

Annex 1: Measurement diagrams to
TEST REPORT
 No.: 16-1-0001901T61

According to:
FCC Regulations
 Part 22, Part 24, Part 27

for

peiker acoustic GmbH

ATM-02-ROW-T1
 Telematic Device

FCC: QWY-ATM2-T-13







Laboratory Accreditation and Listings		
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 <p>AUTHORIZED RF LABORATORY</p>	 <p>Authorized Test Lab</p> <p>Lab Code: 20011130-00</p>	 <p>MRA US-EU 0003</p>
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Laboratory Accreditation and Listings		

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1. Measurement diagrams LTE-mode

1.1. Power conducted

1.1.1. Power conducted LTE-Band 5

LTE-Band 5				QPSK-Modulation			16-QAM-Modulation			max. modulation QPSK	max. modulation 16-QAM	max. channel	absolute max. value
channel bandwidth	ARFCN ch. no.	ARFCN-Frequency [MHz]	Resource block allocation	Peak detektor [dBm]	RMS detektor [dBm]	PAR Faktor [dB]	Peak detektor [dBm]	RMS detektor [dBm]	PAR Faktor [dB]				
1.4 MHz	20407	824.7	1 RB low	26,1354	21,7404	4,395	26,2949	21,2156	5,0793	21,83	21,22	21,83	
			1 RB high	26,0294	21,5416	4,4878	26,1384	20,8977	5,2407				
			50% RB mid	26,3396	21,8325	4,5071	26,4826	20,9563	5,5263				
			100% RB	26,7132	20,6686	6,0446	26,9311	19,8002	7,1309				
	20525	836.5	1 RB low	26,2632	21,2354	5,0278	26,5276	21,2687	5,2589	21,24	21,27		
			1 RB high	26,2782	21,2047	5,0735	26,4318	20,9666	5,4652				
			50% RB mid	26,47	21,1406	5,3004	26,7562	20,6027	6,1535				
			100% RB	26,3697	20,1621	6,2076	26,5628	19,3892	7,1736				
	20643	848.3	1 RB low	26,3261	21,6971	4,629	26,4768	21,3433	5,1335	21,73	21,34		
			1 RB high	25,6481	21,3734	4,2747	26,2272	20,8554	5,3718				
			50% RB mid	26,2767	21,7331	4,5436	26,6405	21,0313	5,6092				
			100% RB	26,649	20,5259	6,1231	26,885	19,8484	7,0366				
3 MHz	20415	825.5	1 RB low	26,0681	21,641	4,4271	26,1557	21,3285	4,8272	21,71	21,33		
			1 RB high	25,889	21,7107	4,1783	25,8264	21,1357	4,6907				
			50% RB mid	25,308	20,5166	4,7914	26,0111	20,8799	5,1312				
			100% RB	26,0968	20,5147	5,5821	26,1274	19,4637	6,6637				
	20525	836.5	1 RB low	26,1982	21,5113	4,6869	26,4545	21,0293	5,4252	21,51	21,44		
			1 RB high	26,1712	21,4147	4,7565	26,5287	21,4357	5,093				
			50% RB mid	25,5879	20,3474	5,2405	26,4352	20,7568	5,6784				
			100% RB	26,5461	20,4134	6,1327	26,7588	19,4443	7,3145				
	20635	847.5	1 RB low	25,8449	21,4026	4,4423	26,0192	20,9481	5,0711	21,50	21,00		
			1 RB high	25,6579	21,5015	4,1564	25,9991	21,0014	4,9977				
			50% RB mid	25,6484	20,5644	5,084	26,3323	20,7959	5,5364				
			100% RB	26,2239	20,5293	5,6946	26,518	19,5854	6,9326				
5 MHz	20425	826.5	1 RB low	26,1735	21,7996	4,3739	26,062	20,9875	5,0745	21,80	21,08		
			1 RB high	25,7995	21,5446	4,2549	25,8342	21,0777	4,7565				
			50% RB mid	25,6754	20,437	5,2384	25,9829	20,799	5,1839				
			100% RB	26,0375	20,4765	5,561	26,2522	19,4581	6,7941				
	20525	836.5	1 RB low	26,0467	21,3117	4,735	26,206	20,9754	5,2306	21,32	20,98		
			1 RB high	26,1262	21,32	4,8051	26,2614	20,816	5,4454				
			50% RB mid	26,177	20,3705	5,8065	26,6019	20,8969	5,705				
			100% RB	27,1114	20,2372	6,8742	26,0894	19,3844	6,705				
	20625	846.5	1 RB low	25,5522	21,4015	4,1507	25,7109	20,9504	4,7605	21,40	21,06		
			1 RB high	25,6714	21,4014	4,27	26,0945	21,0649	5,0296				
			50% RB mid	26,0496	20,4822	5,5674	25,9913	20,5054	5,4859				
			100% RB	26,7321	20,3257	6,4064	26,1706	19,477	6,6936				
10 MHz	20450	829	1 RB low	26,0075	21,3693	4,6382	26,013	20,8495	5,1635	21,44	20,95		
			1 RB high	26,1846	21,435	4,7496	26,0768	20,946	5,1308				
			50% RB mid	25,6541	20,5186	5,1355	25,2111	19,5043	5,7068				
			100% RB	26,8233	20,4157	6,4076	26,1424	19,4654	6,677				
	20525	836.5	1 RB low	25,7614	21,409	4,3524	25,8528	20,906	4,9468	21,41	20,91		
			1 RB high	25,6324	21,2054	4,427	25,7696	20,5742	5,1954				
			50% RB mid	25,8359	20,2995	5,5364	25,6001	19,4142	6,1859				
			100% RB	26,8934	20,2086	6,6848	26,7346	19,3774	7,3572				
	20600	844	1 RB low	25,8979	21,1519	4,746	26,0344	20,8621	5,1723	21,41	21,26		
			1 RB high	25,8701	21,4059	4,4642	26,0982	21,2617	4,8365				
			50% RB mid	25,6373	20,4016	5,2357	25,2255	19,5594	5,6661				
			100% RB	26,8279	20,367	6,4609	27,0298	19,4801	7,5497				

1.1.2. Power conducted LTE-Band 7

LTE-Band 7				QPSK-Modulation			16-QAM-Modulation			max. modulation	max. modulation	max. channel	absolute max. value
channel bandwidth	ARFCN ch. no.	ARFCN-Frequency [MHz]	Resource block allocation	Peak detektor [dBm]	RMS detektor [dBm]	PAR Faktor [dB]	Peak detektor [dBm]	RMS detektor [dBm]	PAR Faktor [dB]				
5 MHz	20775		1 RB low	23,0504	19,1538	3,8966	23,2814	19,124	4,1574	19,1538	19,124	19,68	
			1 RB high	23,3642	18,5326	4,8316	23,4652	18,8676	4,5976				
			50% RB mid	23,2092	18,3462	4,863	23,4611	18,6448	4,8163				
			100% RB	23,4264	18,1936	5,2328	23,6516	17,4537	6,1979				
	21100		1 RB low	23,4217	19,3148	4,1069	23,3339	18,7142	4,6197				
			1 RB high	23,2414	19,0102	4,2312	23,1657	18,338	4,8277				
			50% RB mid	23,1277	17,9062	5,2215	23,2304	18,0513	5,1791				
			100% RB	23,5841	17,8478	5,7363	23,3604	16,9809	6,3795				
	21425		1 RB low	23,148	19,4508	3,6972	23,3649	19,2346	4,1303				
			1 RB high	22,3677	19,675	2,6927	22,7107	19,1	3,6107				
			50% RB mid	22,9424	18,287	4,6554	23,1074	18,7378	4,3696				
			100% RB	23,8038	18,3318	5,472	23,6093	17,5794	6,0299				
10 MHz	20800		1 RB low	23,7858	20,3496	3,4362	23,875	19,9983	3,8767	20,3796	20,444	20,44	
			1 RB high	24,012	20,3796	3,6324	24,1625	20,444	3,7185				
			50% RB mid	23,2419	18,3894	4,8525	23,2012	17,6399	5,5613				
			100% RB	24,3262	18,2889	6,0373	24,1769	17,621	6,5559				
	21000		1 RB low	23,5701	19,6963	3,8738	23,4811	19,102	4,3791				
			1 RB high	23,2445	19,2912	3,9533	23,4387	18,7207	4,718				
			50% RB mid	22,8626	17,9828	4,8798	22,5014	17,0357	5,4657				
			100% RB	23,9611	18,0146	5,9465	23,5028	17,0381	6,4647				
	21400		1 RB low	23,5375	19,7461	3,7914	23,6821	19,2589	4,4232				
			1 RB high	22,3228	20,1336	2,1892	22,7473	19,6617	3,0856				
			50% RB mid	22,977	18,3234	4,6536	22,8291	17,4824	5,3467				
			100% RB	23,9222	18,4848	5,4374	23,7249	17,4951	6,2298				
15 MHz	20825		1 RB low	24,1046	21,0953	3,0093	23,9449	20,1149	3,83	21,0953	20,4247	21,10	
			1 RB high	24,0636	20,4336	3,63	24,0316	20,4247	3,6069				
			50% RB mid	23,9377	19,7033	4,2344	24,2721	20,1194	4,1527				
			100% RB	25,3625	19,7795	5,583	24,7882	18,3616	6,4266				
	21100		1 RB low	23,5611	19,7196	3,8415	23,639	19,127	4,512				
			1 RB high	23,3466	19,3972	3,9494	23,4727	18,6363	4,8364				
			50% RB mid	23,3047	18,3846	4,9201	23,6853	18,6834	5,0019				
			100% RB	24,3152	18,3829	5,9323	24,2338	17,5101	6,7237				
	21375		1 RB low	23,2901	19,8978	3,3923	23,4844	19,4787	4,0057				
			1 RB high	21,8368	20,7438	1,093	22,5895	20,1648	2,4247				
			50% RB mid	23,318	19,0218	4,2962	23,7098	19,494	4,2158				
			100% RB	24,4028	18,9941	5,4087	24,5618	18,0651	6,4967				
20 MHz	20850		1 RB low	24,1127	21,089	3,0237	24,0721	20,4666	3,6055	21,089	20,4666	21,09	
			1 RB high	24,3945	20,6783	3,7162	24,481	20,1941	4,2869				
			50% RB mid	23,8839	19,7601	4,1238	24,3422	19,9095	4,4327				
			100% RB	25,0222	19,3763	5,6459	24,7756	18,4035	6,3721				
	21100		1 RB low	23,7395	20,2596	3,4799	23,6522	19,275	4,3772				
			1 RB high	23,3486	19,3254	4,0232	23,3542	19,4214	3,9328				
			50% RB mid	23,1661	18,4784	4,6877	23,6591	18,6763	4,9828				
			100% RB	24,1967	18,4339	5,7628	24,0174	17,5879	6,4295				
	21300		1 RB low	23,3316	20,4988	2,8328	23,4032	19,3485	4,0547				
			1 RB high	21,5473	20,5573	0,99	22,647	20,0821	2,5649				
			50% RB mid	23,4568	19,366	4,0908	23,6504	19,0532	4,5972				
			100% RB	24,0633	19,0374	5,0259	24,2958	18,0909	6,2049				

1.1.3. PAPR-Value (CCDF plots)

1.1.3.1. LTE Band 5

Worst-Case of each maximum Peak power value was tested with the CCDF method

1.1.3.2. 1.4MHz signal bandwidth

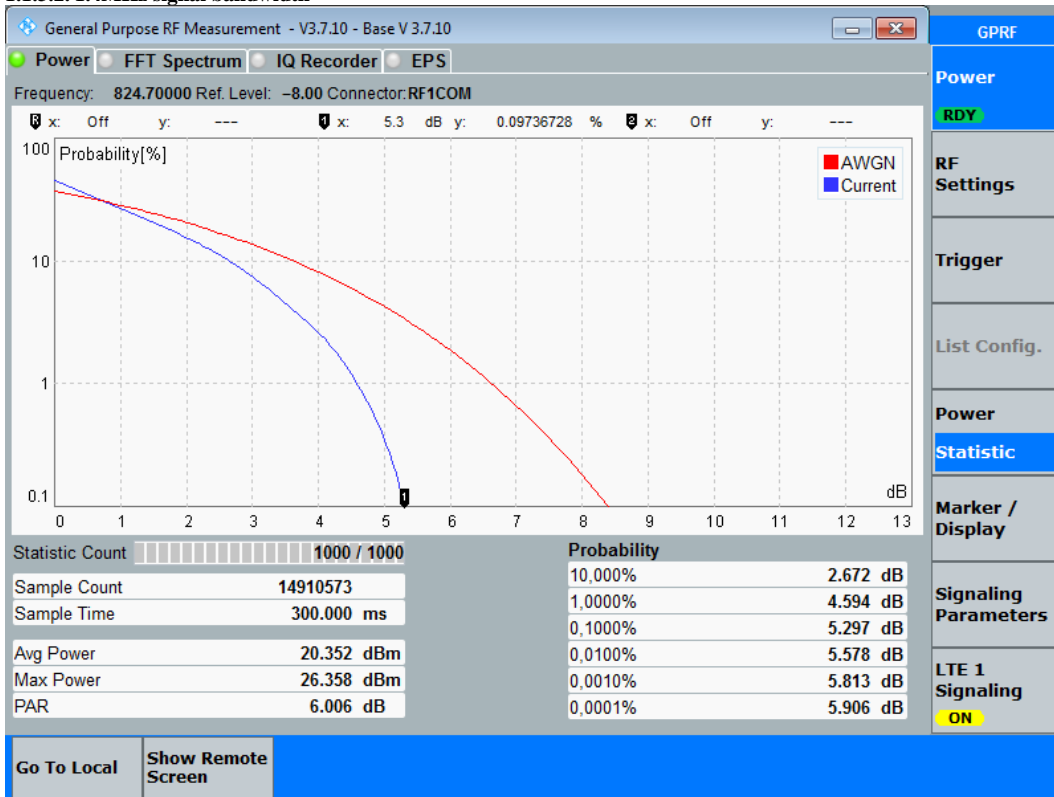


Diagram: QPSK 1.4 MHz CH20407,3RB mid

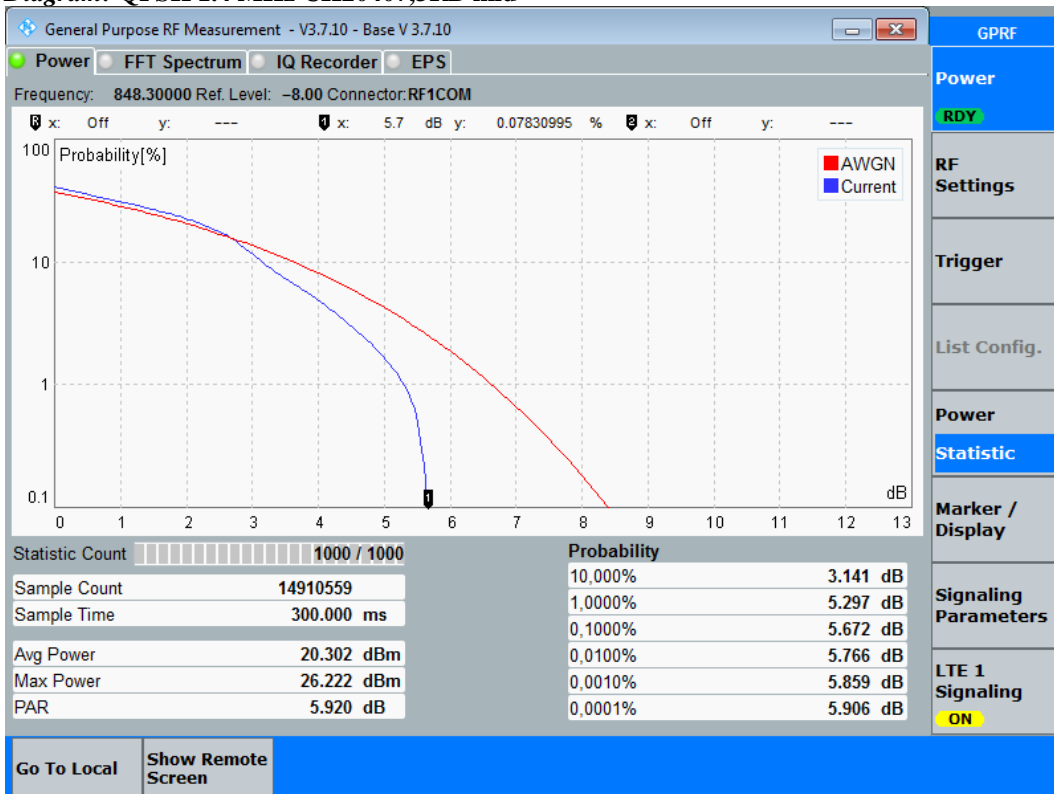


Diagram: 16QAM 1.4 MHz CH20643,1RB low

1.1.3.3. 3MHz signal bandwidth

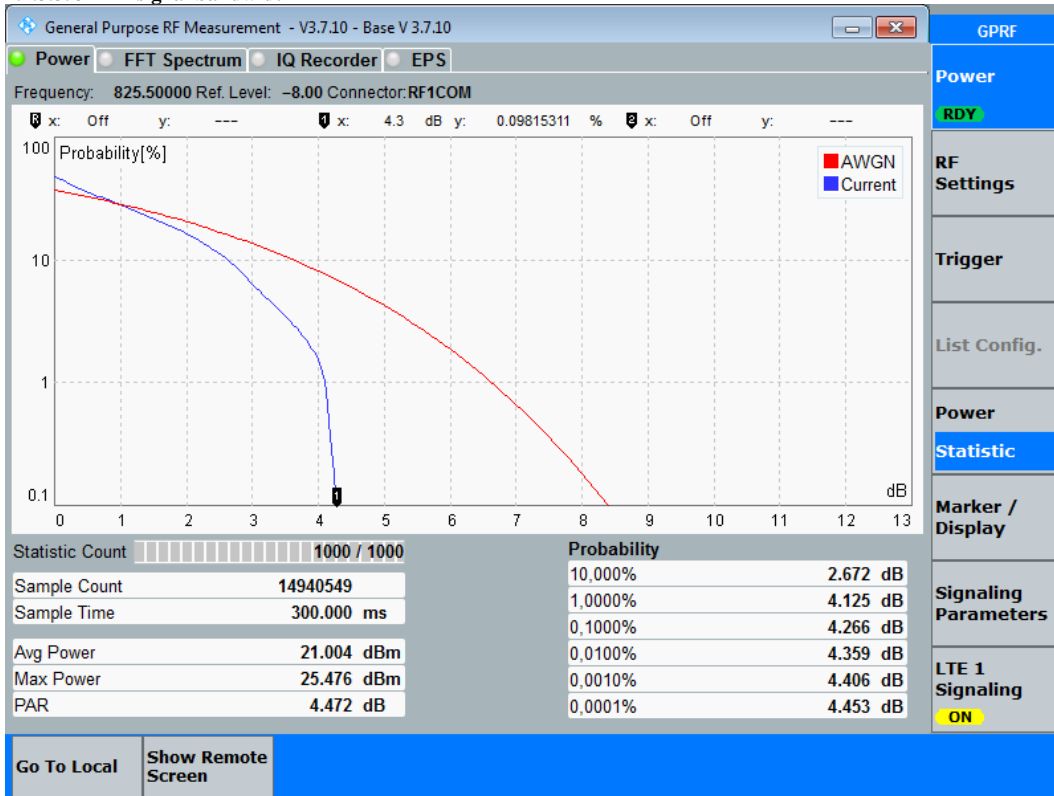


Diagram: Ch20415_QPSK_1RB_high_3MHz

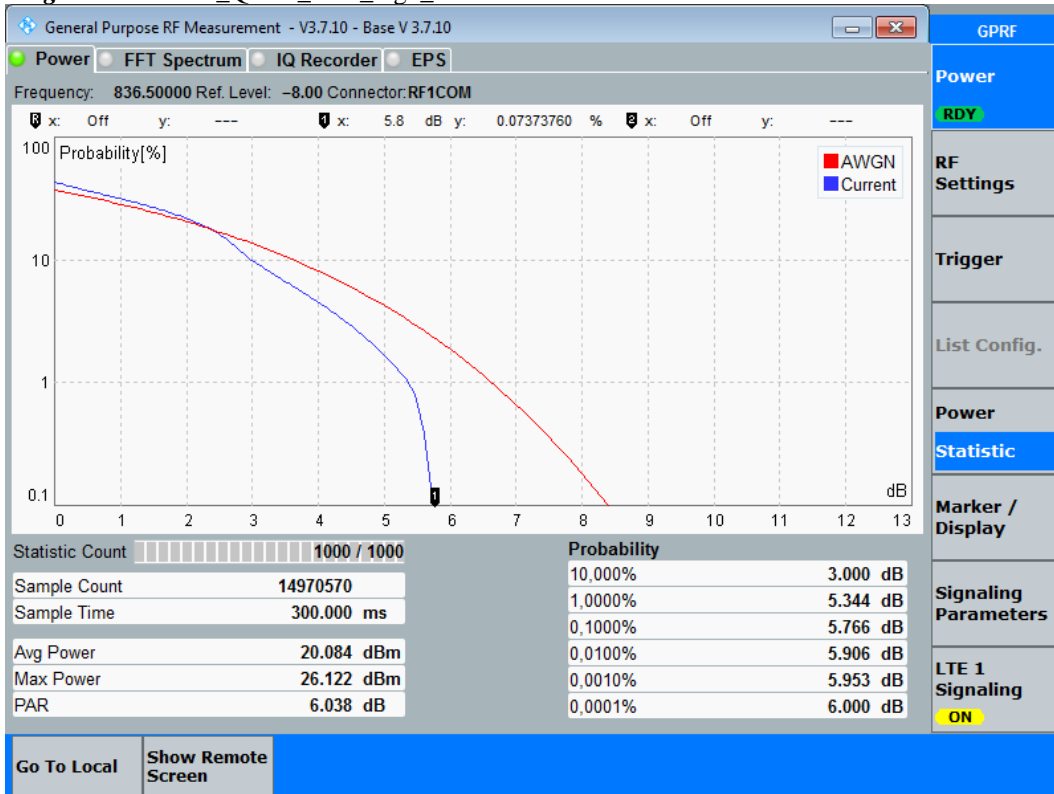


Diagram: Ch20525_QAM_1RB_high_3MHz

1.1.3.4. 5MHz signal bandwidth

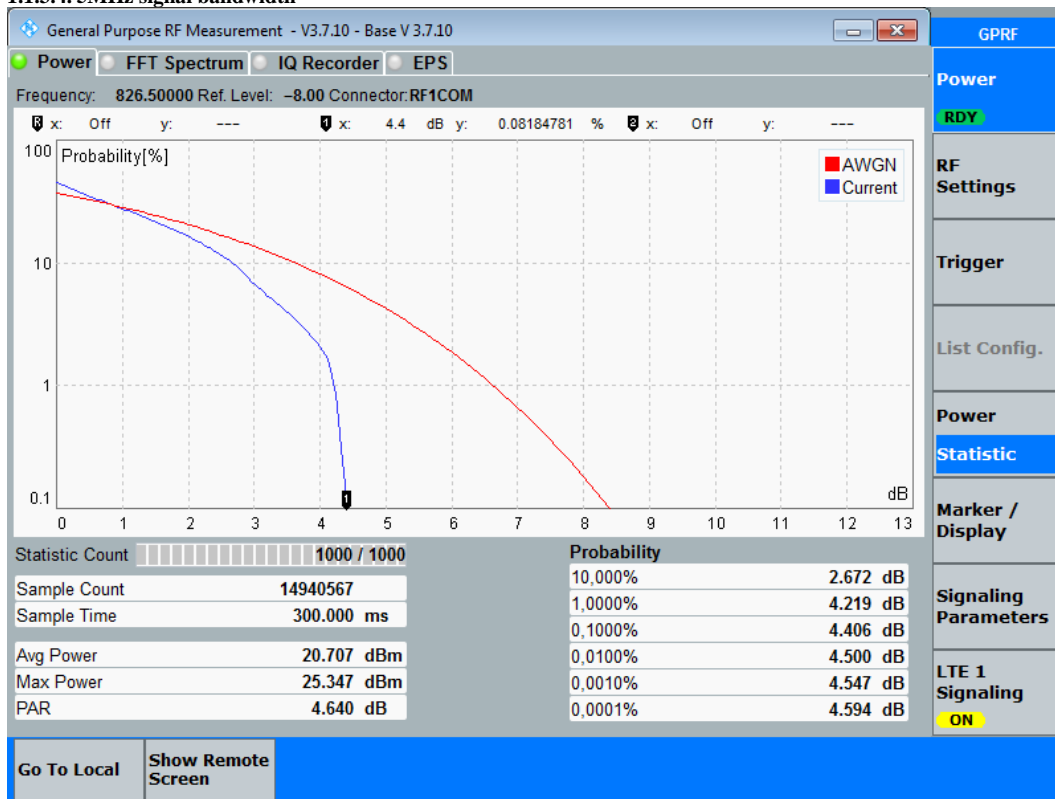


Diagram: Ch20425_QPSK_1RB_low_5MHz

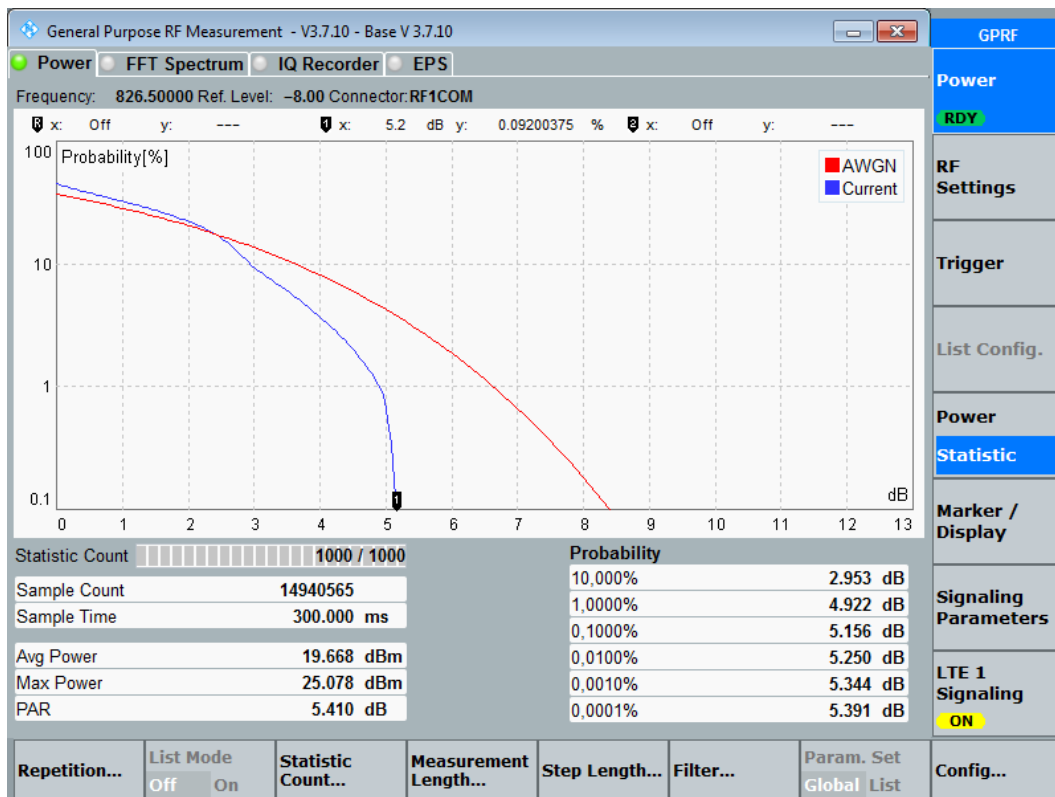


Diagram: Ch20425_QAM_1RB_high_5MHz

1.1.3.5. 10MHz signal bandwidth

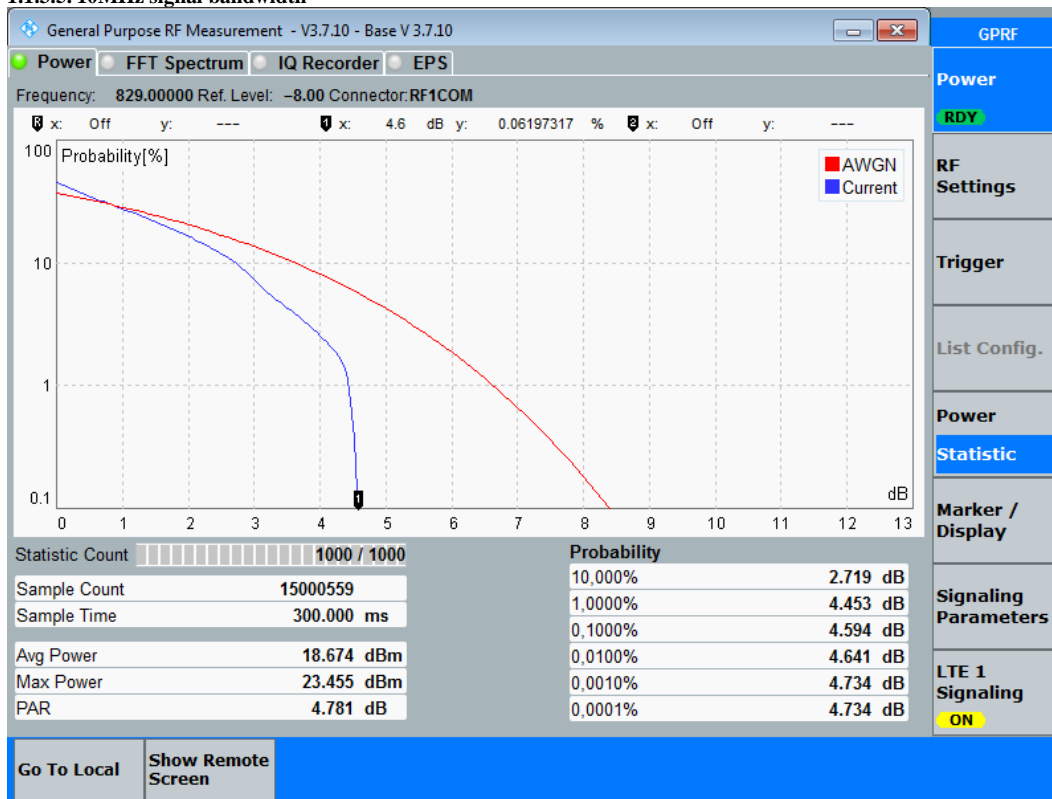


Diagram: QPSK 10MHz CH20450,1RB high

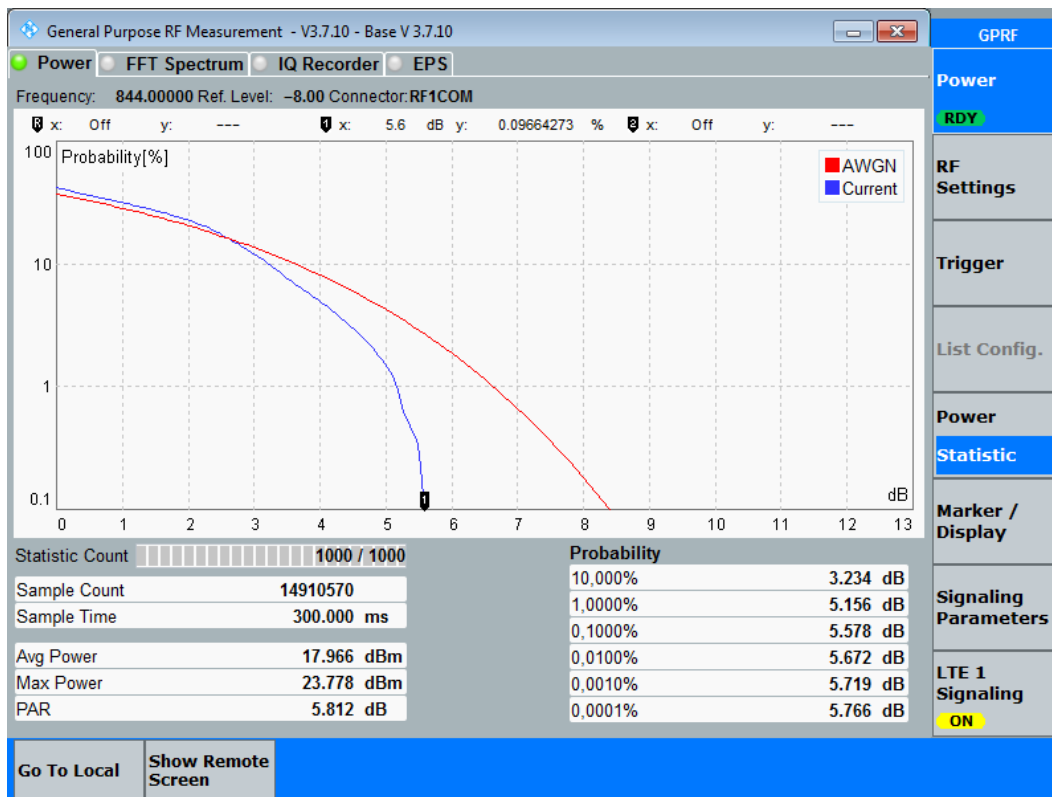


Diagram: Ch20600_QAM_1RB_high_10MHz

1.1.4. LTE Band 7

1.1.4.1. 5MHz signal bandwidth

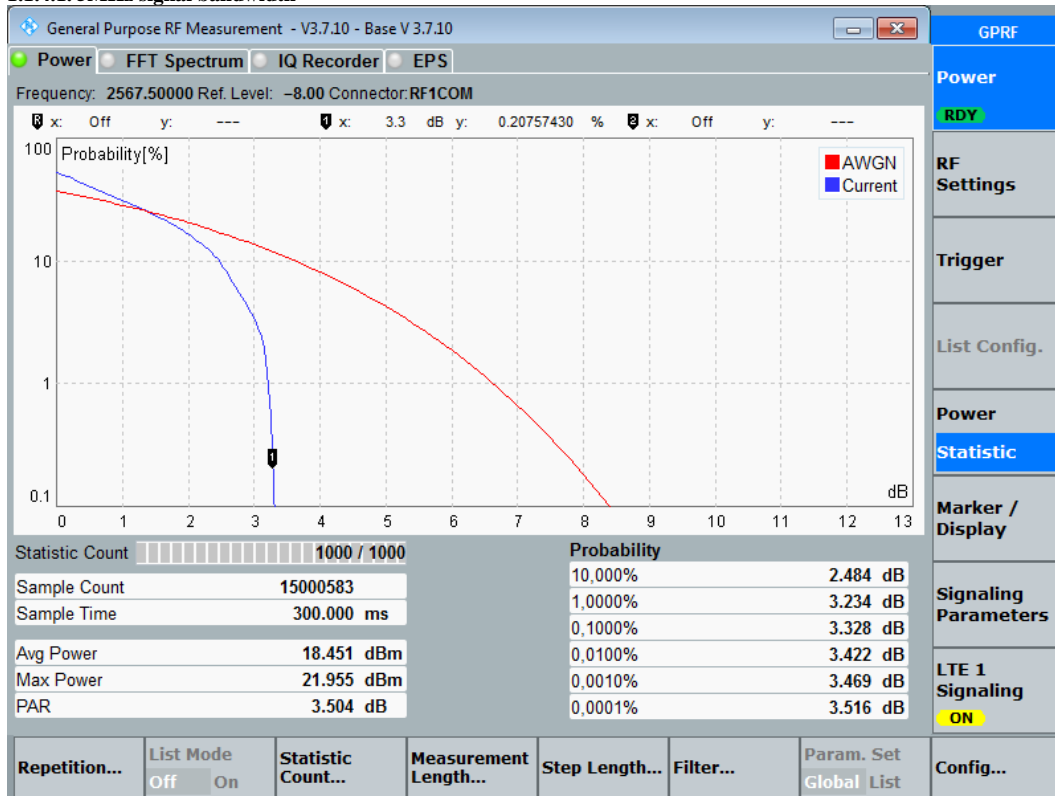


Diagram: Ch21425_QPSK_1RB_high_5MHz

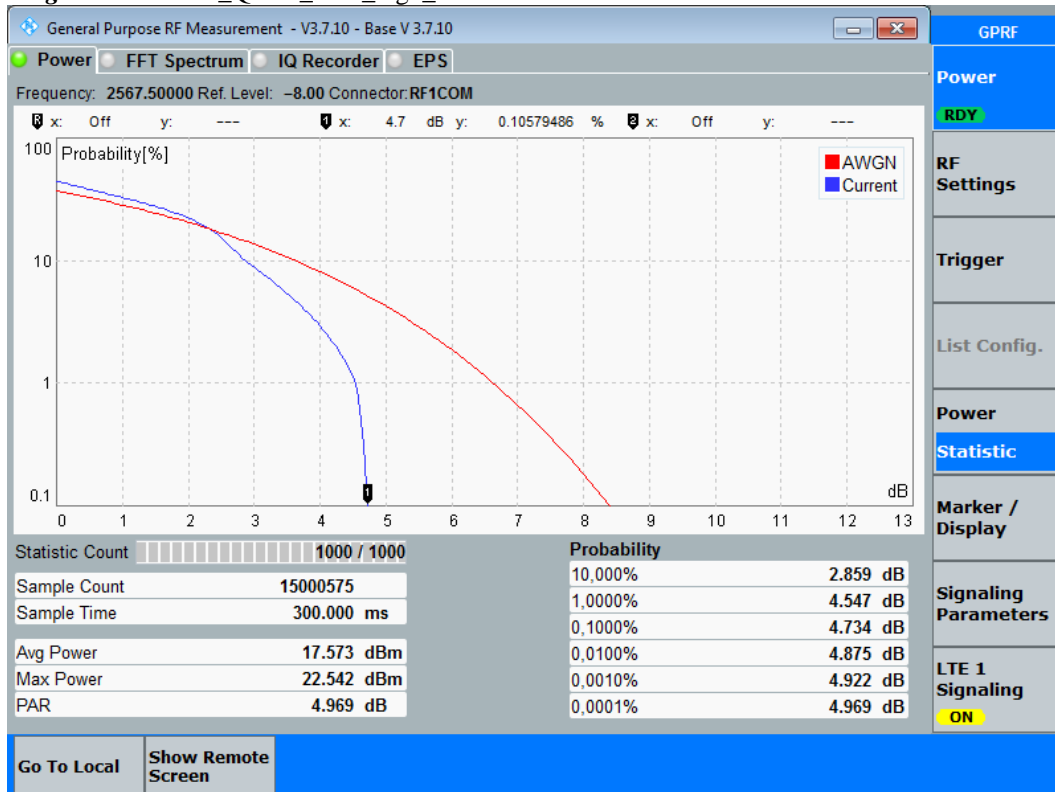


Diagram: Ch21425_QAM_1RB_low_5MHz

1.1.4.2. 10MHz signal bandwidth

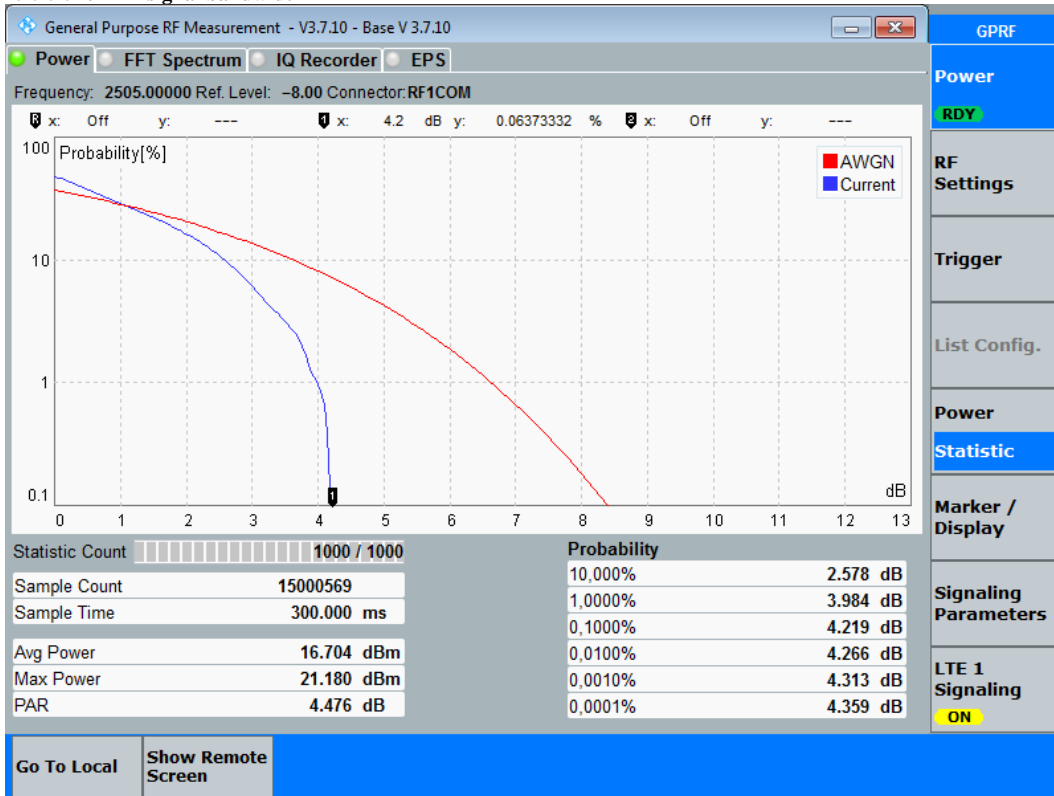


Diagram: Ch20800_QPSK_1RB_high_10MHz

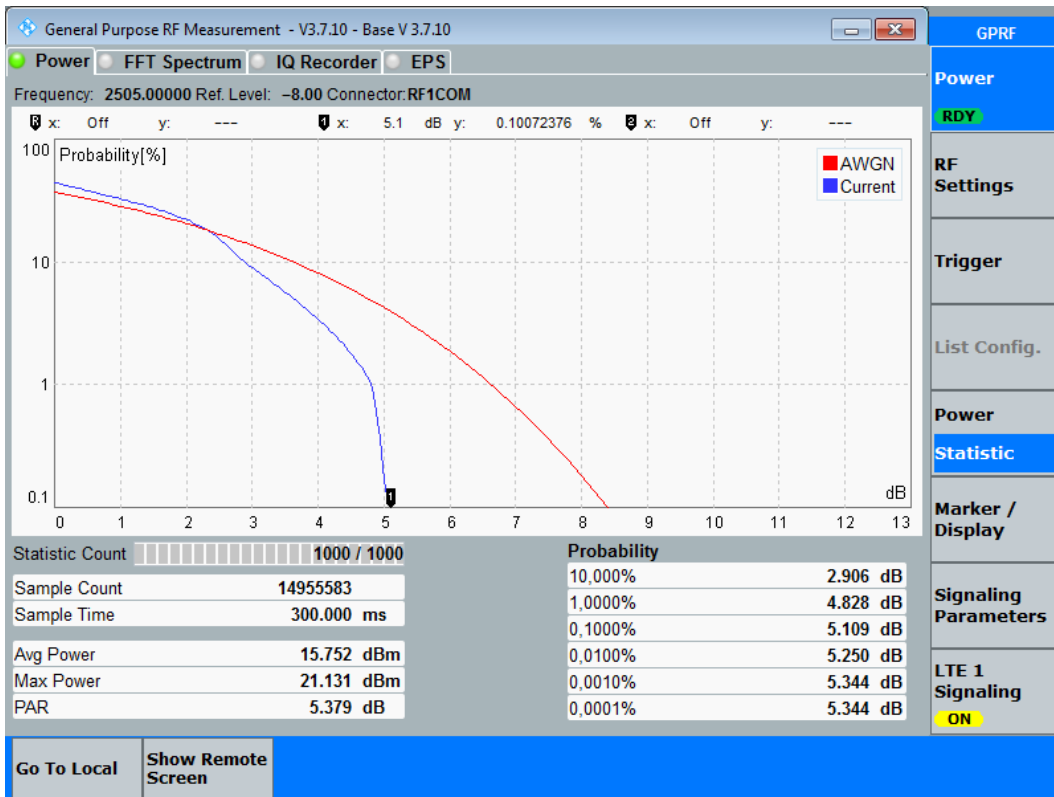


Diagram: Ch20800_QAM_1RB_high_10MHz

1.1.4.3. 15MHz signal bandwidth

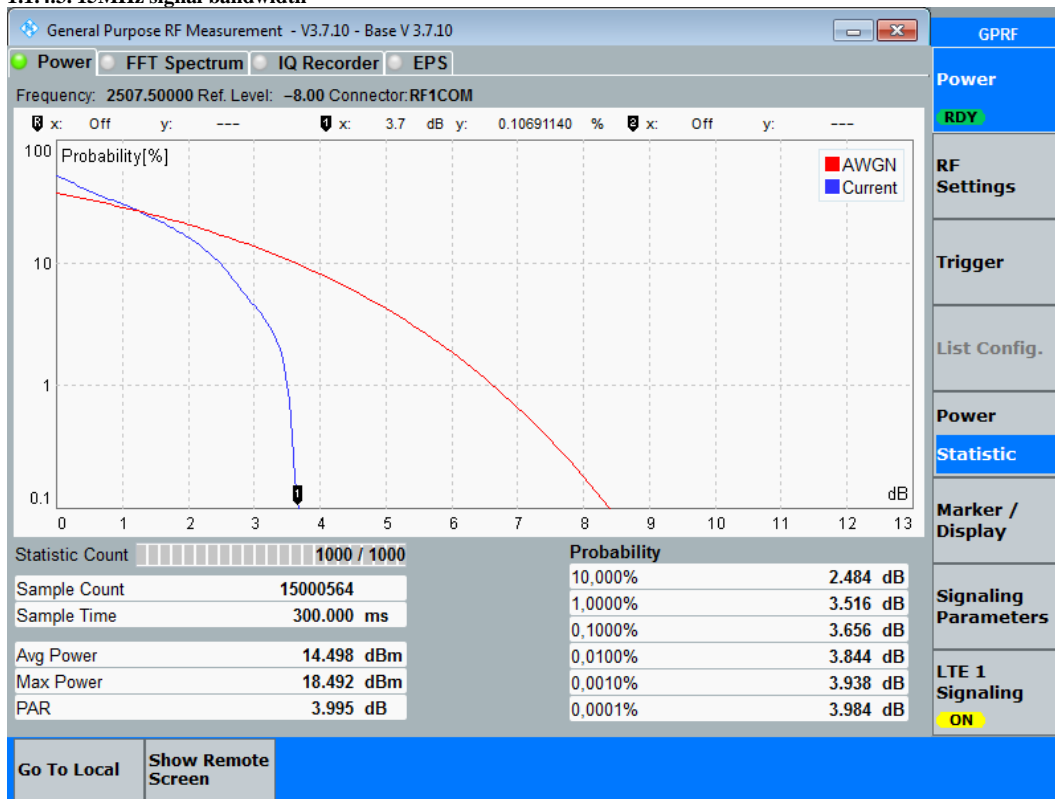


Diagram: Ch20825_QPSK_1RB_low_15MHz

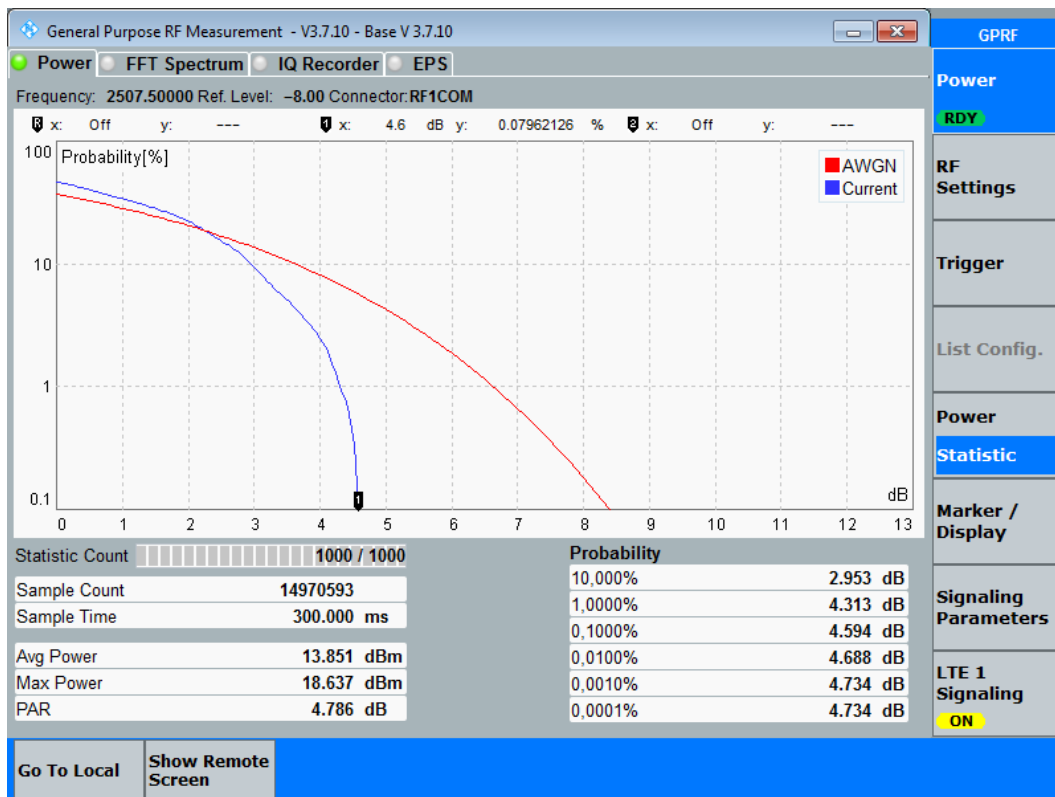


Diagram: Ch20825_QAM_1RB_high_15MHz

1.1.4.4. 20MHz signal bandwidth

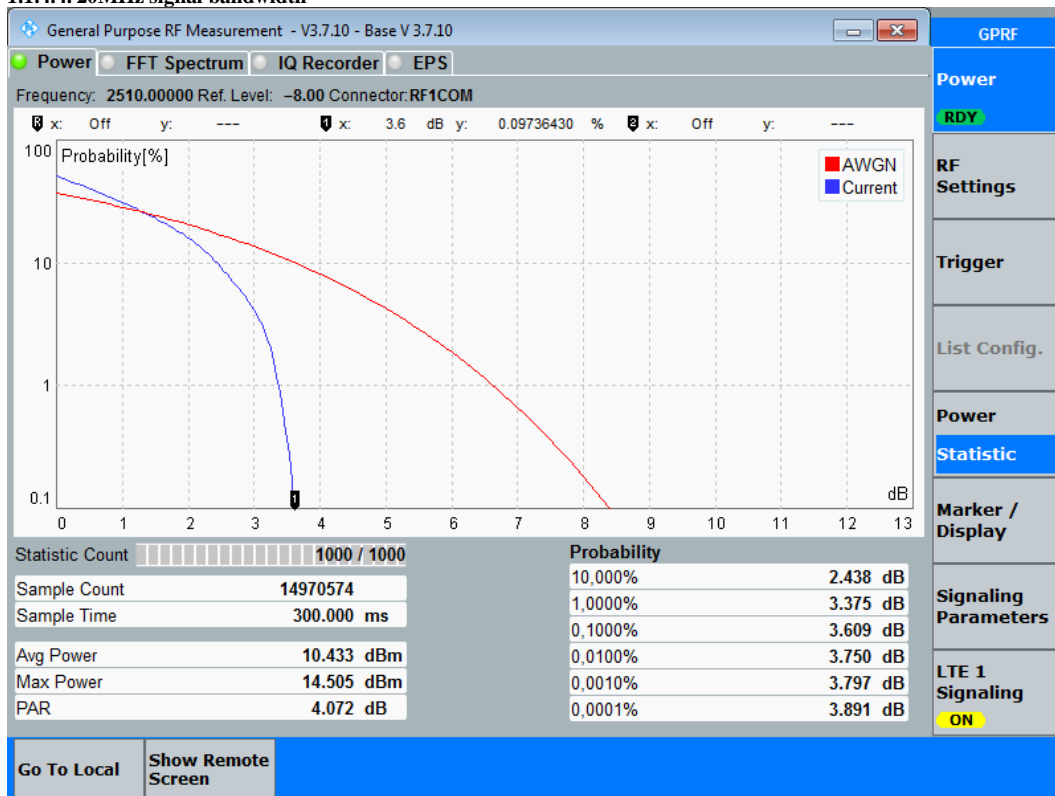


Diagram: Ch20850_QPSK_1RB_low_20MHz

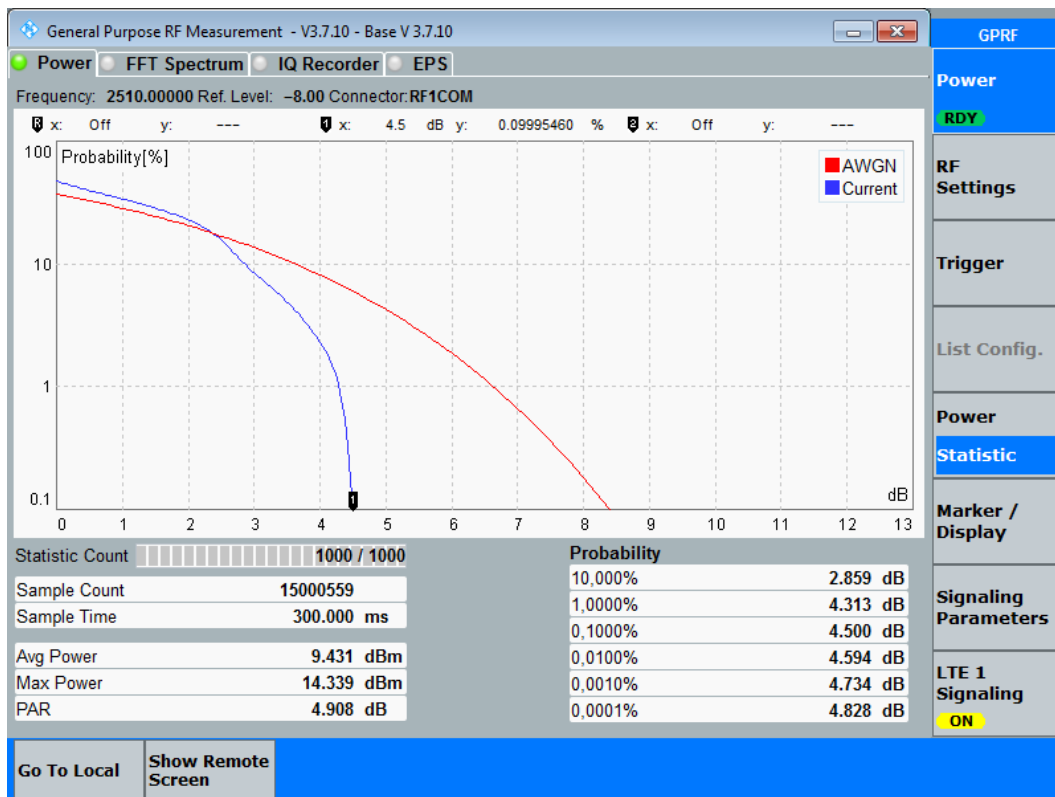


Diagram: Ch20850_QAM_1RB_low_20MHz

1.2. Spurious emissions radiated (LTE Band 5)

1.2.1. Magnetic field strength radiated (LTE Band 5)

2.01a_RMC_LTE_FDD5_BW1_4_RBmid_CH20407_laying

Common Information

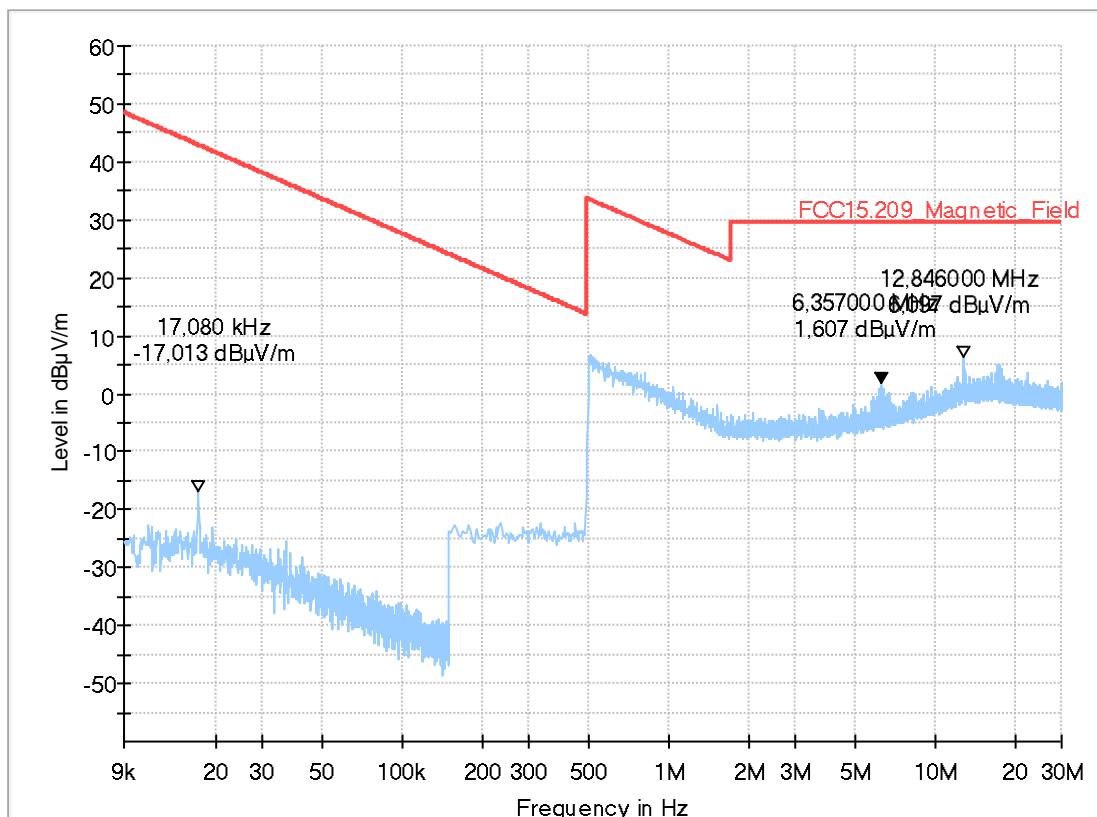
Test Description:	Magnetic Field Strength Measurement related to 30/300m distance
Operating Conditions:	UE allocated channel 20407/ BW:1.4MHz/ RB:mid \Mod:QPsK
Operator Name:	HEI
Comment:	DUT Laying

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)

HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC
Comments:	-

Full Spectrum



2.01b_RMC_LTE_FDD5_BW1_4_RBmid_CH20407_standing

Common Information

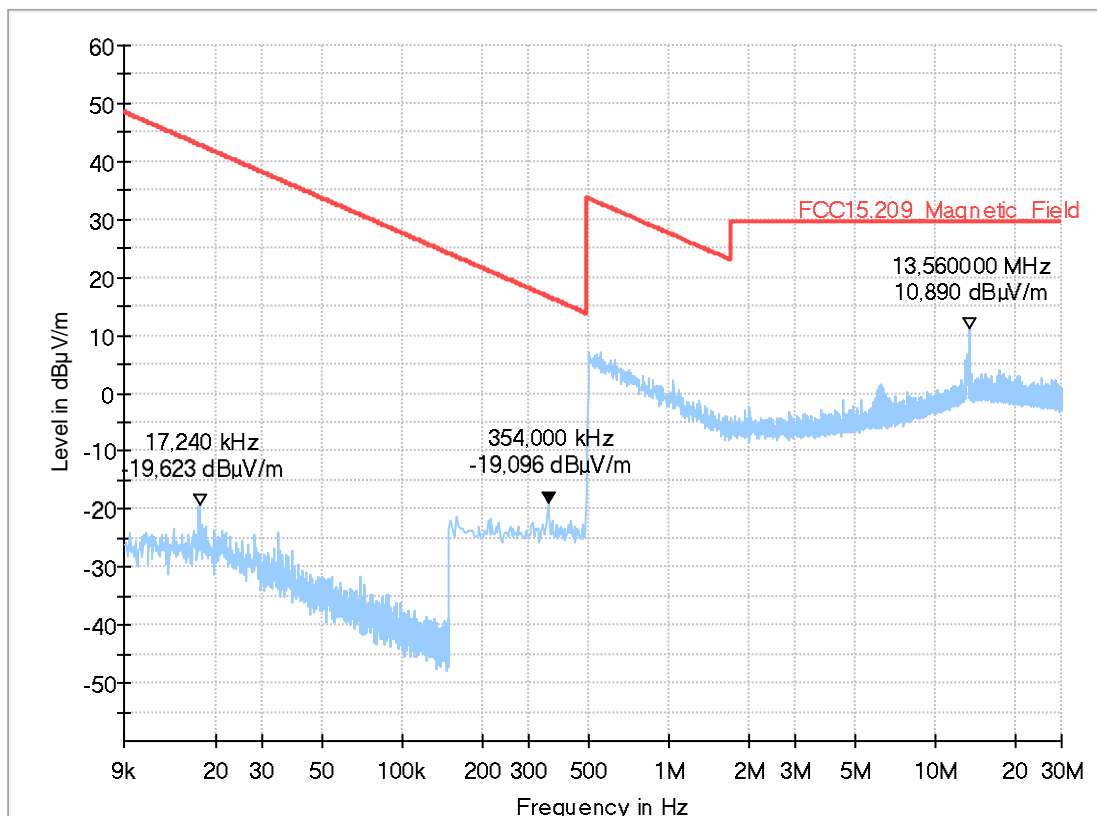
Test Description:	Magnetic Field Strength Measurement related to 30/300m distance
Operating Conditions:	FDD5_BW1_4_RBmid_CH20407
Operator Name:	MBe
Comment:	EUT Standing

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)

HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC
Comments:	-

Full Spectrum



2.02a_RMC_LTE_FDD5_BW3_RB1high_CH20525_laying

Common Information

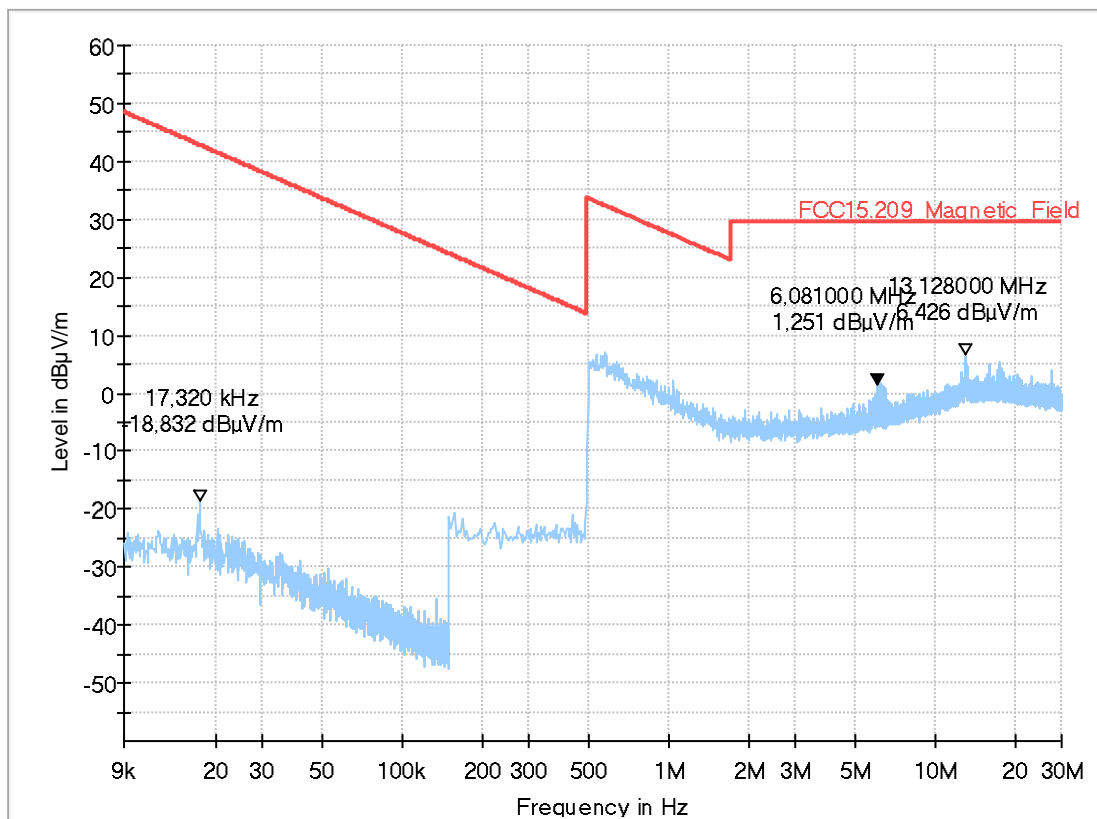
Test Description:	Magnetic Field Strength Measurement related to 30/300m distance
Operating Conditions:	UE allocated channel 20525/ BW:3/ RB:high \Mod:16QAM
Operator Name:	HEI
Comment:	DUT Laying

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)

HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC
Comments:	-

Full Spectrum



2.02b_RMC_LTE_FDD5_BW3_RB1high_CH20525_standing

Common Information

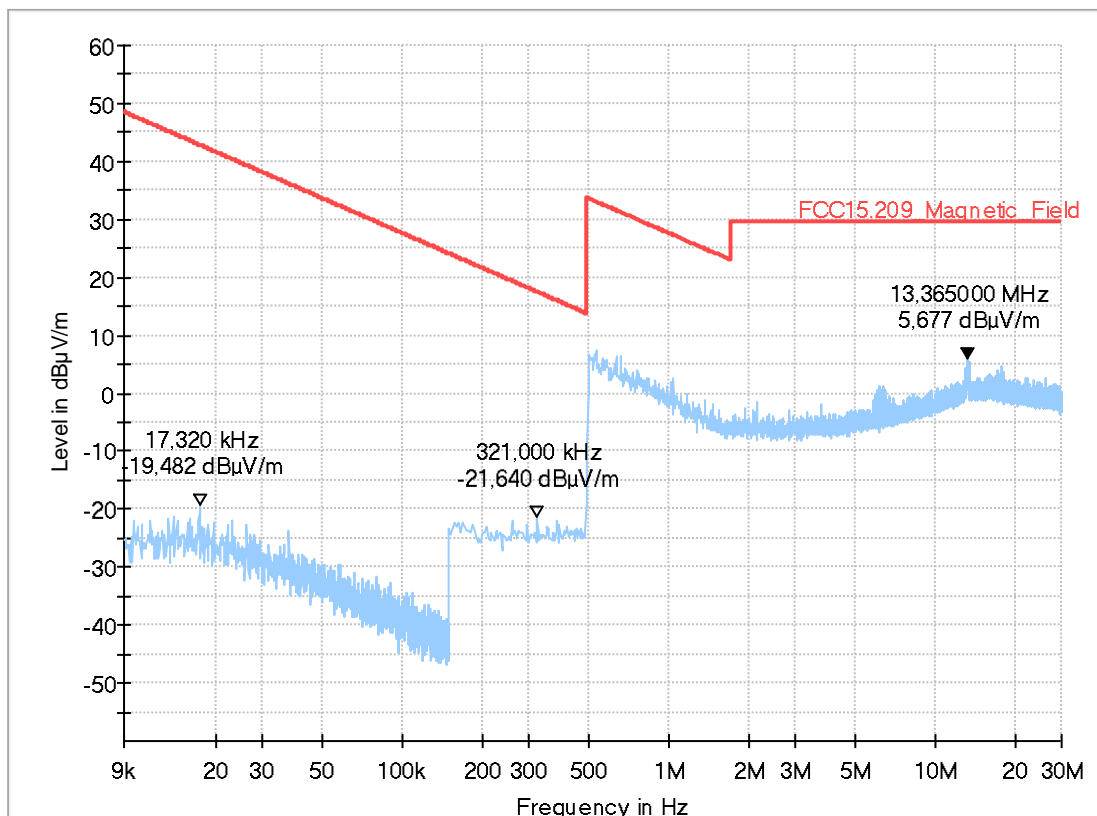
Test Description:	Magnetic Field Strength Measurement related to 30/300m distance
Operating Conditions:	FDD5_BW3_RB1high_CH20525
Operator Name:	MBe
Comment:	EUT Standing

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)

HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC
Comments:	-

Full Spectrum



1.2.2. Emissions above 30MHz (LTE Band 5)

8.01a_RMC_LTE_FDD5_BW1_4_RBmid_CH20407_laying

Common Information

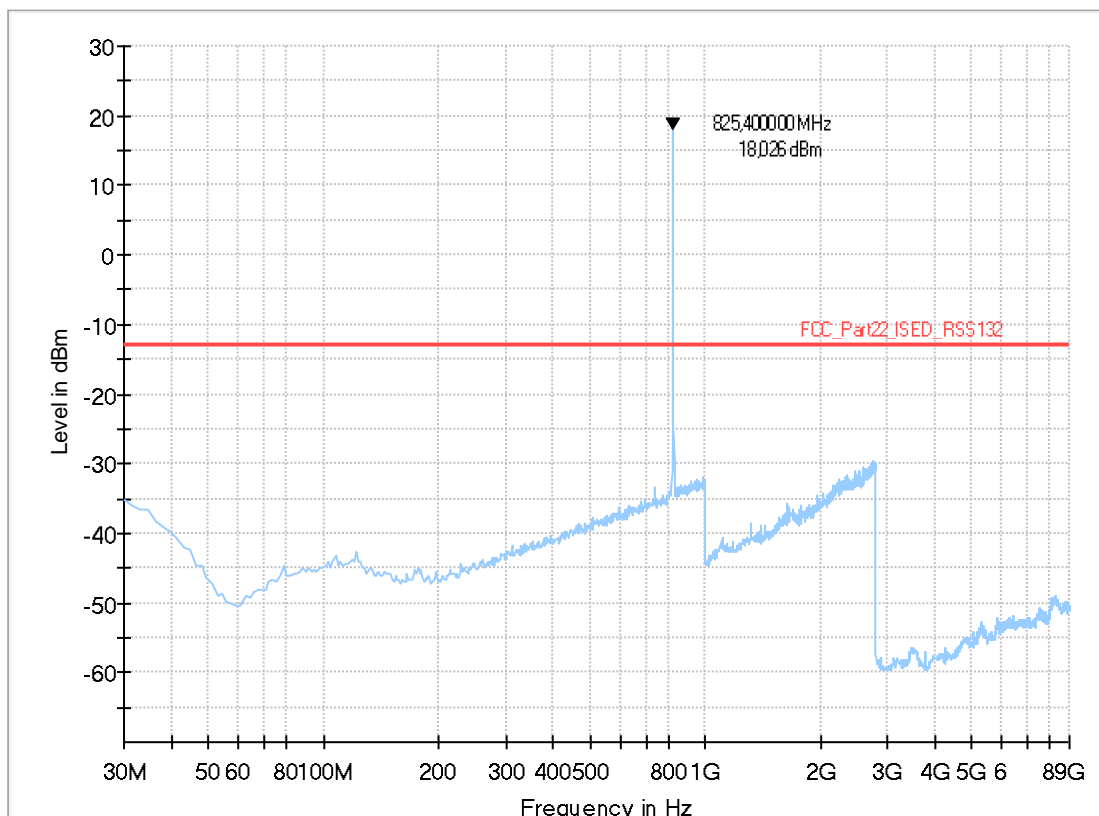
Test Description:	Radiated emission related to 1m
Test Site:	FAR
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Operation mode:	UE allocated channel 20407/ BW: 1.4MHz/ RB:1 / Position:low/Mod:QPSk
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Operator Name:	HEI
Comment:	EUT_Laying position

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)

HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC
Comments:	-

Full Spectrum



8.01b_RMC_LTE_FDD5_BW1_4_RBmid_CH20407_standing

Common Information

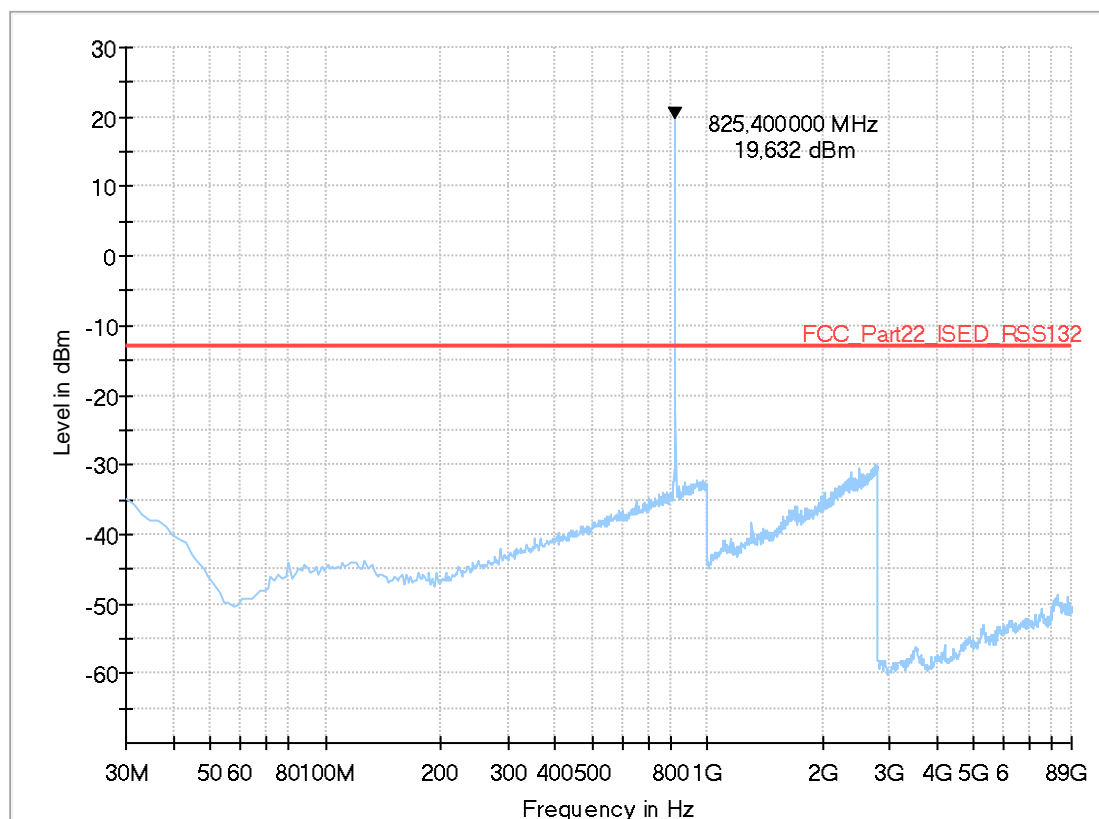
Test Description:	Radiated emission related to 1m
Test Site:	FAR
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Operation mode:	UE allocated channel 20407/ BW: 1.4MHz/ RB:1 / Position:low\Mod:QPSk
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Operator Name:	HEI
Comment:	EUT_Laying position

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)

HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC
Comments:	-

Full Spectrum



8.02a_RMC_LTE_FDD5_BW3_RB1high_CH20525_laying

Common Information

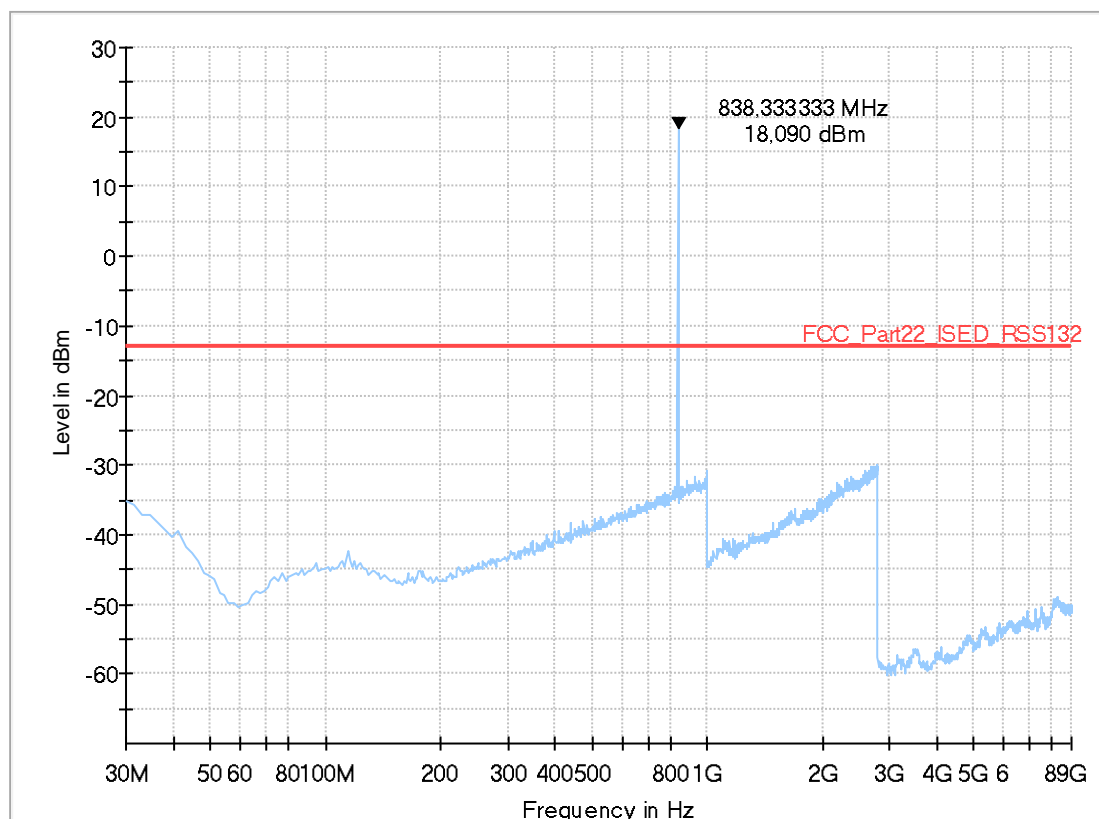
Test Description:	Radiated emission related to 1m
Test Site:	FAR
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Operation mode:	UE allocated channel 20525/ BW: 3MHz/ RB:1 / Position: High\Mod:16QAM
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Operator Name:	HEI
Comment:	EUT_Laying position

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)

HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC
Comments:	-

Full Spectrum



8.02b_RMC_LTE_FDD5_BW3_RB1high_CH20525_standing

Common Information

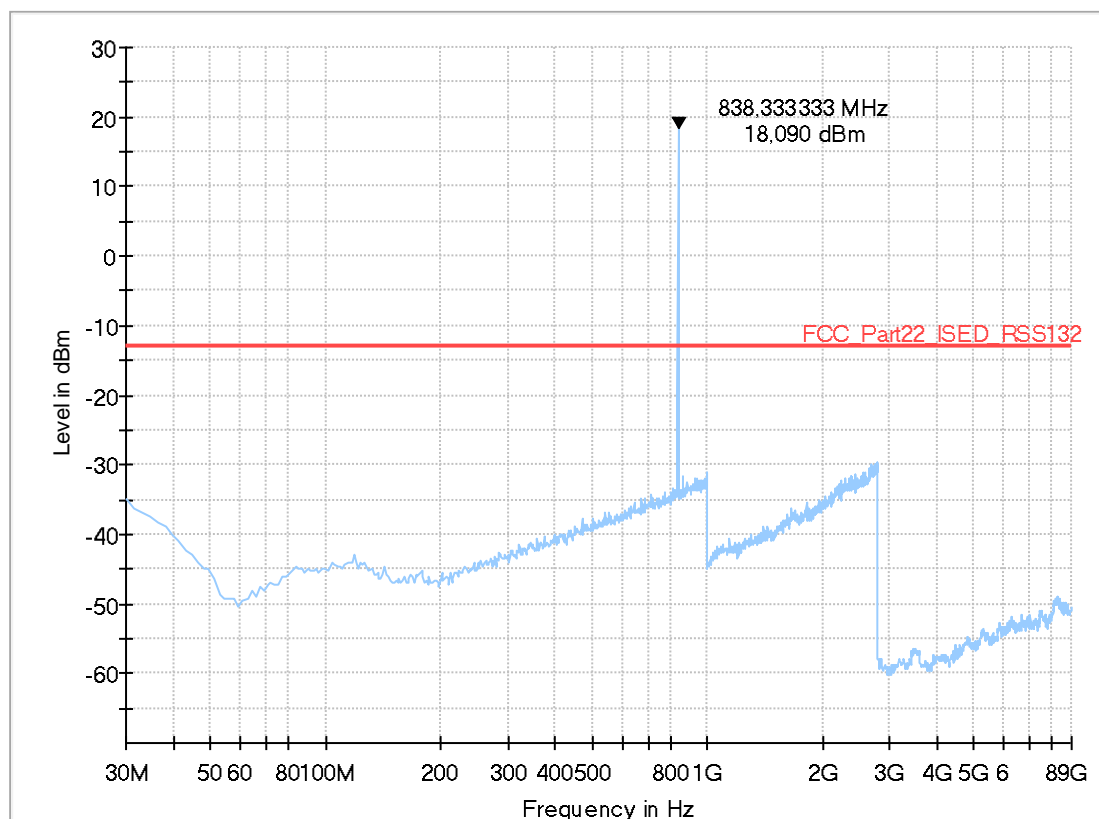
Test Description:	Radiated emission related to 1m
Test Site:	FAR
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Operation mode:	UE allocated channel 20525/ BW: 3MHz/ RB:1 / Position: High\Mod:16QAM
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Operator Name:	HEI
Comment:	EUT_Standing position

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)

HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC
Comments:	-

Full Spectrum



1.3. Spurious emissions radiated (LTE Band 7)

1.3.1. Magnetic field strength radiated (LTE Band 7)

2.03a_RMC_LTE_FDD7_BW15_RB1low_CH20825_laying

Common Information

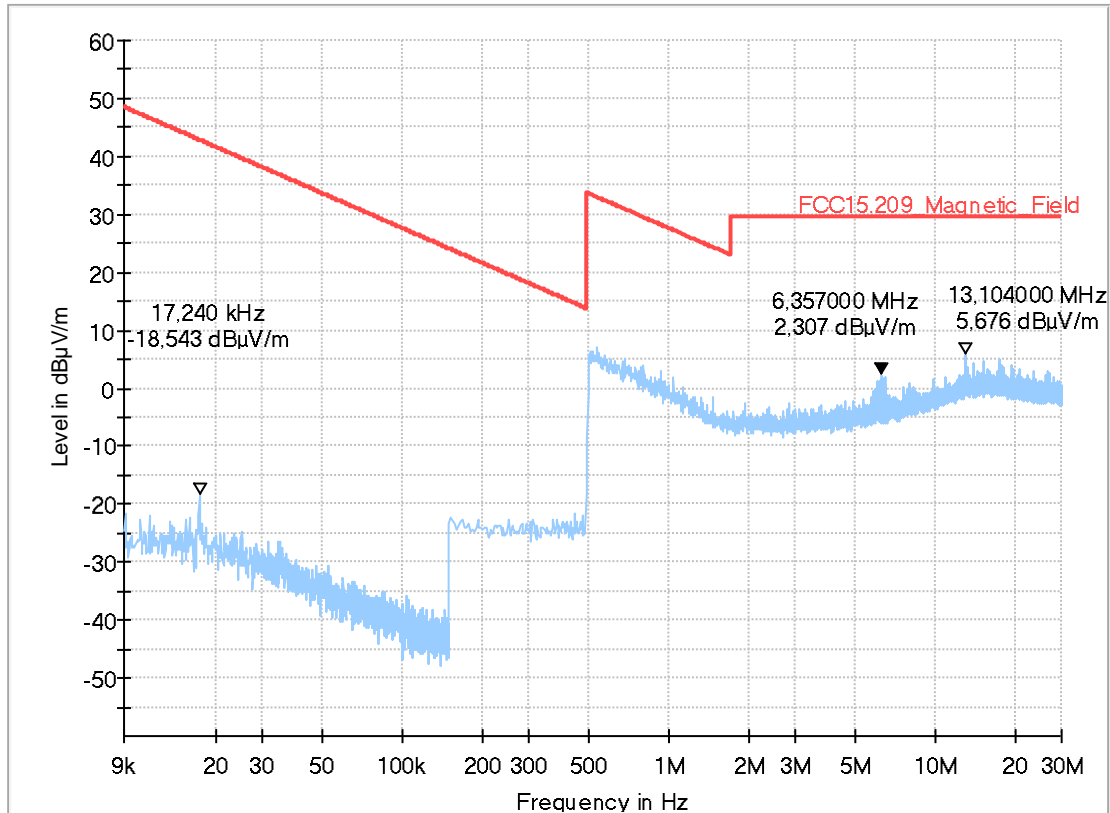
Test Description:	Magnetic Field Strength Measurement related to 30/300m distance
Operating Conditions:	UE allocated channel 20825/ BW:15/ RB:low \Mod:QPSK
Operator Name:	HEI
Comment:	DUT Laying

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)

HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC
Comments:	-

Full Spectrum



2.03b_RMC_LTE_FDD7_BW15_RB1low_CH20825_standing

Common Information

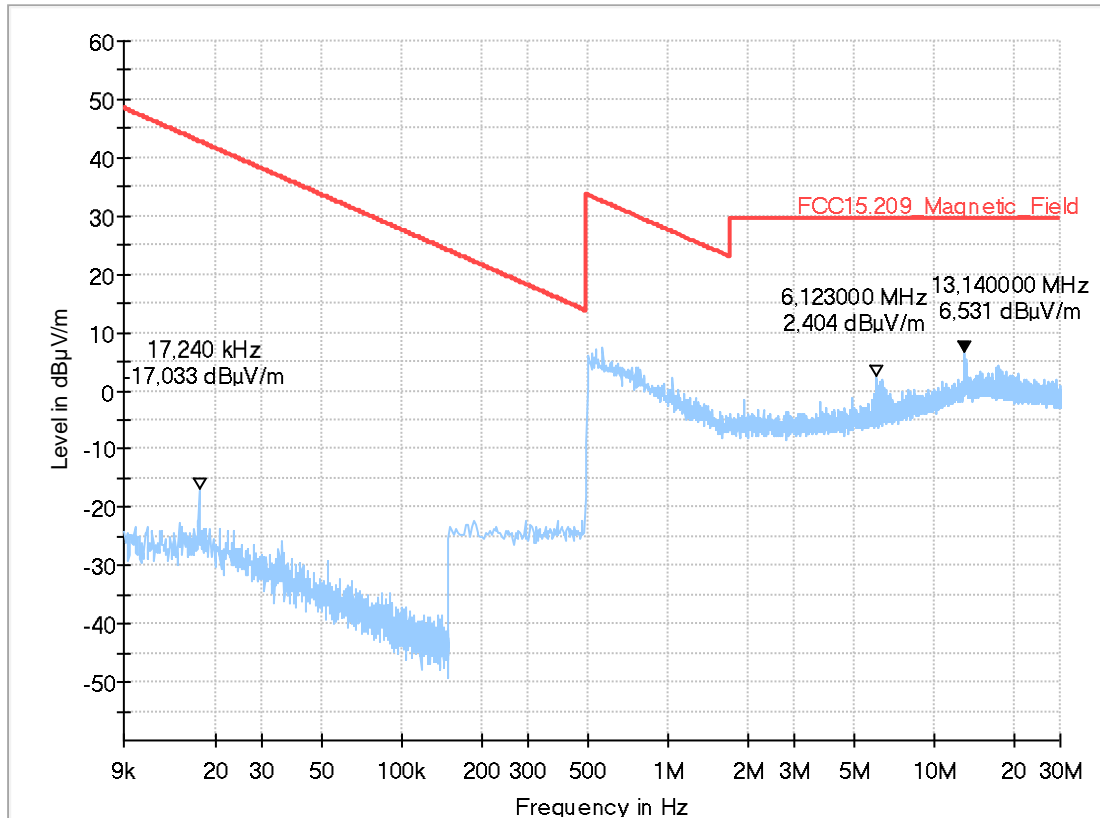
Test Description:	Magnetic Field Strength Measurement related to 30/300m distance
Operating Conditions:	UE allocated channel 20825/ BW:15/ RB:low \Mod:QPSK
Operator Name:	HEI
Comment:	DUT Standing

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)

HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC
Comments:	-

Full Spectrum



2.04a_RMC_LTE_FDD7_BW20_RB1low_CH20850_laying

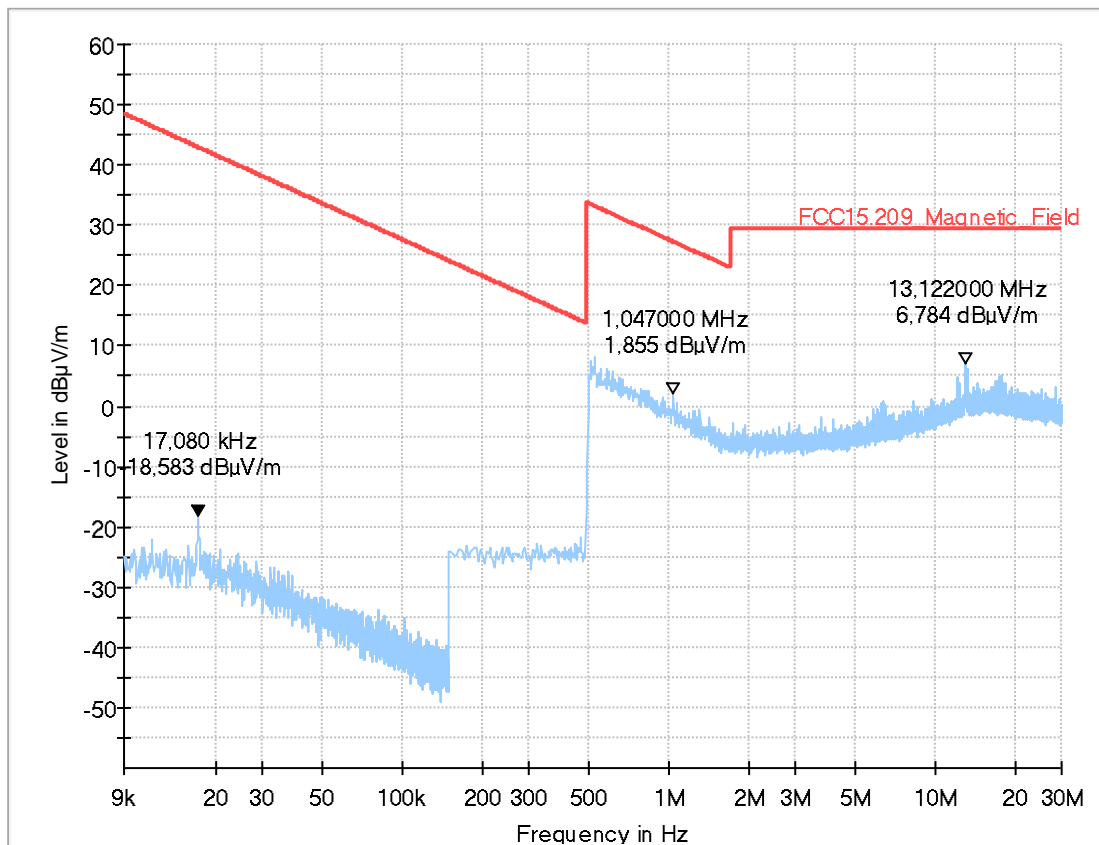
Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300m distance
Operating Conditions:	LTE FDD7 1 RB low 16QAM CH 20850
Operator Name:	Klv
Comment:	DUT Laying

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)

HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC
Comments:	-



2.04b_RMC_LTE_FDD7_BW20_RB1low_CH20850_standing

Common Information

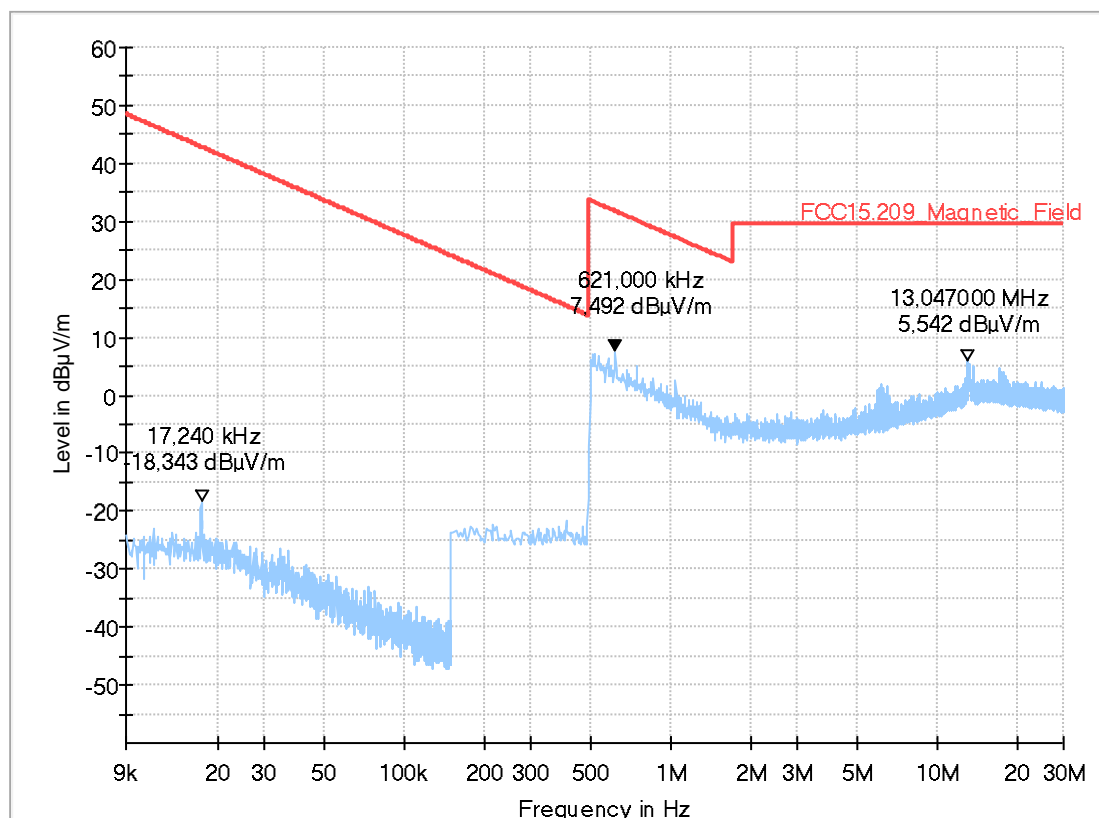
Test Description:	Magnetic Field Strength Measurement related to 30/300m distance
Operating Conditions:	LTE_FDD7_BW20_RB1low_CH20850
Operator Name:	MBe
Comment:	EUT Standing

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)

HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC
Comments:	-

Full Spectrum



1.3.2. Emissions above 30MHz (LTE Band 7)**8.03a_RMC_LTE_FDD7_BW15_RB1low_CH20825_30MHz_2.8GHz_laying****Common Information**

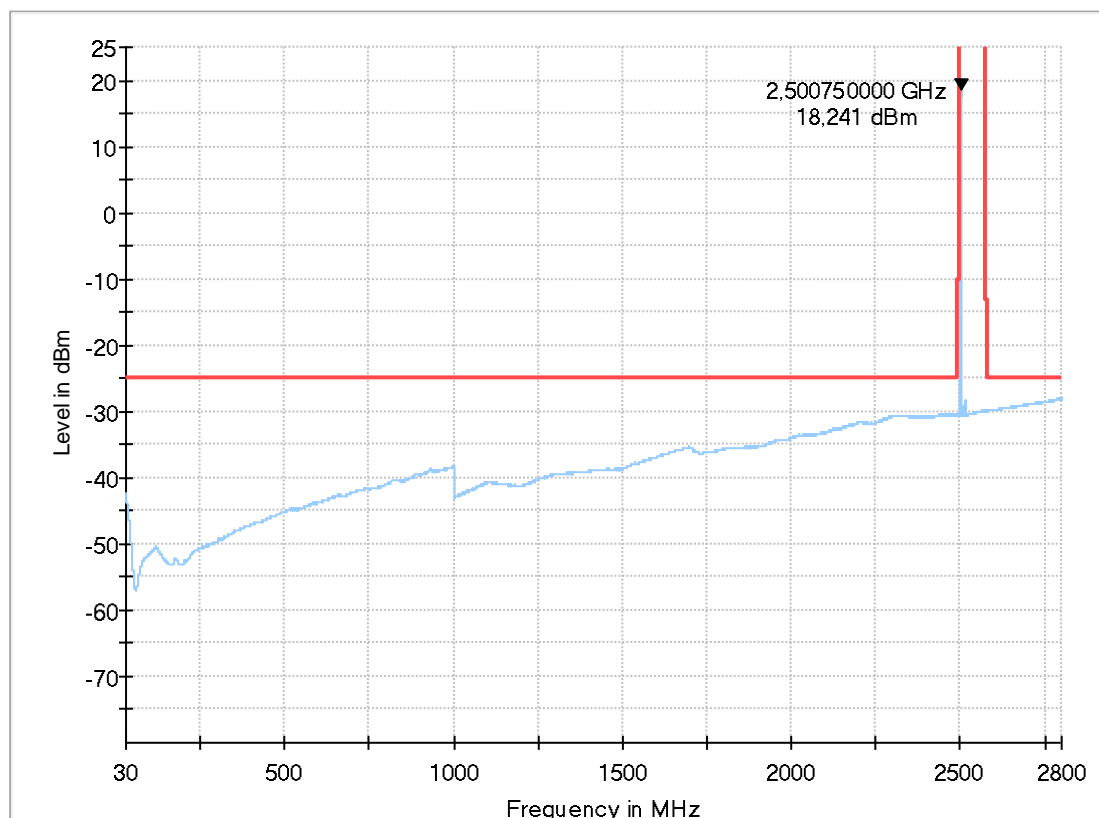
Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band 7
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27.53(l)(4) Mobile stations limits
Operating Mode:	UE allocated channel 20825/ BW: 15MHz/ RB:1 / Position: LowMod:QPSk
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Test SW Version:	EMC32 V9.26.0
Operator:	HEI
Remarks:	EUT - laying position

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)

HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC
Comments:	-

Full Spectrum



8.03b_RMC_LTE_FDD7_BW15_RB1low_CH20825_2.8_20GHz_laying

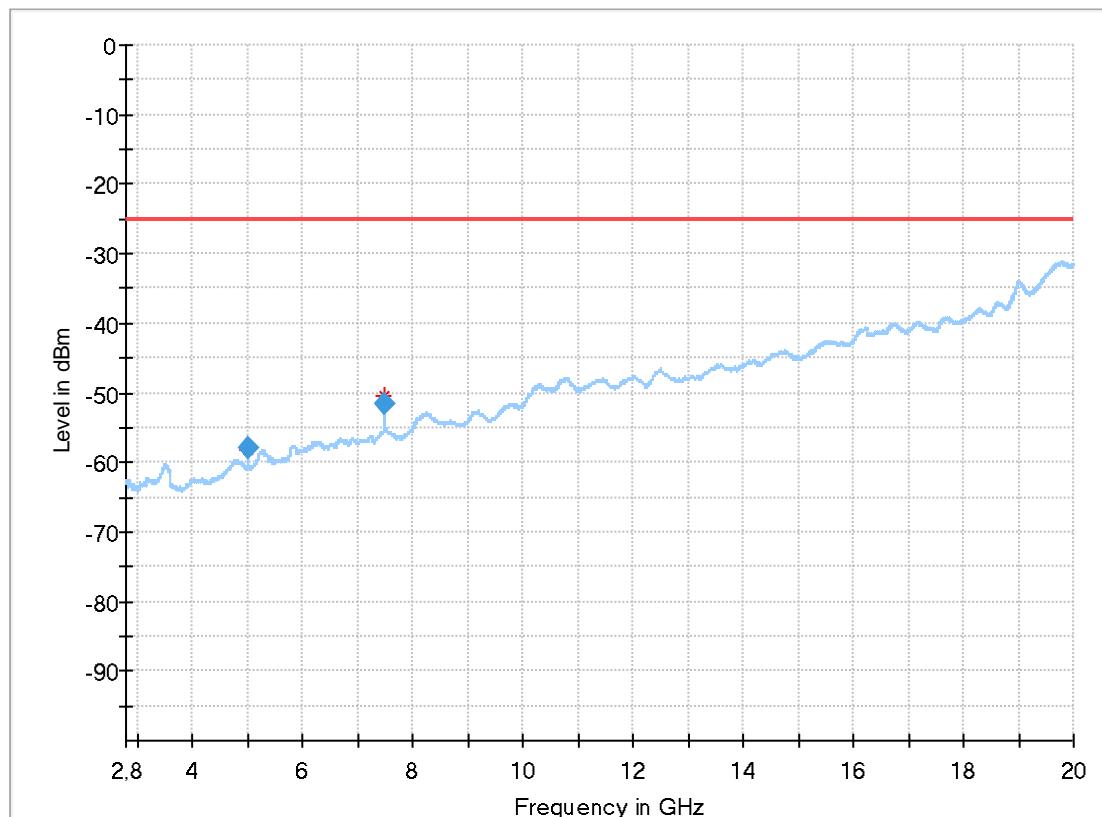
Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band 7
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27.53(l)(4) Mobile stations limits
Operating Mode:	UE allocated channel 20825/ BW: 15MHz/ RB:1 / Position: LowMod:QPSk
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Test SW Version:	EMC32 V9.26.0
Operator:	HEI
Remarks:	EUT - laying position

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)
HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC

Full Spectrum



Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
5001.633500	-57.78	-25.00	32.78	1000.0	1000.000	155.0	V	92.0	0.0	-91.2
7502.570250	-51.45	-25.00	26.45	1000.0	1000.000	155.0	V	73.0	0.0	-83.3

(continuation of the "Final_Result" table from column 17 ...)

Frequency (MHz)	Comment
5001.633500	18:55:06 - 05.12.2017
7502.570250	18:57:59 - 05.12.2017

8.04a_RMC_LTE_FDD7_BW15_RB1low_CH20825_30MHz_2.8MHz_standing**Common Information**

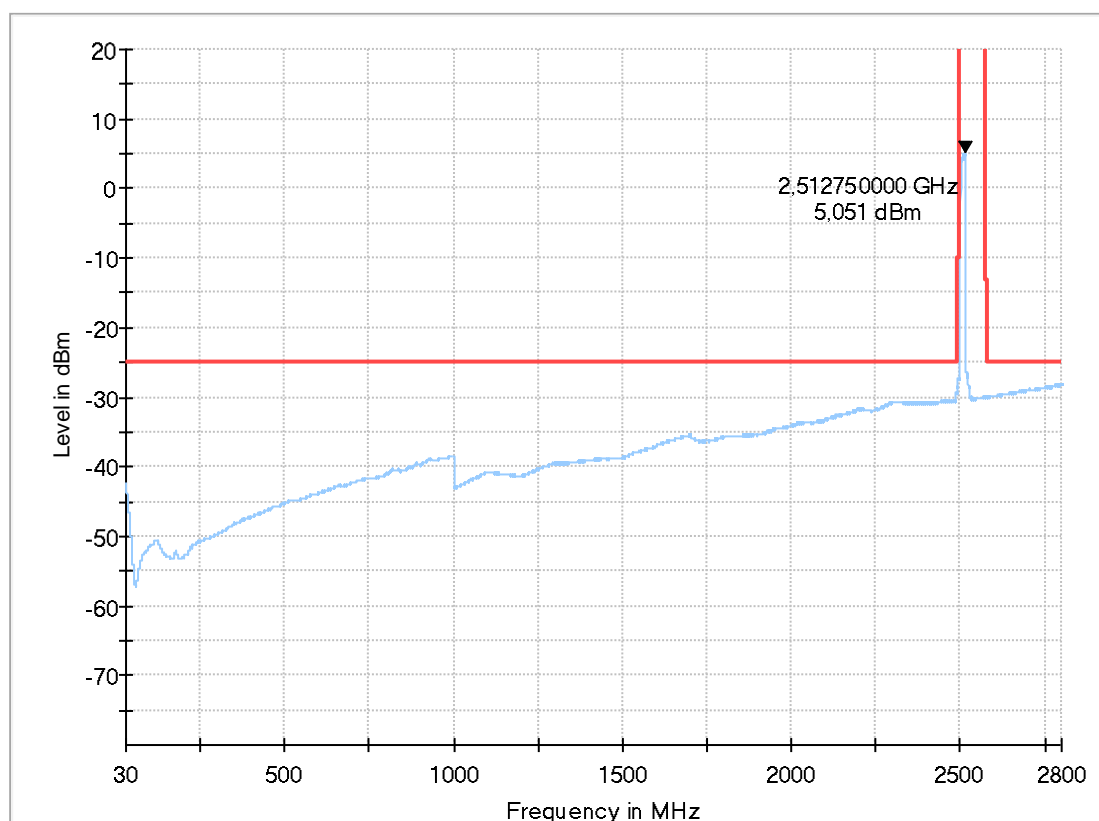
Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band 7
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27.53(l)(4) Mobile stations limits
Operating Mode:	UE allocated channel 20825/ BW: 15MHz/ RB:1 low/ Mod: QPSK
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Test SW Version:	EMC32 V9.26.0
Operator:	Klv
Remarks:	EUT - Standing position

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)

HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC
Comments:	-

Full Spectrum



8.04b_RMC_LTE_FDD7_BW15_RB1low_CH20825_2.8_20GHz_standing

Common Information

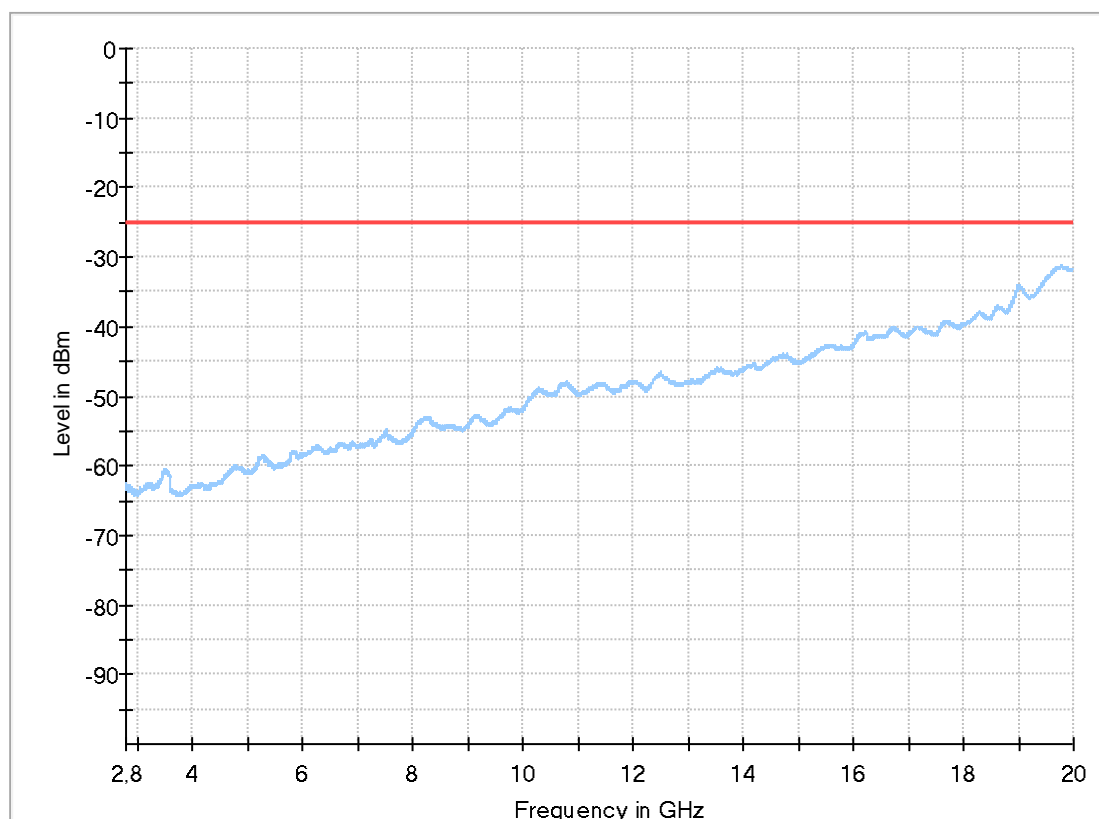
Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band 7
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27.53(l)(4) Mobile stations limits
Operating Mode:	UE allocated channel 20825/ BW: 15MHz/ RB:1 / Position: LowMod:QPSk
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Test SW Version:	EMC32 V9.26.0
Operator:	Klv
Remarks:	EUT - Standing position

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)

HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC
Comments:	-

Full Spectrum



8.05a_RMC_LTE_FDD7_BW20_RB1low_CH20850__30MHz_2.8GHz_laying

Common Information

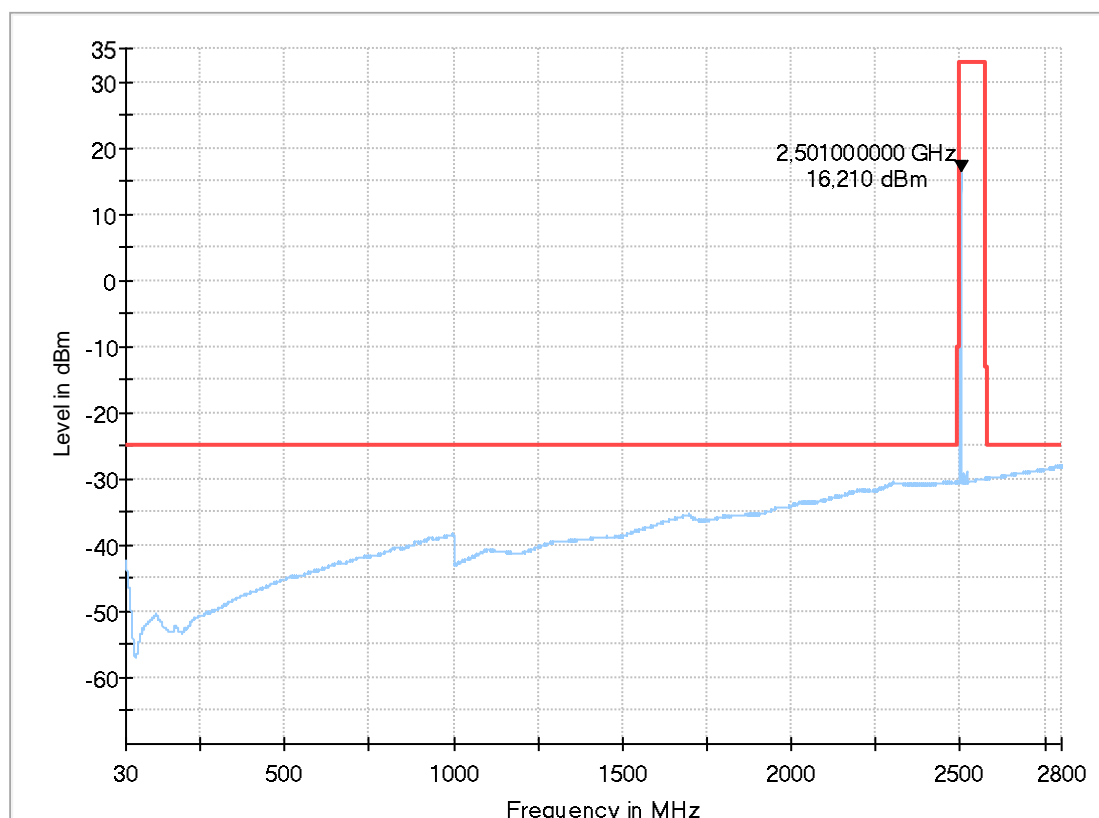
Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band 7
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27.53(l)(4) Mobile stations limits
Operating Mode:	UE allocated channel 20850/ BW: 20MHz/ RB:1 / Position: LowMod:16QAM
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Test SW Version:	EMC32 V9.26.0
Operator:	HEI
Remarks:	EUT - laying position

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)

HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC
Comments:	-

Full Spectrum



8.05a_RMC_LTE_FDD7_BW20_RB1low_CH20850_2.8_20GHz_laying

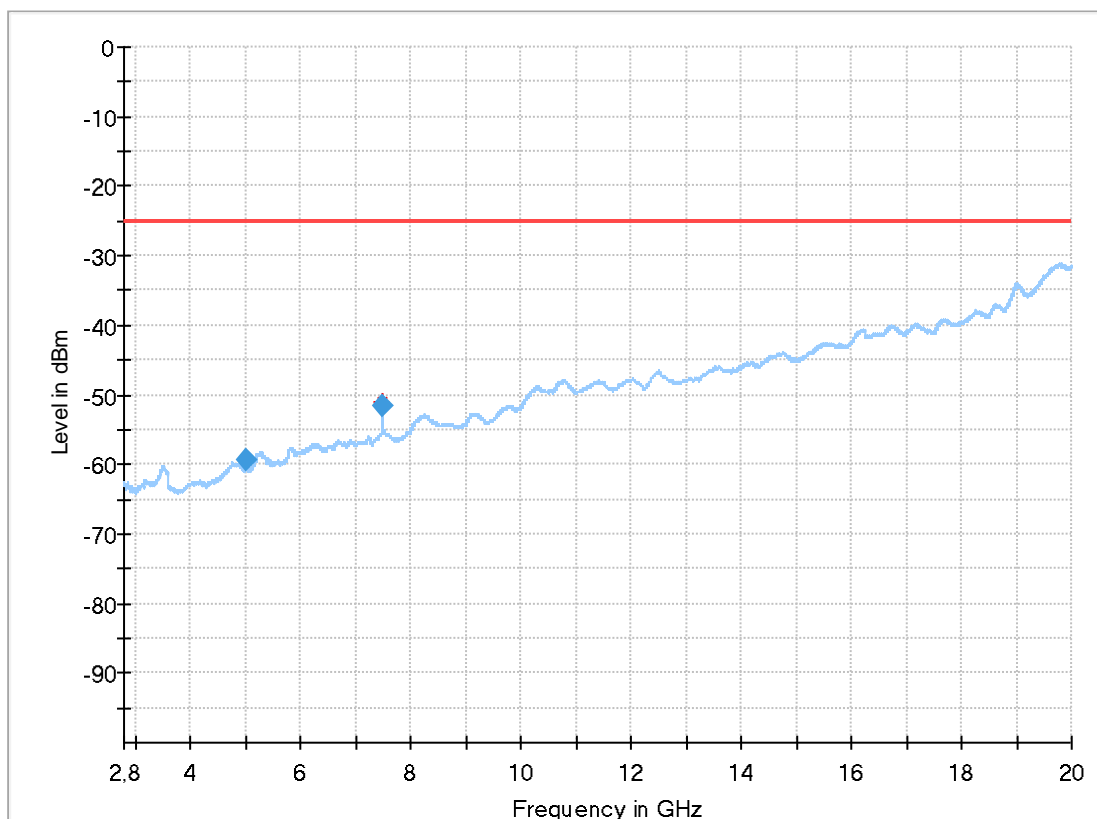
Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band 7
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27.53(l)(4) Mobile stations limits
Operating Mode:	UE allocated channel 20850/ BW: 20MHz/ RB:1 / Position: LowMod:16QAM
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Test SW Version:	EMC32 V9.26.0
Operator:	HEI
Remarks:	EUT - laying position

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)
HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC

Full Spectrum



Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
5002.010000	-59.31	-25.00	34.31	1000.0	1000.000	155.0	V	92.0	0.0	-91.2
7503.285000	-51.46	-25.00	26.46	1000.0	1000.000	155.0	V	85.0	0.0	-83.3

(continuation of the "Final_Result" table from column 17 ...)

Frequency (MHz)	Comment
5002.010000	20:10:30 - 05.12.2017
7503.285000	20:13:21 - 05.12.2017

8.06b_RMC_LTE_FDD7_BW20_RB1low_CH20850__30MHz_2.8GHz_standing

Common Information

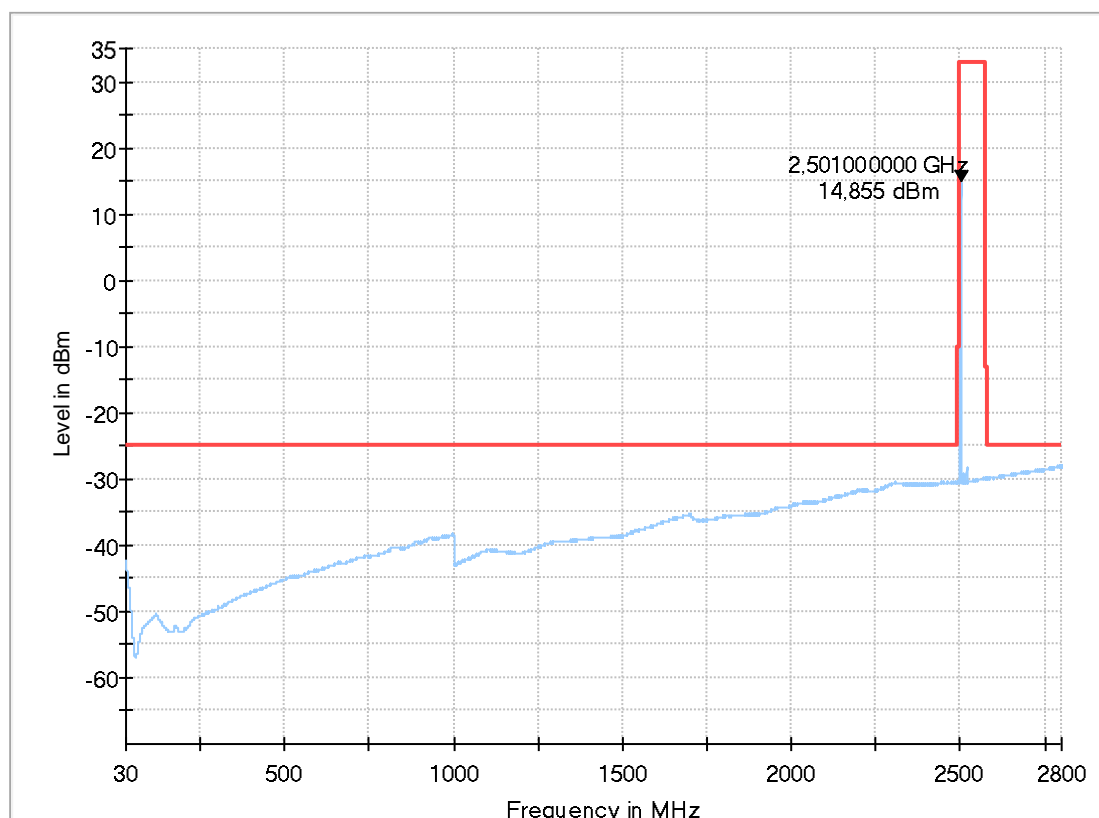
Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band 7
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27.53(l)(4) Mobile stations limits
Operating Mode:	UE allocated channel 20850/ BW: 20MHz/ RB:1 / Position: LowMod:16QAM
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Test SW Version:	EMC32 V9.26.0
Operator:	HEI
Remarks:	EUT - Standing position

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)

HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC
Comments:	-

Full Spectrum



8.06b_RMC_LTE_FDD7_BW20_RB1low_CH20850_2.8_20GHz_Standing

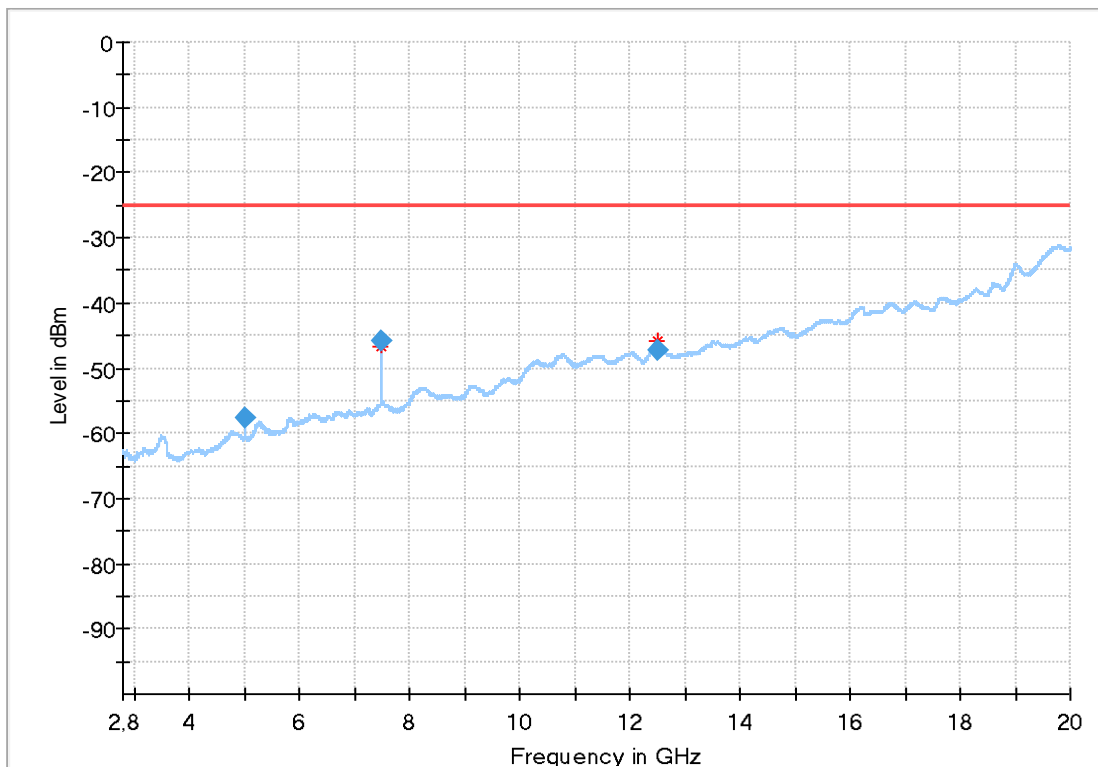
Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band 7
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27.53(l)(4) Mobile stations limits
Operating Mode:	UE allocated channel 20850/ BW: 20MHz/ RB:1 / Position: LowMod:16QAM
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Test SW Version:	EMC32 V9.26.0
Operator:	HEI
Remarks:	EUT - Standing position

EUT Information

Manufacturer:	peiker acoustic GmbH & Co. KG a valeo Brand
EUT:	ATM-02-ROW-T1 (Sample 1035)
HW version:	202.009.004
SW version:	001.009.020
Serial number:	4363
Connected Interfaces:	Antenna (65206826326-03) + EMC Control Unit
Power Supply:	12VDC

Full Spectrum



Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
5002.193000	-57.61	-25.00	32.61	1000.0	1000.000	155.0	H	148.0	0.0	-91.2
7503.285000	-45.69	-25.00	20.69	1000.0	1000.000	155.0	H	134.0	0.0	-83.3
12505.560000	-47.32	-25.00	22.32	1000.0	1000.000	155.0	H	221.0	0.0	-75.3

1.4. Radiated emissions – band-edge (LTE Band 5)

1.4.1. Low Band-Edge

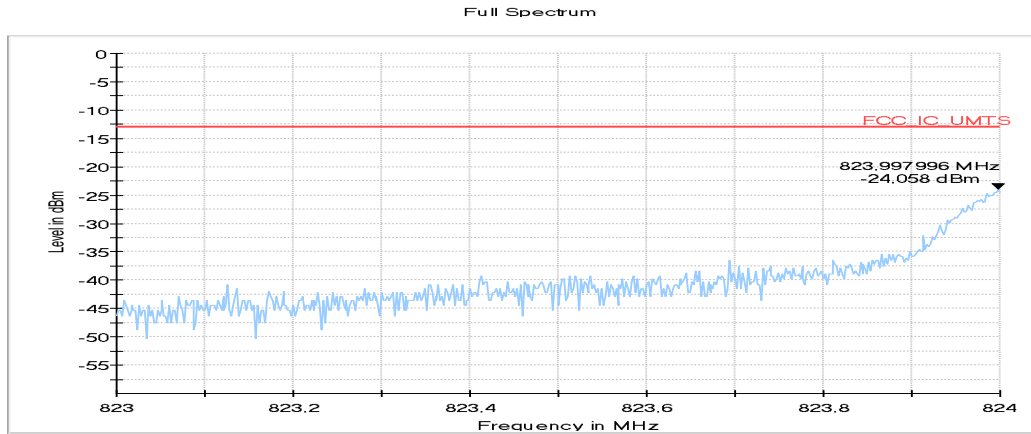


Diagram 1: 9.503a_LTE5_BE_Ch20415_BW3_1RBLow_QPSK_laying

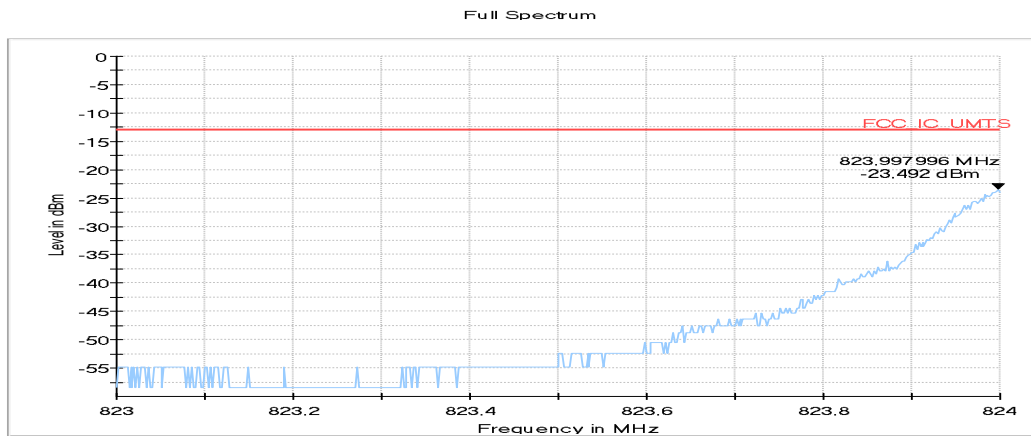


Diagram 2: 9.503a_LTE5_BE_Ch20415_BW3_1RBLow_QPSK_standing

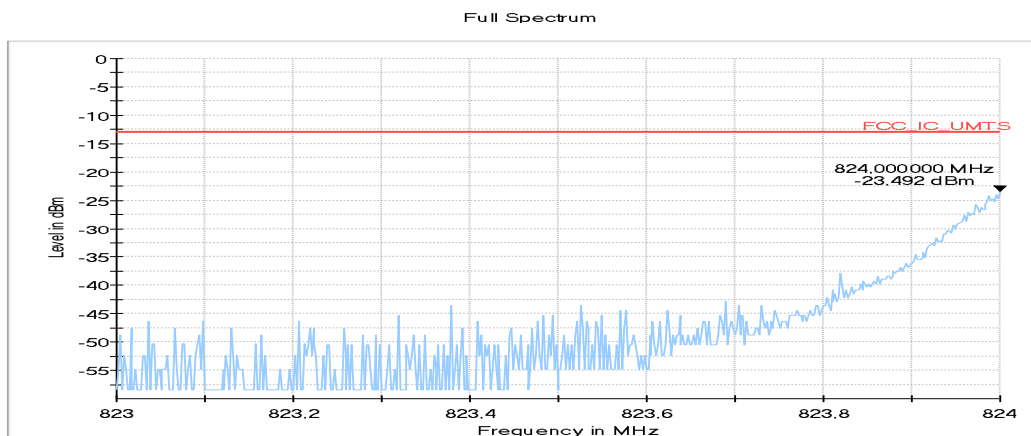


Diagram 3: 9.503b_LTE5_BE_Ch20415_BW3_1RBLow_16-QAM_laying

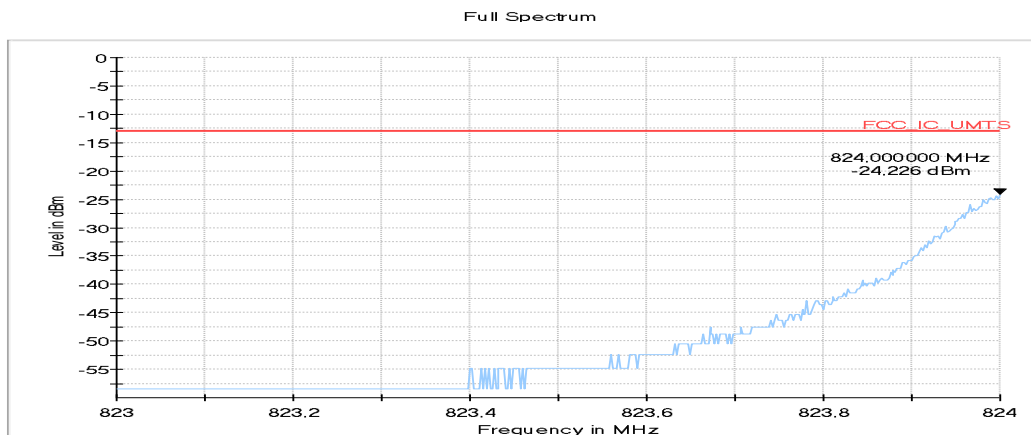


Diagram 4: 9.503b_LTE5_BE_Ch20415_BW3_1RBLow_16-QAM_standing

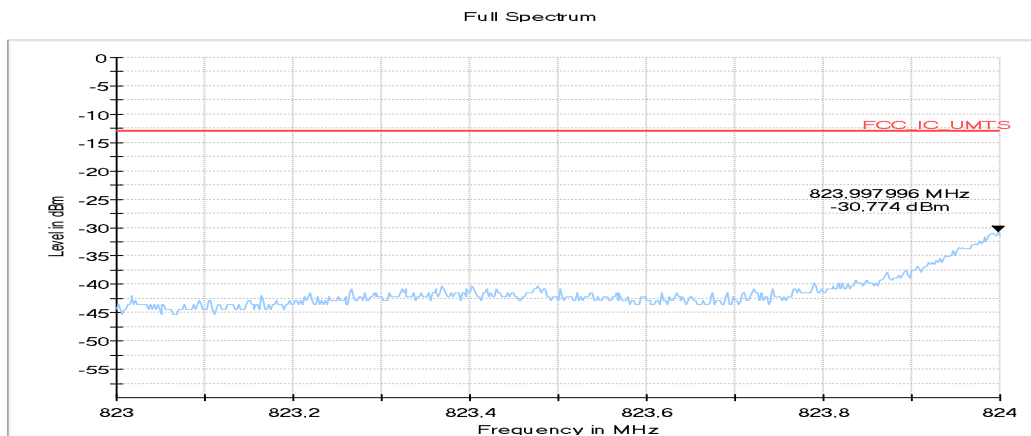


Diagram 5: 9.504a_LTE5_BE_Ch20415_BW3_15RBLow_QPSK_laying

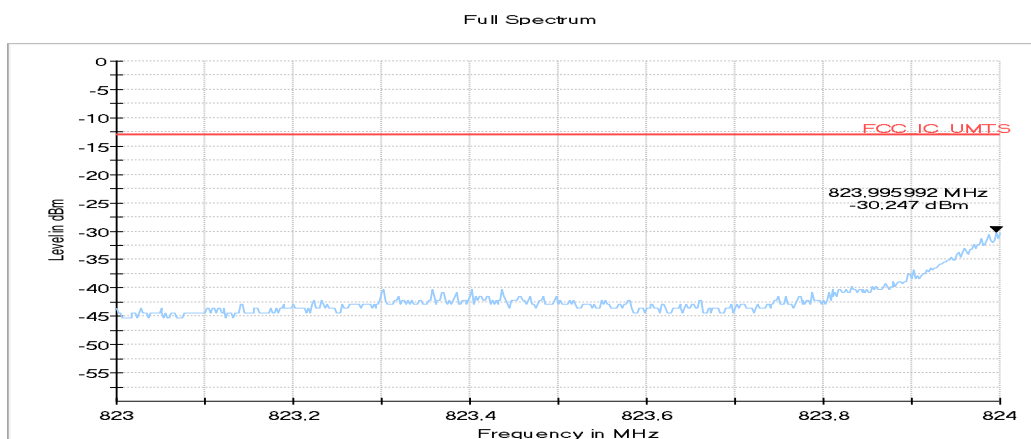


Diagram 6: 9.504a_LTE5_BE_Ch20415_BW3_15RBLow_QPSK_standing

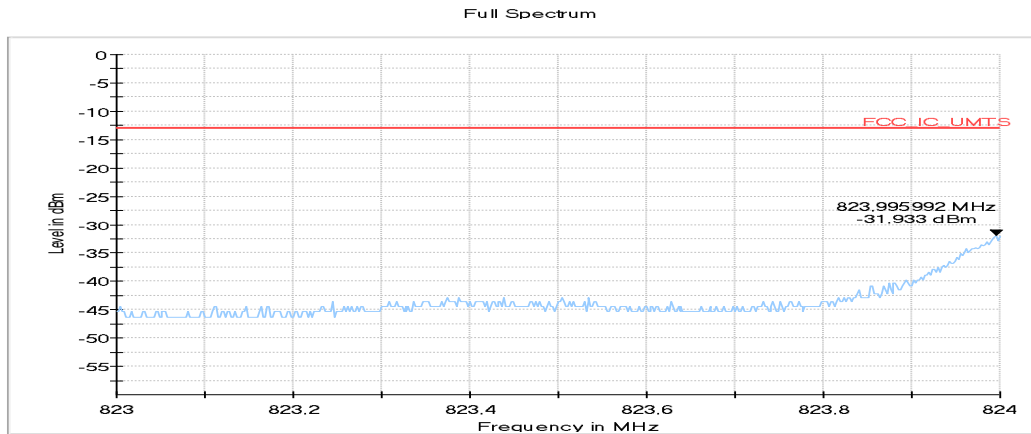


Diagram 7: 9.504b_LTE5_BE_Ch20415_BW3_15RBLow_16-QAM_laying

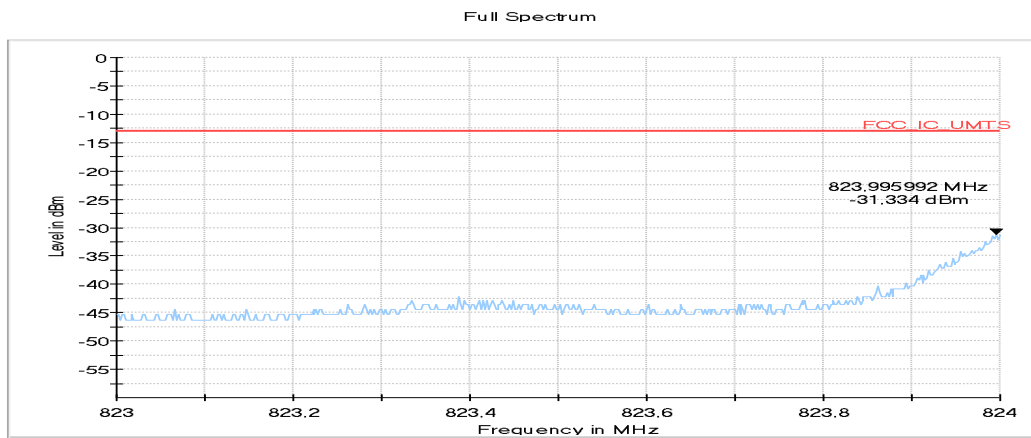


Diagram 8: 9.504b_LTE5_BE_Ch20415_BW3_15RBLow_16-QAM_standing

1.4.2. High Band-Edge

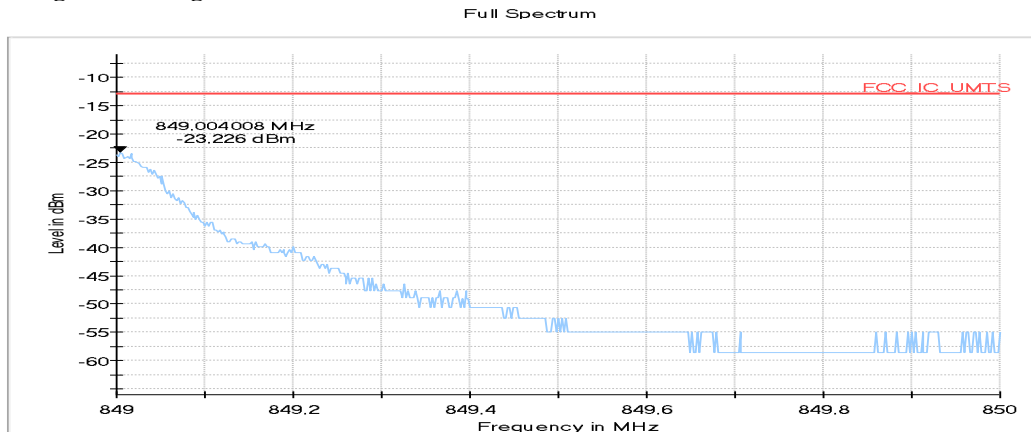


Diagram 9: 9.512a_LTE5_BE_Ch20635_BW3_1RBhigh_QPSK_laying

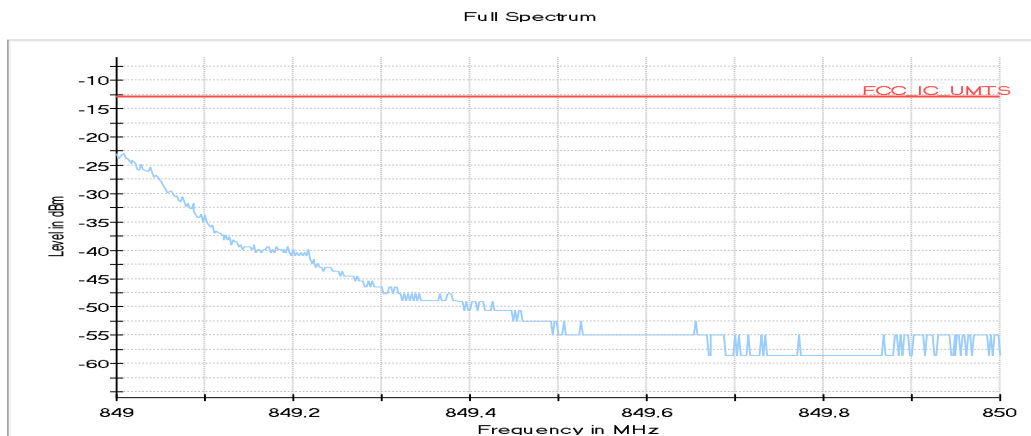


Diagram 10: 9.512a_LTE5_BE_Ch20635_BW3_1RBhigh_QPSK_standing

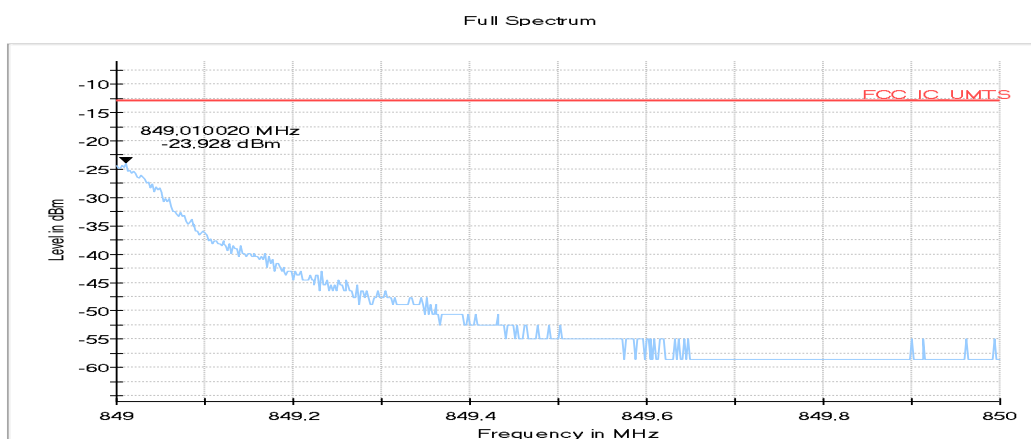


Diagram 11: 9.512b_LTE5_BE_Ch20635_BW3_1RBhigh_16-QAM_laying

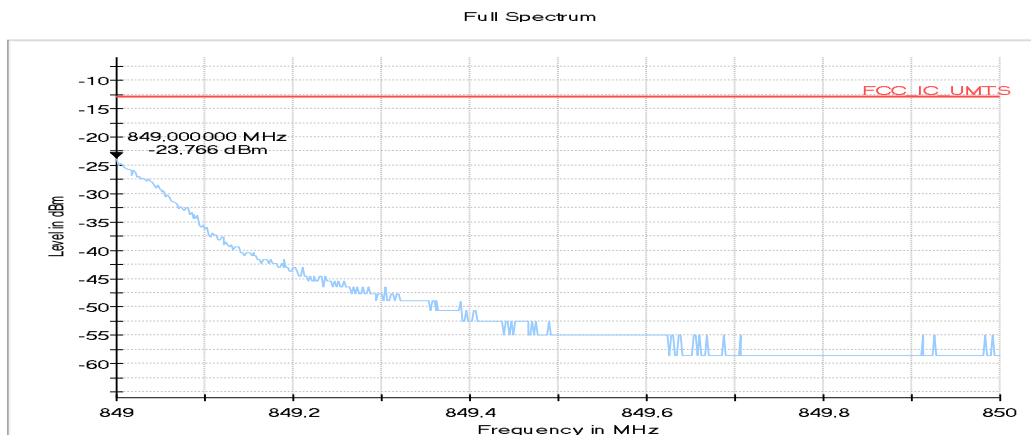


Diagram 12: 9.512b_LTE5_BE_Ch20635_BW3_1RBhigh_16-QAM_standing

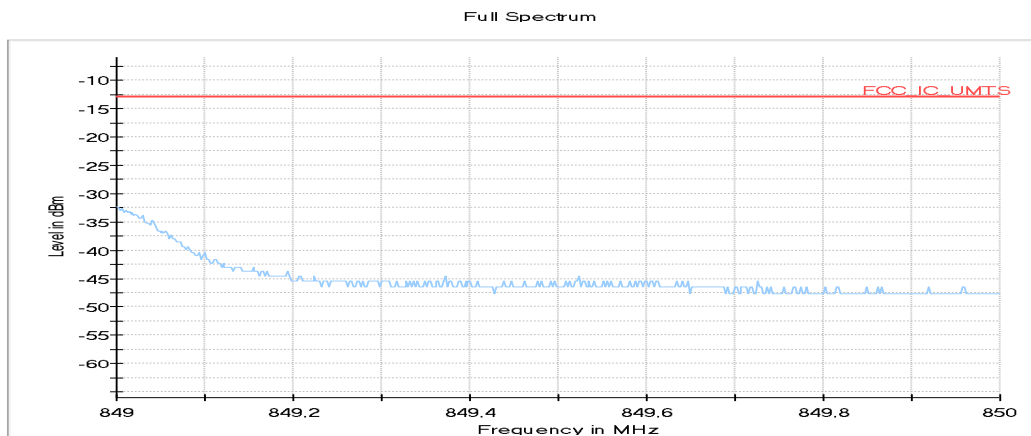


Diagram 13: 9.513a_LTE5_BE_Ch20635_BW3_15RBhigh_QPSK_laying

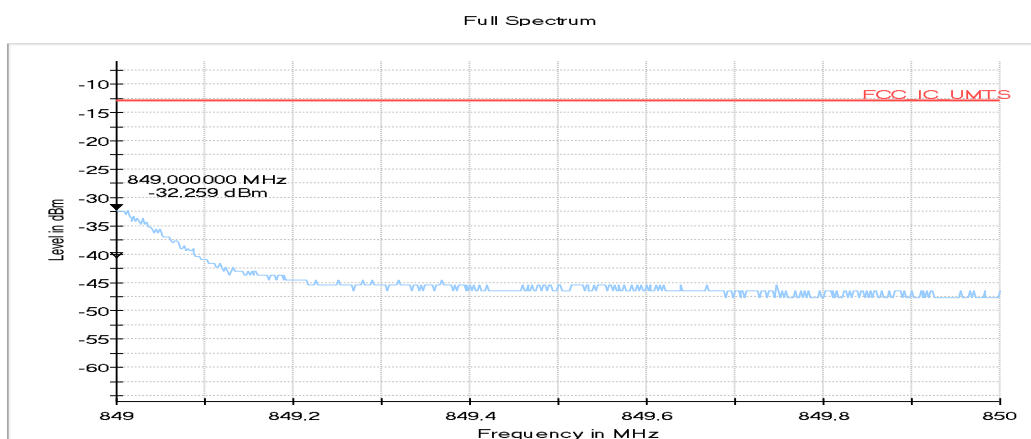
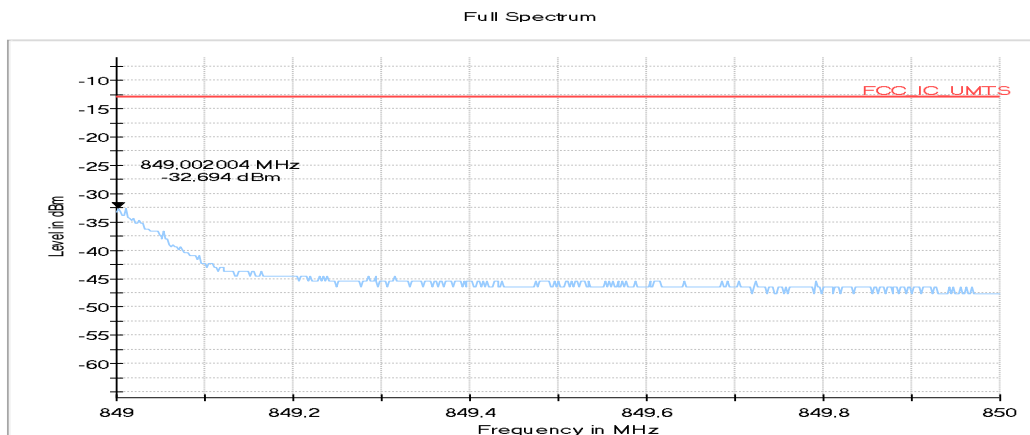
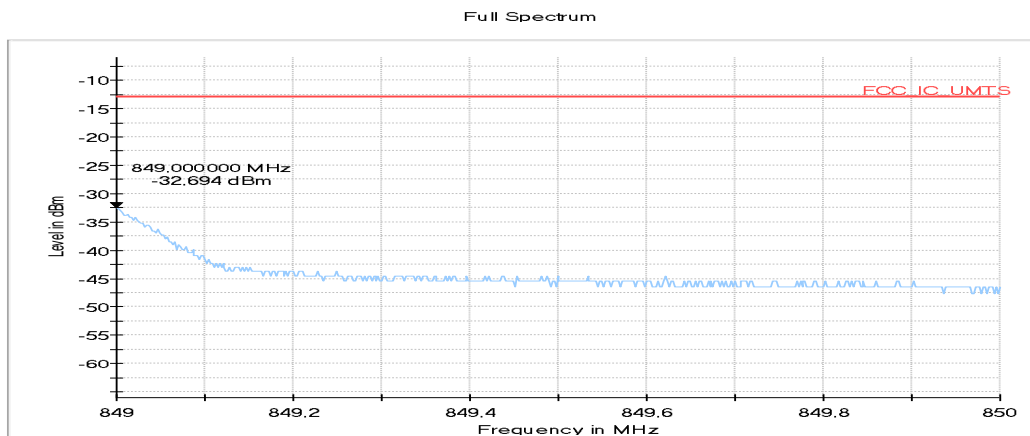


Diagram 14: 9.513a_LTE5_BE_Ch20635_BW3_15RBhigh_QPSK_standing

**Diagram 15: 9.513b_LTE5_BE_Ch20635_BW3_15RBhigh_16-QAM_laying****Diagram 16: 9.513b_LTE5_BE_Ch20635_BW3_15RBhigh_16-QAM_standing**

1.5. Radiated emissions – band-edge (LTE Band 7)

1.5.1. Low Band-Edge

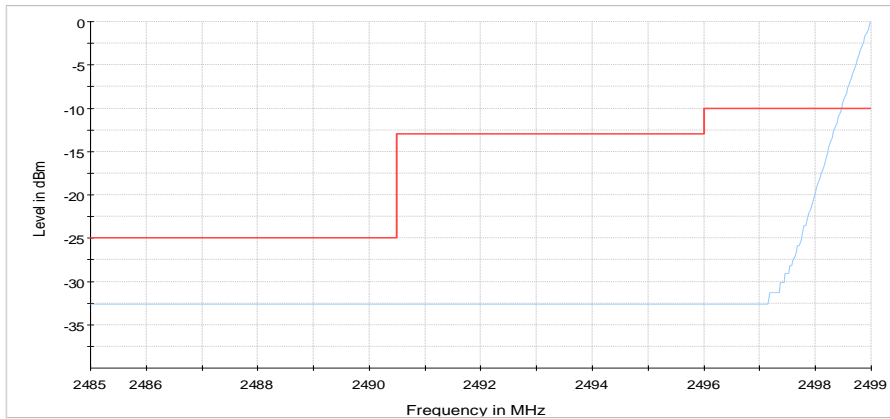


Diagram 17: 9.701a_CH20775_BW5_1RBlow_QPSK_sweep1_laying

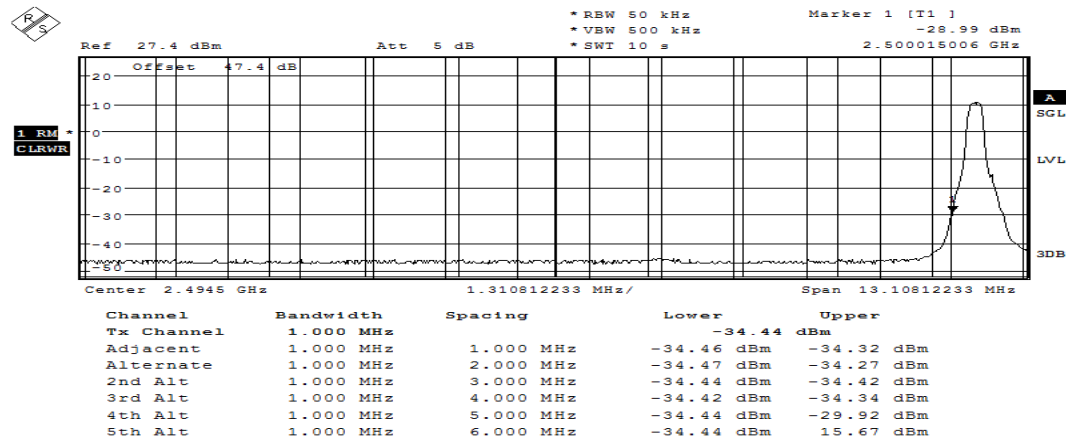


Diagram 18: 9.701a_CH20775_BW5_1RBlow_QPSK_sweep1_laying

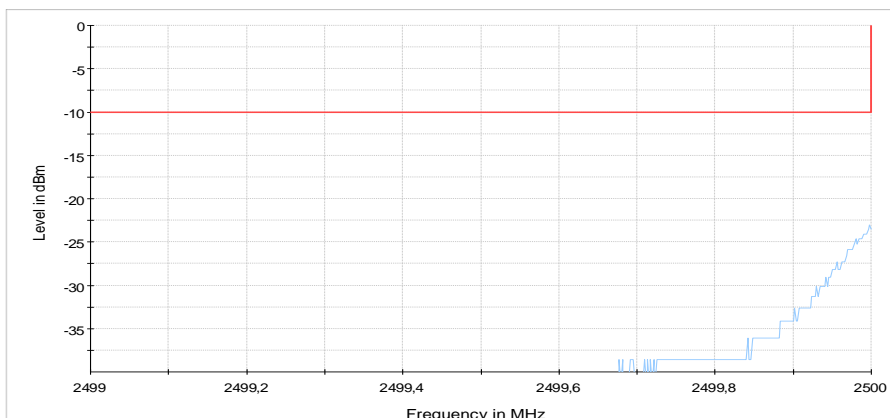


Diagram 19: 9.701a_CH20775_BW5_1RBlow_QPSK_sweep2_laying

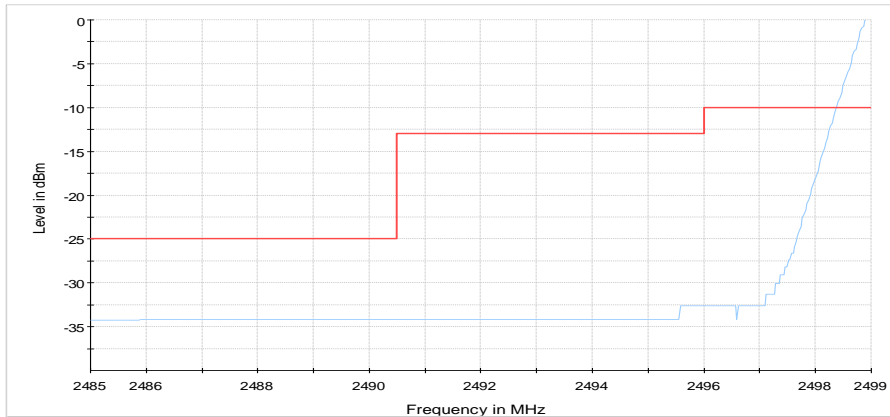


Diagram 20: 9.701a_CH20775_BW5_1RBlow_QPSK_sweep1_standing

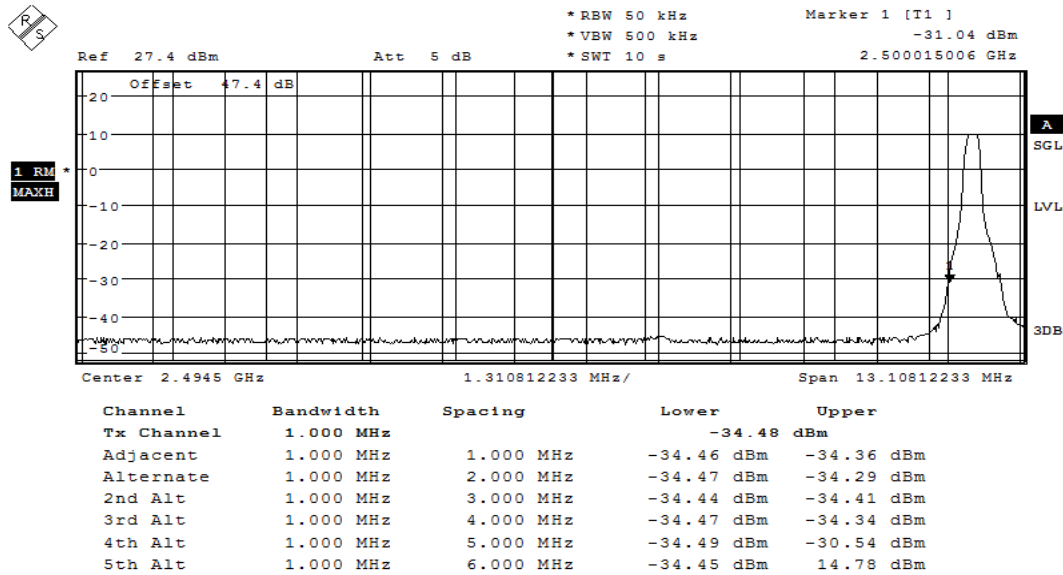


Diagram 21: 9.701a_CH20775_BW5_1RBlow_QPSK_sweep1_standing_intBw

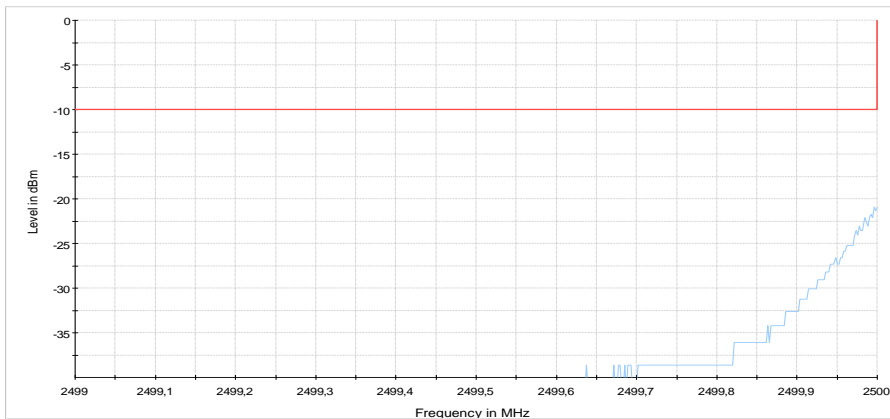


Diagram 22: 9.701a_CH20775_BW5_1RBlow_QPSK_sweep2_standing

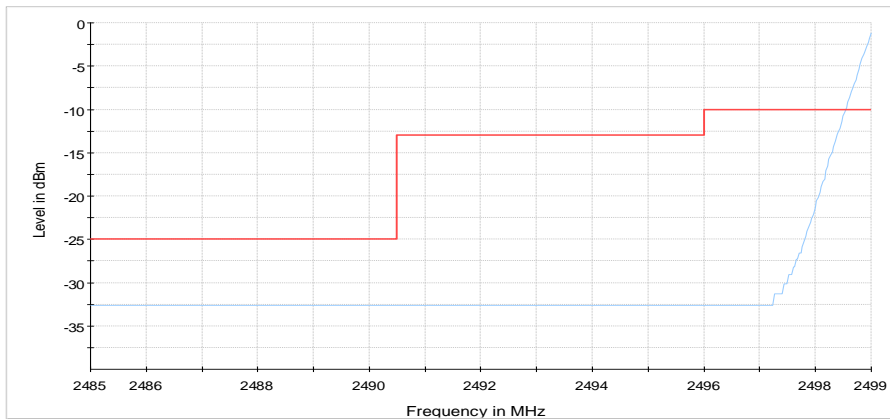
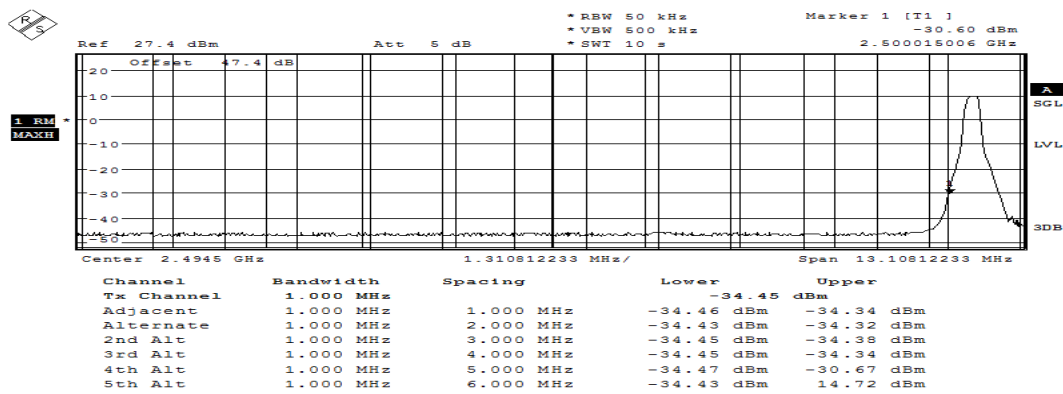


Diagram 23: 9.701b_CH20775_BW5_1RBlow_QAM_sweep1_laying



Date: 9.FEB.2018 17:42:38

Diagram 24: 9.701b_CH20775_BW5_1RBlow_QAM_sweep1_laying_intBw

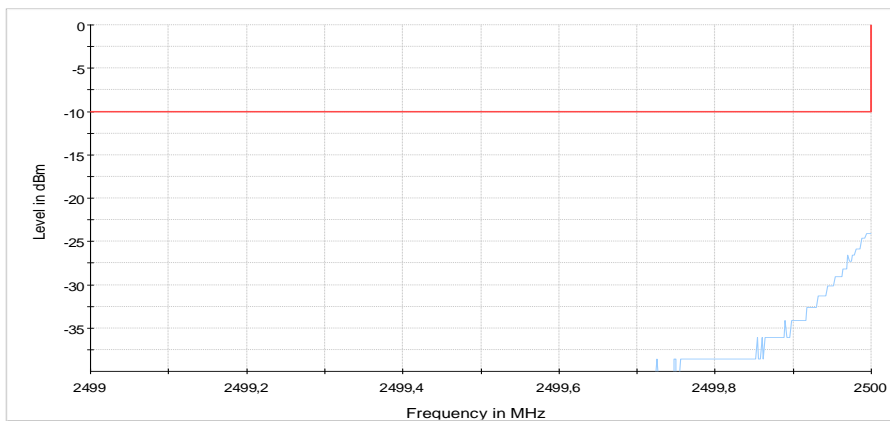


Diagram 25: 9.701b_CH20775_BW5_1RBlow_QAM_sweep2_laying

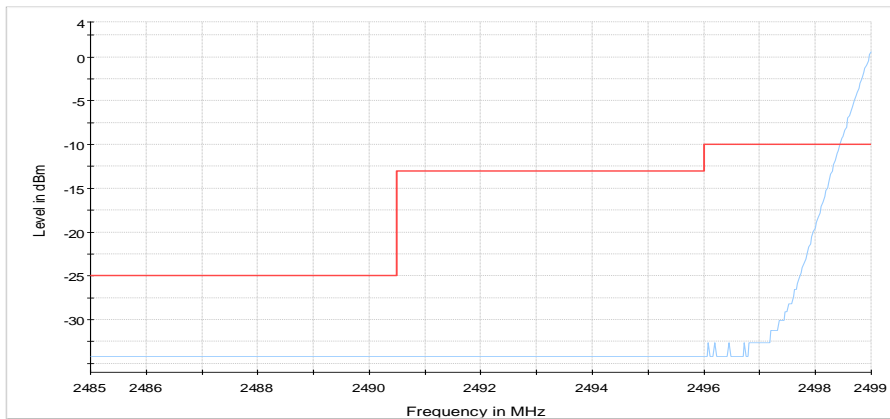


Diagram 26: 9.701b_CH20775_BW5_1RBlow_QAM_sweep1_standing

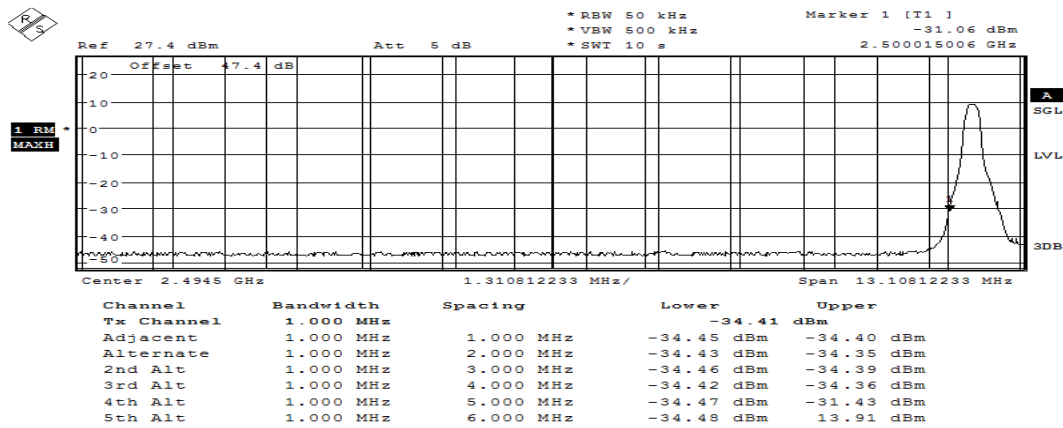


Diagram 27: 9.701b_CH20775_BW5_1RBlow_QAM_sweep1_standing_intBW

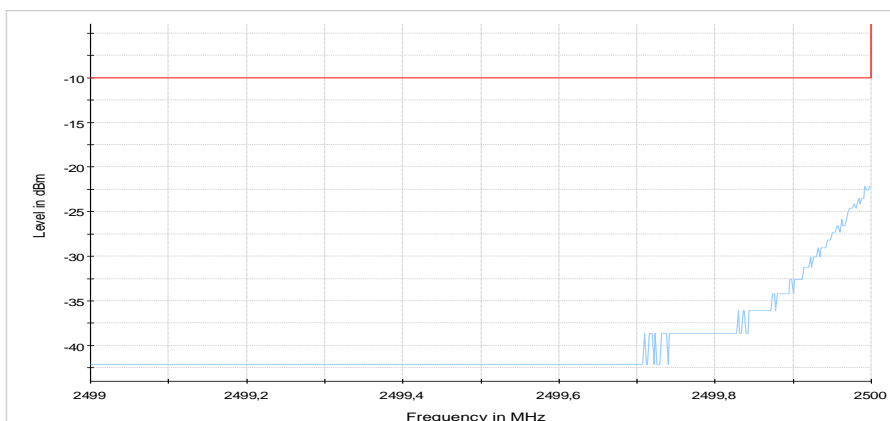
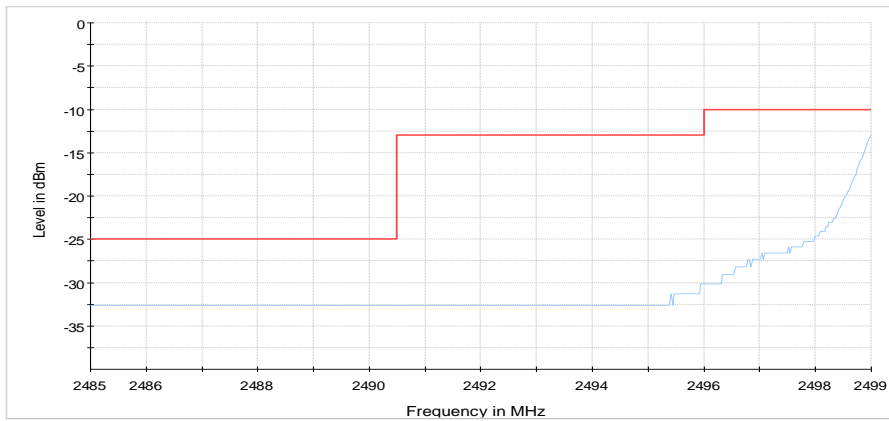
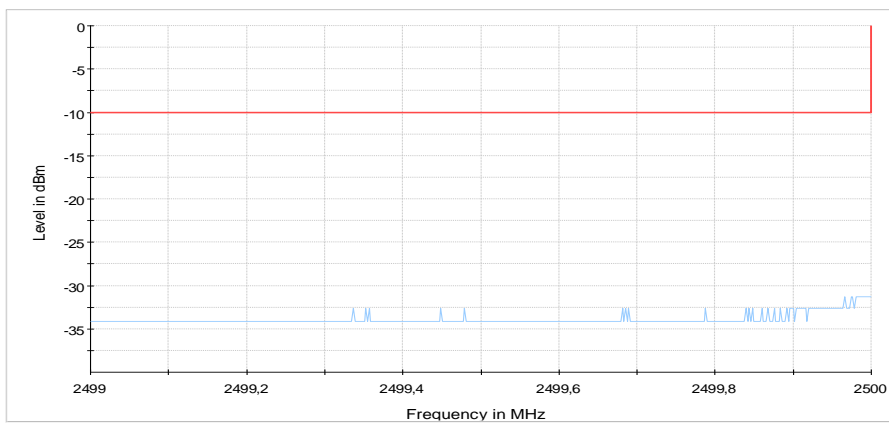
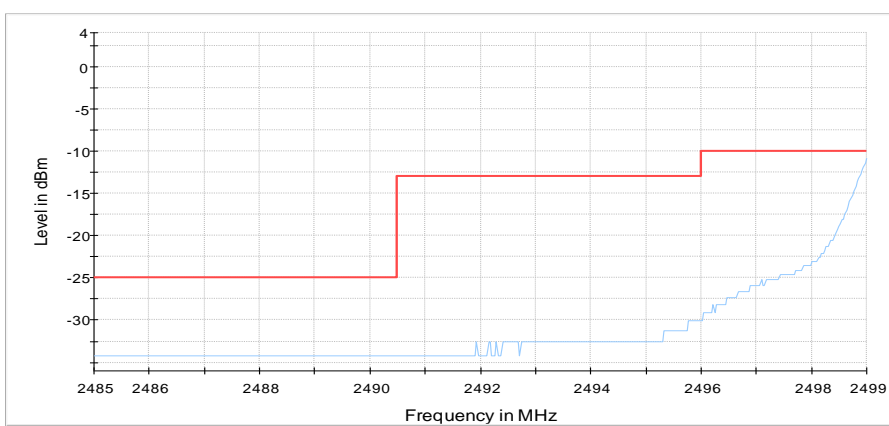
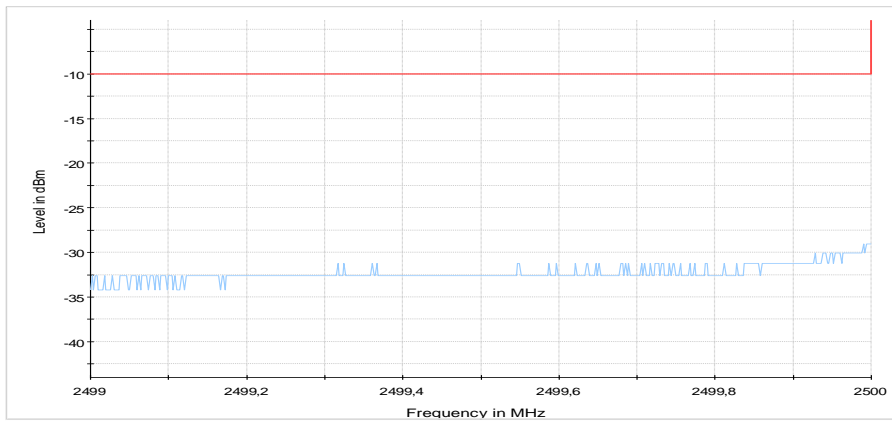
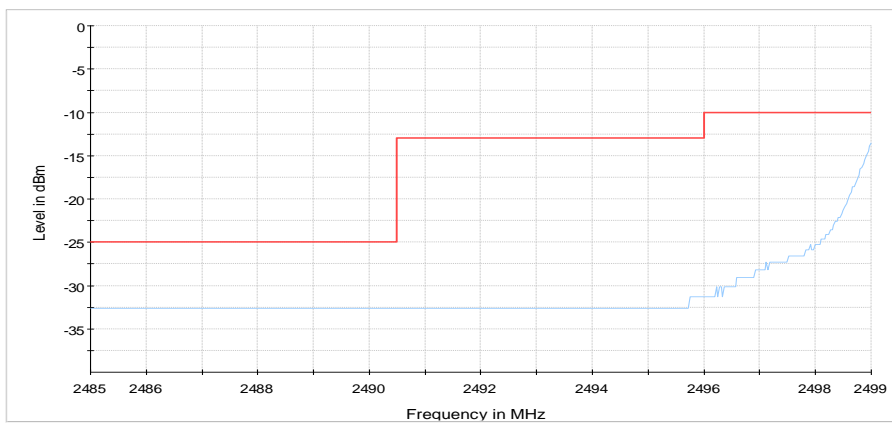
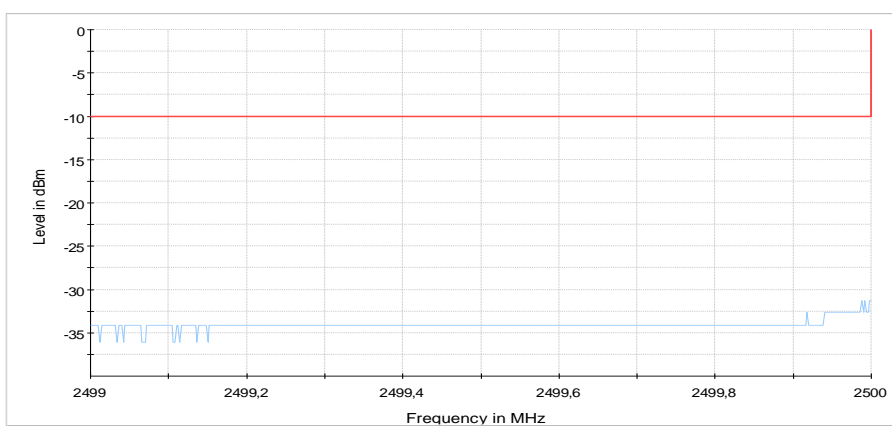
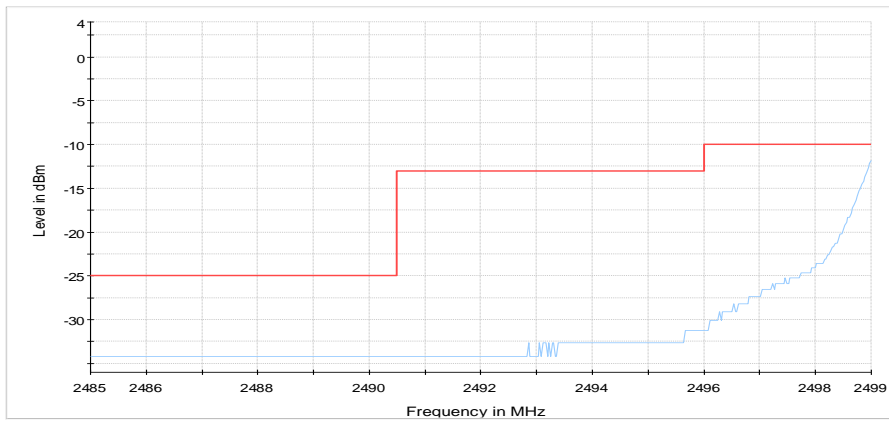
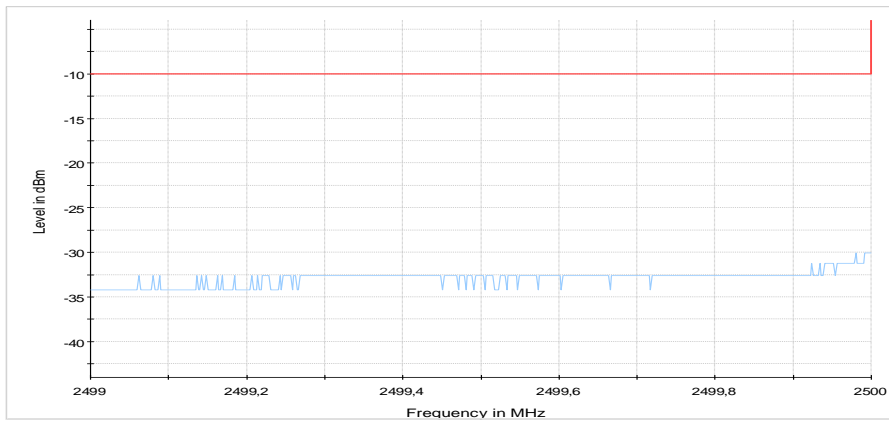


Diagram 28: 9.701b_CH20775_BW5_1RBlow_QAM_sweep2_standing

**Diagram 29: 9.702a_CH20775_BW5_25RBlow_QPSK_sweep1_laying****Diagram 30: 9.702a_CH20775_BW5_25RBlow_QPSK_sweep2_laying****Diagram 31: 9.702a_CH20775_BW5_25RBlow_QPSK_sweep1_standing**

**Diagram 32: 9.702a_CH20775_BW5_25RBlow_QPSK_sweep2_standing****Diagram 33: 9.702b_CH20775_BW5_25RBlow_QAM_sweep1_laying****Diagram 34: 9.702b_CH20775_BW5_25RBlow_QAM_sweep2_laying**

**Diagram 35: 9.702b_CH20775_BW5_25RBlow_QAM_sweep1_standing****Diagram 36: 9.702b_CH20775_BW5_25RBlow_QAM_sweep2_standing**

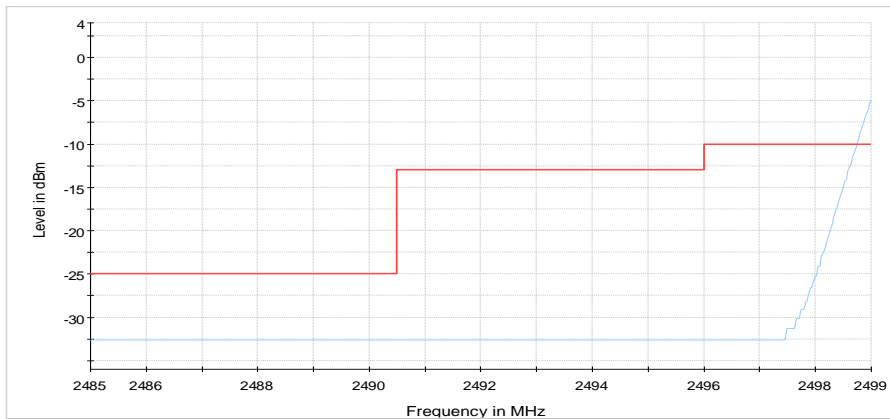


Diagram 37: 9.703a_CH20800_BW10_1RBlow_QPSK_sweep1_laying

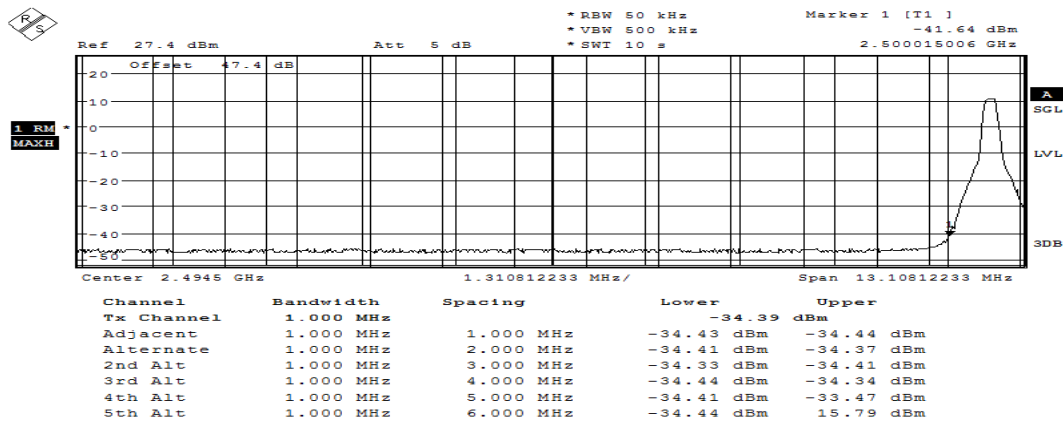


Diagram 38: 9.703a_CH20800_BW10_1RBlow_QPSK_sweep1_laying_intBW

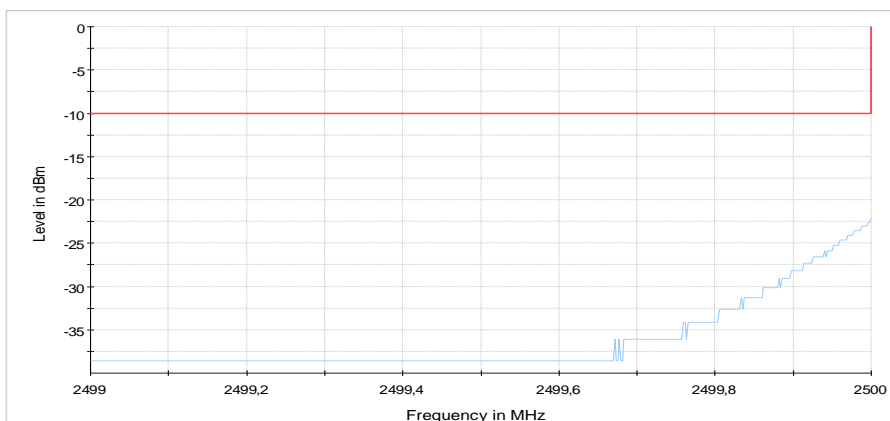


Diagram 39: 9.703a_CH20800_BW10_1RBlow_QPSK_sweep2_laying

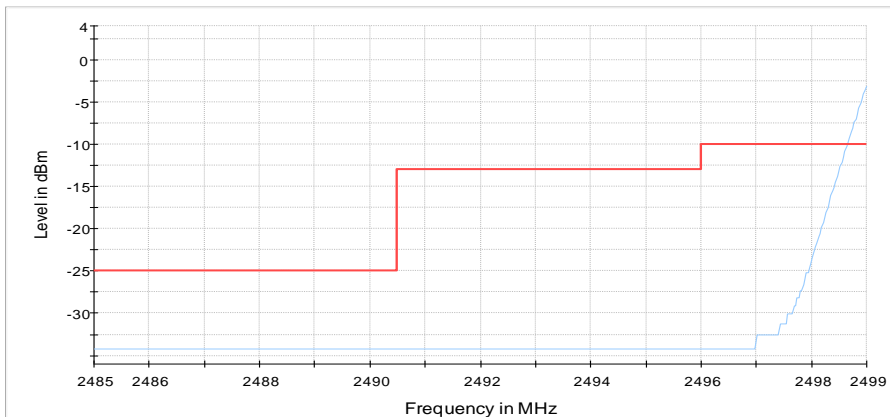


Diagram 40: 9.703a_CH20800_BW10_1RBlow_QPSK_sweep1_standing

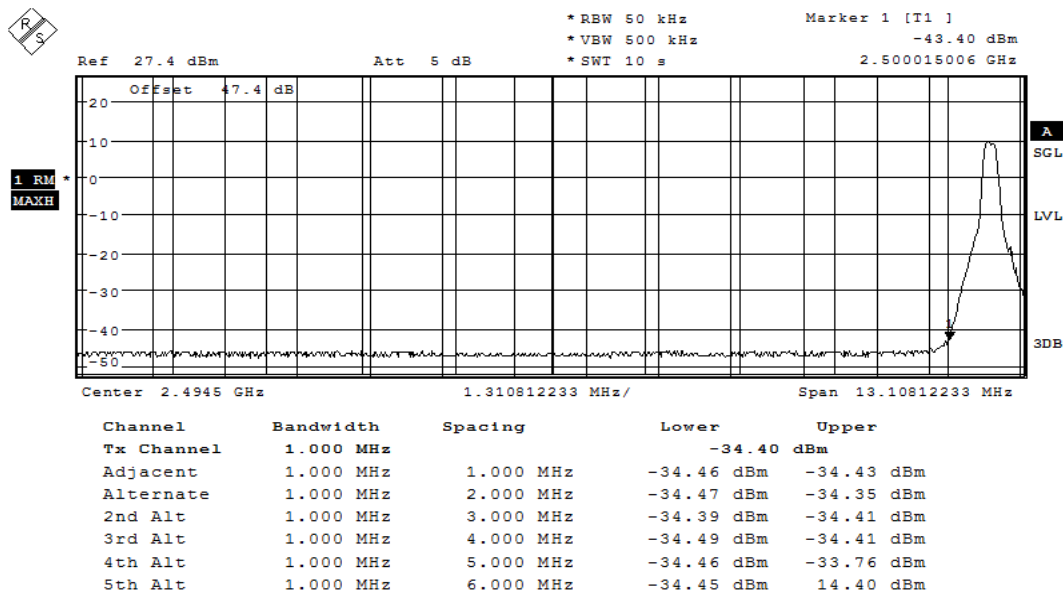


Diagram 41: 9.703a_CH20800_BW10_1RBlow_QPSK_sweep1_standing_intBW

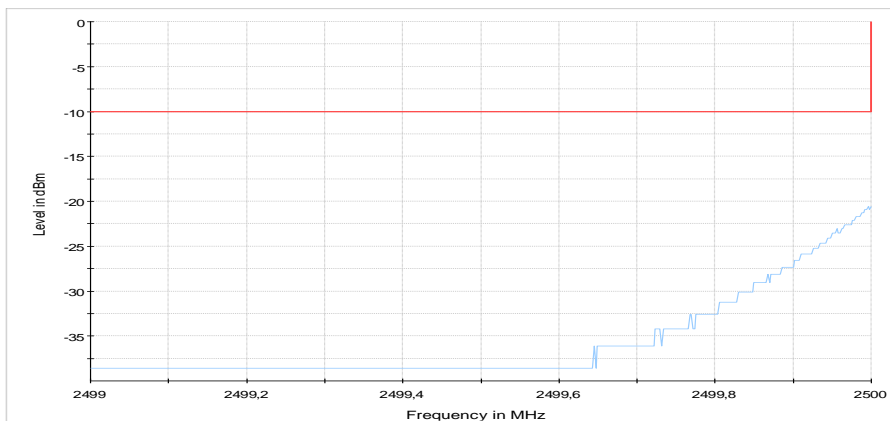


Diagram 42: 9.703a_CH20800_BW10_1RBlow_QPSK_sweep2_standing

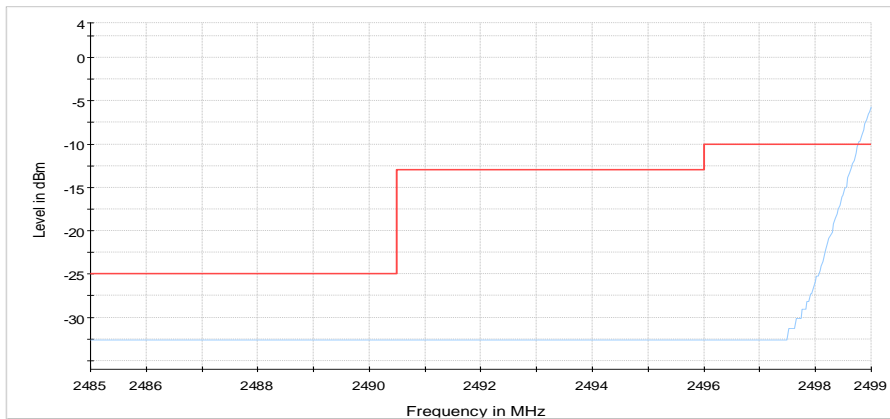


Diagram 43: 9.703b_CH20800_BW10_1RBlow_QAM_sweep1_laying

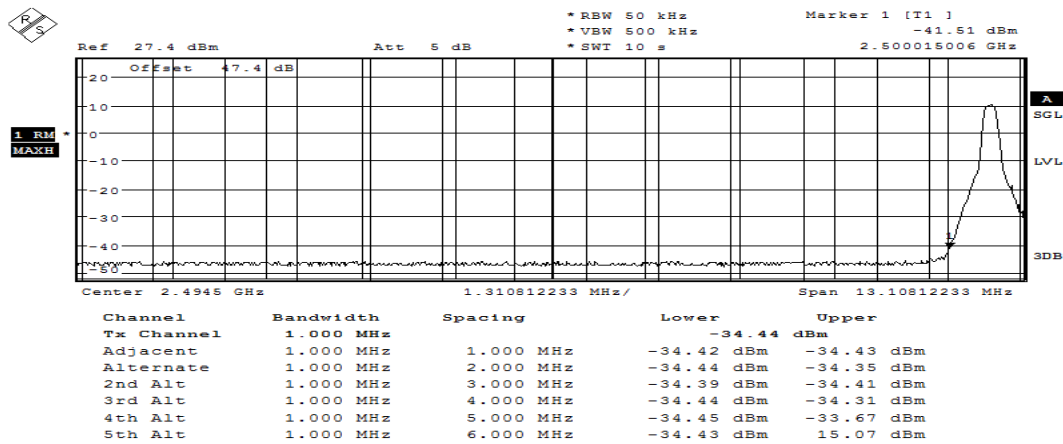


Diagram 44: 9.703b_CH20800_BW10_1RBlow_QAM_sweep1_laying_intBW

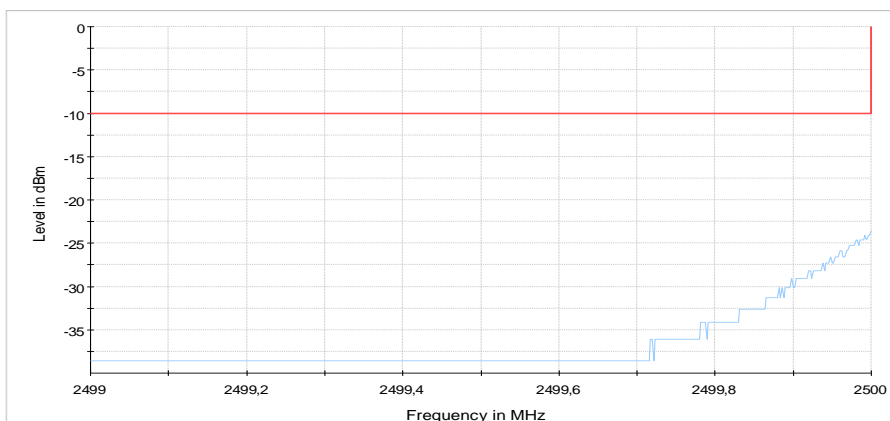


Diagram 45: 9.703b_CH20800_BW10_1RBlow_QAM_sweep2_laying

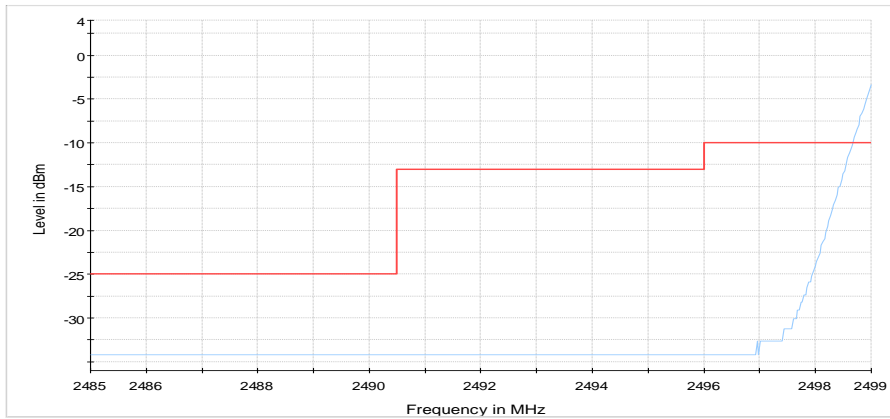


Diagram 46: 9.703b_CH20800_BW10_1RBlow_QAM_sweep1_standing

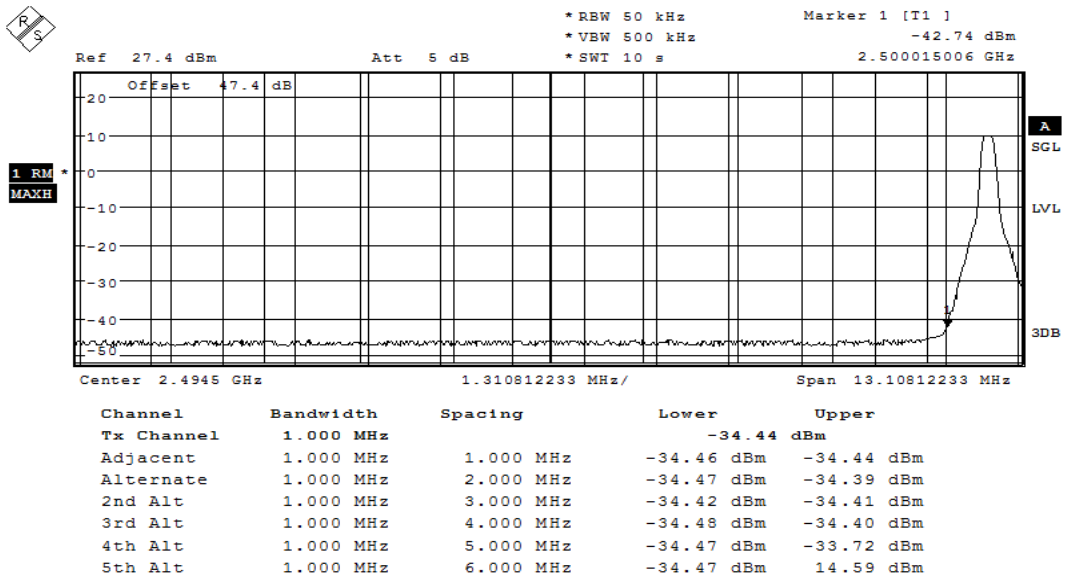


Diagram 47: 9.703b_CH20800_BW10_1RBlow_QAM_sweep1_standing_intBW

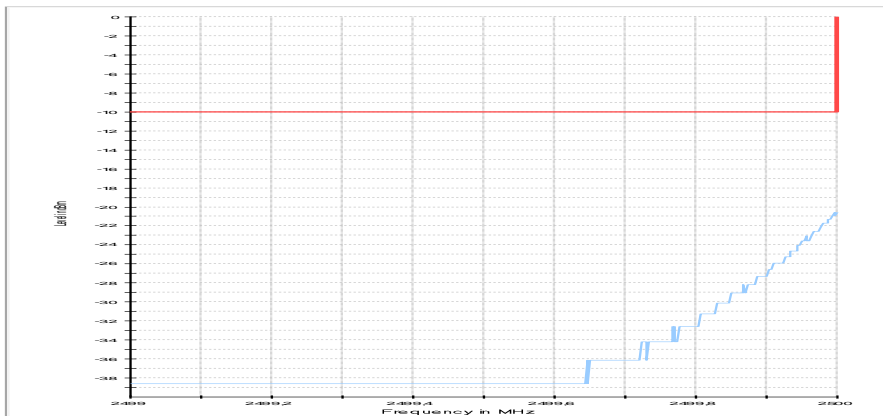


Diagram 48: 9.703b_CH20800_BW10_1RBlow_QAM_sweep2_standing

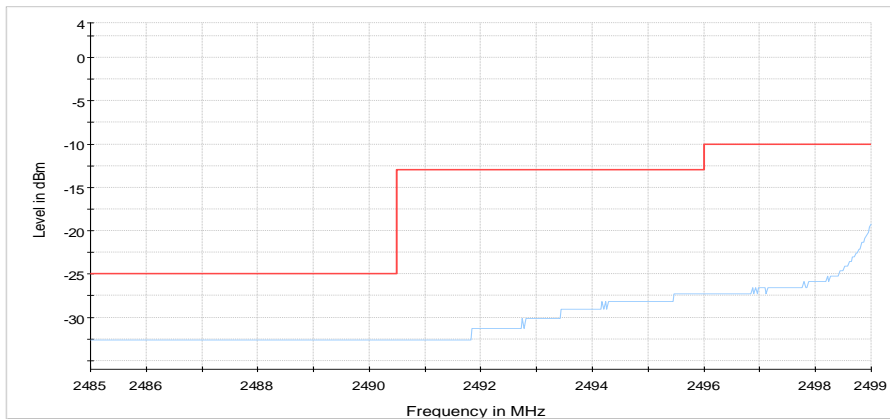


Diagram 49: 9.704a_CH20800_BW10_50RBlow_QPSK_sweep1_laying

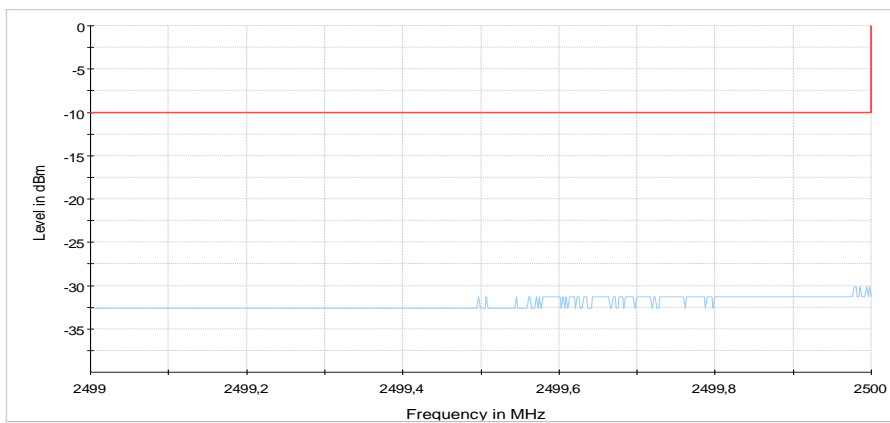


Diagram 50: 9.704a_CH20800_BW10_50RBlow_QPSK_sweep2_laying

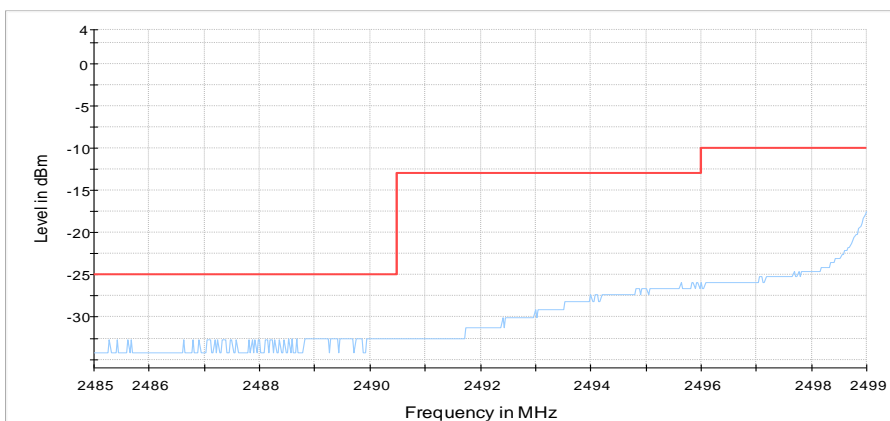
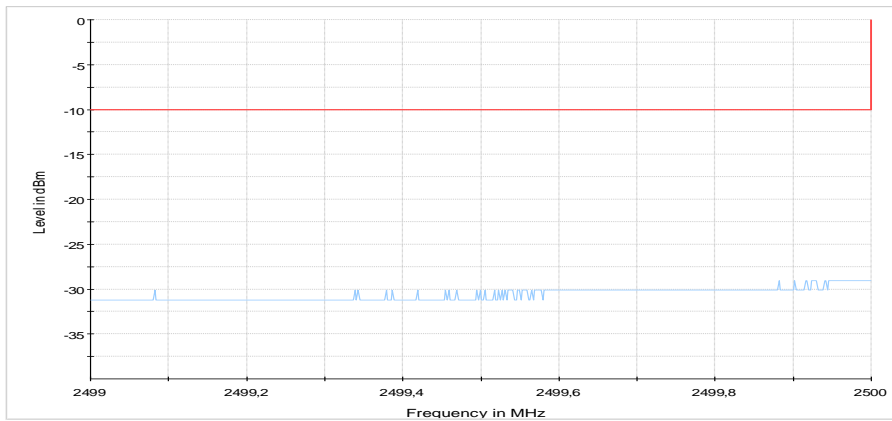
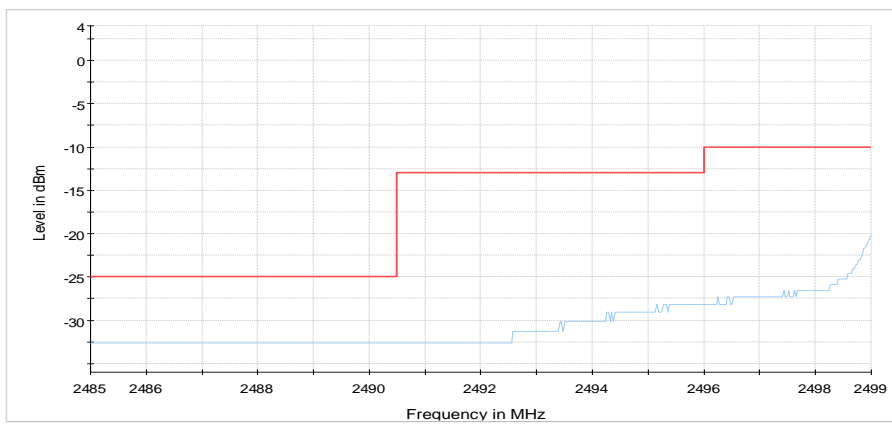
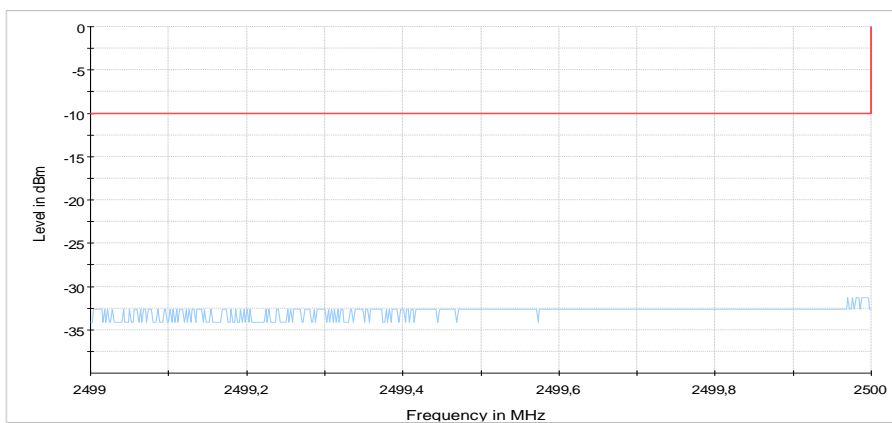
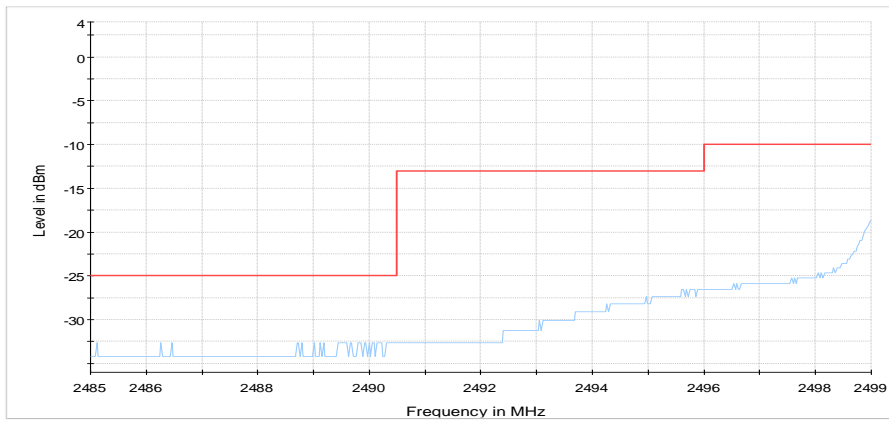
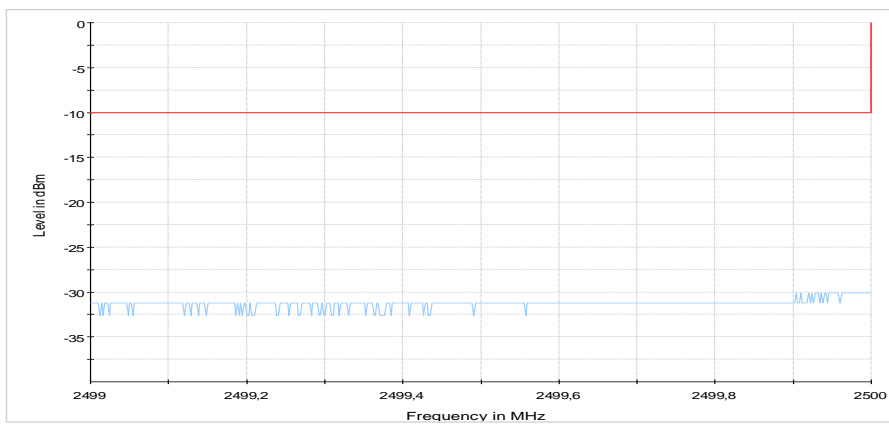


Diagram 51: 9.704a_CH20800_BW10_50RBlow_QPSK_sweep1_standing

**Diagram 52: 9.704a_CH20800_BW10_50RBlow_QPSK_sweep2_standing****Diagram 53: 9.704b_CH20800_BW10_50RBlow_QAM_sweep1_laying****Diagram 54: 9.704b_CH20800_BW10_50RBlow_QAM_sweep2_laying**

**Diagram 55: 9.704b_CH20800_BW10_50RBlow_QAM_sweep1_standing****Diagram 56: 9.704b_CH20800_BW10_50RBlow_QAM_sweep2_standing**

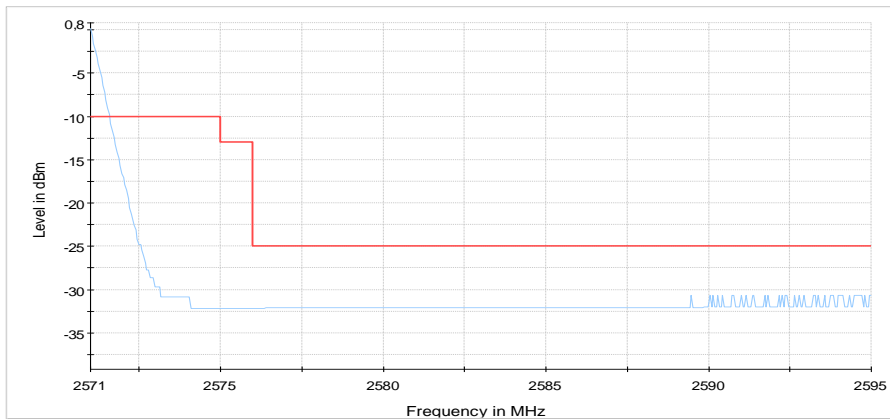


Diagram 57: 9.710a_CH21425_BW5_1RBhigh_QPSK_sweep1_laying

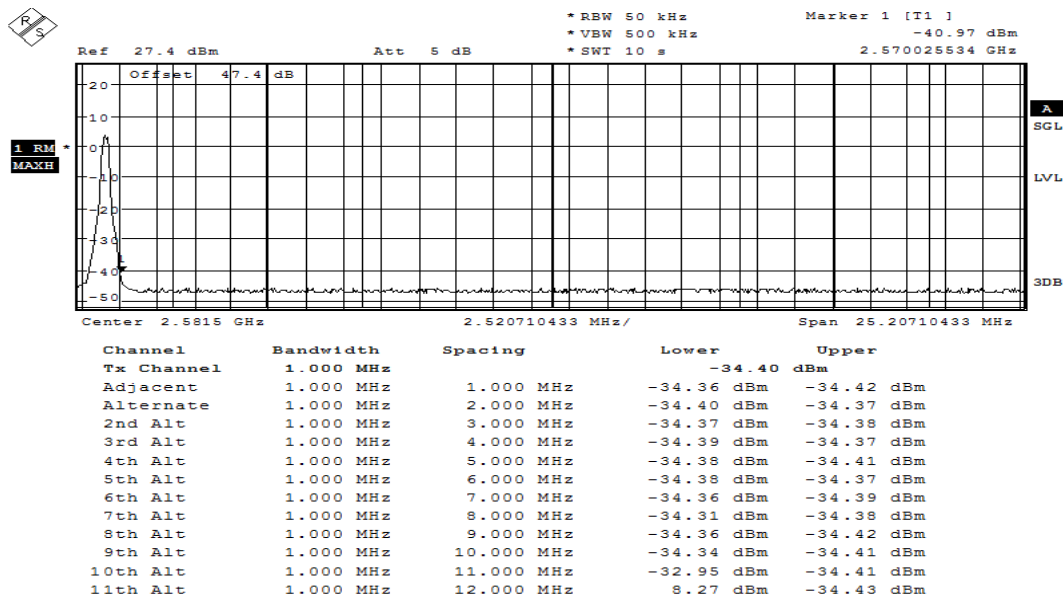


Diagram 58: 9.710a_CH21425_BW5_1RBhigh_QPSK_sweep1_laying_intBW

1.5.2. High Band-Edge

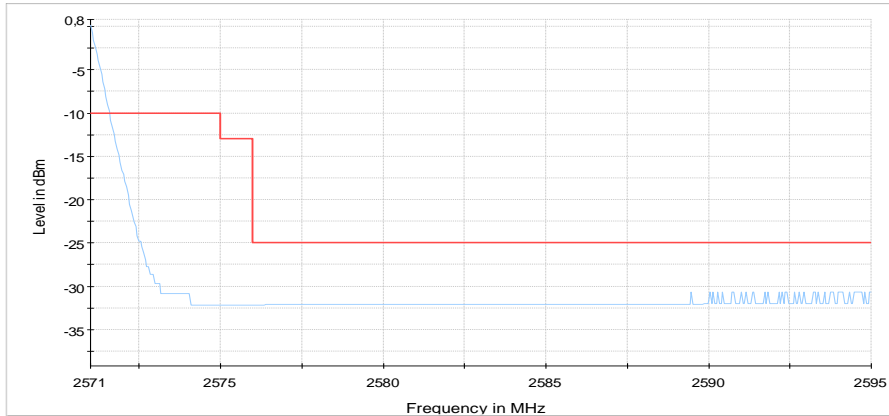


Diagram 59: 9.710a_CH21425_BW5_1RBhigh_QPSK_sweep1_laying

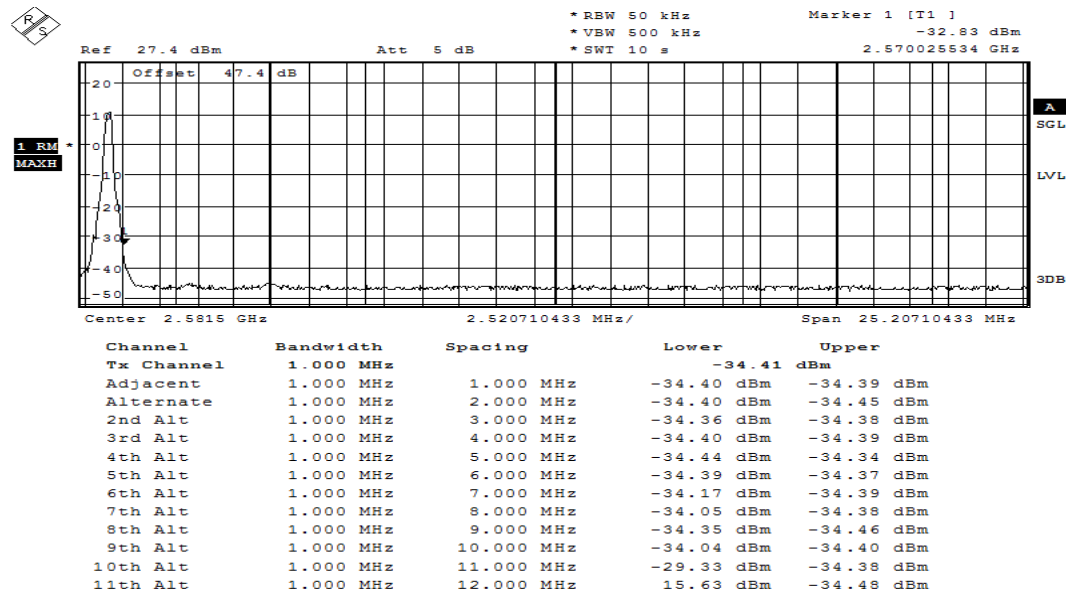


Diagram 60: 9.710a_CH21425_BW5_1RBhigh_QPSK_sweep1_standing_intBW

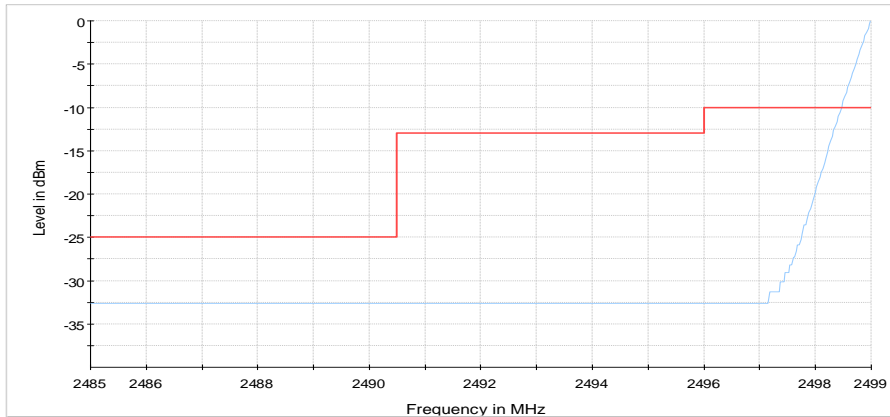


Diagram 61: 9.710a_CH21425_BW5_1RBhigh_QPSK_sweep2_laying

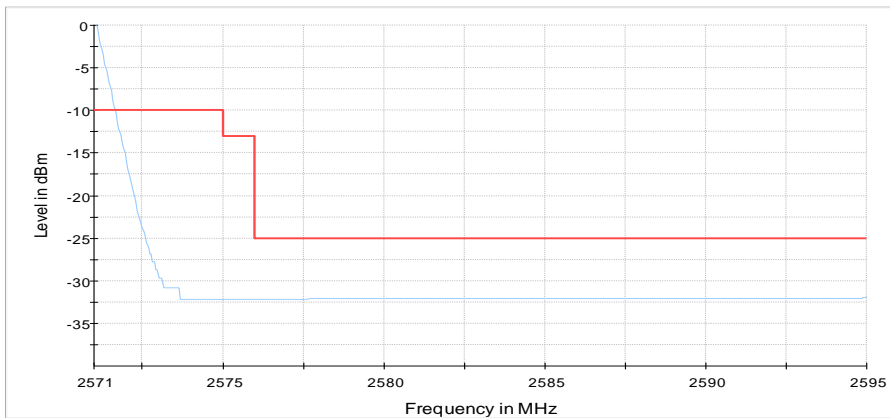


Diagram 62: 9.710a_CH21425_BW5_1RBhigh_QPSK_sweep1_standing

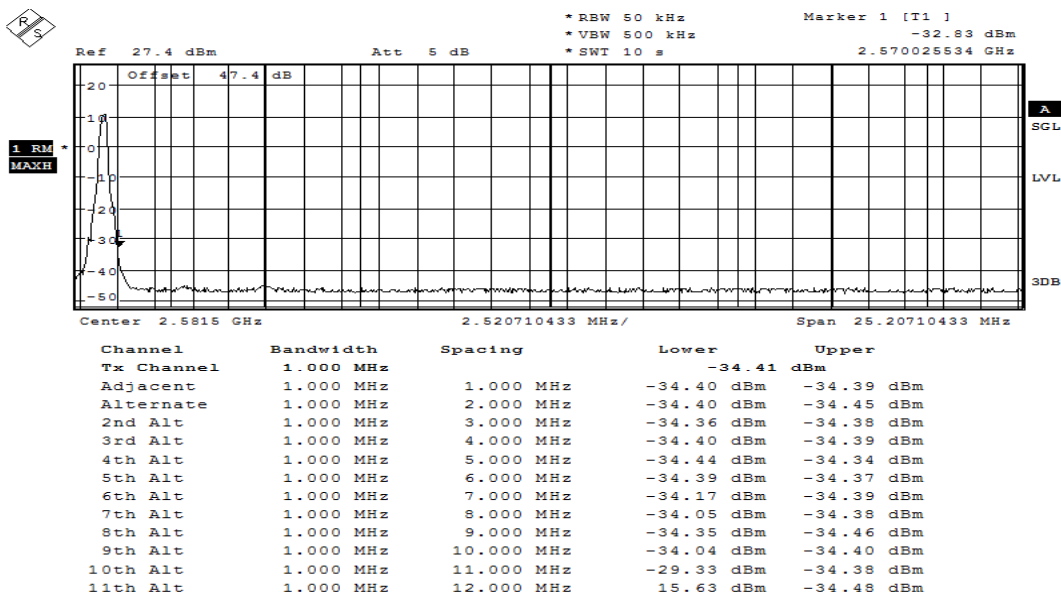


Diagram 63: 9.710a_CH21425_BW5_1RBhigh_QPSK_sweep1_standing_intBW

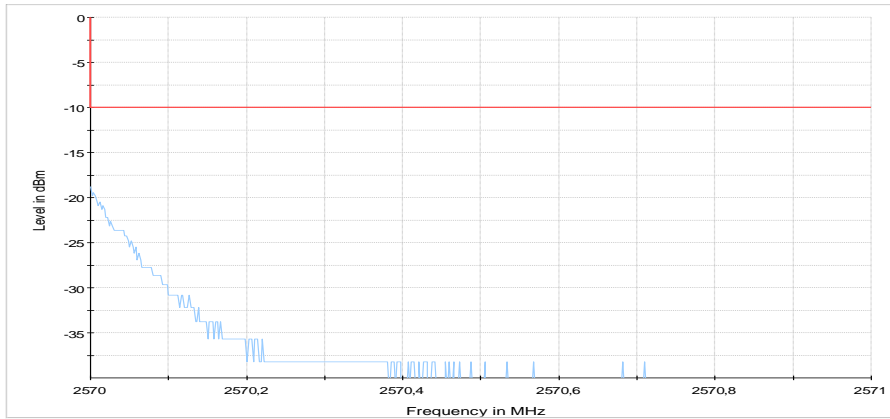


Diagram 64: 9.710a_CH21425_BW5_1RBhigh_QPSK_sweep2_standing

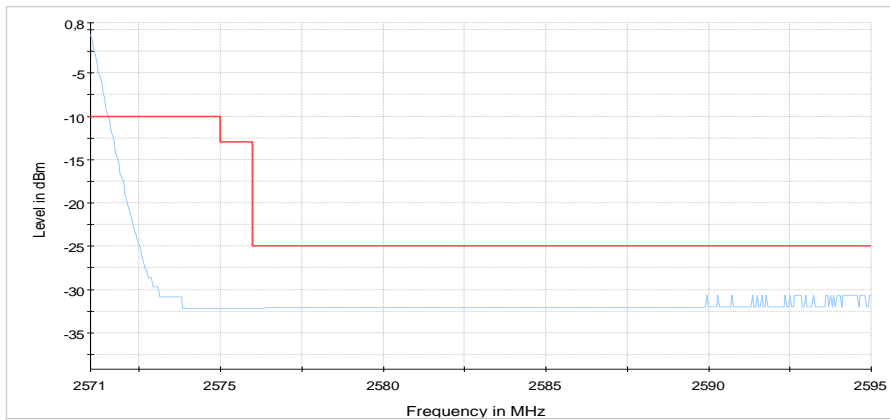


Diagram 65: 9.710b_CH21425_BW5_1RBhigh_QAM_sweep1_laying

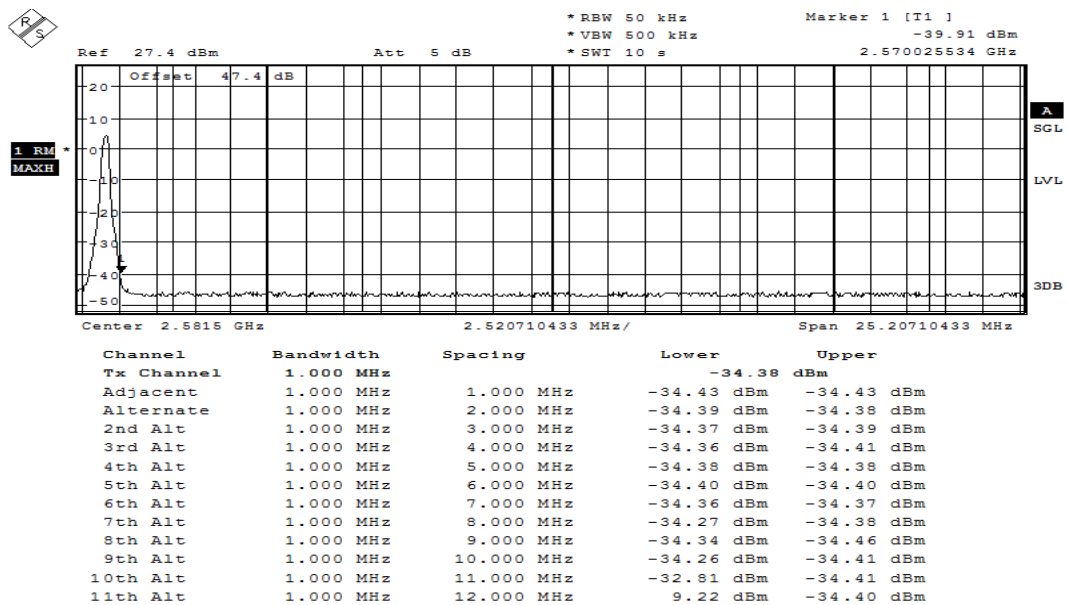


Diagram 66: 9.710b_CH21425_BW5_1RBhigh_QAM_sweep1_laying_intBW

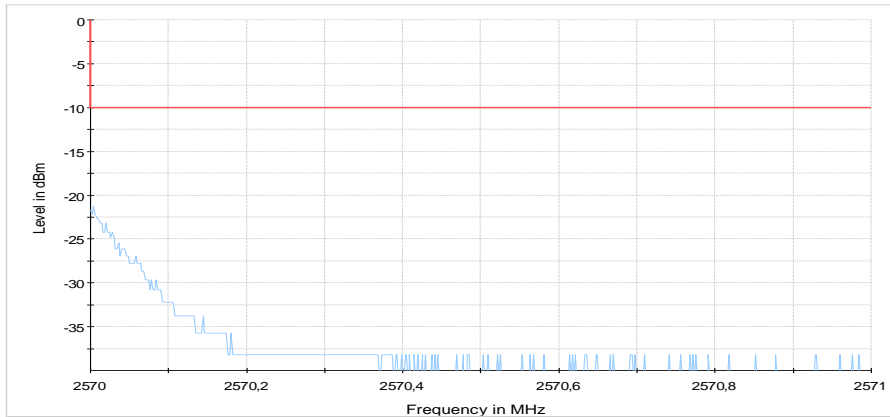


Diagram 67: 9.710b_CH21425_BW5_1RBhigh_QAM_sweep2_laying

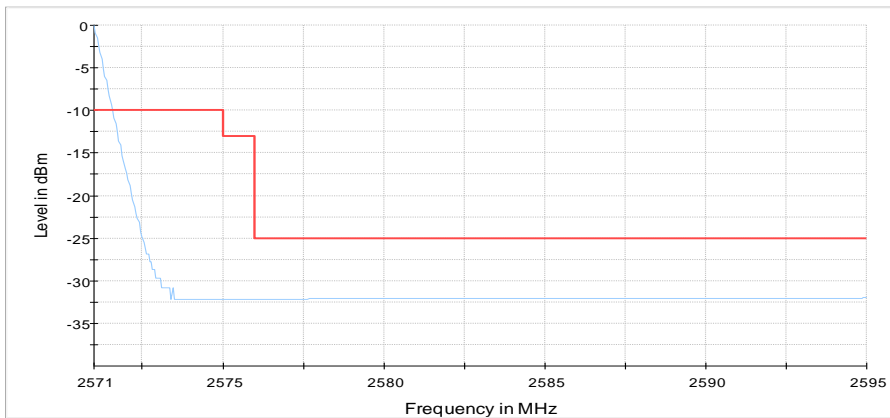


Diagram 68: 9.710b_CH21425_BW5_1RBhigh_QAM_sweep1_standing

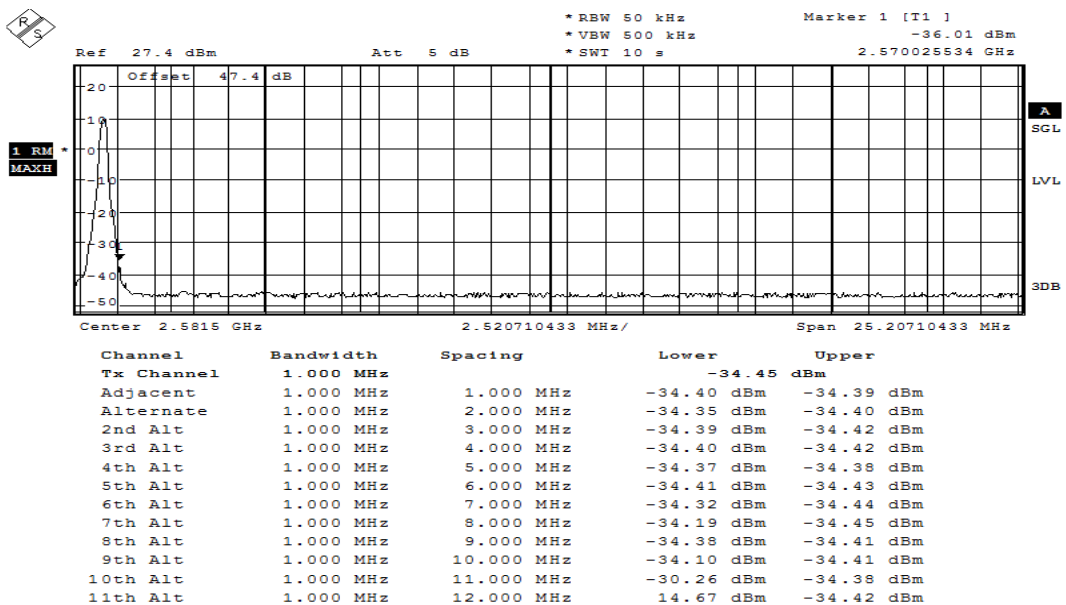


Diagram 69: 9.710b_CH21425_BW5_1RBhigh_QAM_sweep1_standing_intBW

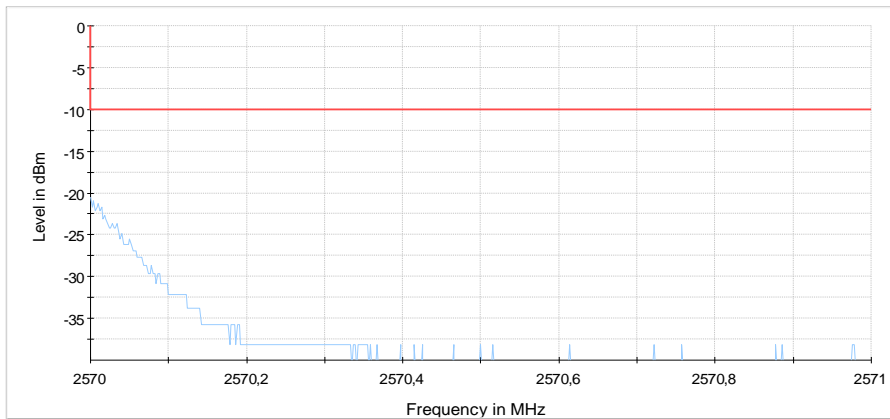


Diagram 70: 9.710b_CH21425_BW5_1RBhigh_QAM_sweep2_standing

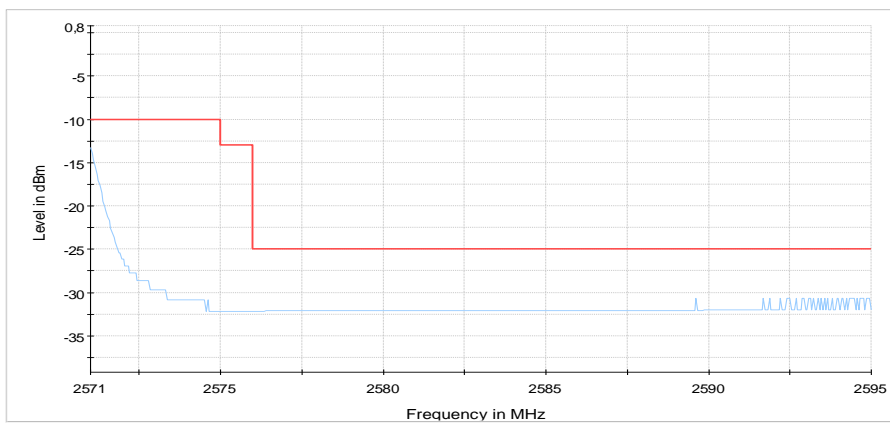


Diagram 71: 9.711a_CH21425_BW5_25RBhigh_QPSK_sweep1_laying

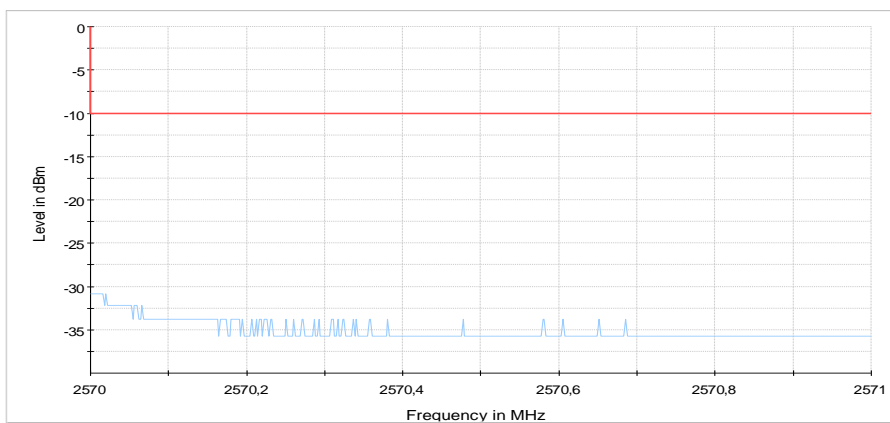


Diagram 72: 9.711a_CH21425_BW5_25RBhigh_QPSK_sweep2_laying

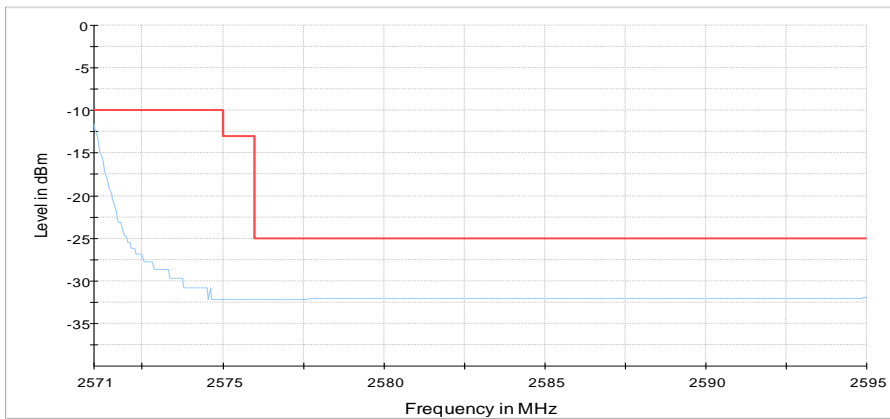


Diagram 73: 9.711a_CH21425_BW5_25RBhigh_QPSK_sweep1_standing

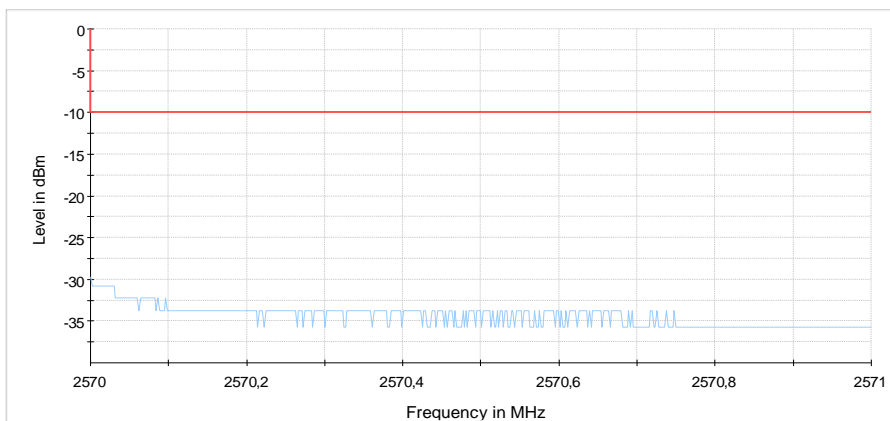


Diagram 74: 9.711a_CH21425_BW5_25RBhigh_QPSK_sweep2_standing

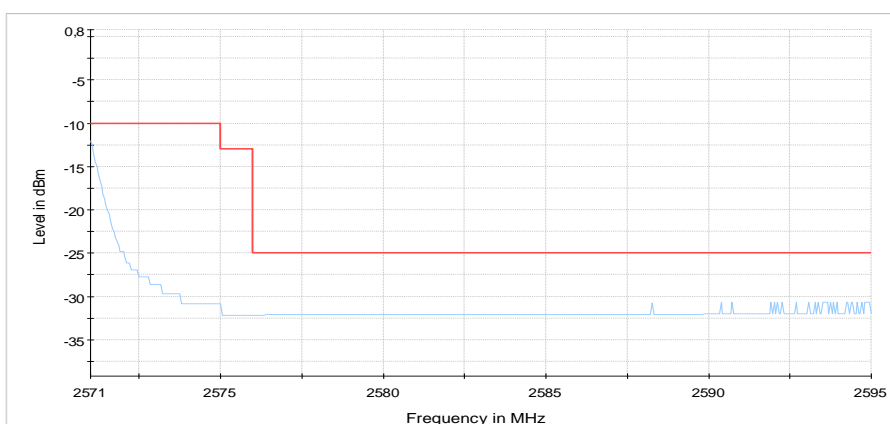


Diagram 75: 9.711b_CH21425_BW5_25RBhigh_QAM_sweep1_laying

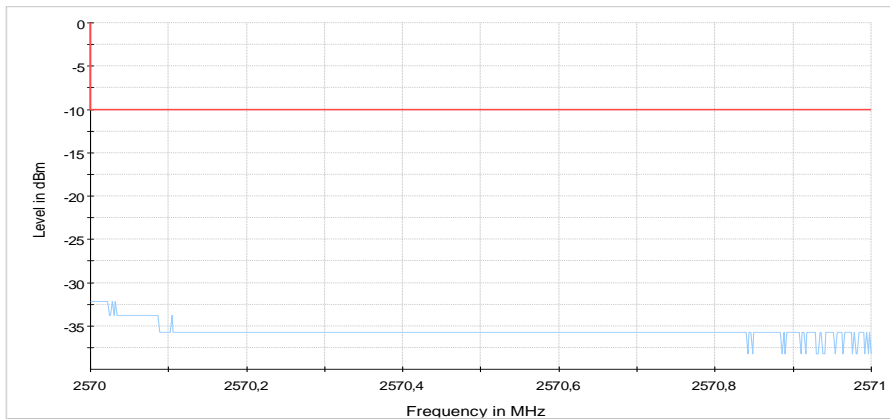


Diagram 76: 9.711b_CH21425_BW5_25RBhigh_QAM_sweep2_laying

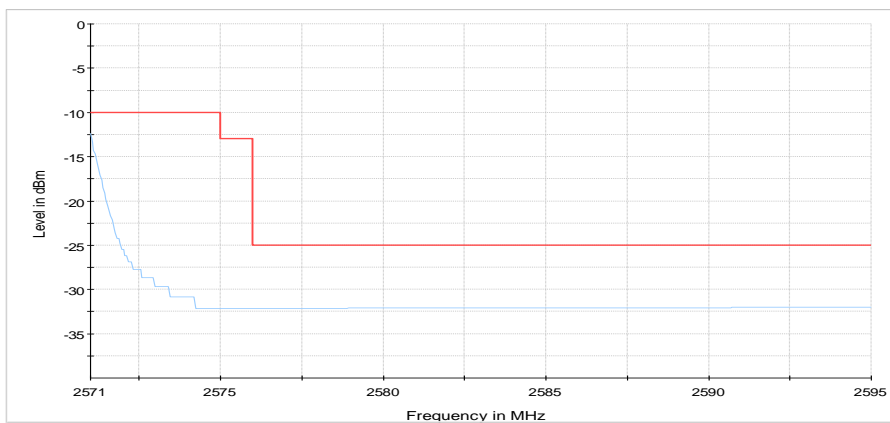


Diagram 77: 9.711b_CH21425_BW5_25RBhigh_QAM_sweep1_standing

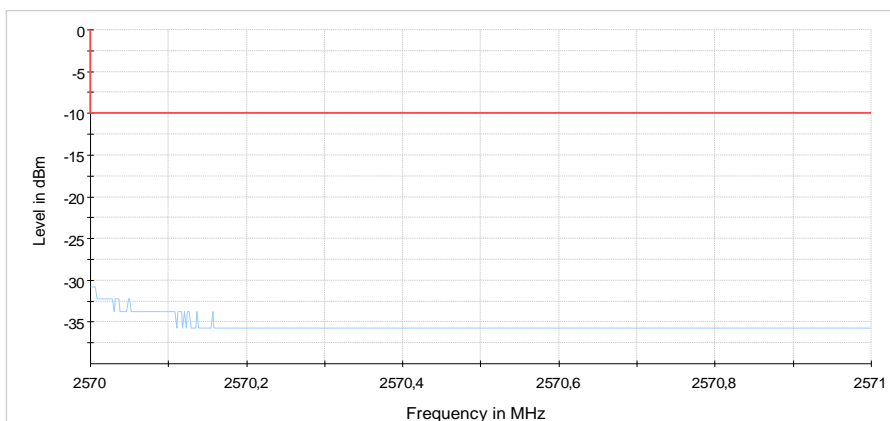


Diagram 78: 9.711b_CH21425_BW5_25RBhigh_QAM_sweep2_standing

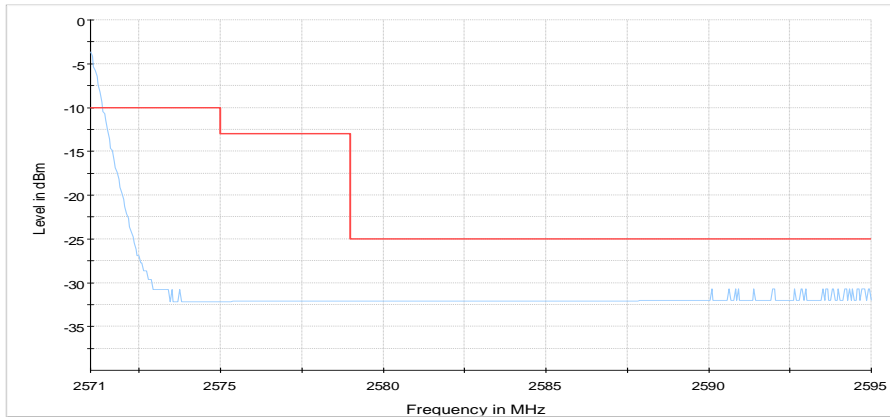


Diagram 79: 9.712a_CH21400_BW10_1RBhigh_QPSK_sweep1_laying

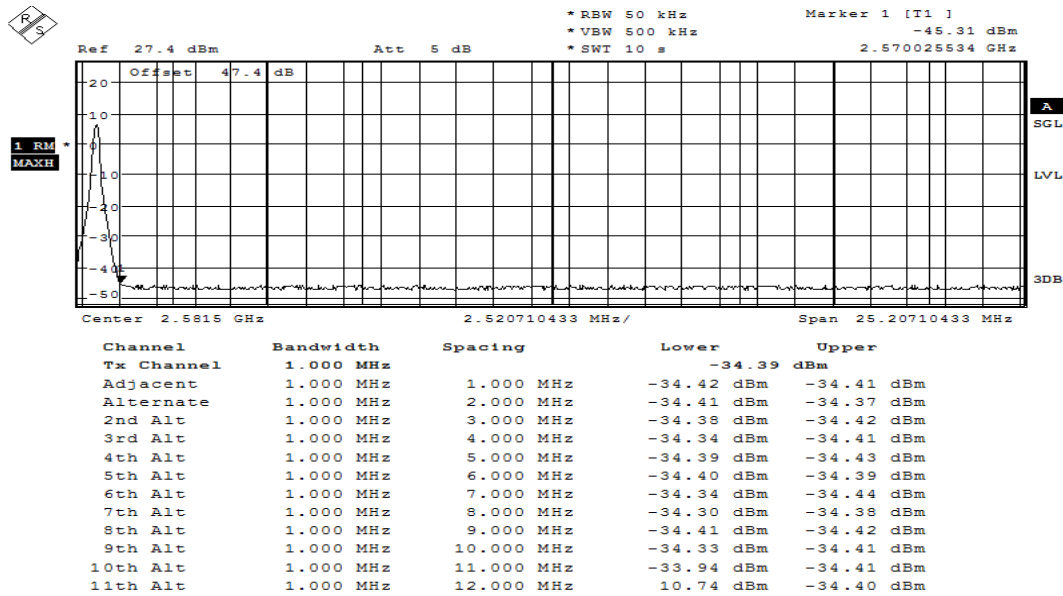


Diagram 80: 9.712a_CH21400_BW10_1RBhigh_QPSK_sweep1_laying_intBW

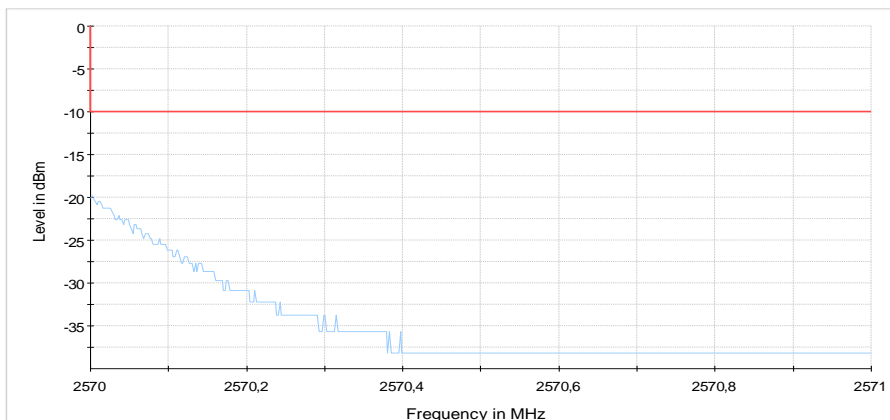


Diagram 81: 9.712a_CH21400_BW10_1RBhigh_QPSK_sweep2_laying

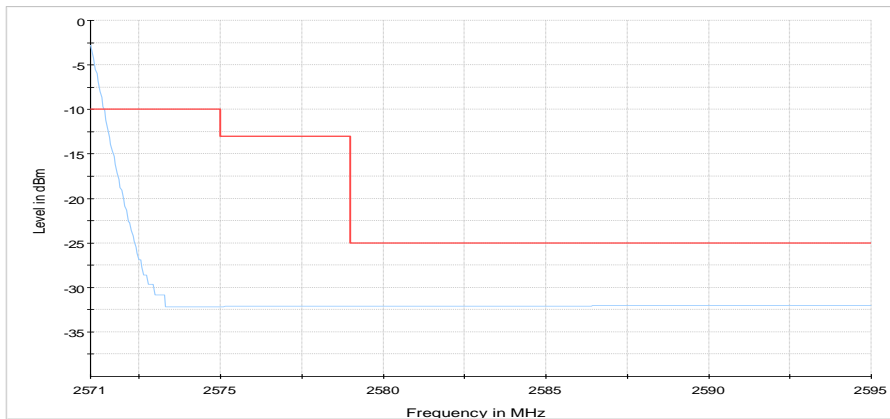


Diagram 82: 9.712a_CH21400_BW10_1RBhigh_QPSK_sweep1_standing

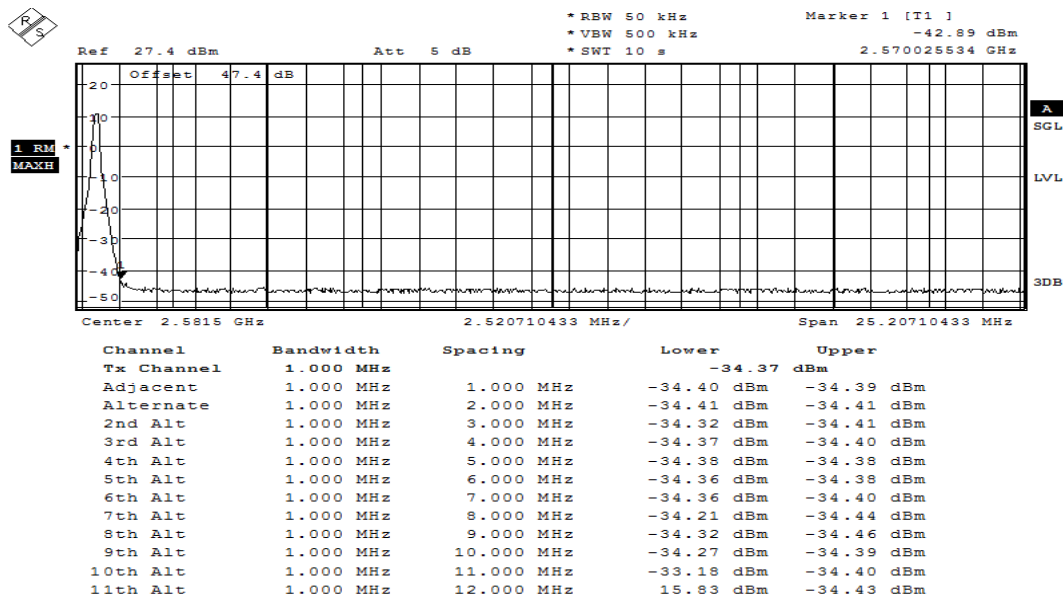


Diagram 83: 9.712a_CH21400_BW10_1RBhigh_QPSK_sweep1_standing_intBW

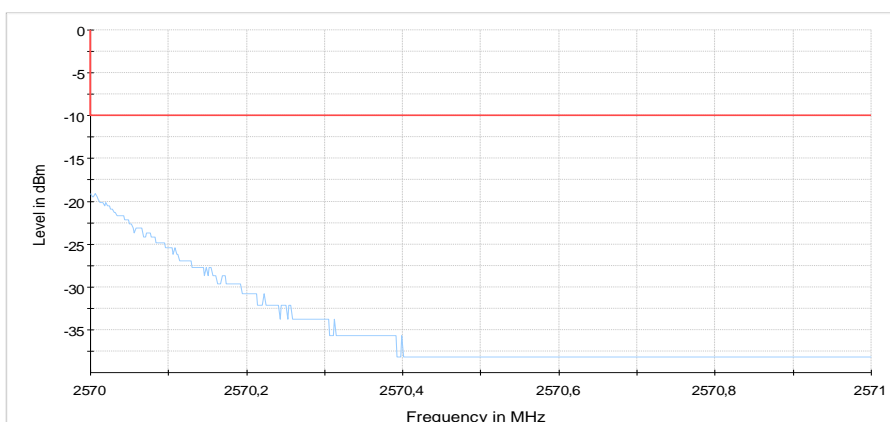


Diagram 84: 9.712a_CH21400_BW10_1RBhigh_QPSK_sweep2_standing

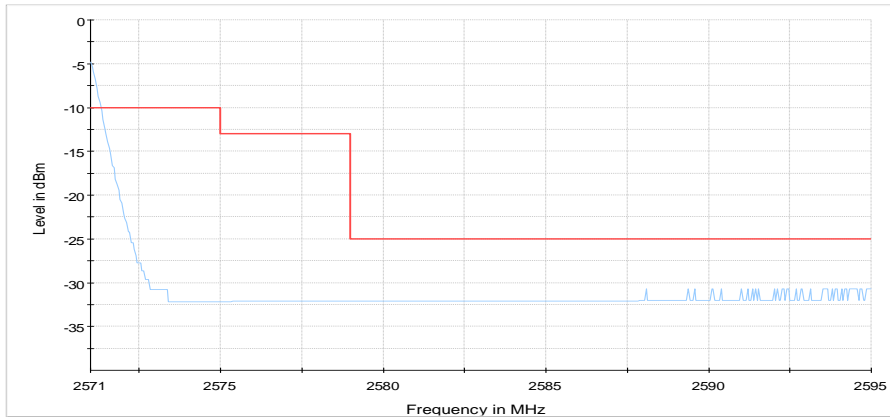


Diagram 85: 9.712b_CH21400_BW10_1RBhigh_QAM_sweep1_laying

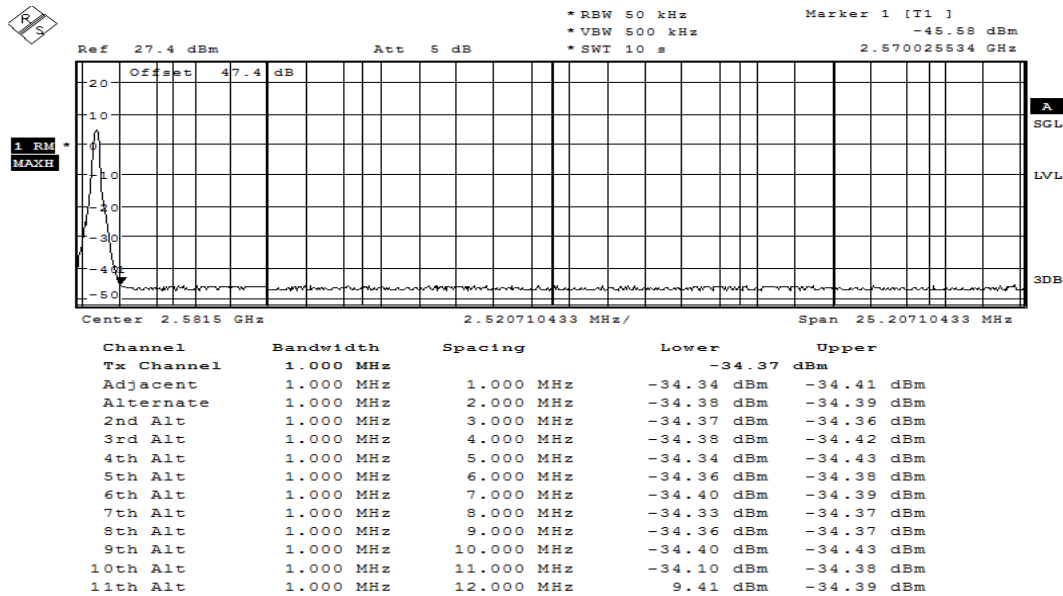


Diagram 86: 9.712b_CH21400_BW10_1RBhigh_QAM_sweep1_laying_intBW

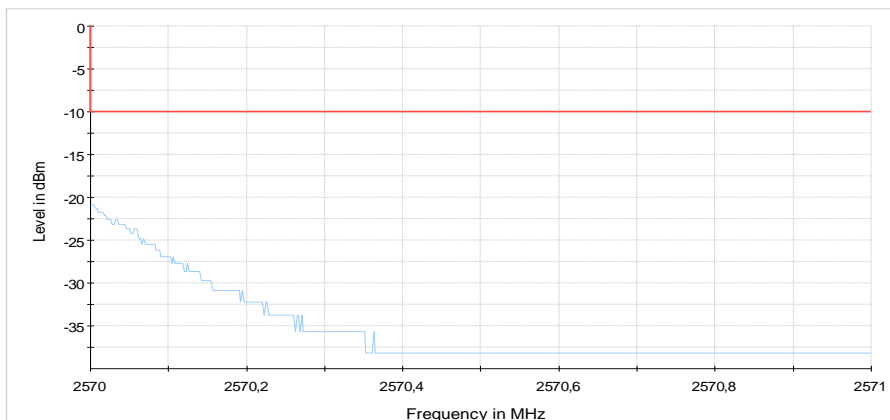


Diagram 87: 9.712b_CH21400_BW10_1RBhigh_QAM_sweep2_laying

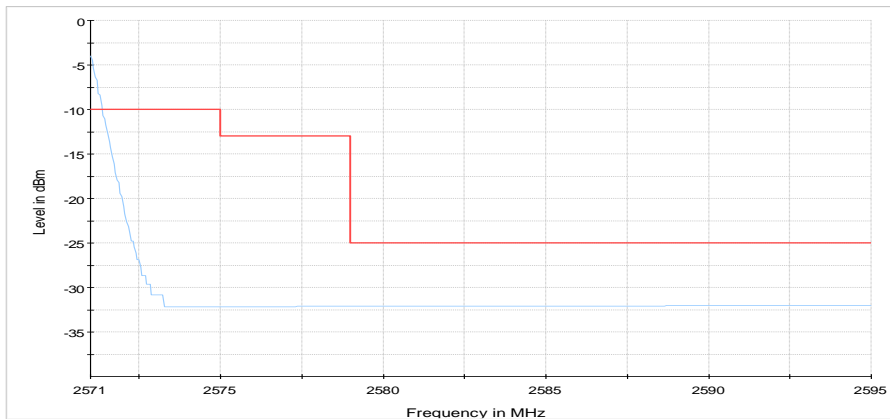


Diagram 88: 9.712b_CH21400_BW10_1RBhigh_QAM_sweep1_standing

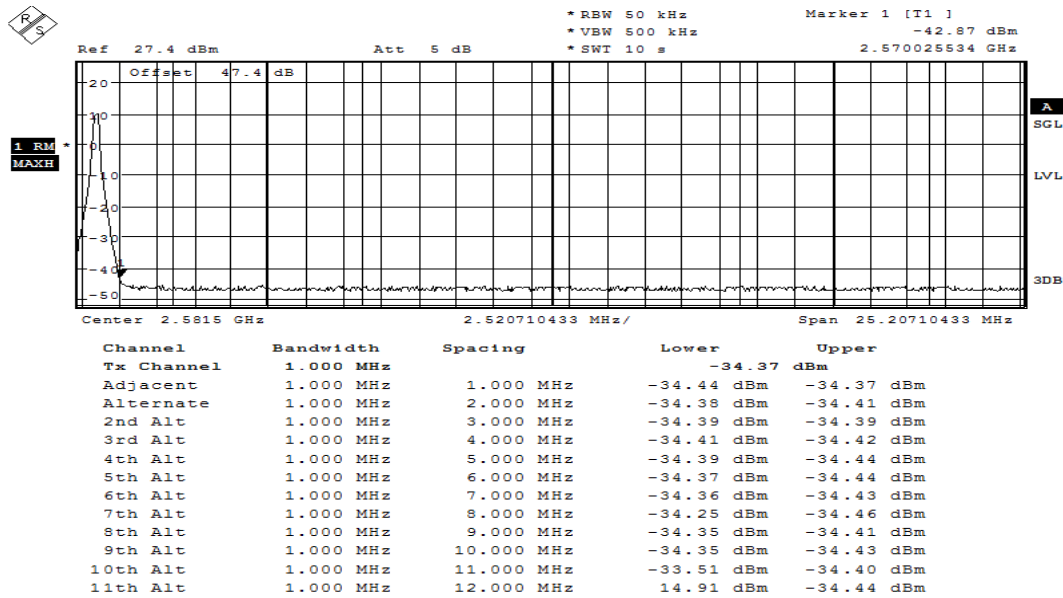


Diagram 89: 9.712b_CH21400_BW10_1RBhigh_QAM_sweep1_standing_intBW

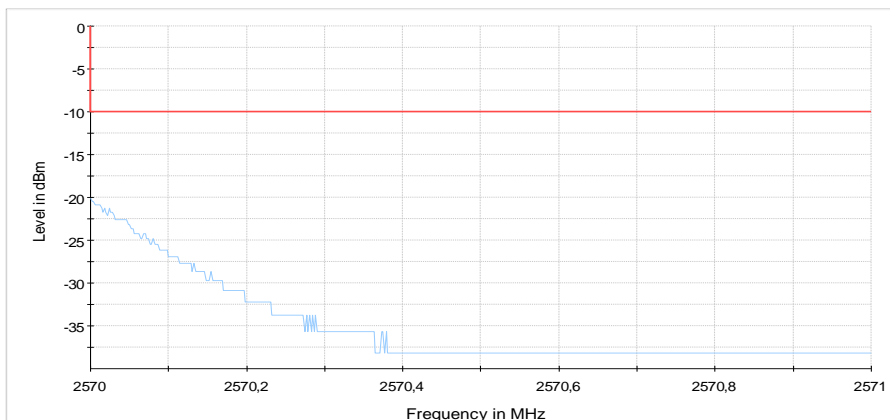
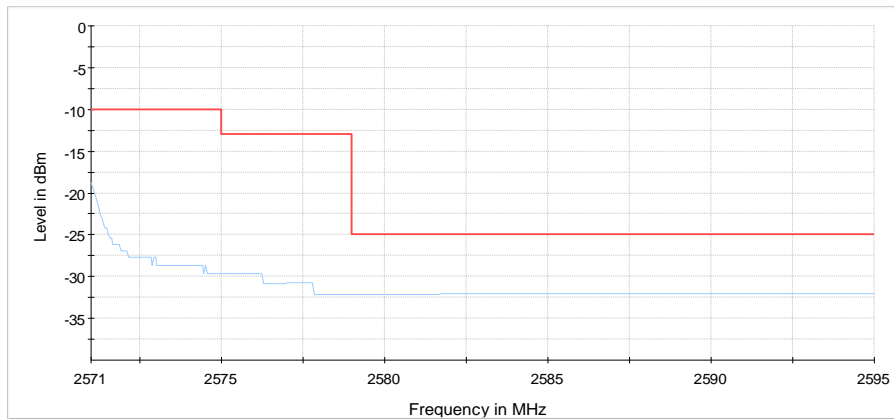
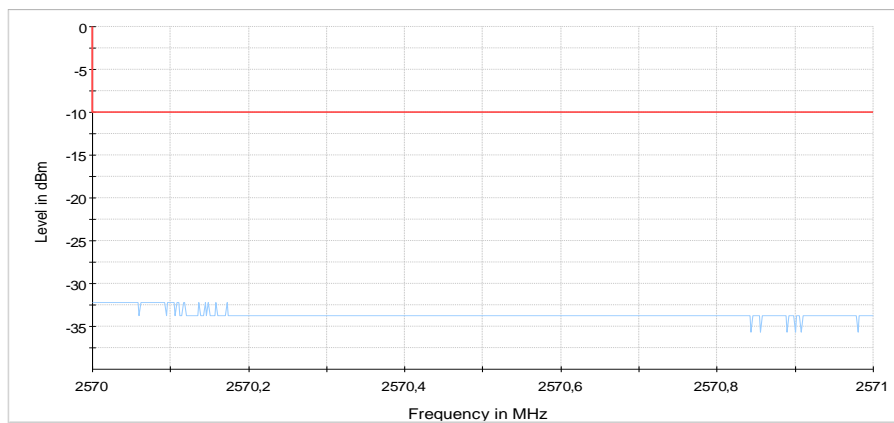
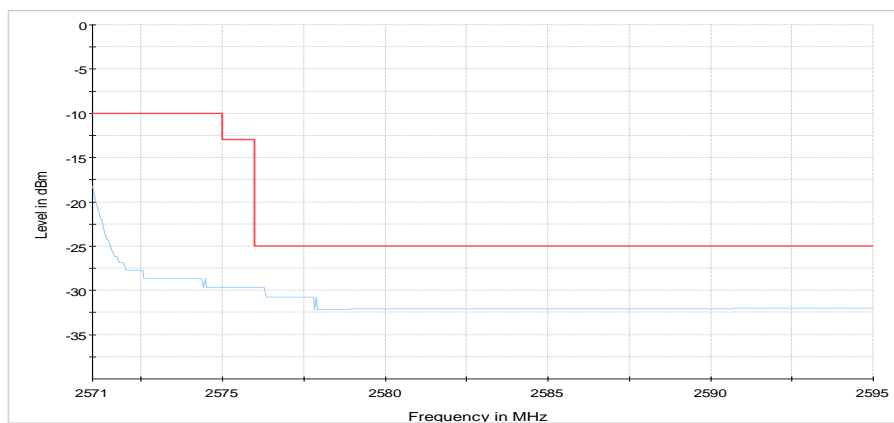
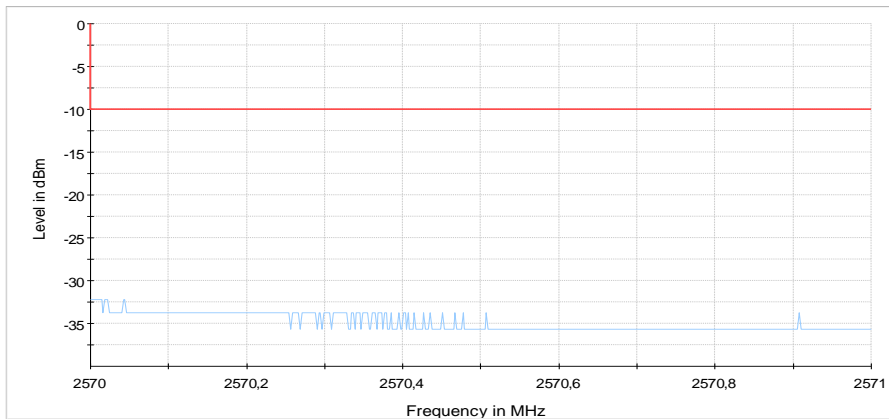
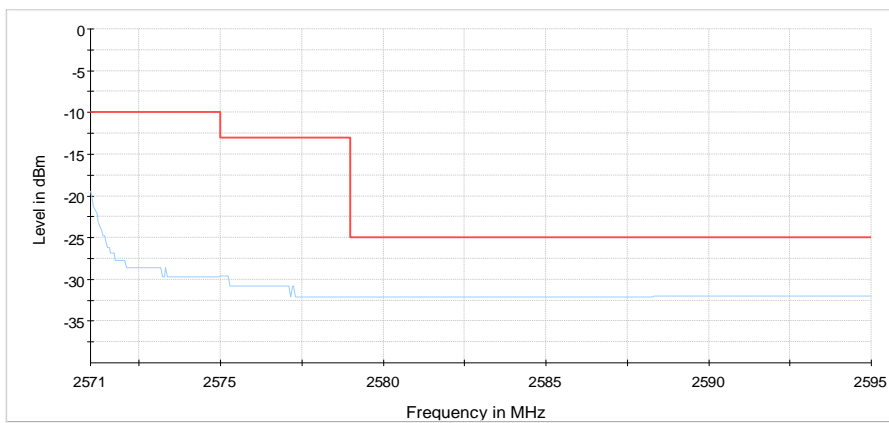
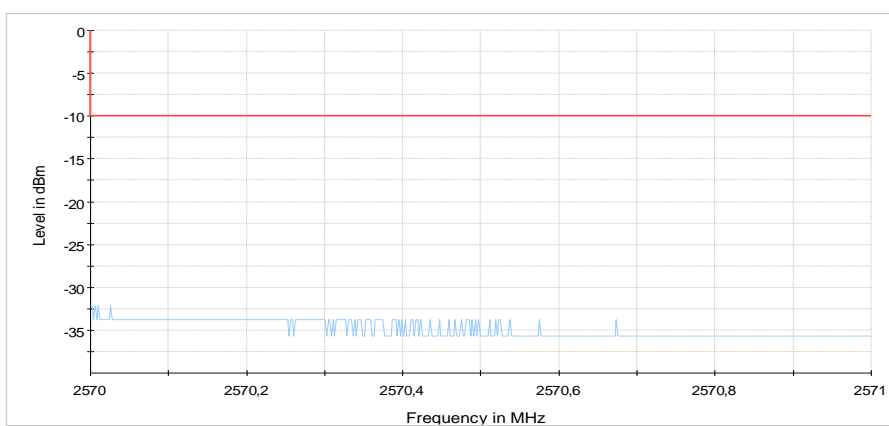
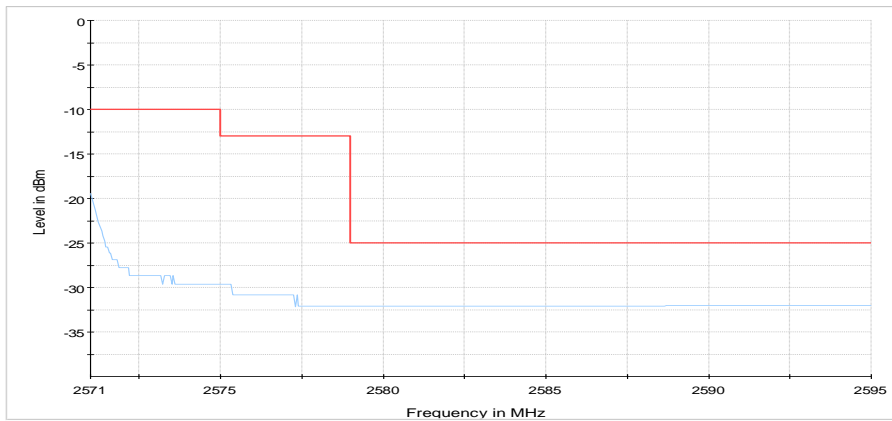
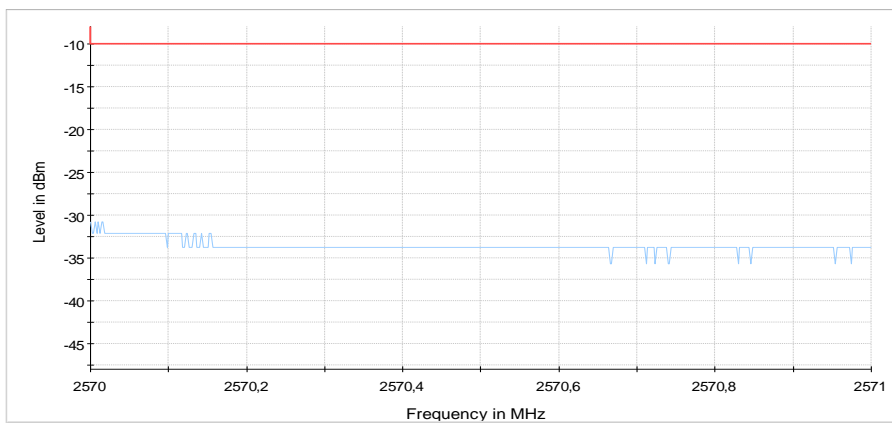


Diagram 90: 9.712b_CH21400_BW10_1RBhigh_QAM_sweep2_standing

**Diagram 91: 9.713a_CH21400_BW10_50RBhigh_QPSK_sweep1_laying****Diagram 92: 9.713a_CH21400_BW10_50RBhigh_QPSK_swee2_laying****Diagram 93: 9.713a_CH21400_BW10_50RBhigh_QPSK_sweep1_standing**

**Diagram 94: 9.713a_CH21400_BW10_50RBhigh_QPSK_sweep2_standing****Diagram 95: 9.713b_CH21400_BW10_50RBhigh_QAM_sweep1_laying****Diagram 96: 9.713b_CH21400_BW10_50RBhigh_QAM_sweep2_laying**

**Diagram 97: 9.713b_CH21400_BW10_50RBhigh_QAM_sweep2_standing****Diagram 98: 9.713b_CH21400_BW10_50RBhigh_QAM_sweep2_standing**