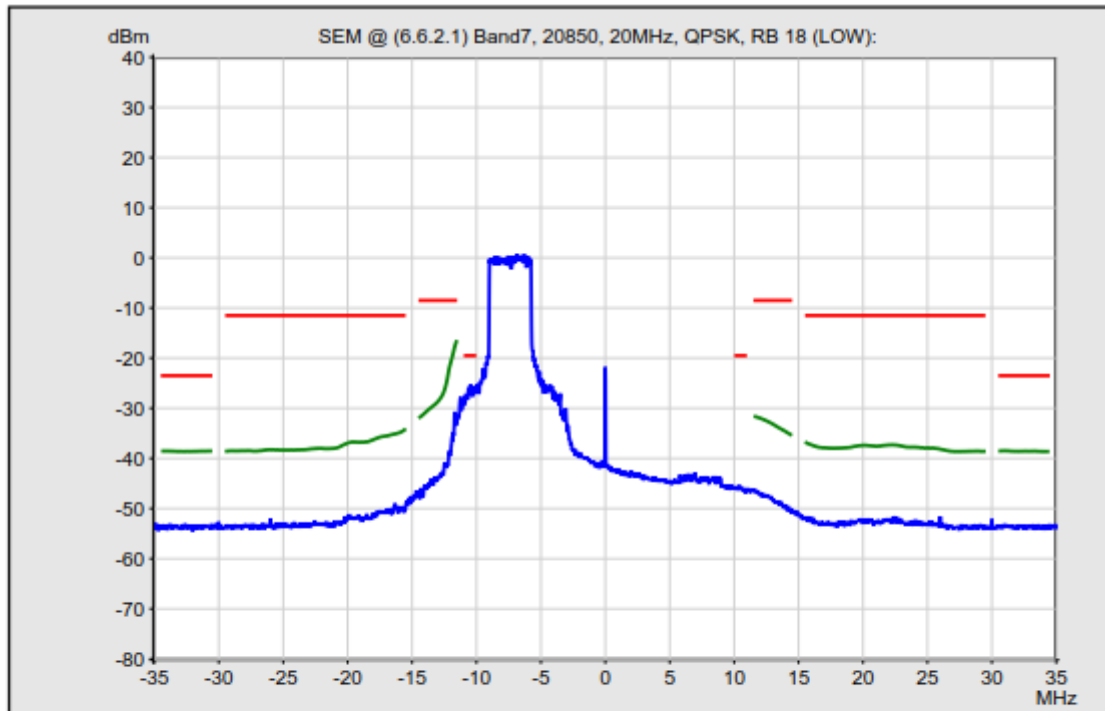


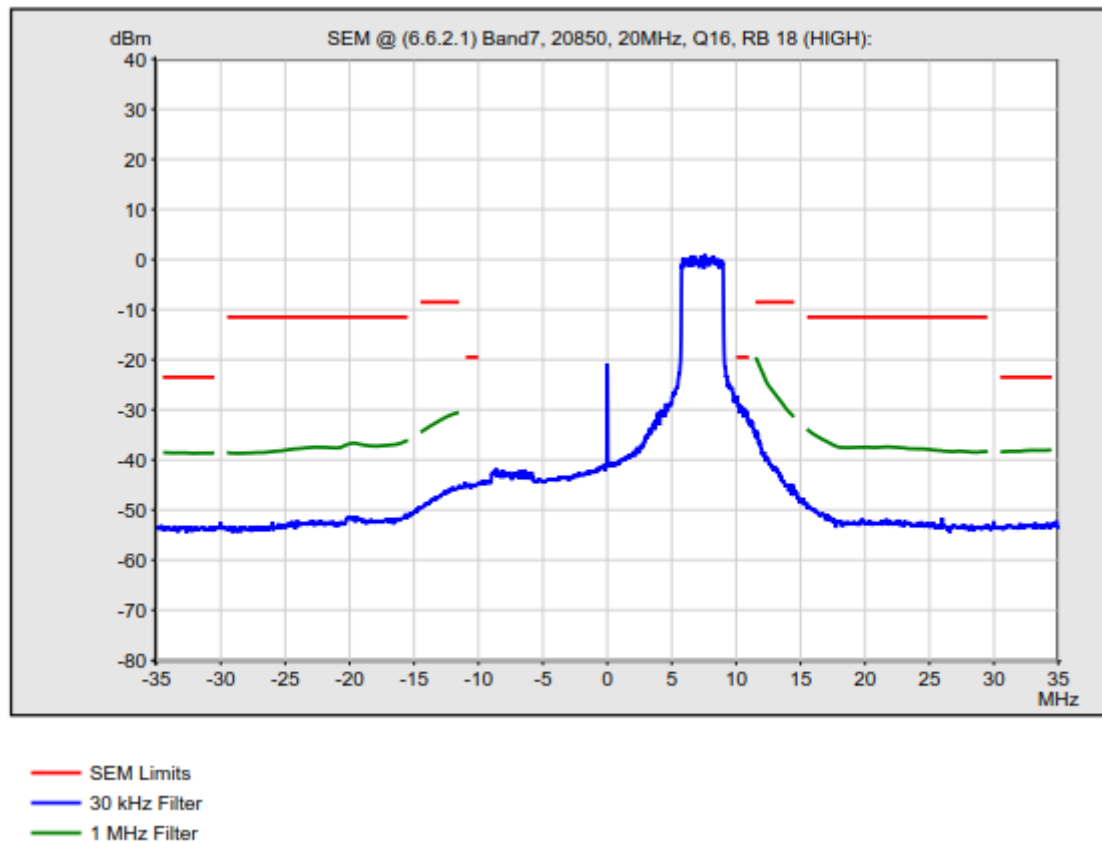
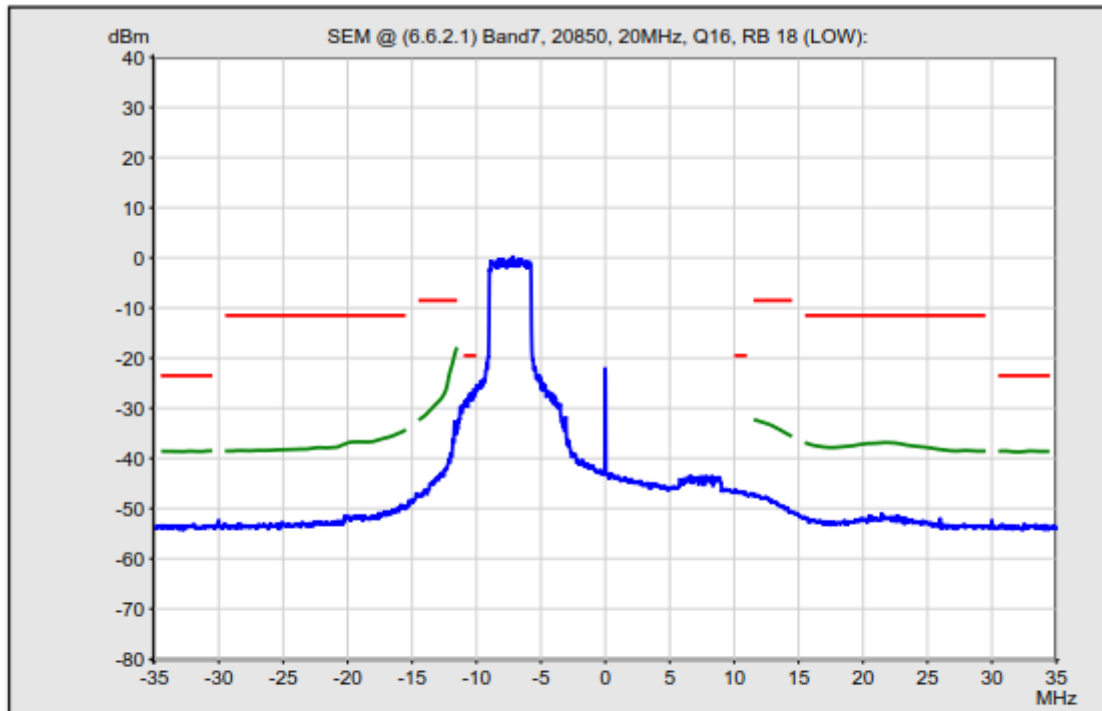


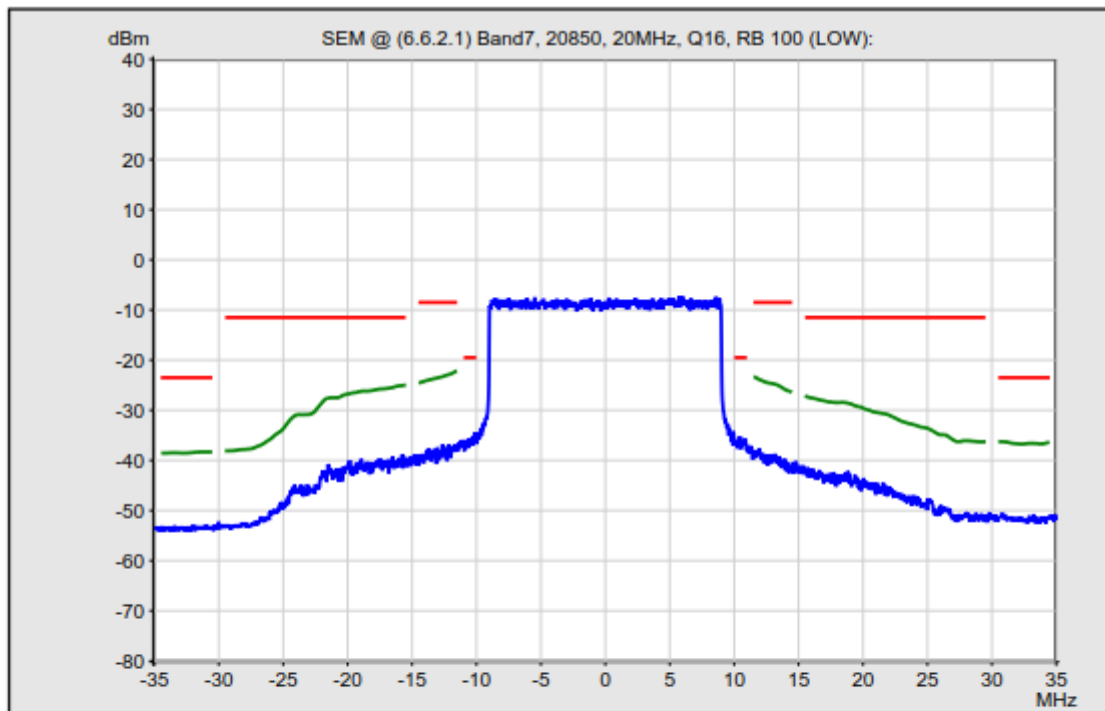




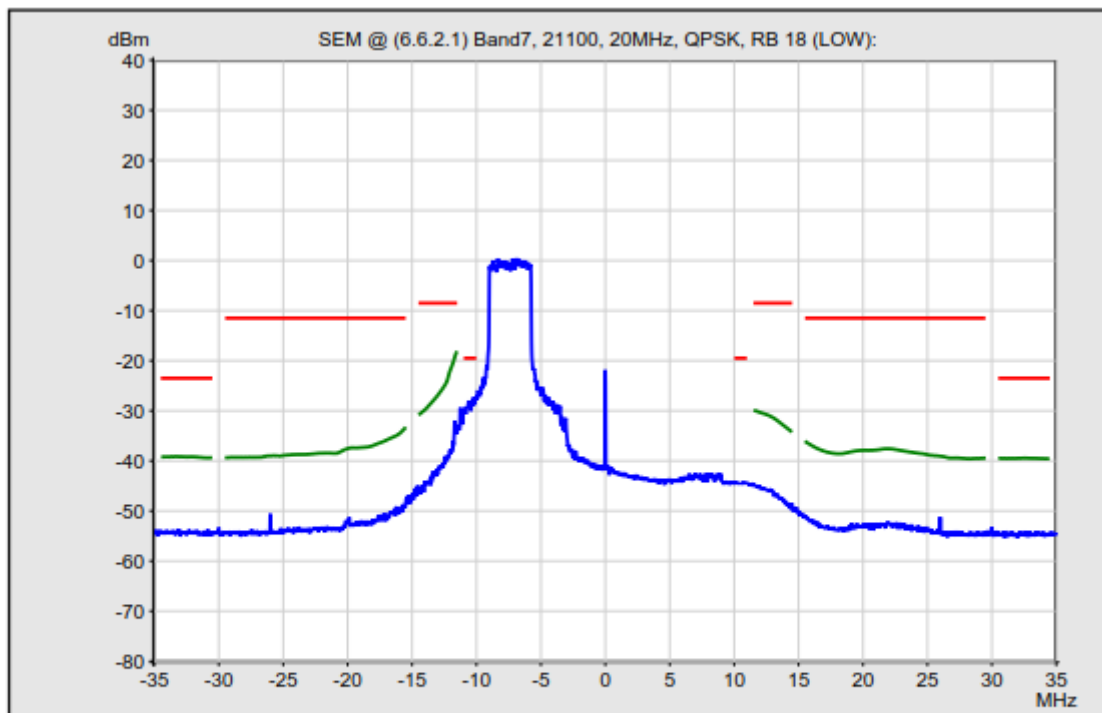
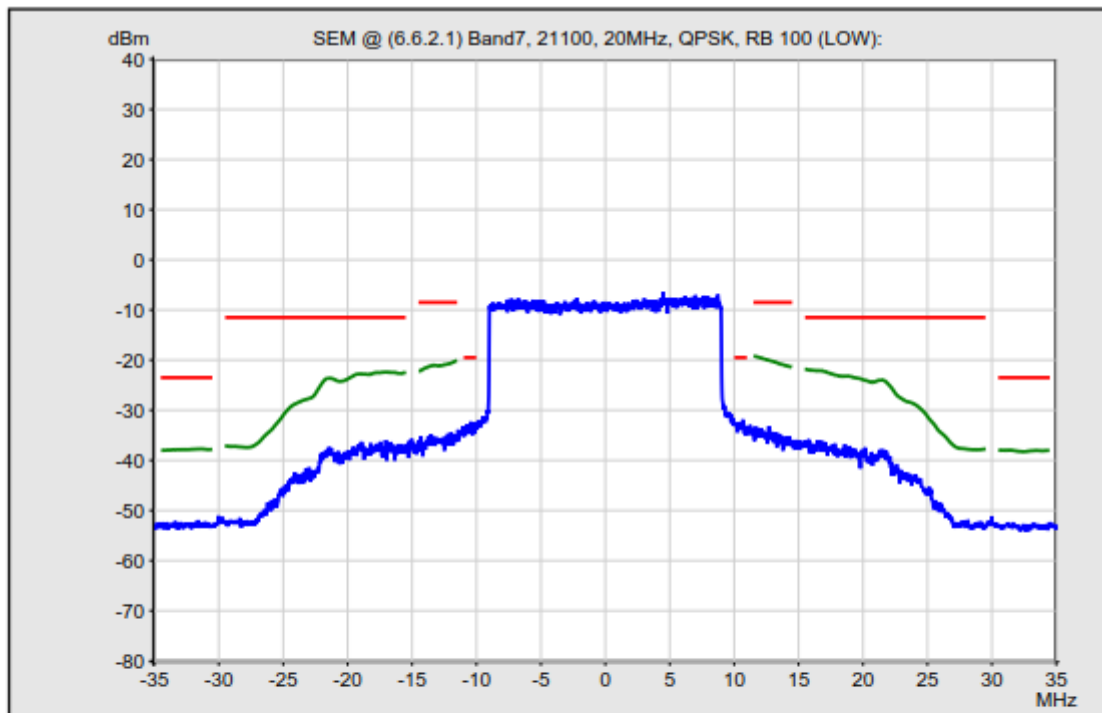


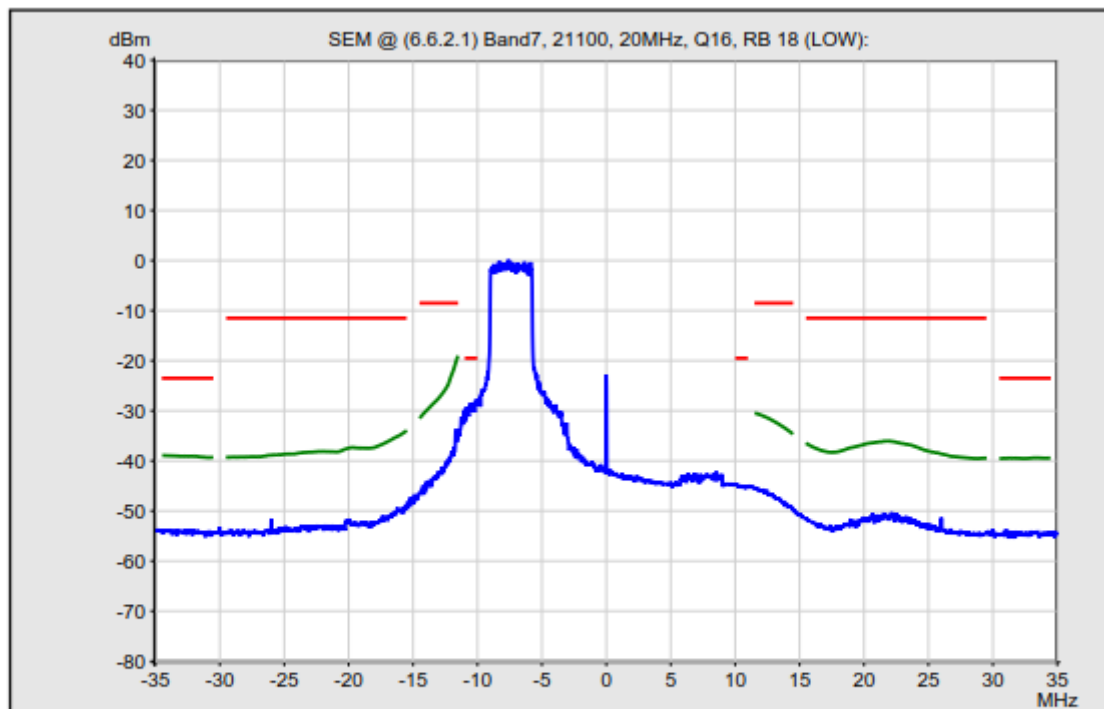
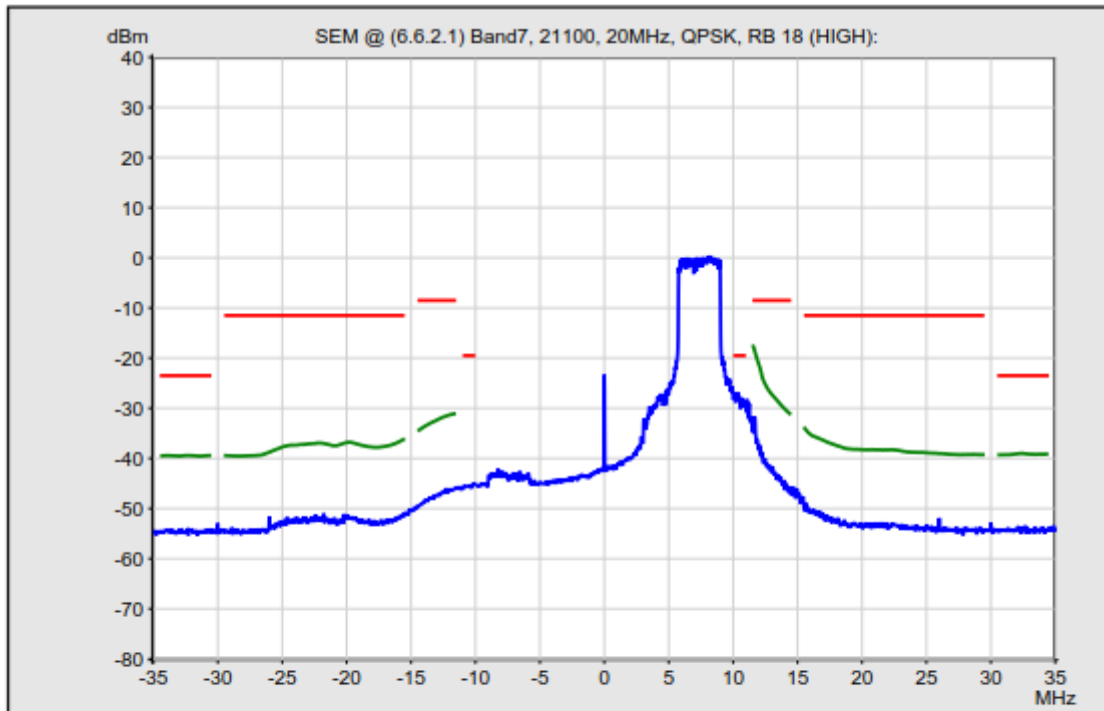


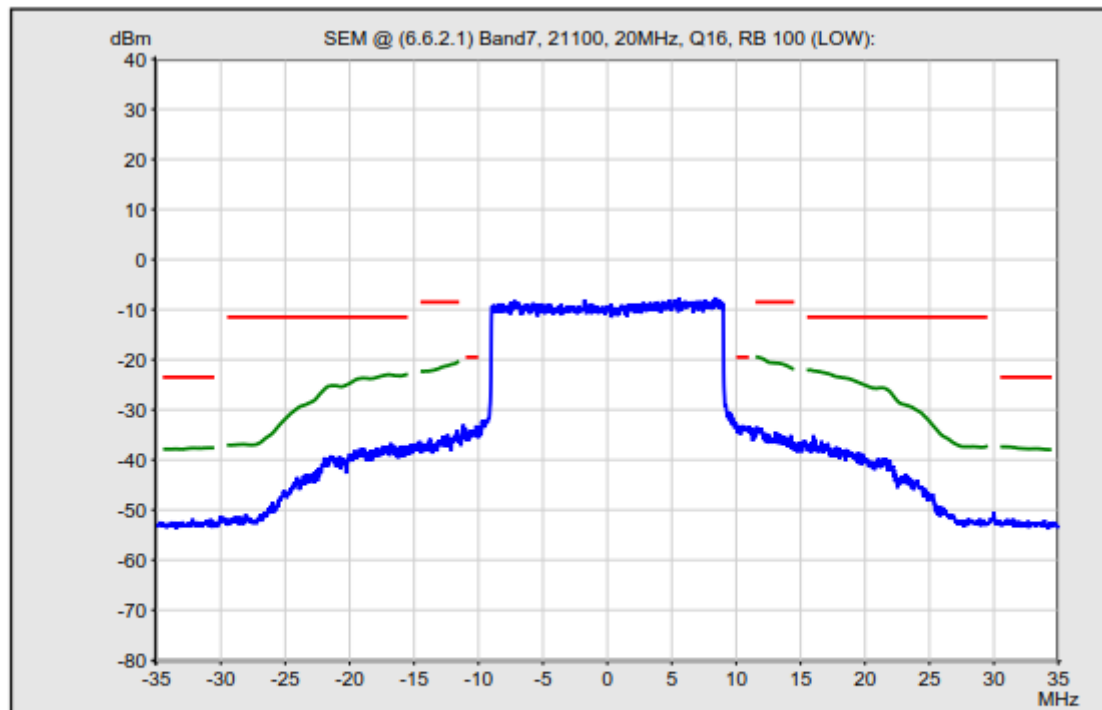
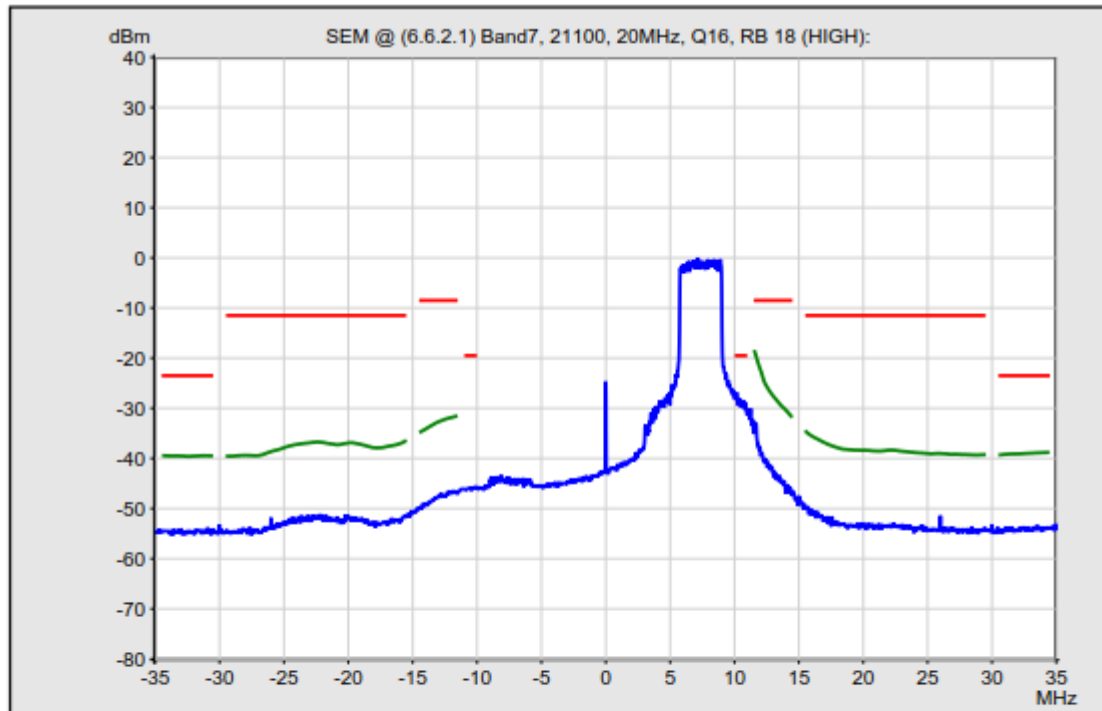


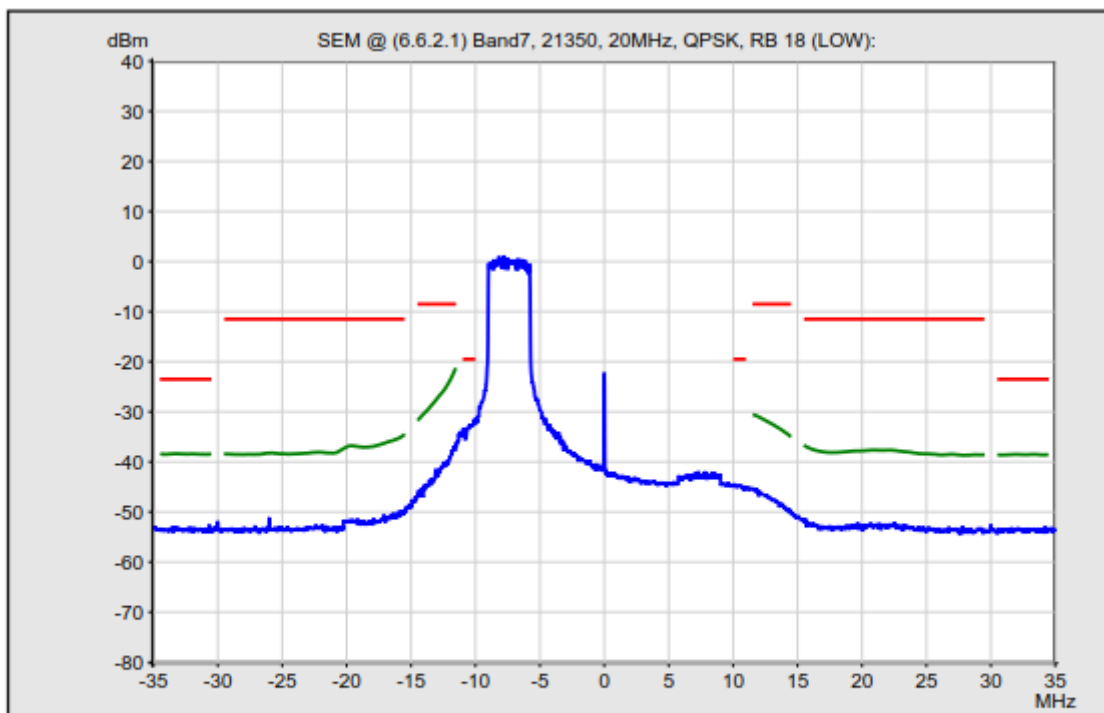
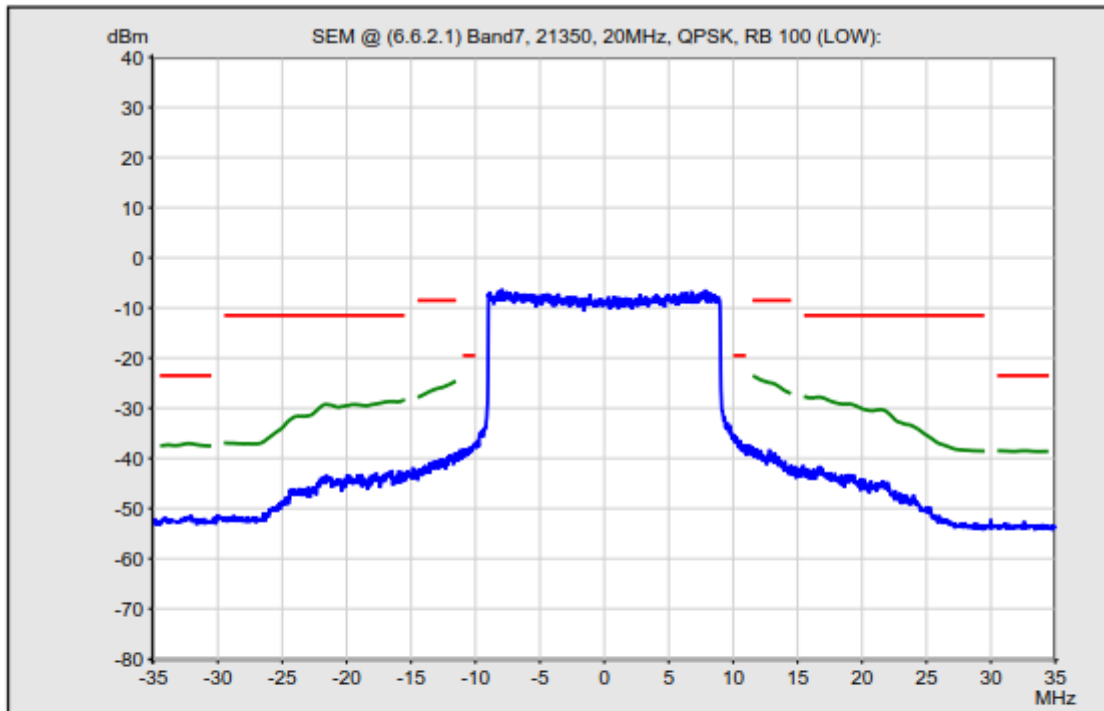


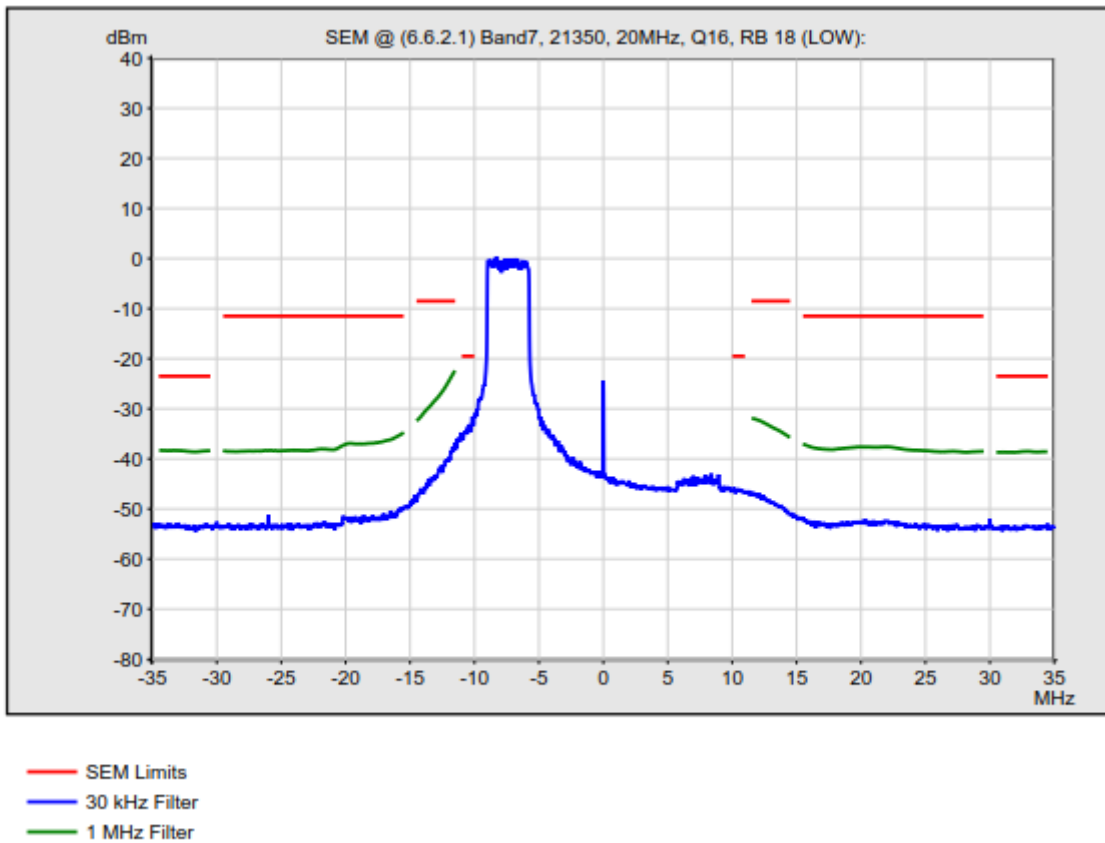
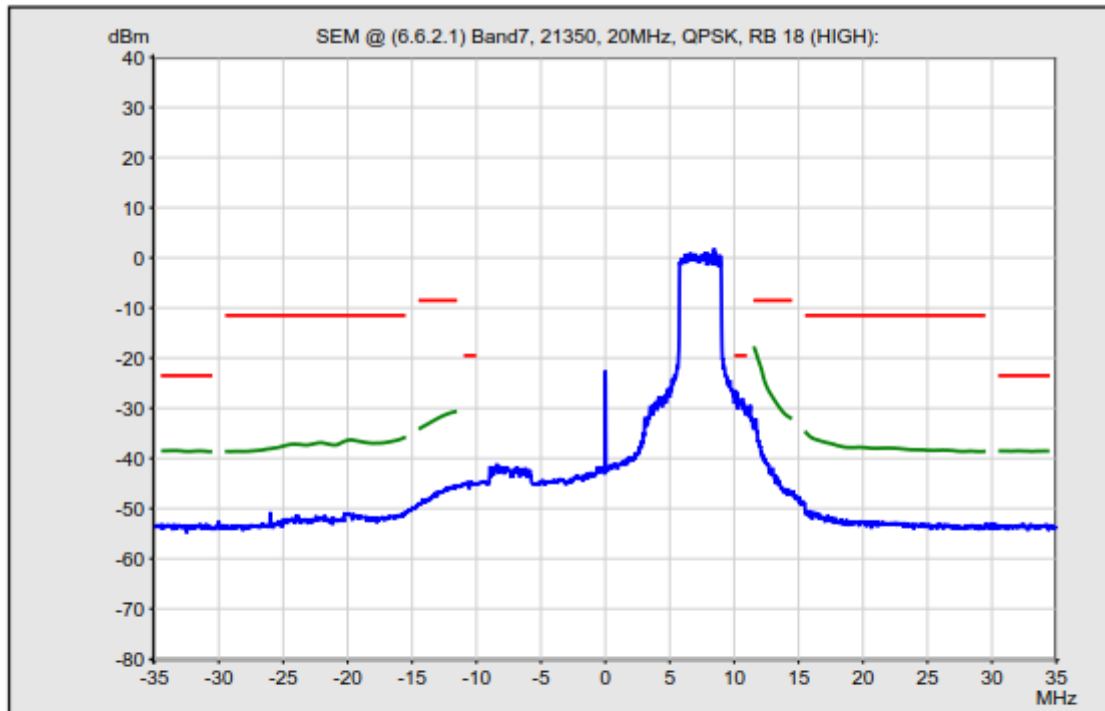
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

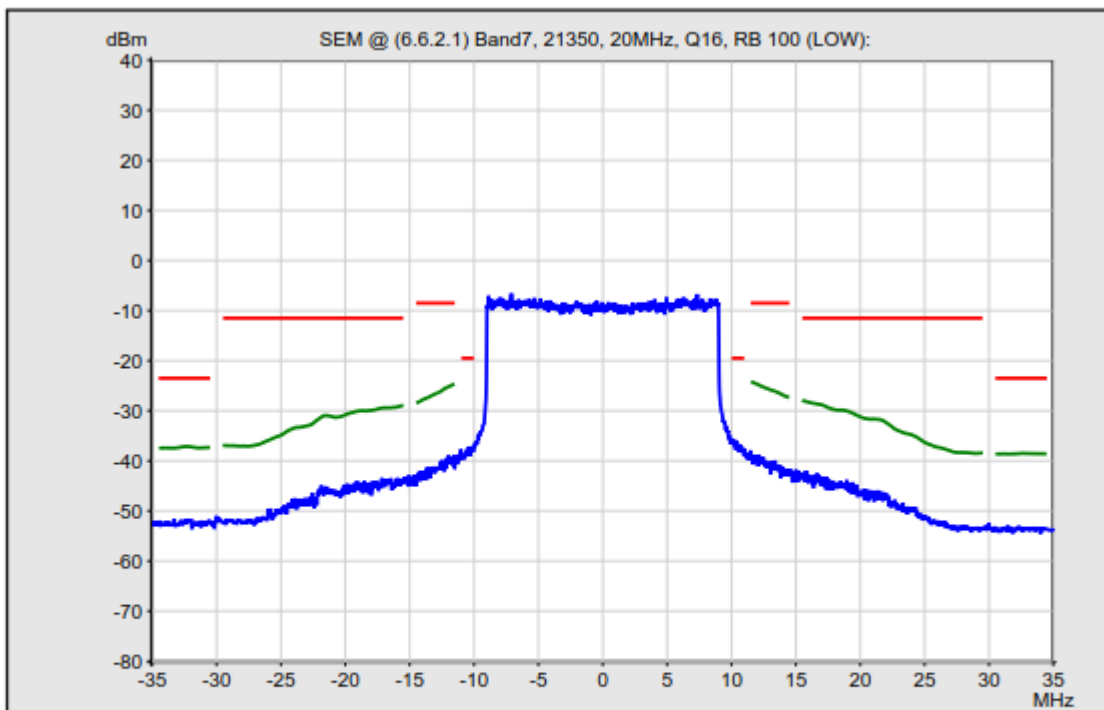
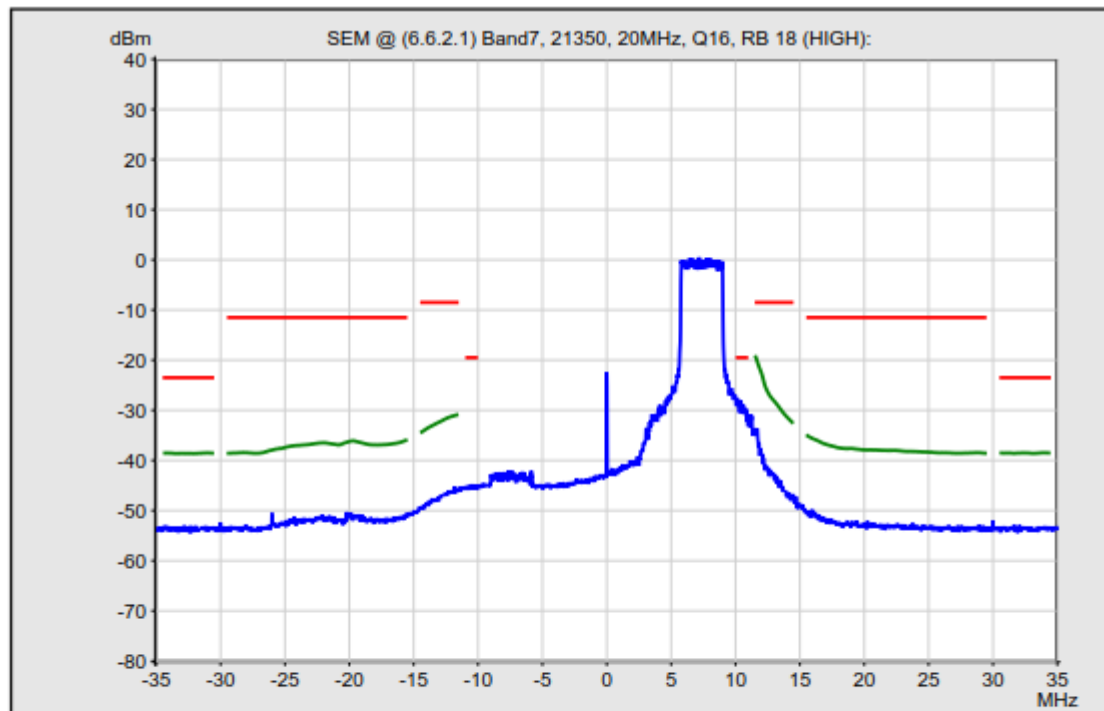




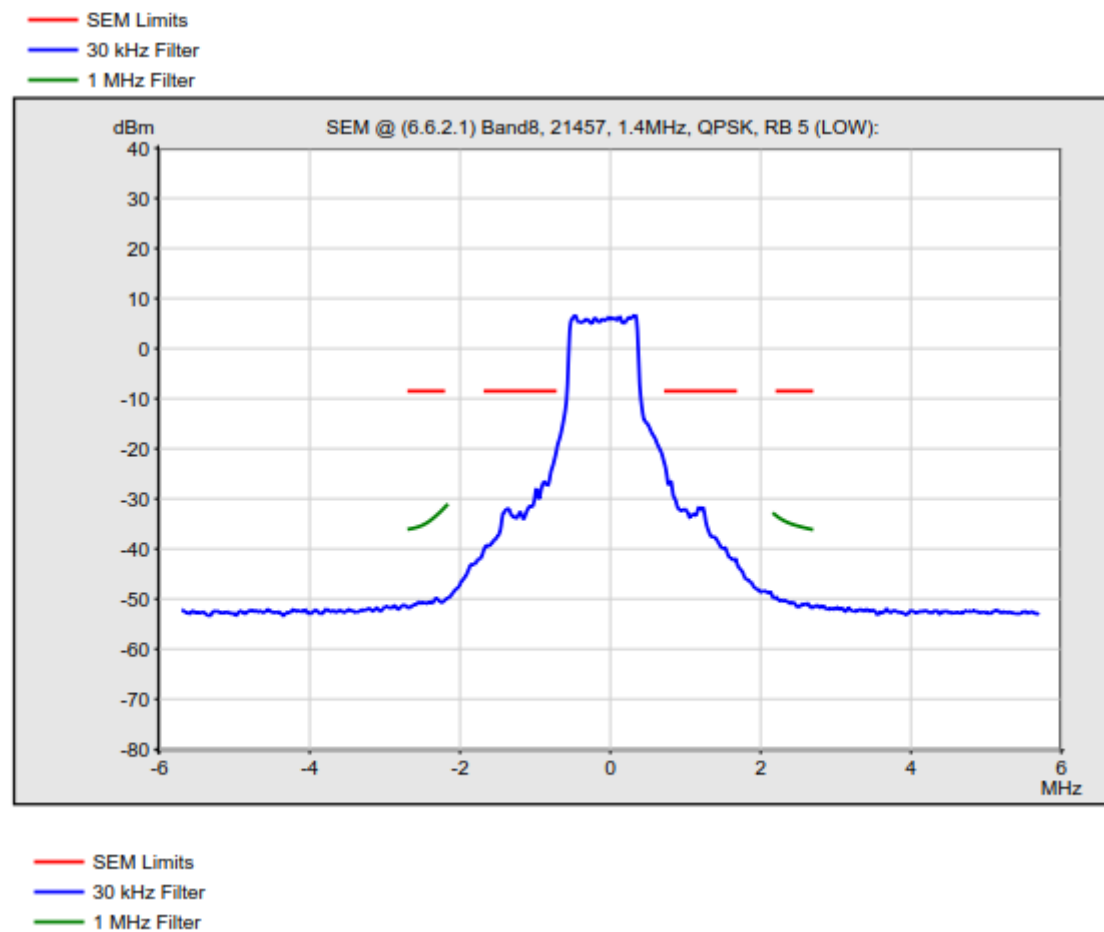
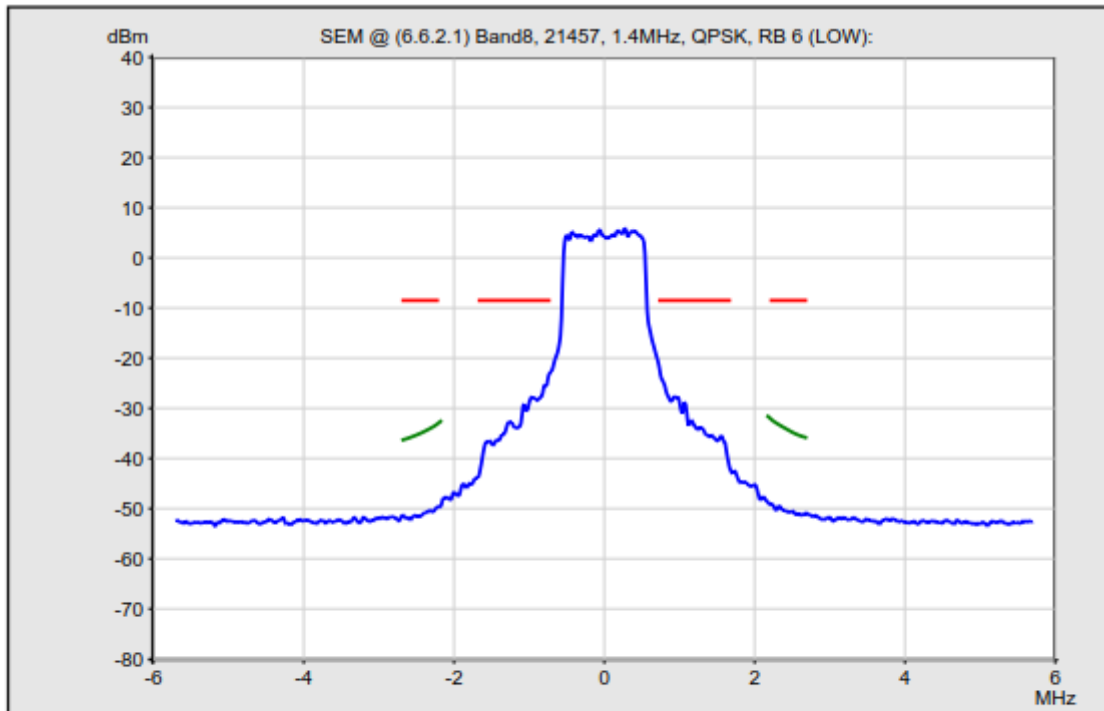


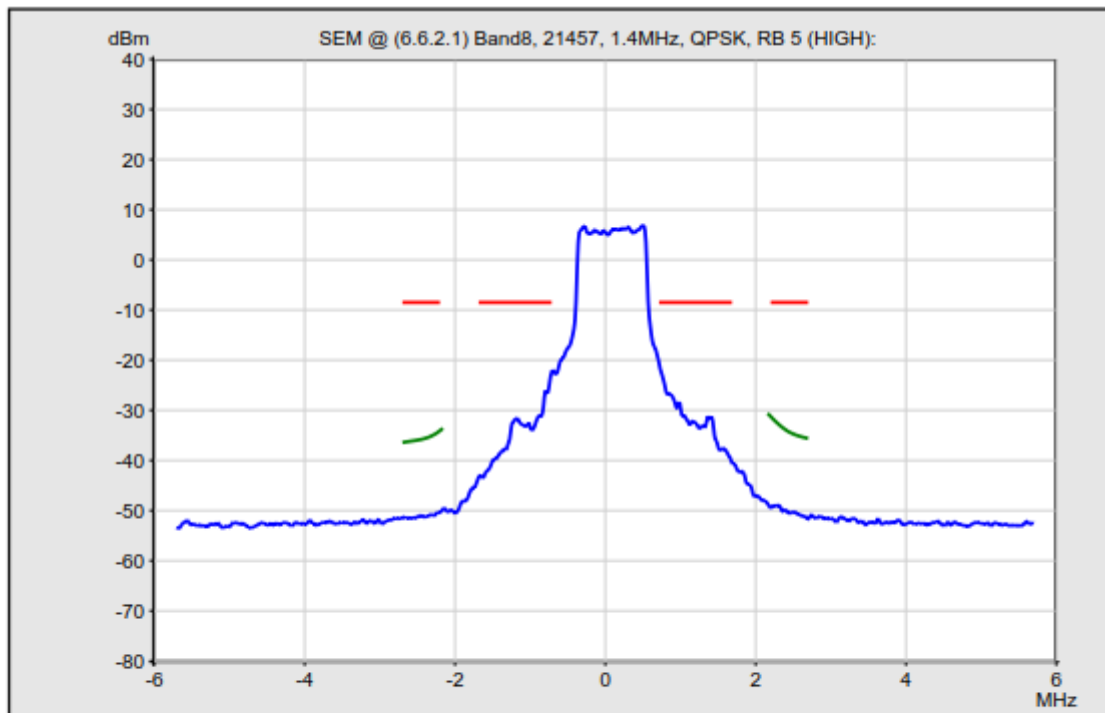




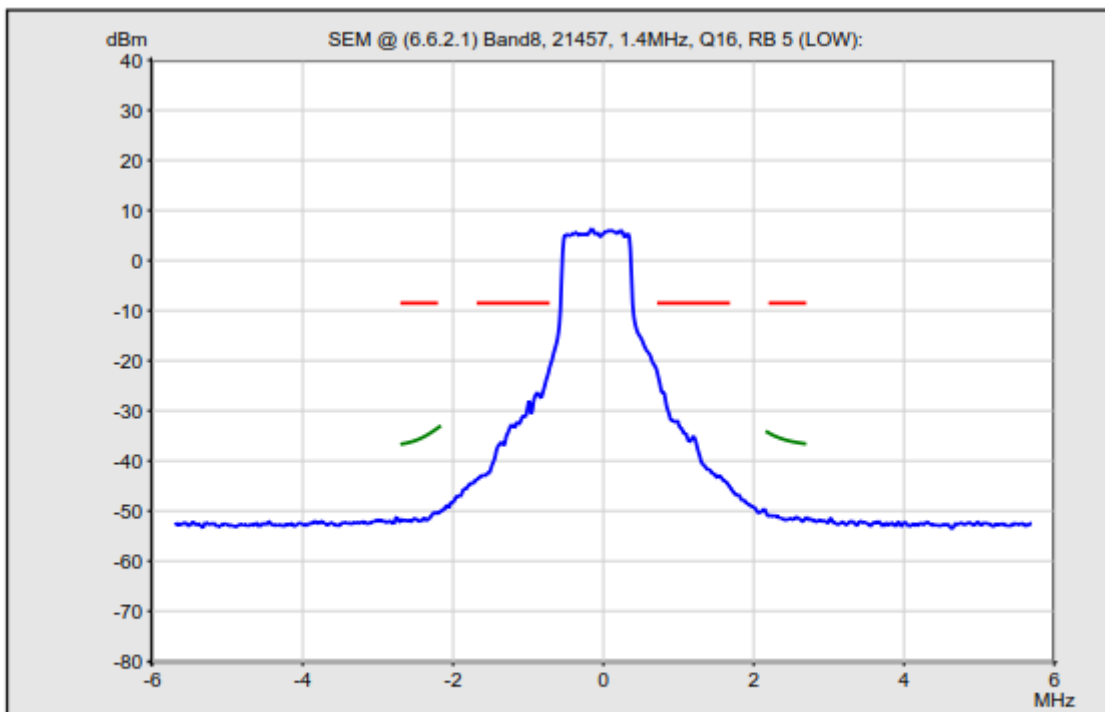


Band 8

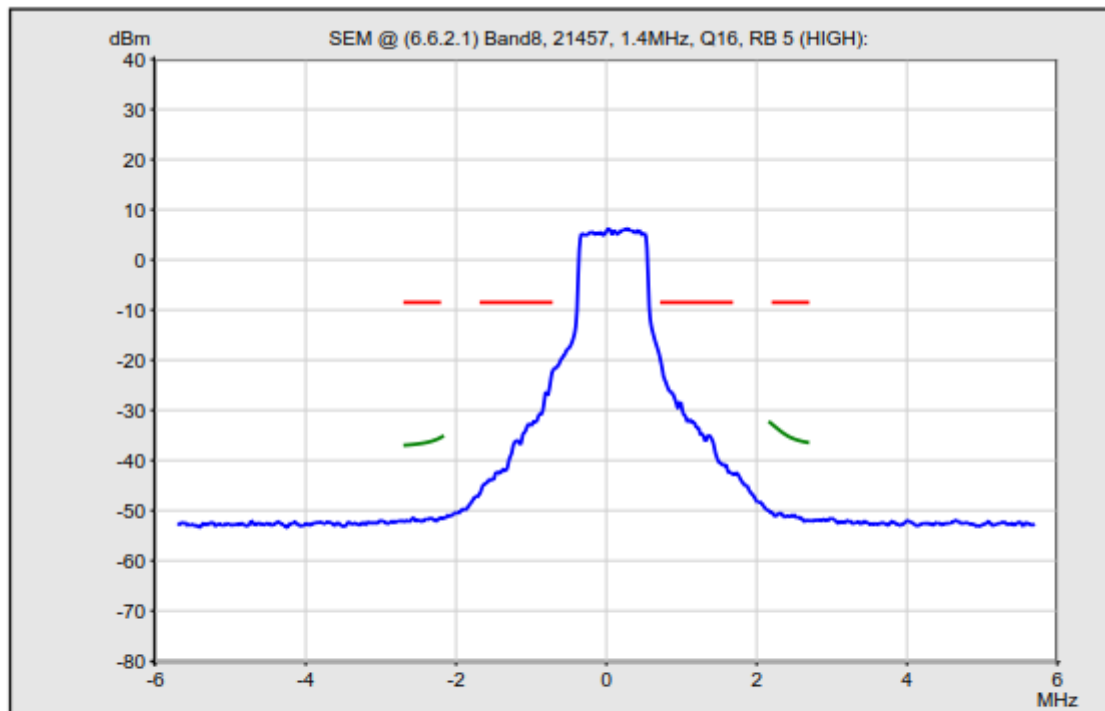




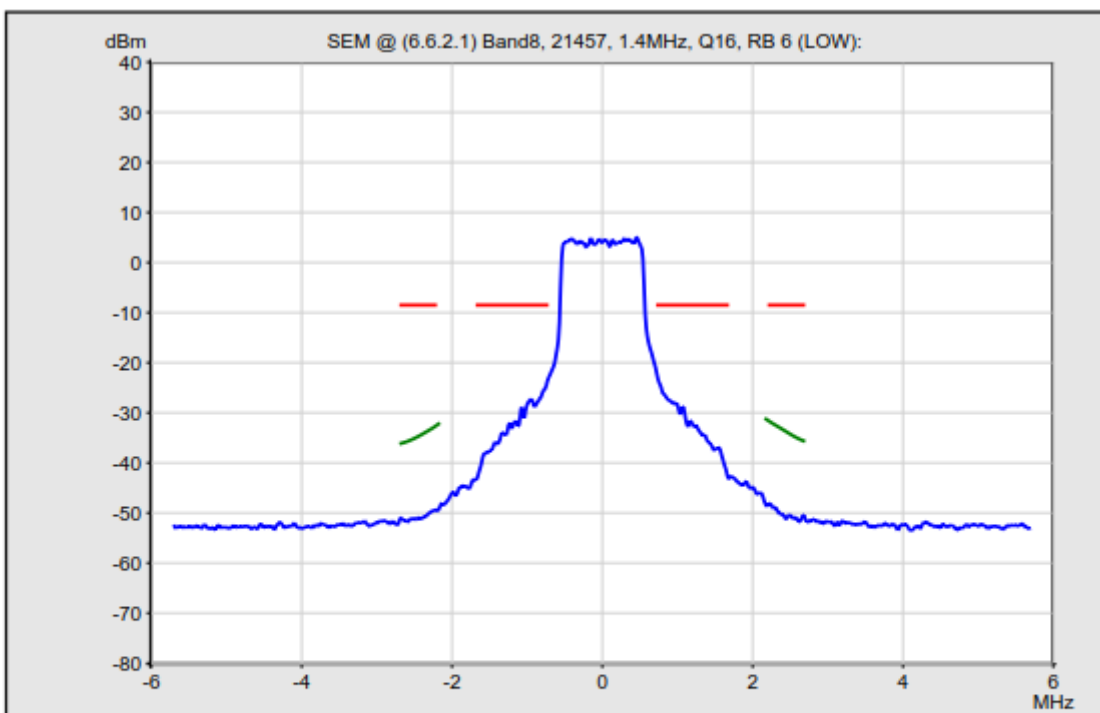
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— 30 kHz Filter
— 1 MHz Filter



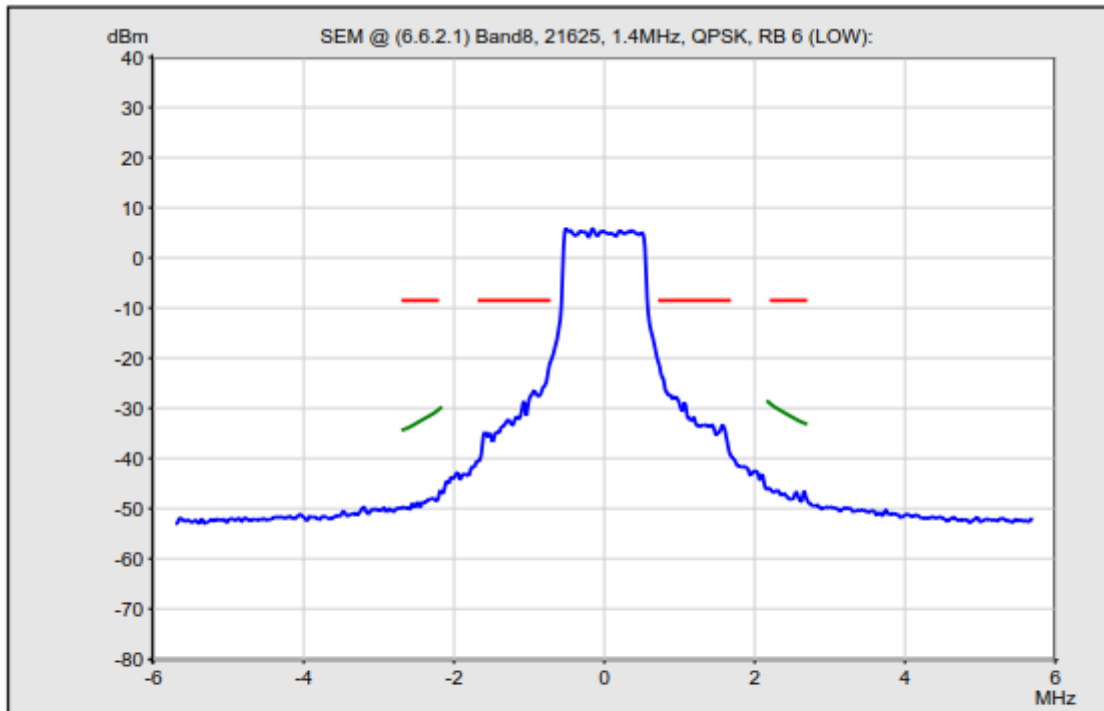
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter



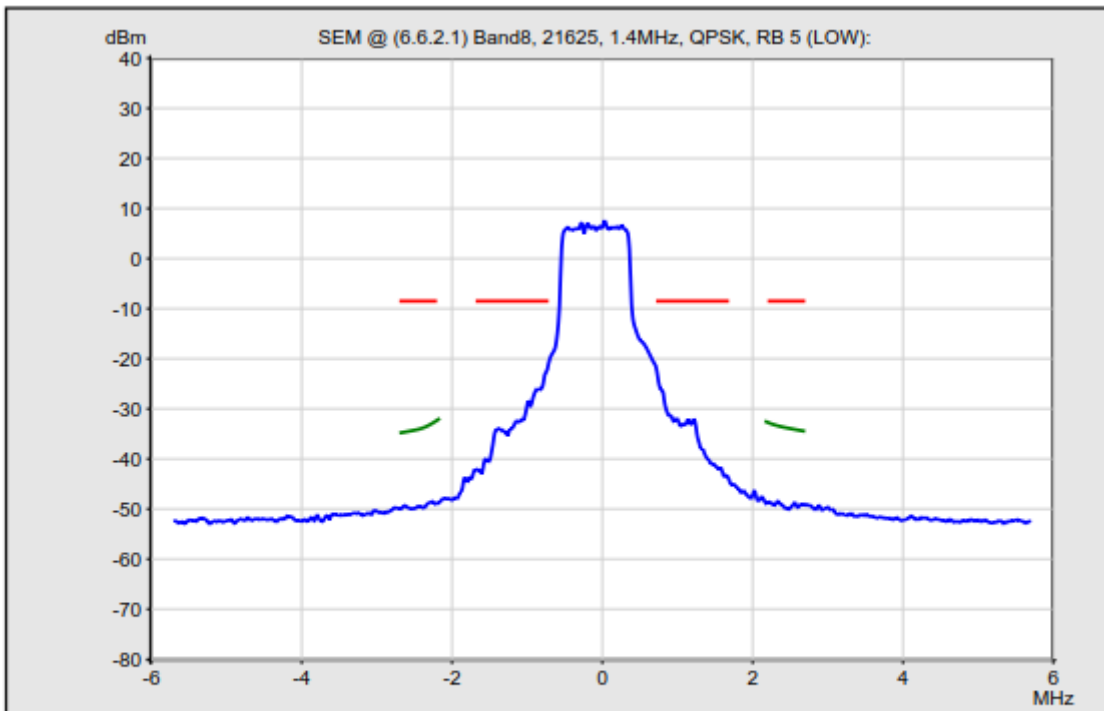
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter



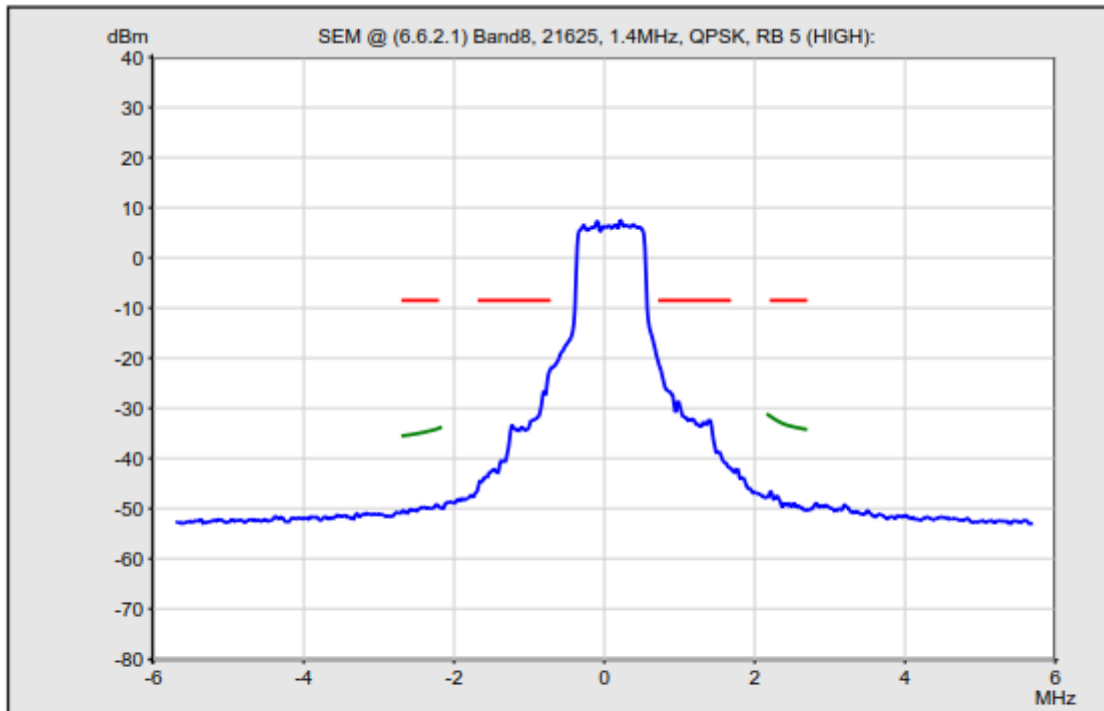
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter



— SEM Limits
— 30 kHz Filter
— 1 MHz Filter



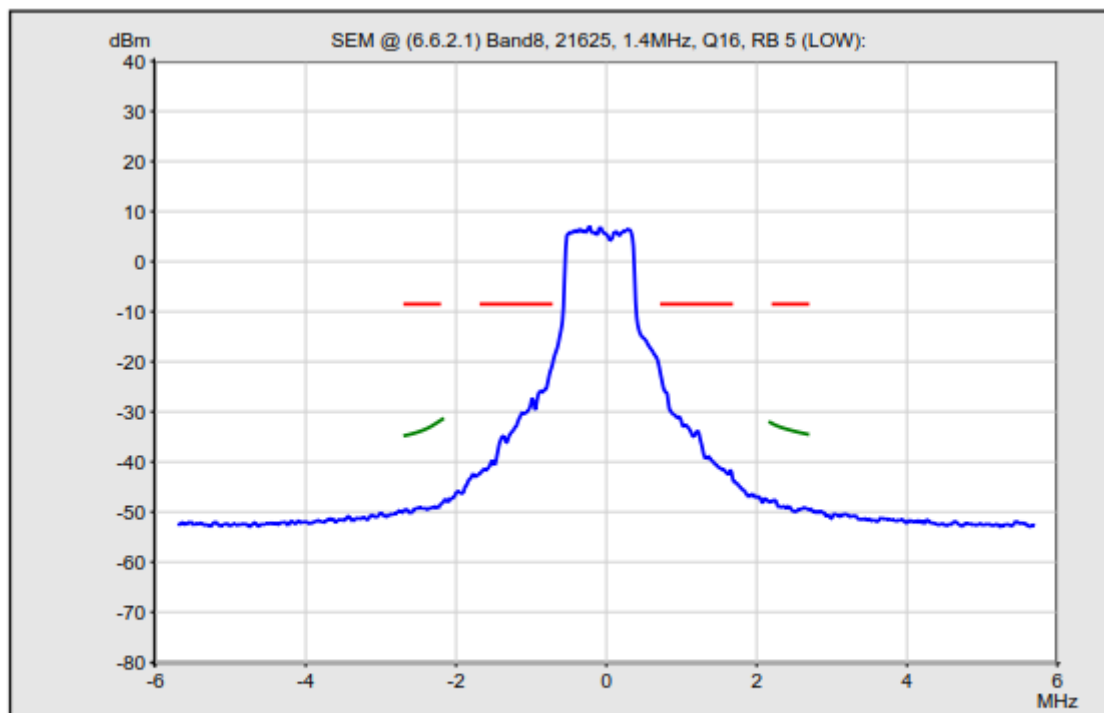
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter



— SEM Limits

— 30 kHz Filter

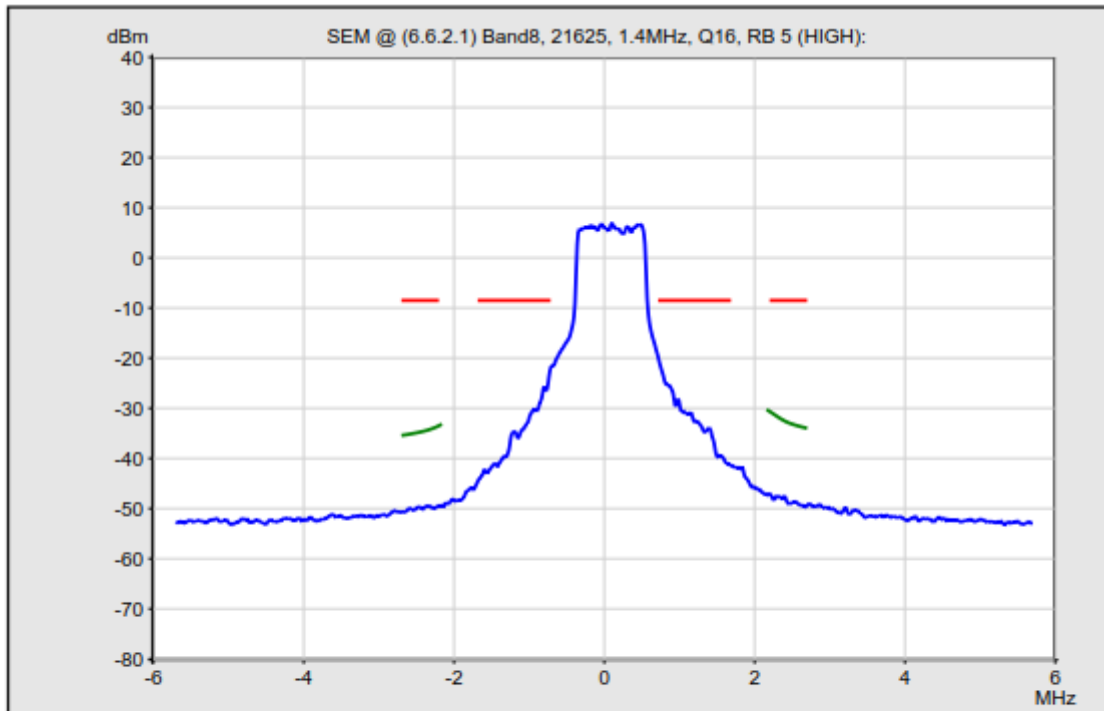
— 1 MHz Filter



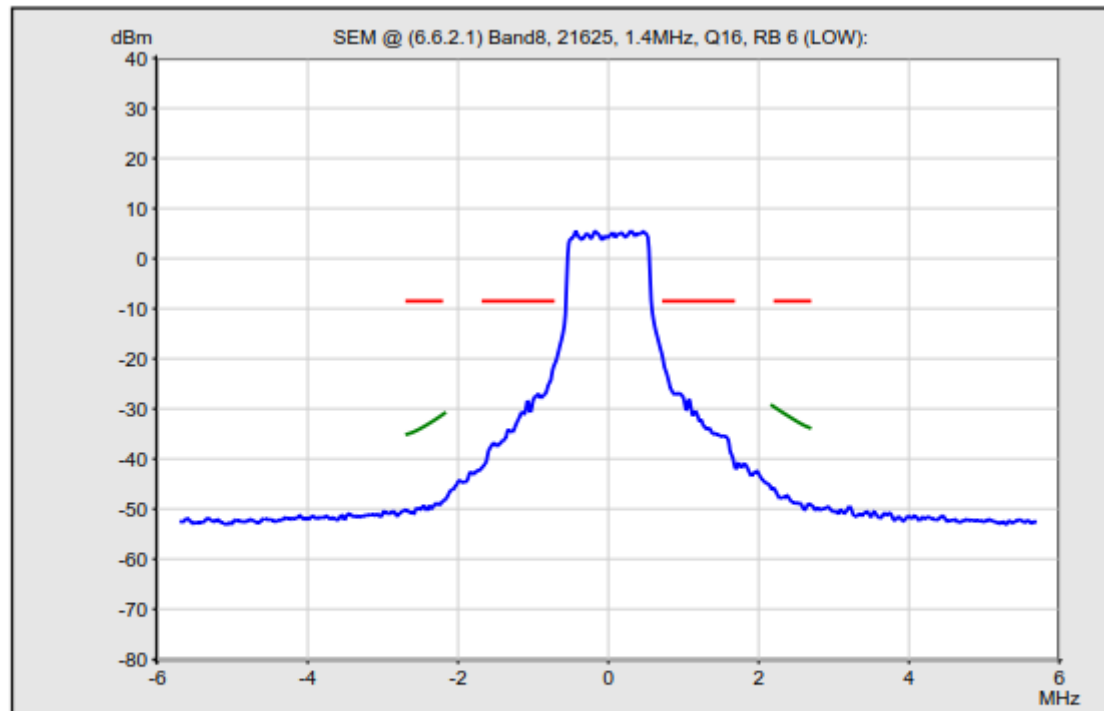
— SEM Limits

— 30 kHz Filter

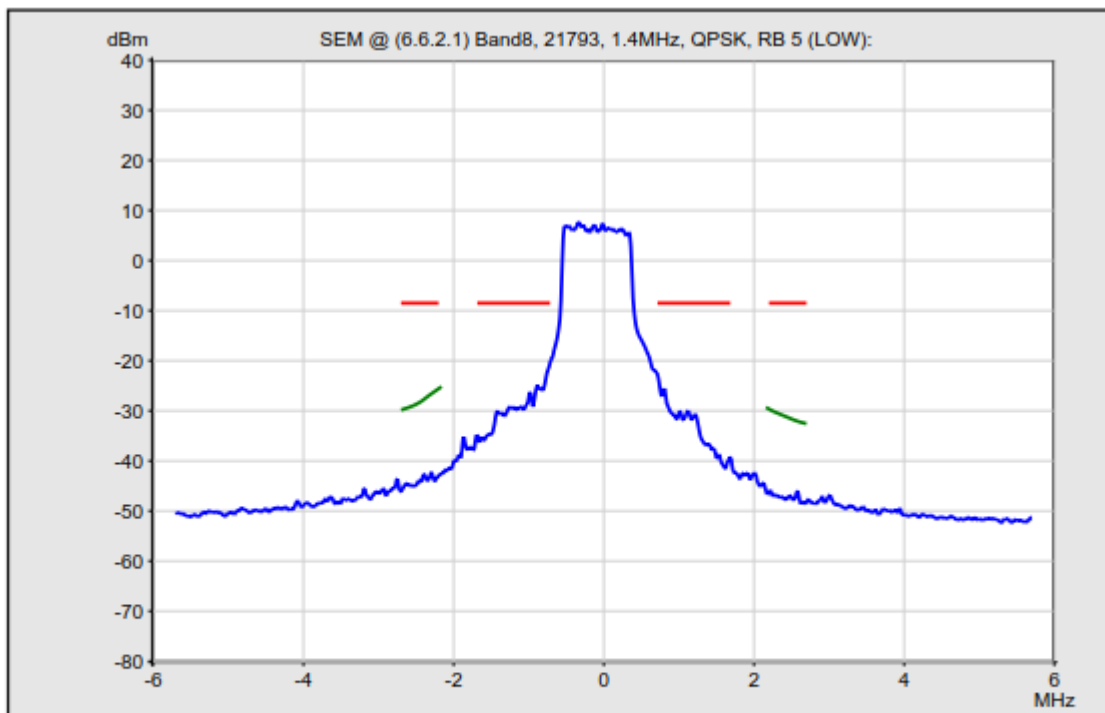
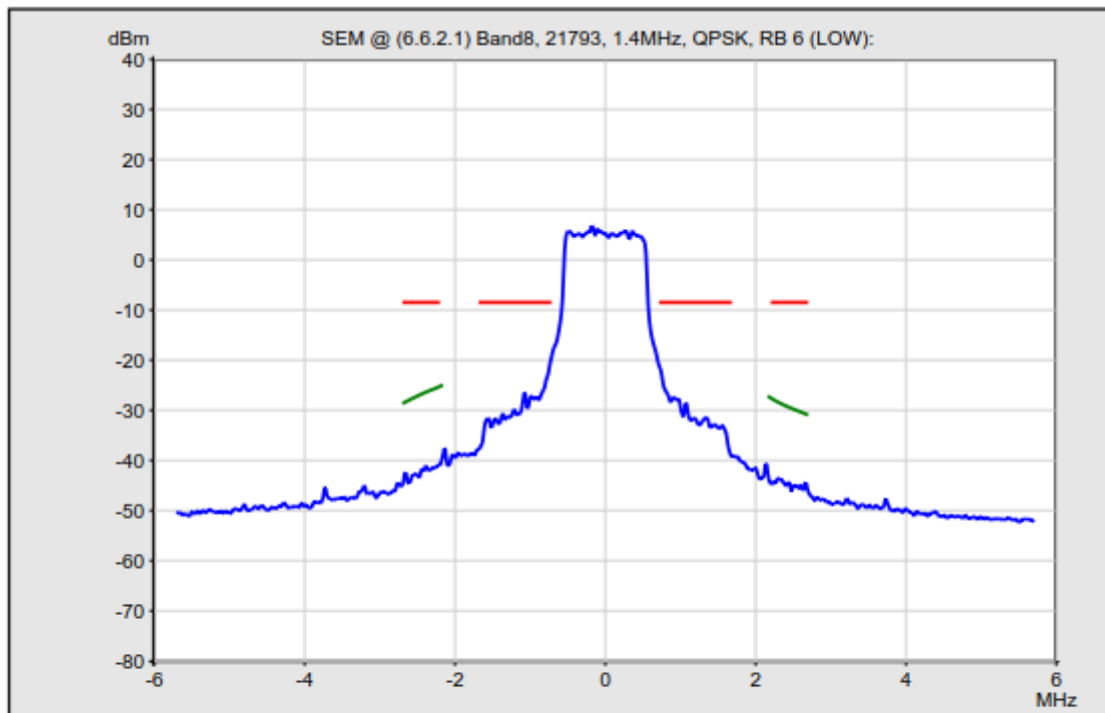
— 1 MHz Filter

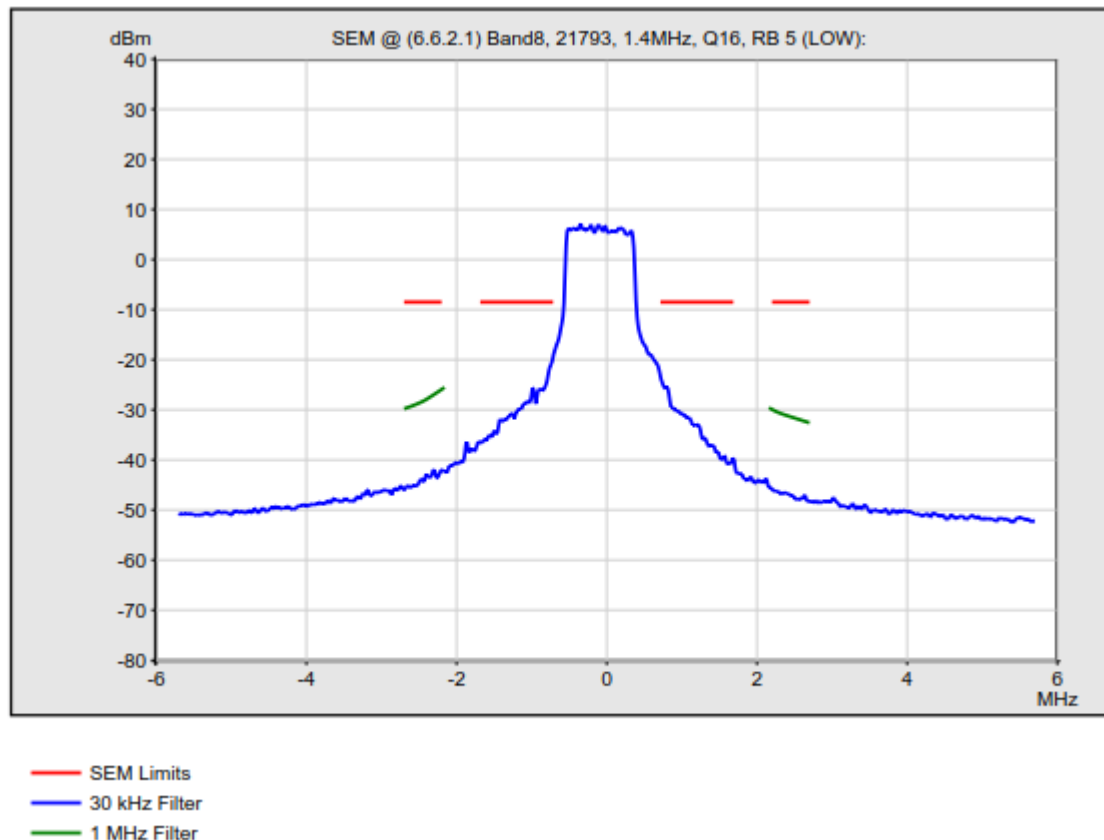
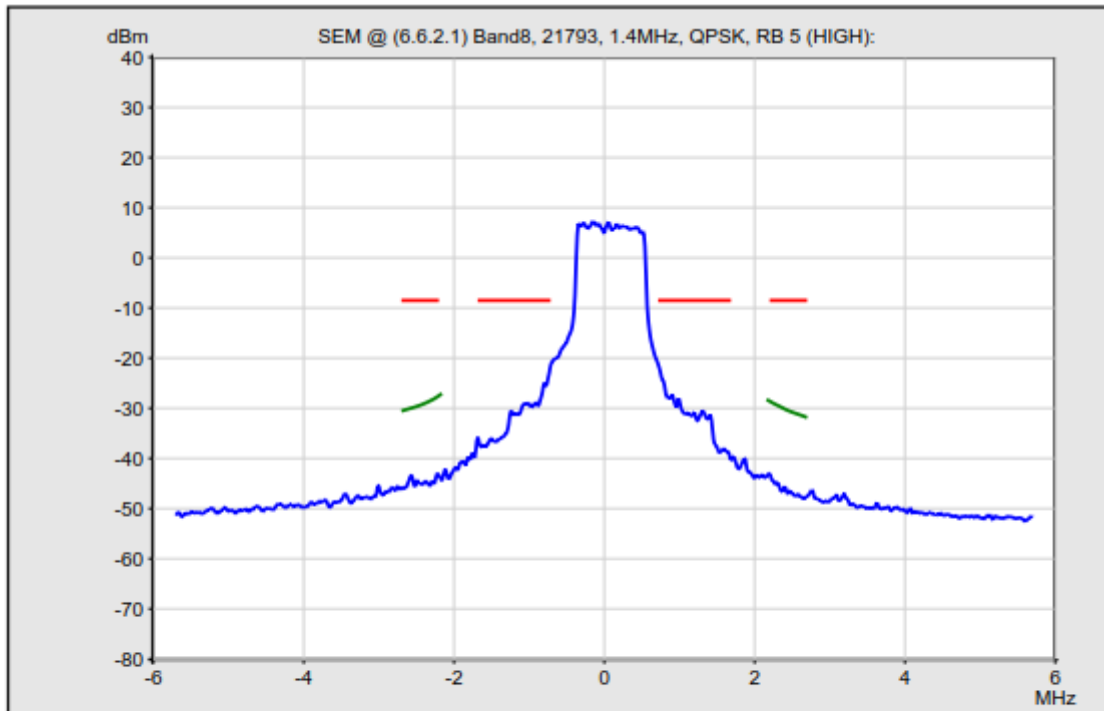


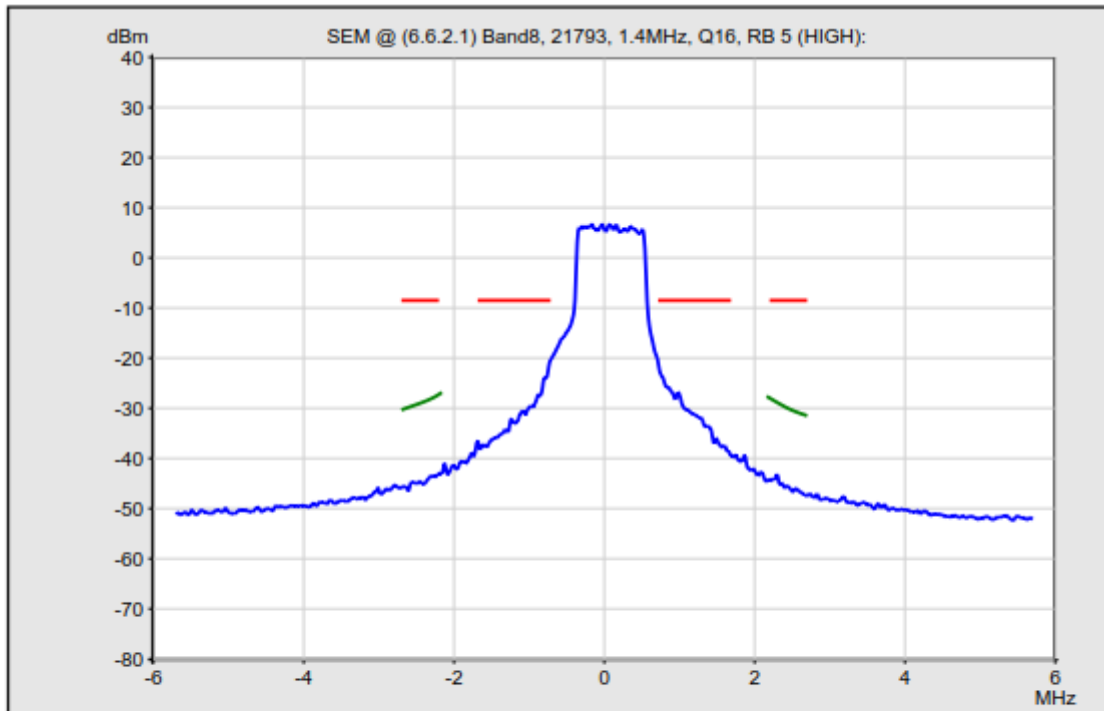
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— 30 kHz Filter
— 1 MHz Filter



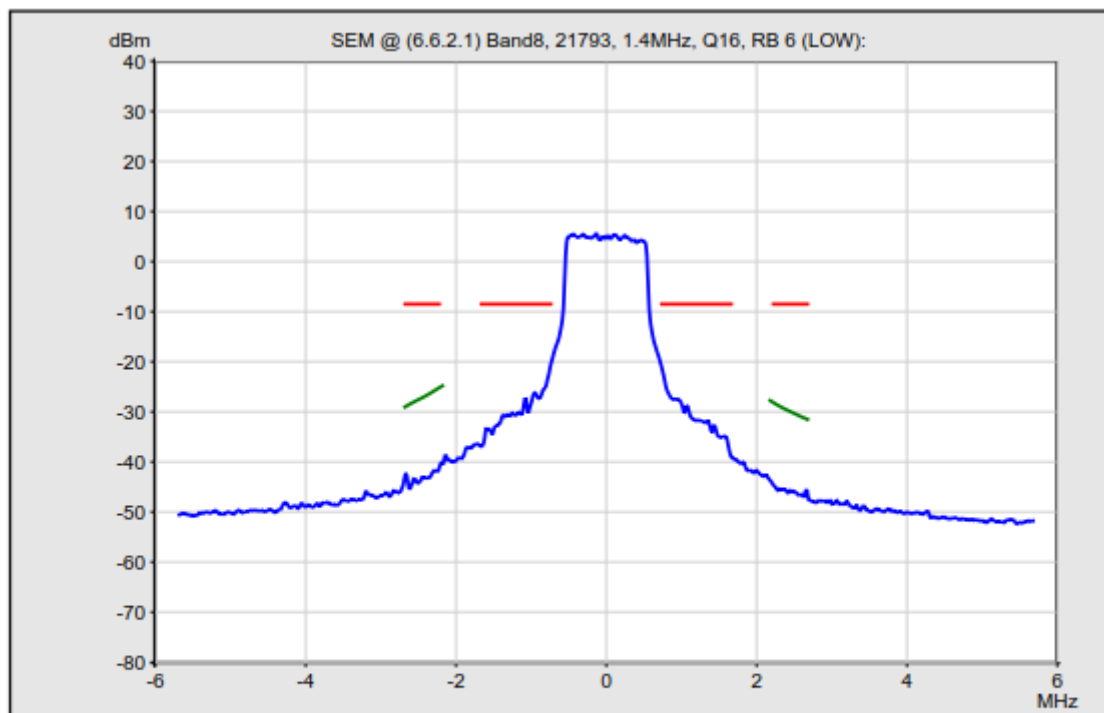
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— 30 kHz Filter
— 1 MHz Filter



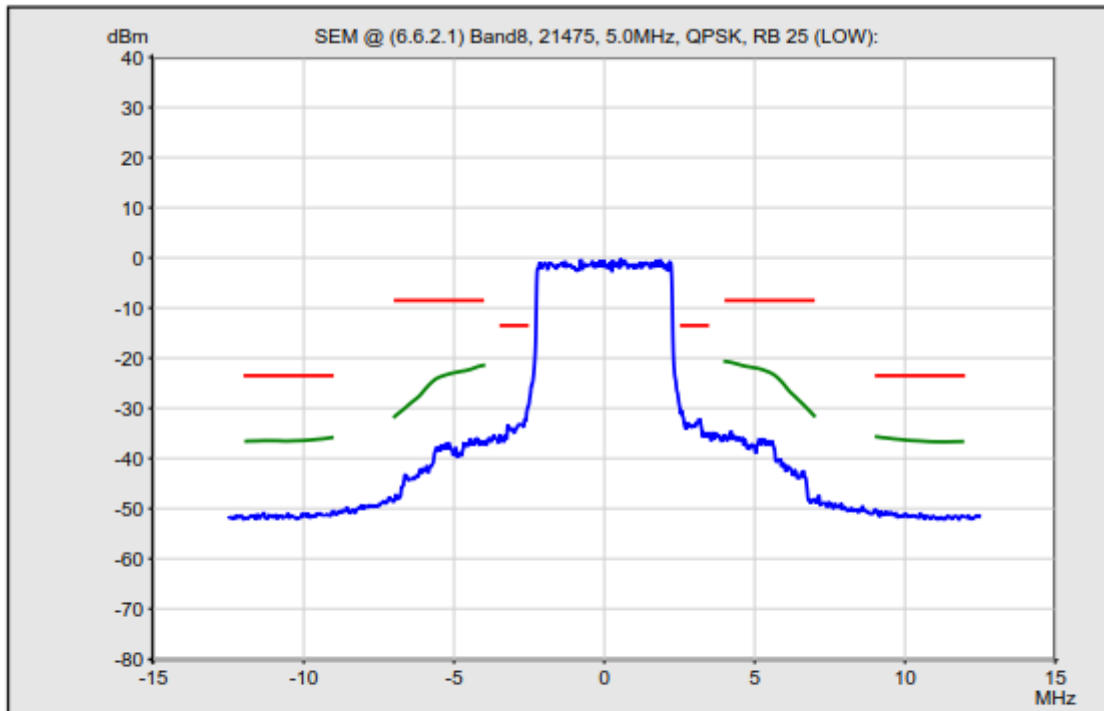




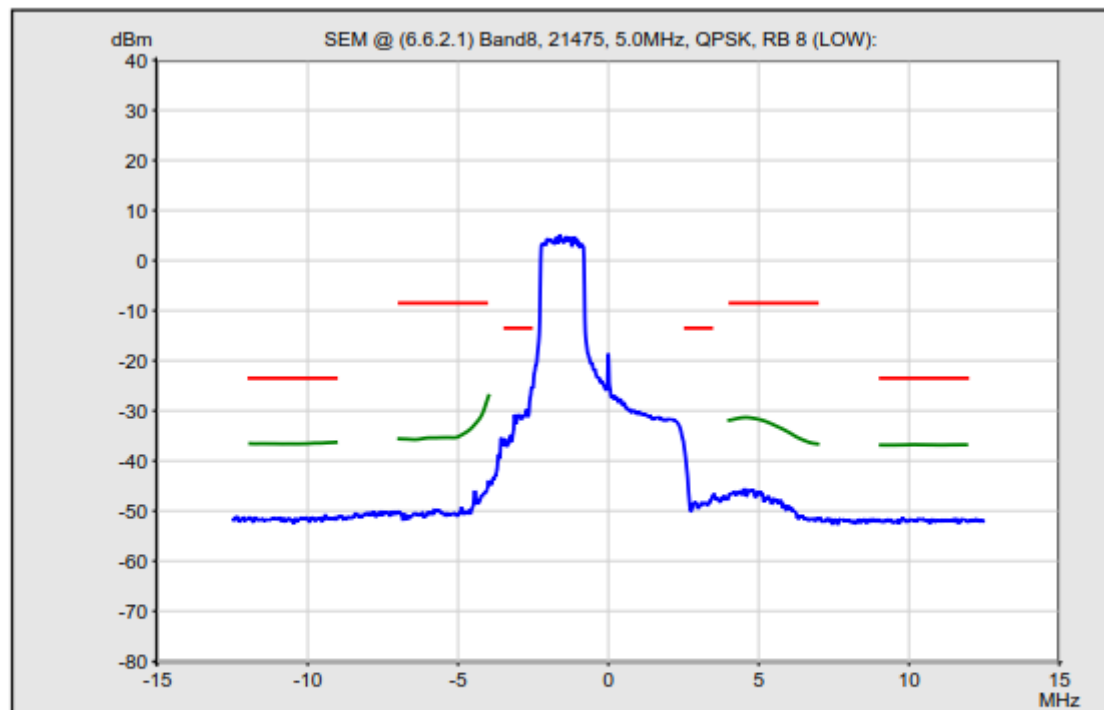
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter



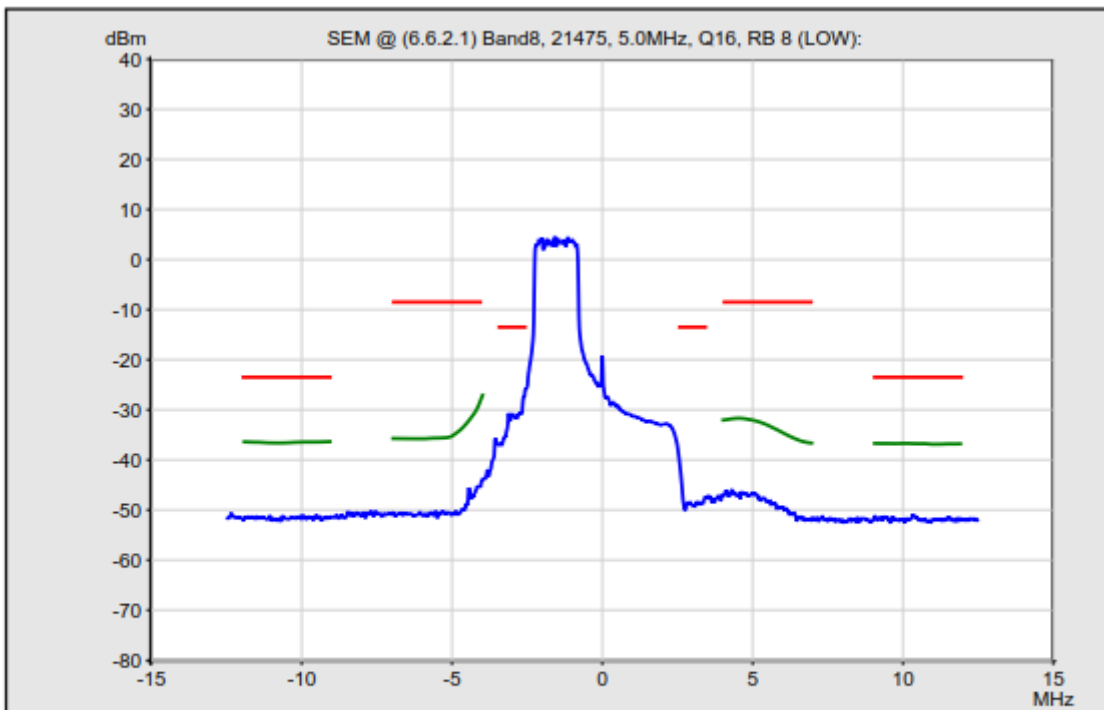
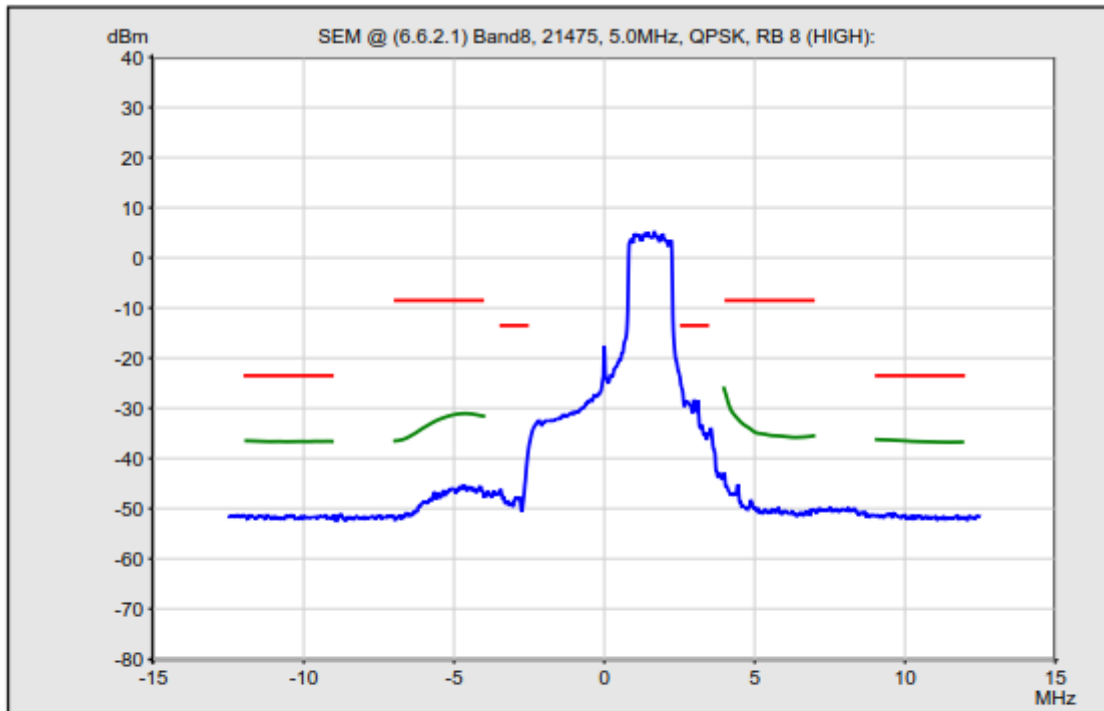
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— 30 kHz Filter
— 1 MHz Filter

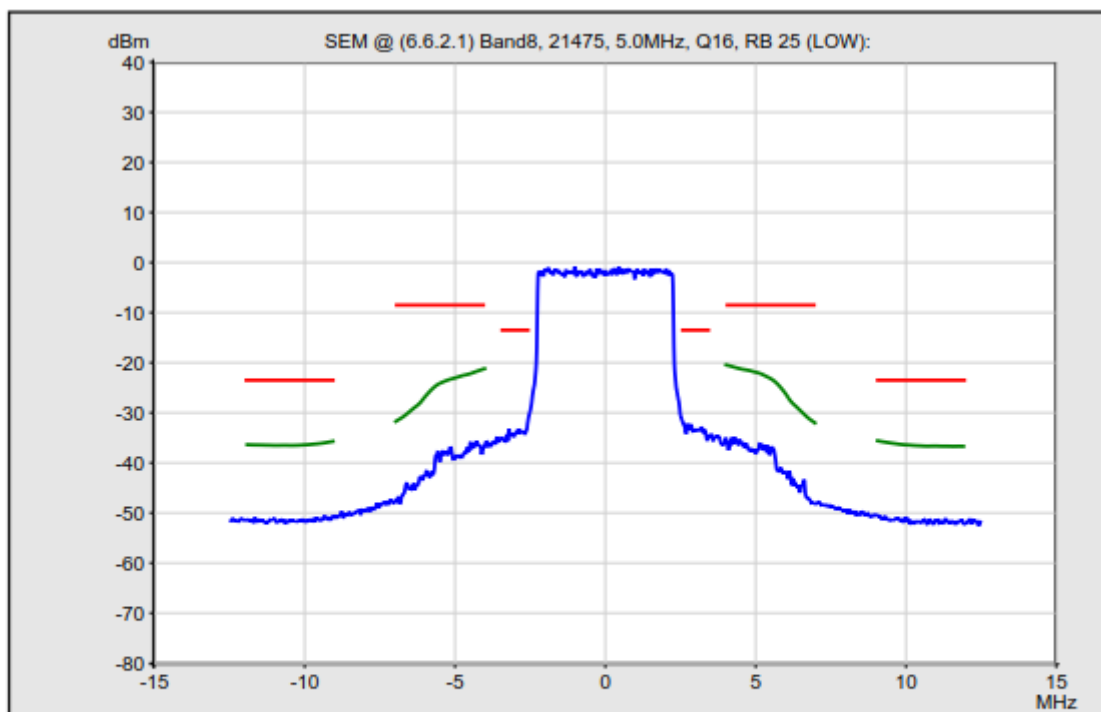
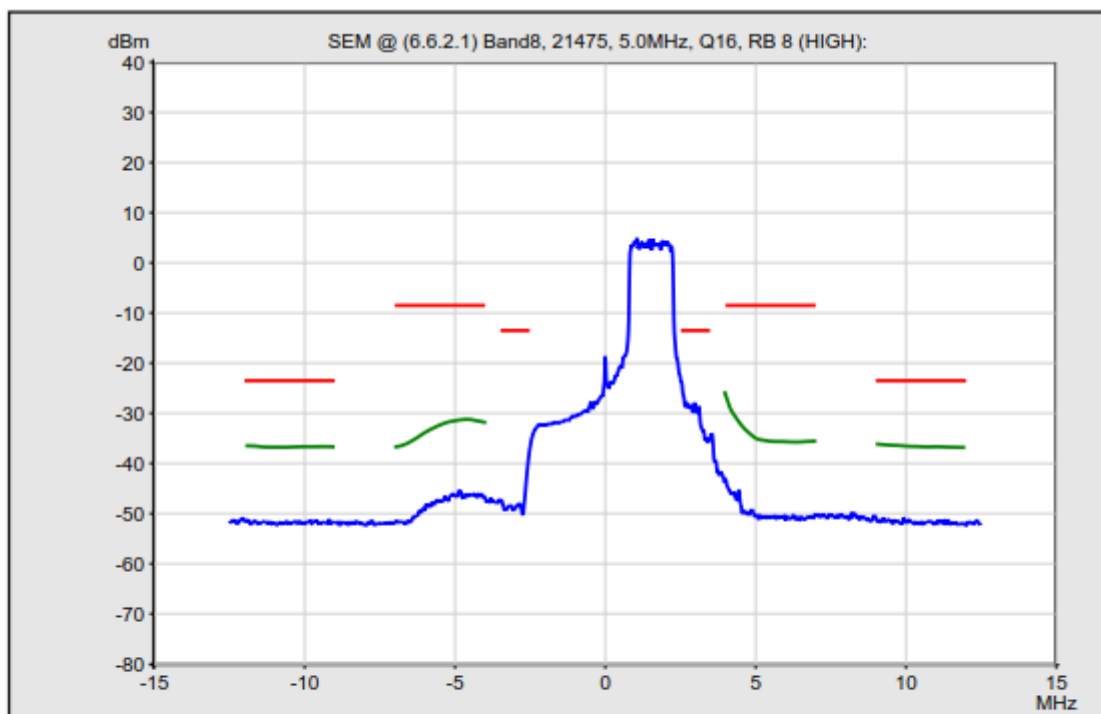


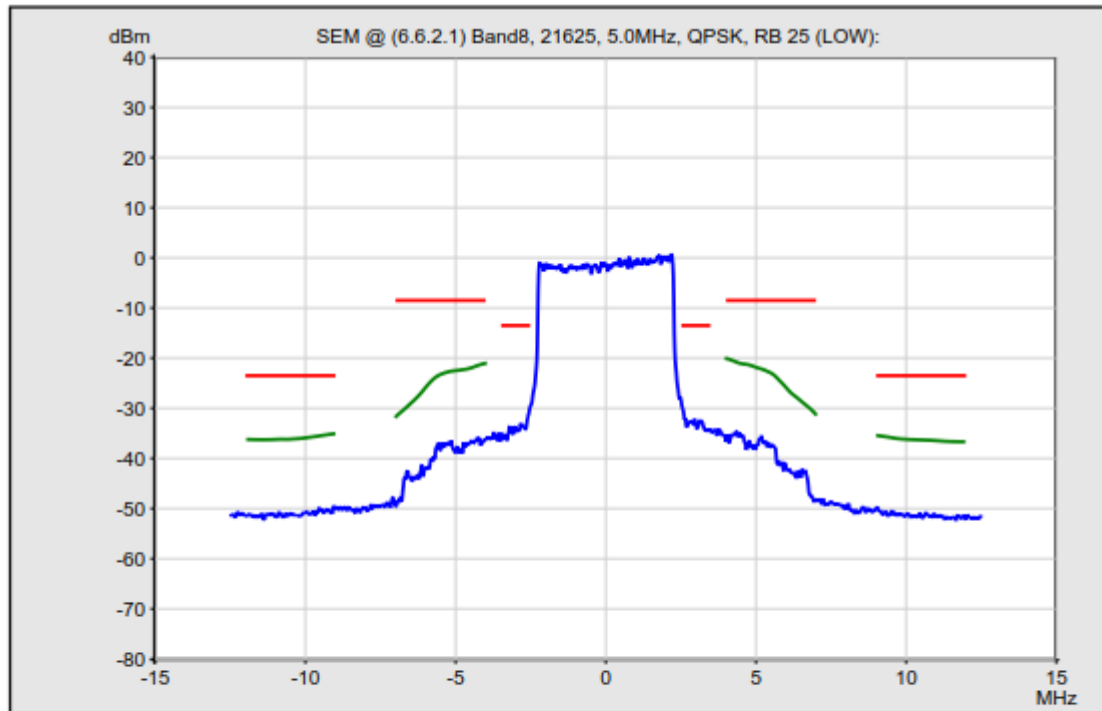
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— 30 kHz Filter
— 1 MHz Filter



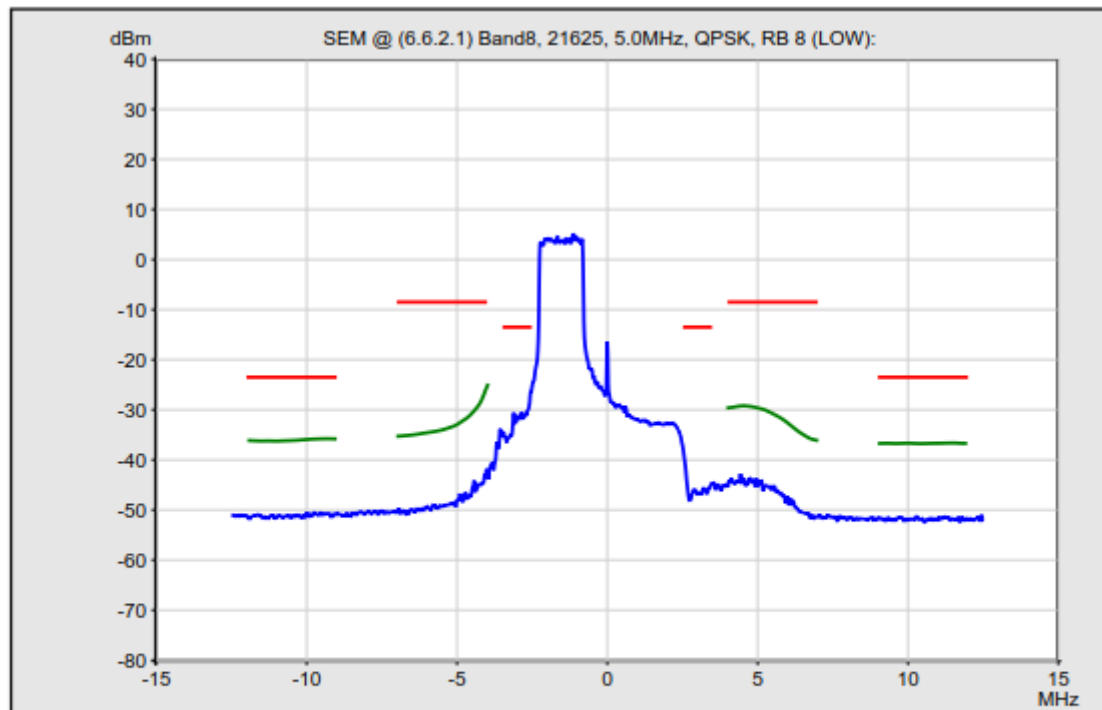
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter



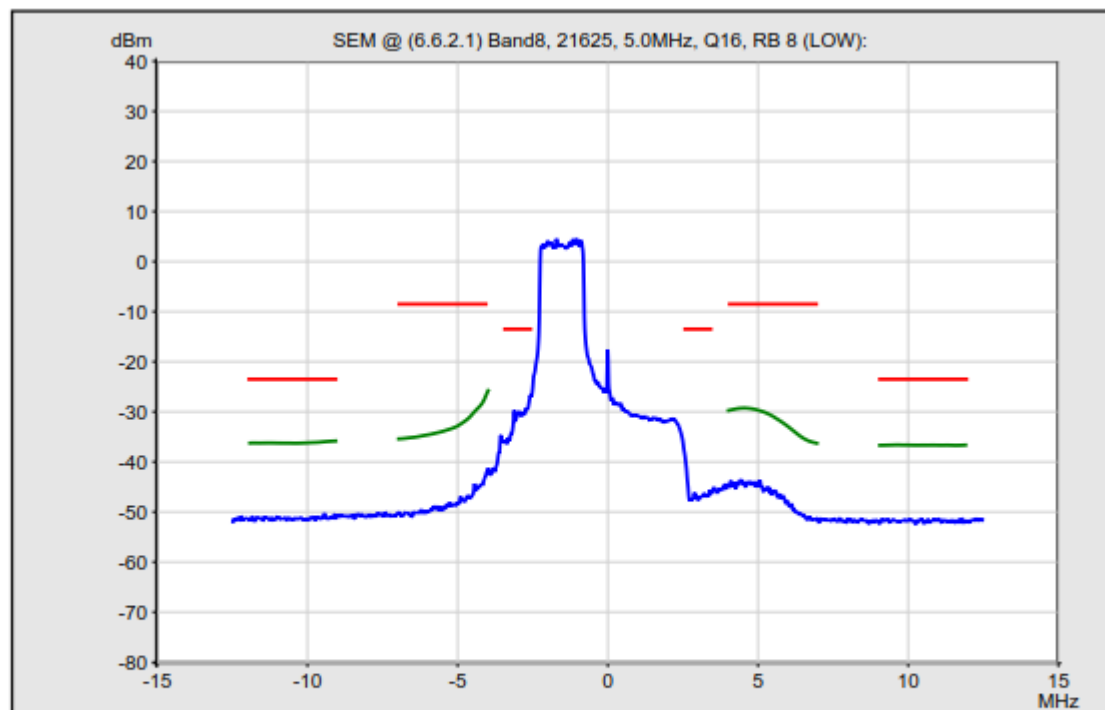
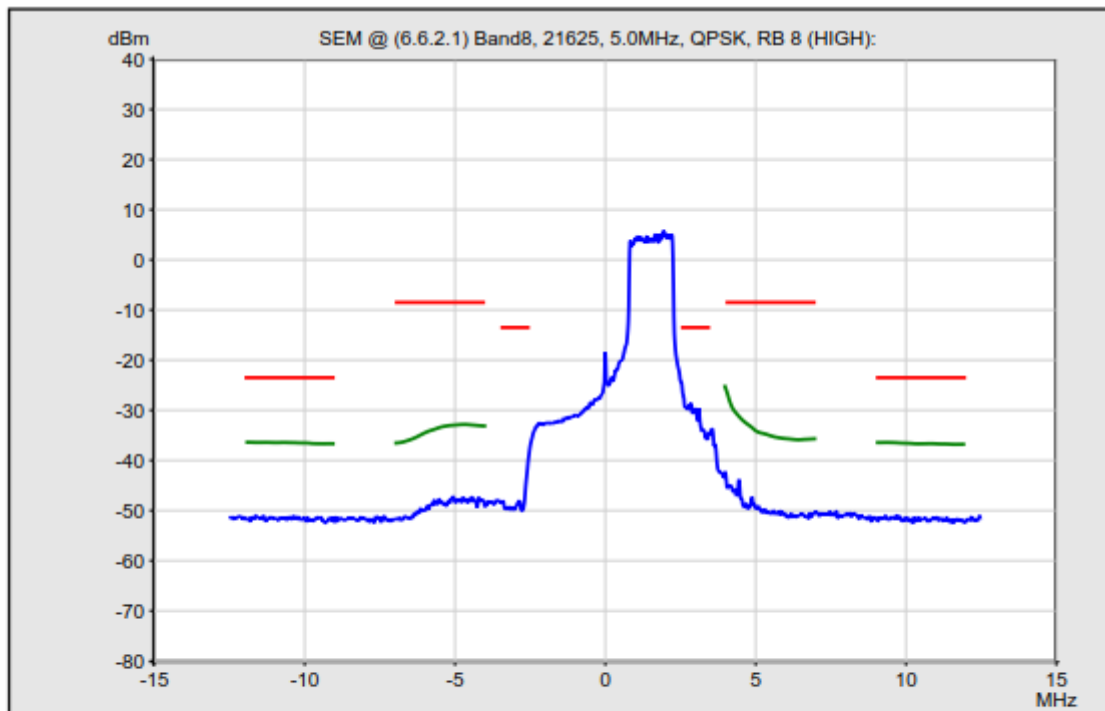


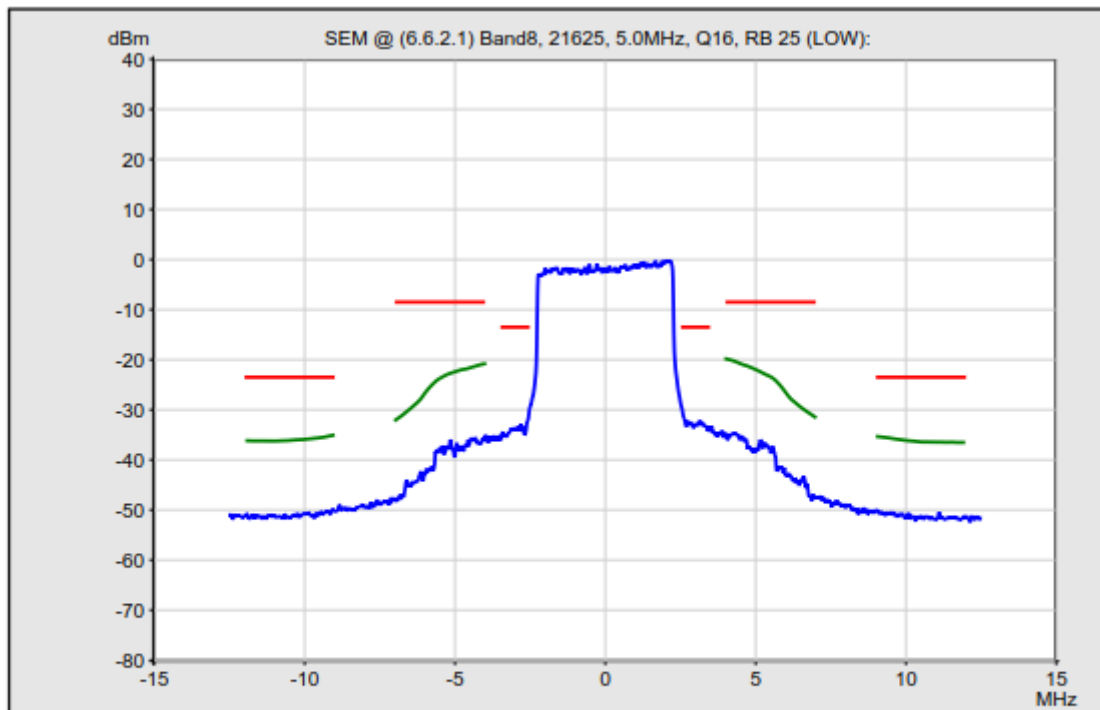
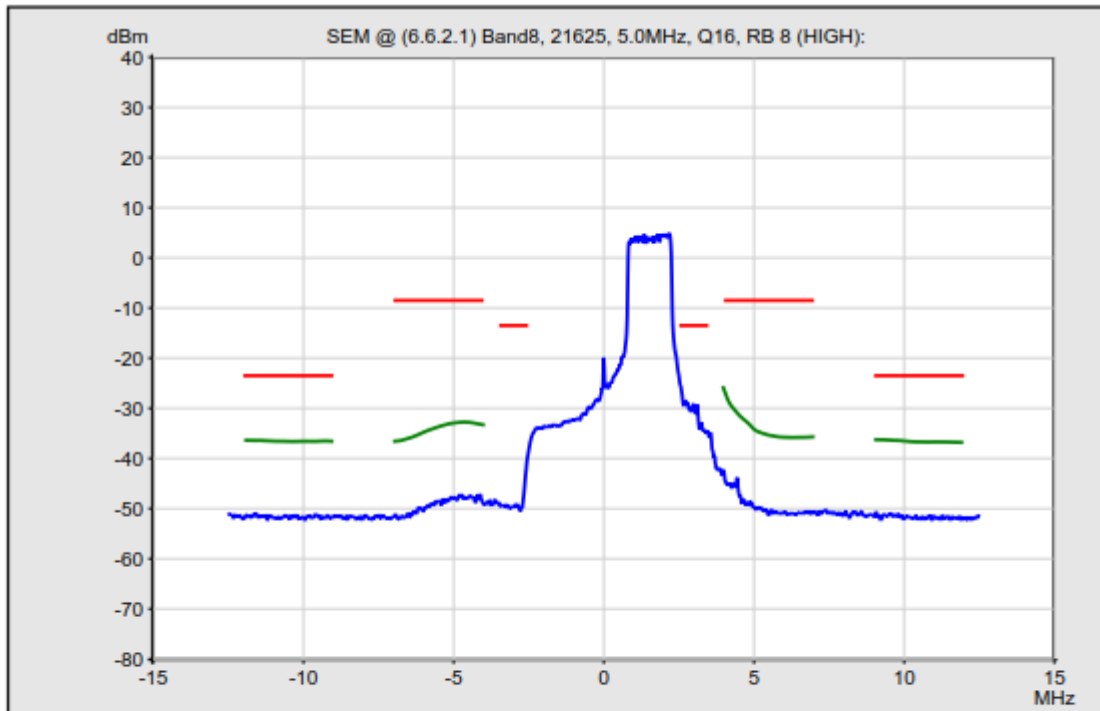


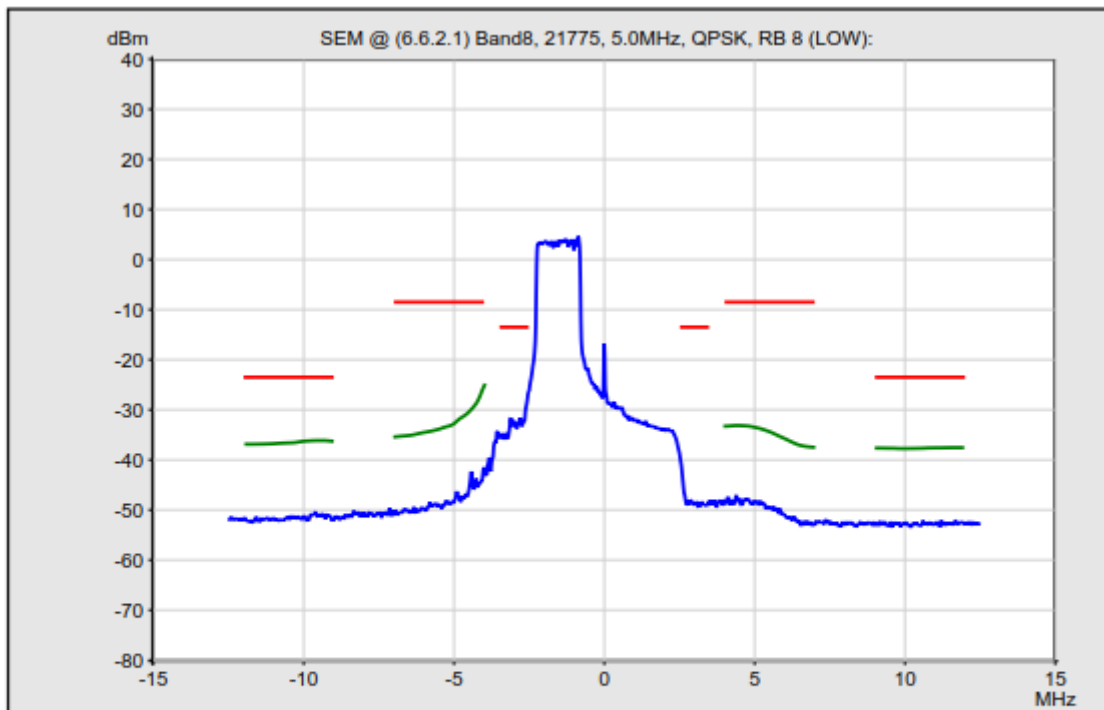
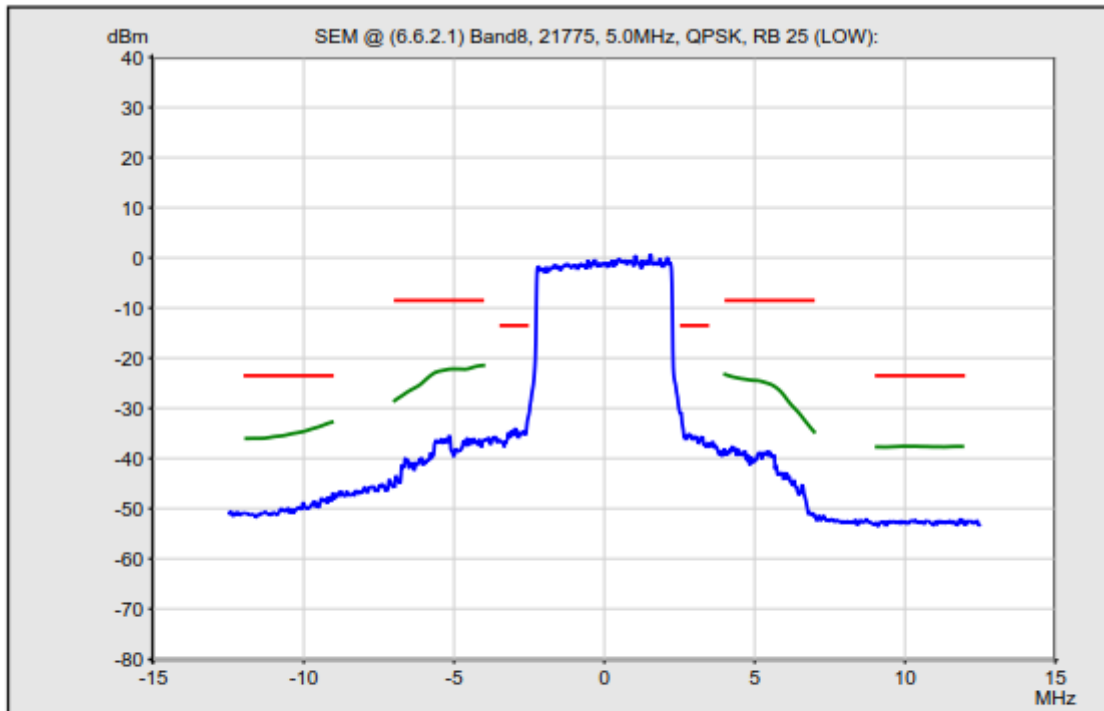
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

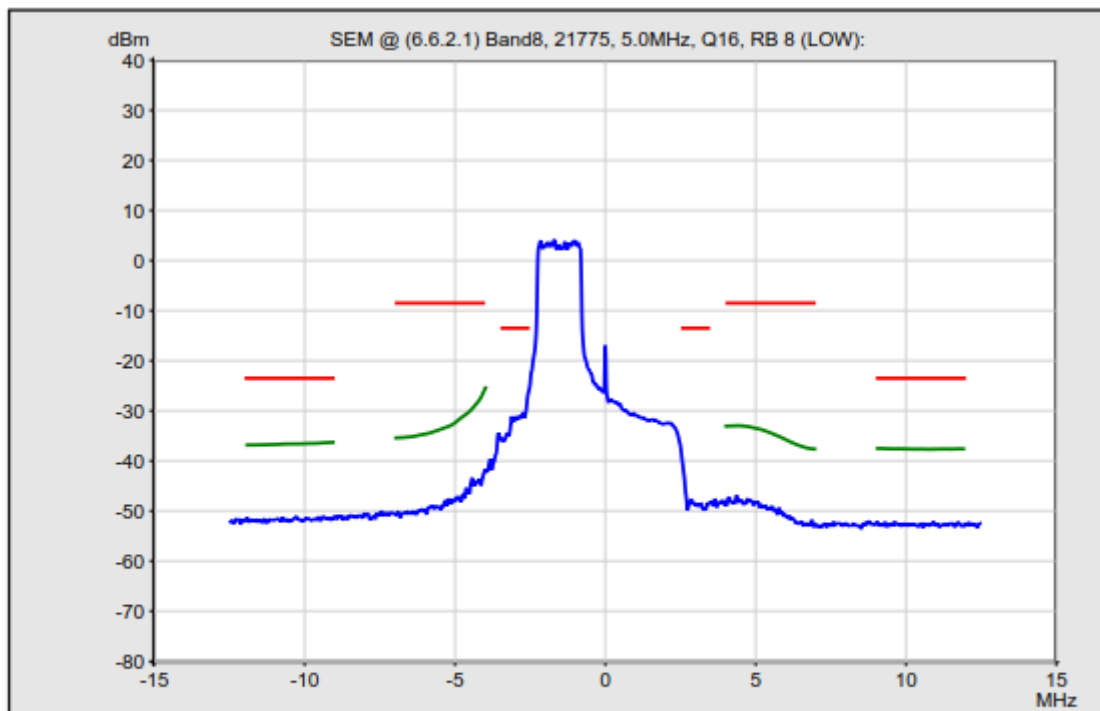
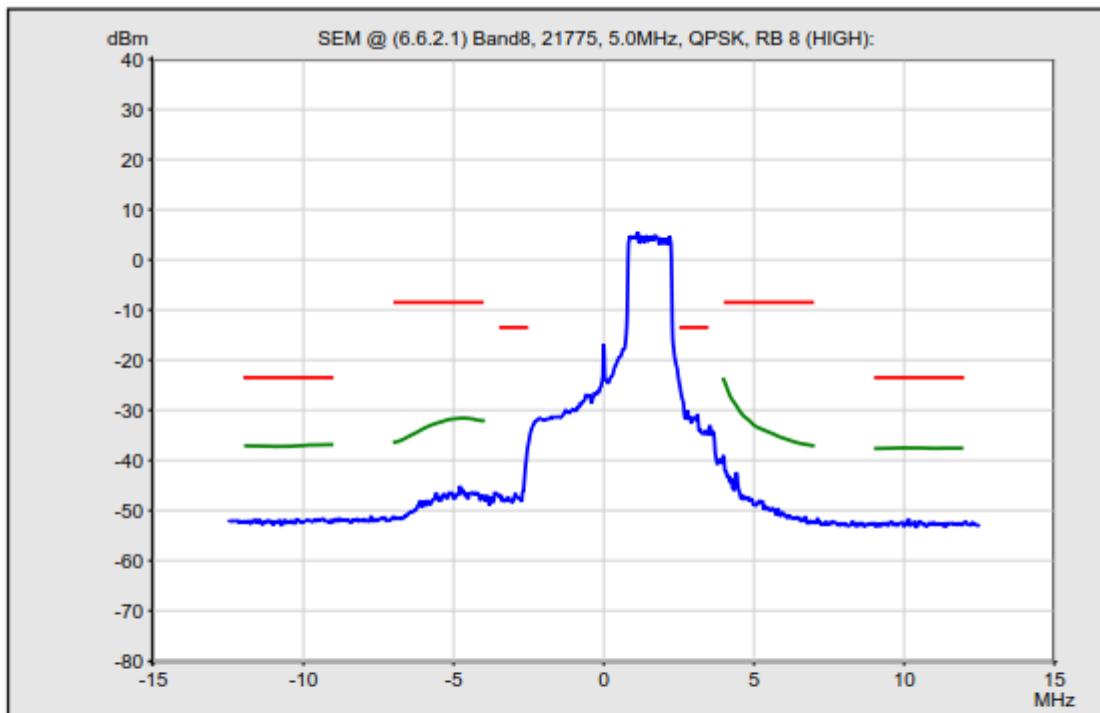


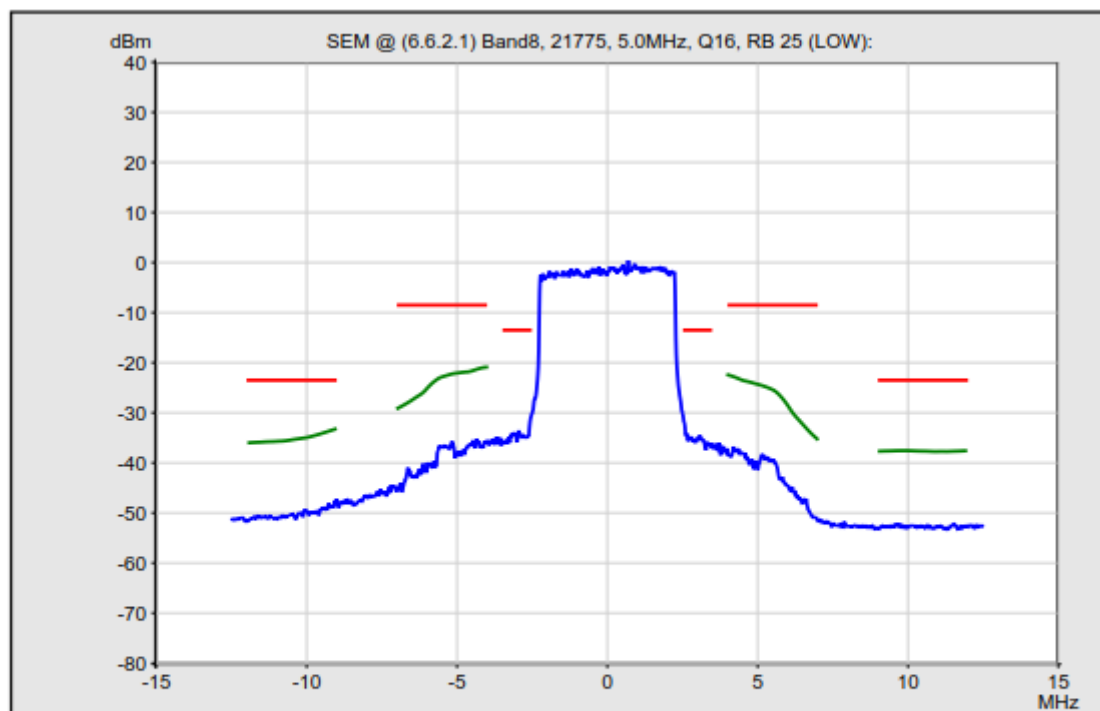
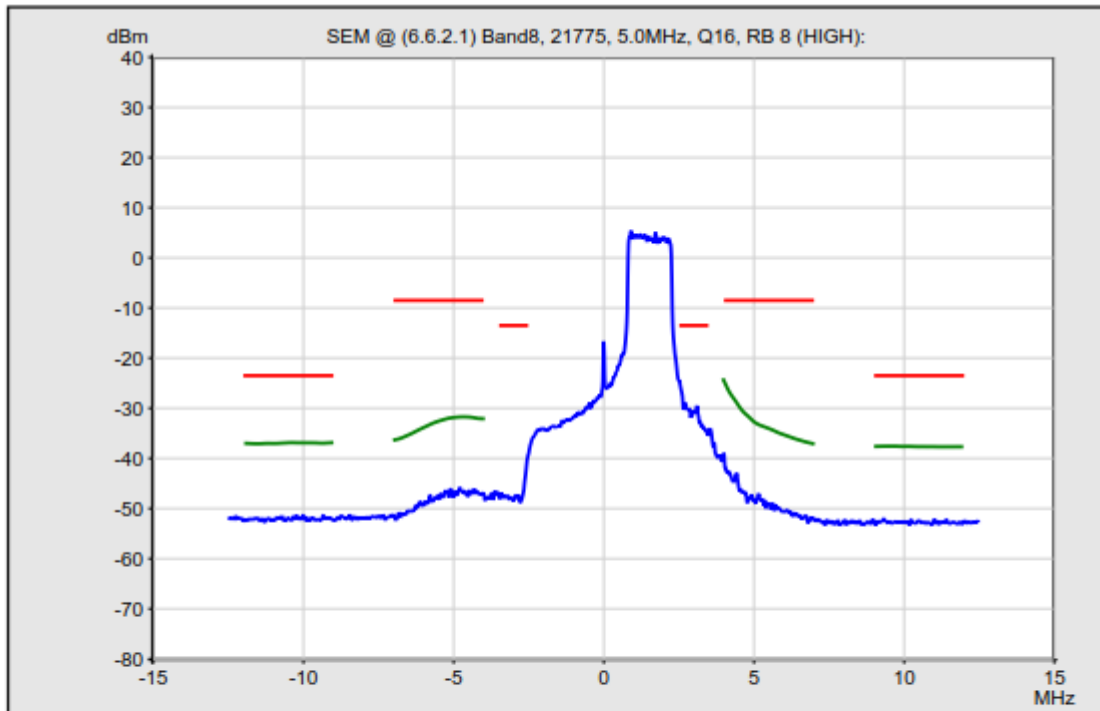
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

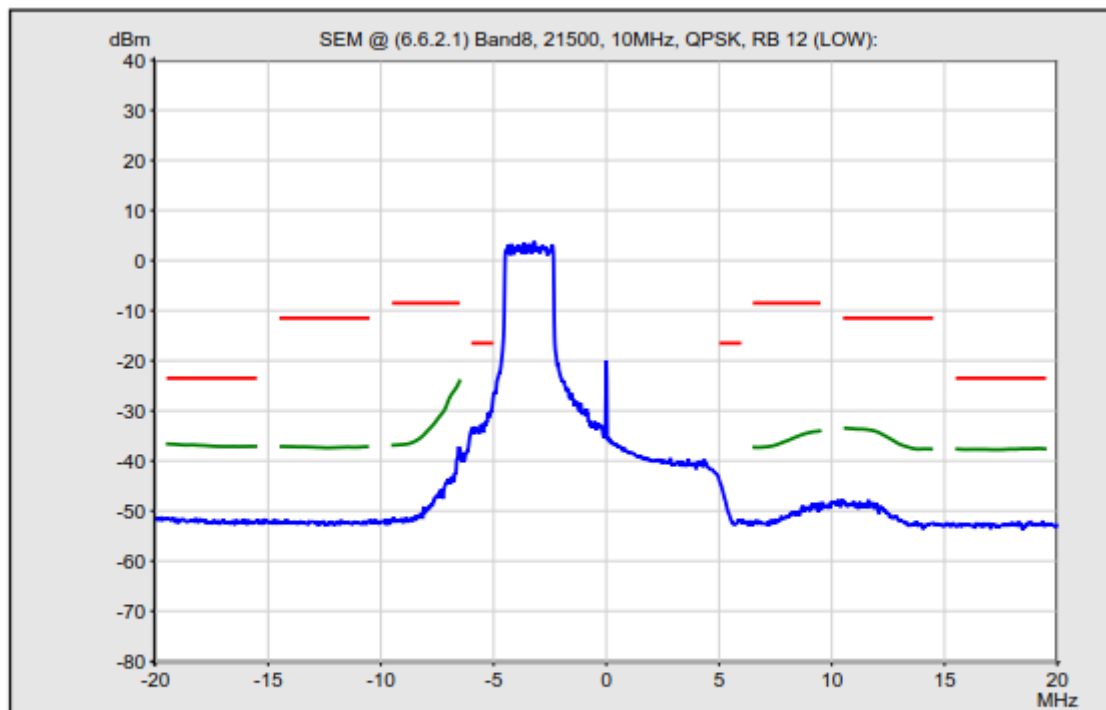
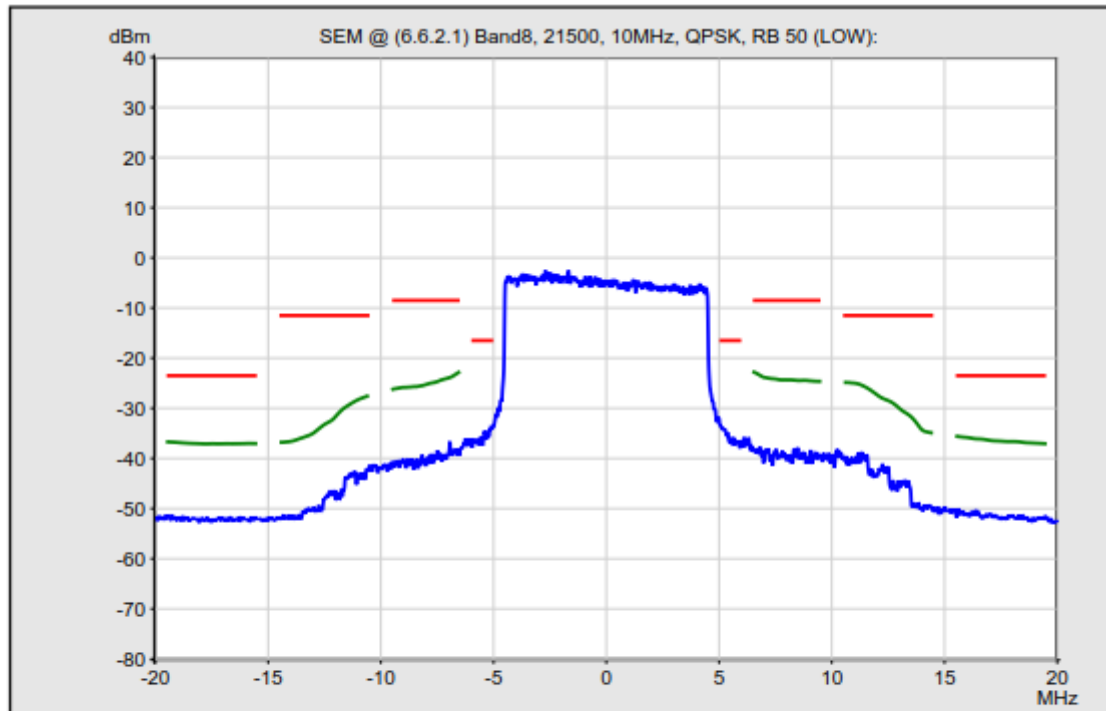


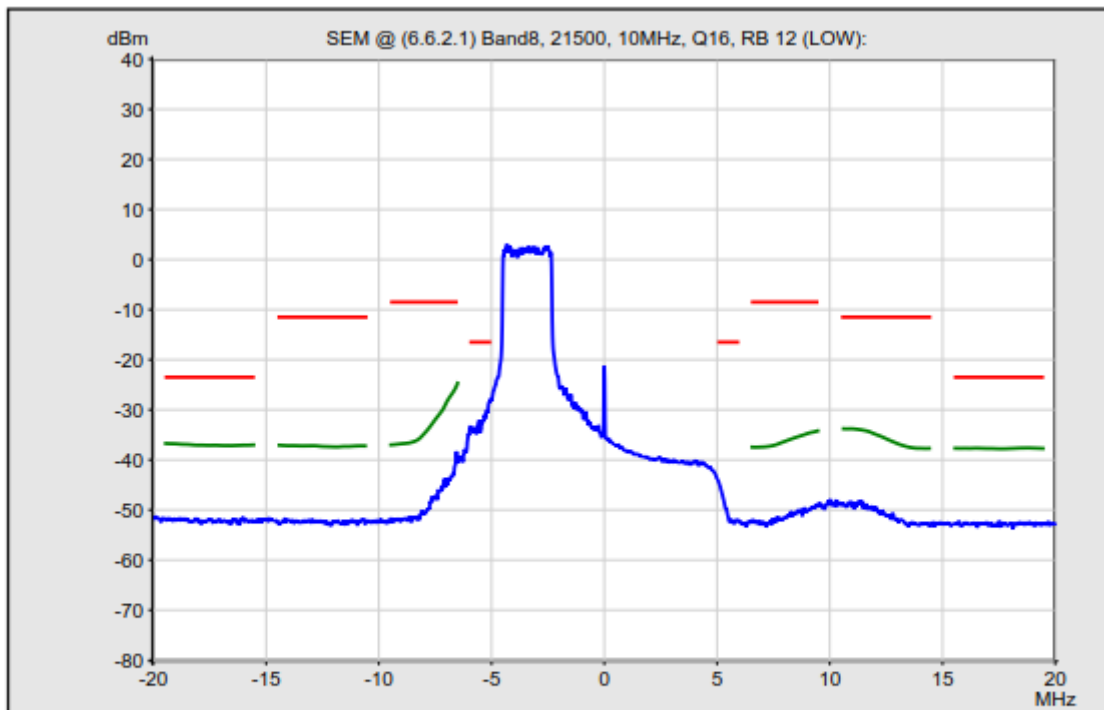
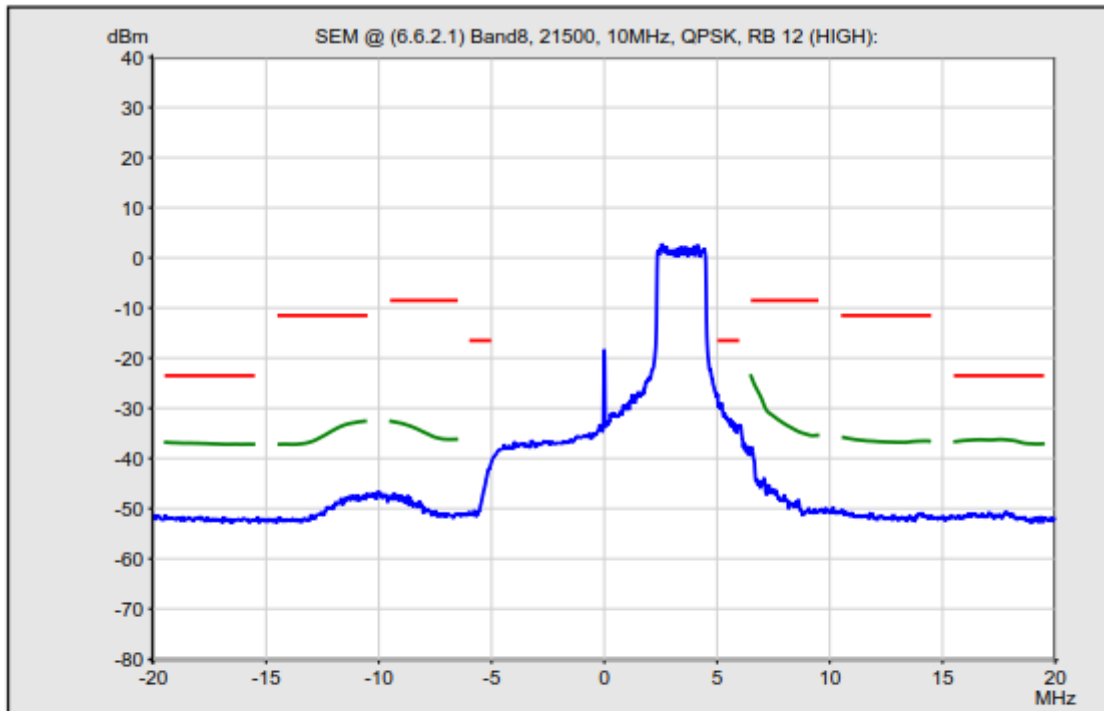


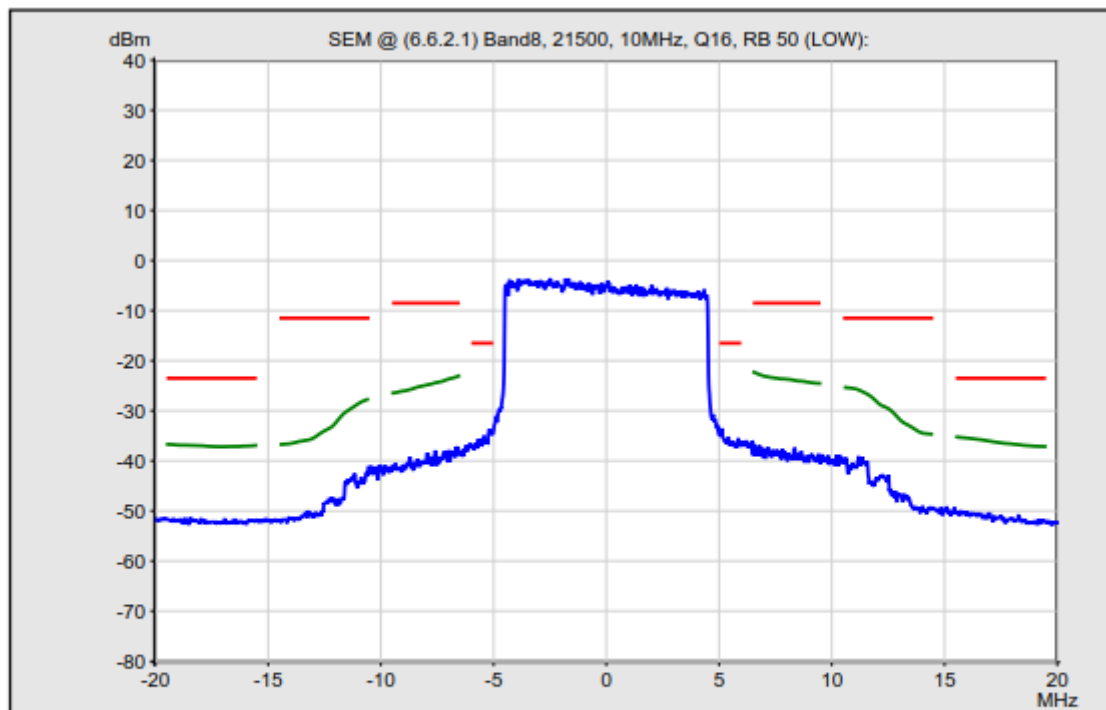
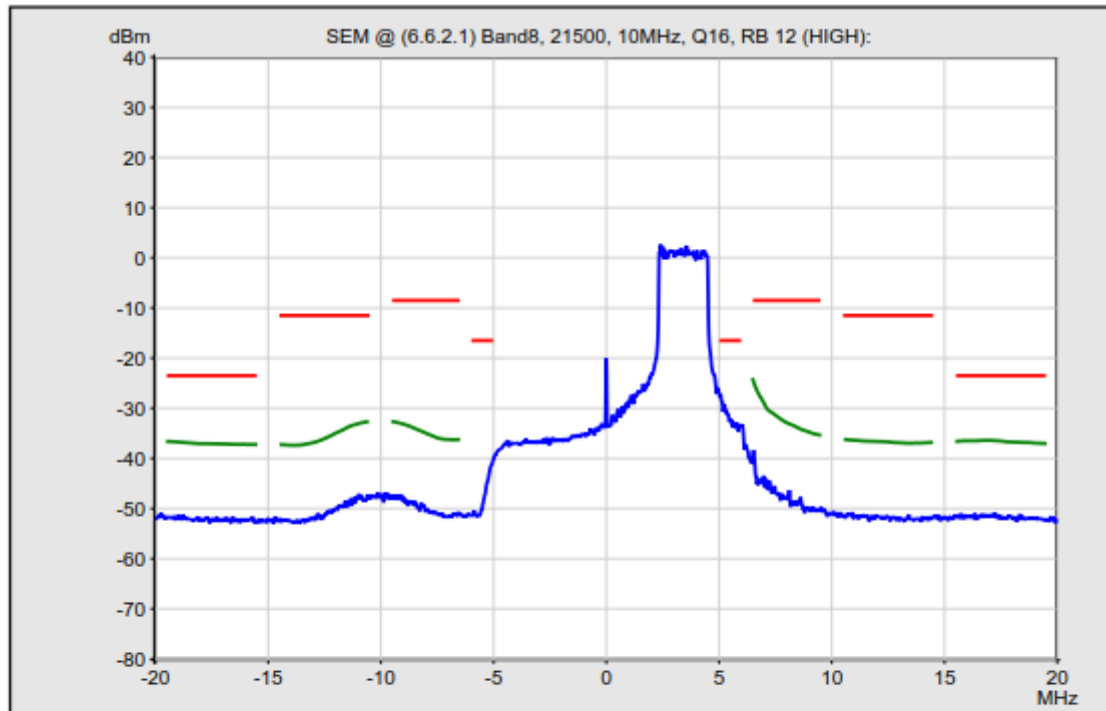


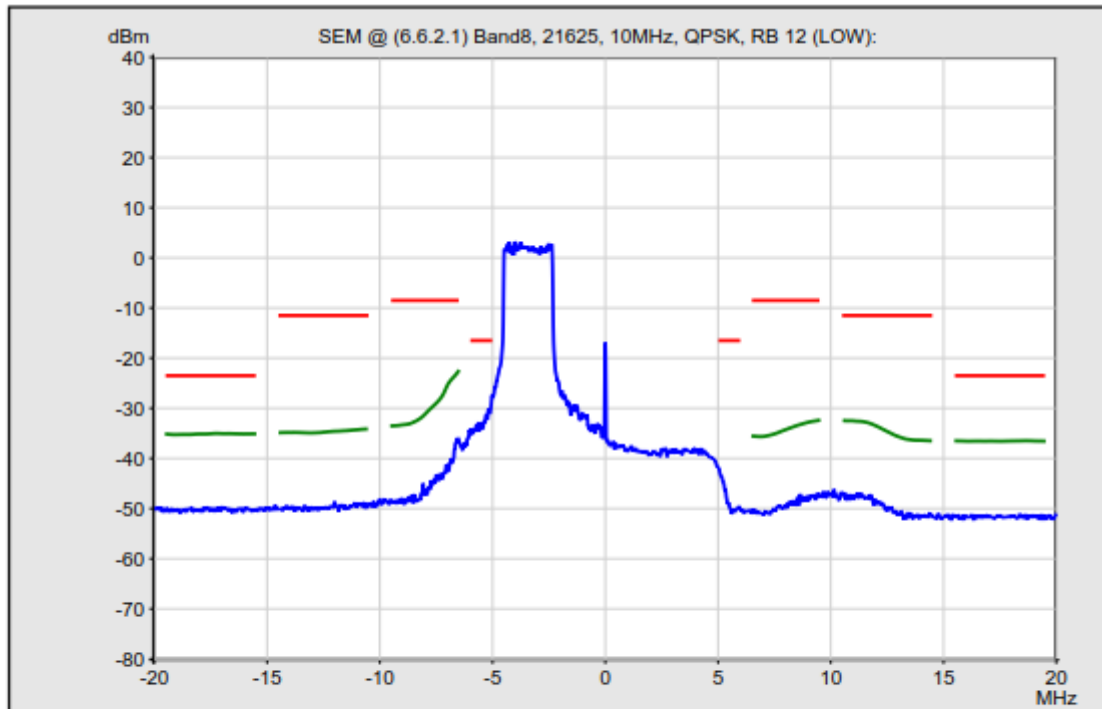




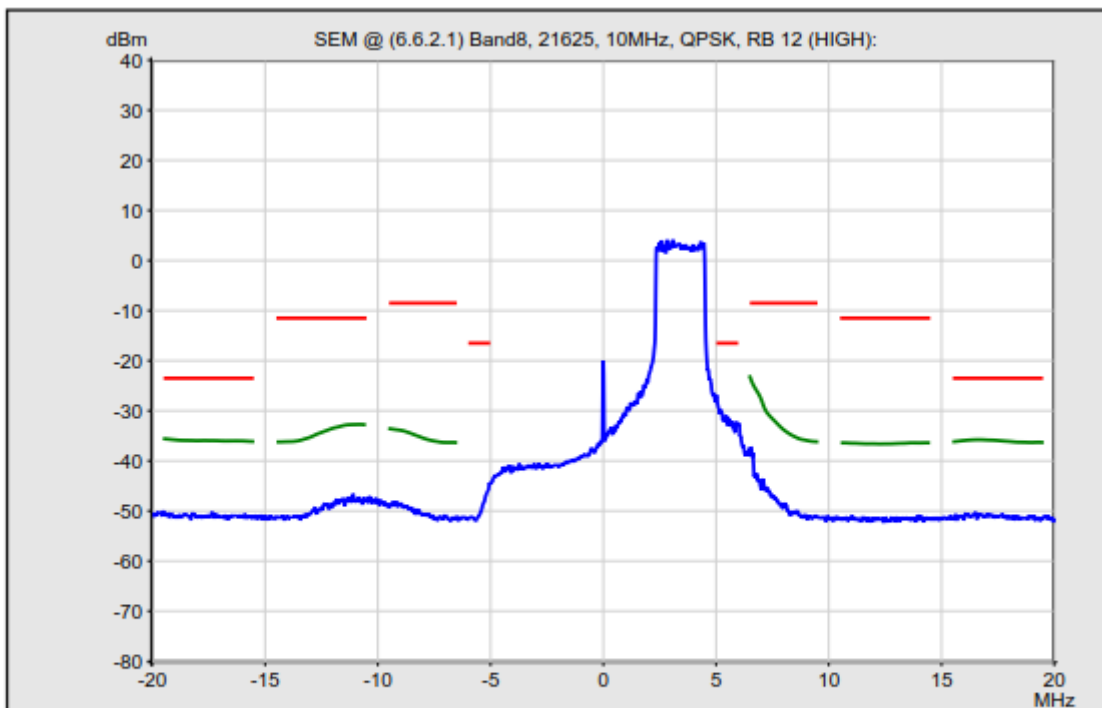




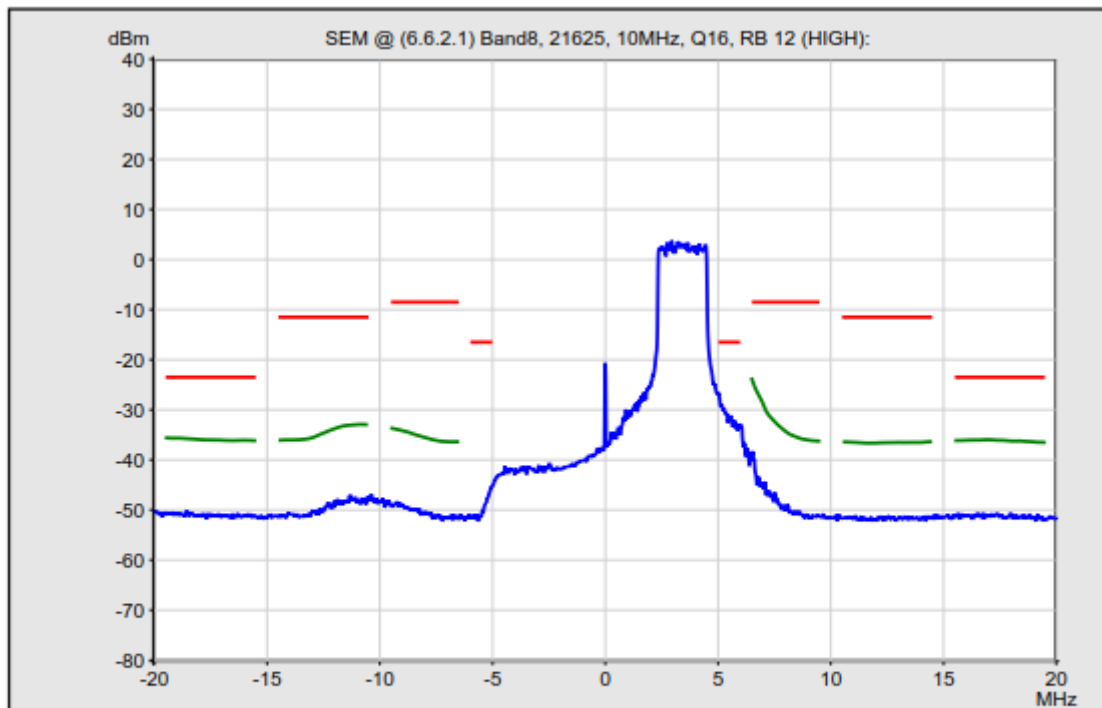
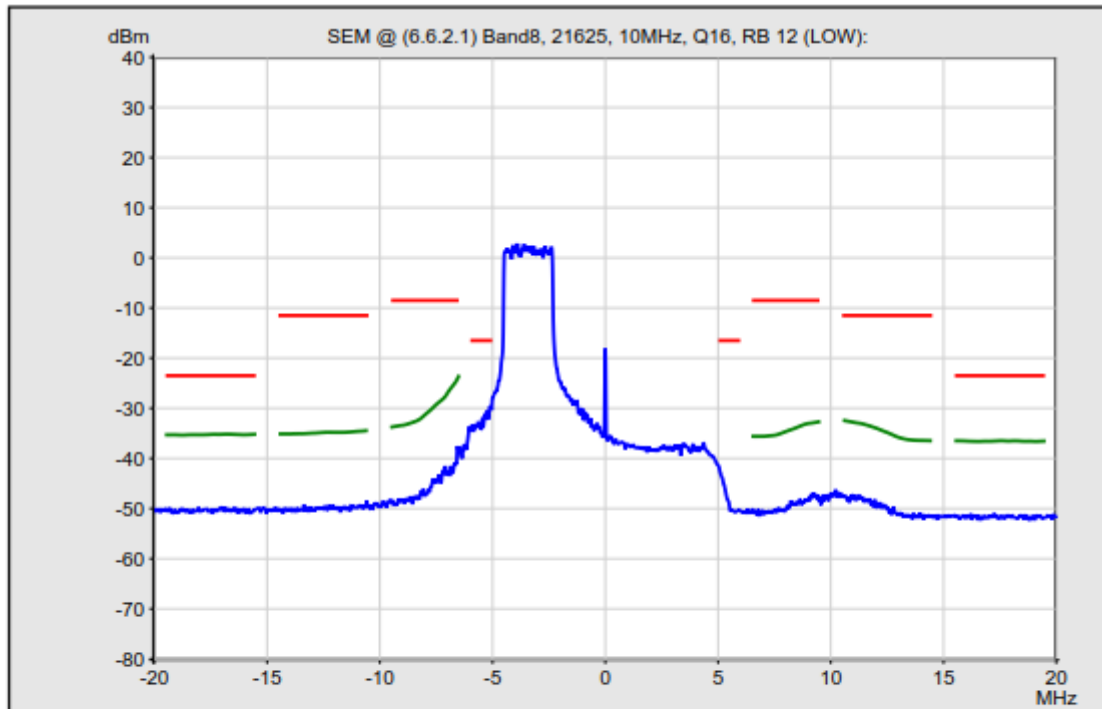


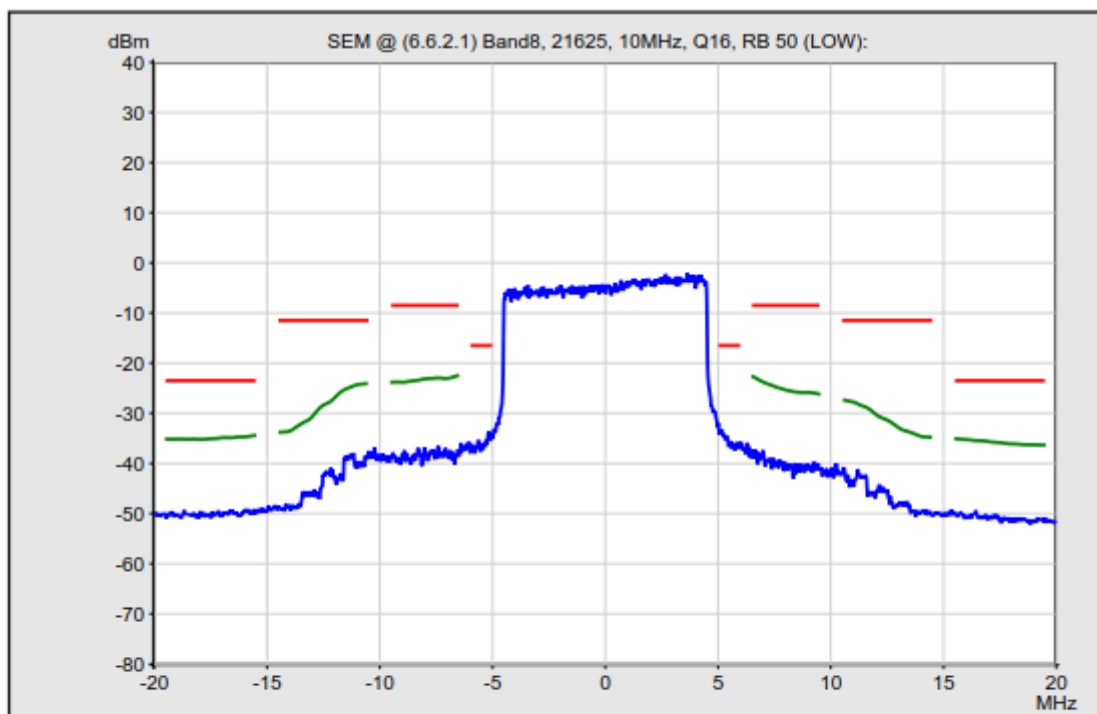


— SEM Limits
— 30 kHz Filter
— 1 MHz Filter



— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

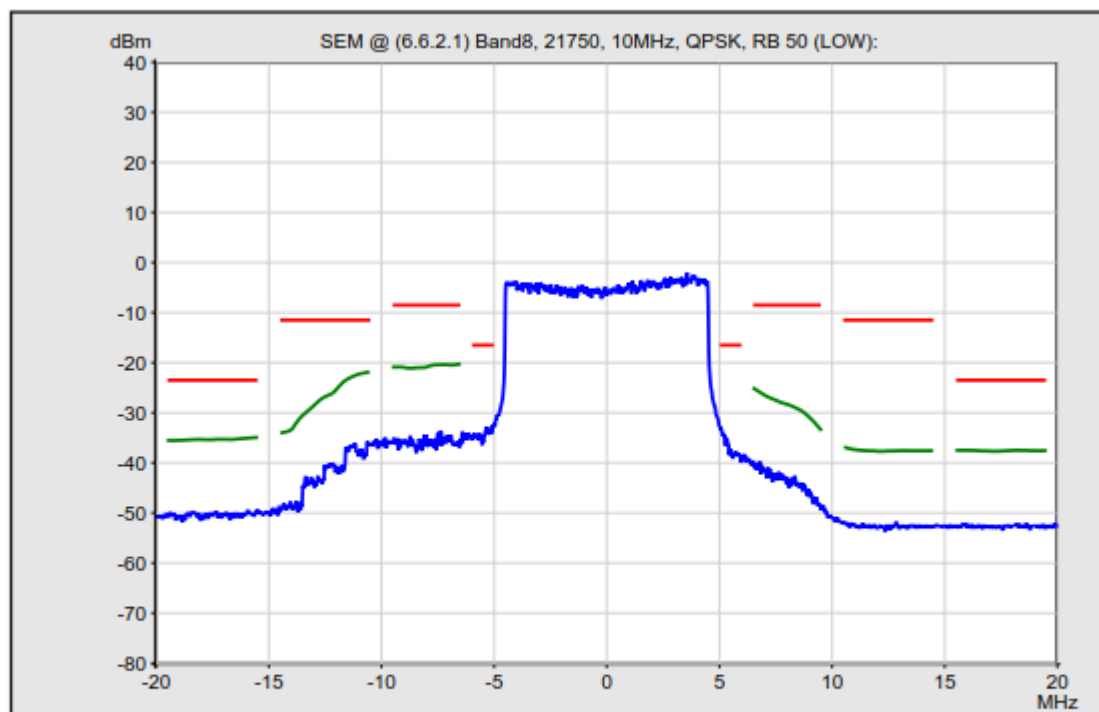




— SEM Limits

— 30 kHz Filter

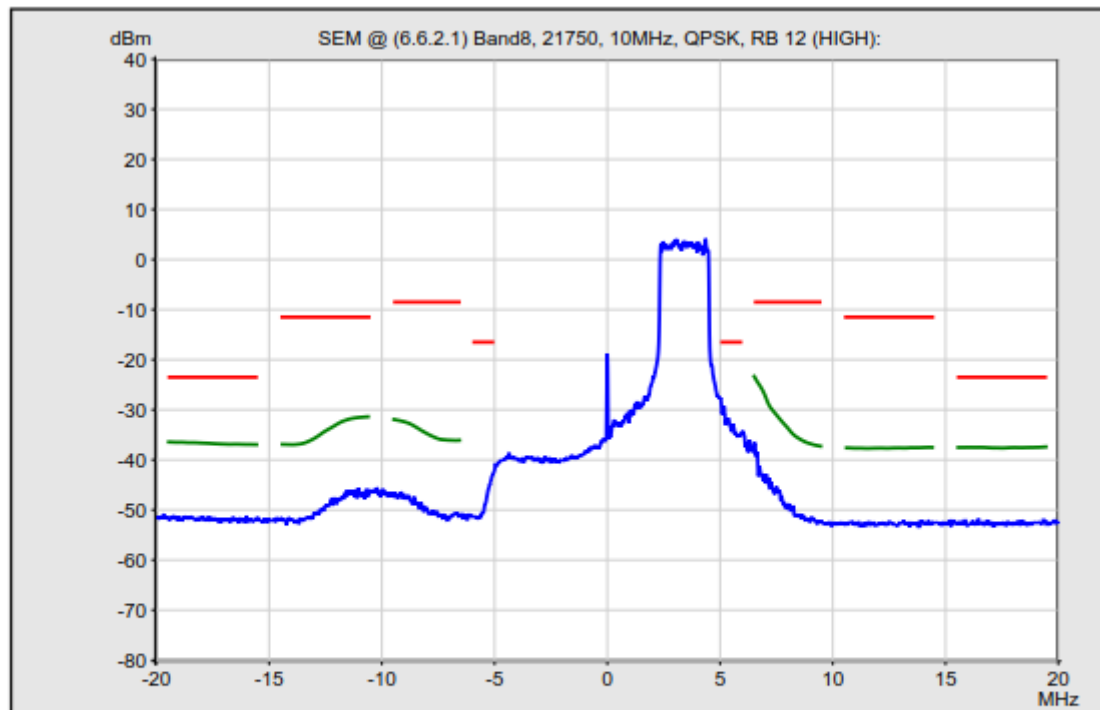
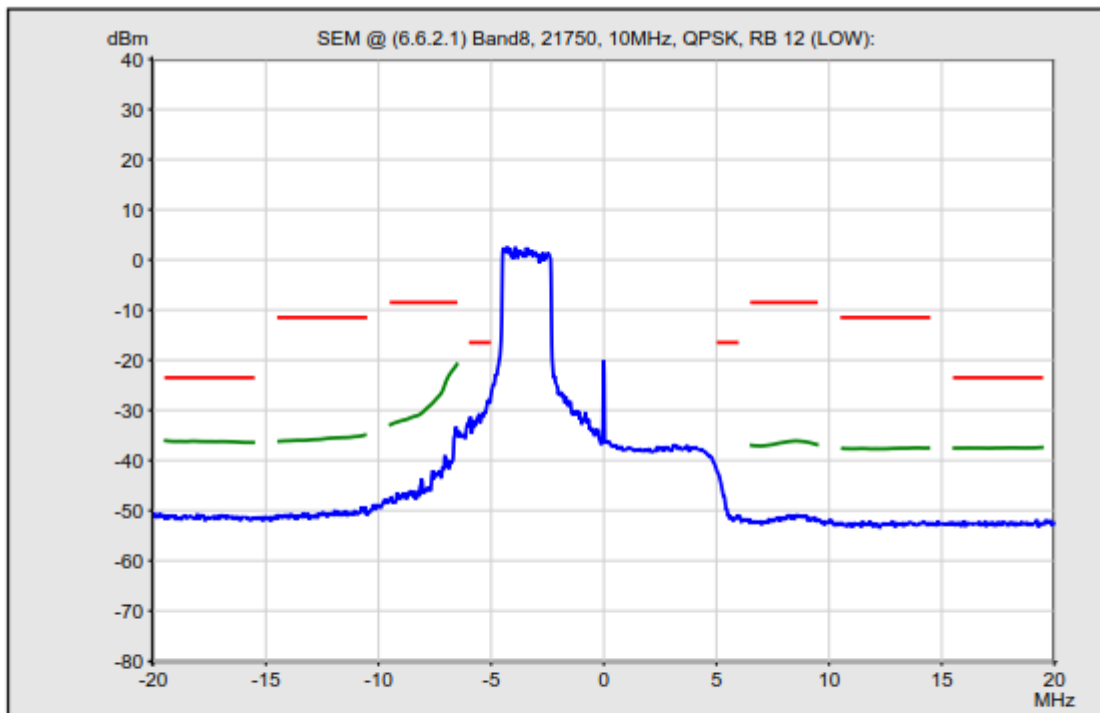
— 1 MHz Filter

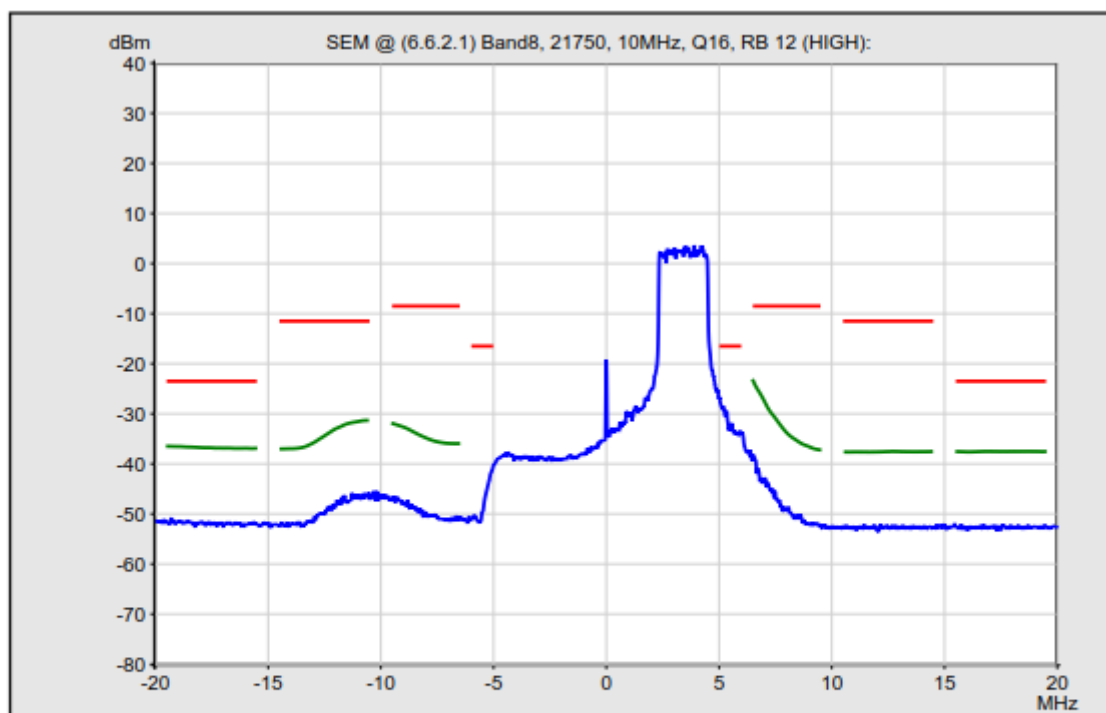
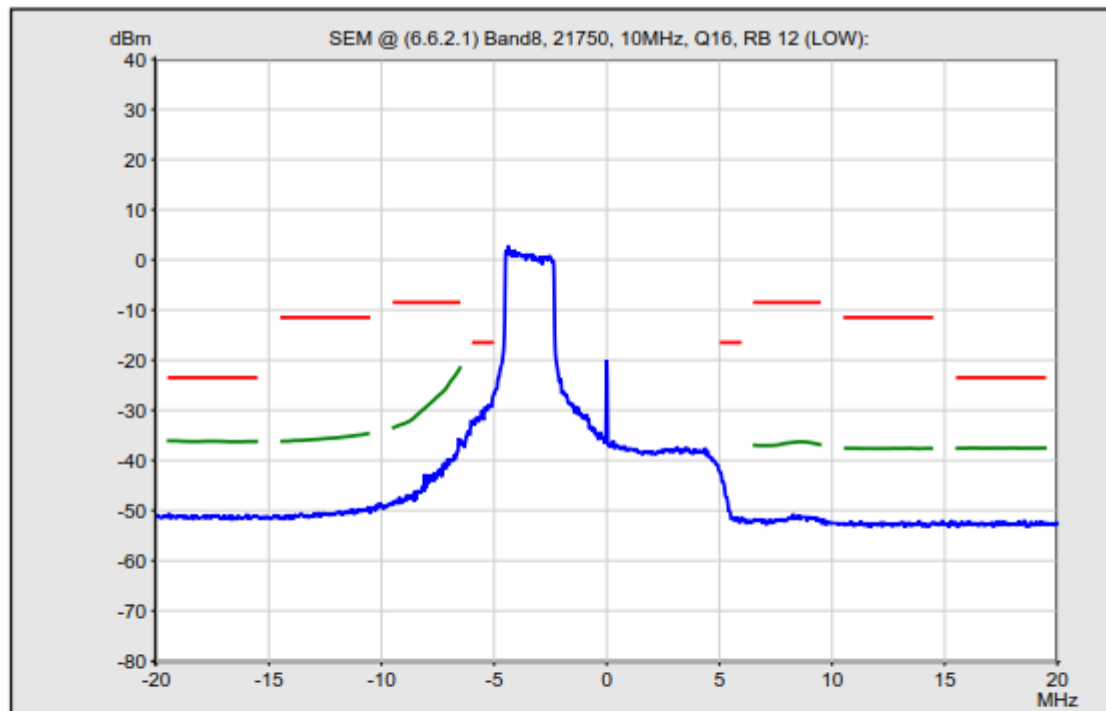


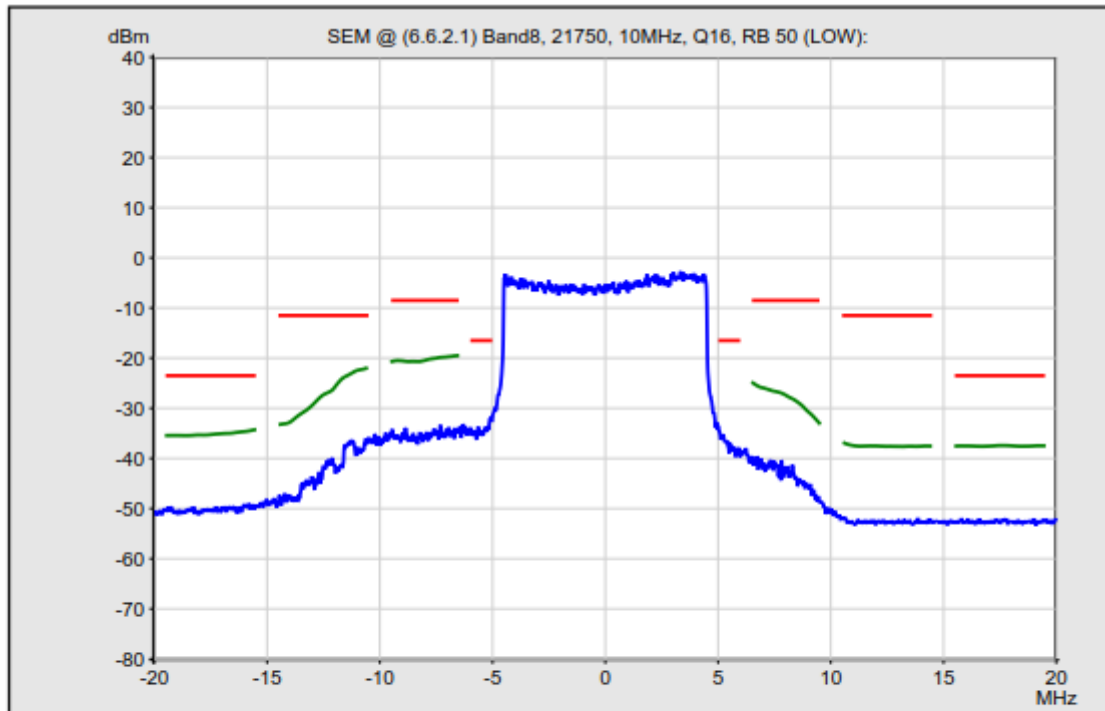
— SEM Limits

— 30 kHz Filter

— 1 MHz Filter



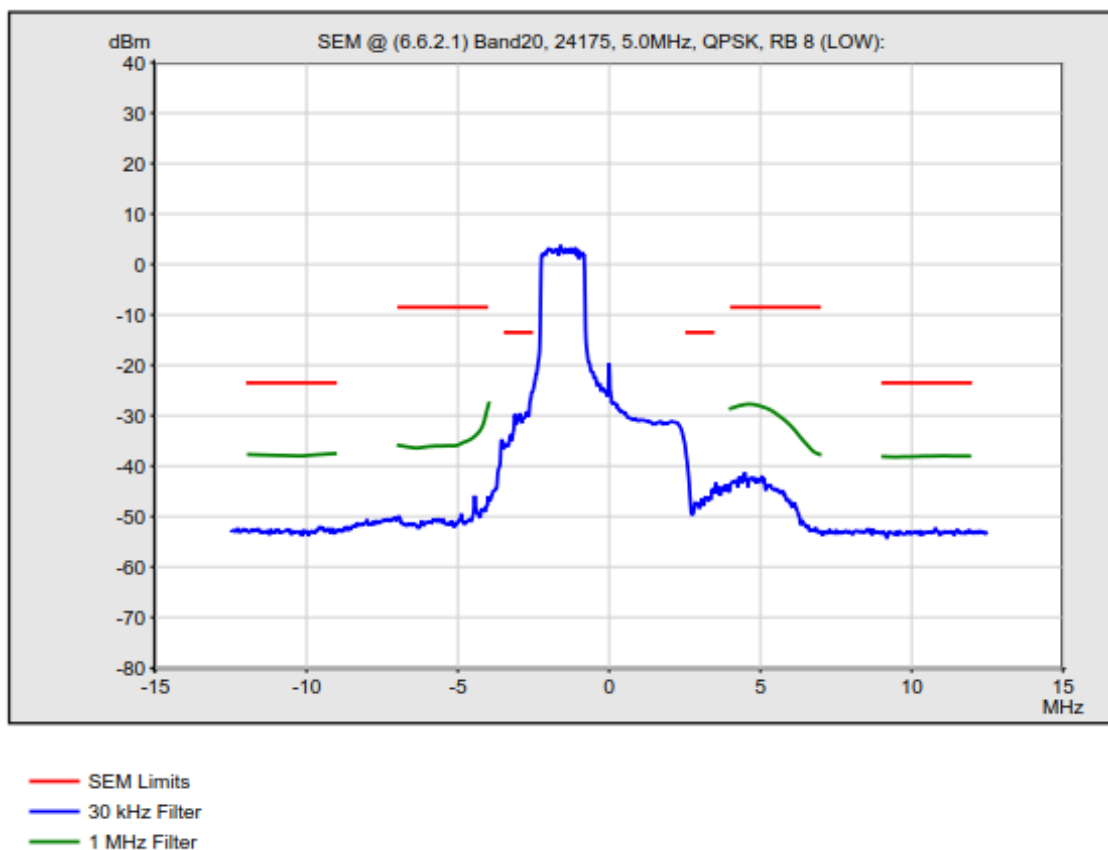
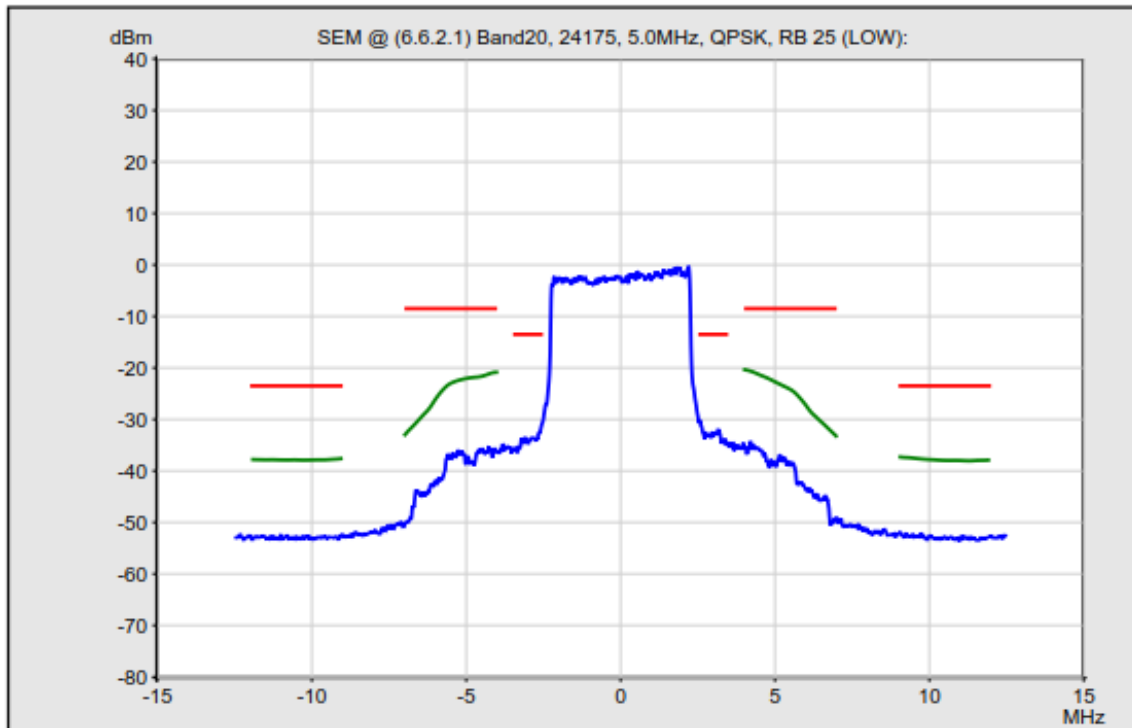


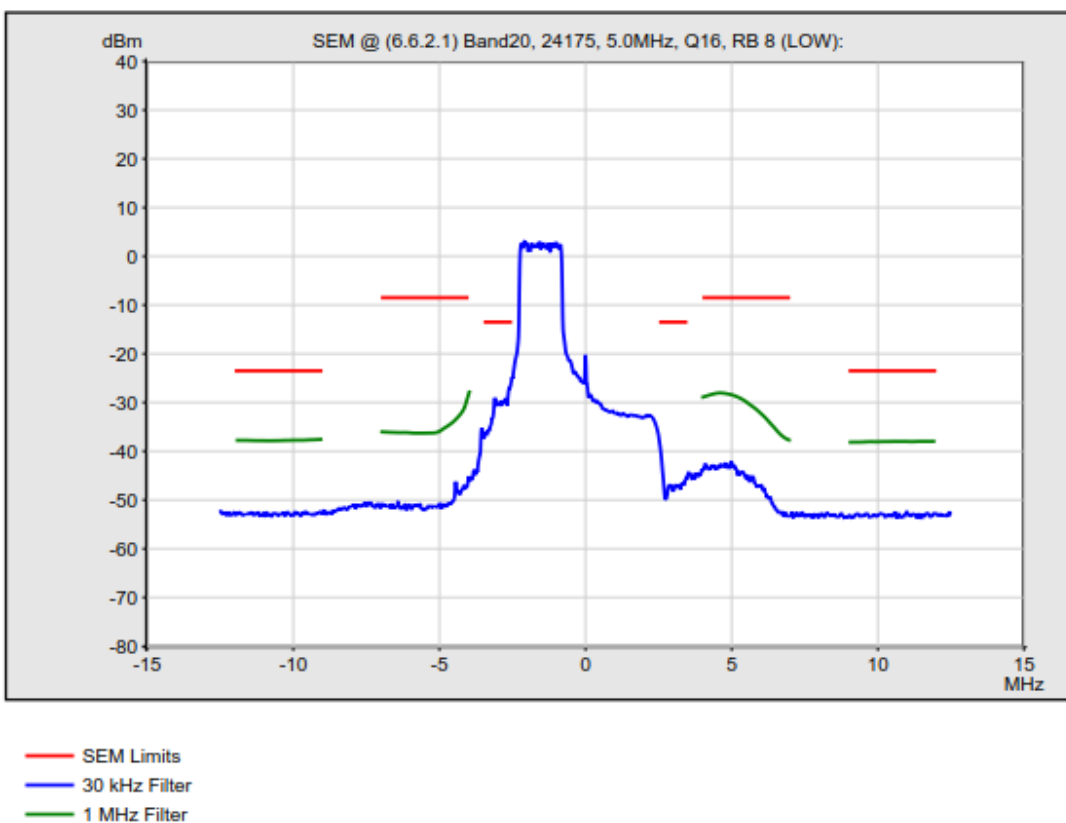
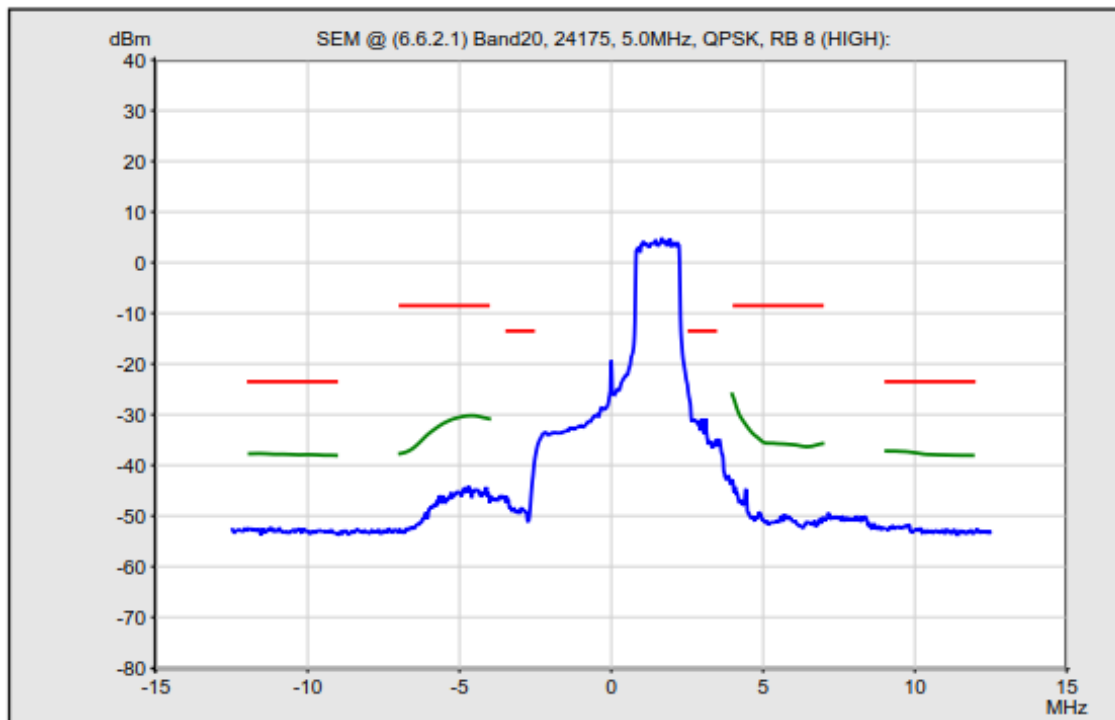


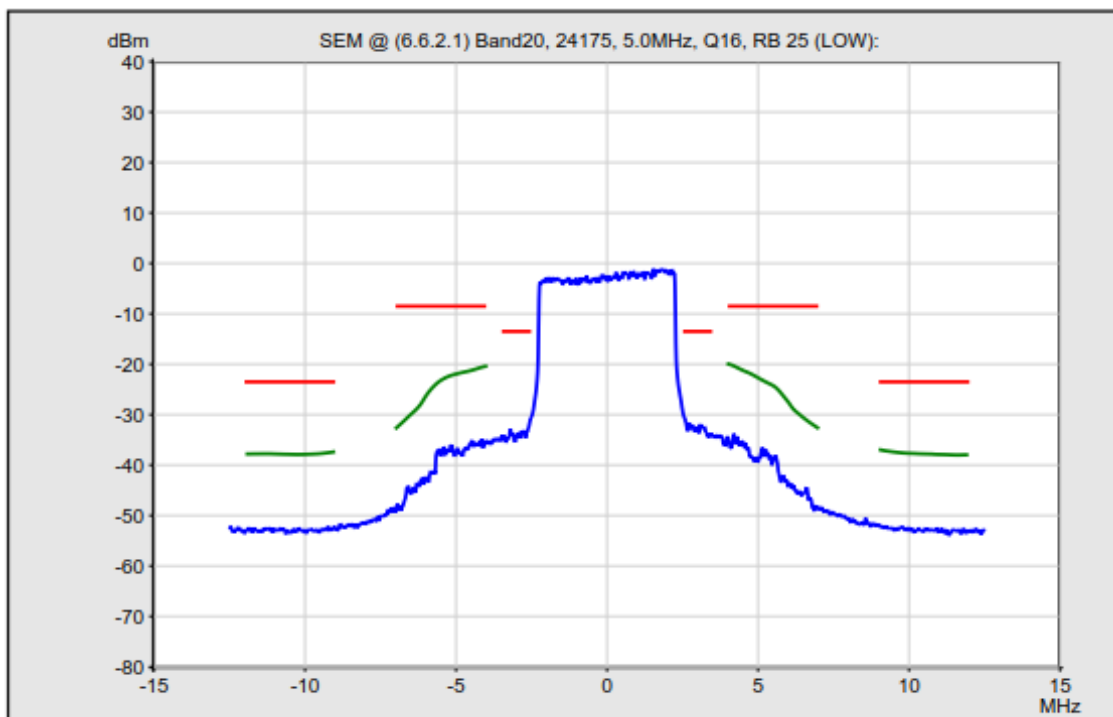
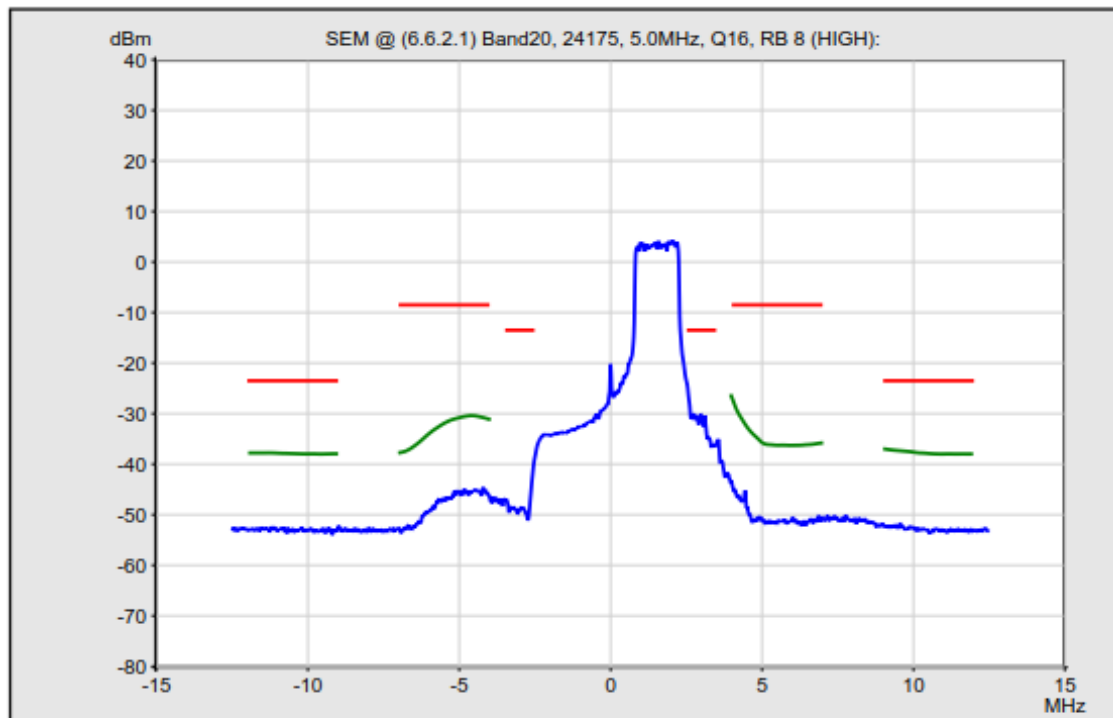
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

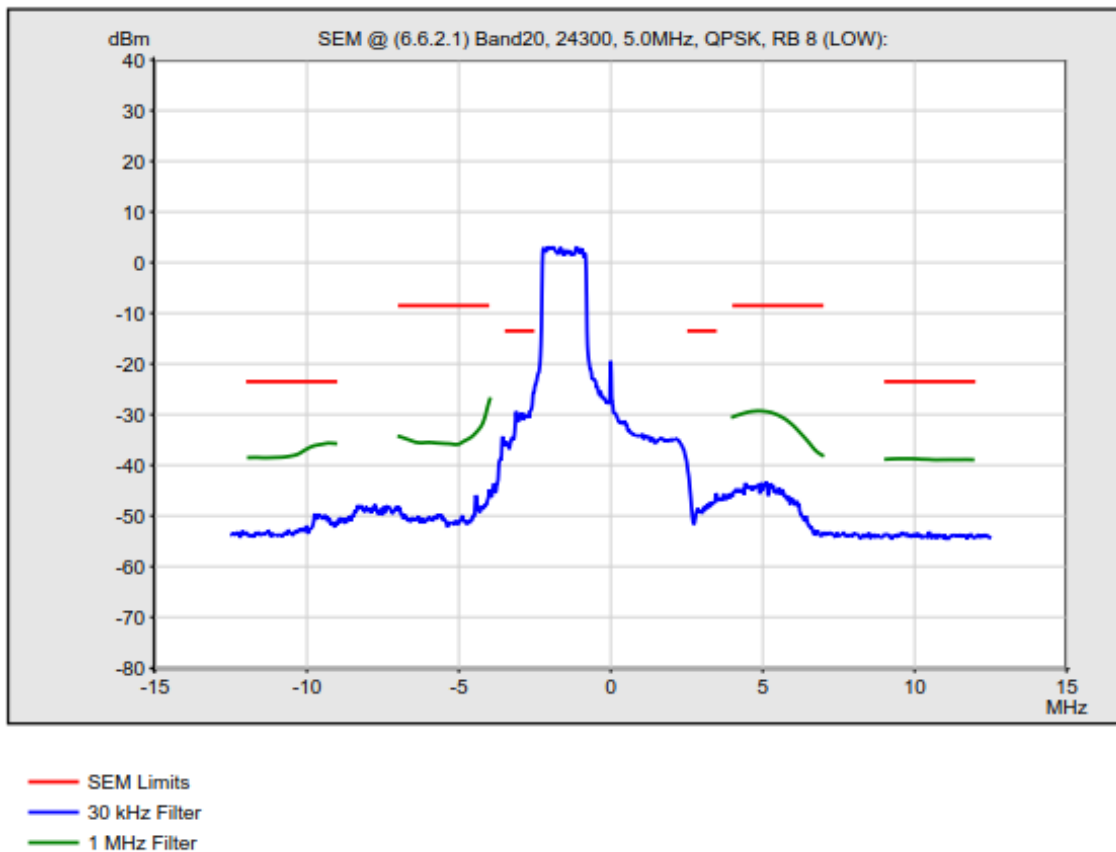
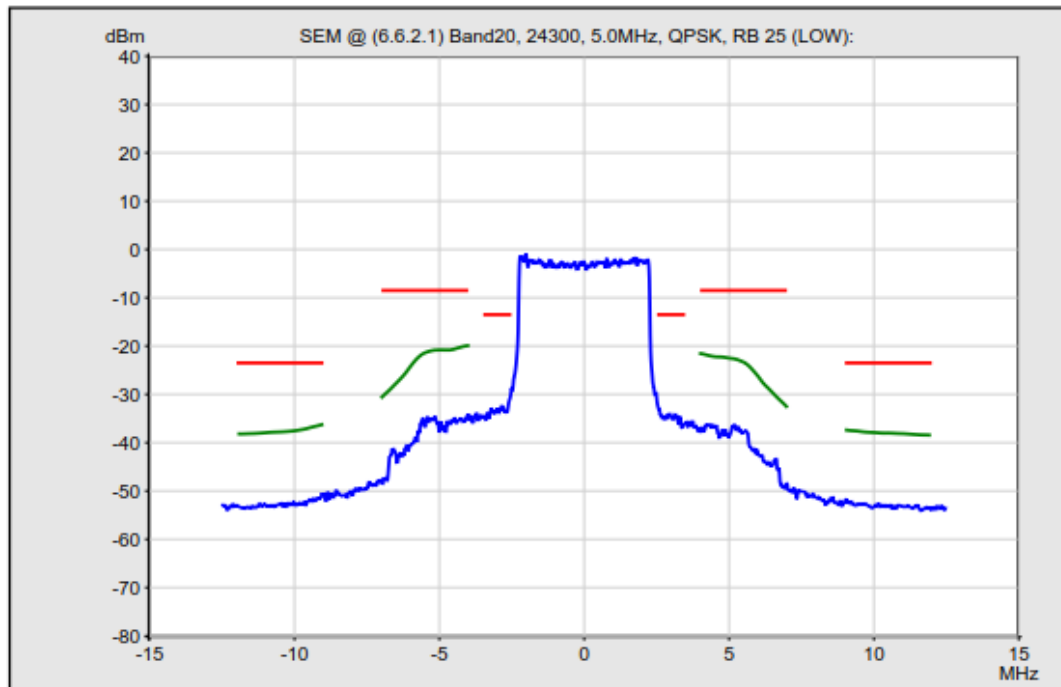
Band 20

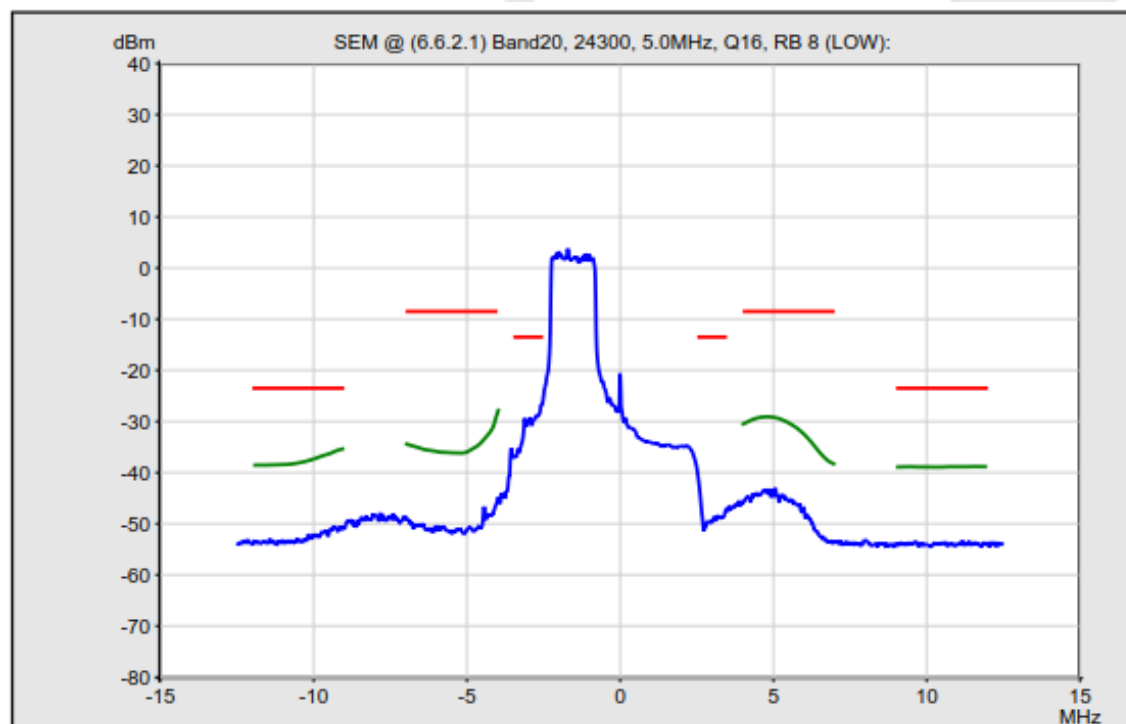
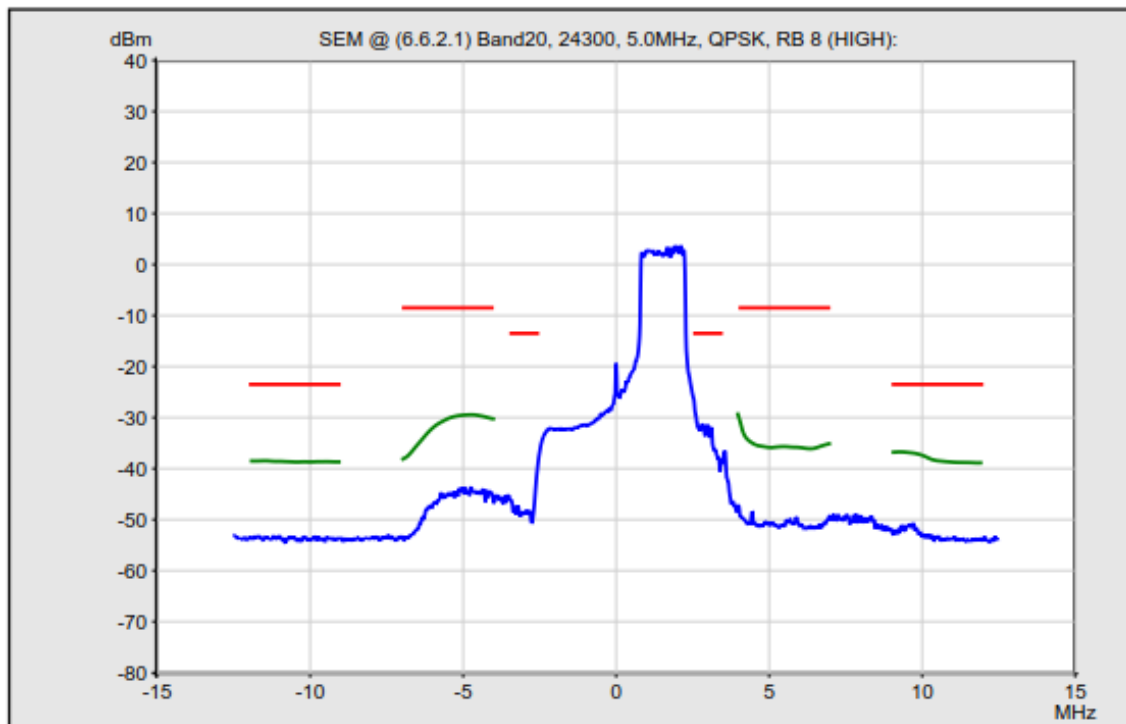


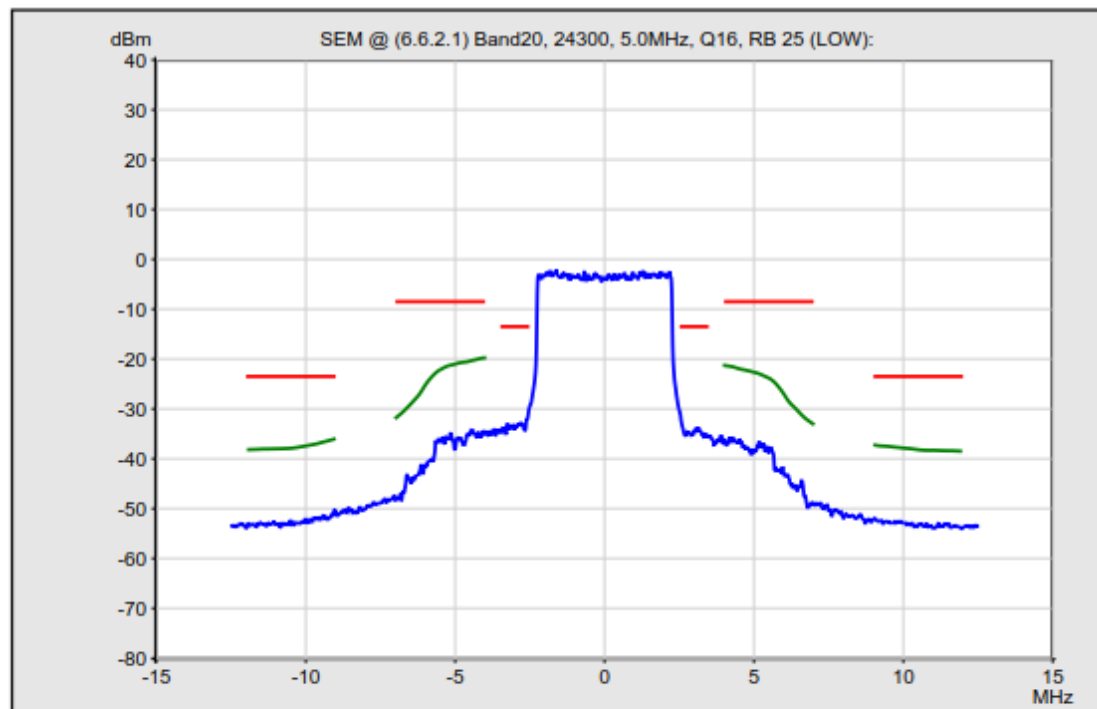
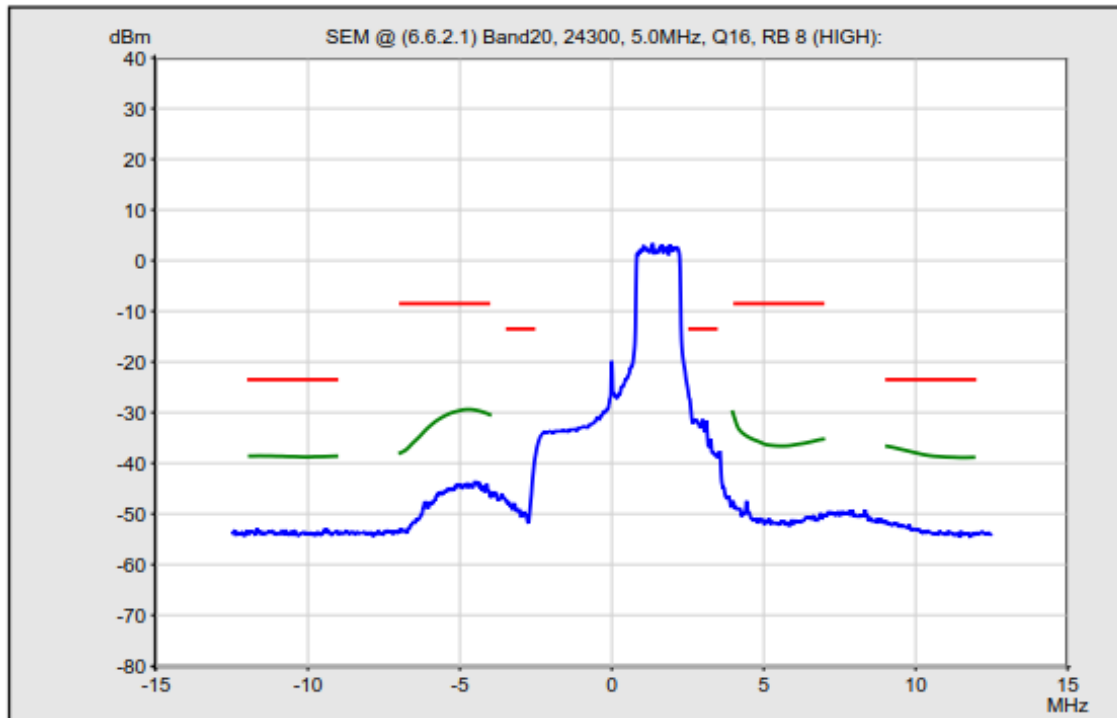


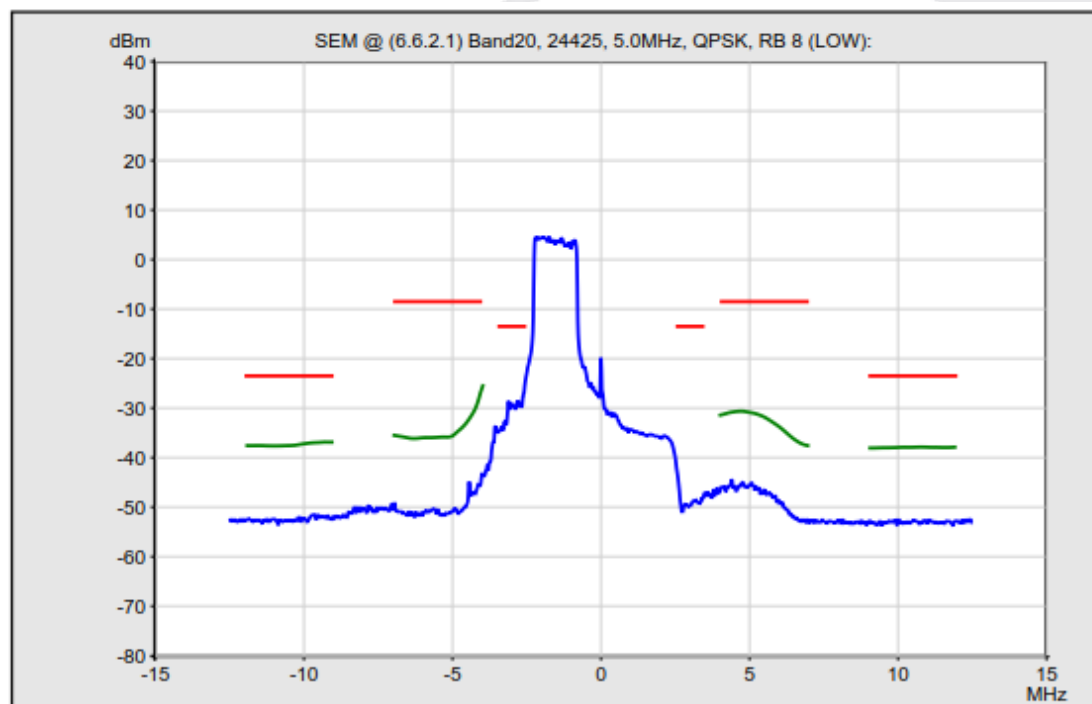
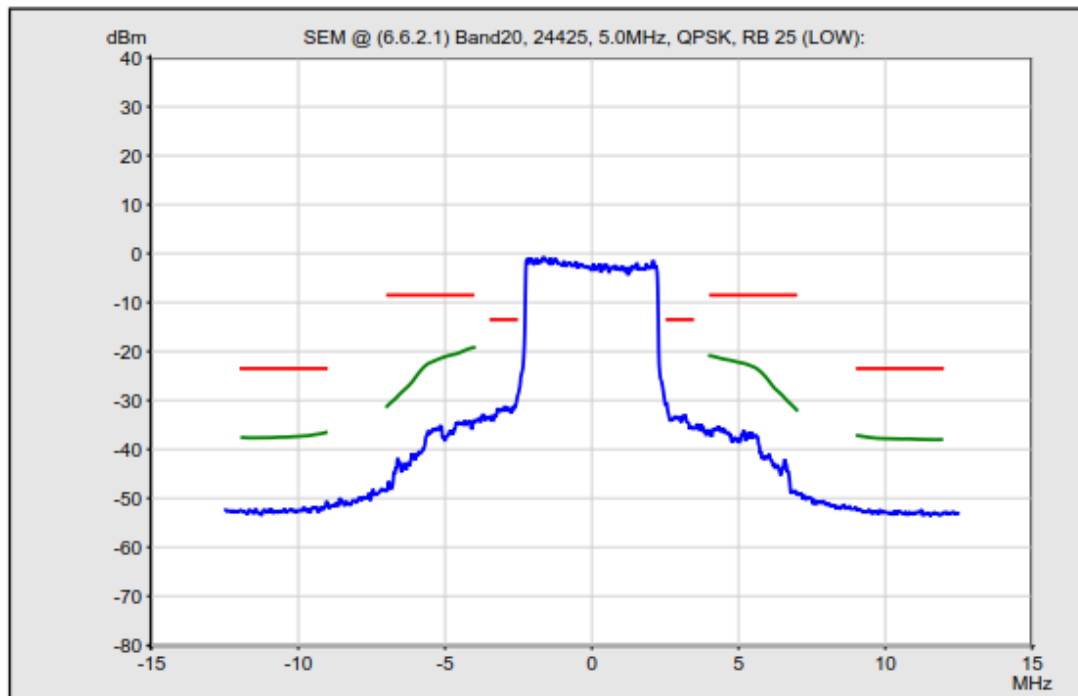


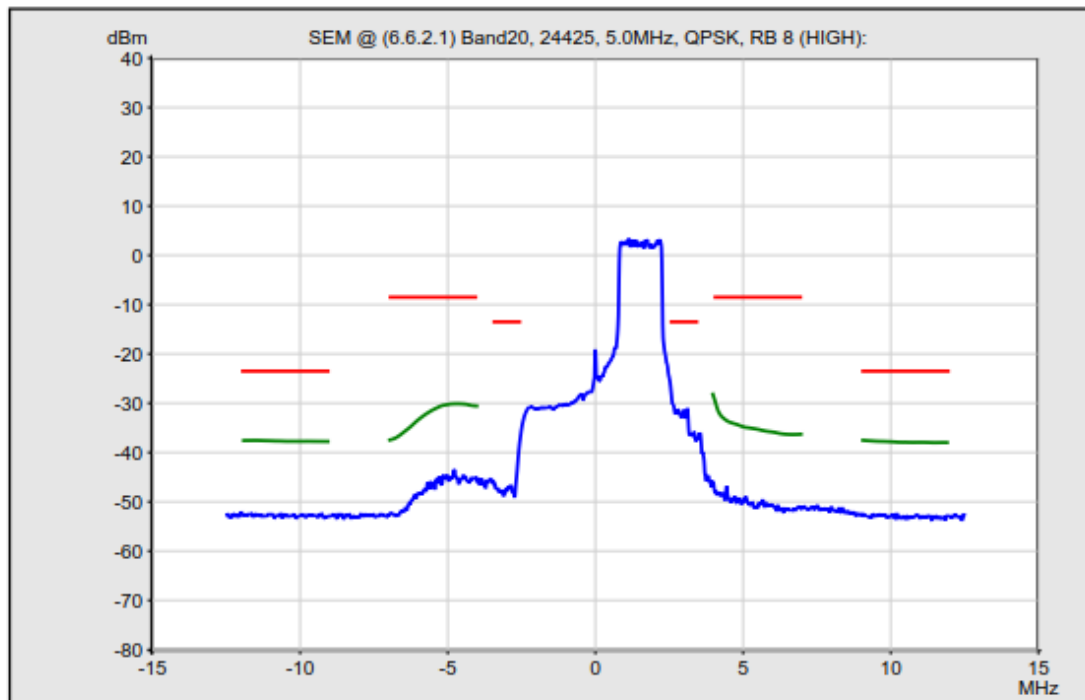




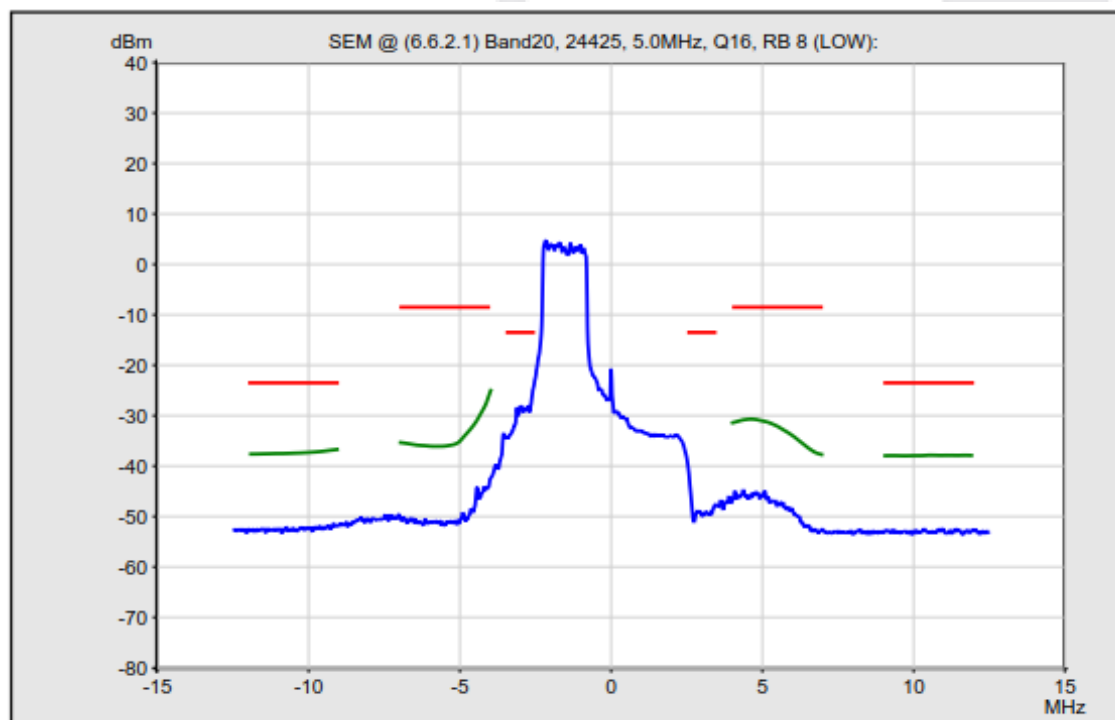




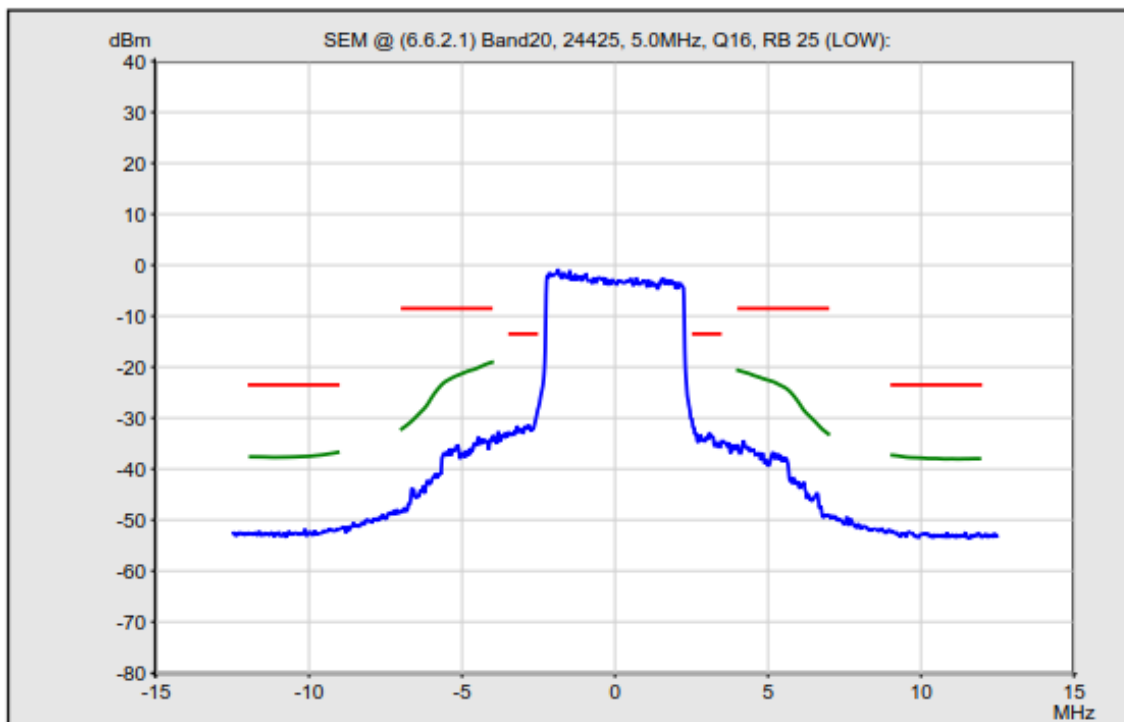
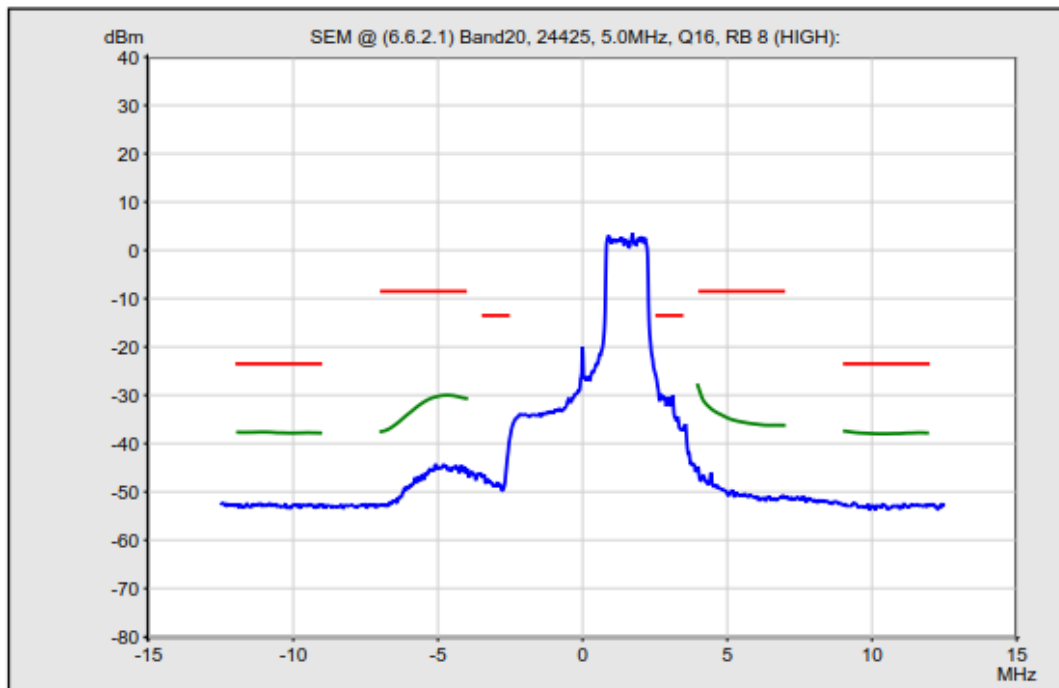


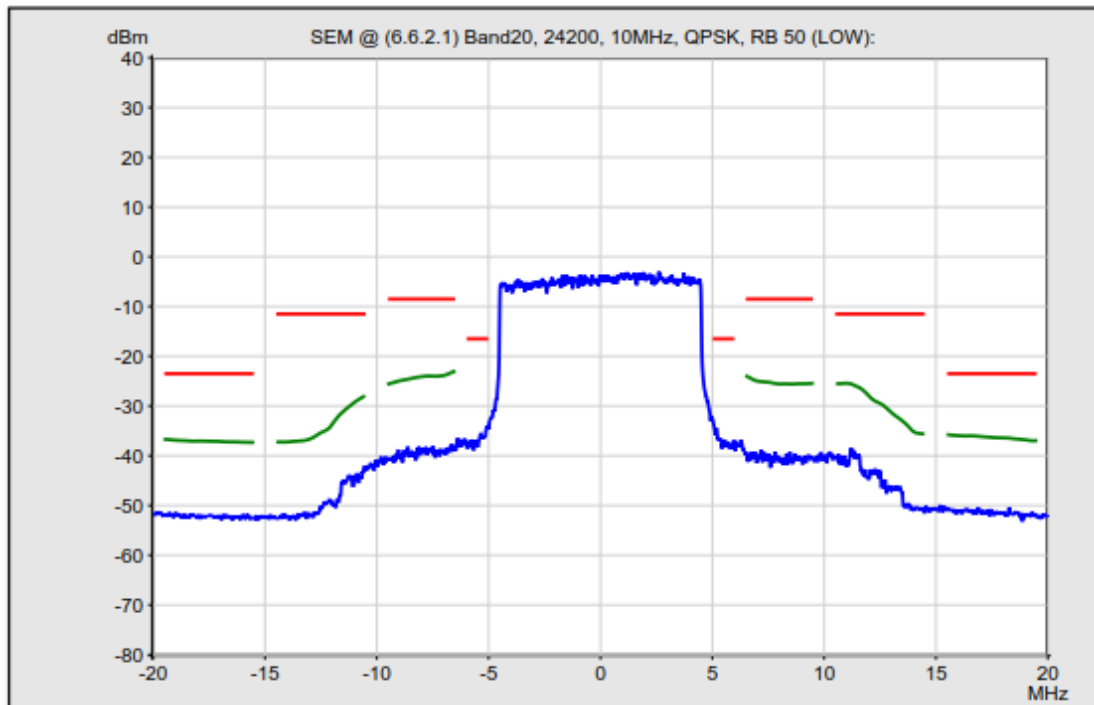


— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

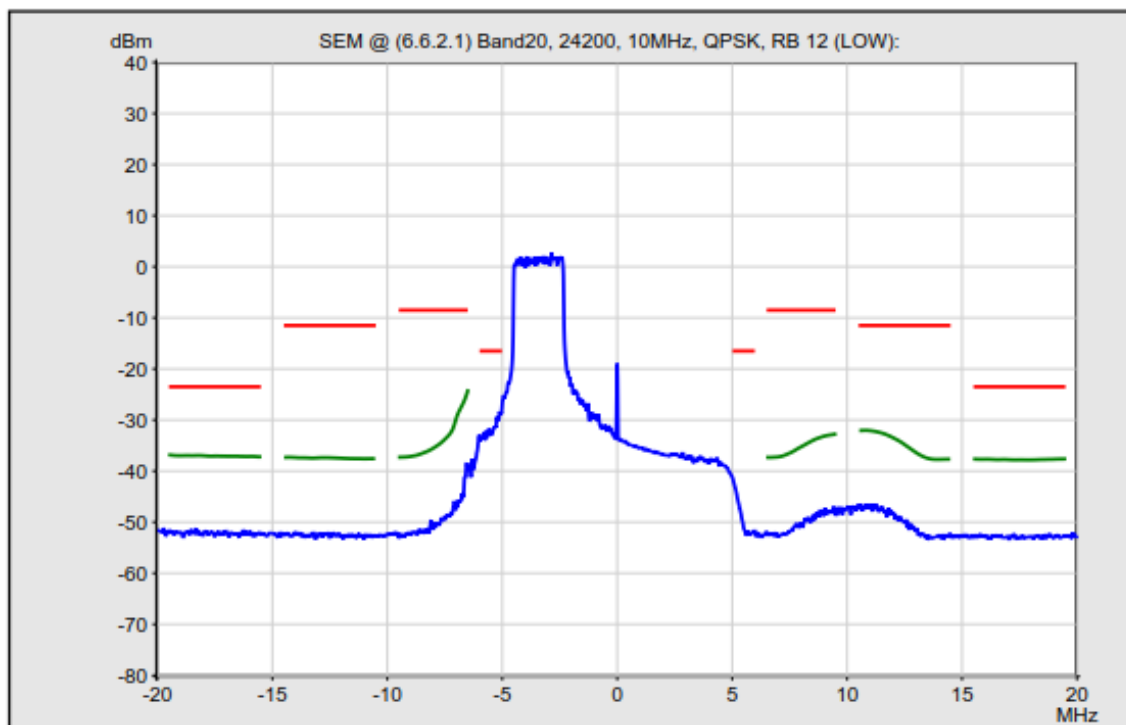


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— 30 kHz Filter
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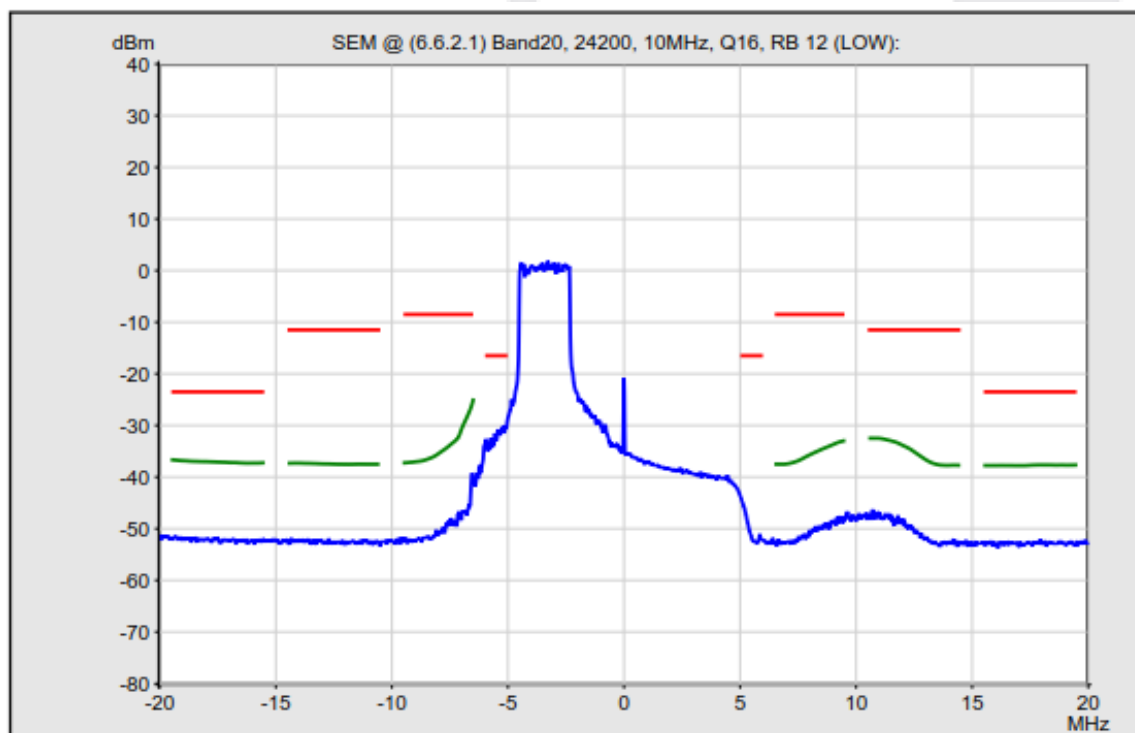
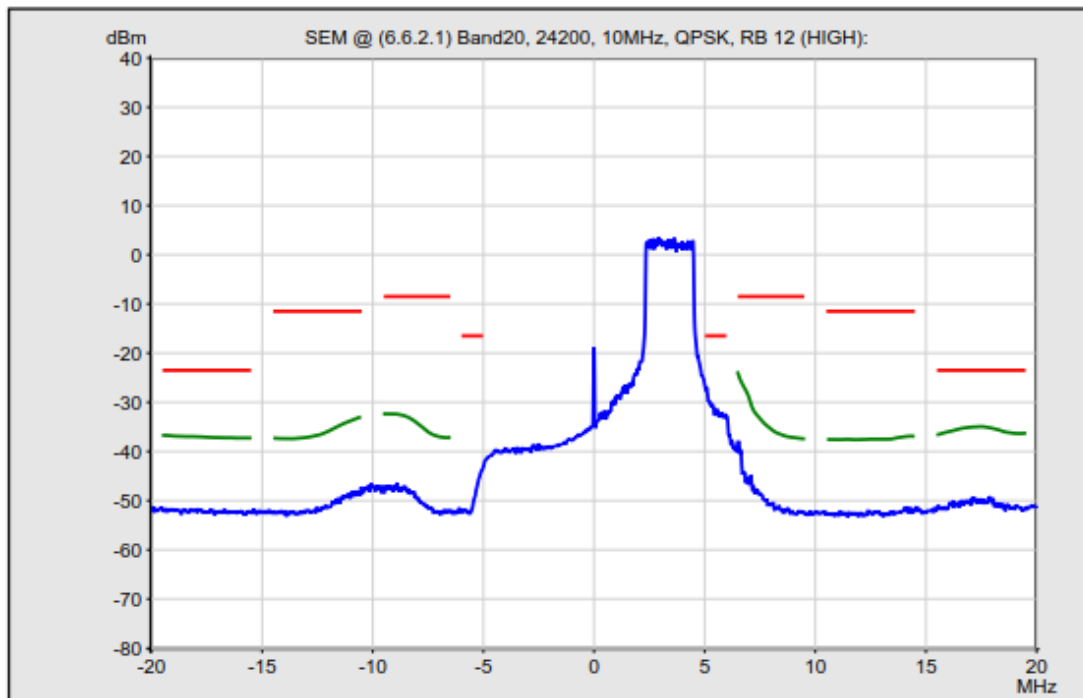


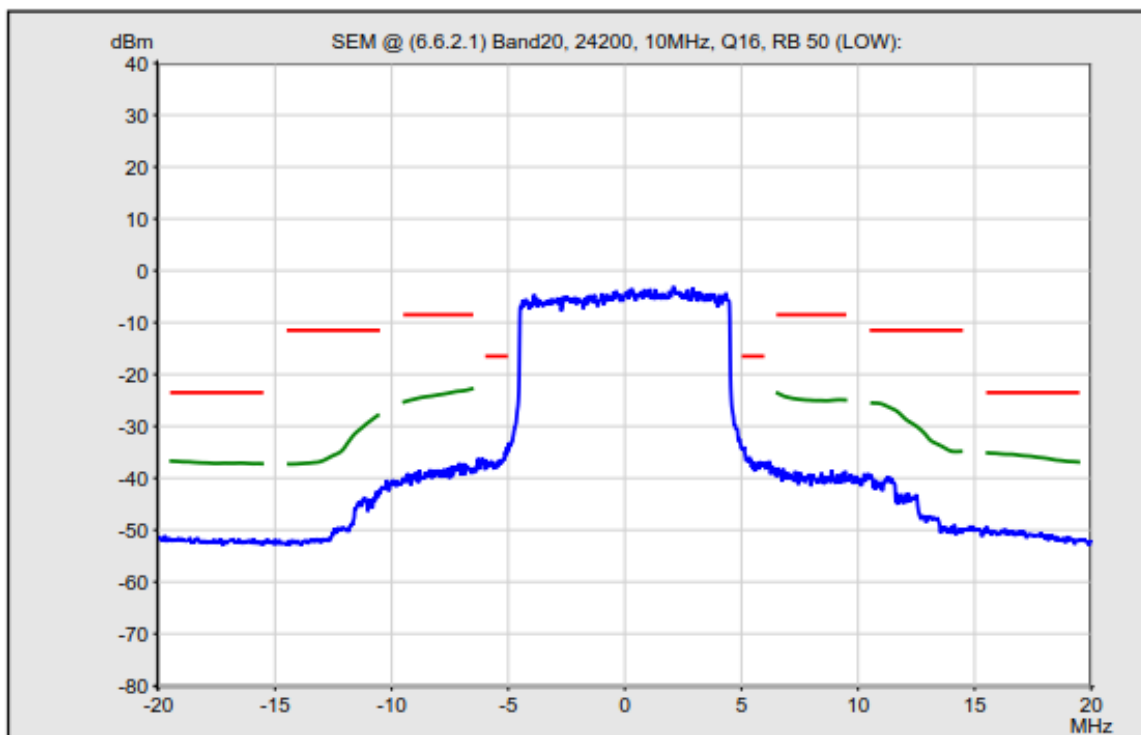
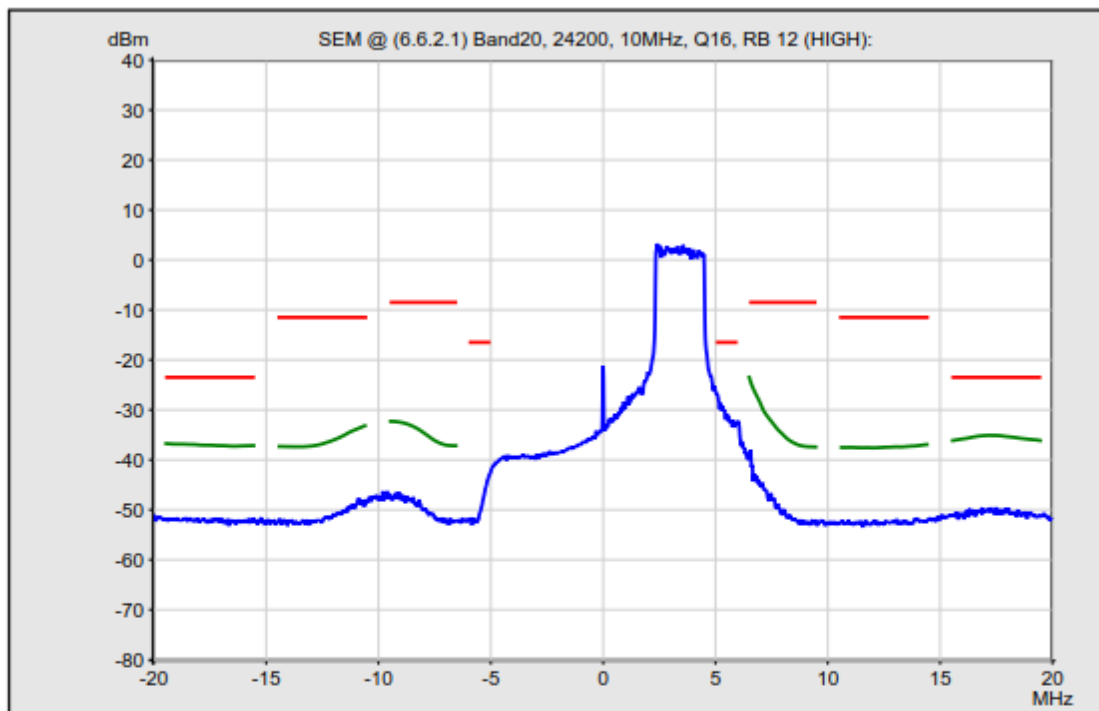


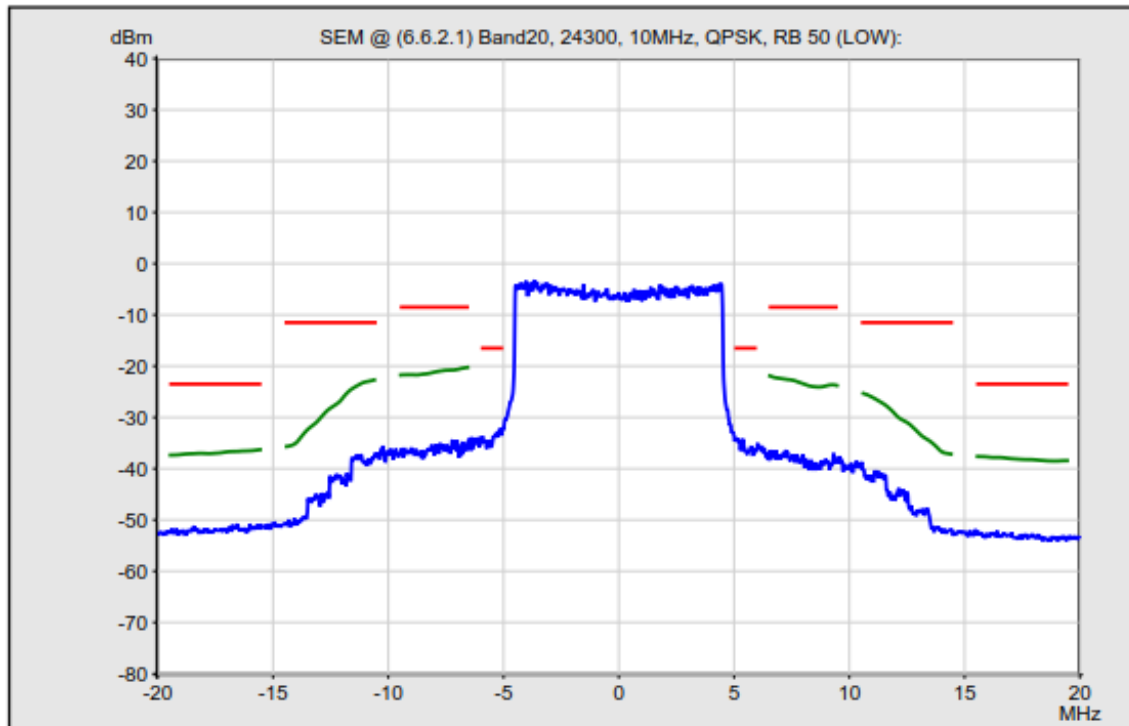
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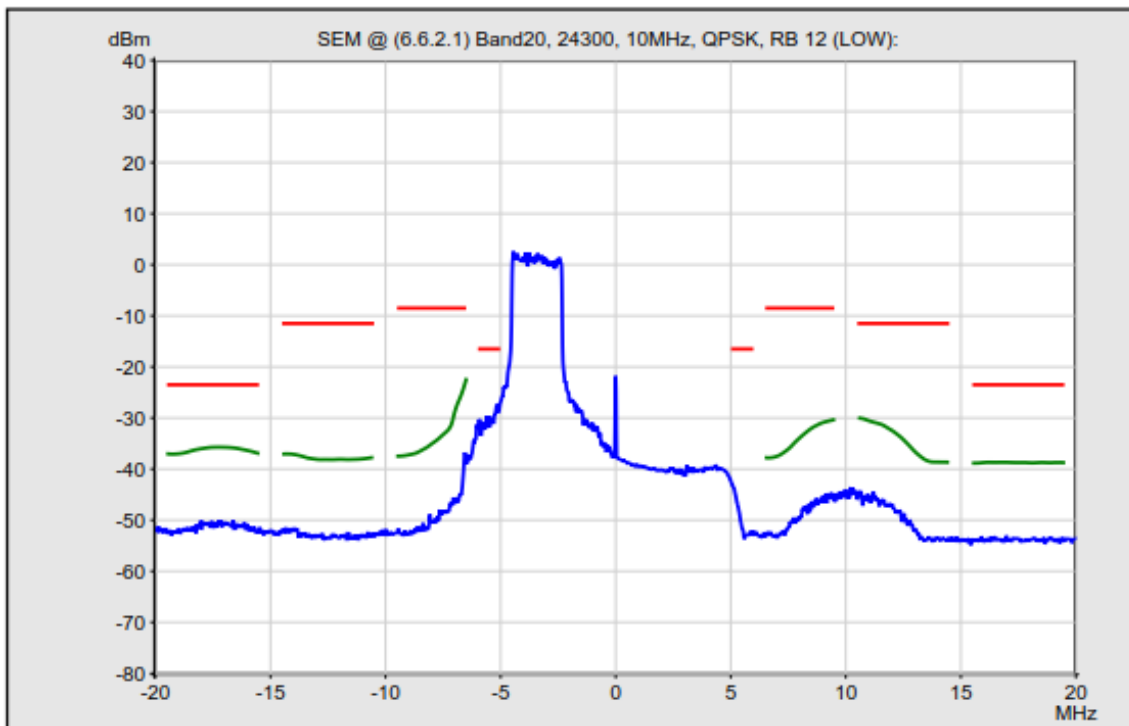
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— 1 MHz Filter



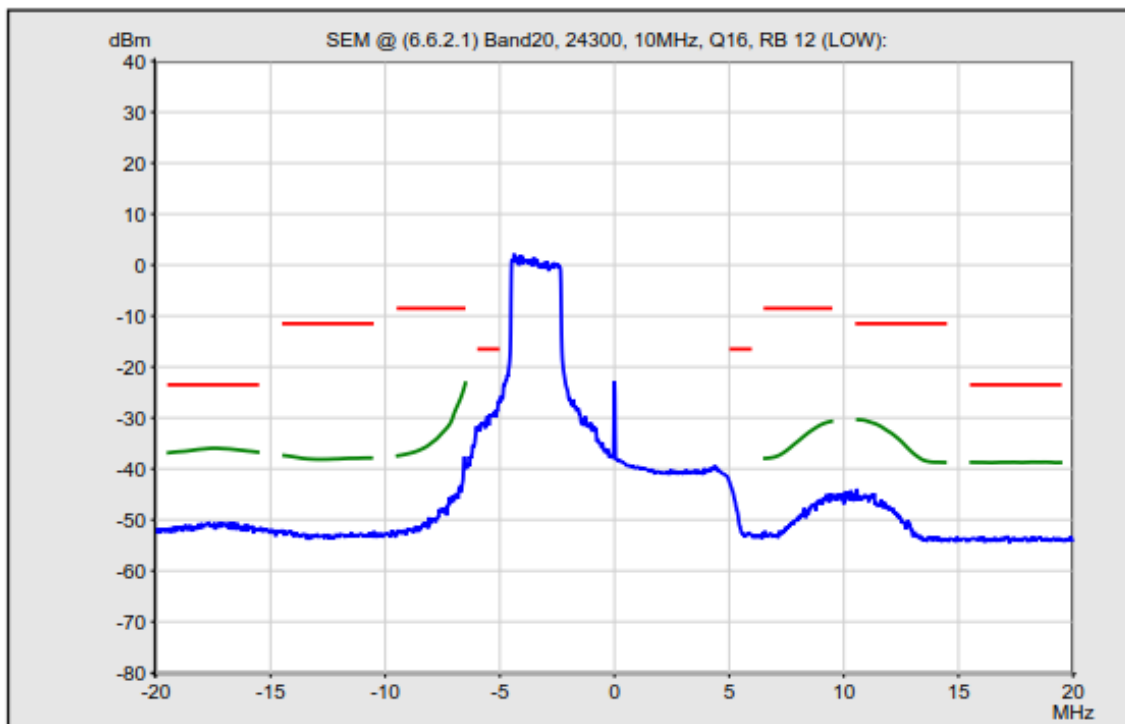
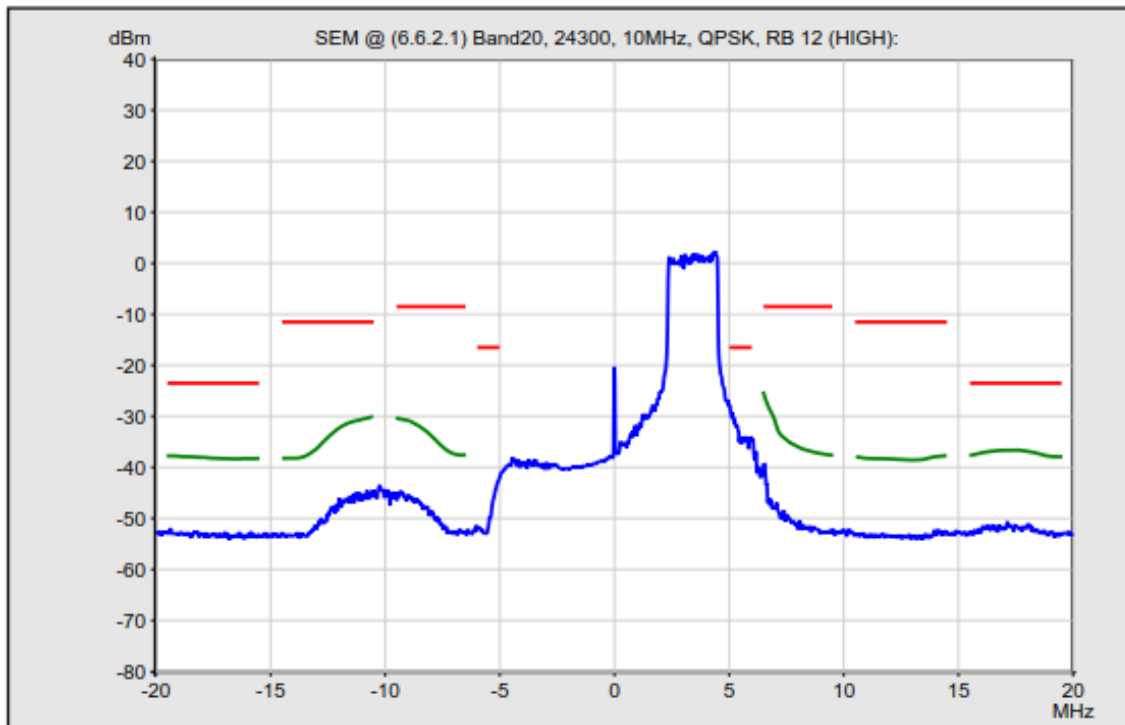


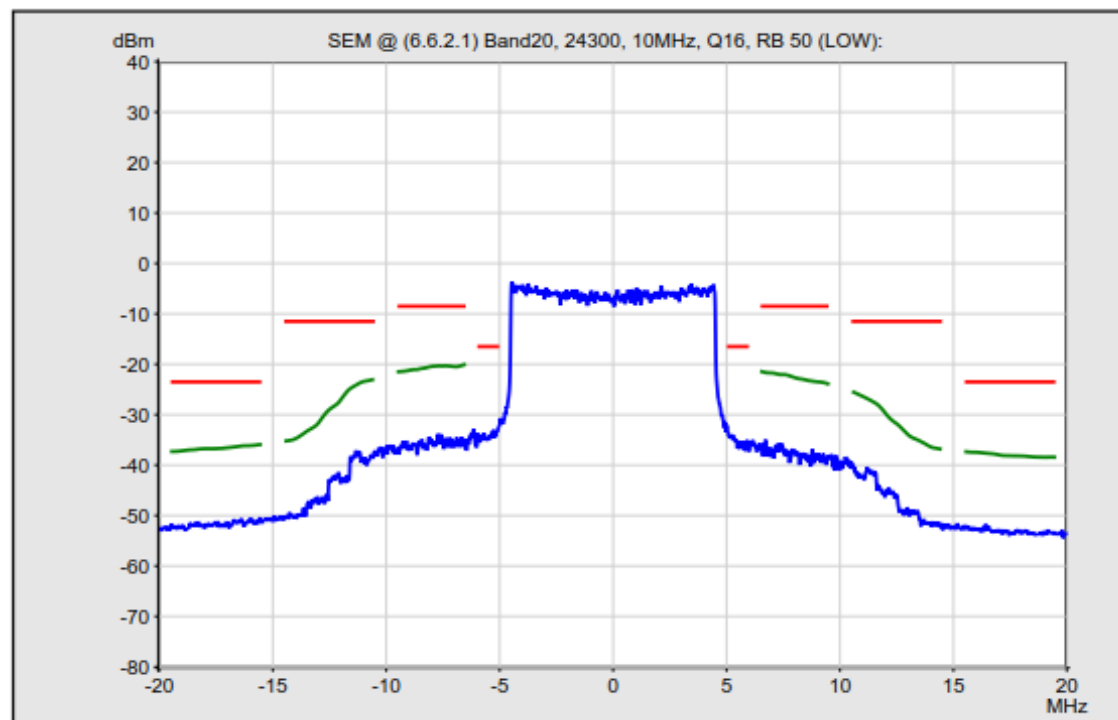
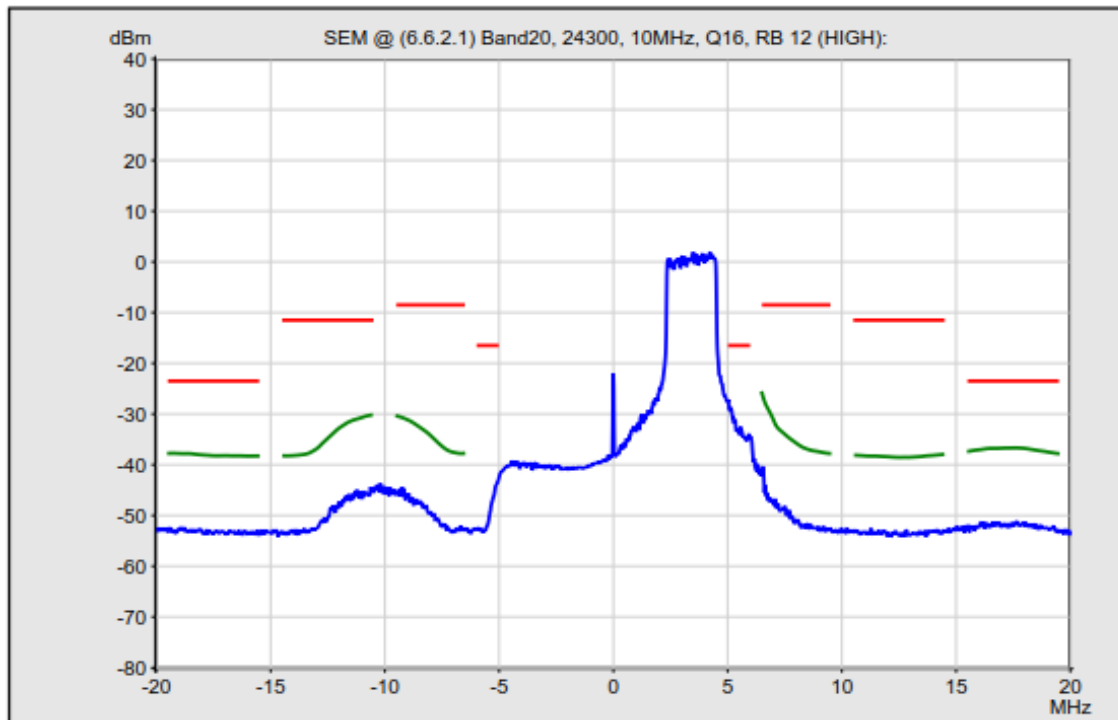


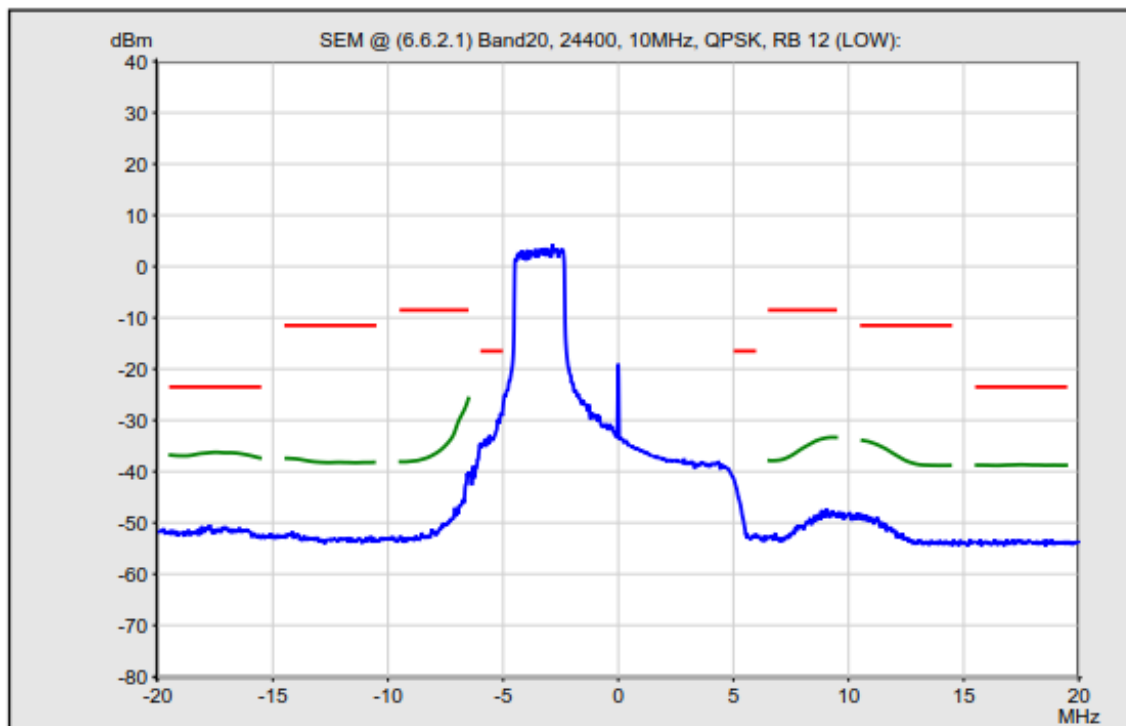
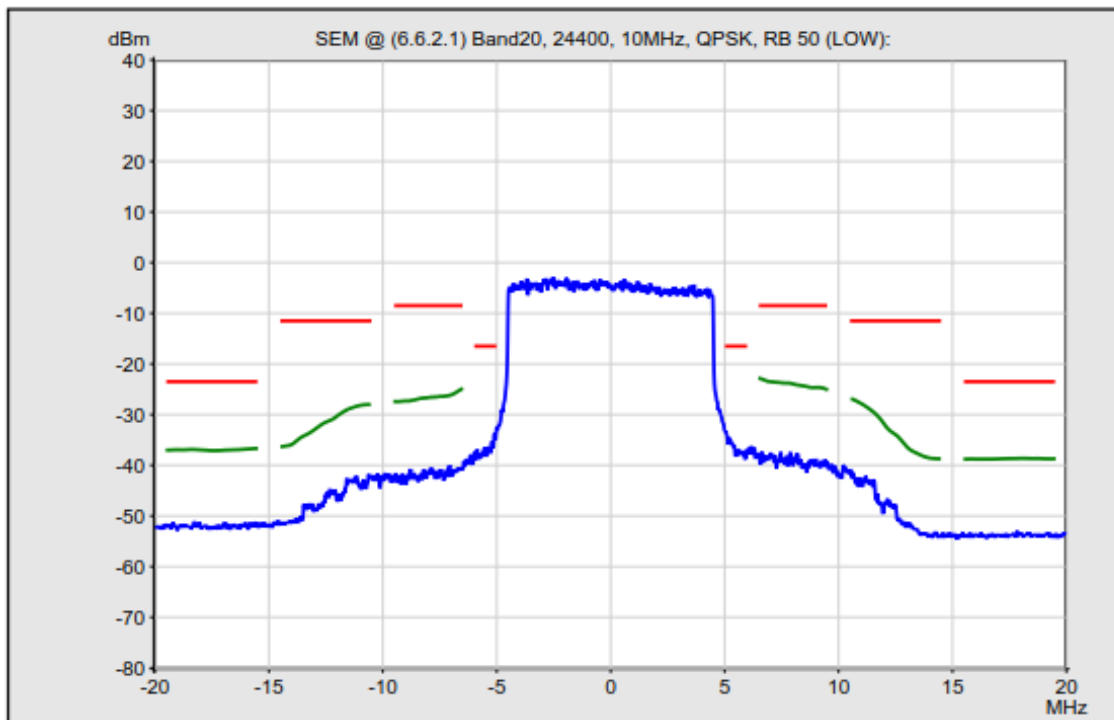
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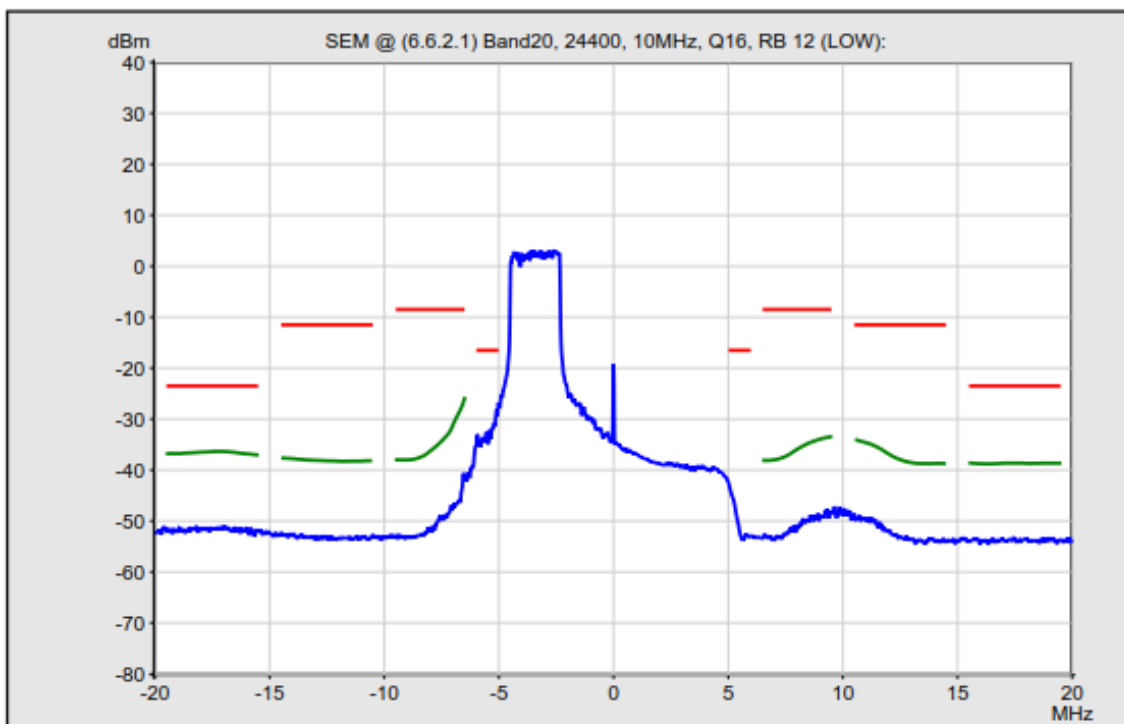
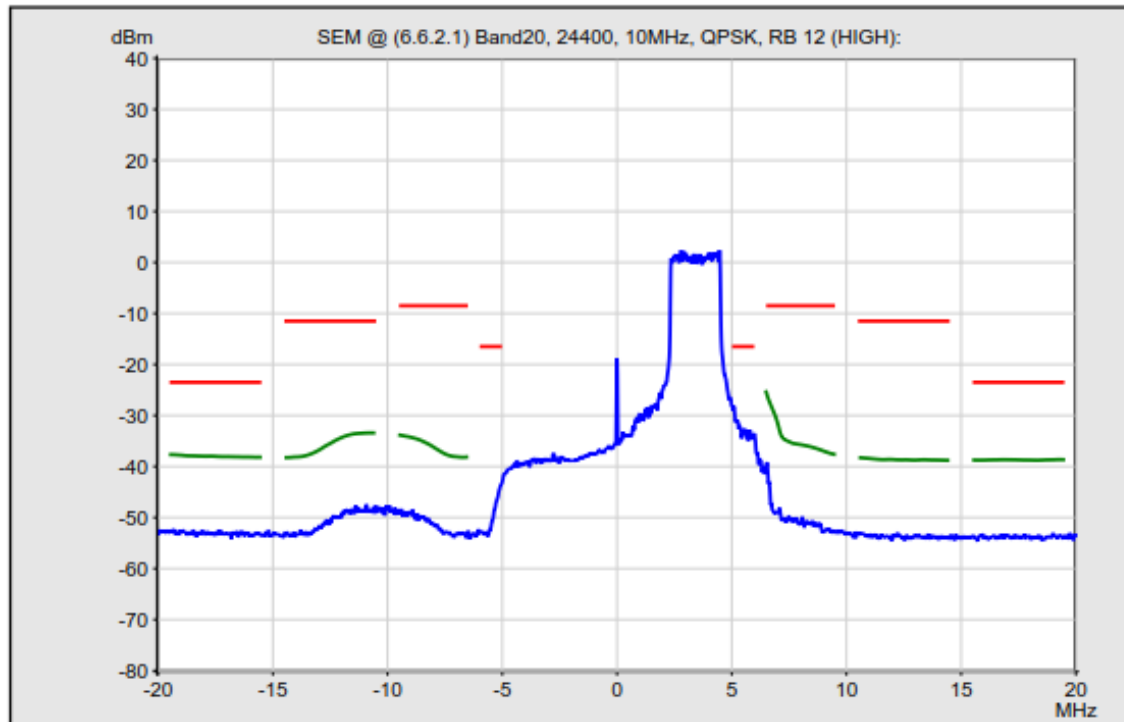


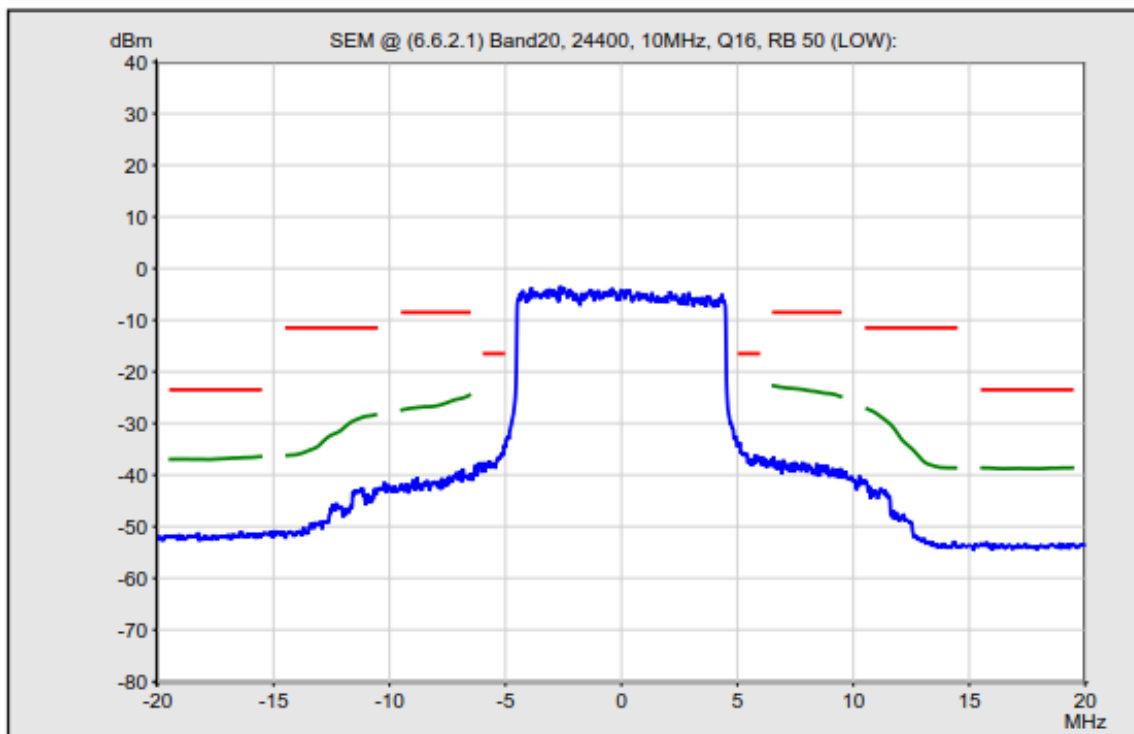
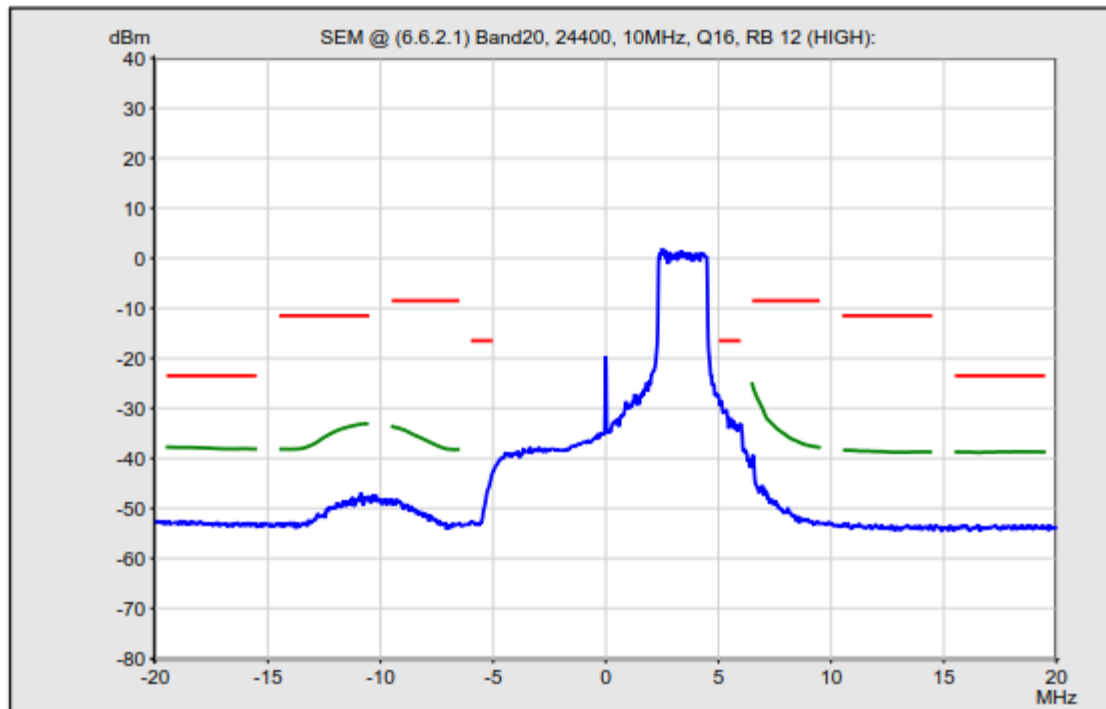
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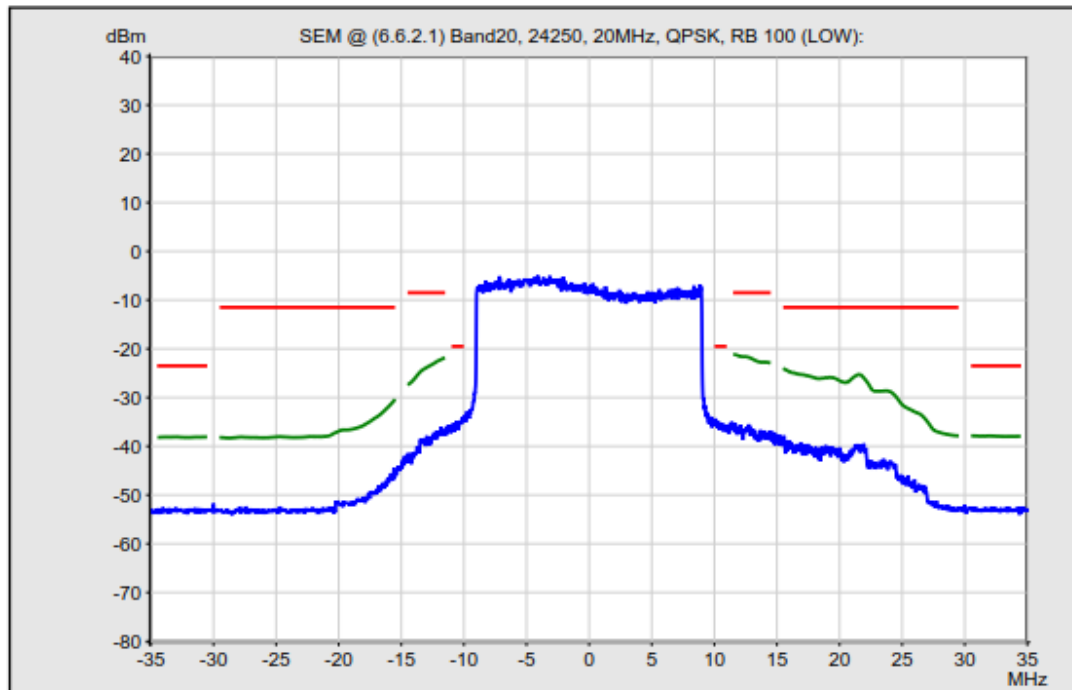




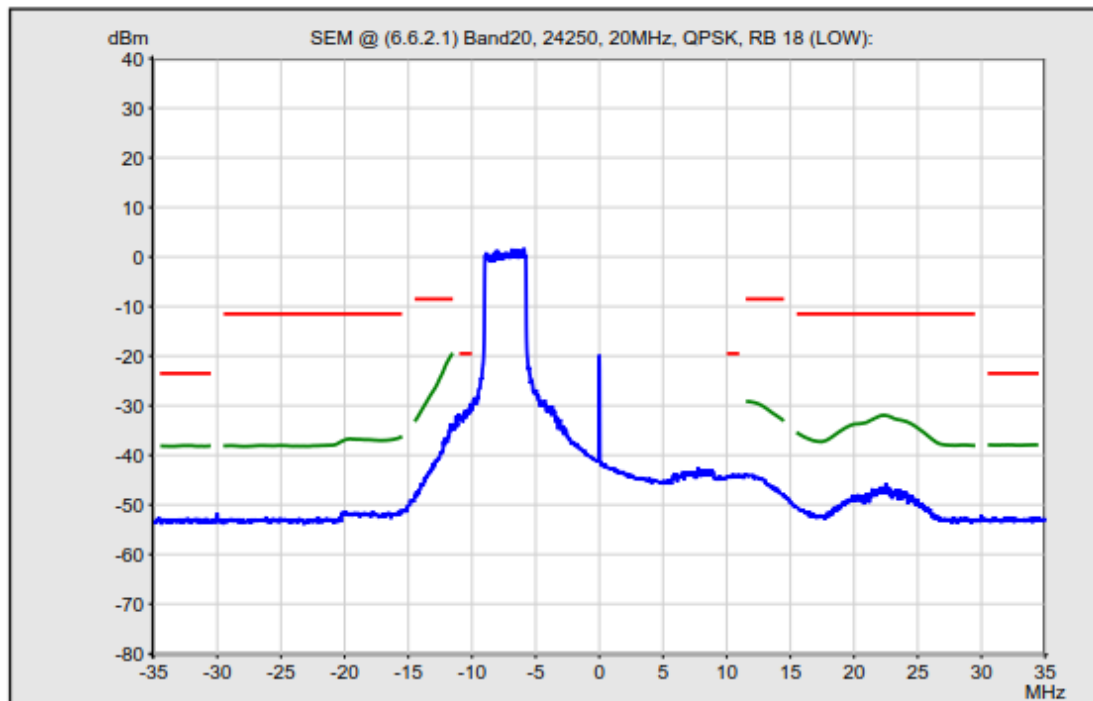




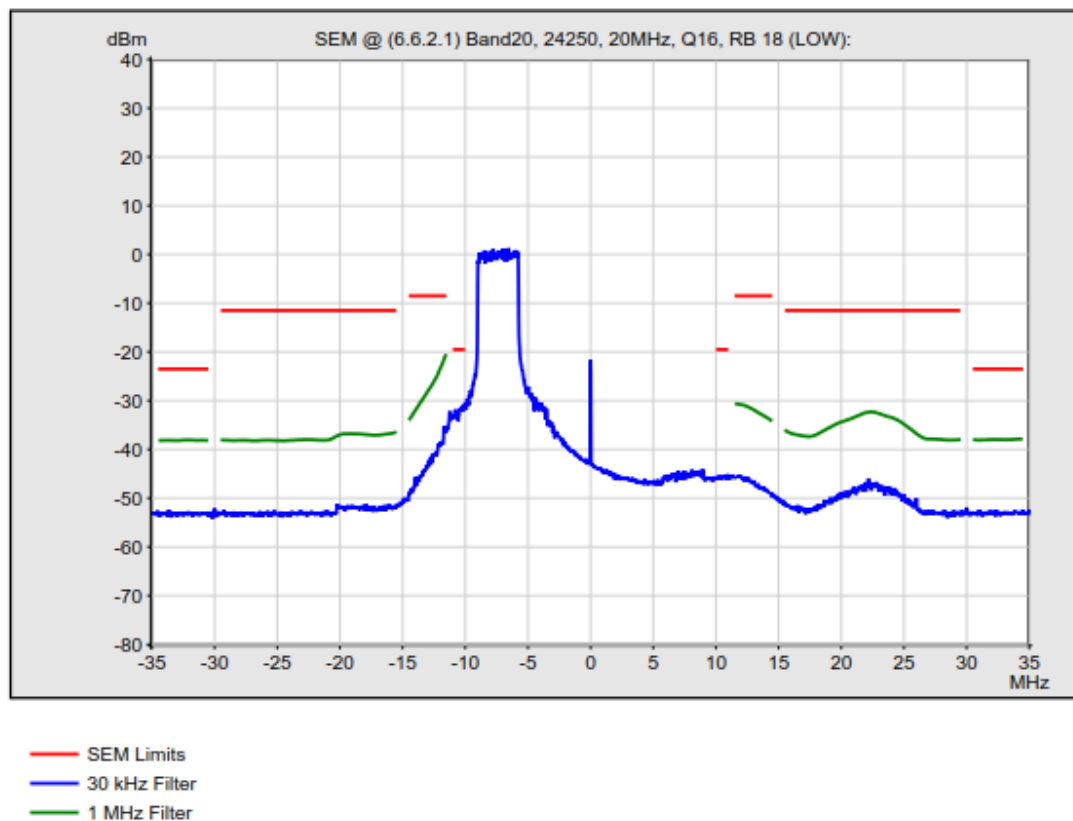
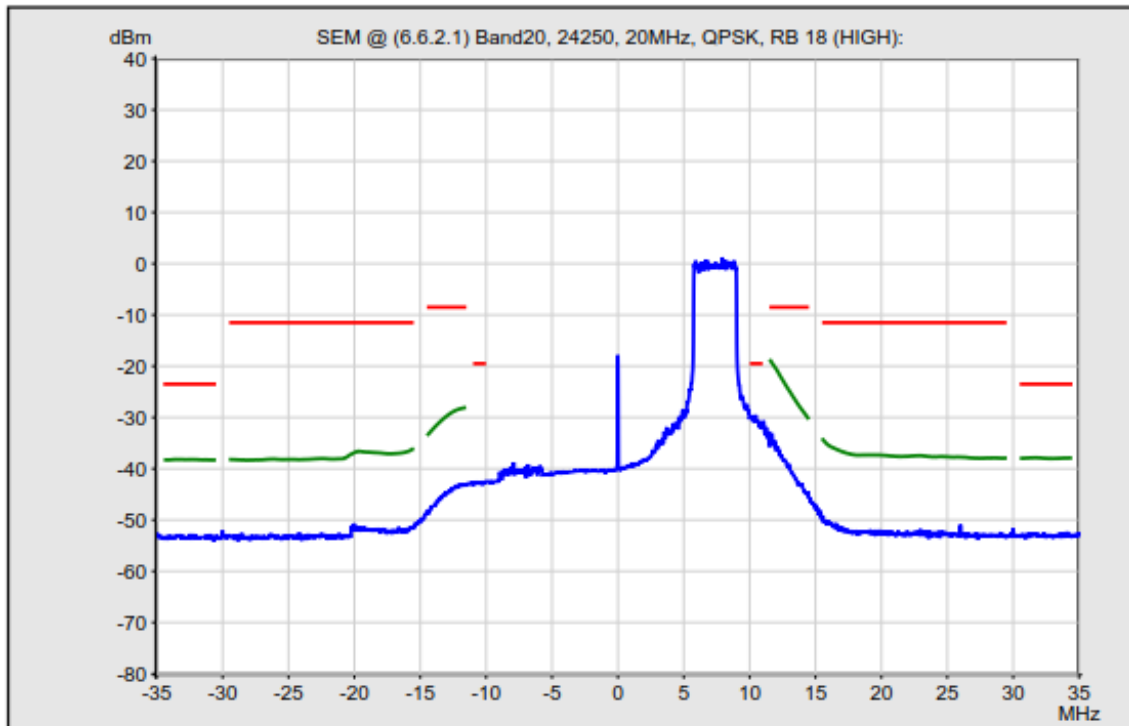


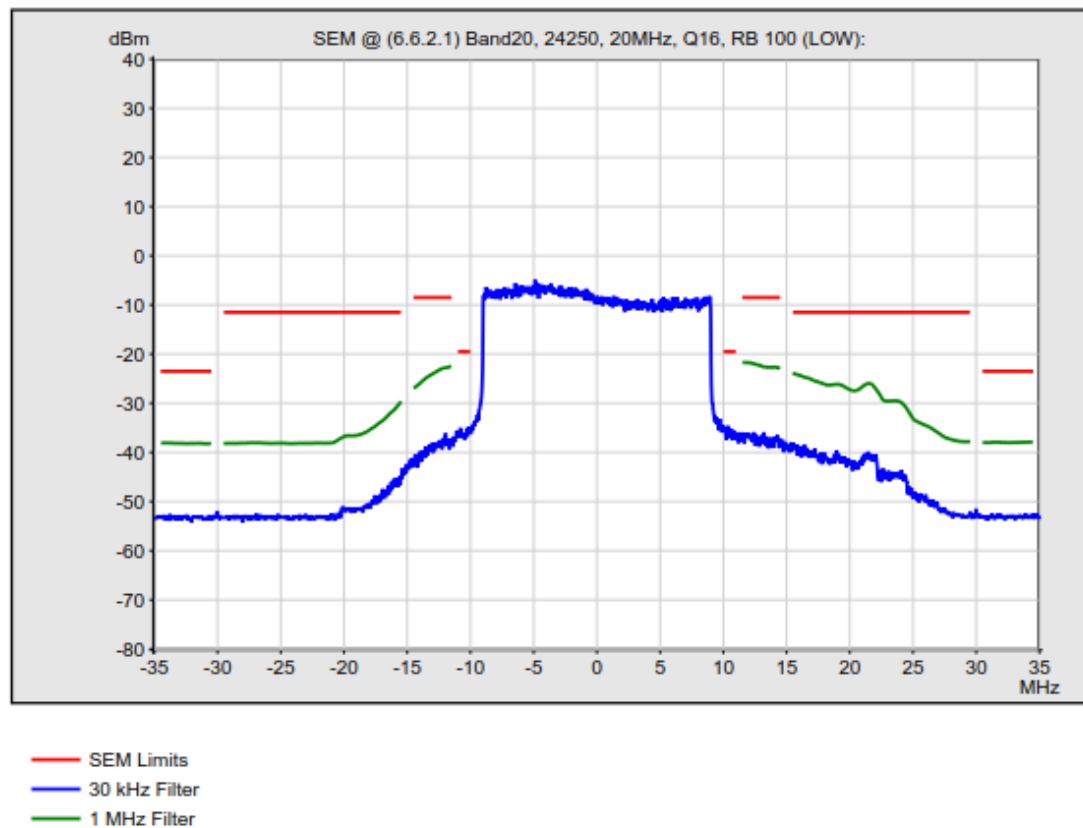
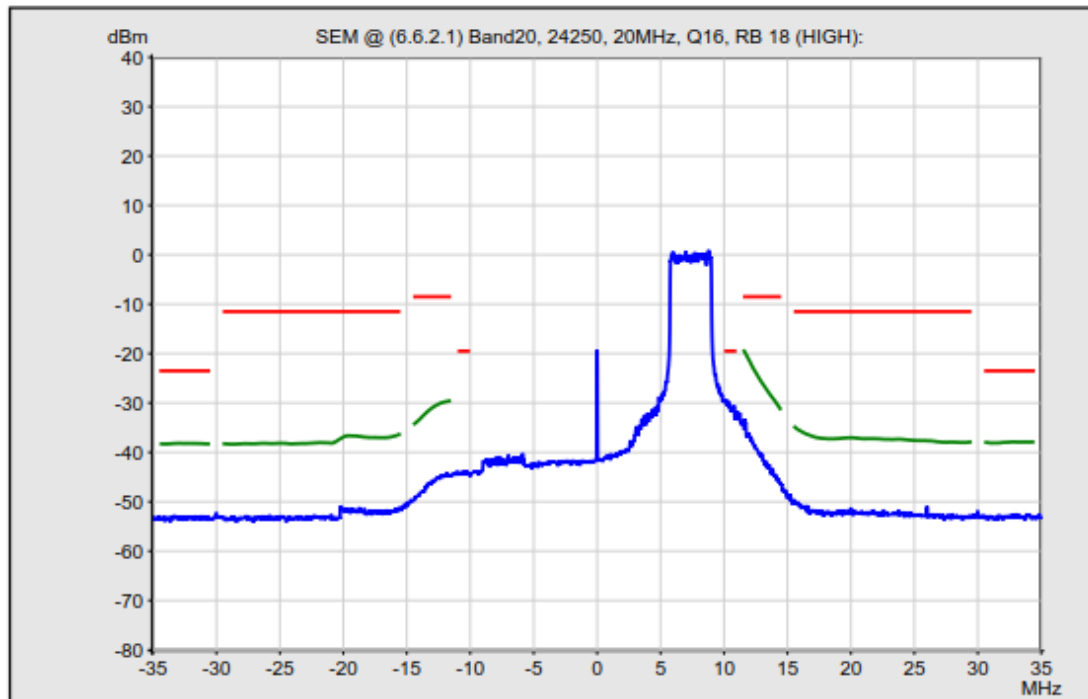


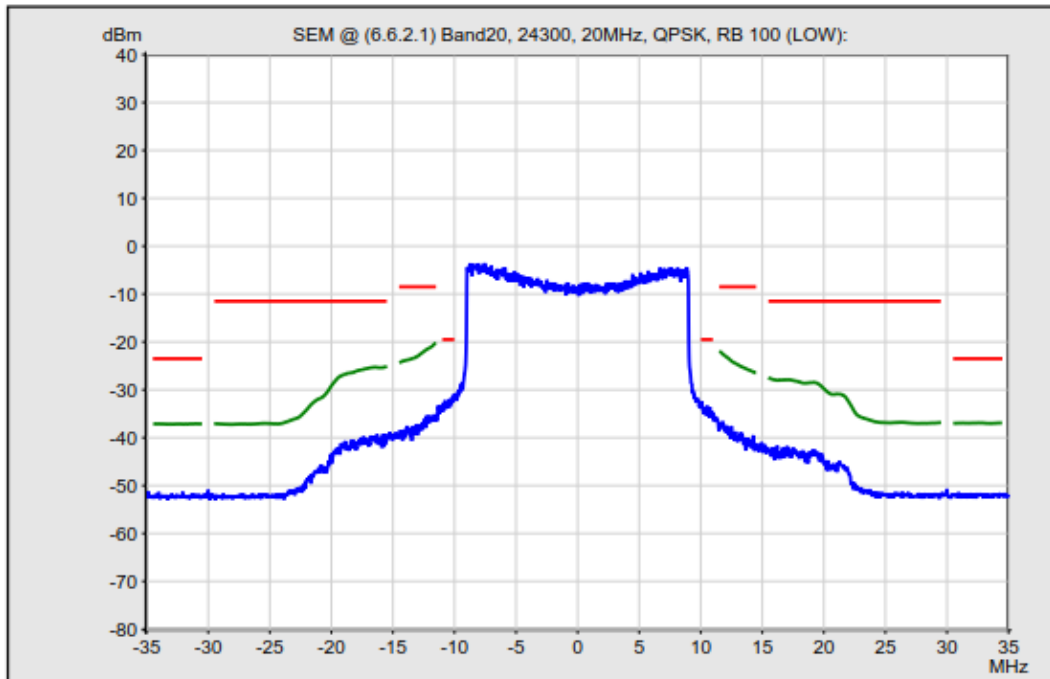
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— 30 kHz Filter
— 1 MHz Filter



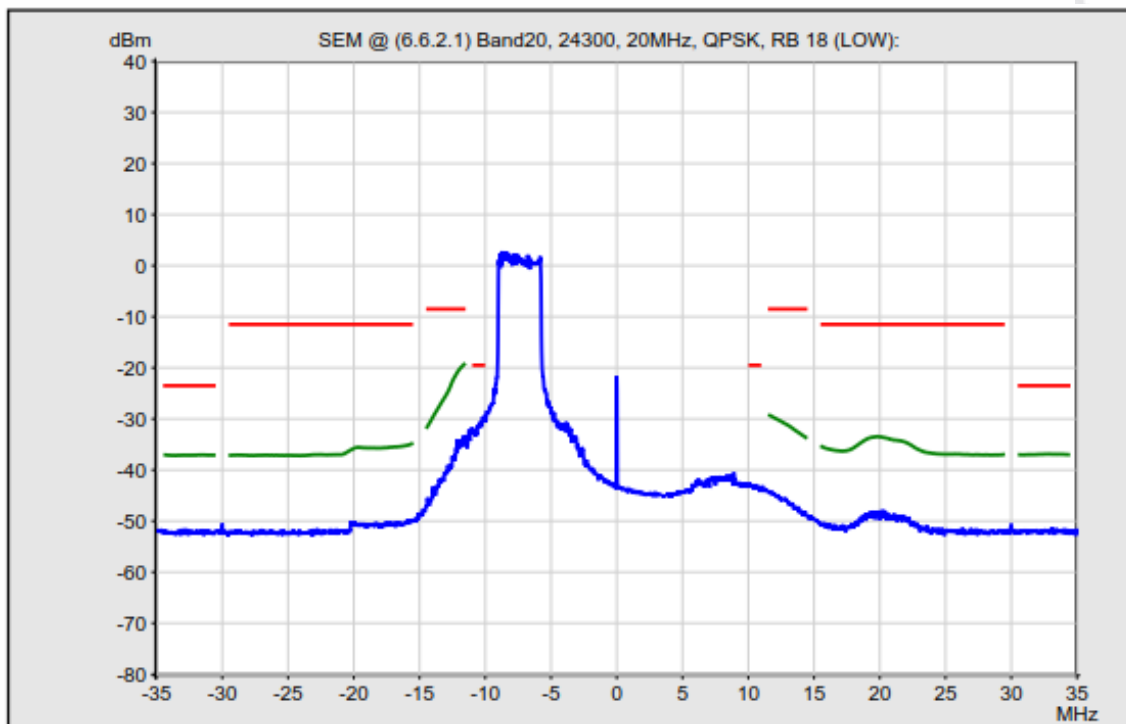
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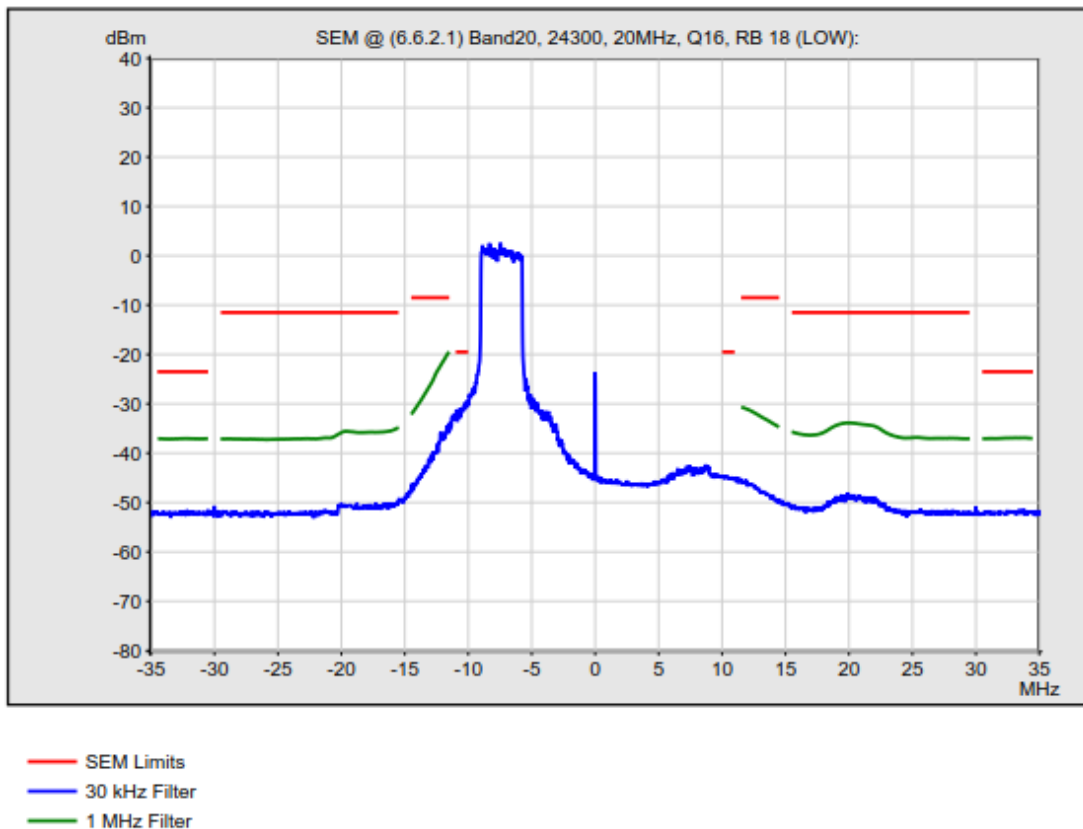
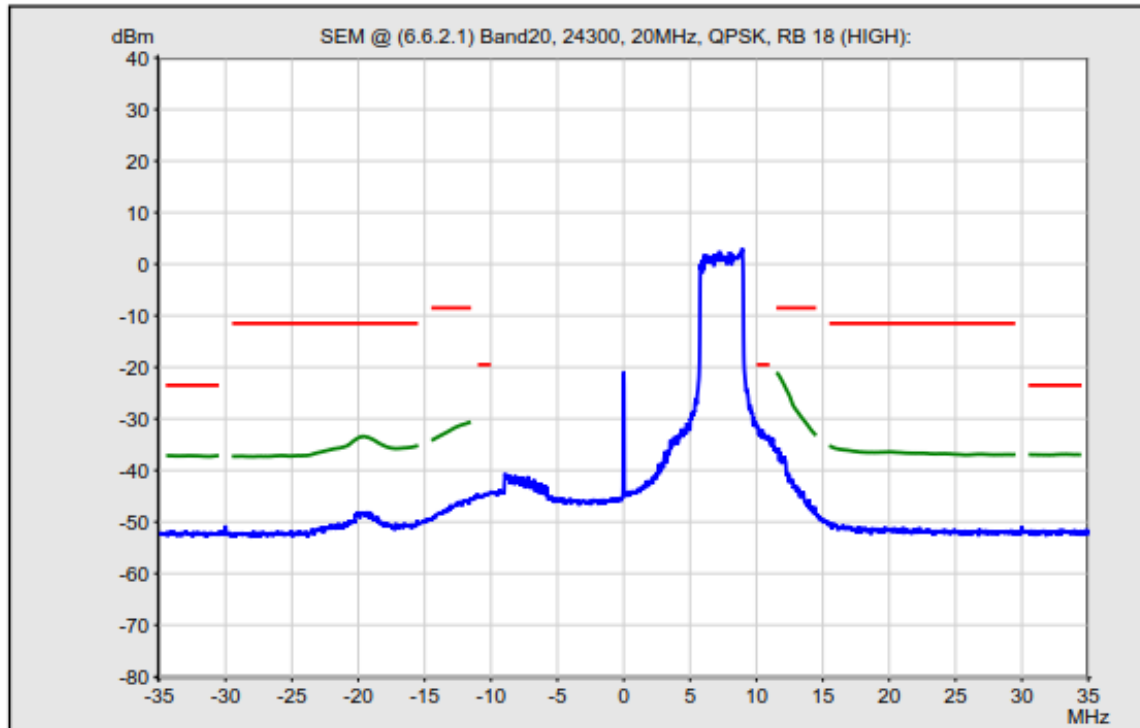


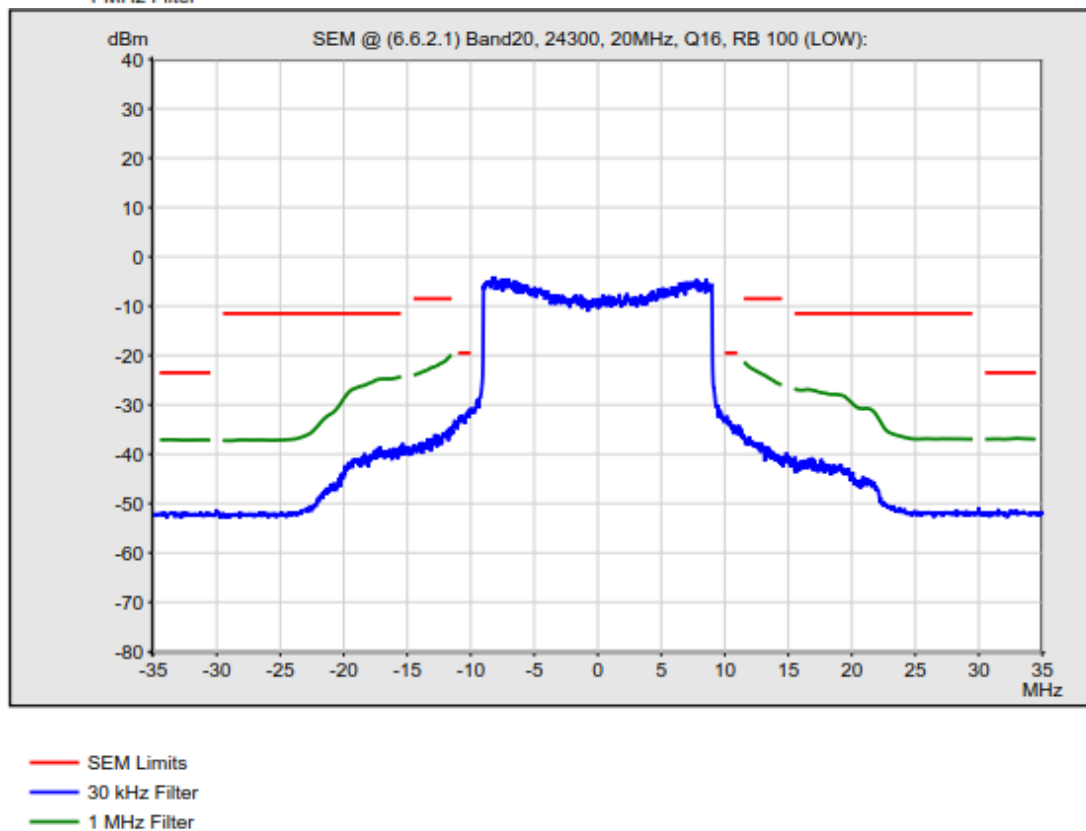
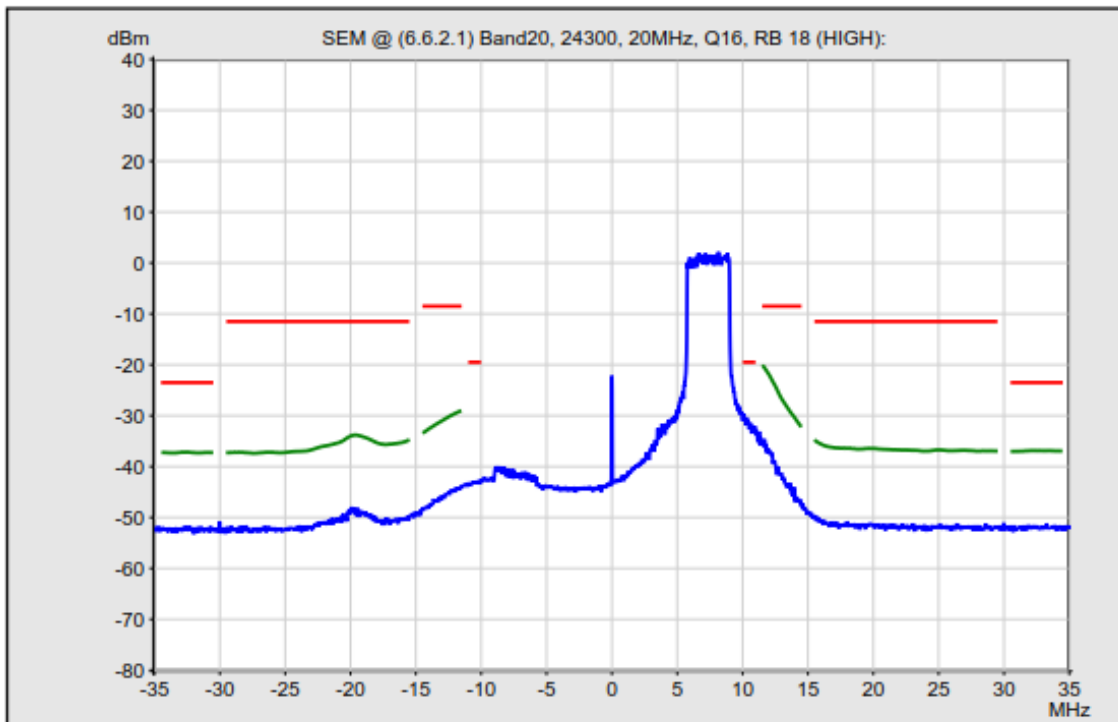


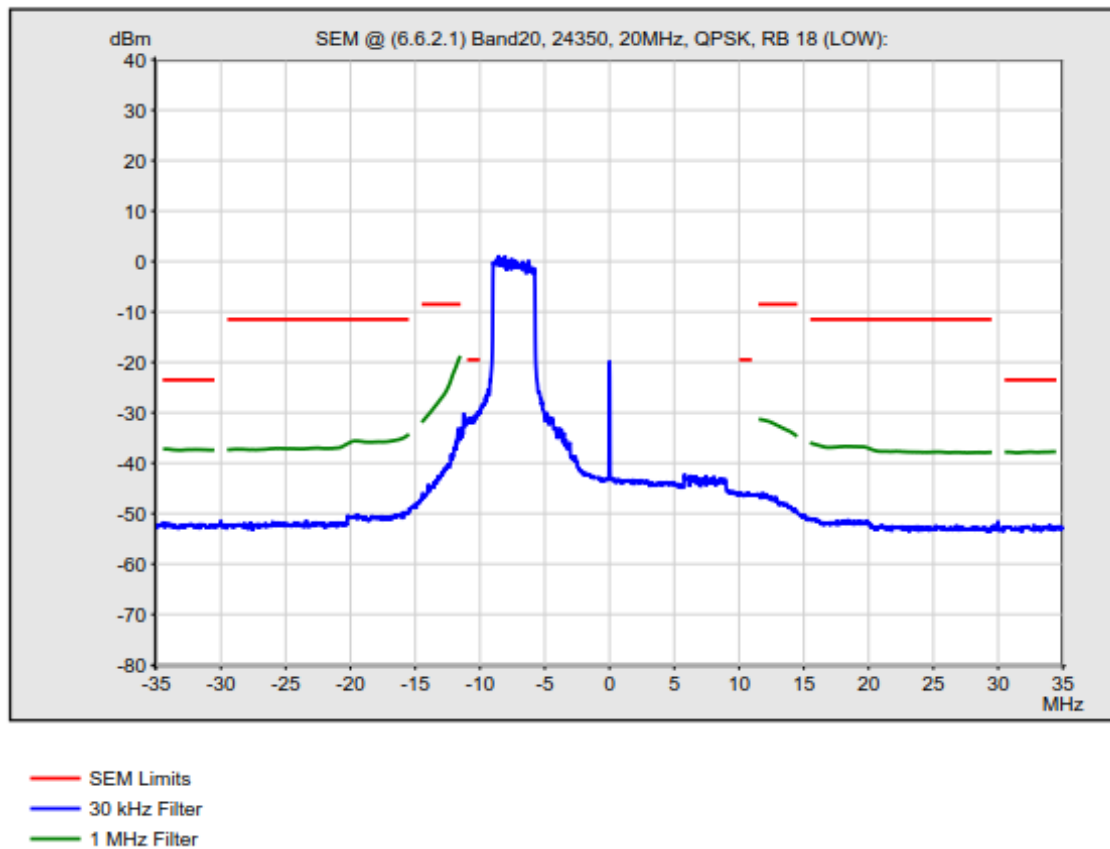
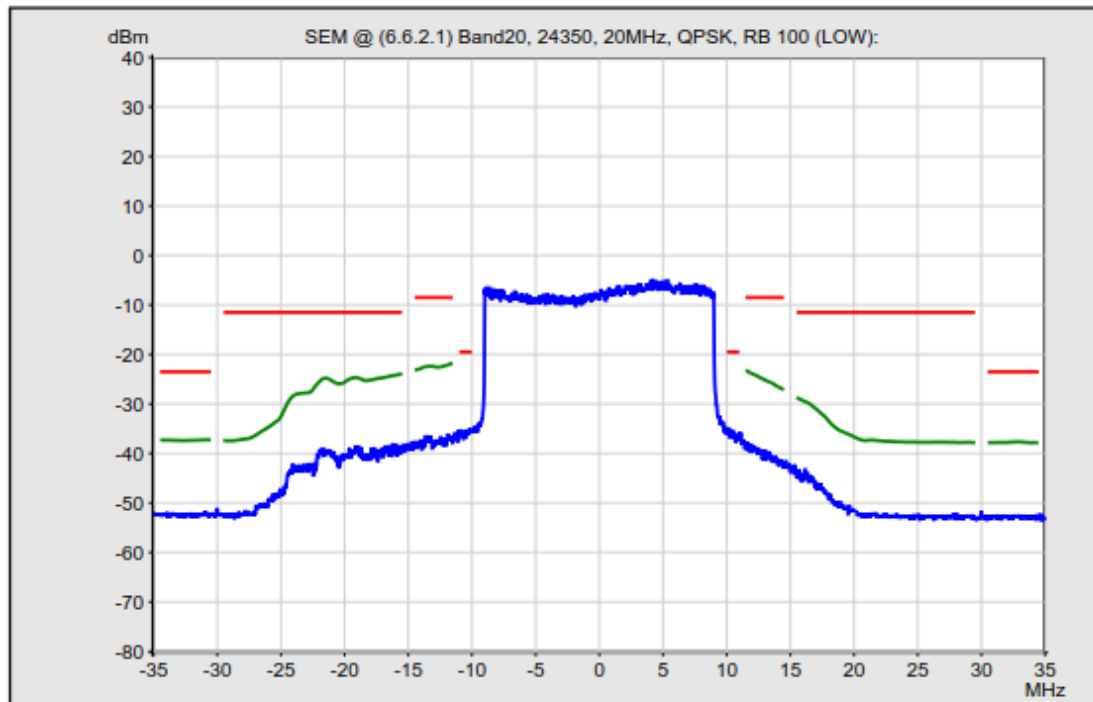
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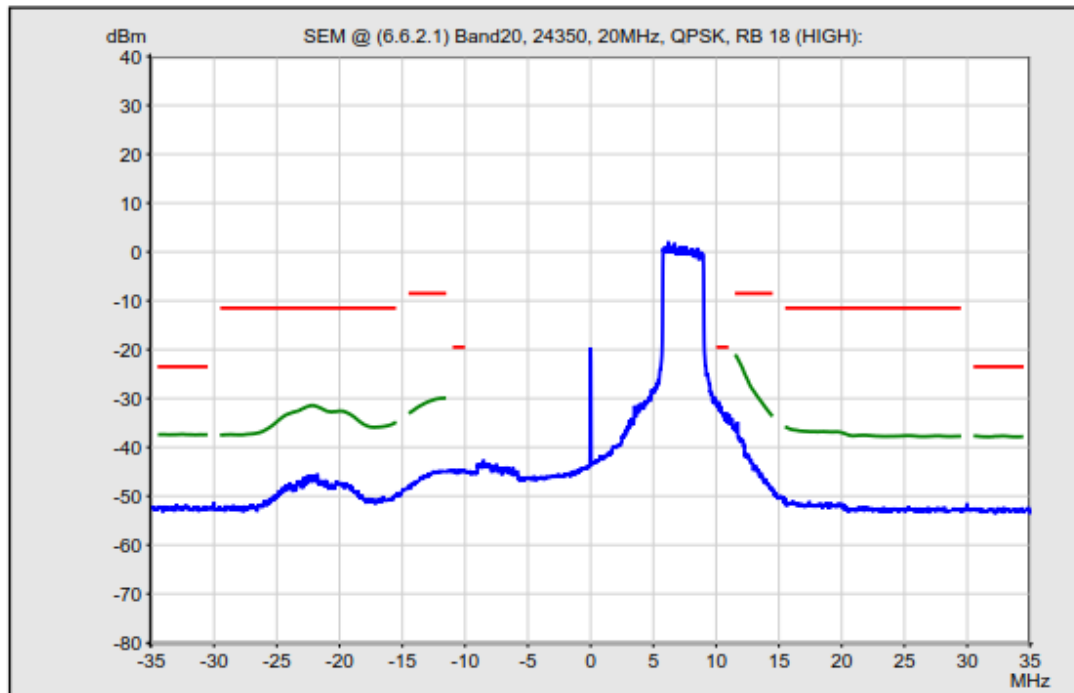


— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

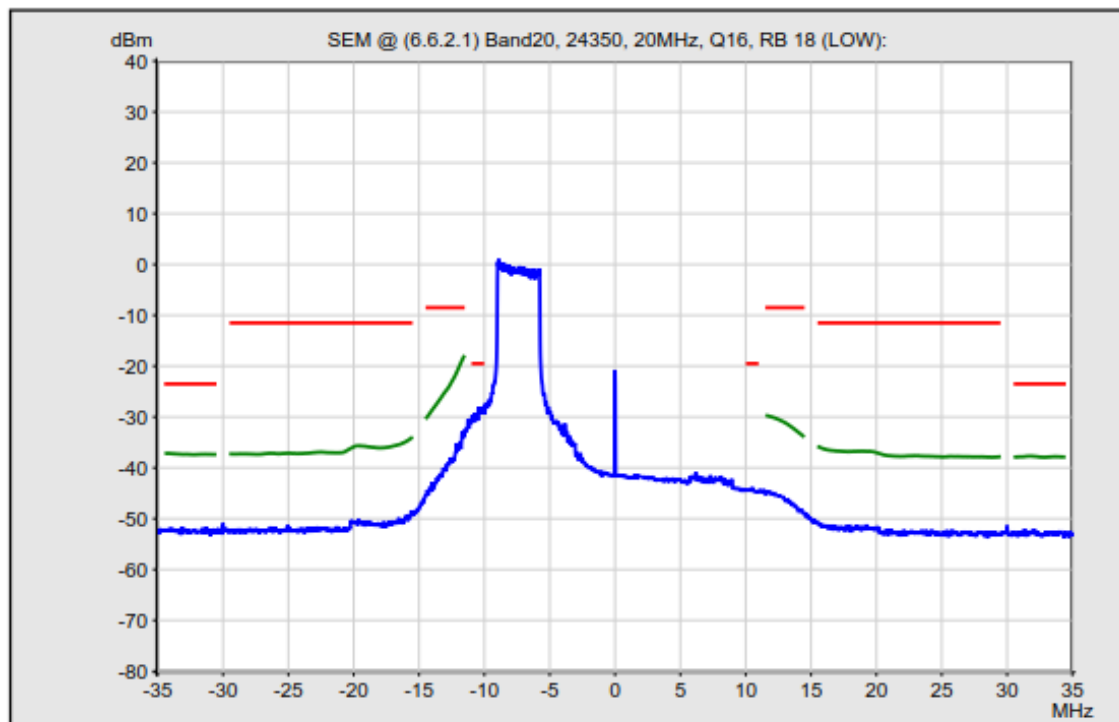




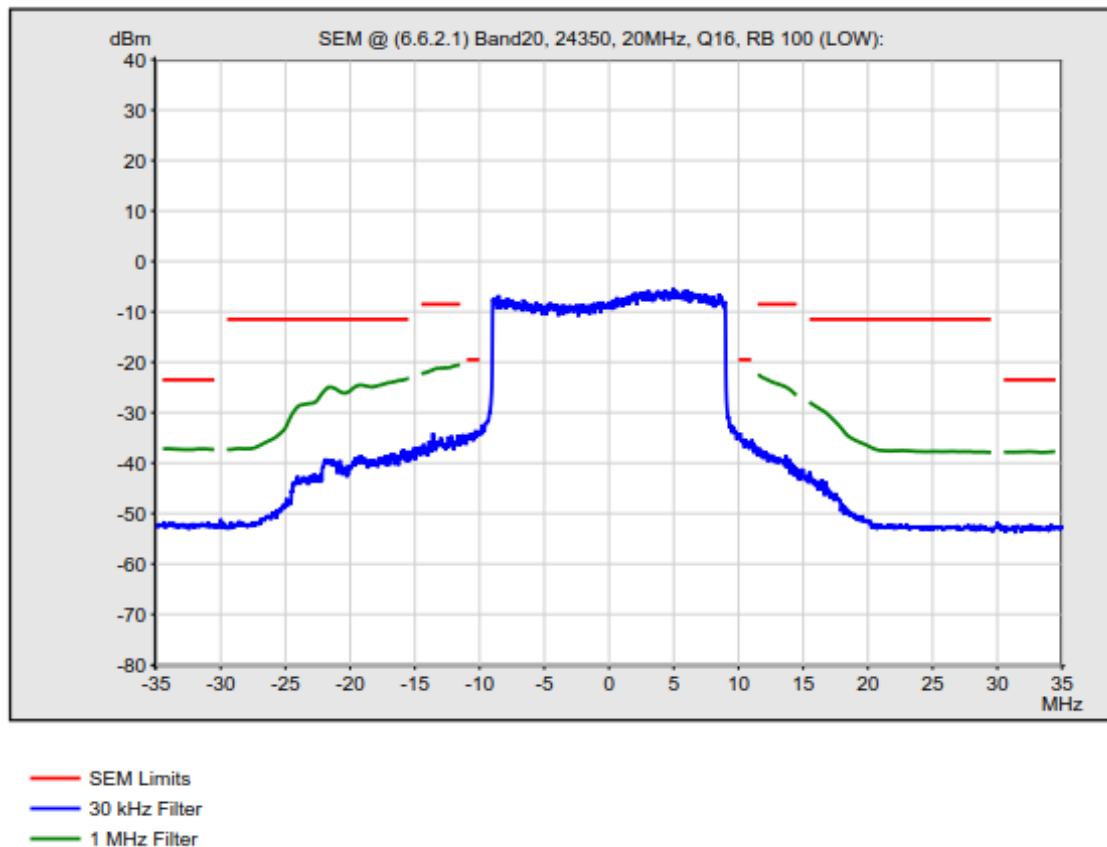
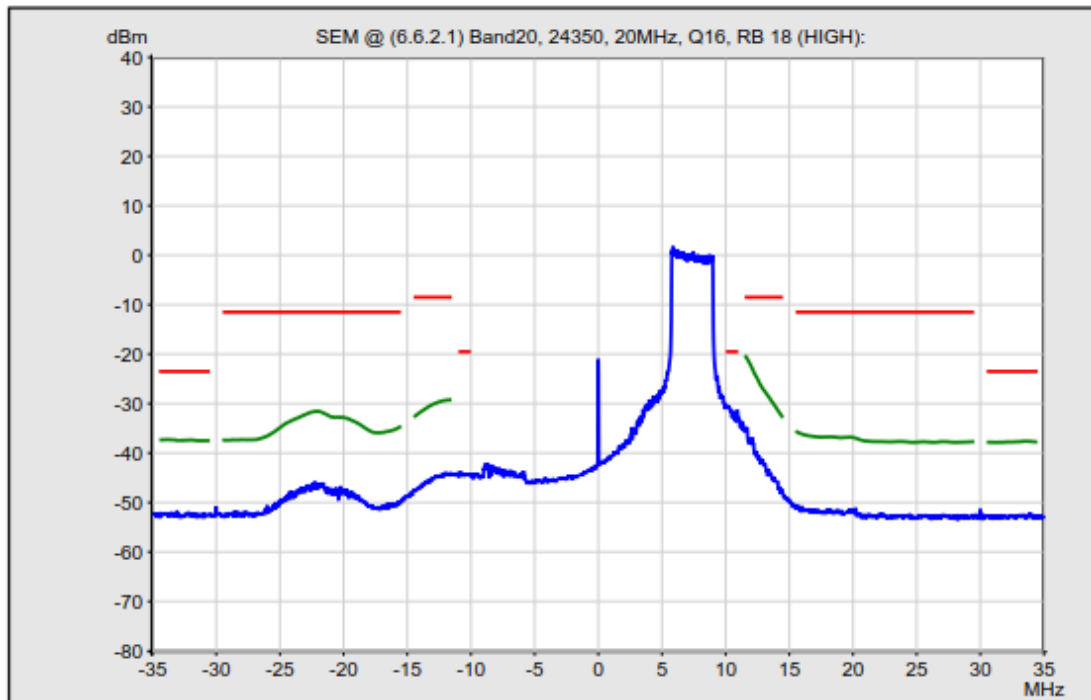




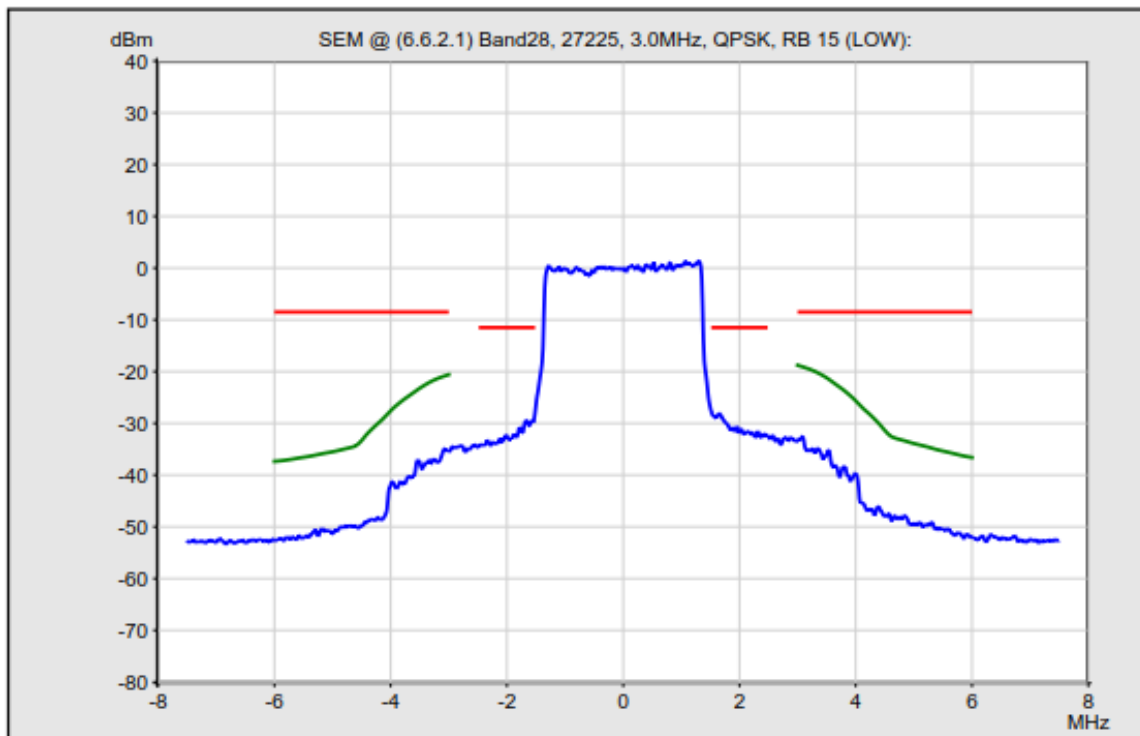
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— 30 kHz Filter
— 1 MHz Filter



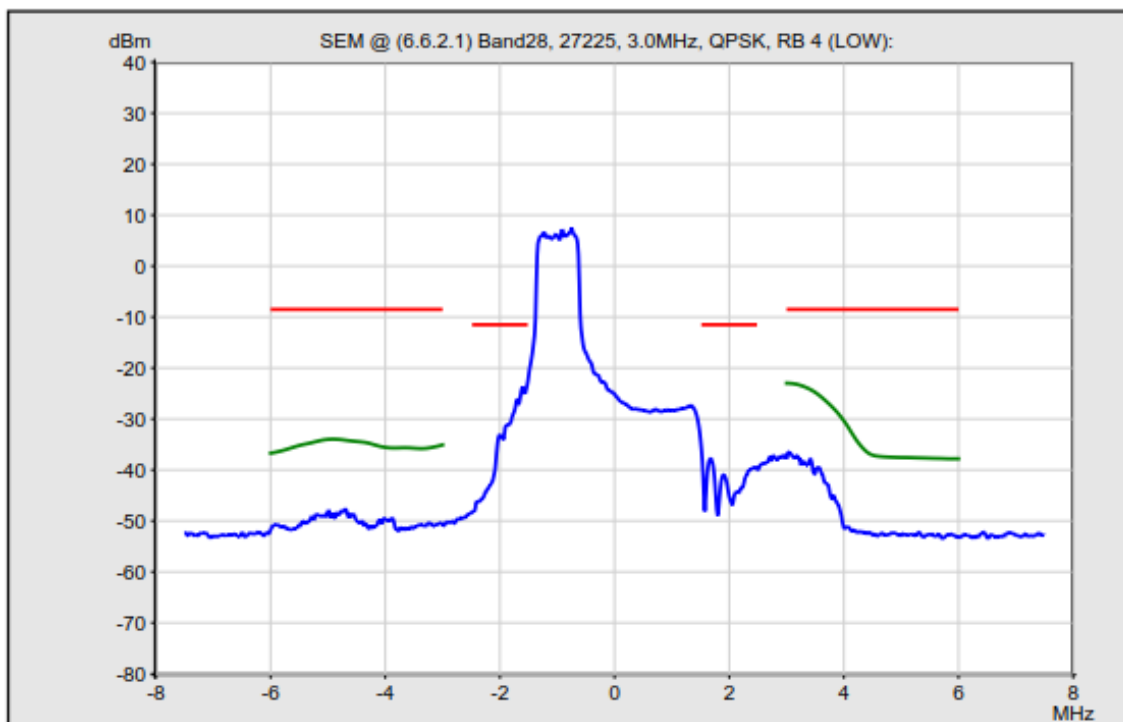
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— 30 kHz Filter
— 1 MHz Filter



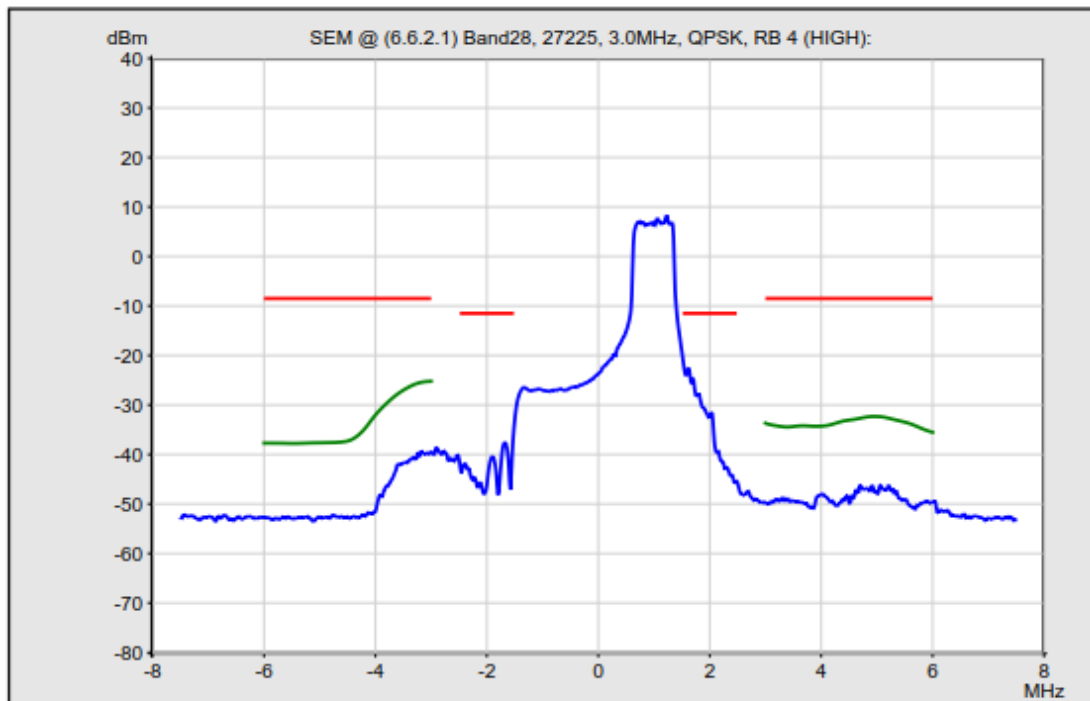
Band 28



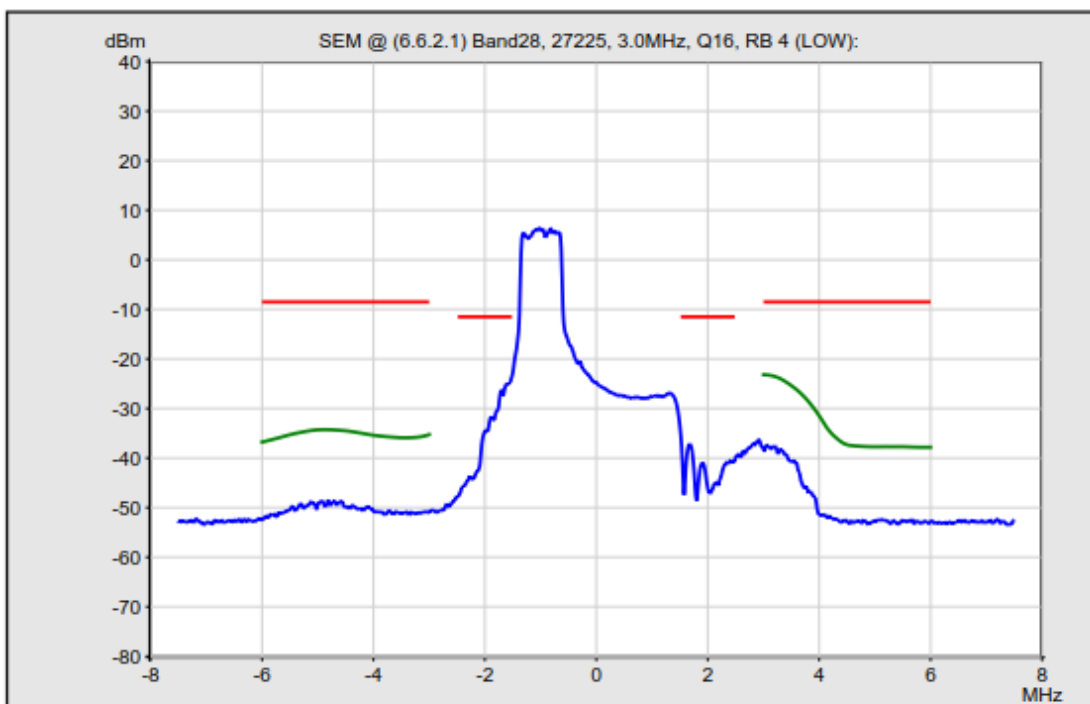
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— 30 kHz Filter
— 1 MHz Filter



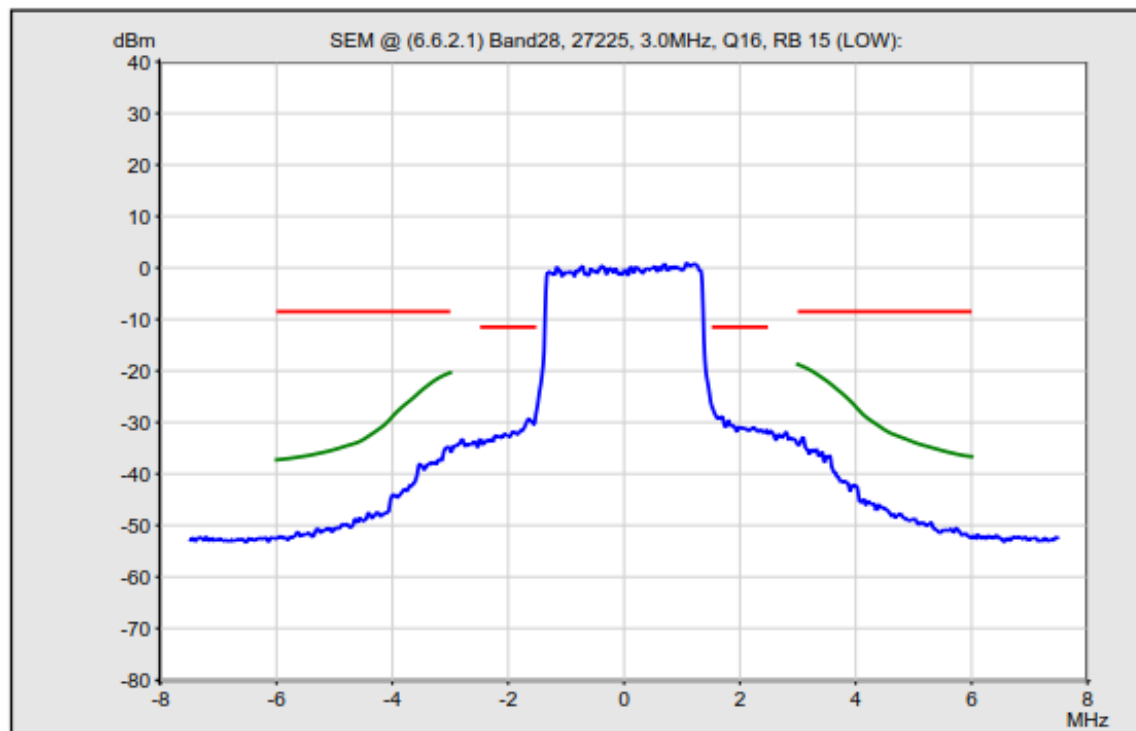
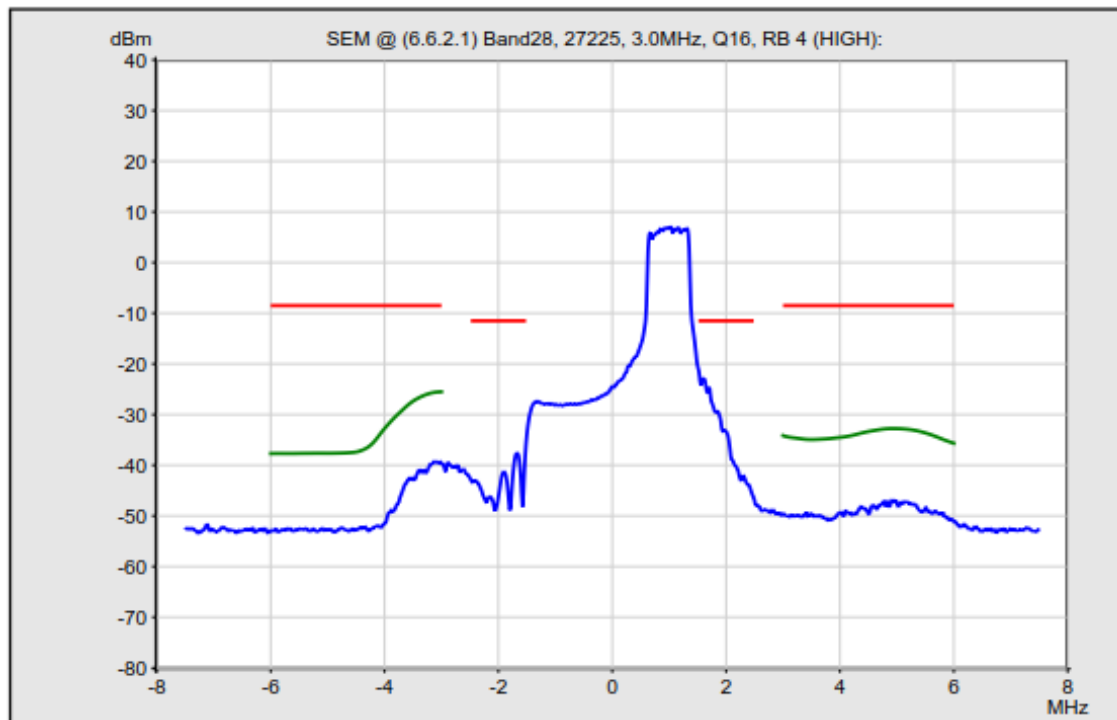
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

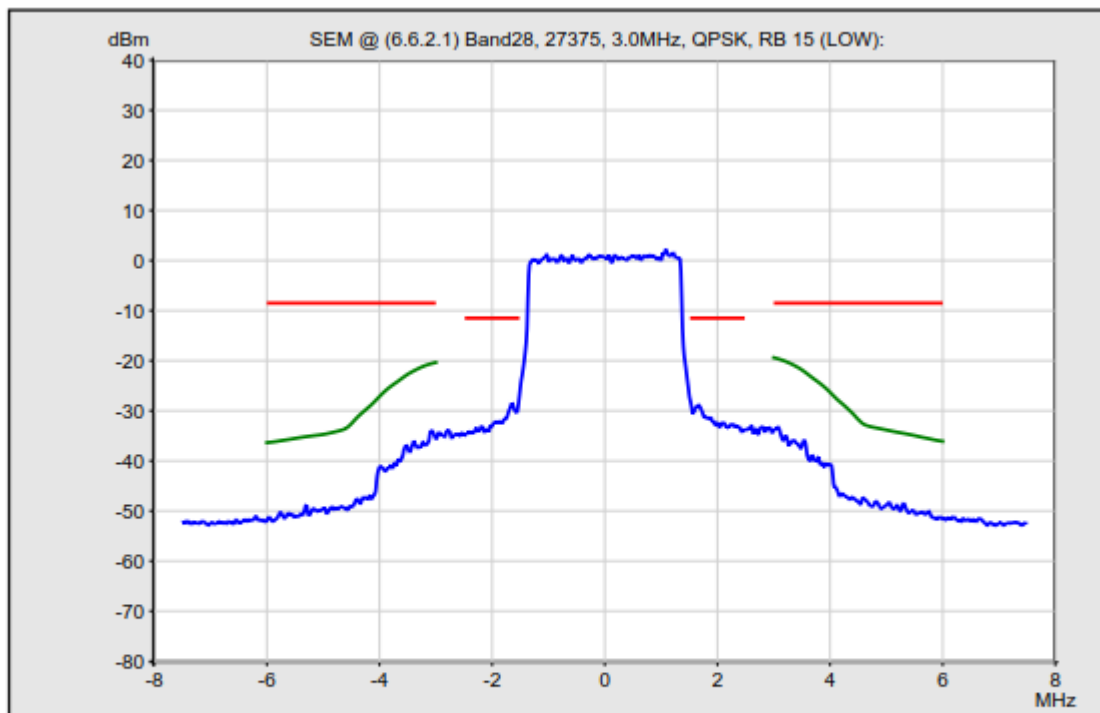


— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

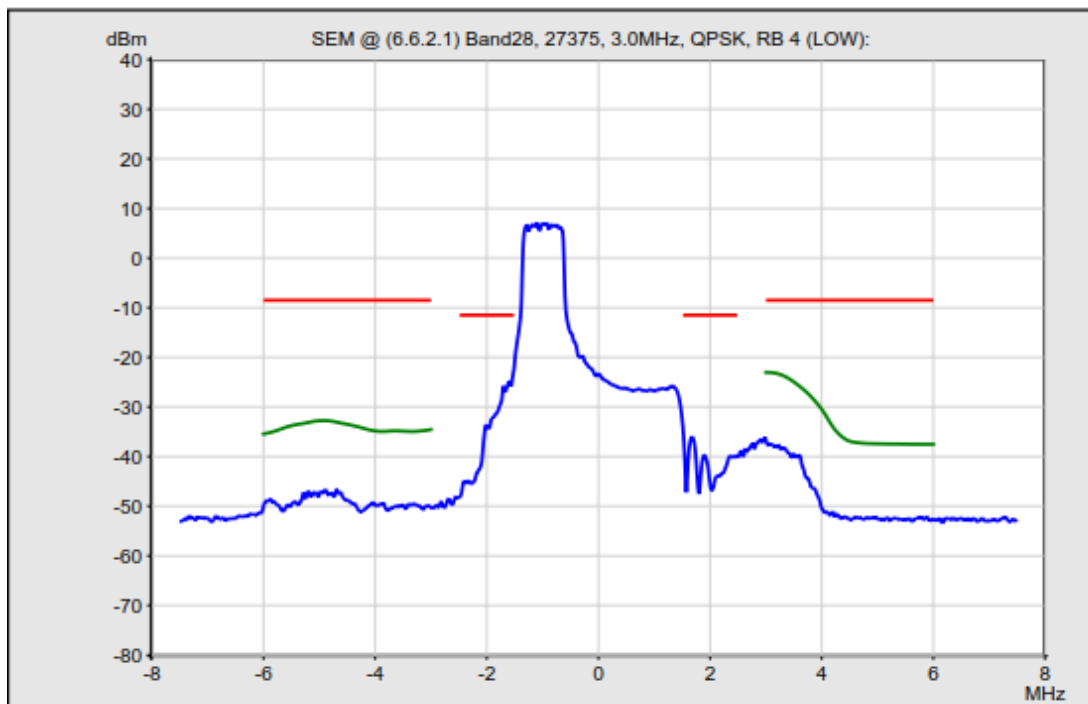


— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

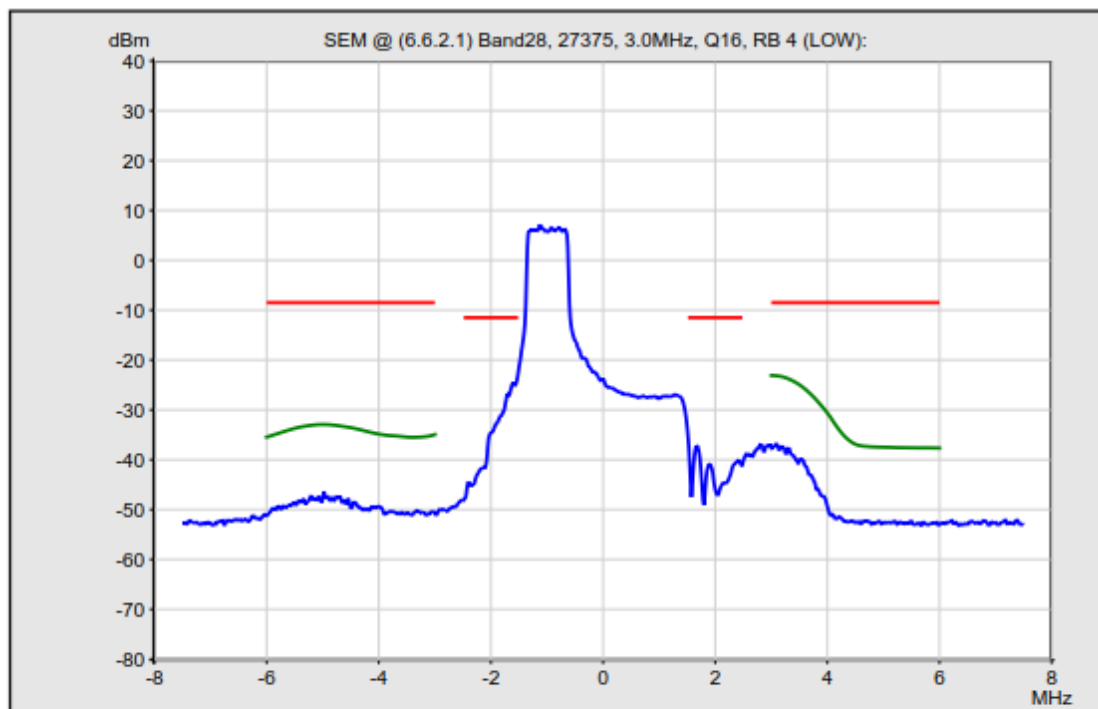
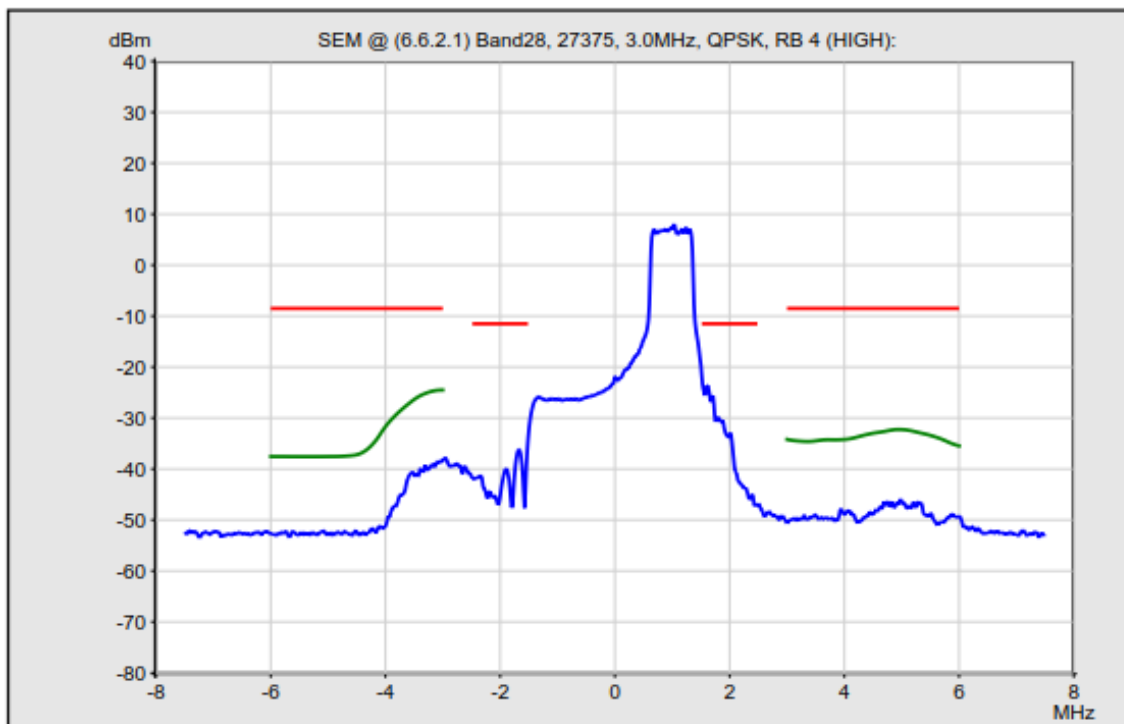


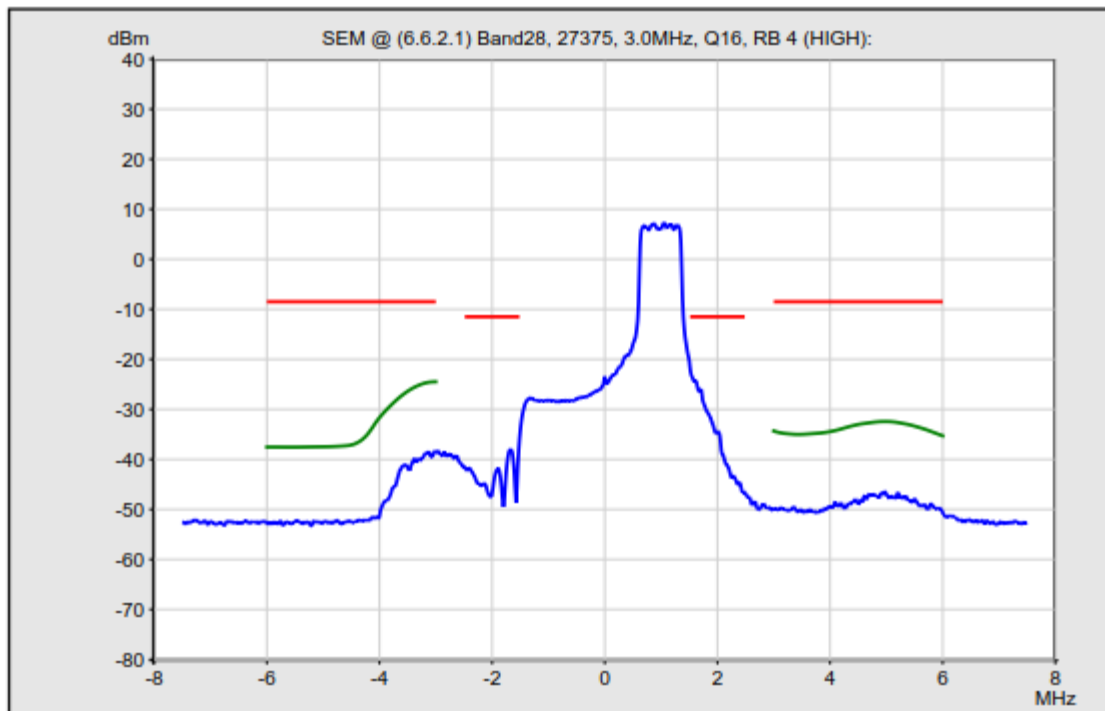


— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

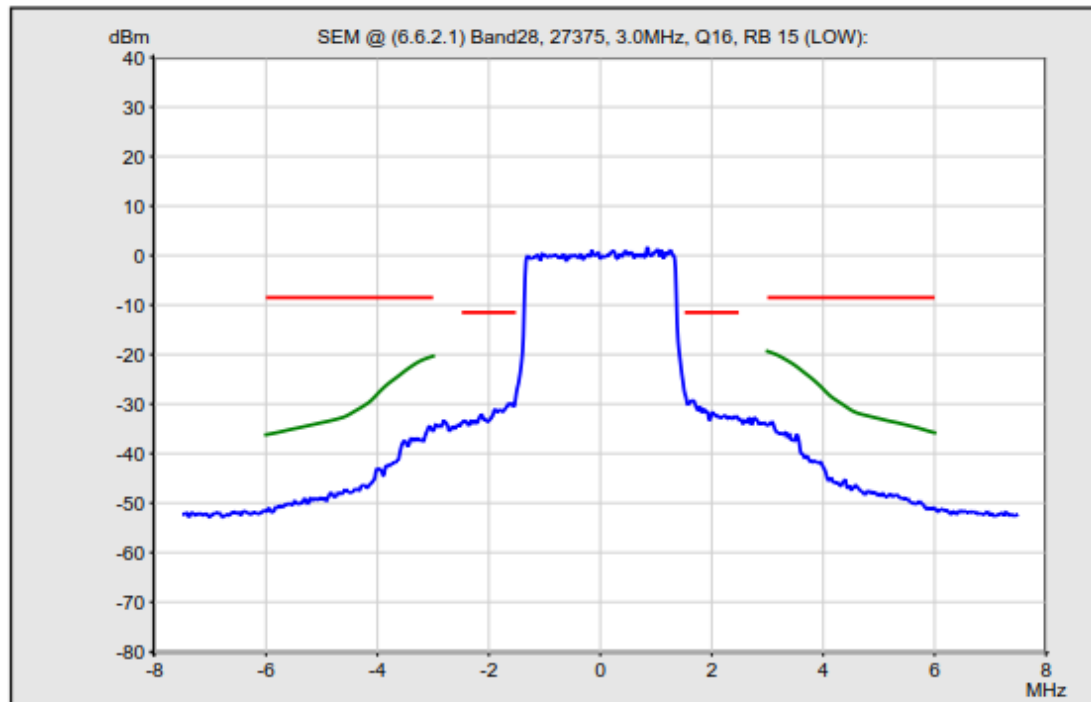


— SEM Limits
— 30 kHz Filter
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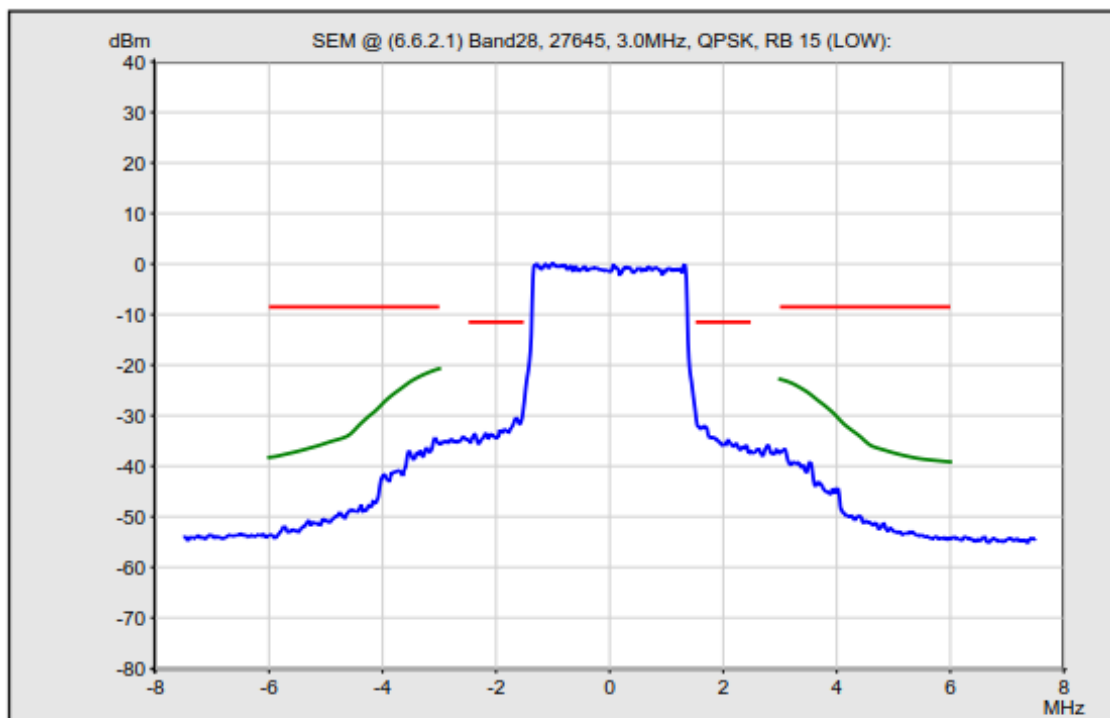




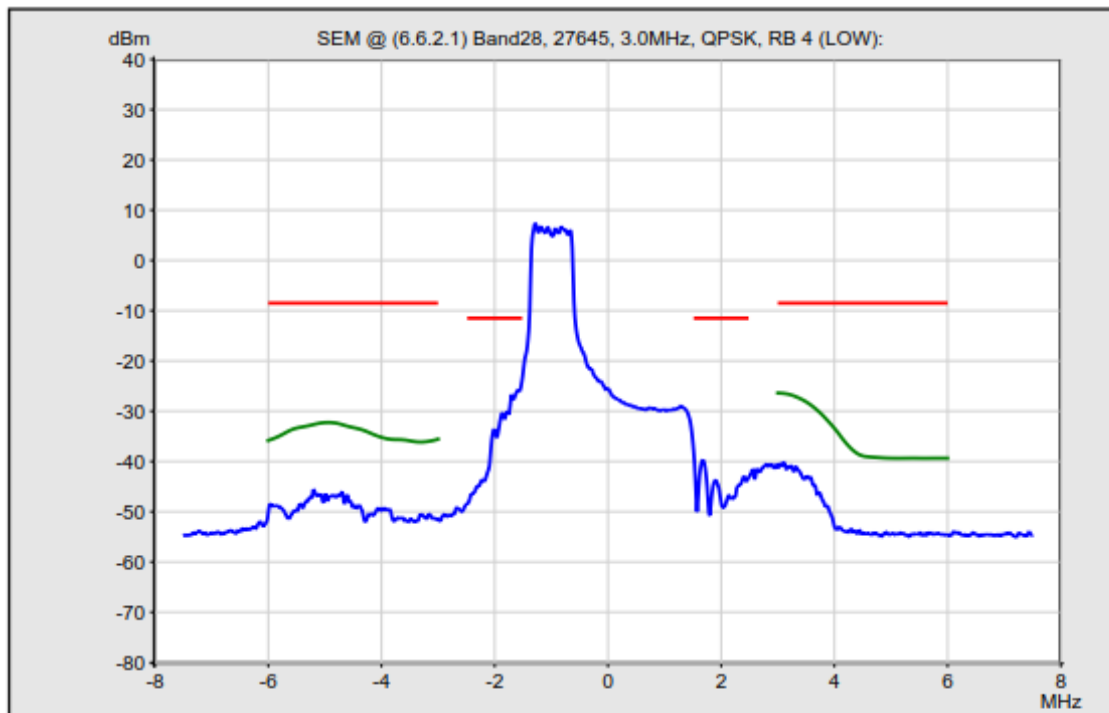
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter



— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

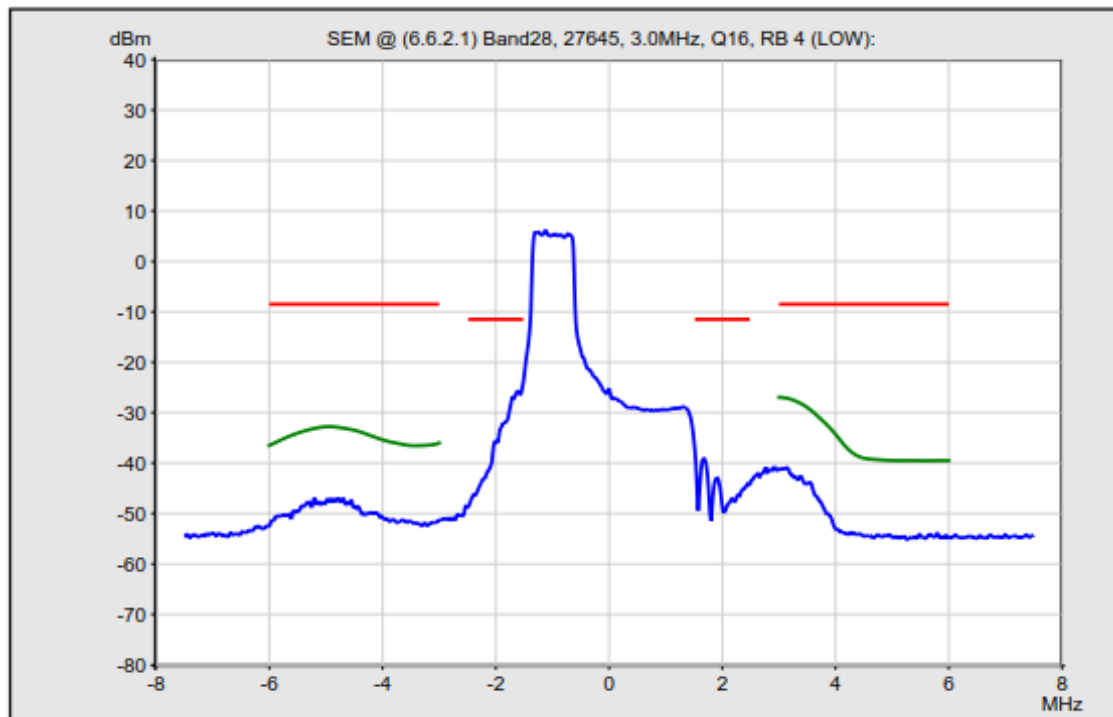
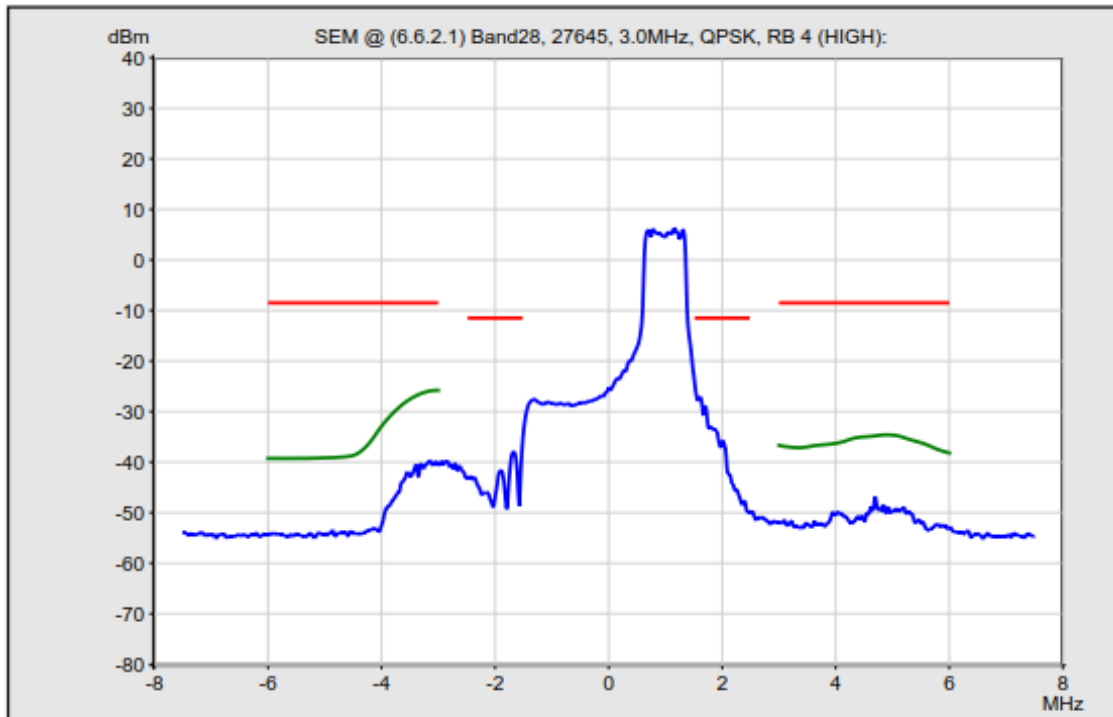


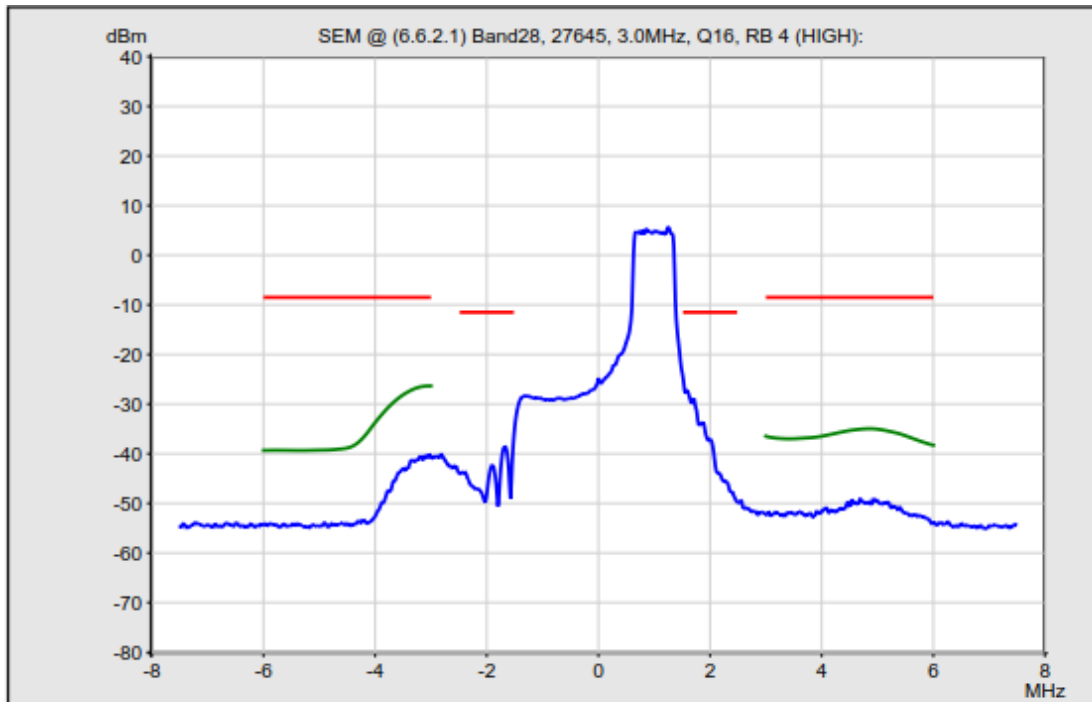
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— 30 kHz Filter
— 1 MHz Filter



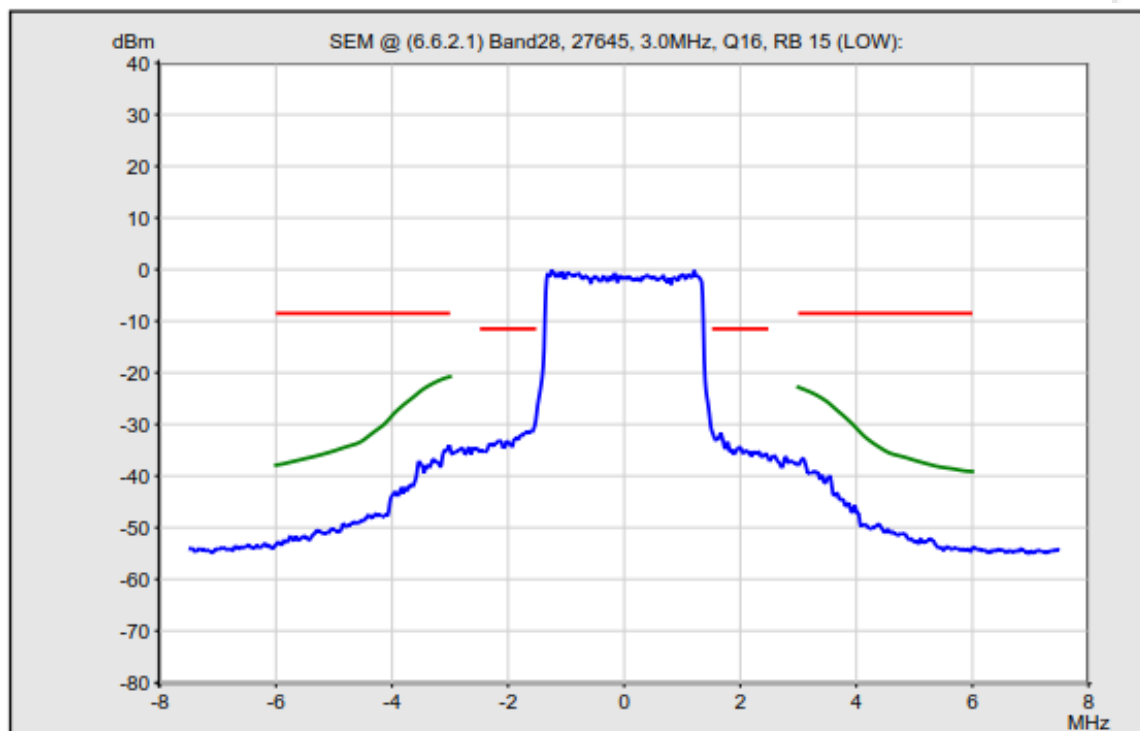
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— 30 kHz Filter
— 1 MHz Filter



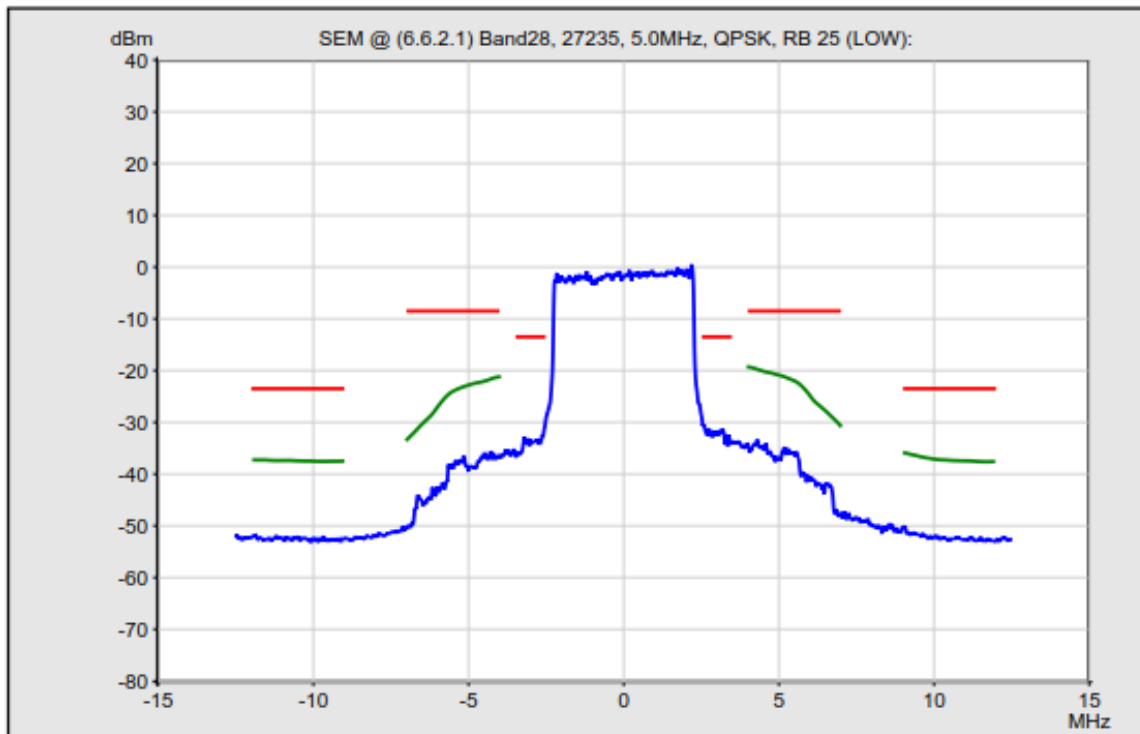




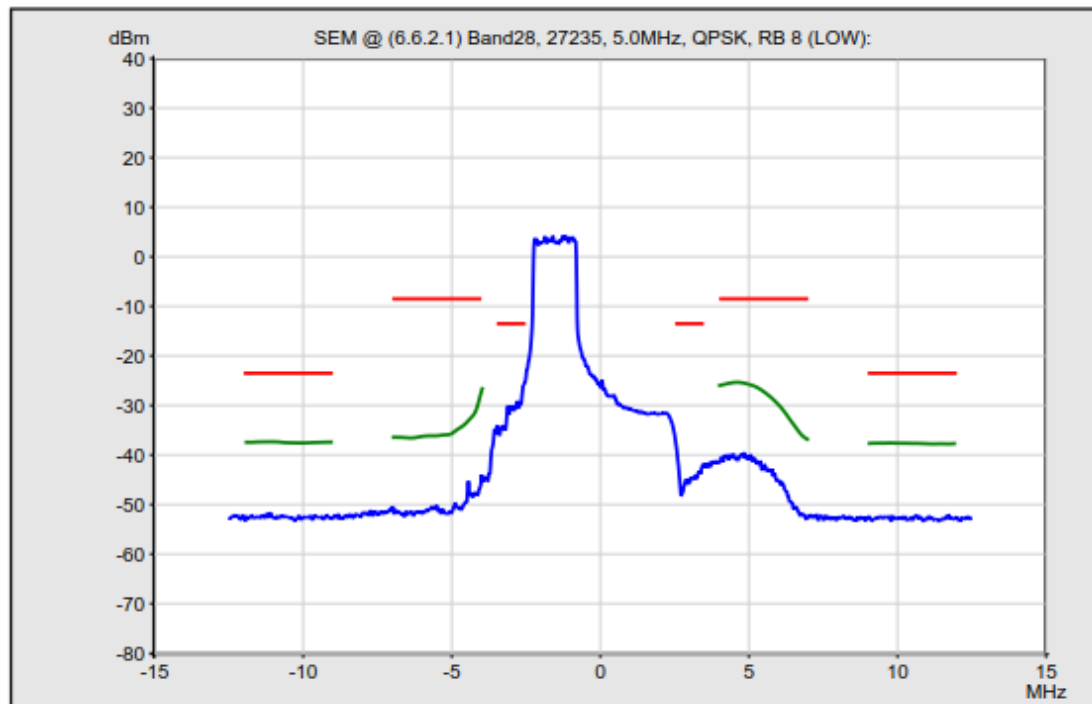
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— 30 kHz Filter
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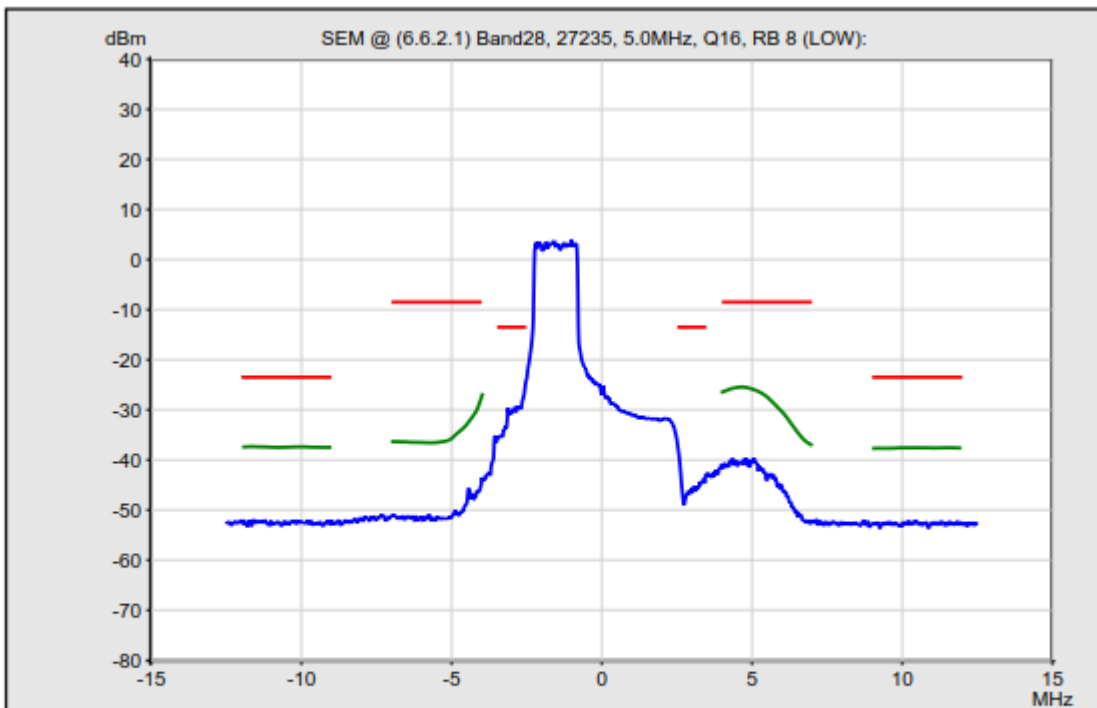
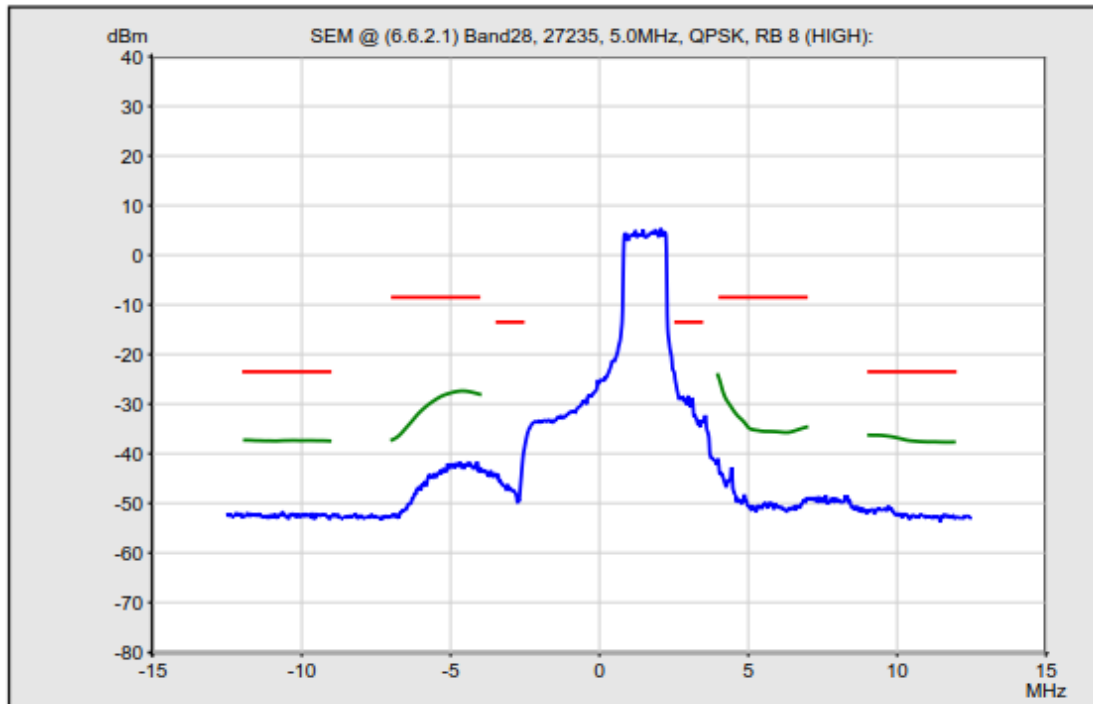
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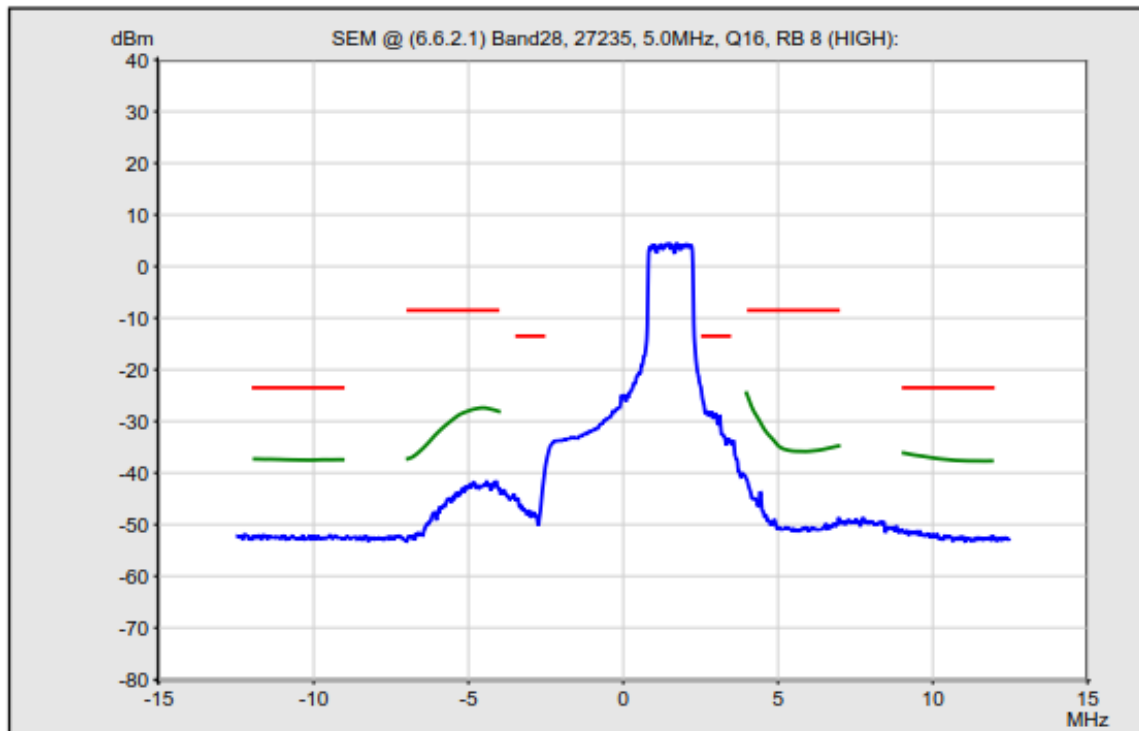


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— 1 MHz Filter

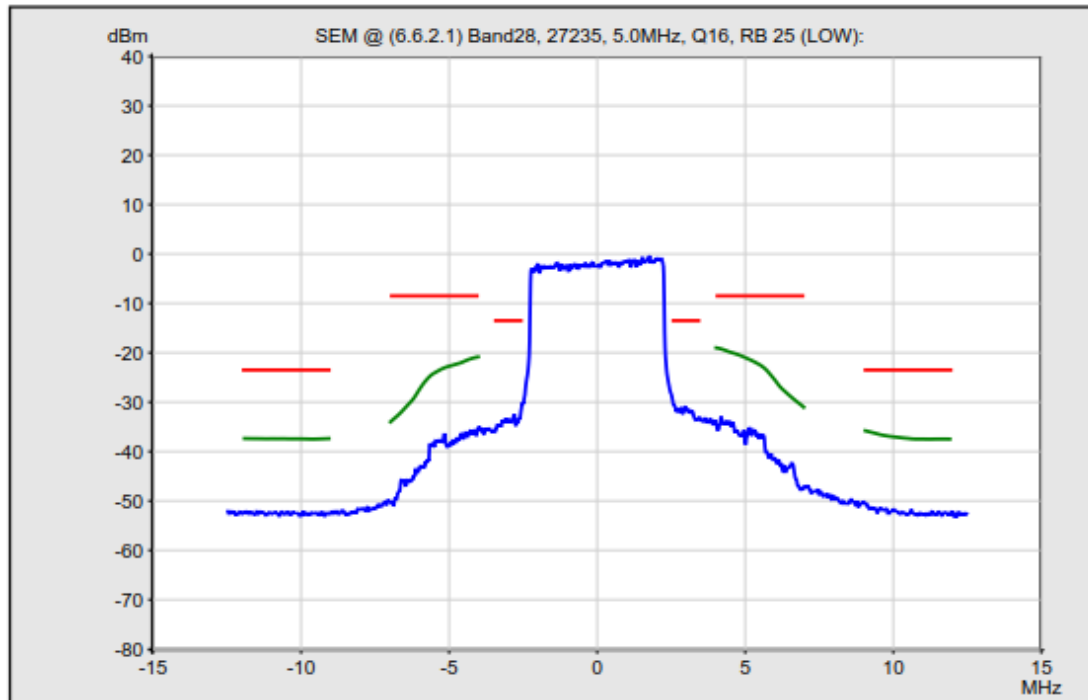


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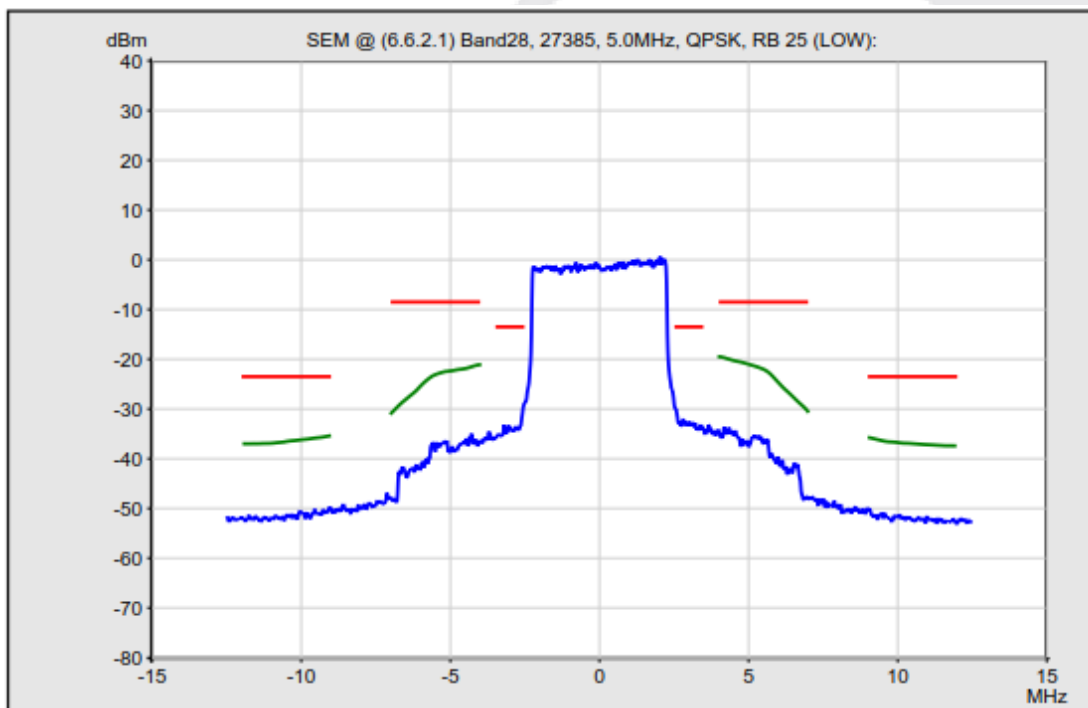




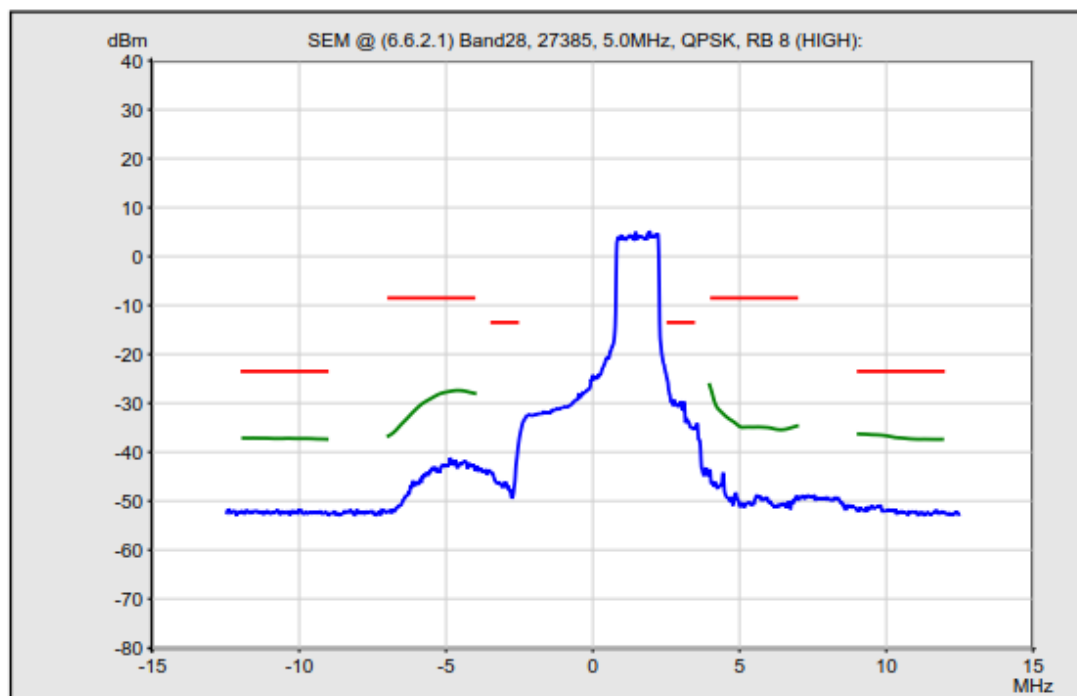
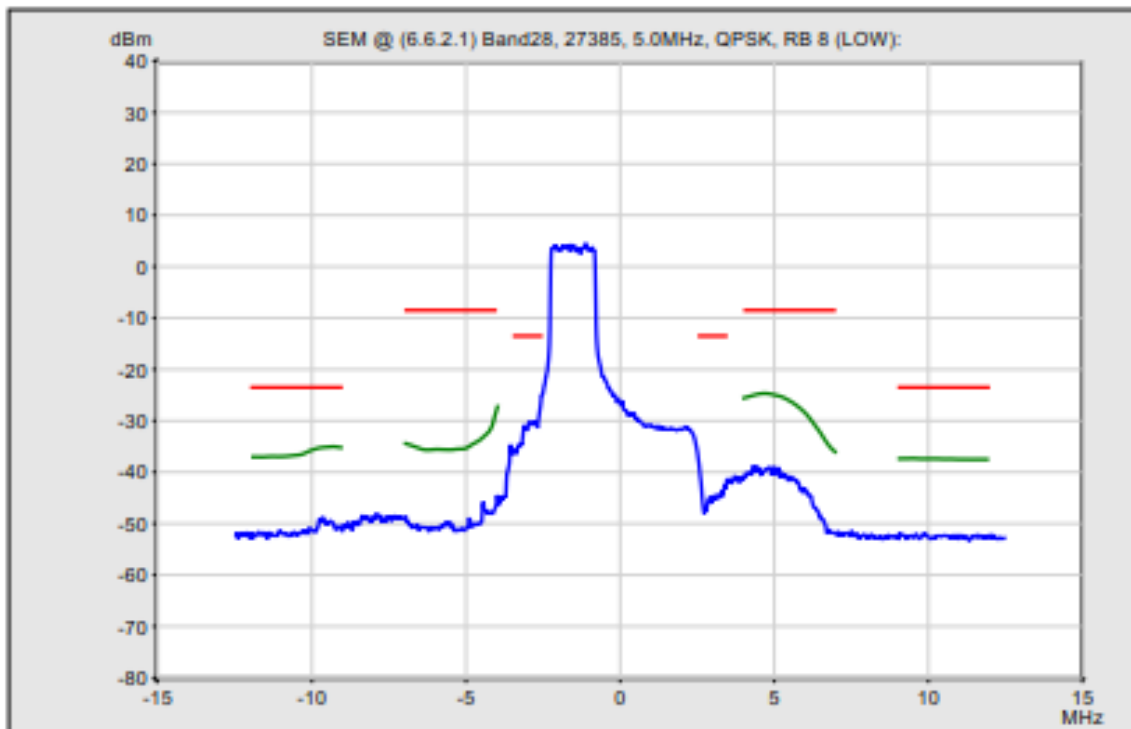
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— 30 kHz Filter
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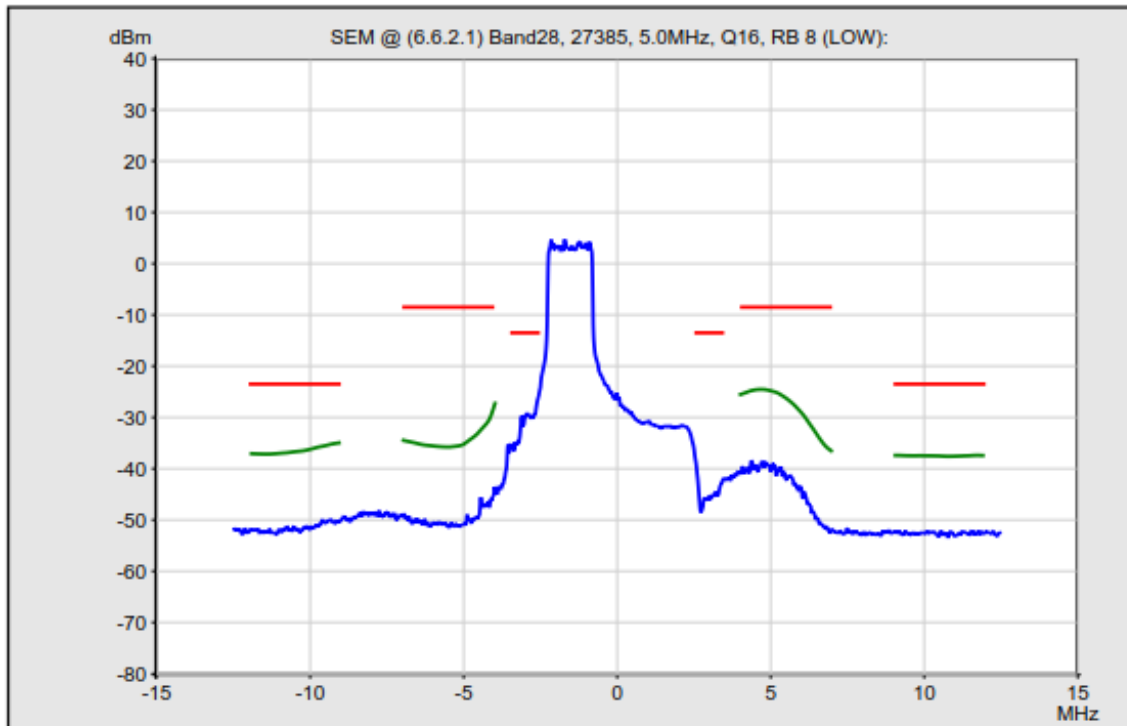


SEM Limits
30 kHz Filter
1 MHz Filter

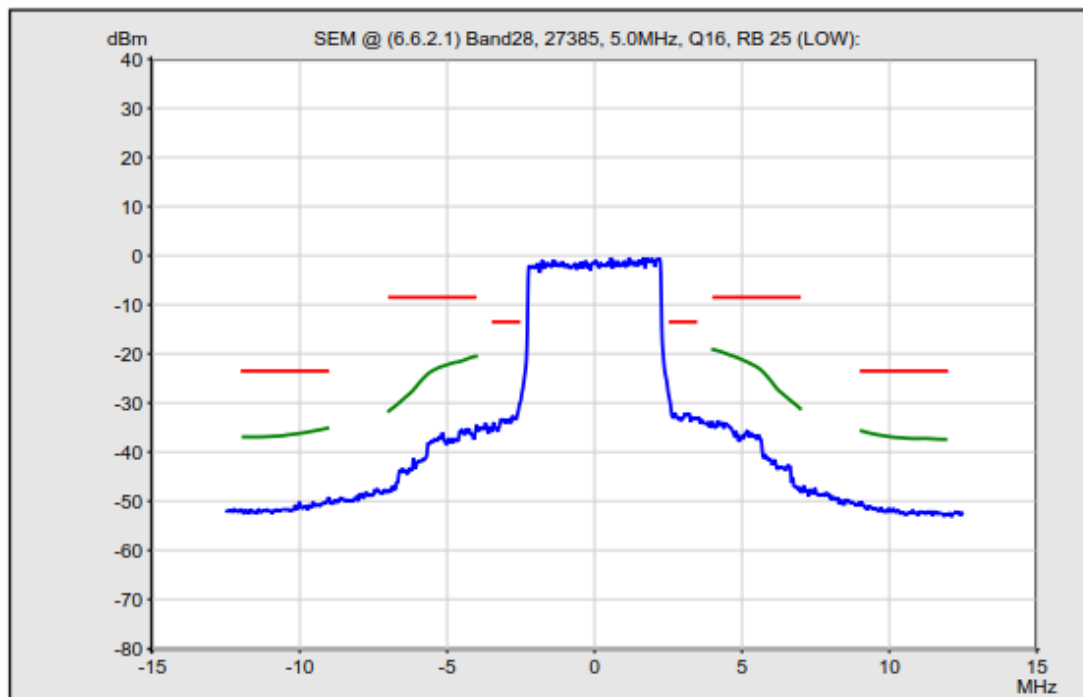
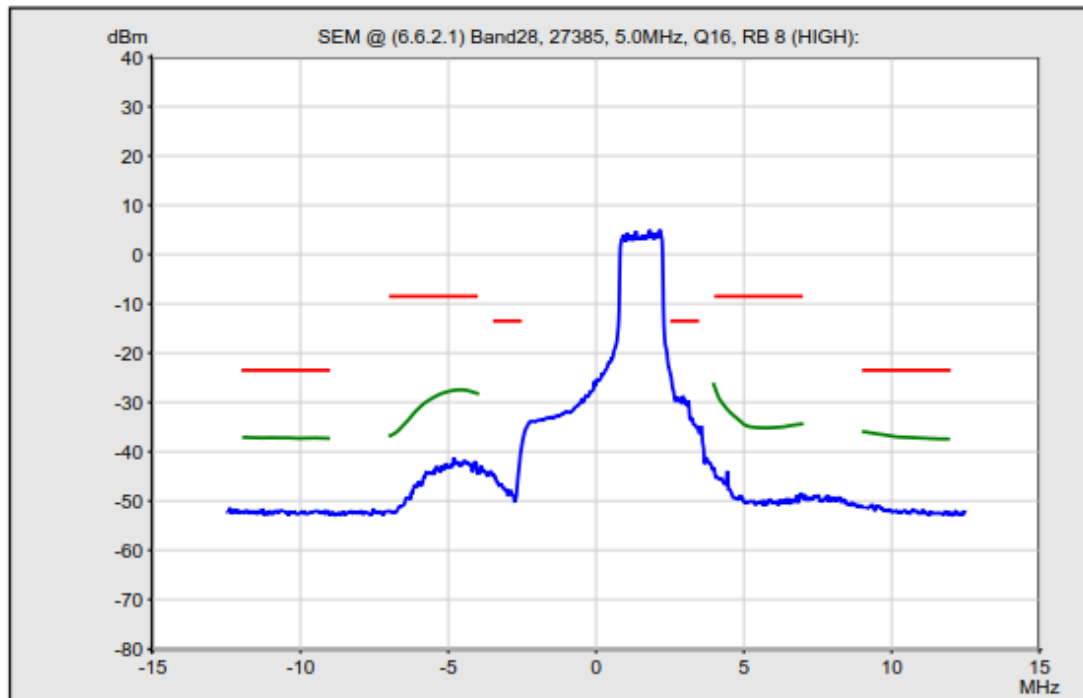


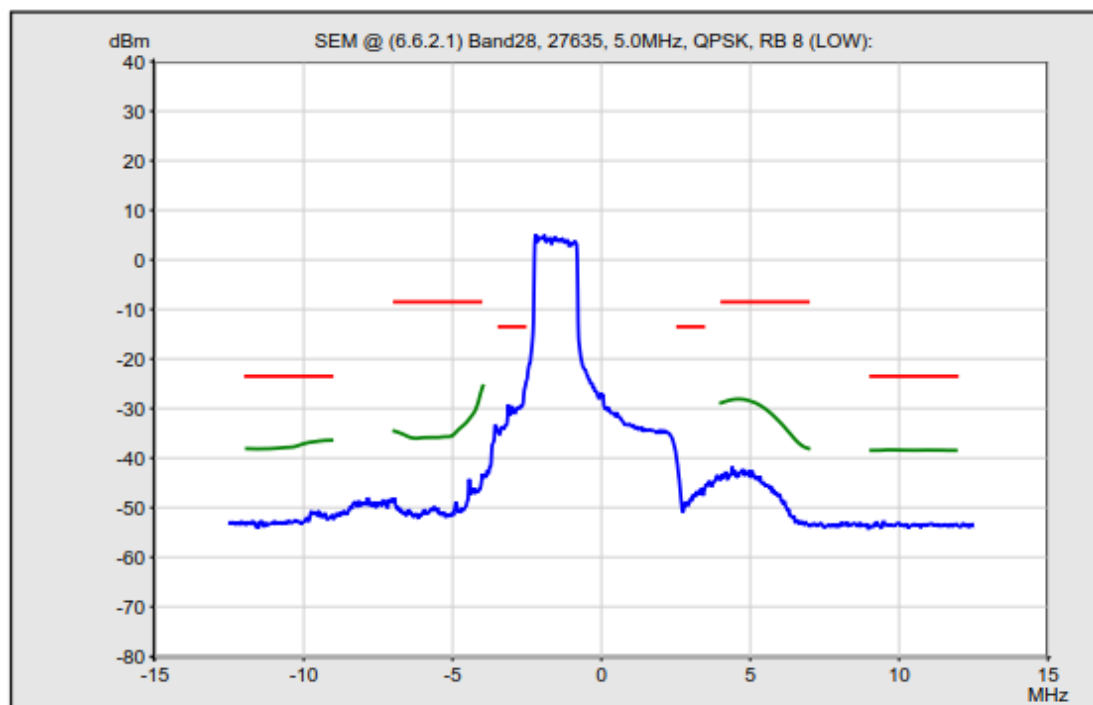
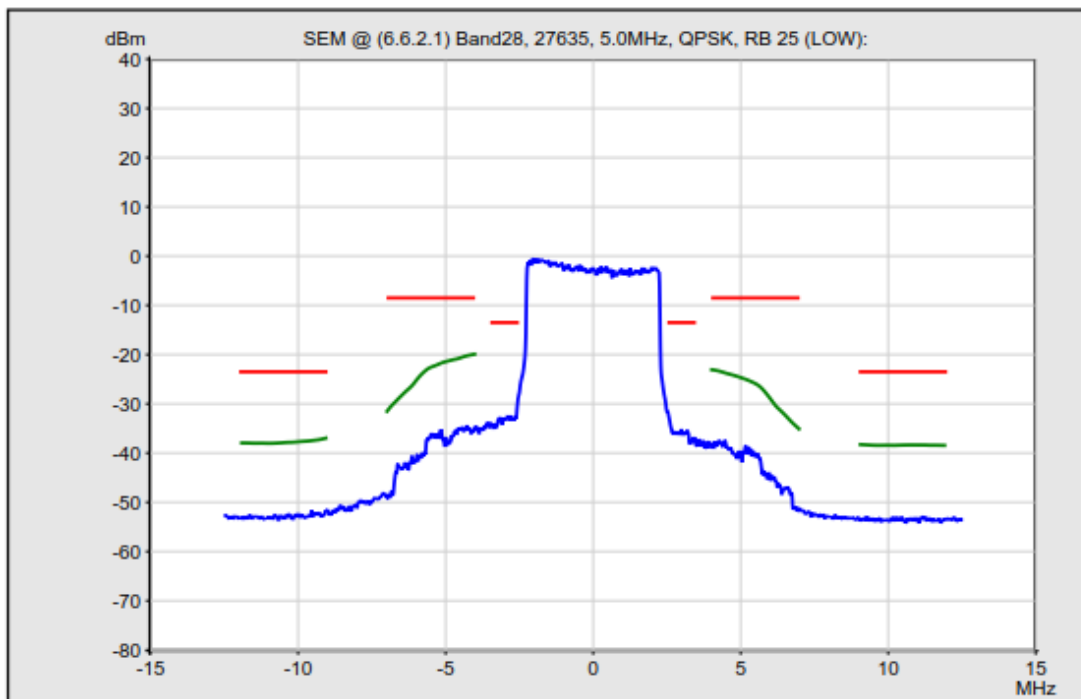
SEM Limits
30 kHz Filter
1 MHz Filter

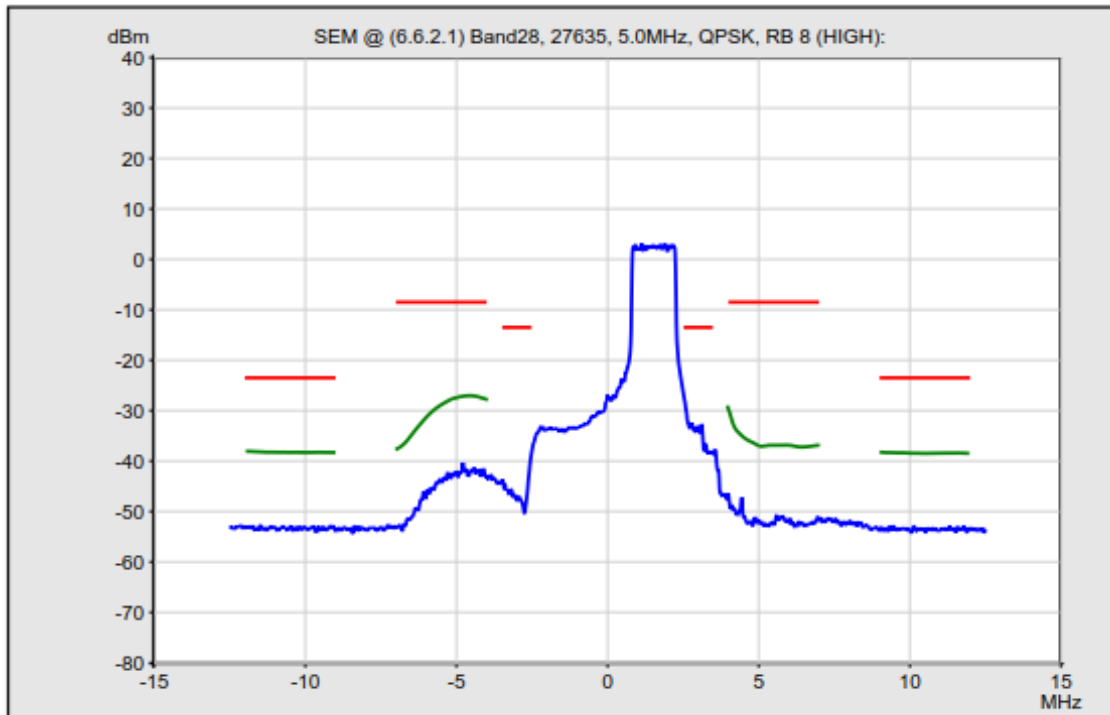




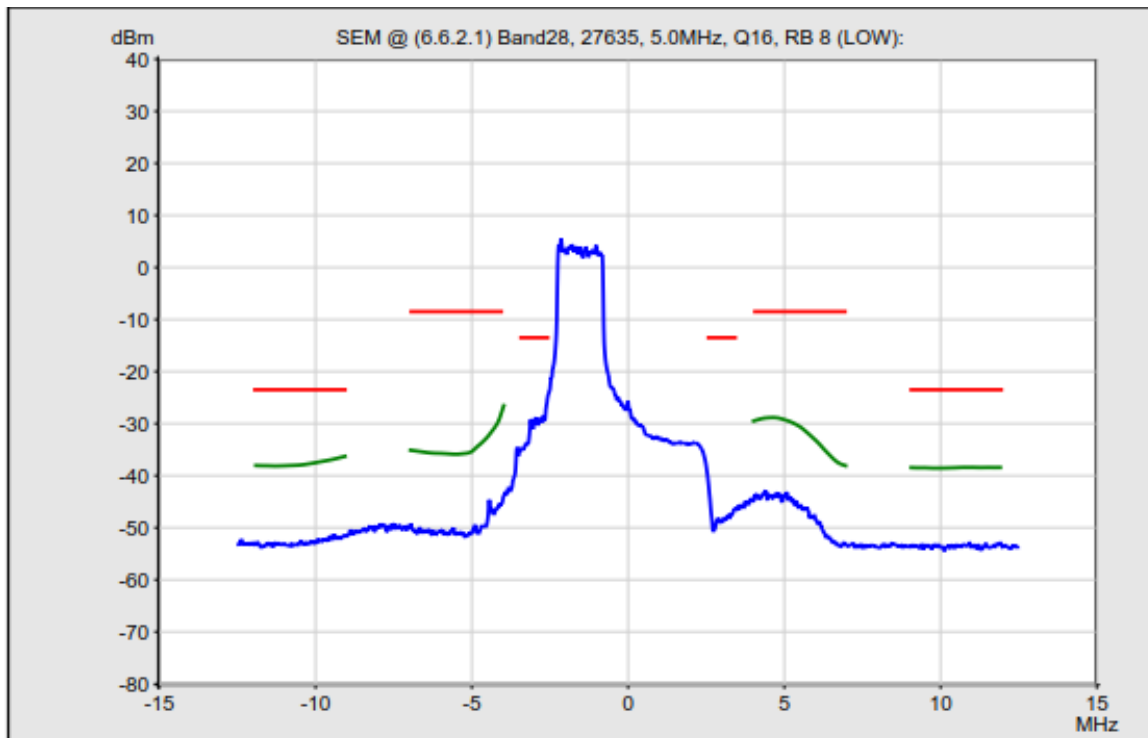
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter



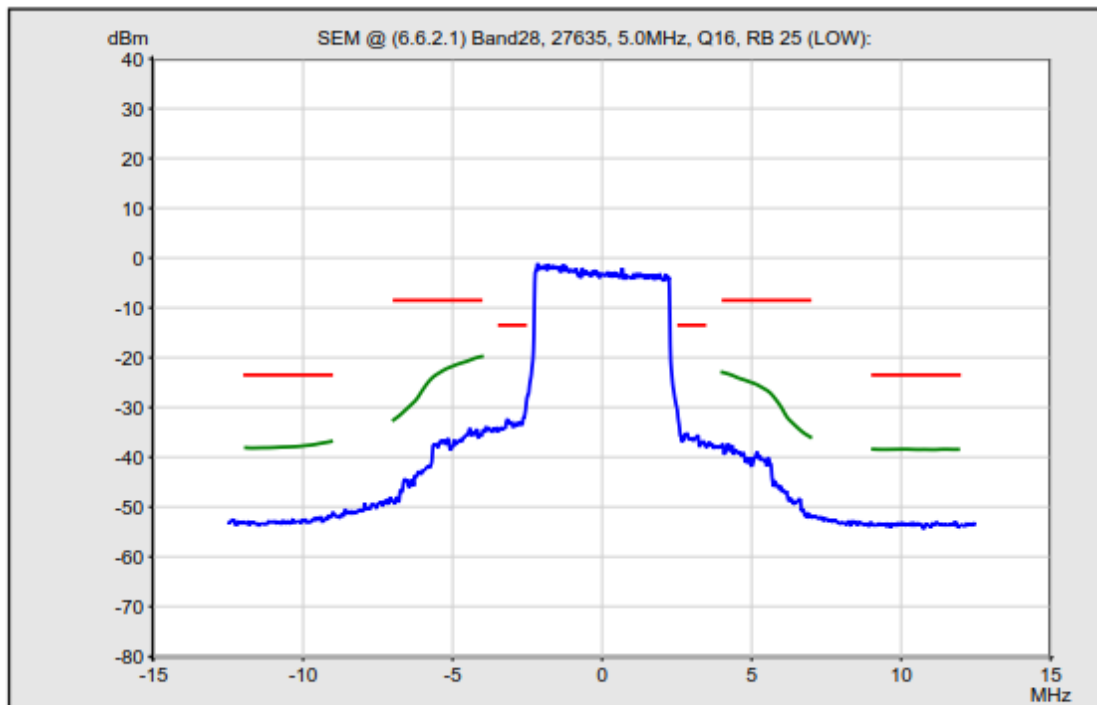
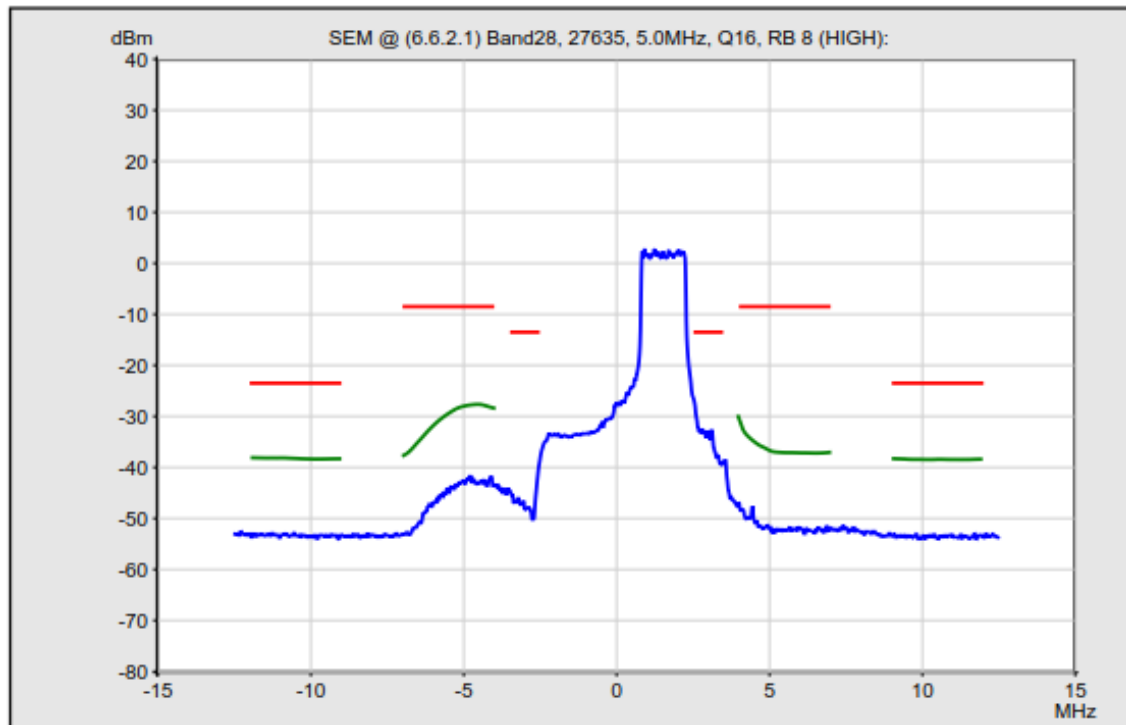


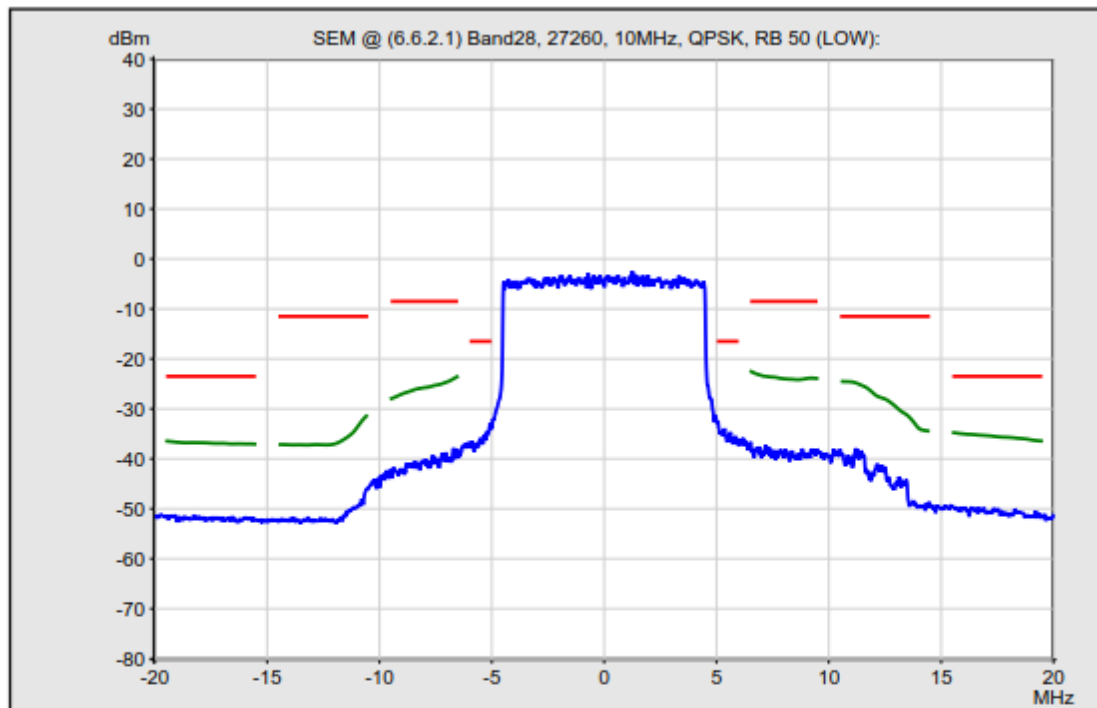


— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

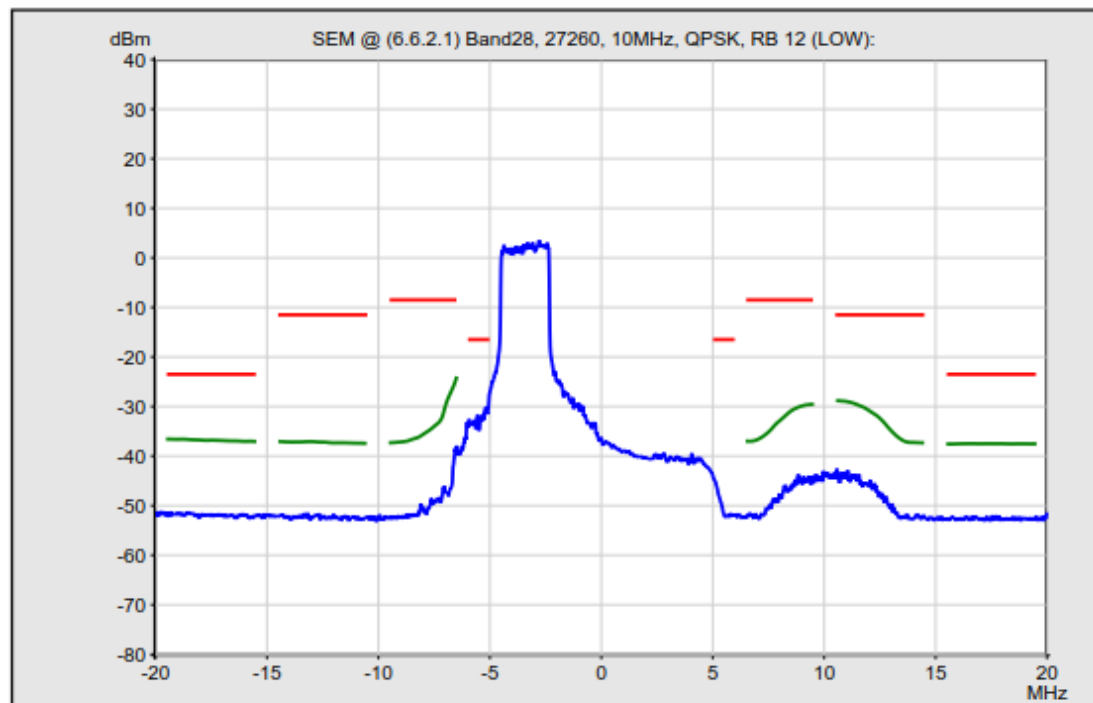


— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

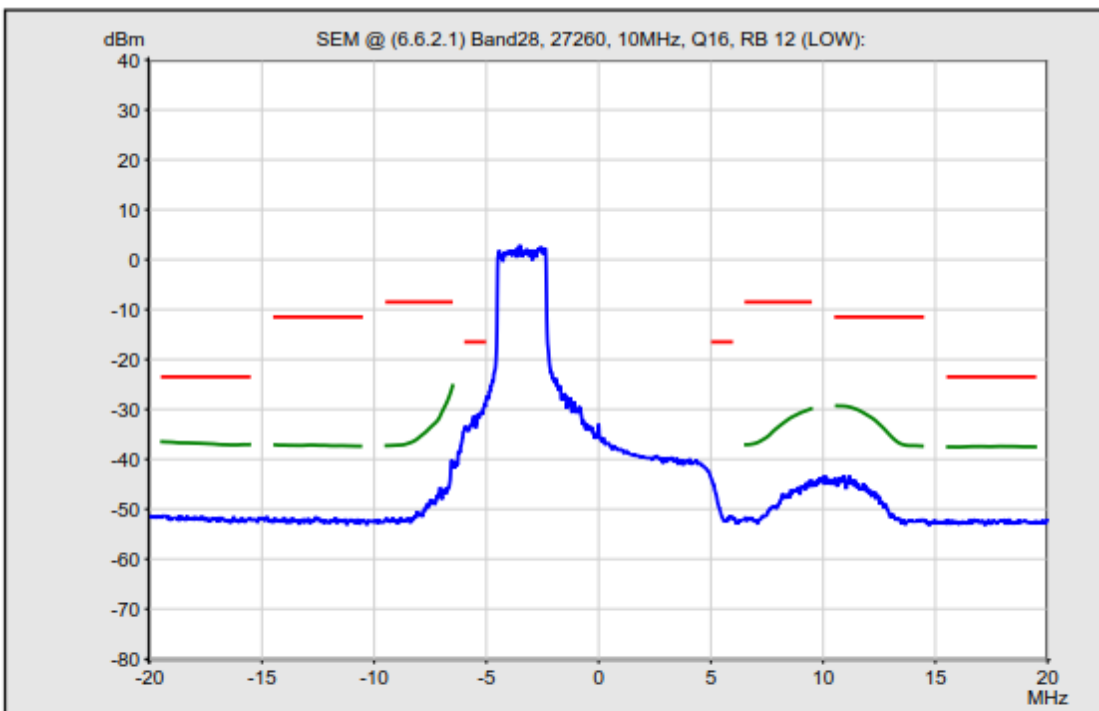
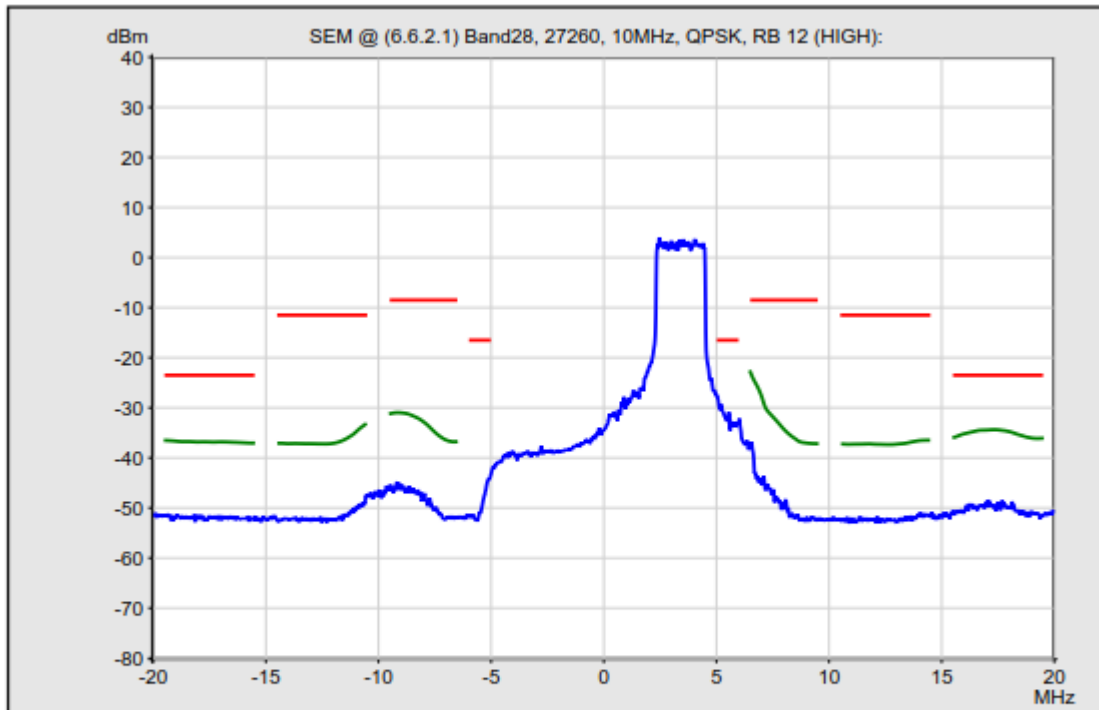


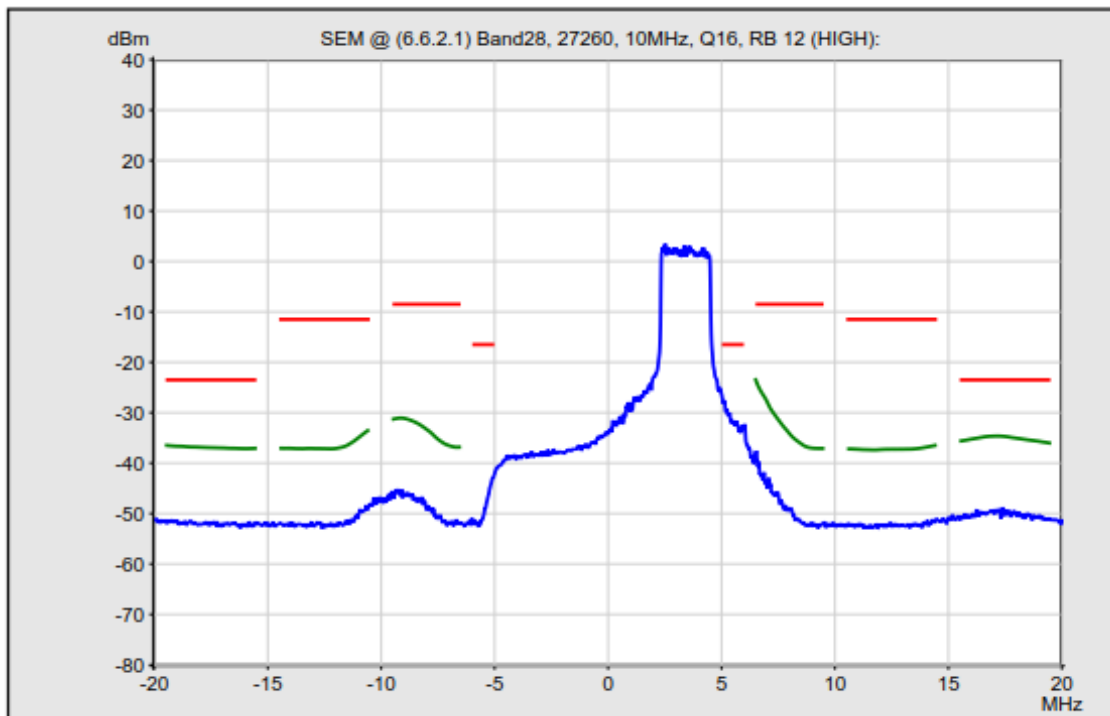


— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

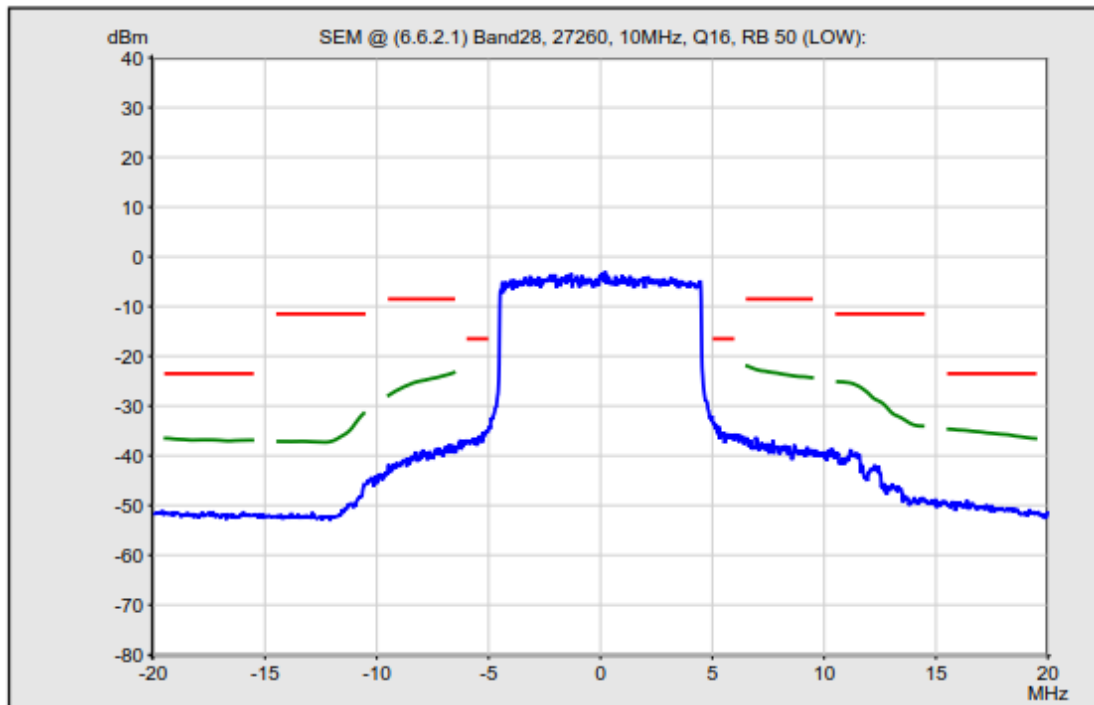


— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

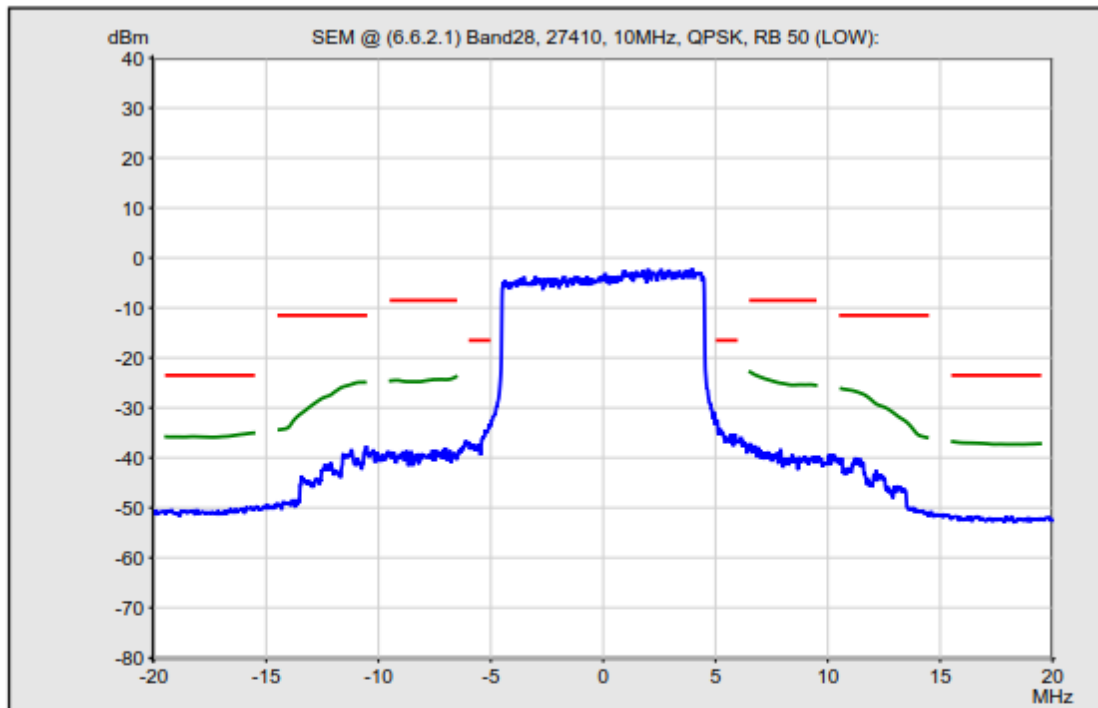




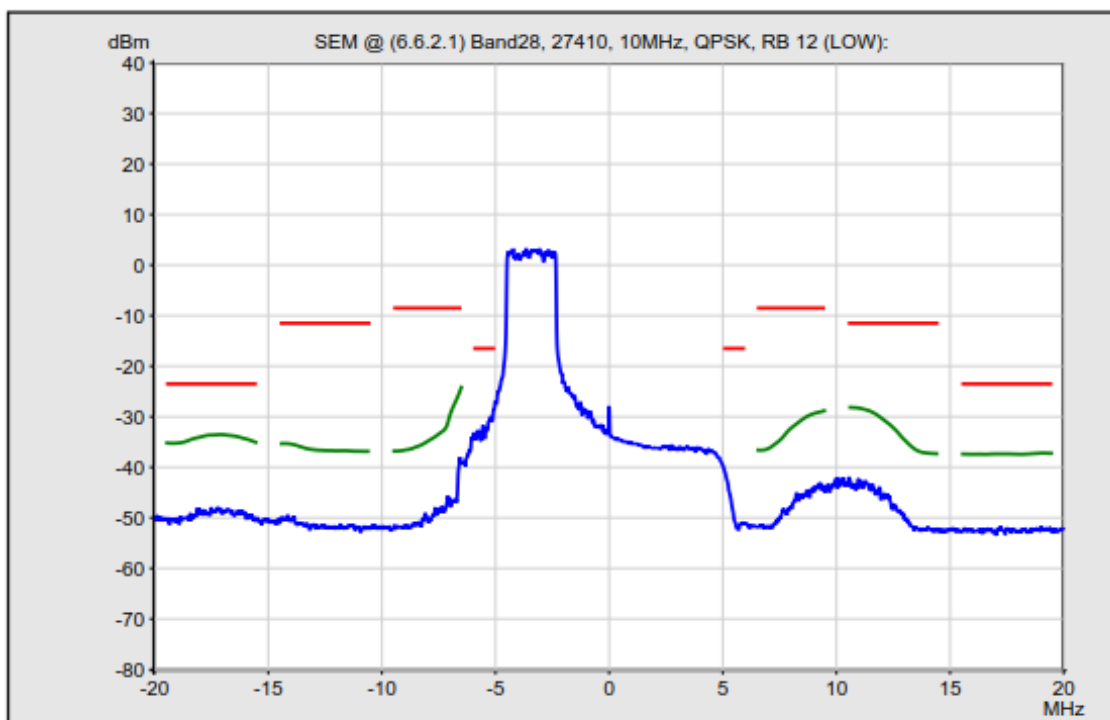
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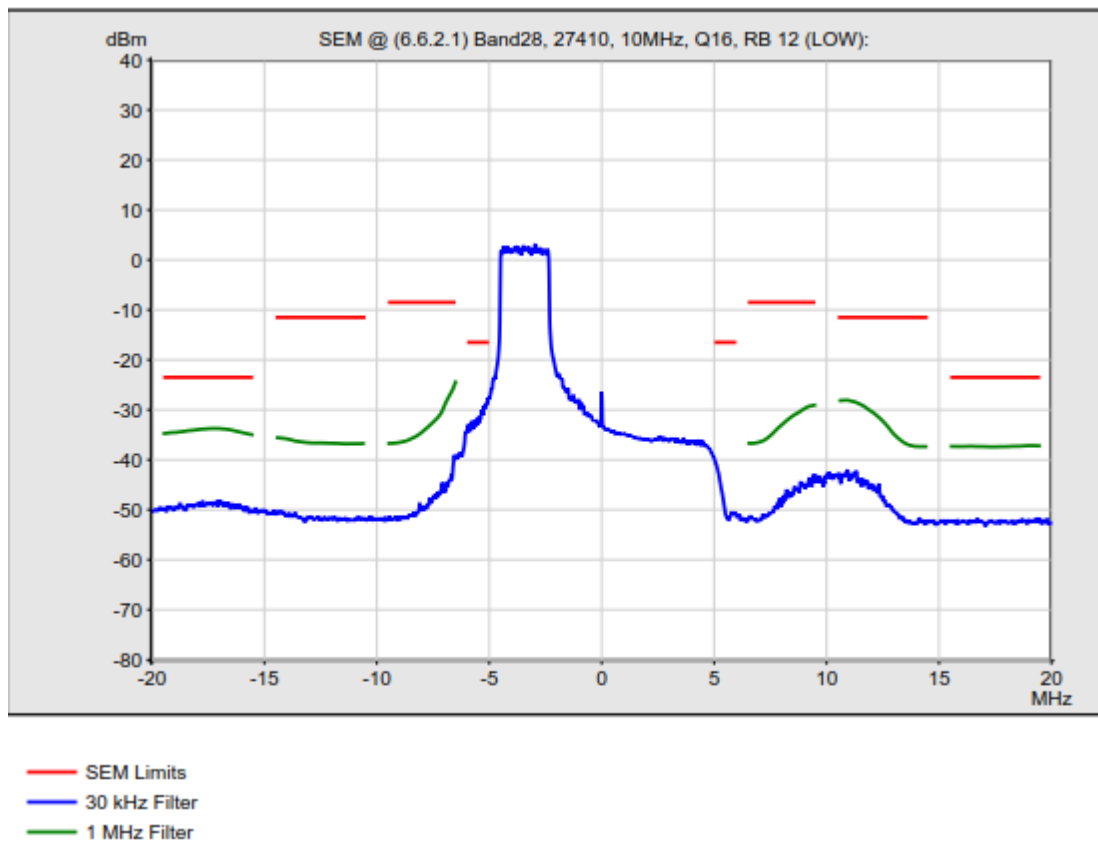
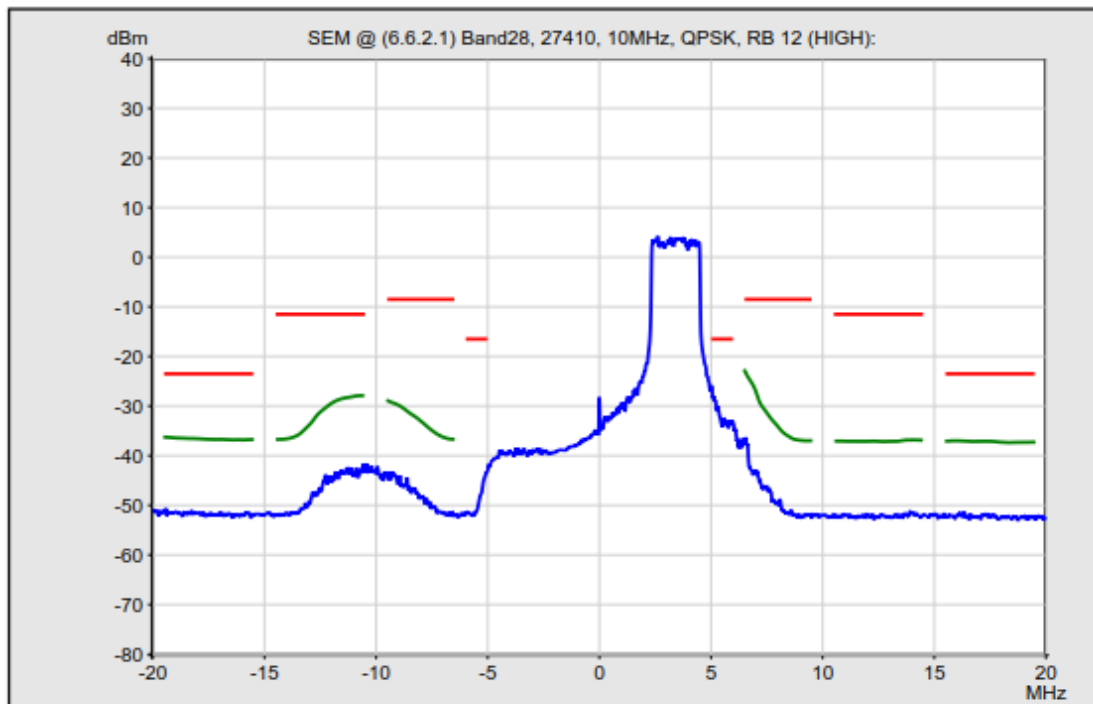
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— 30 kHz Filter
— 1 MHz Filter

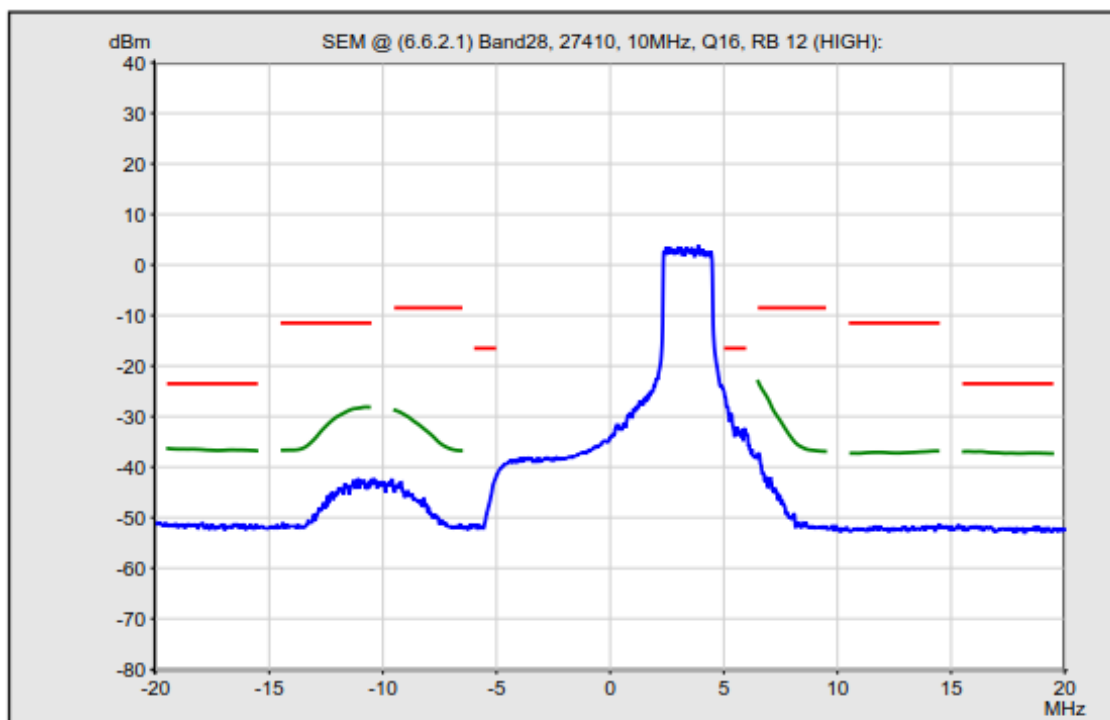


— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

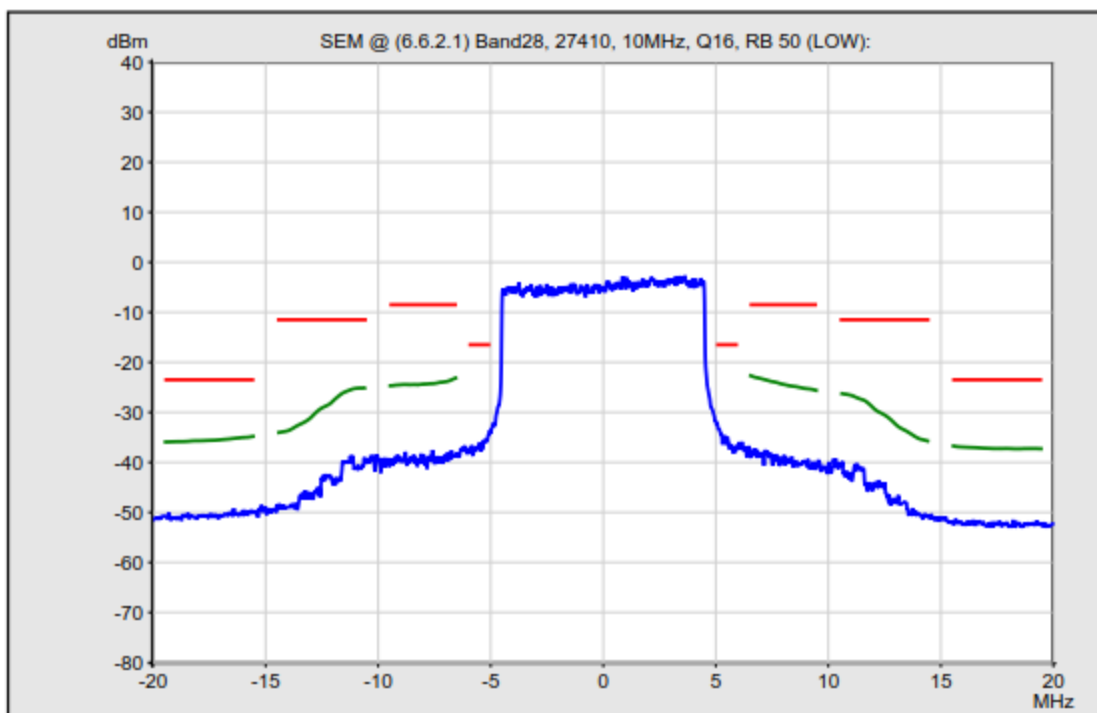


— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

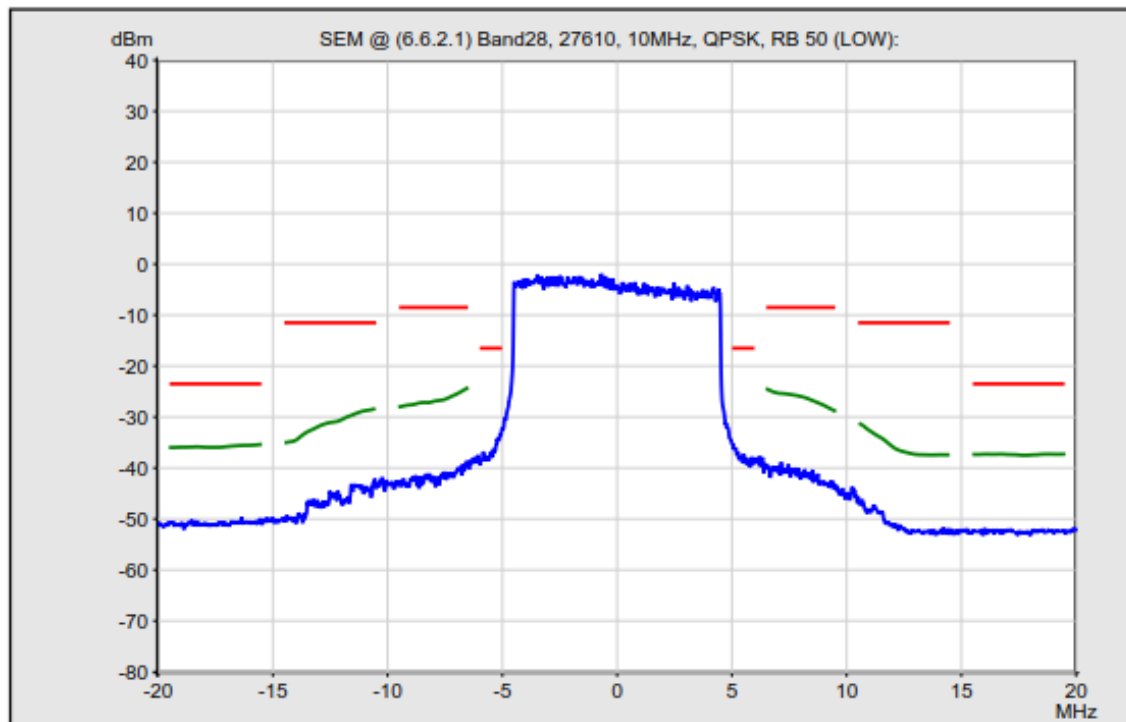




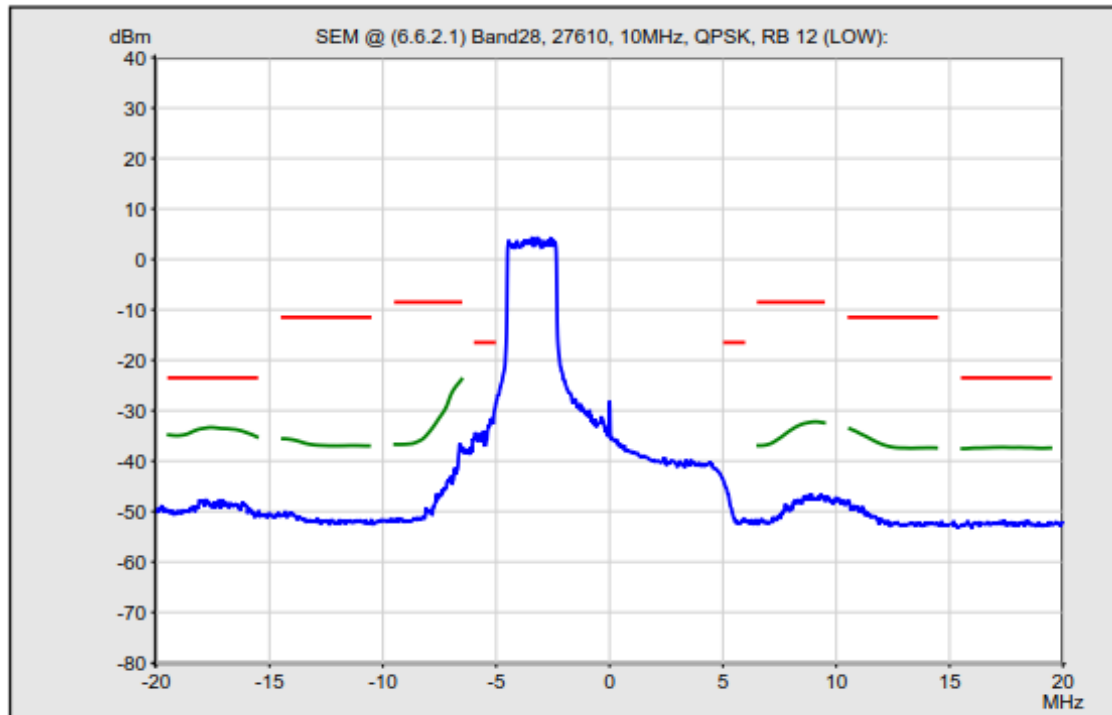
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter



— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

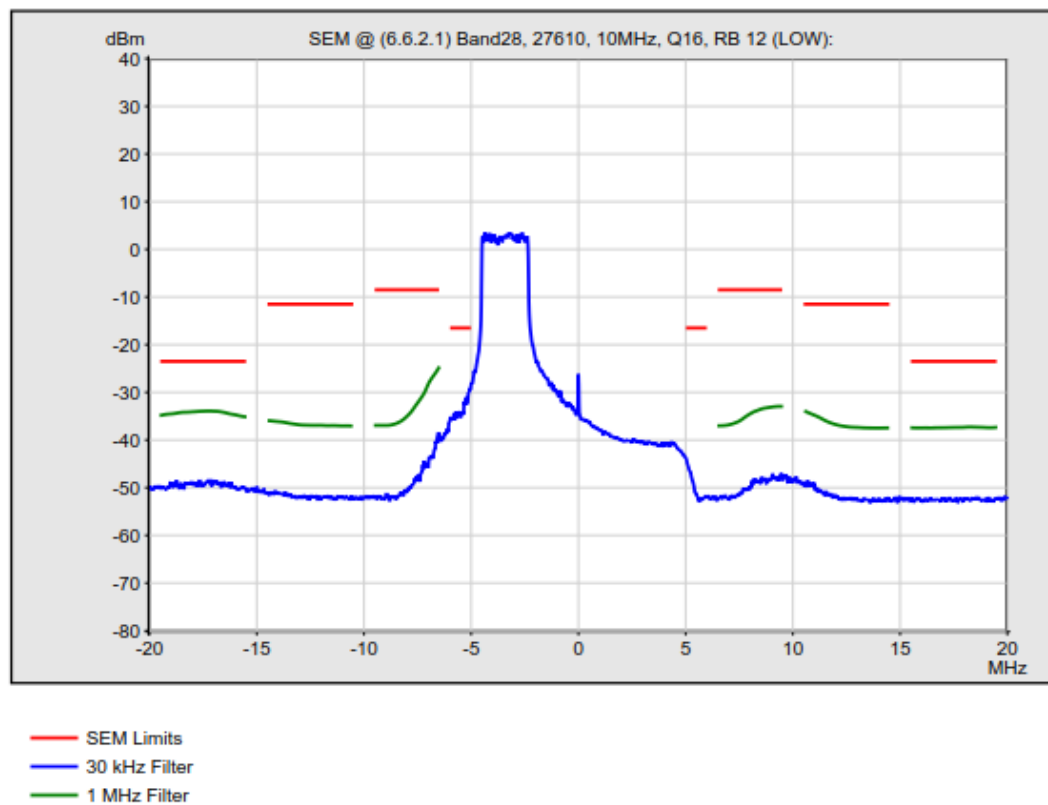
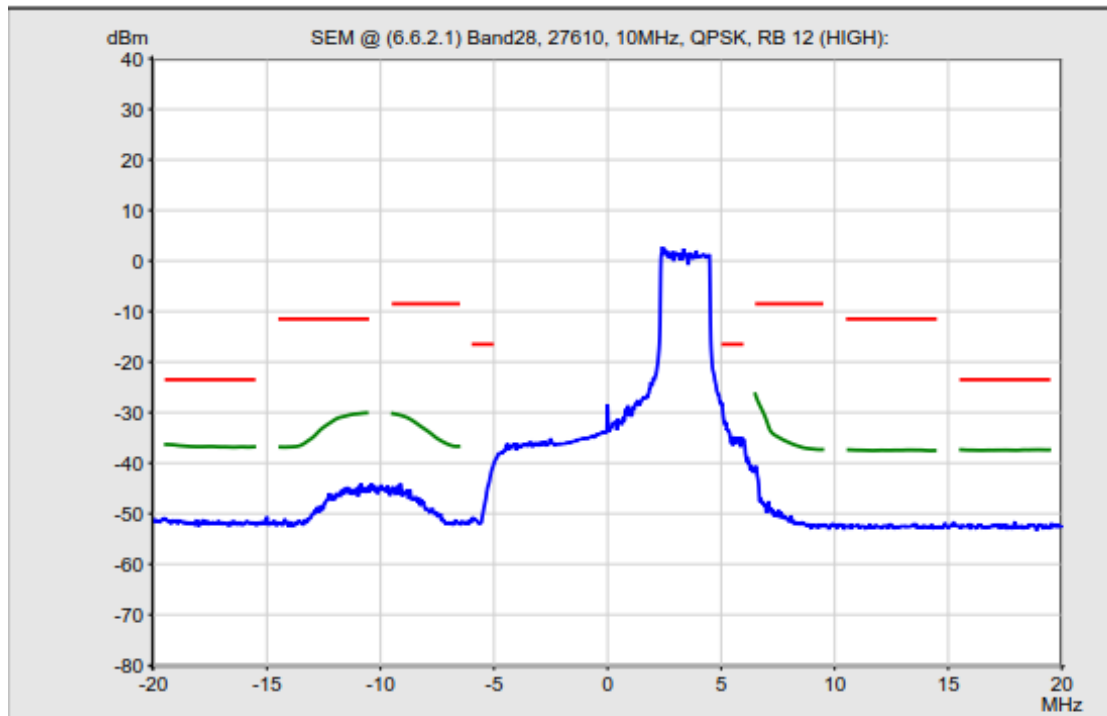


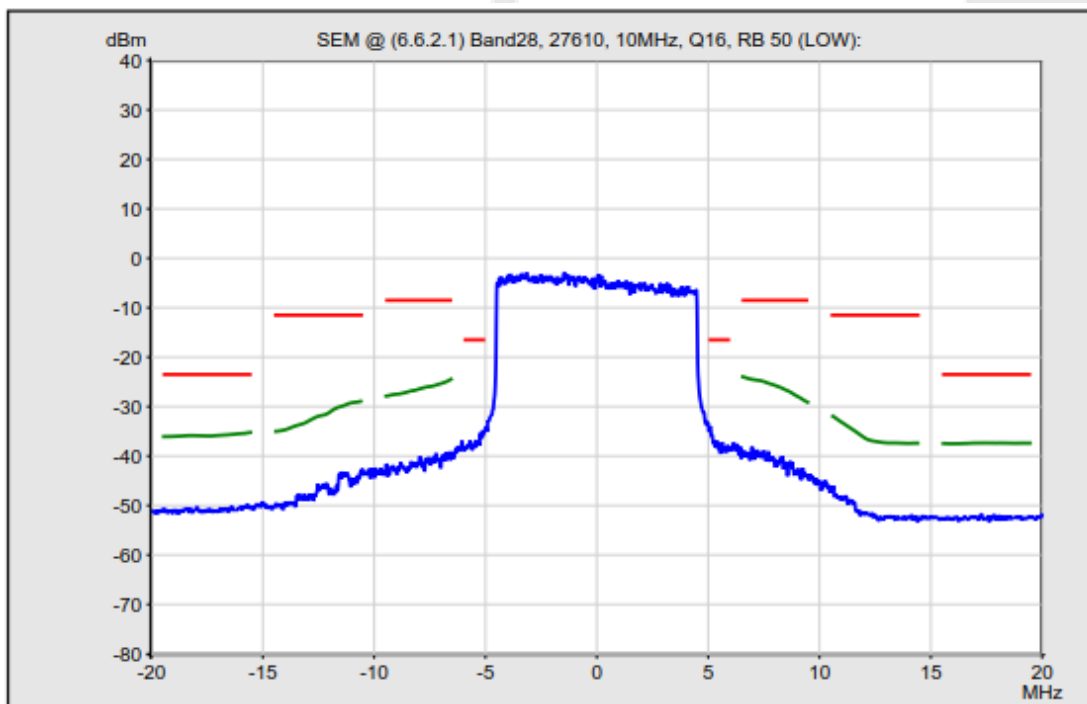
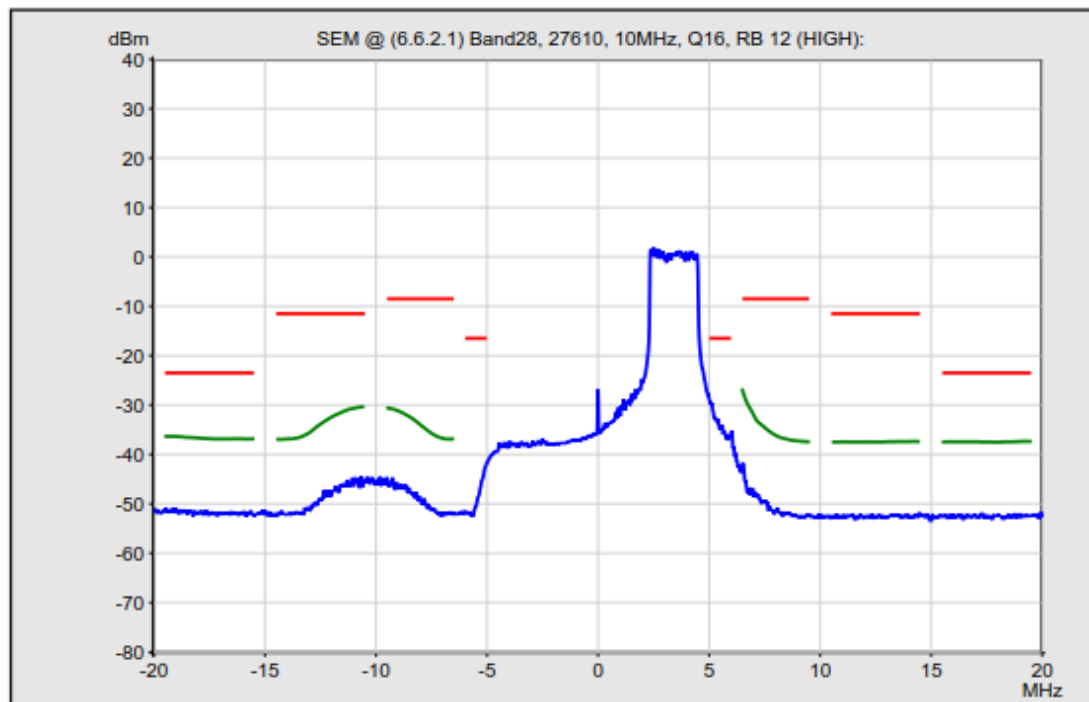
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

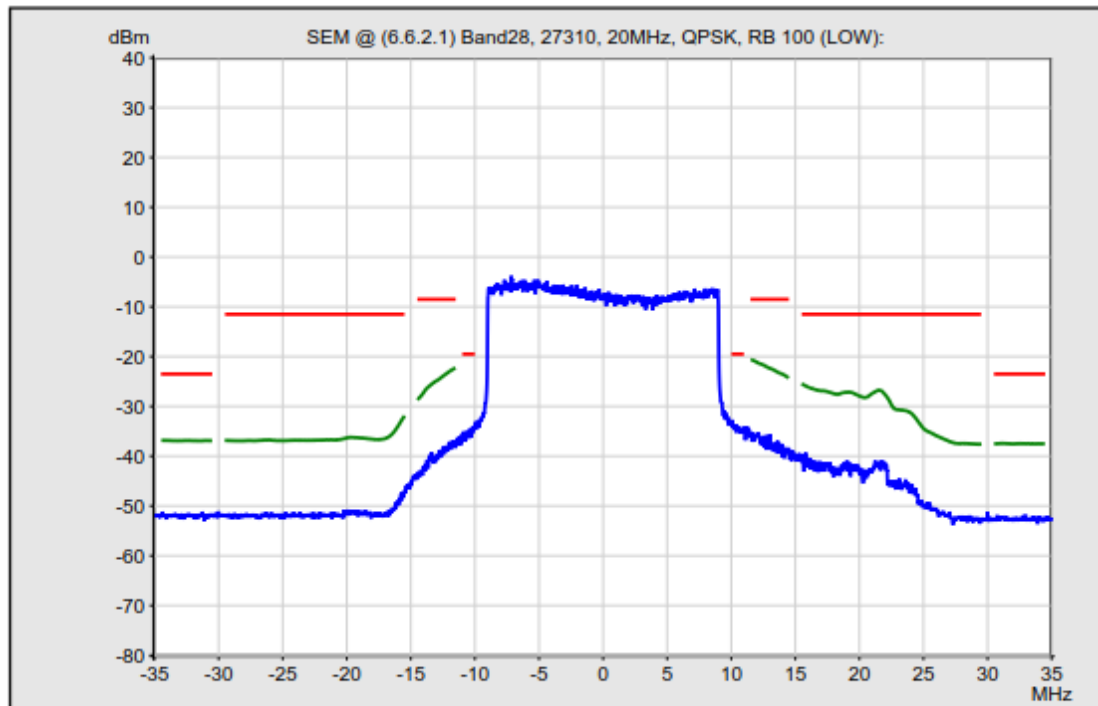


— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

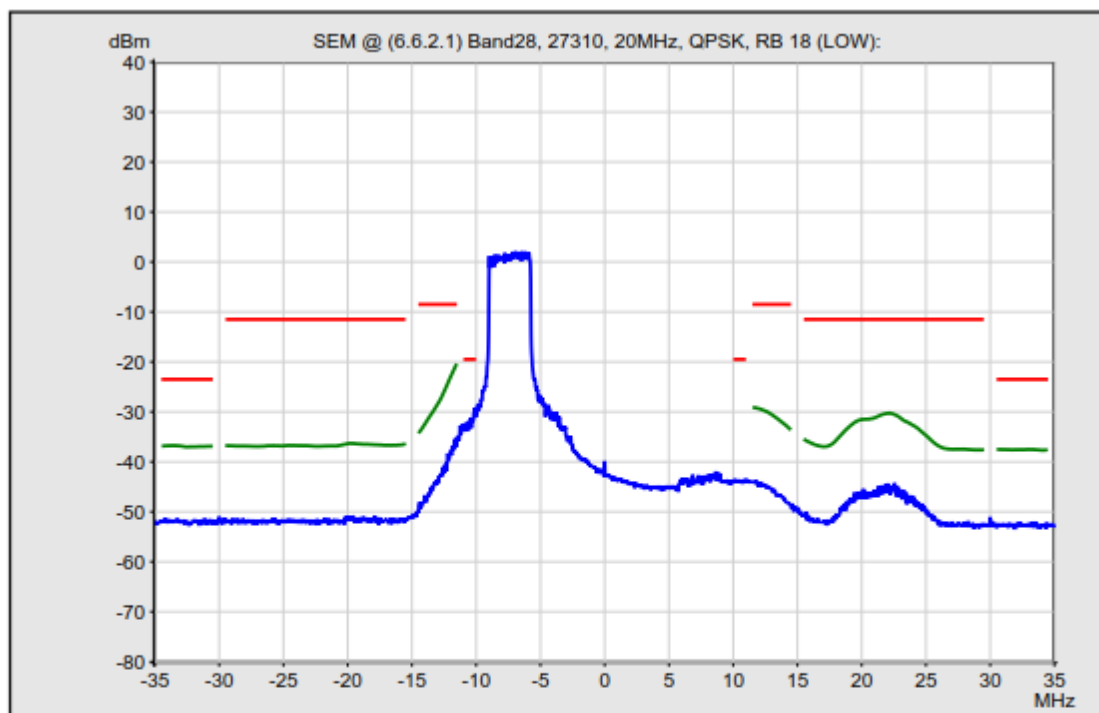




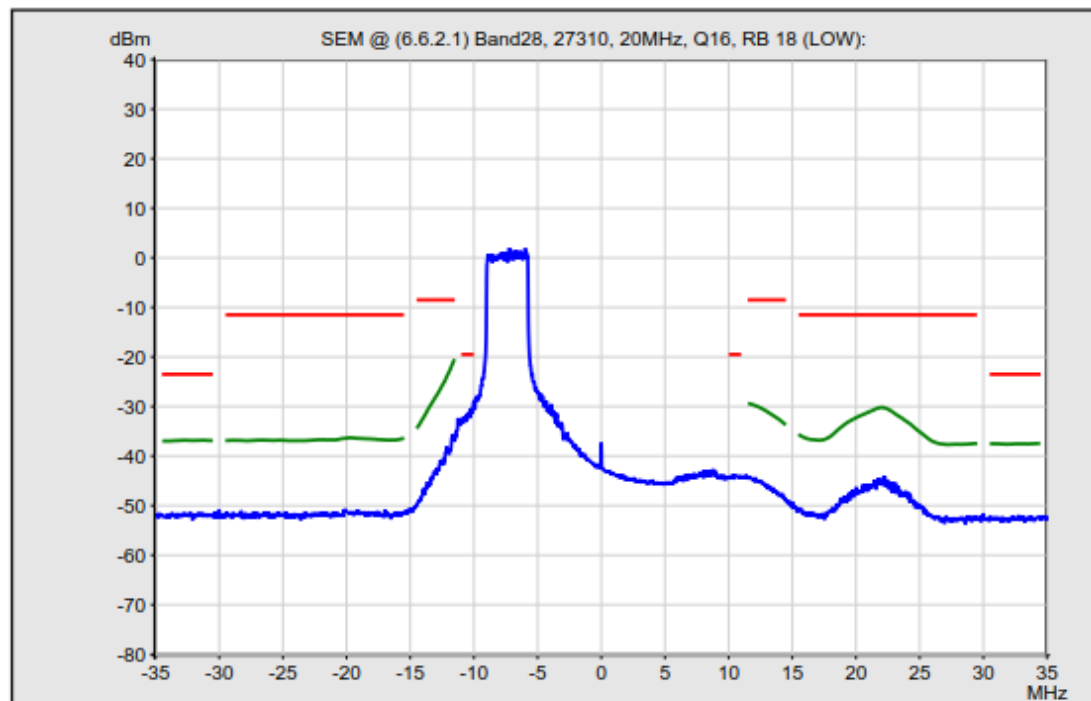
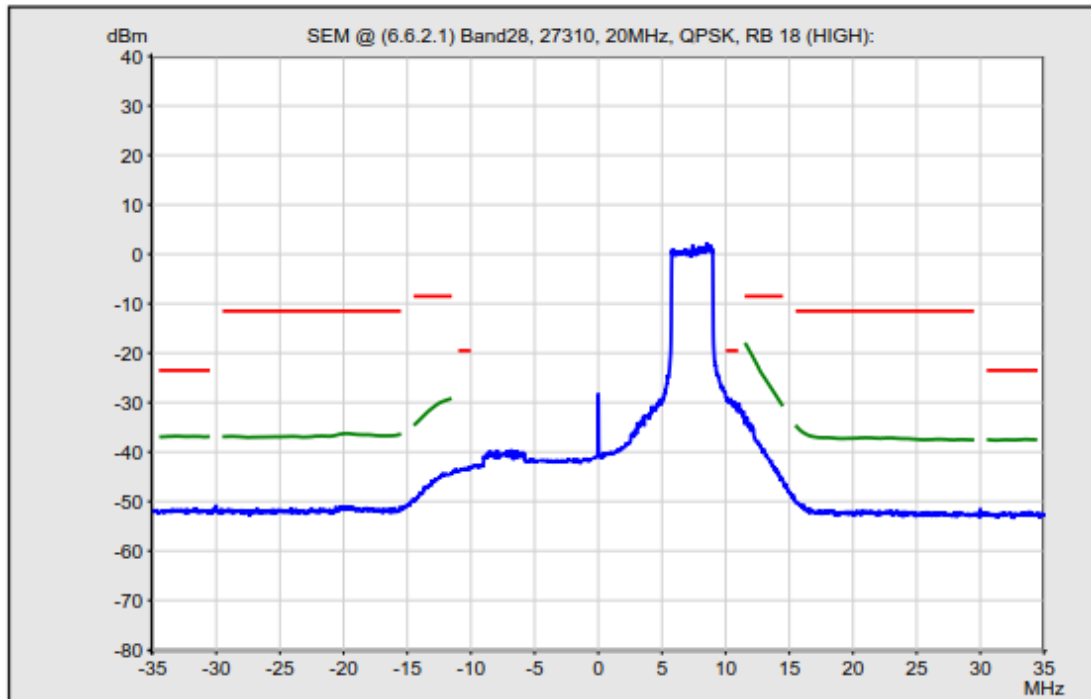


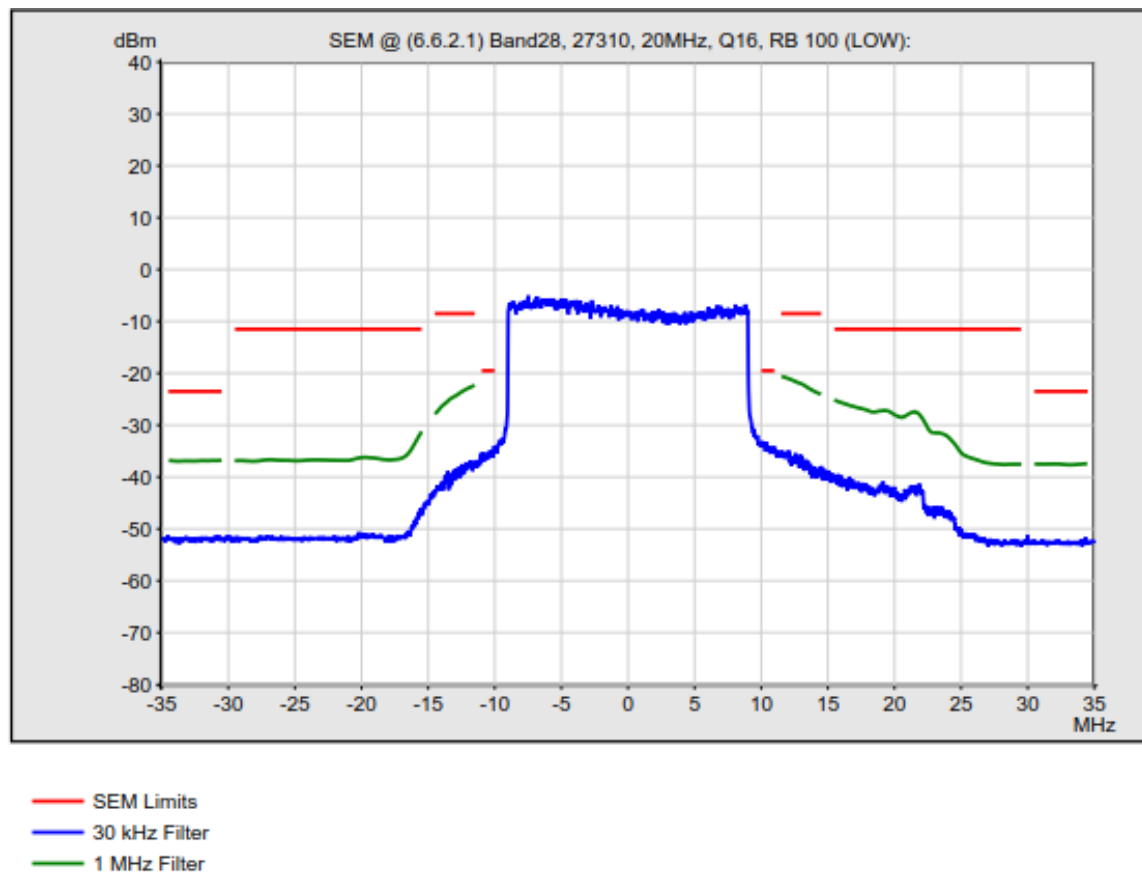
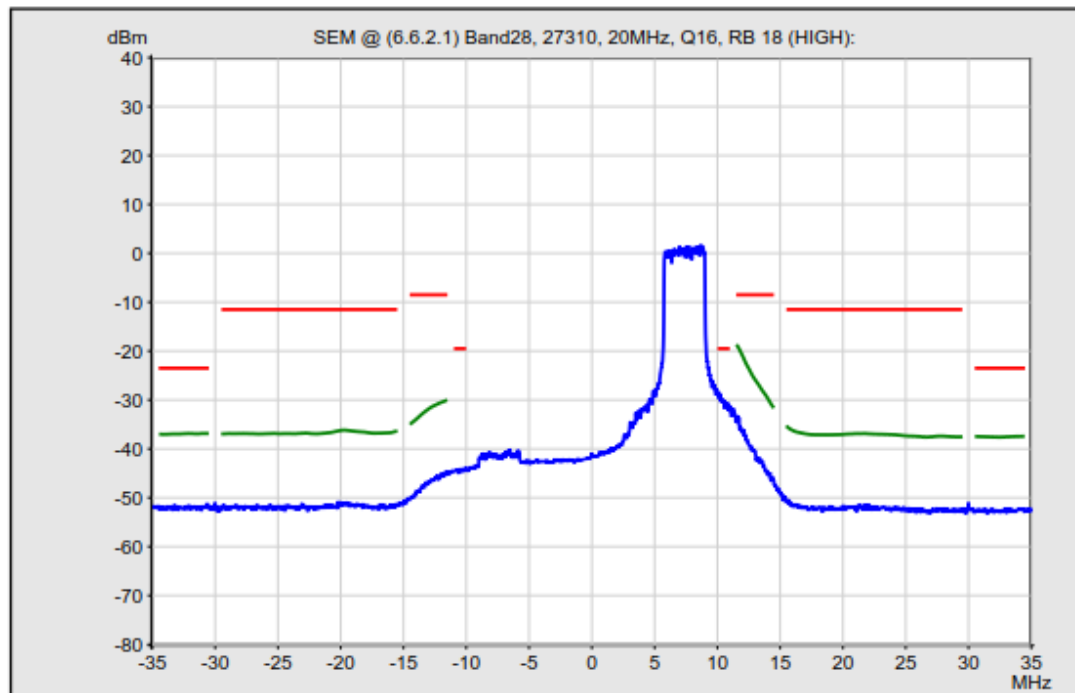


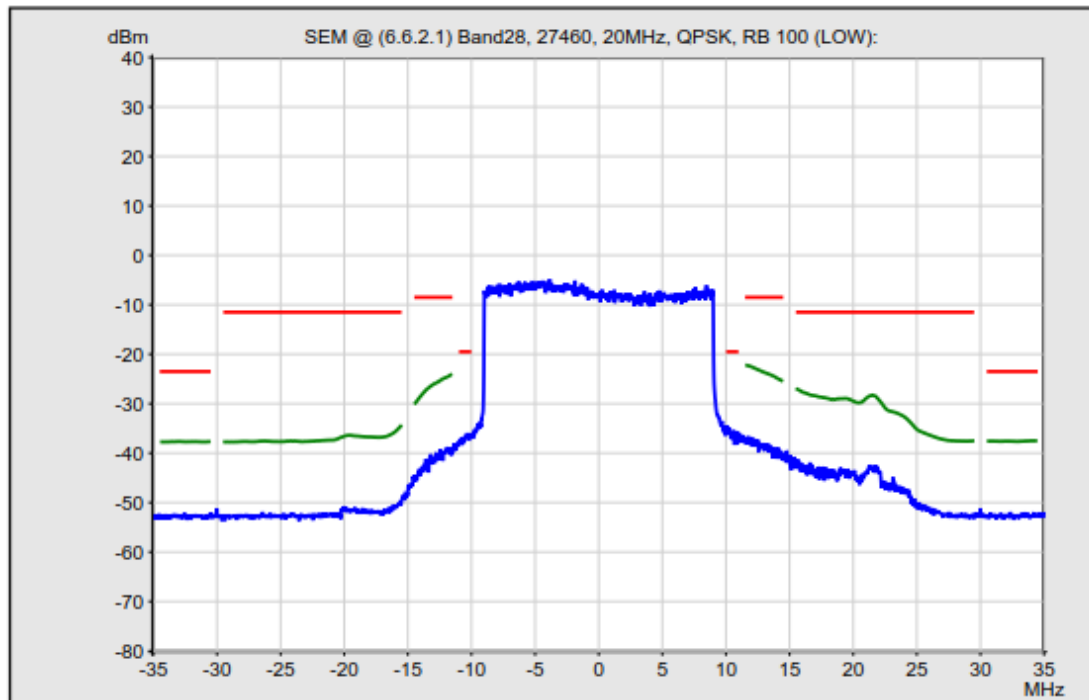
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter



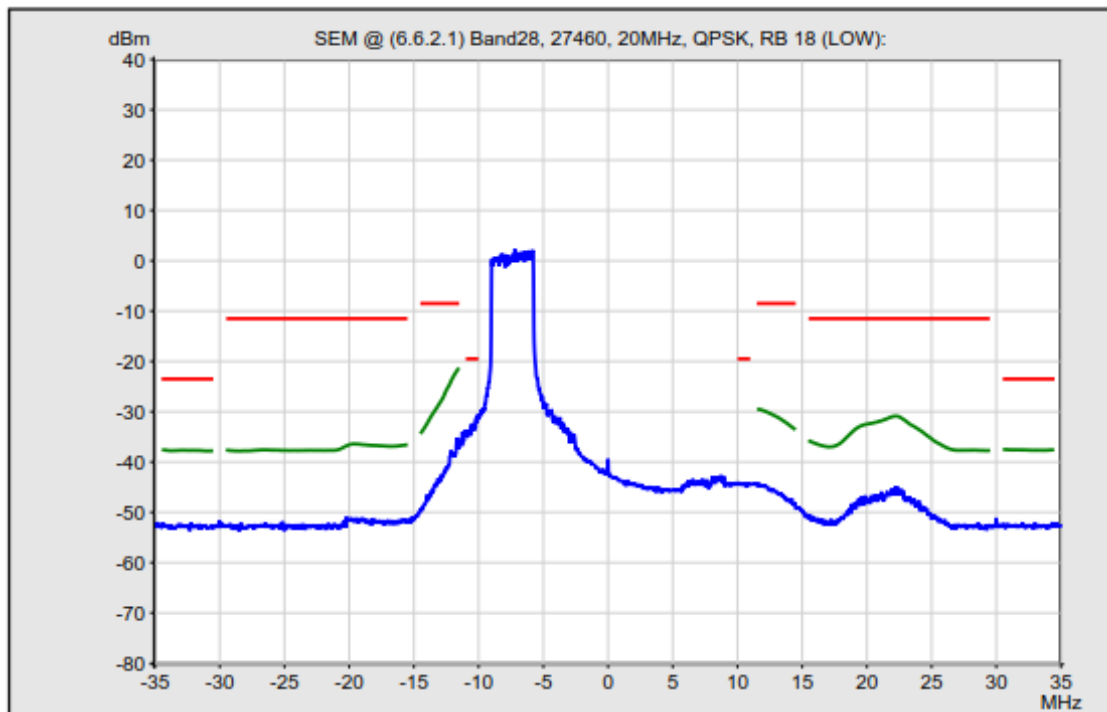
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter



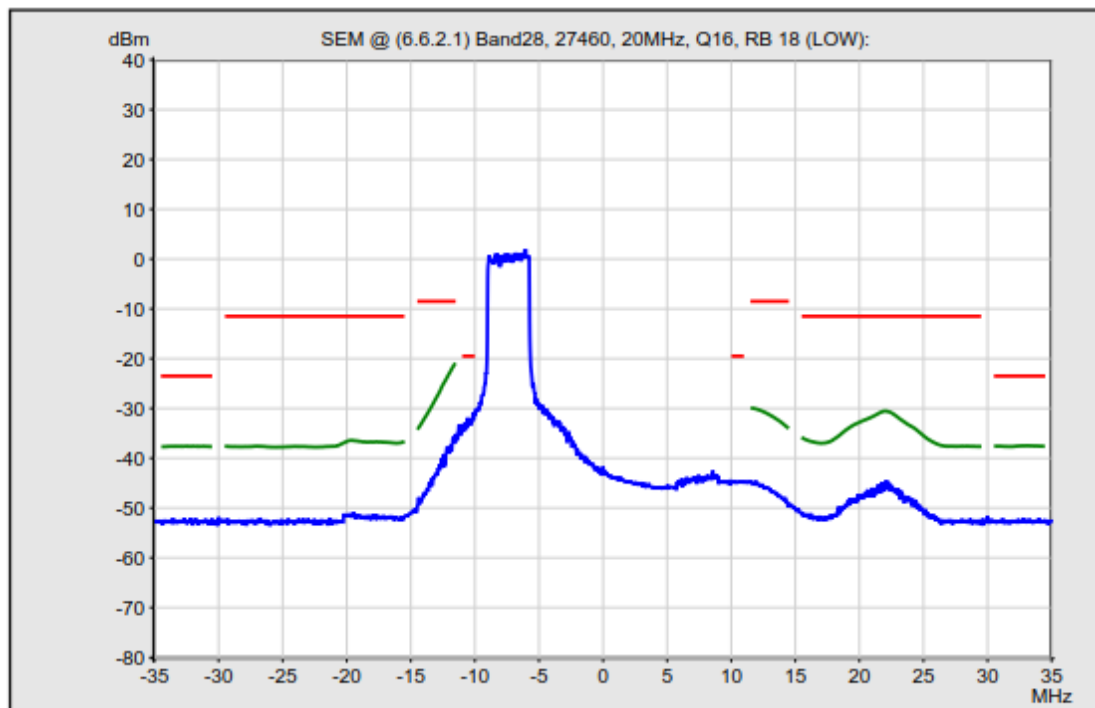
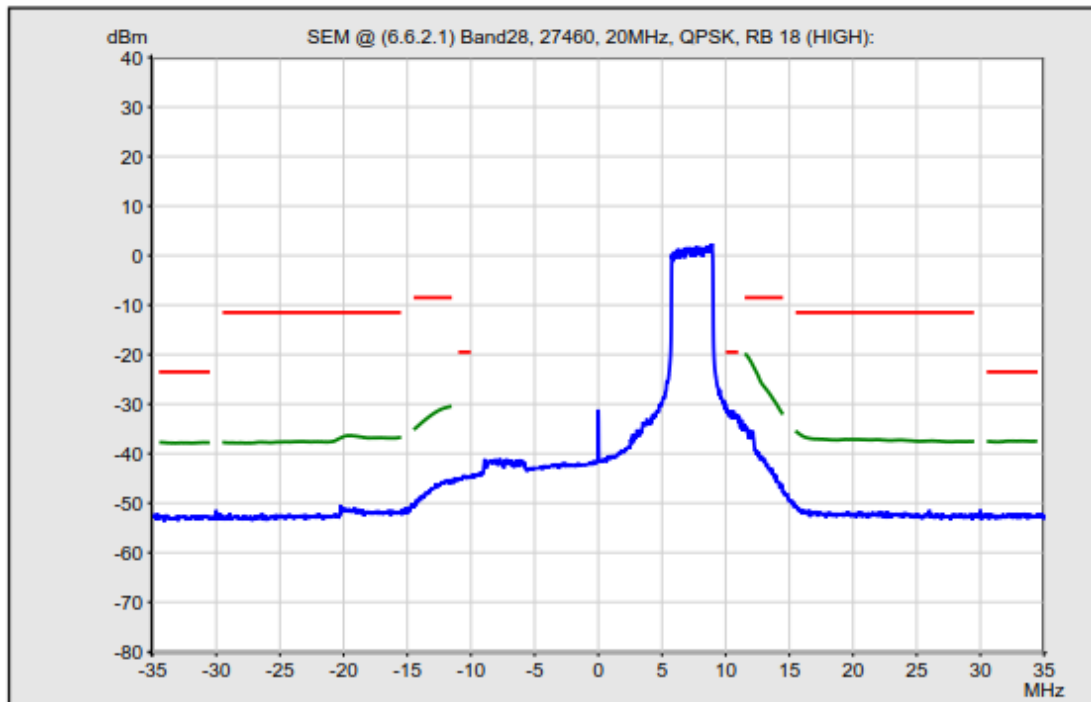


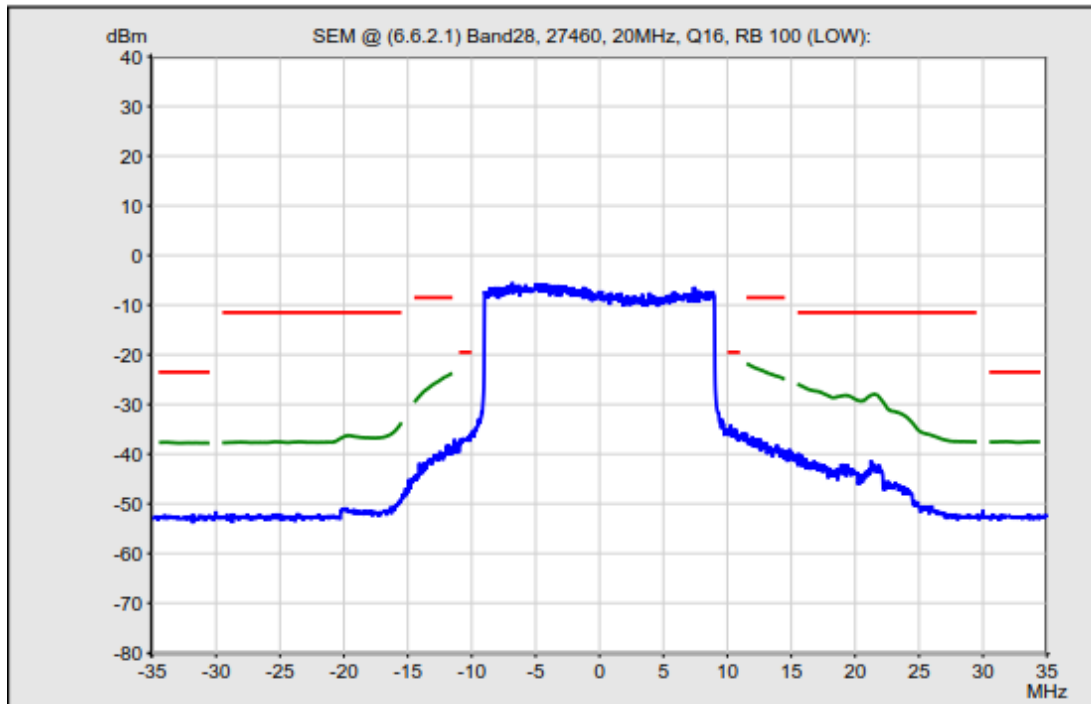
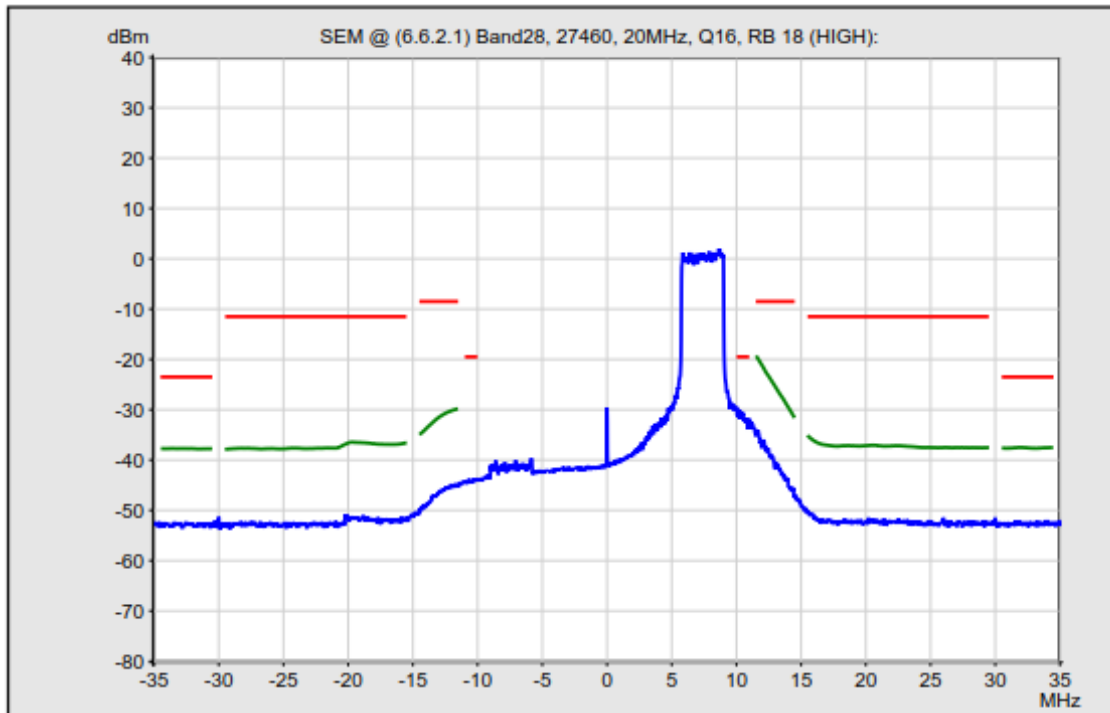


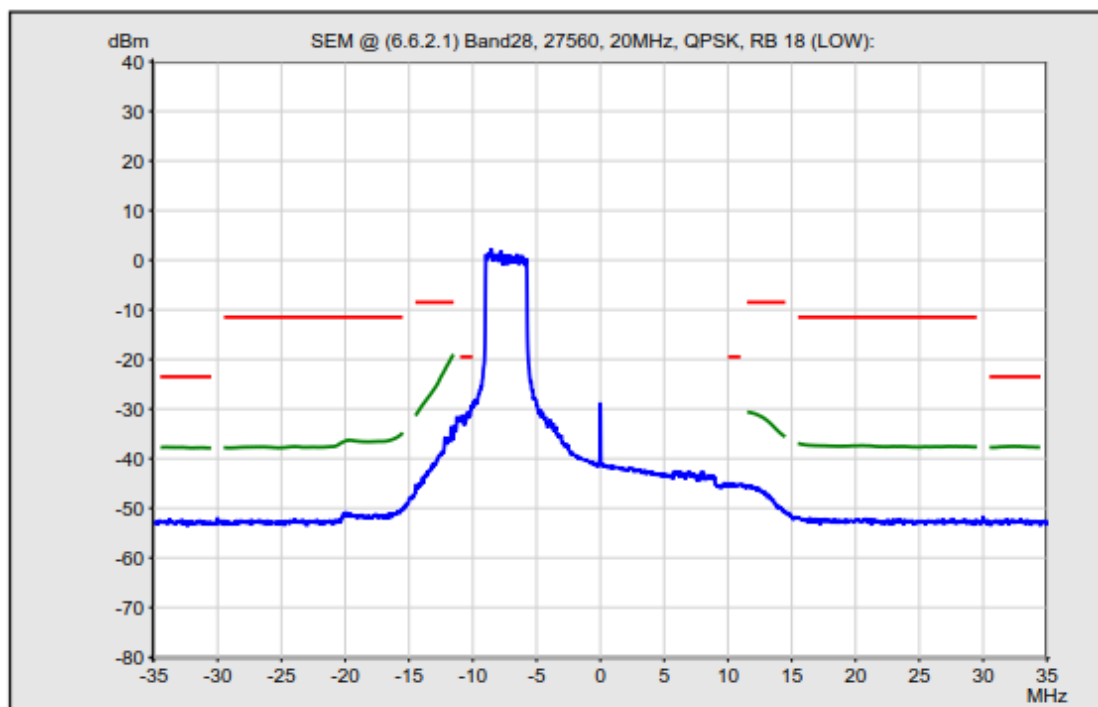
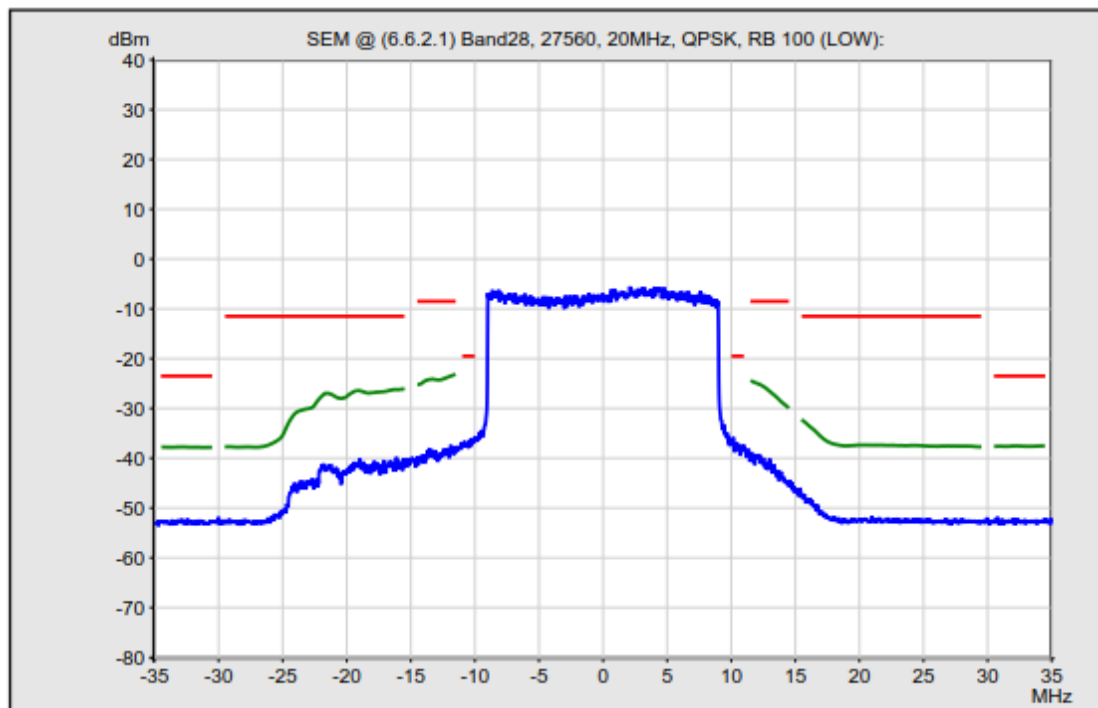
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

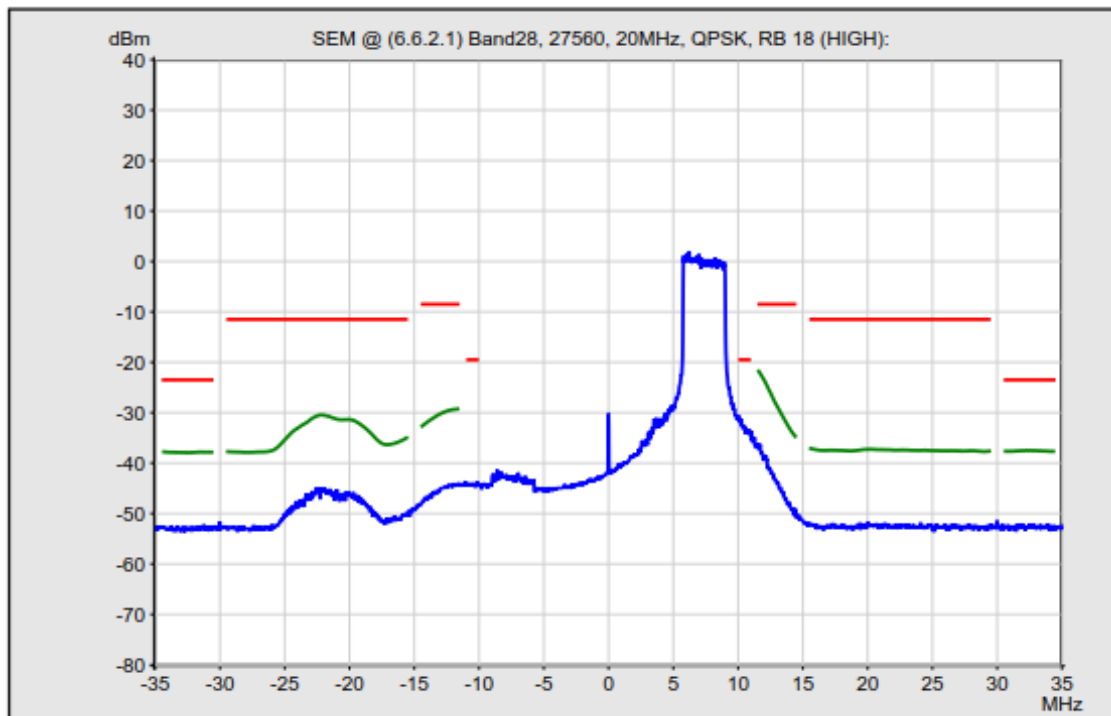


— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

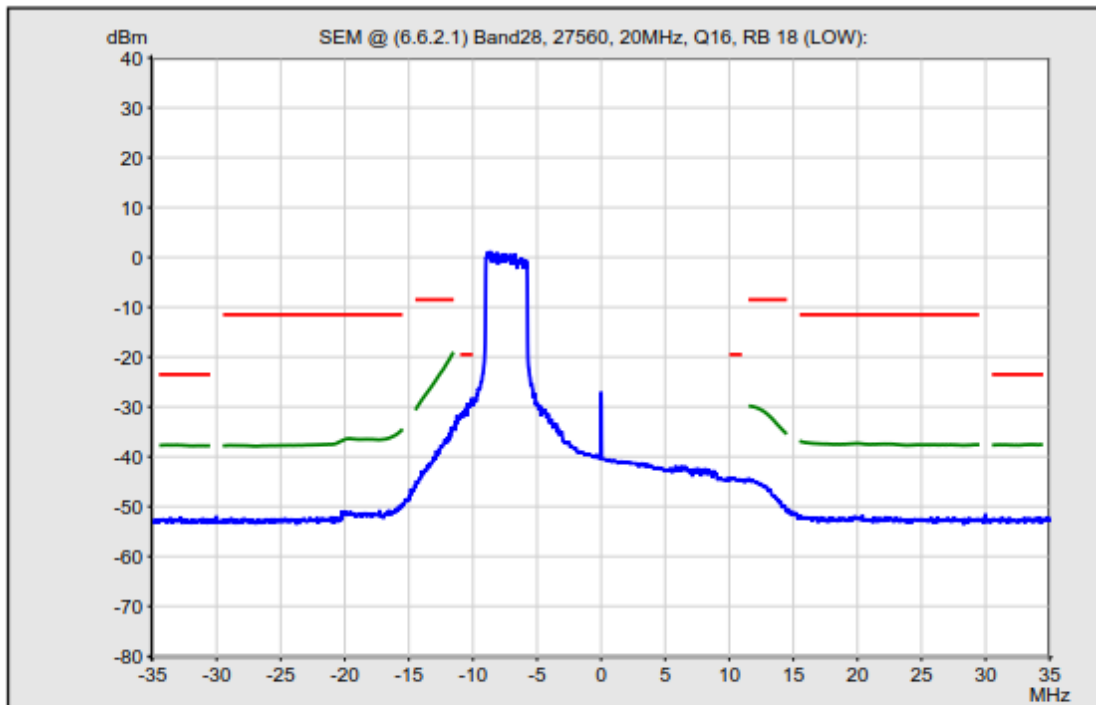




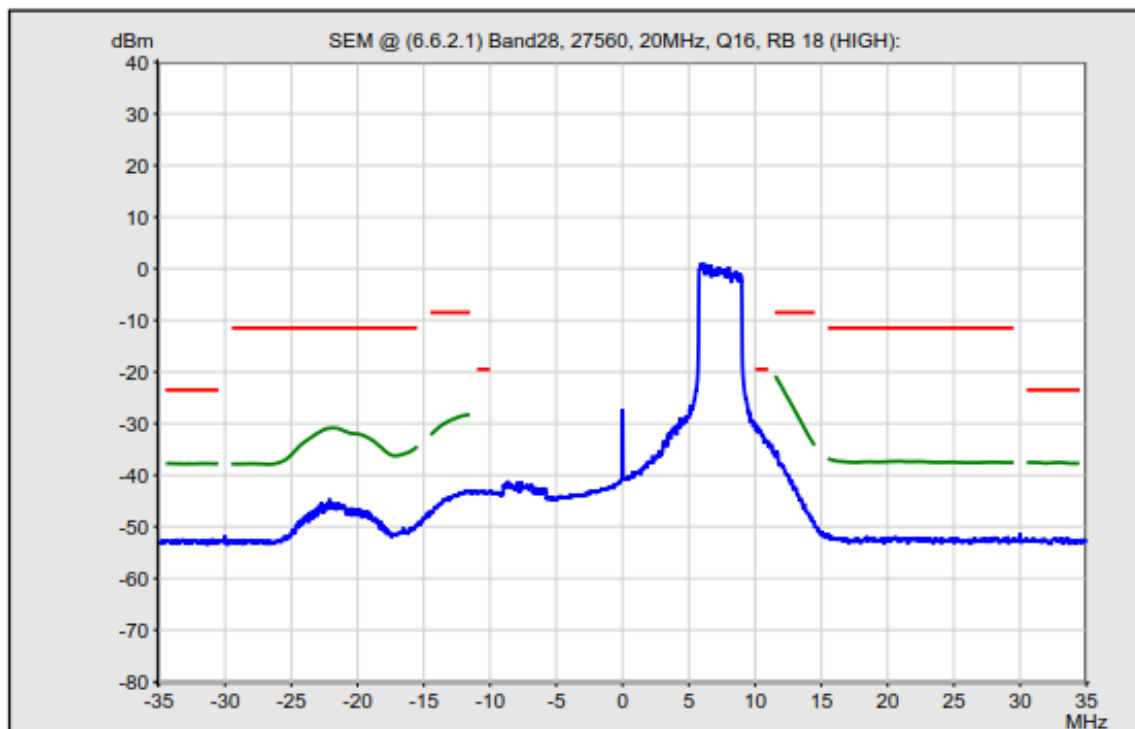




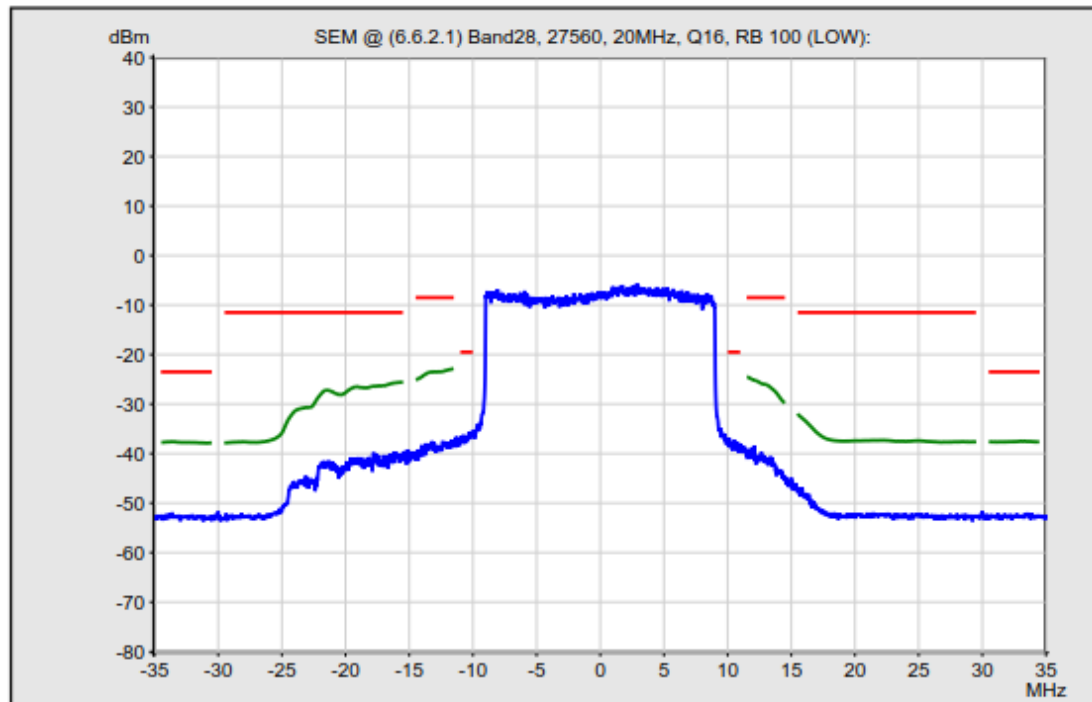
— SEM Limits
— 30 kHz Filter
— 1 MHz Filter



— SEM Limits
— 30 kHz Filter
— 1 MHz Filter



— SEM Limits
— 30 kHz Filter
— 1 MHz Filter



— SEM Limits
— 30 kHz Filter
— 1 MHz Filter

5. TRANSMITTER SPURIOUS EMISSIONS

5.1. Limit

The measured average power of spurious emission for general requirements shall not exceed the described values in below table

General spurious emissions test requirements

Frequency range	Maximum level	Measurement bandwidth	Comment
$9 \text{ kHz} \leq f < 150 \text{ kHz}$	-36 dBm	1 kHz	
$150 \text{ kHz} \leq f < 30 \text{ MHz}$	-36 dBm	10 kHz	
$30 \text{ MHz} \leq f < 1\,000 \text{ MHz}$	-36 dBm	100 kHz	
$1 \text{ GHz} \leq f < 12,75 \text{ GHz}$	-30 dBm	1 MHz	
$12,75 \text{ GHz} \leq f < 5^{\text{th}}$ harmonic of the upper frequency edge of the UL operating band in GHz	-30 dBm	1 MHz	See note
NOTE: Shall apply for Band 22, 42 and Band 43.			

UE co-existence limits

E-UTRA Band	Spurious emission						
	Protected band	Frequency range (MHz)			Maximum Level (dBm)	MBW (MHz)	Comment
1	E-UTRA Band 1, 7, 8, 20, 22, 28, 32, 38, 40, 42, 43	F _{DL_low}	-	F _{DL_high}	-50	1	
	E-UTRA Band 3, 34	F _{DL_low}	-	F _{DL_high}	-50	1	Note 3
	Frequency range	1900	-	1915	-15,5	5	Notes 3, 8
	Frequency range	1915	-	1920	+1,6	5	Notes 3, 8
3	E-UTRA Band 1, 7, 8, 20,28, 32, 33, 34, 38, 43	F _{DL_low}	-	F _{DL_high}	-50	1	
	E-UTRA Band 3	F _{DL_low}	-	F _{DL_high}	-50	1	Note 3
	E-UTRA Band 22, 42	F _{DL_low}	-	F _{DL_high}	-50	1	Note 2
7	E-UTRA Band 1, 3, 7, 8, 20, 22, 28, 32, 33, 34, 40, 42, 43	F _{DL_low}	-	F _{DL_high}	-50	1	
	Frequency range	2570		2575	+1,6	5	Notes 3, 4
	Frequency range	2575		2595	-15,5	5	Notes 3, 4
	Frequency range	2595		2620	-40	2	Notes 3, 4
8	E-UTRA Band 1, 20, 28, 32, 33, 34, 38, 40	F _{DL_low}	-	F _{DL_high}	-50	1	
	E-UTRA band 3	F _{DL_low}	-	F _{DL_high}	-50	1	Note 2
	E-UTRA band 7	F _{DL_low}	-	F _{DL_high}	-50	1	Note 2

	E-UTRA band 8	F _{DL_low}	-	F _{DL_high}	-50	1	Note 3
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E-UTRA Band	Spurious emission						
	Protected band	Frequency range (MHz)			Maximum Level (dBm)	MBW (MHz)	Comment
8	E-UTRA Band 22, 42, 43	F _{DL_low}	-	F _{DL_high}	-50	1	Note 2
20	E-UTRA Band 1, 3, 7, 8, 22, 32, 33, 34, 40, 43	F _{DL_low}	-	F _{DL_high}	-50	1	
	E-UTRA Band 20	F _{DL_low}	-	F _{DL_high}	-50	1	Note 3
	E-UTRA Band 38, 42	F _{DL_low}	-	F _{DL_high}	-50	1	Note 2
	Frequency range	758		788	-50	1	
22	E-UTRA Band 1, 3, 7, 8, 20, 28, 32, 33, 34, 38, 40, 43	F _{DL_low}	-	F _{DL_high}	-50	1	
	Frequency range	3510		3525	-40	5	Notes 3
	Frequency range	3525		3590	-50	1	
28	E-UTRA Band 3, 7, 8, 20, 32, 34, 38	F _{DL_low}	-	F _{DL_high}	-50	1	
	E-UTRA Band 1, 22, 42, 43	F _{DL_low}	-	F _{DL_high}	-50	1	Note 2
	E-UTRA Band 1	F _{DL_low}	-	F _{DL_high}	-50	1	Note 6
	Frequency range	758		773	-32	1	Note 3
	Frequency range	773		803	-50	1	
	Frequency range	470		694	-42	8	Note 3,7
33	E-UTRA Band 1, 7, 8, 20, 22, 28, 32, 34, 38, 40, 42,43	F _{DL_low}	-	F _{DL_high}	-50	1	

	E-UTRA Band 3	F _{DL_low}	-	F _{DL_high}	-50	1	Note 3
34	E-UTRA Band 1, 3, 7, 8, 20, 22, 28, 32, 33, 38, 40, 42,43	F _{DL_low}	-	F _{DL_high}	-50	1	
38	E-UTRA Band 1, 3, 8, 20,22, 28, 32, 33, 34, 40, 42,43	F _{DL_low}	-	F _{DL_high}	-50	1	
	Frequency range	2620	-	2645	-15.5	5	Note 3,5
	Frequency range	2645	-	3690	-40	1	Note 3,5
40	E-UTRA Band 1, 3, 7, 8, 20,22, 28, 32, 33, 34, 38, 42,43	F _{DL_low}	-	F _{DL_high}	-50	1	
42	E-UTRA Band 1, 3, 7, 8, 20,28, 32, 33, 34, 38, 40	F _{DL_low}	-	F _{DL_high}	-50	1	

E-UTRA Band	Spurious emission						
	Protected band	Frequency range (MHz)			Maximum Level (dBm)	MBW (MHz)	Comment
43	E-UTRA Band 1, 3, 7, 8, 20,22, 28, 32, 33, 34, 38, 40	F _{DL_low}	-	F _{DL_high}	-50	1	

NOTE 1: F_{DL_low} and F_{DL_high} refer to each frequency range of the protected E-UTRA band.

NOTE 2: As exceptions, measurements with a level up to the applicable requirements defined in table 4.2.4.1.2-2 are permitted for each assigned E-UTRA carrier used in the measurement due to 2nd, 3rd or 4th harmonic spurious emissions. Due to spreading of the harmonic emission the exception shall be allowed for the first 1 MHz frequency range immediately outside the harmonic emission on both sides of the harmonic emission. This results in an overall exception interval centred at the harmonic emission of (2 MHz + N x L_{CRB} x 180 kHz), where N is 2, 3, 4 for the 2nd, 3rd or 4th harmonic respectively. The exception is allowed if the measurement bandwidth (MBW) totally or partially overlaps the overall exception interval.

NOTE 3: These requirements shall also apply for the frequency ranges that are less than Δf_{OOB} (MHz) in table 4.2.4.1.2-1 from the edge of the channel bandwidth.

NOTE 4: This requirement shall be applicable for any channel bandwidths within the range 2 500 - 2 570 MHz with the following restriction: for carriers of 15 MHz bandwidth when carrier centre frequency is within the range 2 560,5 - 2 562,5 MHz and for carriers of 20 MHz bandwidth when carrier centre frequency is within the range 2 552 - 2 560 MHz the requirement is applicable only for an uplink transmission bandwidth less than or equal to 54 RB.

NOTE 5: This requirement shall be applicable for any channel bandwidths within the range 2 570 - 2 615 MHz with the following restriction: for carriers of 15 MHz bandwidth when carrier centre frequency is within the range 2 605,5 - 2 607,5 MHz and for carriers of 20 MHz bandwidth when carrier centre frequency is within the range 2 597 - 2 605 MHz the requirement is applicable only for an uplink transmission bandwidth less than or equal to 54 RB.

For carriers with channel bandwidth overlapping the frequency range 2 615 - 2 620 MHz the requirement shall apply with the maximum output power configured to +19 dBm.

NOTE 6: As exceptions, measurements with a level up to the applicable requirement of -36 dBm/MHz is permitted for each assigned E-UTRA carrier used in the measurement due to 3rd harmonic spurious emissions. An exception is allowed if there is at least one individual RB within the transmission bandwidth (see figure 5.4.2-1 in ETSI TS 136 521-1 [1]) for

which the 3rd harmonic totally or partially overlaps the measurement bandwidth (MBW).

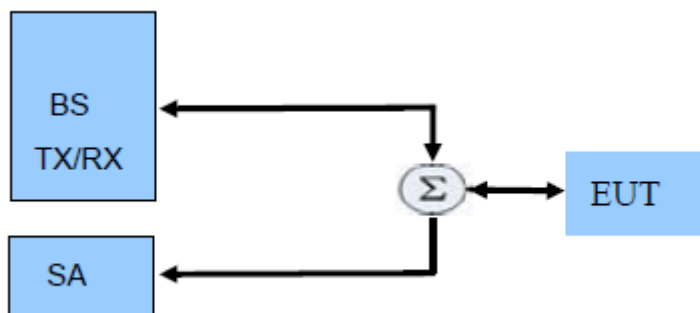
NOTE 7: This requirement shall be applicable in the case of a 10 MHz E-UTRA carrier confined within 703 MHz and 733 MHz, otherwise the requirement of -25 dBm with a measurement bandwidth of 8 MHz applies.

NOTE 8: This requirement shall be applicable for any channel bandwidths within the range 1 920 - 1 980 MHz with the following restriction: for carriers of 15 MHz bandwidth when carrier centre frequency is within the range 1 927,5 - 1 929,5 MHz and for carriers of 20 MHz bandwidth when carrier centre frequency is within the range 1 930 - 1 938 MHz the requirement is applicable only for an uplink transmission bandwidth less than or equal to 54 RB.

Additional spurious emissions requirements

E-UTRA band	Protected Frequency range	Maximum Level (dBm)	MBW (MHz)
20	$470 \text{ MHz} \leq f \leq 790 \text{ MHz}$	-65	8MHz
NOTE: The conformance shall be assessed using the measurement position placed at the following centre frequencies: 474 MHz, 586 MHz, 690 MHz, 754 MHz, 770 MHz and 786 MHz.			

5.2. Test Setup



5.3. Test Procedure

According to EN 301 908-13 , section 5.3.3

1. Connect the SS to the UE antenna connectors.
2. SS sends uplink scheduling information for each UL HARQ process via PDCCH DCI format 0 for C_RNTI to schedule the UL RMC according to table 6.2.2.1.4.1-1 of TS 36 521-1 [1]. Since the UE has no payload and no loopback data to send the UE sends uplink

MAC padding bits on the ULRMC.

3. Send continuously uplink power control "up" commands in the uplink scheduling information to the UE until the UE transmits at PUMAX level.
4. For each applicable requirement in tables from 4.2.4.1.2-2 to 4.2.4.1.2-6; measure the power of the transmitted signal with a measurement filter of bandwidths. The center frequency of the filter shall be stepped in contiguous steps according to the tables. The measured power shall be verified for each step. The measurement period shall capture the active time slots.
5. Repeat for applicable test frequencies, channel bandwidths and operating band combinations.

5.4. Test Result

Test Mode		Band 1				
Test Environment		Normal				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz and highest channel				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
5MHz	N/A for Max UE output power testing			QPSK	25	PASS
5MHz				QPSK	1	PASS
20MHz				QPSK	100	PASS
20MHz				QPSK	1	PASS

Test Mode		Band 3				
Test Environment		Normal				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz and highest channel				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
1.4MHz	N/A for Max UE output power testing			QPSK	6	PASS
1.4MHz				QPSK	1	PASS
5MHz				QPSK	25	PASS
5MHz				QPSK	1	PASS
20MHz				QPSK	100	PASS
20MHz				QPSK	1	PASS

Test Mode		Band 7				
Test Environment		Normal				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz and highest channel				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
5MHz	N/A for Max UE output power testing			QPSK	25	PASS
5MHz				QPSK	1	PASS
20MHz				QPSK	100	PASS
20MHz				QPSK	1	PASS

Test Mode		Band 8				
Test Environment		Normal				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz and highest channel				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
1.4MHz	N/A for Max UE output power testing			QPSK	6	PASS
1.4MHz				QPSK	1	PASS
5MHz				QPSK	25	PASS
5MHz				QPSK	1	PASS
10MHz				QPSK	50	PASS
10MHz				QPSK	1	PASS

Test Mode		Band 20				
Test Environment		Normal				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz and highest channel				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
5MHz	N/A for Max UE output power testing			QPSK	25	PASS
5MHz				QPSK	1	PASS
20MHz				QPSK	100	PASS
20MHz				QPSK	1	PASS

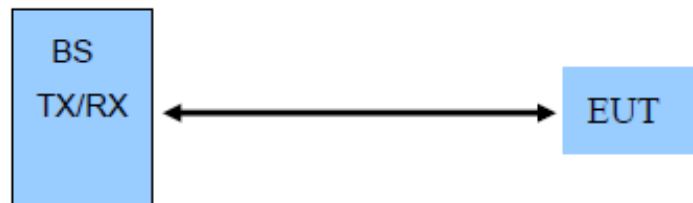
Test Mode		Band 28				
Test Environment		Normal				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz and highest channel				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
3MHz	N/A for Max UE output power testing			QPSK	15	PASS
3MHz				QPSK	1	PASS
5MHz				QPSK	25	PASS
5MHz				QPSK	1	PASS
20MHz				QPSK	100	PASS
20MHz				QPSK	1	PASS

6. TRANSMITTER MINIMUM OUTPUT POWER

6.1. Limit

Channel bandwidth/minimum output power/measurement bandwidth						
Channel bandwidth	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
Minimum output power	For carrier frequency $f \leq 3,0$ GHz: ≤ -39 dBm For carrier frequency $3,0$ GHz $< f \leq 4,2$ GHz: $\leq -38,7$ dBm					
Measurement bandwidth	1,08 MHz	2,7 MHz	4,5 MHz	9,0 MHz	13,5 MHz	18 MHz

6.2. Test Setup



6.3. Test Procedure

According to EN 301 908-13, section 5.3.4

1. Connect the SS to the UE antenna connectors.
2. SS sends uplink scheduling information for each UL HARQ process via PDCCH DCI format 0 for C_RNTI to schedule the UL RMC according to table 6.2.2.1.4.1-1 of TS 36 521-1 [1]. Since the UE has no payload and no loopback data to send the UE sends uplink MAC padding bits on the ULRMC.
3. Send continuous uplink power control "down" commands in the uplink scheduling information to the UE to ensure that the UE transmits at its minimum output power.
4. For each applicable requirement in tables from 4.2.4.1.2-2 to 4.2.4.1.2-6; measure the power of the transmitted signal with a measurement filter of bandwidths. The center frequency of the filter shall be stepped in contiguous steps according to the tables. The measured power shall be verified for each step. The measurement period shall capture the active time slots.
5. Repeat for applicable test frequencies, channel bandwidths, operating bands and environmental conditions.

6.4. Test Result

Test Mode		Band 1				
Test Environment		Normal				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz and highest channel				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
5MHz	N/A for Max UE output power testing			QPSK	25	PASS
20MHz				QPSK	100	PASS

Test Mode		Band 3				
Test Environment		Normal				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz and highest channel				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
1.4MHz	N/A for Max UE output power testing			QPSK	6	PASS
5MHz				QPSK	25	PASS
20MHz				QPSK	100	PASS

Test Mode		Band 7				
Test Environment		Normal				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz and highest channel				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
5MHz	N/A for Max UE output power testing			QPSK	25	PASS
20MHz				QPSK	100	PASS

Test Mode		Band 8				
Test Environment		Normal				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz and highest channel				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
1.4MHz	N/A for Max UE output power testing			QPSK	6	PASS
5MHz				QPSK	25	PASS
10MHz				QPSK	50	PASS

Test Mode		Band 20				
Test Environment		Normal				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz and highest channel				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
5MHz	N/A for Max UE output power testing			QPSK	25	PASS
20MHz				QPSK	100	PASS

Test Mode		Band 28				
Test Environment		Normal				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz and highest channel				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
3MHz	N/A for Max UE output power testing			QPSK	15	PASS
5MHz				QPSK	25	PASS
20MHz				QPSK	100	PASS

6.3.2 Minimum Output Power @ Band1				
UE Minimum OutputPower: :@ULCH: 18025, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 25 (RB_Pos:HIGH)	---	-39.00	-46.63	dBm
UE Minimum OutputPower: :@ULCH: 18300, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 25 (RB_Pos:HIGH)	---	-39.00	-46.02	dBm
UE Minimum OutputPower: :@ULCH: 18575, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 25 (RB_Pos:HIGH)	---	-39.00	-45.12	dBm
UE Minimum OutputPower: :@ULCH: 18100, BW: 20 MHz ; UL_MOD_RB: QPSK, 100 (RB_Pos:HIGH)	---	-39.00	-44.97	dBm
UE Minimum OutputPower: :@ULCH: 18300, BW: 20 MHz ; UL_MOD_RB: QPSK, 100 (RB_Pos:HIGH)	---	-39.00	-45.98	dBm
UE Minimum OutputPower: :@ULCH: 18500, BW: 20 MHz ; UL_MOD_RB: QPSK, 100 (RB_Pos:HIGH)	---	-39.00	-45.37	dBm



6.3.2 Minimum Output Power	Limit Low	Limit High	Measured	Unit
6.3.2 Minimum Output Power @ Band3				
UE Minimum OutputPower: :@ULCH: 19207, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 6 (RB_Pos:HIGH)	---	-39.00	-46.97	dBm
UE Minimum OutputPower: :@ULCH: 19575, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 6 (RB_Pos:HIGH)	---	-39.00	-44.93	dBm
UE Minimum OutputPower: :@ULCH: 19943, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 6 (RB_Pos:HIGH)	---	-39.00	-45.12	dBm
UE Minimum OutputPower: :@ULCH: 19225, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 25 (RB_Pos:HIGH)	---	-39.00	-46.67	dBm
UE Minimum OutputPower: :@ULCH: 19575, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 25 (RB_Pos:HIGH)	---	-39.00	-45.14	dBm
UE Minimum OutputPower: :@ULCH: 19925, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 25 (RB_Pos:HIGH)	---	-39.00	-45.66	dBm
UE Minimum OutputPower: :@ULCH: 19300, BW: 20 MHz ; UL_MOD_RB: QPSK, 100 (RB_Pos:HIGH)	---	-39.00	-46.11	dBm
UE Minimum OutputPower: :@ULCH: 19575, BW: 20 MHz ; UL_MOD_RB: QPSK, 100 (RB_Pos:HIGH)	---	-39.00	-44.67	dBm
UE Minimum OutputPower: :@ULCH: 19850, BW: 20 MHz ; UL_MOD_RB: QPSK, 100 (RB_Pos:HIGH)	---	-39.00	-44.82	dBm

6.3.2 Minimum Output Power	Limit Low	Limit High	Measured	Unit
6.3.2 Minimum Output Power @ Band7				
UE Minimum OutputPower: :@ULCH: 20775, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 25 (RB_Pos:HIGH)	---	-39.00	-46.76	dBm
UE Minimum OutputPower: :@ULCH: 21100, BW: 5.0 MHz ;	---	-39.00	-47.16	dBm

UL_MOD_RB: QPSK, 25 (RB_Pos:HIGH)				
UE Minimum OutputPower: :@ULCH: 21425, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 25 (RB_Pos:HIGH)	---	-39.00	-46.56	dBm
UE Minimum OutputPower: :@ULCH: 20850, BW: 20 MHz ; UL_MOD_RB: QPSK, 100 (RB_Pos:HIGH)	---	-39.00	-46.35	dBm
UE Minimum OutputPower: :@ULCH: 21100, BW: 20 MHz ; UL_MOD_RB: QPSK, 100 (RB_Pos:HIGH)	---	-39.00	-46.98	dBm
UE Minimum OutputPower: :@ULCH: 21350, BW: 20 MHz ; UL_MOD_RB: QPSK, 100 (RB_Pos:HIGH)	---	-39.00	-46.82	dBm

6.3.2 Minimum Output Power	Limit Low	Limit High	Measured	Unit
6.3.2 Minimum Output Power @ Band8				
UE Minimum OutputPower: :@ULCH: 21457, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 6 (RB_Pos:HIGH)	---	-39.00	-44.80	dBm
UE Minimum OutputPower: :@ULCH: 21625, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 6 (RB_Pos:HIGH)	---	-39.00	-44.56	dBm
UE Minimum OutputPower: :@ULCH: 21793, BW: 1.4 MHz ; UL_MOD_RB: QPSK, 6 (RB_Pos:HIGH)	---	-39.00	-44.00	dBm
UE Minimum OutputPower: :@ULCH: 21475, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 25 (RB_Pos:HIGH)	---	-39.00	-44.94	dBm
UE Minimum OutputPower: :@ULCH: 21625, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 25 (RB_Pos:HIGH)	---	-39.00	-44.75	dBm
UE Minimum OutputPower: :@ULCH: 21775, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 25 (RB_Pos:HIGH)	---	-39.00	-44.34	dBm
UE Minimum OutputPower: :@ULCH: 21500, BW: 10 MHz ; UL_MOD_RB: QPSK, 50 (RB_Pos:HIGH)	---	-39.00	-45.71	dBm
UE Minimum OutputPower: :@ULCH: 21625, BW: 10 MHz ; UL_MOD_RB: QPSK, 50 (RB_Pos:HIGH)	---	-39.00	-44.74	dBm
UE Minimum OutputPower: :@ULCH: 21750, BW: 10 MHz ; UL_MOD_RB: QPSK, 50 (RB_Pos:HIGH)	---	-39.00	-44.94	dBm

6.3.2 Minimum Output Power	Limit Low	Limit High	Measured	Unit
6.3.2 Minimum Output Power @ Band20				
UE Minimum OutputPower: :@ULCH: 24175, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 25 (RB_Pos:HIGH)	---	-39.00	-46.18	dBm
UE Minimum OutputPower: :@ULCH: 24300, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 25 (RB_Pos:HIGH)	---	-39.00	-46.52	dBm
UE Minimum OutputPower: :@ULCH: 24425, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 25 (RB_Pos:HIGH)	---	-39.00	-45.74	dBm
UE Minimum OutputPower: :@ULCH: 24250, BW: 20 MHz ;	---	-39.00	-45.77	dBm
UL_MOD_RB: QPSK, 100 (RB_Pos:HIGH)				
UE Minimum OutputPower: :@ULCH: 24300, BW: 20 MHz ; UL_MOD_RB: QPSK, 100 (RB_Pos:HIGH)	---	-39.00	-44.43	dBm
UE Minimum OutputPower: :@ULCH: 24350, BW: 20 MHz ; UL_MOD_RB: QPSK, 100 (RB_Pos:HIGH)	---	-39.00	-45.09	dBm

6.3.2 Minimum Output Power	Limit Low	Limit High	Measured	Unit
6.3.2 Minimum Output Power @ Band28				
UE Minimum OutputPower: :@ULCH: 27225, BW: 3.0 MHz ; UL_MOD_RB: QPSK, 15 (RB_Pos:HIGH)	---	-39.00	-49.88	dBm
UE Minimum OutputPower: :@ULCH: 27375, BW: 3.0 MHz ; UL_MOD_RB: QPSK, 15 (RB_Pos:HIGH)	---	-39.00	-49.12	dBm
UE Minimum OutputPower: :@ULCH: 27645, BW: 3.0 MHz ; UL_MOD_RB: QPSK, 15 (RB_Pos:HIGH)	---	-39.00	-50.79	dBm
UE Minimum OutputPower: :@ULCH: 27235, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 25 (RB_Pos:HIGH)	---	-39.00	-49.29	dBm
UE Minimum OutputPower: :@ULCH: 27385, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 25 (RB_Pos:HIGH)	---	-39.00	-48.85	dBm
UE Minimum OutputPower: :@ULCH: 27635, BW: 5.0 MHz ; UL_MOD_RB: QPSK, 25 (RB_Pos:HIGH)	---	-39.00	-50.14	dBm
UE Minimum OutputPower: :@ULCH: 27310, BW: 20 MHz ; UL_MOD_RB: QPSK, 100 (RB_Pos:HIGH)	---	-39.00	-48.71	dBm
UE Minimum OutputPower: :@ULCH: 27460, BW: 20 MHz ; UL_MOD_RB: QPSK, 100 (RB_Pos:HIGH)	---	-39.00	-49.44	dBm
UE Minimum OutputPower: :@ULCH: 27560, BW: 20 MHz ; UL_MOD_RB: QPSK, 100 (RB_Pos:HIGH)	---	-39.00	-48.92	dBm

7. RECEIVER ADJACENT CHANNEL SELECTIVITY (ACS)

7.1. Limit

The throughput shall be $\geq 95\%$ of the maximum throughput of the reference measurement channels as specified in TS 136 521-1 [1] under the conditions specified in table case 1, and also under the conditions specified in table case2.

CASE1

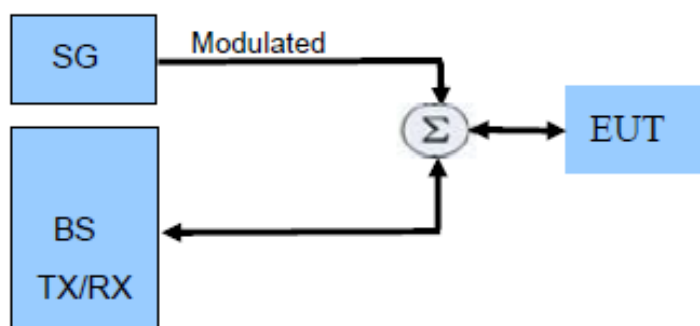
Rx Parameter	Units	Channel bandwidth					
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
Power in Transmission Bandwidth Configuration	dBm	REFSENS + 14 dB					
$P_{\text{Interferer}}$	dBm	REFSENS + 45,5 dB	REFSENS + 45,5 dB	REFSENS + 45,5 dB	REFSENS + 45,5 dB	REFSENS + 42,5 dB	REFSENS + 39,5 dB
$BW_{\text{Interferer}}$	MHz	1.4	3	5	5	5	5
$F_{\text{Interferer}}(\text{offset})$	MHz	1,4025	3,0075	5,0025	7,5075	10,0125	12,5025
NOTE 1: The transmitter shall be set to 4 dB below PCMAX_L or PCMAX_L_CA as defined in clause 6.2.5 in ETSI TS 136 101 [3]. NOTE 2: The interferer shall consist of the Reference measurement channel specified in clause A.3.2 of ETSI TS 136 521-1 [1] with set-up according to clause C.3.1 of ETSI TS 136 521-1 [1]. NOTE 3: REFSENS as defined in clause 7.3.3 in ETSI TS 136 521-1 [1].							

CASE2

Rx Parameter	Units	Channel bandwidth					
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
Power in Transmission Bandwidth Configuration	dBm	-56,5	-56,5	-56,5	-56,5	-53,5	-50,5

n							
P _{Interferer}	dBm	-25					
BW _{Interferer}	MHz	1.4	3	5	5	5	5
F _{Interferer} (offset)	MHz	1,4025	3,0075	5,0025	7,5075	10,0125	12,5025
NOTE 1: The transmitter shall be set to 24 dB below PCMAX _L or PCMAX _{L_CA} as defined in clause 6.2.5 in ETSI TS 136 101 [3].							
NOTE 2: The interferer shall consist of the Reference measurement channel specified in clause A.3.2 of ETSI TS 136 521-1 [1] with set-up according to clause C.3.1 of ETSI TS 136 521-1 [1].							

7.2. Test Setup



7.3. Test Procedure

According to EN 301 908-13, section 5.3.5

- Connect the SS and interfering source to the UE antenna connectors.
- Send Uplink power control commands to the UE, to ensure that the UE output power is near the target level in table 7.5.4.1-1 for at least the duration of the throughput measurement (obtain correct UE output power as specified in TS 136 521-1 [1]).
- Set the Downlink signal level to the value as defined in table 4.2.6.1.2-2 (Case 1).
- Set the Interferer signal level to the value as defined in table 4.2.6.1.2-2 (Case 1), using a modulated interferer.
- Measure the average throughput for a duration sufficient to achieve statistical significance according to clause G.2 of TS 136 521-1 [1].
- Send Uplink power control commands to the UE, to ensure that the UE output power

near the target level in table 4.2.6.1.2-3 (Case 2) for at least the duration of the throughput measurement (obtain correct UE output power as specified in TS 136 521-1 [1]).

- g · Set the Downlink signal level to the value as defined in table 4.2.6.1.2-3 (Case 2).
- h · Set the Interferer signal level to the value as defined in table 4.2.6.1.2-3 (Case 2), using a modulated interferer using a modulated interferer as defined in ETSI TS 136 521-1 [1], annex C.
- i · Measure the average throughput for a duration sufficient to achieve statistical significance.
- j · Repeat for applicable channel bandwidths in both Case 1 and Case 2.



7.4. Test Result

Test Mode		Band 1					
Test Environment		Normal					
Test Frequencies		Mid range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 1		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
5MHz	QPSK	Full	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	Full	QPSK	100	≥95 %	100%	PASS
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 2		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
5MHz	QPSK	Full	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	Full	QPSK	100	≥95 %	100%	PASS

Test Mode		Band 3					
Test Environment		Normal					
Test Frequencies		Mid range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 1		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
1.4MHz	QPSK	Full	QPSK	6	≥95 %	100%	PASS
5MHz	QPSK	Full	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	Full	QPSK	100	≥95 %	100%	PASS
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 2		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
1.4MHz	QPSK	Full	QPSK	6	≥95 %	100%	PASS
5MHz	QPSK	Full	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	Full	QPSK	100	≥95 %	100%	PASS

Test Mode		Band 7					
Test Environment		Normal					
Test Frequencies		Mid range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 1		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
5MHz	QPSK	Full	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	Full	QPSK	100	≥95 %	100%	PASS
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 2		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
5MHz	QPSK	Full	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	Full	QPSK	100	≥95 %	100%	PASS

Test Mode		Band 8					
Test Environment		Normal					
Test Frequencies		Mid range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 1		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
1.4MHz	QPSK	Full	QPSK	6	≥95 %	100%	PASS
5MHz	QPSK	Full	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	Full	QPSK	100	≥95 %	100%	PASS
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 2		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
1.4MHz	QPSK	Full	QPSK	6	≥95 %	100%	PASS
5MHz	QPSK	Full	QPSK	25	≥95 %	100%	PASS
10MHz	QPSK	Full	QPSK	50	≥95 %	100%	PASS

Test Mode		Band 20					
Test Environment		Normal					
Test Frequencies		Mid range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 1		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
5MHz	QPSK	Full	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	Full	QPSK	100	≥95 %	100%	PASS
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 2		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
5MHz	QPSK	Full	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	Full	QPSK	100	≥95 %	100%	PASS

Test Mode		Band 28					
Test Environment		Normal					
Test Frequencies		Mid range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 1		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
3MHz	QPSK	Full	QPSK	15	≥95 %	100%	PASS
5MHz	QPSK	Full	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	Full	QPSK	100	≥95 %	100%	PASS
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 2		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
3MHz	QPSK	Full	QPSK	15	≥95 %	100%	PASS
5MHz	QPSK	Full	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	Full	QPSK	100	≥95 %	100%	PASS

8. RECEIVER BLOCKING CHARACTERISTICS

8.1. Limit

With parameters specified in In-band blocking parameters table and In-band blocking table, the maximum throughput shall be $\geq 95\%$.

Rx Parameter	Units	Channel bandwidth					
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
Power in Transmission Bandwidth Configuration	dBm	6	6	6	6	7	9
BW _{Interferer}	MHz	1,4	3	5	5	5	5
F _{Offset, case 1}	MHz	2,1125	4,5075	7,5125	7,5025	7,5075	7,5125
F _{Offset, case 2}	MHz	3,5075	7,5075	12,5075	12,5125	12,5025	12,5075
NOTE 1: The transmitter shall be set to 4 dB below P _{C_{MAX}L} or P _{C_{MAX}L_{CA}} as defined in clause 6.2.5 in ETSI TS 136 101 [3].NOTE 2: The interferer shall consist of the Reference measurement channel specified in clause A.3.2 of ETSI TS 136 521-1 [1] with set-up according to clause C.3.1 of ETSI TS 136 521-1 [1].NOTE 3: REFSENS as defined in clause 7.3.3 in ETSI TS 136 521-1 [1].							

In-band blocking

E-UTRA band	Parameter	Units	Case 1	Case 2
	P _{Interferer}	dBm	-56	-44
	F _{Interferer(Offset)}	MHz	$= -BW/2 - F_{Offset, case 1}$ and $= +BW/2 + F_{Offset, case 1}$	$\leq -BW/2 - F_{Offset, case 2}$ and $\leq +BW/2 + F_{Offset, case 2}$

1, 3, 7, 8, 20, 22, 28,33, 34, 38, 40, 42, 43	$F_{\text{Interferer}}$	MHz	(note 2)	$F_{\text{DL_low}} - 15$ to $F_{\text{DL_high}} + 15$
NOTE 1: For certain bands, the unwanted modulated interfering signal may not fall inside the UE receive band, but within the first 15 MHz below or above the UE receive band. NOTE 2: For each carrier frequency the requirement is valid for two frequencies: a) the carrier frequency $-BW/2 - F_{\text{offset}}$, case 1; and b) the carrier frequency $+BW/2 + F_{\text{offset}}$, case 1. NOTE 3: $F_{\text{Interferer}}$ range values for unwanted modulated interfering signal are interferer centre frequencies.				



Out-of-band blocking parameters

Rx Parameter	Units	Channel bandwidth					
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
Power in Transmission Bandwidth Configuration	dBm	6	6	6	6	7	9
NOTE 1: The transmitter shall be set to 4 dB below P_{CMAX_L} or $P_{CMAX_L_CA}$ as defined in clause 6.2.5 in ETSI TS 136 101 [3]. NOTE 2: The interferer shall consist of the Reference measurement channel specified in clause A.3.2 of ETSI TS 136 521-1 [1] with set-up according to clause C.3.1 of ETSI TS 136 521-1 [1]. NOTE 3: REFSENS as defined in clause 7.3.3 in ETSI TS 136 521-1 [1].							

Out-of-band blocking

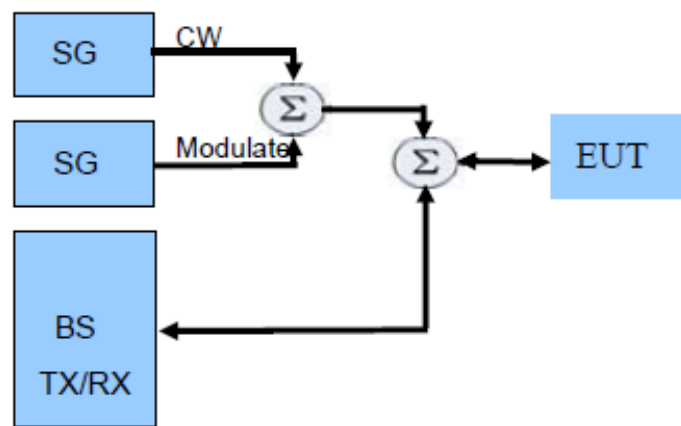
E-UTRA band	Parameter	Units	Frequency		
			Case 1	Case 2	Case 2
	P _{Interferer}	dBm	-44	-30	-15
1, 3, 7, 8, 20, 22,28, 33, 34, 38,40, 42 (NOTE 2),43 (NOTE 2)	F _{Interferer} (CW)	MHz	F _{DL_low} - 15 to	F _{DL_low} - 60 to	F _{DL_low} - 85 to
			F _{DL_low} - 60	F _{DL_low} - 85	1 MHz
			F _{DL_high} + 15 to F _{DL_high} + 60	F _{DL_high} + 60 to F _{DL_high} + 85	F _{DL_high} + 85 to +12 750 MHz
NOTE 1: Range 3 shall be tested only with the highest channel bandwidth.					
NOTE 2: The power level of the interferer (P _{Interferer}) for Range 3 shall be modified to -20 dBm for F _{Interferer} > 2 800 MHz and F _{Interferer} < 4 400MHz.					

Narrow-band blocking

Parameter	Units	Channel bandwidth					
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
P_w	dBm	22	18	16	13	14	16
$P_{uw} (CW)$	dBm	-55	-55	-55	-55	-55	-55
F_{uw} (offset for $\Delta f = 15$)	MHz	0,9075	1,7025	2,7075	5,2125	7,7025	10,2075

kHz)							
NOTE 1: The transmitter shall be set a 4 dB below P_{CMAX_L} at the minimum uplink configuration specified in ETSI TS 136 101 [3] (table 7.3.1-2 with P_{CMAX_L} as defined in clause 6.2.5). NOTE 2: Reference measurement channel is in clause A.3.2 of ETSI TS 136 521-1 [1]. NOTE 3: REFSSENS as defined in clause 7.3.3 in ETSI TS 136 521-1 [1].							

8.2. Test Setup



8.3. Test Procedure

According to EN 301 908-13, section 5.3.6

1. Connect the SS to the UE antenna connectors.
2. Set the parameters of the CW signal generator for an interfering signal according to tables 4.2.7.2-1 to 4.2.7.2-4 as specified in TS 136 521-1 [1]. The frequency step size is 1 MHz.
3. Set the output power level of the UE according to the tables 4.2.7.2-1 to 4.2.7.2-4 or send uplink power control commands to the UE, to ensure that the UE output power is near the target level in tables 4.2.7.2-1 to 4.2.7.2-4 for at least the duration of the throughput measurement as specified in TS 136 521-1 [1].
4. Set the downlink signal level according to the table 4.2.7.2-1 to 4.2.7.2-4.
5. Measure the average throughput for a duration sufficient to achieve statistical significance according to clause G.2 of TS 136 521-1 [1].

For table 4.2.7.2-4 record the frequencies for which the throughput does not meet the requirements

8.4. Test Result

Test Mode		Band 1					
Test Environment		NC					
Test Frequencies		Mid range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 1		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 2		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS

Test Mode		Band 3					
Test Environment		NC					
Test Frequencies		Mid range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 1		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
1.4MHz	QPSK	6	QPSK	6	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 2		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
1.4MHz	QPSK	6	QPSK	6	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS

Test Mode		Band 7					
Test Environment		NC					
Test Frequencies		Mid range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 1		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 2		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS

Test Mode		Band 8					
Test Environment		NC					
Test Frequencies		Mid range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 1		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
1.4MHz	QPSK	6	QPSK	6	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 2		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
1.4MHz	QPSK	6	QPSK	6	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
10MHz	QPSK	50	QPSK	100	≥95 %	100%	PASS

Test Mode		Band 20					
Test Environment		NC					
Test Frequencies		Mid range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 1		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 2		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS

Test Mode		Band 28					
Test Environment		NC					
Test Frequencies		Mid range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 1		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
3MHz	QPSK	15	QPSK	15	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS
Channel Bandwidth	Downlink Configuration		Uplink Configuration		CASE 2		
	Modulation	RB allocation	Modulation	RB allocation	Throughput Limit	Throughput	Verdict
		FDD		FDD/TDD			
3MHz	QPSK	15	QPSK	15	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS

9. RECEIVER SPURIOUS RESPONSE

9.1. Limit

The throughput shall be $\geq 95\%$ of the maximum throughput parameters specified in tables Spurious response parameters and Spurious Response

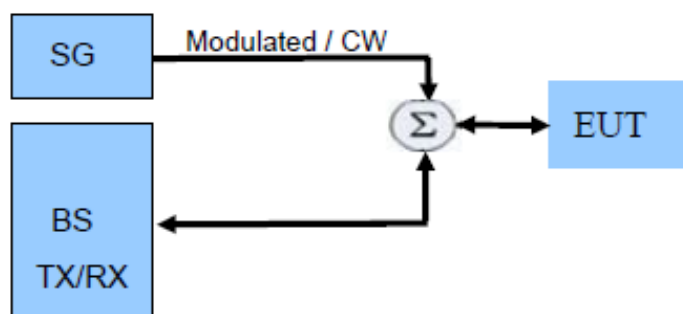
Spurious response parameters

Rx Parameter	Units	Channel bandwidth					
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
Power in Transmission Bandwidth Configuration	dBm	6	6	6	6	7	9
NOTE 1: The transmitter shall be set to 4 dB below PCMAX_L at the minimum uplink configuration specified in ETSI TS 136 101 [3] (table 7.3.1-2 with PCMAX_L as defined in clause 6.2.5). NOTE 2: Reference measurement channel is clause A.3.2 of ETSI TS 136 521-1 [1]. NOTE 3: REFSENS as defined in clause 7.3.3 in ETSI TS 136 521-1 [1].							

Spurious Response

Parameter	Units	Level
P _{Interferer} (CW)	dBm	-44
F _{Interferer}	MHz	Spurious response frequencies

9.2. Test Setup



9.3. Test Procedure

According to EN 301 908-13, section 5.3.6

1. Set the parameters of the CW signal generator for an interfering signal according to table 4.2.8.2-2. The spurious frequencies are taken from step 5) records in clause 5.3.6.1.2.
2. Set the output power level of the UE according to the table 4.2.8.2-1 or send uplink power control commands to the UE, to ensure that the UE output power is near the target level for at least the duration of the throughput measurement as specified in TS 136 521-1 [1].
3. Set the downlink signal level according to the table 4.2.8.2-1.
4. For the spurious frequency, measure the average throughput for a duration sufficient to achieve statistical significance.

9.4. Test Result

Receiver blocking characteristics items not failed items
The equipment passed the requirement of this clause.

10. RECEIVER INTERMODULATION CHARACTERISTICS

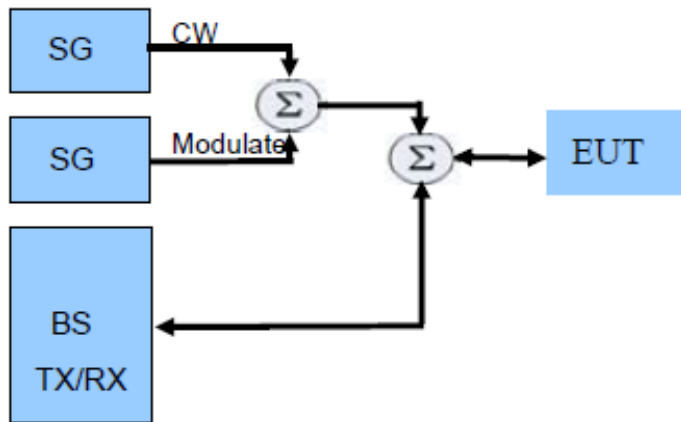
10.1. Limit

For The throughput shall be ≥ 95 % of the maximum throughput of the reference measurement channels as specified in below table 1 for the specified wanted signal mean power in the presence of two interfering signals.

parameters for Wide band intermodulation

Rx Parameter	Units	Channel bandwidth					
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
Power in Transmission Bandwidth Configuration	dBm	12	8	6	6	7	9
P _{Interferer 1} (CW)	dBm	-46					
P _{Interferer 2} (Modulated)	dBm	-46					
BW _{Interferer 2}		1.4	3	5			
F _{Interferer 1} (Offset)	MHz	-BW/2 - 2,1 / +BW/2 + 2,1	-BW/2 - 4,5 / +BW/2 + 4,5	-BW/2 - 7,5 / +BW/2 + 7,5			
F _{Interferer 2} (Offset)	MHz	2 × F _{Interferer 1}					
NOTE 1: The transmitter shall be set to 4 dB below P_{CMAX_L} at the minimum uplink configuration specified in ETSI TS 136 101 [3] (table 7.3.1-2 with P_{CMAX_L} as defined in clause 6.2.5). NOTE 2: Reference measurement channel is clause A.3.2 of ETSI TS 136 521-1 [1]. NOTE 3: The modulated interferer shall consist of the Reference measurement channel specified in clause A.3.2 of ETSI TS 136 521-1 [1] with set-up according to clause C.3.1 of ETSI TS 136 521-1 [1].The interfering modulated signal is 5 MHz E-UTRA signal as described in annex C of ETSI TS 136 521-1 [1] for channel bandwidth ≥ 5MHz. NOTE 4: REFSSENS as defined in clause 7.3.3 in ETSI TS 136 521-1 [1].							

10.2. Test Setup



10.3. Test Procedure

According to EN 301 908-13, section 5.3.8

1. Connect the SS and interfering sources to the UE antenna connectors.
2. Send Uplink power control commands to the UE, to ensure that the UE output power is near the target level in table 4.2.9.2-1 for at least the duration of the Throughput measurement.
3. Set the Downlink signal level to the value as defined in table 4.2.9.2-1.
4. Set the Interfering signal levels to the values as defined in table 4.2.9.2-1, using a modulated interferer bandwidth as defined in annex D of TS 136 521-1 [1].
5. Measure the average throughput for a duration sufficient to achieve statistical significance.
6. Repeat for applicable channel bandwidths and band combinations.

10.4. Test Result

Test Mode		Band 1					
Test Environment		NC					
Test Frequencies		Mid range					
Test Channel Bandwidths		5MHz, Highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		Throughput Limit	Throughput	Verdict
	Modulation	RB allocation	Modulation	RB allocation			
		FDD		FDD			
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	20	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	75	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	50	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	20	≥95 %	100%	PASS

Test Mode		Band 3					
Test Environment		NC					
Test Frequencies		Mid range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		Throughput Limit	Throughput	Verdict
	Modulation	RB allocation	Modulation	RB allocation			
		FDD		FDD			
1.4MHz	QPSK	6	QPSK	6	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	20	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	75	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	50	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	20	≥95 %	100%	PASS

Test Mode		Band 7					
Test Environment		NC					
Test Frequencies		Mid range					
Test Channel Bandwidths		5MHz, Highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		Throughput Limit	Throughput	Verdict
	Modulation	RB allocation	Modulation	RB allocation			
		FDD		FDD			
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	20	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	75	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	50	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	20	≥95 %	100%	PASS

Test Mode		Band 8					
Test Environment		NC					
Test Frequencies		Mid range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		Throughput Limit	Throughput	Verdict
	Modulation	RB allocation	Modulation	RB allocation			
		FDD		FDD			
1.4MHz	QPSK	6	QPSK	6	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	20	≥95 %	100%	PASS
10MHz	QPSK	50	QPSK	50	≥95 %	100%	PASS
10MHz	QPSK	50	QPSK	25	≥95 %	100%	PASS
10MHz	QPSK	50	QPSK	20	≥95 %	100%	PASS
10MHz	QPSK	50	QPSK	15	≥95 %	100%	PASS

Test Mode		Band 20					
Test Environment		NC					
Test Frequencies		Mid range					
Test Channel Bandwidths		5MHz, Highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		Throughput Limit	Throughput	Verdict
	Modulation	RB allocation	Modulation	RB allocation			
		FDD		FDD			
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	20	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	75	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	50	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	20	≥95 %	100%	PASS

Test Mode		Band 28					
Test Environment		NC					
Test Frequencies		Mid range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		Throughput Limit	Throughput	Verdict
	Modulation	RB allocation	Modulation	RB allocation			
		FDD		FDD			
3MHz	QPSK	15	QPSK	15	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	20	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	75	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	50	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	20	≥95 %	100%	PASS

11. RECEIVER SPURIOUS EMISSIONS

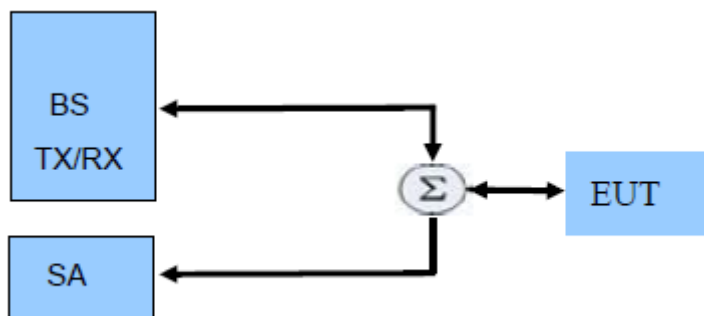
11.1. Limit

The measured spurious emissions shall not exceed the maximum level specified in below table

General receiver spurious emission requirements

Frequency Band	Measurement bandwidth	Maximum level	Note
$30 \text{ MHz} \leq f < 1 \text{ GHz}$	100 kHz	-57 dBm	
$1 \text{ GHz} \leq f \leq 12,75 \text{ GHz}$	1MHz	-47 dBm	
$12,75 \text{ GHz} \leq f \leq 5\text{th}$ harmonic of the upper frequency edge of the DL operating band in GHz	1MHz	-47 dBm	Note 1
NOTE 1: Shall apply only for Band 22, 42 and Band 43.			
NOTE 2: Unused PDCCH resources are padded with resource element groups with power level given by PDCCH_RA/RB as defined in ETSI TS 136 101 [3], clause C.3.1.			

11.2. Test Setup



11.3. Test Procedure

According to EN 301 908-13, section 5.3.9

1. Connect a spectrum analyzer (or other suitable test equipment) to the UE antenna connectors.
Sweep the spectrum analyser (or other suitable test equipment) over a frequency range from 30 MHz to 12,75 GHz and measure the average power of the spurious emissions

11.4. Test Result

The equipment **passed** the requirement of this clause.

Test Mode		Band 1				
Test Environment		NC				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		Highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
20MHz	QPSK	0	QPSK	0	20MHz	PASS

Test Mode		Band 3				
Test Environment		NC				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		Highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
20MHz	QPSK	0	QPSK	0	20MHz	PASS

Test Mode		Band 7				
Test Environment		NC				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		Highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
20MHz	QPSK	0	QPSK	0	20MHz	PASS

Test Mode		Band 8				
Test Environment		NC				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		Highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
10MHz	QPSK	0	QPSK	0	10MHz	PASS

Test Mode		Band 20				
Test Environment		NC				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		Highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
20MHz	QPSK	0	QPSK	0	20MHz	PASS

Test Mode		Band 28				
Test Environment		NC				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		Highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
20MHz	QPSK	0	QPSK	0	20MHz	PASS



12. TRANSMITTER ADJACENT CHANNEL LEAKAGE POWER RATIO(ACLR)

12.1. Limit

If the measured adjacent channel power is greater than -50 dBm then the measured E-UTRAACLR shall be higher than the limits in table E-UTRA UE ACLR

E-UTRA UE ACLR

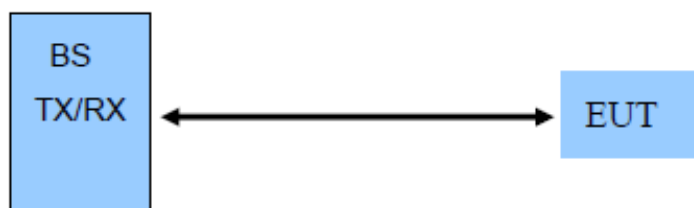
	Channel bandwidth					
	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
E-UTRA _{ACLR1}	29,2 dB	29,2 dB	29,2 dB	29,2 dB	29,2 dB	29,2 dB
E-UTRA channel Measurement bandwidth	1,08 MHz	2,7 MHz	4,5 MHz	9,0 MHz	13,5 MHz	18 MHz
UE channel	+1,4 MHz or -1,4 MHz	+3 MHz or -3 MHz	+5 MHz or -5 MHz	+10 MHz or -10 MHz	+15 MHz or -15 MHz	+20 MHz or -20 MHz

If the measured UTRA channel power is greater than -50 dBm then the measured UTRAACLR1, UTRAACLR2 shall be higher than the limits in below table

	Channel bandwidth					
	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
E-UTRA _{ACLR1}	32,2 dB	32,2 dB	32,2 dB	32,2 dB	32,2 dB	32,2 dB
E-UTRA channel Measurement bandwidth	$0,7 + \frac{BW_{UTRA}}{2}$ $/-0,7 - \frac{BW_{UTRA}}{2}$	$1,5 + \frac{BW_{UTRA}}{2}$ $/-1,5 - \frac{BW_{UTRA}}{2}$	$2,5 + \frac{BW_{UTRA}}{2}$ $/-2,5 - \frac{BW_{UTRA}}{2}$	$5 + \frac{BW_{UTRA}}{2}$ $/-5 - \frac{BW_{UTRA}}{2}$	$7,5 + \frac{BW_{UTRA}}{2}$ $/-7,5 - \frac{BW_{UTRA}}{2}$	$10 + \frac{BW_{UTRA}}{2}$ $/-10 - \frac{BW_{UTRA}}{2}$
E-UTRA _{ACLR2}	-	-	35,2 dB	35,2 dB	35,2 dB	35,2 dB
Adjacent channel centre Frequency offset (in MHz)	-	-	$2,5 + 3 \times \frac{BW_{UTRA}}{2}$ $/-2,5 - 3 \times \frac{BW_{UTRA}}{2}$	$5 + 3 \times \frac{BW_{UTRA}}{2}$ $/-5 - 3 \times \frac{BW_{UTRA}}{2}$	$7,5 + 3 \times \frac{BW_{UTRA}}{2}$ $/-7,5 - 3 \times \frac{BW_{UTRA}}{2}$	$10 + 3 \times \frac{BW_{UTRA}}{2}$ $/-10 - 3 \times \frac{BW_{UTRA}}{2}$

E-UTRA Channel Measurement bandwidth	1,08 MHz	2,7 MHz	4,5 MHz	9,0 MHz	13,5 MHz	18 MHz
UTRA 5 MHz channel Measurement bandwidth (see note 1)	3,84 MHz	3,84 MHz	3,84 MHz	3,84 MHz	3,84 MHz	3,84 MHz
UTRA 1,6 MHz channel measurement bandwidth (see note 2)	1,28 MHz	1,28 MHz	1,28 MHz	1,28 MHz	1,28 MHz	1,28 MHz
NOTE 1: Shall apply for E-UTRA FDD co-existence with UTRA FDD in paired spectrum. NOTE 2: Shall apply for E-UTRA TDD co-existence with UTRA TDD in unpaired spectrum. NOTE 3: BW_{UTRA} for UTRA FDD shall be 5 MHz and for UTRA TDD shall be 1,6MHz.						

12.2. Test Setup



12.3. Test Procedure

According to EN 301 908-13 , section 5.3.9

2. Connect a spectrum analyzer (or other suitable test equipment) to the UE antenna connectors.

Sweep the spectrum analyser (or other suitable test equipment) over a frequency range from 30 MHz to 12,75 GHz and measure the average power of the spurious emissions

12.4. Test Result

Test Mode		Band 1				
Test Environment		NC, TL/VL, TL/VH, TH/VL, TH/VH				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz, 10 MHz and highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
5MHz	N/A for ACLR testing			QPSK	25	PASS
5MHz				QPSK	8	PASS
5MHz				16QAM	8	PASS
5MHz				16QAM	25	PASS
10MHz				QPSK	50	PASS
10MHz				QPSK	12	PASS
10MHz				16QAM	12	PASS
10MHz				16QAM	50	PASS
20MHz				QPSK	100	PASS
20MHz				QPSK	8	PASS
20MHz				16QAM	8	PASS
20MHz				16QAM	100	PASS

Test Mode		Band 3				
Test Environment		NC, TL/VL, TL/VH, TH/VL, TH/VH				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz, 10 MHz and highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
1.4MHz	N/A for ACLR testing			QPSK	6	PASS
1.4MHz				QPSK	5	PASS
1.4MHz				16QAM	5	PASS
1.4MHz				16QAM	6	PASS
5MHz				QPSK	25	PASS
5MHz				QPSK	8	PASS
5MHz				16QAM	8	PASS
5MHz				16QAM	25	PASS
10MHz				QPSK	50	PASS
10MHz				QPSK	12	PASS
10MHz				16QAM	12	PASS
10MHz				16QAM	50	PASS
20MHz				QPSK	100	PASS
20MHz				QPSK	8	PASS
20MHz				16QAM	8	PASS
20MHz				16QAM	100	PASS

Test Mode		Band 7				
Test Environment		NC, TL/VL, TL/VH, TH/VL, TH/VH				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz, 10 MHz and highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
5MHz	N/A for ACLR testing			QPSK	25	PASS
5MHz				QPSK	8	PASS
5MHz				16QAM	8	PASS
5MHz				16QAM	25	PASS
10MHz				QPSK	50	PASS
10MHz				QPSK	12	PASS
10MHz				16QAM	12	PASS
10MHz				16QAM	50	PASS
20MHz				QPSK	100	PASS
20MHz				QPSK	8	PASS
20MHz				16QAM	8	PASS
20MHz				16QAM	100	PASS

Test Mode		Band 8				
Test Environment		NC, TL/VL, TL/VH, TH/VL, TH/VH				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz, 10 MHz and highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
1.4MHz	N/A for ACLR testing			QPSK	6	PASS
1.4MHz				QPSK	5	PASS
1.4MHz				16QAM	5	PASS
1.4MHz				16QAM	6	PASS
5MHz				QPSK	25	PASS
5MHz				QPSK	8	PASS
5MHz				16QAM	8	PASS
5MHz				16QAM	25	PASS
10MHz				QPSK	50	PASS
10MHz				QPSK	12	PASS
10MHz				16QAM	12	PASS
10MHz				16QAM	50	PASS

Test Mode		Band 20				
Test Environment		NC, TL/VL, TL/VH, TH/VL, TH/VH				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz, 10 MHz and highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
5MHz	N/A for ACLR testing			QPSK	25	PASS
5MHz				QPSK	8	PASS
5MHz				16QAM	8	PASS
5MHz				16QAM	25	PASS
10MHz				QPSK	50	PASS
10MHz				QPSK	12	PASS
10MHz				16QAM	12	PASS
10MHz				16QAM	50	PASS
20MHz				QPSK	100	PASS
20MHz				QPSK	8	PASS
20MHz				16QAM	8	PASS
20MHz				16QAM	100	PASS

Test Mode		Band 28				
Test Environment		NC, TL/VL, TL/VH, TH/VL, TH/VH				
Test Frequencies		Low range, Mid range, High range				
Test Channel Bandwidths		lowest, 5 MHz, 10 MHz and highest				
Test Parameters for Channel Bandwidths						
Channel Bandwidth	Downlink Configuration			Uplink Configuration		
	Modulation	RB allocation		Modulation	RB allocation	
		FDD/TDD	Verdict		FDD/TDD	Verdict
3MHz	N/A for ACLR testing			QPSK	15	PASS
3MHz				QPSK	4	PASS
3MHz				16QAM	4	PASS
3MHz				16QAM	15	PASS
5MHz				QPSK	25	PASS
5MHz				QPSK	8	PASS
5MHz				16QAM	8	PASS
5MHz				16QAM	25	PASS
10MHz				QPSK	50	PASS
10MHz				QPSK	12	PASS
10MHz				16QAM	12	PASS
10MHz				16QAM	50	PASS
20MHz				QPSK	100	PASS
20MHz				QPSK	8	PASS
20MHz				16QAM	8	PASS
20MHz				16QAM	100	PASS

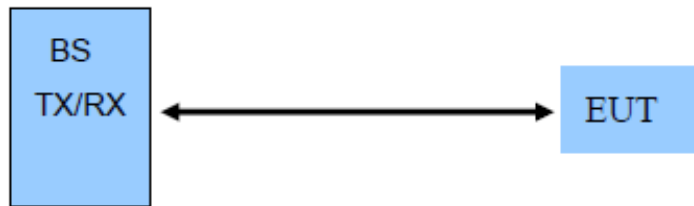
13. RECEIVER REFERENCE SENSITIVITY LEVEL

13.1. Limit

The throughput shall be ≥ 95 % of the maximum throughput of the reference measurement channels as specified in ETSI TS 136 521-1 [1], clauses A.2.2, A.2.3 and A.3.2. The reference receive sensitivity (REFSENS) requirement specified in below table.

E-UTRA Band	Channel bandwidth						Duplex Mode
	1,4 MHz (dBm)	3 MHz (dBm)	5 MHz (dBm)	10 MHz (dBm)	15 MHz (dBm)	20 MHz (dBm)	
1	-	-	-99,3	-96,3	-94,5	-93,3	FDD
2	-101,0	-98,0	-96,3	-93,3	-91,5	-90,3	FDD
7	-	-	-97,3	-94,3	-92,5	-91,3	FDD
8	-101,5	-98,5	-96,3	-93,3	-	-	FDD
20	-	-	-96,3	-93,3	-90,5	-89,3	FDD
22	-	-	-96,0	-93,0	-91,2	-90,0	FDD
28	-	-99,5	-97,8	-94,8	-93,0	-90,3	FDD
33	-	-	-99,3	-96,3	-94,5	-93,3	TDD
34	-	-	-99,3	-96,3	-94,5	-	TDD
38	-	-	-99,3	-96,3	-94,5	-93,3	TDD
40	-	-	-99,3	-96,3	-94,5	-93,3	TDD
42	-	-	-98,0	-95,0	-93,2	-92,0	TDD
43	-	-	-98,0	-95,0	-93,2	-92,0	TDD
NOTE 1: The transmitter shall be set to maximum output power level (ETSI TS 136 521-1 [1], table 7.3.5-2).							
NOTE 2: The reference measurement channel is specified in ETSI TS 136 521-1 [1], clause A.3.2 with one sided dynamic OCNG Pattern OP.1 FDD/TDD as described in ETSI TS 136 521-1 [1], clauses A.5.1.1 and A.5.2.1.							
NOTE 3: The signal power is specified per port.							

13.2. Test Setup



13.3. Test Procedure

According to EN 301 908-13, section 5.3.11

1. Connect the SS to the UE to the UE antenna connectors.
2. Set the Downlink signal level to the appropriate REFSENS value defined in “reference receive sensitivity”.
3. Measure the average throughput for a duration sufficient to achieve statistical significance according to clause G.2 of ETSI TS 136 521-1 [1].
4. Repeat for applicable test frequencies, channel bandwidths and operating bands.

13.4. Test Result

Test Mode		Band 1					
Test Environment		NC, TL/VL, TL/VH, TH/VL, TH/VH					
Test Frequencies		low range, mid-range, high range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		Throughput Limit	Throughput	Verdict
	Modulation	RB allocation	Modulation	RB allocation			
		FDD		FDD			
5MHz	QPSK	25	QPSK	15	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	20	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	20	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	50	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	75	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS

Test Mode		Band 3					
Test Environment		NC, TL/VL, TL/VH, TH/VL, TH/VH					
Test Frequencies		low range, mid-range, high range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		Throughput Limit	Throughput	Verdict
	Modulation	RB allocation	Modulation	RB allocation			
		FDD		FDD			
1.4MHz	QPSK	6	QPSK	6	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	15	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	20	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	20	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	50	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	75	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS

Test Mode		Band 7					
Test Environment		NC, TL/VL, TL/VH, TH/VL, TH/VH					
Test Frequencies		low range, mid-range, high range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		Throughput Limit	Throughput	Verdict
	Modulation	RB allocation	Modulation	RB allocation			
		FDD		FDD			
5MHz	QPSK	25	QPSK	15	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	20	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	20	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	50	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	75	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS

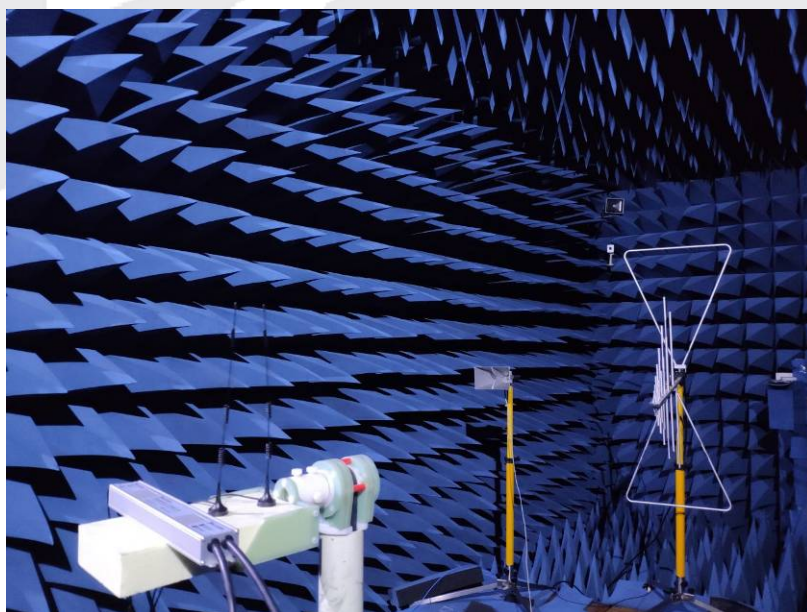
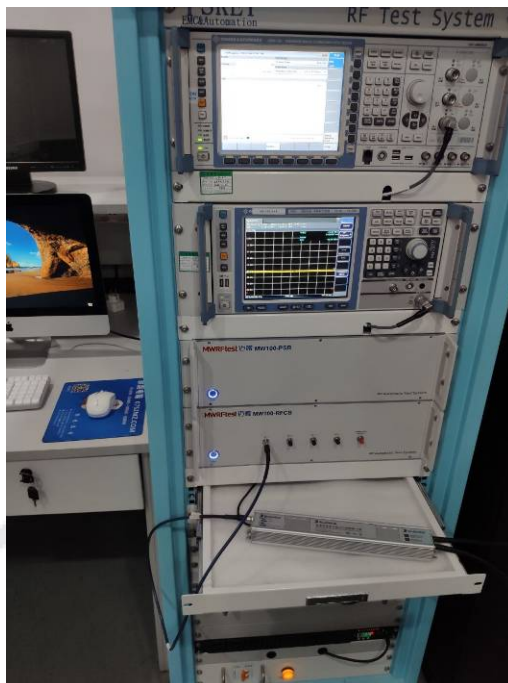
Test Mode		Band 8					
Test Environment		NC, TL/VL, TL/VH, TH/VL, TH/VH					
Test Frequencies		low range, mid-range, high range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		Throughput Limit	Throughput	Verdict
	Modulation	RB allocation	Modulation	RB allocation			
		FDD		FDD			
1.4MHz	QPSK	6	QPSK	6	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	15	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	20	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
10MHz	QPSK	50	QPSK	50	≥95 %	100%	PASS
10MHz	QPSK	50	QPSK	25	≥95 %	100%	PASS
10MHz	QPSK	50	QPSK	20	≥95 %	100%	PASS
10MHz	QPSK	50	QPSK	15	≥95 %	100%	PASS

Test Mode		Band 20					
Test Environment		NC, TL/VL, TL/VH, TH/VL, TH/VH					
Test Frequencies		low range, mid-range, high range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		Throughput Limit	Throughput	Verdict
	Modulation	RB allocation	Modulation	RB allocation			
		FDD		FDD			
5MHz	QPSK	25	QPSK	15	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	20	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	20	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	50	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	75	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS

Test Mode		Band 28					
Test Environment		NC, TL/VL, TL/VH, TH/VL, TH/VH					
Test Frequencies		low range, mid-range, high range					
Test Channel Bandwidths		lowest, 5 MHz and highest					
Test Parameters for Channel Bandwidths							
Channel Bandwidth	Downlink Configuration		Uplink Configuration		Throughput Limit	Throughput	Verdict
	Modulation	RB allocation	Modulation	RB allocation			
		FDD		FDD			
3MHz	QPSK	15	QPSK	15	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	15	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	20	≥95 %	100%	PASS
5MHz	QPSK	25	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	20	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	25	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	50	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	75	≥95 %	100%	PASS
20MHz	QPSK	100	QPSK	100	≥95 %	100%	PASS

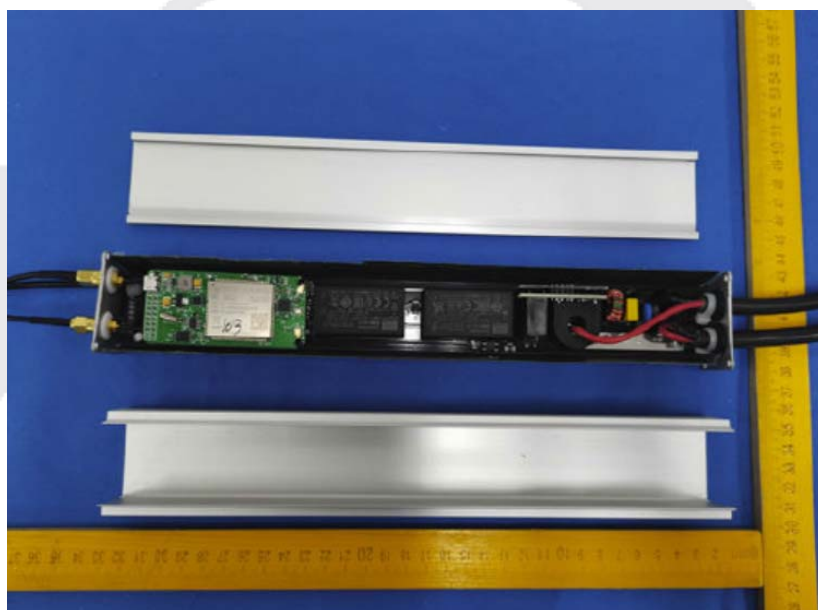
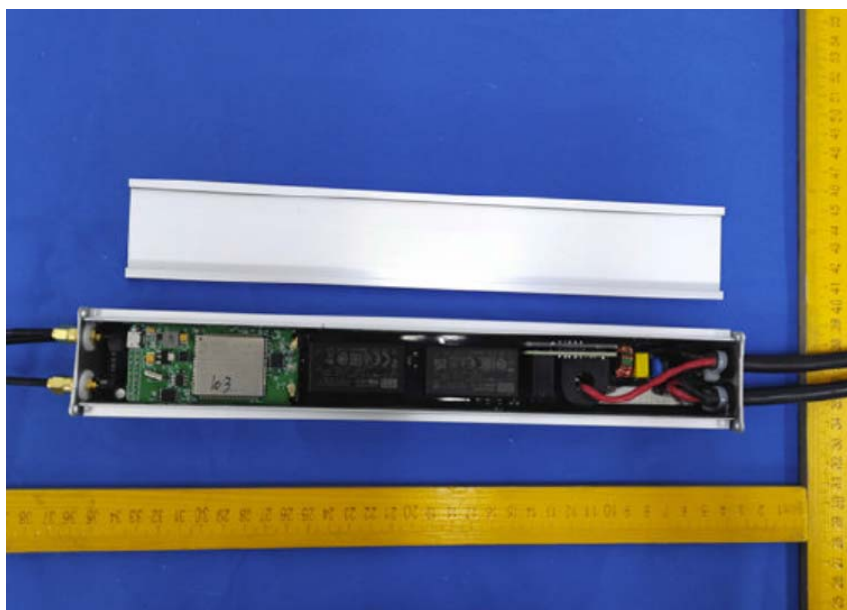
14. PHOTOGRAPHS OF TEST SETUP

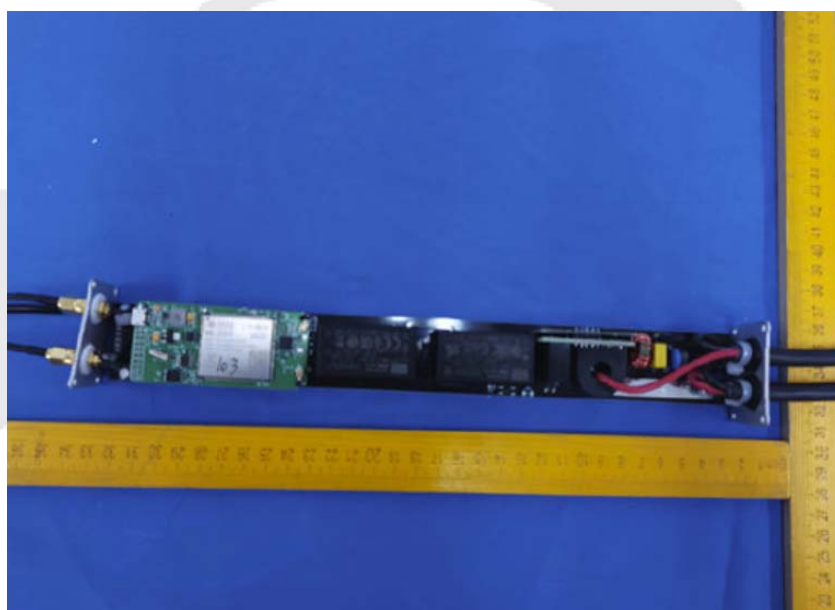
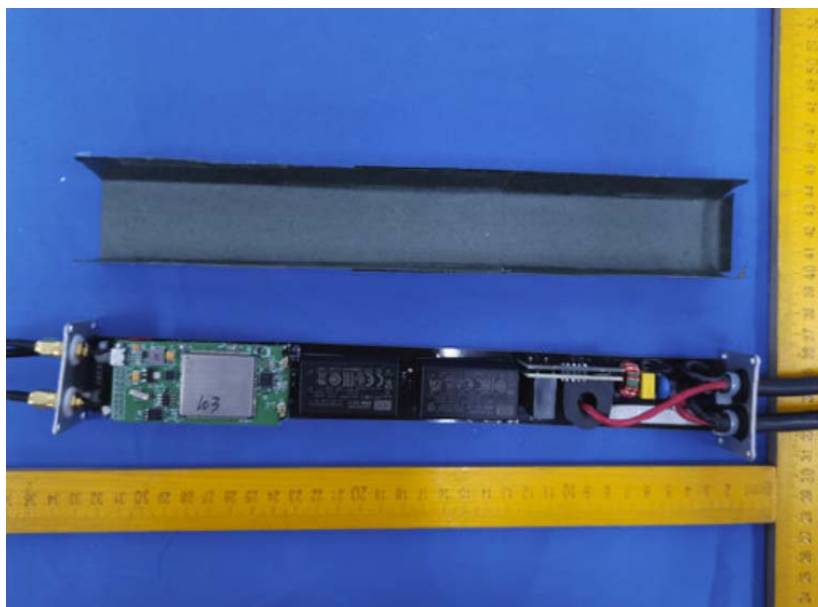
14.1. Setup for Test



15. EUT PHOTO









..... End of Report



Statement

1. The calibration and measurement of test equipments used in our laboratory are traceable to National primary standard of measurement and BIPM.
2. The report is invalid without the special test seal of the company.
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