

Annex 1: Measurement diagrams to TEST REPORT No.: 16-1-0109701T05a

According to:
FCC Regulations
Part 24, Part 27, Part 15C - §15.207

IC-Regulations
RSS-133 Issue 6, RSS-139 Issue 2
RSS-130 Issue 1, RSS-Gen Issue 4

for

Gemalto M2M GmbH

ELS31-US LTE module

FCC-ID: QIPELS31-US
IC: 7830A-ELS31US

Laboratory Accreditation and Listings			
 DAkkS Deutsche Akkreditierungsstelle D-PL-12047-01-01	 FCC FEDERAL COMMUNICATIONS COMMISSION USA MRA US-EU 0003	 Industry Canada Reg. No.: 3462D-2 Reg. No.: 3462D-3	 Voluntary Controls for Electromagnetic Emissions Reg. No.: R-2666 C-2914, T-1967, G-301
 WiFi ALLIANCE AUTHORIZED RF LABORATORY	 ctia AuthorizedTM Test Lab Lab Code: 20011130-00		
accredited according to DIN EN ISO/IEC 17025			
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1. Measurement diagrams

1.1. Power conducted LTE-Band 4

LTE-Band 4				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]				
5 MHz	19975	1712,5	1RB low	27,819	23,305	4,5135	27,79	22,356	5,4343	23,305	22,5		
			1RB high	27,989	22,6014	5,388	28,037	21,743	6,2933				
			50%RB mid	28,2	23,2	5	28,2	22,5	5,7				
			100%RB	28,153	22,0125	6,1402	27,914	21,101	6,8132				
	20175	1732,5	1RB low	27,133	21,857	5,2761	27,494	21,038	6,4556	22,54	21,93	23,31	
			1RB high	27,165	22,3383	4,8267	27,335	21,482	5,8534				
			50%RB mid	27,95	22,54	5,41	28,5	21,93	6,57				
			100%RB	27,409	21,2145	6,1943	27,148	20,16	6,9875				
	20375	1752,5	1RB low	28,156	22,8143	5,3413	27,787	21,842	5,945	23,008	23,02		
			1RB high	28,409	23,0079	5,4006	28,076	22,043	6,0323				
			50%RB mid	28,43	22,11	6,32	28,22	23,02	5,2				
			100%RB	28,314	21,9406	6,3736	28,111	20,976	7,135				
10 MHz	20000	1715	1RB low	27,562	22,7441	4,8177	27,508	22,019	5,4891	22,744	22,664		
			1RB high	27,208	21,3735	5,8342	27,433	20,698	6,7347				
			50%RB mid	27,66	21,82	5,84	27,9	20,8	7,1				
			100%RB	27,794	21,4533	6,3406	25,969	22,664	3,3048				
	20175	1732,5	1RB low	26,957	21,2301	5,7273	26,977	20,582	6,3953	21,988	21,892	22,74	
			1RB high	27,005	21,9879	5,0171	26,938	20,983	5,9546				
			50%RB mid	27,3	21,24	6,06	27,159	20,2	6,9585				
			100%RB	27,281	20,9059	6,3753	25,184	21,892	3,292				
	20350	1750	1RB low	27,719	22,4491	5,2694	27,571	21,605	5,9656	22,449	22,361		
			1RB high	28,348	22,3403	6,0081	28,093	21,427	6,6662				
			50%RB mid	27,96	22,43	5,53	28,02	21,89	6,13				
			100%RB	28,044	21,635	6,4088	25,722	22,361	3,3608				
15 MHz	20025	1717,5	1RB low	27,244	22,709	4,5352	27,475	21,872	5,6031	22,709	22,841		
			1RB high	26,641	21,395	5,2458	27,28	20,571	6,7085				
			50%RB mid	28,76	21,71	7,05	28,67	21,7	6,97				
			100%RB	28,079	21,5037	6,5751	25,997	22,841	3,1563				
	20175	1732,5	1RB low	27,101	21,3501	5,7507	27,958	22,397	5,5608	22,442	22,397	22,84	
			1RB high	27,126	22,4421	4,6836	27,3	21,777	5,5234				
			50%RB mid	27,93	21,803	6,127	27,996	22,086	5,91				
			100%RB	27,743	21,4422	6,3003	27,833	21,968	5,8654				
	20325	1747,5	1RB low	27,137	22,6658	4,4711	27,351	21,803	5,5485	22,666	22,548		
			1RB high	27,708	22,4151	5,2932	28,092	21,661	6,4314				
			50%RB mid	28,44	22,45	5,99	28,672	22,548	6,124				
			100%RB	28,34	22,1561	6,1836	25,741	22,513	3,2285				
20 MHz	20050	1720	1RB low	27,703	23,7188	3,9845	27,656	23,14	4,5165	23,719	23,861		
			1RB high	27,514	22,7521	4,7617	27,875	22,169	5,7059				
			50%RB mid	28,41	21,21	7,2	29,18	21,155	8,025				
			100%RB	28,408	21,5174	6,8902	27,003	23,861	3,1419				
	20175	1732,5	1RB low	27,967	22,4249	5,5416	27,725	21,834	5,8903	22,858	23,288	23,86	
			1RB high	27,692	22,8576	4,8347	27,692	22,858	4,8347				
			50%RB mid	28,004	21,42	6,584	27,897	21,418	6,479				
			100%RB	28,154	21,5328	6,6212	26,518	23,288	3,2306				
	20300	1745	1RB low	27,362	23,204	4,158	27,568	22,747	4,8217	23,623	23,127		
			1RB high	28,582	23,6233	4,9586	28,485	23,127	5,358				
			50%RB mid	28,03	22,22	5,81	28,254	22,24	6,014				
			100%RB	28,376	22,2686	6,1076	26,365	23,127	3,2377				

1.2. Power conducted LTE-Band 2

LTE-Band 2				QPSK-Modulation			16-QAM-Modulation			max. modulation QPSK	max. modulation 16QAM	max. bandwidth	absolute max. value channels/bandwidths
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	18625	1852,5	1RB low	28,404	22,2382	6,1654	28,67	21,404	7,2657	22,482	21,791	22,8	
			1RB high	28,634	22,4823	6,1513	29,014	21,638	7,3768				
			50%RB mid	28,336	21,5307	6,8054	29,004	21,791	7,2125				
			100%RB	29,205	21,5048	7,6999	28,763	20,401	8,3622				
	18900	1880	1RB low	28,753	22,6885	6,0646	28,978	21,953	7,0249	22,689	22,051		
			1RB high	28,755	22,4949	6,2604	29,102	21,854	7,248				
			50%RB mid	28,215	21,7774	6,4374	29,031	22,051	6,9805				
			100%RB	28,599	21,7474	6,8517	28,645	20,65	7,9953				
	19175	1907,5	1RB low	28,289	22,8007	5,4881	27,739	21,822	5,9172	22,801	21,822		
			1RB high	27,716	21,3312	6,3852	26,9	20,464	6,4362				
			50%RB mid	27,773	21,2942	6,4786	28,067	21,577	6,4905				
			100%RB	27,741	21,251	6,4903	27,8	20,407	7,3929				
10 MHz	18650	1855	1RB low	27,794	22,0713	5,723	27,798	20,877	6,9214	22,42	22,903	22,9	23,86
			1RB high	28,356	22,4203	5,9356	28,527	21,491	7,0364				
			50%RB mid	28,658	21,6975	6,9606	28,61	20,644	7,9653				
			100%RB	28,82	21,4748	7,345	26,682	22,903	3,7797				
	18900	1880	1RB low	28,269	22,3971	5,8718	28,276	21,678	6,5982	22,397	22,498		
			1RB high	28,127	21,9318	6,1949	28,39	21,154	7,2365				
			50%RB mid	28,569	21,7053	6,864	28,686	20,71	7,9758				
			100%RB	28,862	21,4786	7,3838	26,14	22,498	3,6426				
	19150	1905	1RB low	27,742	22,014	5,7281	28,143	21,201	6,9423	22,014	21,795		
			1RB high	26,501	20,8109	5,6905	27,397	20,123	7,2735				
			50%RB mid	27,832	21,4703	6,362	27,91	20,606	7,3033				
			100%RB	28,489	21,181	7,3084	25,979	21,795	4,1836				
15 MHz	18675	1857,5	1RB low	27,803	22,0239	5,7792	28,009	21,176	6,8338	22,596	23,046	23,05	
			1RB high	28,296	22,5958	5,7	28,555	21,852	6,703				
			50%RB mid	28,863	22,2335	6,6296	29,504	22,519	6,9844				
			100%RB	28,729	21,8524	6,8764	26,849	23,046	3,8036				
	18900	1880	1RB low	28,408	22,7572	5,6506	28,449	21,81	6,6396	22,757	22,491		
			1RB high	28,097	21,9681	6,1284	28,649	20,913	7,7354				
			50%RB mid	28,774	22,114	6,6598	29,039	22,353	6,6864				
			100%RB	28,827	21,7261	7,1011	26,231	22,491	3,74				
	19125	1902,5	1RB low	28,469	21,831	6,6379	28,696	20,954	7,7418	22,219	22,483		
			1RB high	27,225	21,0756	6,1494	27,448	20,513	6,935				
			50%RB mid	28,467	22,2185	6,2482	28,747	22,483	6,2643				
			100%RB	28,366	21,6475	6,7185	29,01	21,55	7,46				
20 MHz	18700	1860	1RB low	28,477	23,1704	5,307	28,327	22,304	6,023	23,776	23,858	23,86	
			1RB high	28,808	23,7758	5,032	28,813	22,96	5,8534				
			50%RB mid	29,143	22,0697	7,0737	28,962	22,127	6,8358				
			100%RB	29,386	22,0996	7,2867	27,575	23,858	3,7172				
	18900	1880	1RB low	28,938	23,8166	5,1216	28,789	23,162	5,6272	23,817	23,683		
			1RB high	28,849	22,9582	5,8905	28,416	22,211	6,205				
			50%RB mid	28,799	21,7449	7,0539	29,196	21,88	7,316				
			100%RB	29,026	21,8545	7,1713	27,37	23,683	3,6872				
	19100	1900	1RB low	28,946	22,7781	6,168	28,365	22,079	6,2861	22,778	22,838		
			1RB high	27,316	22,0309	5,2854	27,485	21,536	5,9484				
			50%RB mid	28,507	21,6409	6,866	28,727	21,746	6,9806				
			100%RB	28,774	21,5942	7,1798	26,945	22,838	4,1068				

1.3. Power conducted LTE-Band 12

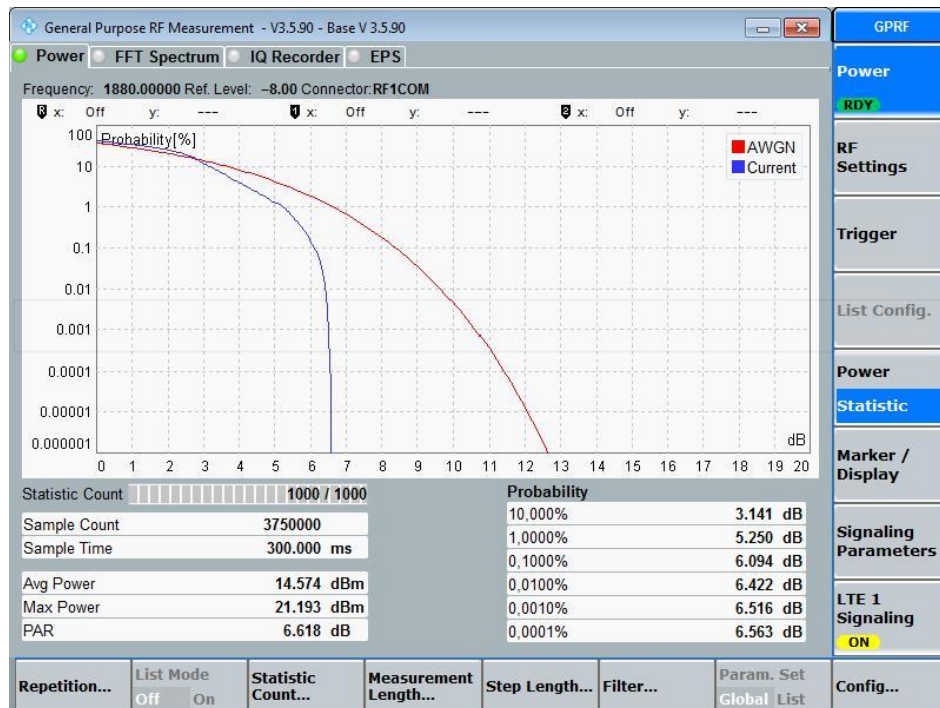
LTE-Band 12				QPSK-Modulation			16-QAM-Modulation			max- modulation QPSK	max. modulation 16-QAM	max. channel	absolute max. value
channel bandwidth	ARFCN ch. no.	ARFCN-Frequency [MHz]	Resource block allocation	Peak detektor [dBm]	RM S detektor [dBm]	PAR Faktor [dB]	Peak detektor [dBm]	RMS detektor [dBm]	PAR Faktor [dB]				
5 MHz	23035		1RB low	28,024	23,3642	4,6597	28,237	22,439	5,7973	23,36	22,44	23,36	23,44
			1RB high	27,711	22,6394	5,0717	28,001	21,806	6,1943				
			50%RB mid	28,388	21,585	6,803	29,042	20,515	8,527				
			100%RB	27,459	21,698	5,761	28,357	20,746	7,611				
	23095		1RB low	28,08	22,54	5,5401	28,213	21,616	6,5974	23,22	22,43		
			1RB high	28,546	23,2168	5,3293	28,765	22,429	6,3361				
			50%RB mid	28,857	21,769	7,088	29,297	20,833	8,464				
			100%RB	28,875	21,764	7,111	29,47	20,85	8,62				
	23155		1RB low	28,546	23,1822	5,3637	28,098	22,344	5,7535	23,38	22,34		
			1RB high	28,012	22,4875	5,5246	27,503	21,64	5,8629				
			50%RB mid	28,266	21,597	6,669	28,517	20,719	7,798				
			100%RB	28,714	21,681	7,033	28,884	20,74	8,144				
10 MHz	23060		1RB low	27,947	22,8239	5,1229	27,945	21,802	6,143	22,82	23,44		
			1RB high	28,294	22,7271	5,5671	28,293	21,665	6,6283				
			50%RB mid	28,747	21,3796	7,3674	28,26	20,383	7,877				
			100%RB	28,366	21,5553	6,8107	26,818	23,435	3,3823				
	23095		1RB low	27,841	22,1961	5,6448	28,436	21,23	7,206	22,76	23,38		
			1RB high	28,103	22,7648	5,3379	28,107	21,711	6,3965				
			50%RB mid	29,083	21,752	7,331	28,727	20,808	7,919				
			100%RB	28,819	21,706	7,1129	26,553	23,176	3,3777				
	23130		1RB low	28,594	22,407	6,1874	28,758	21,814	6,944	22,41	22,78		
			1RB high	27,924	22,038	5,886	26,715	20,613	6,1025				
			50%RB mid	28,913	22,015	6,898	29,104	21,045	8,059				
			100%RB	28,988	21,813	7,175	26,247	22,785	3,4624				

1.4. PAPR-Value (CCDF plots)

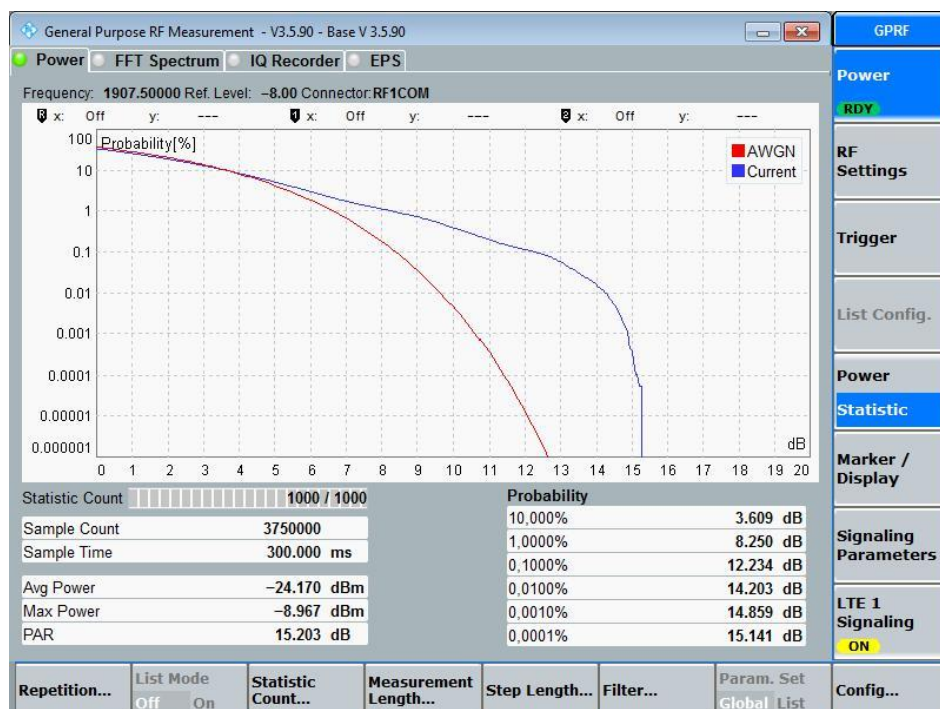
1.4.1. LTE Band 2

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

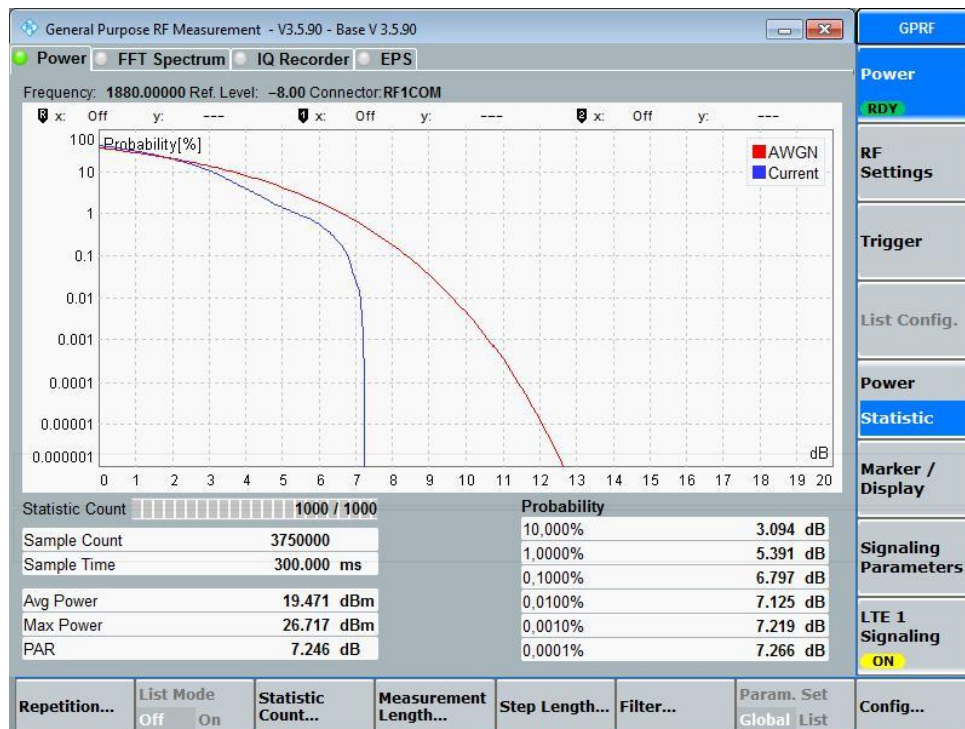
1.4.1.1. 5MHz signal bandwidth



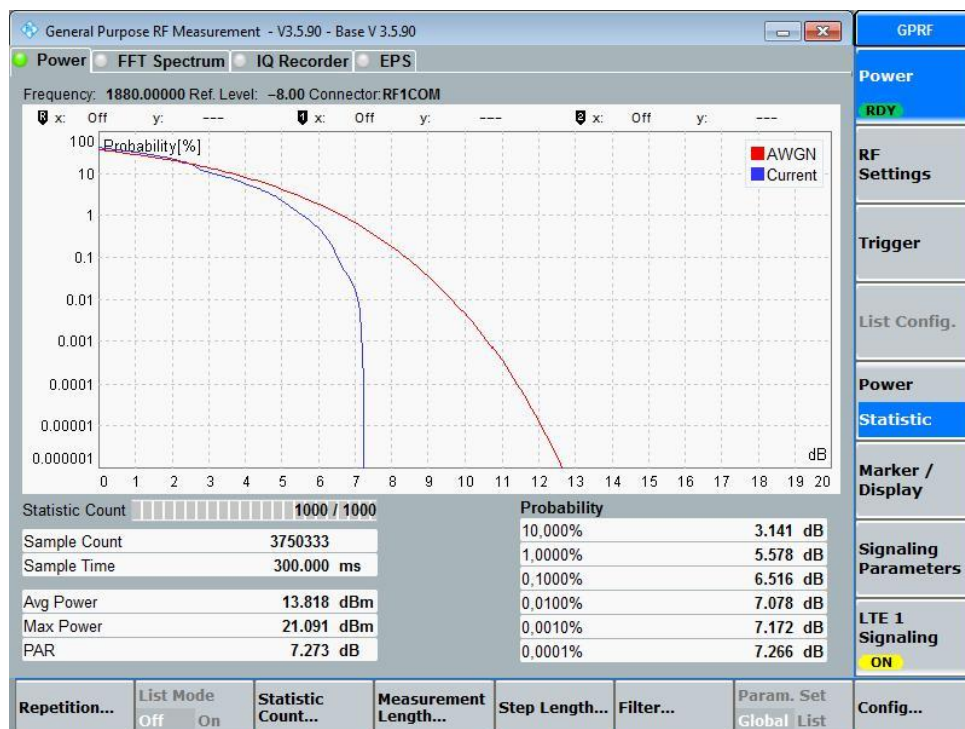
QPSK, Ch18900, 100% RB



QPSK, Ch19175, 1RBlow

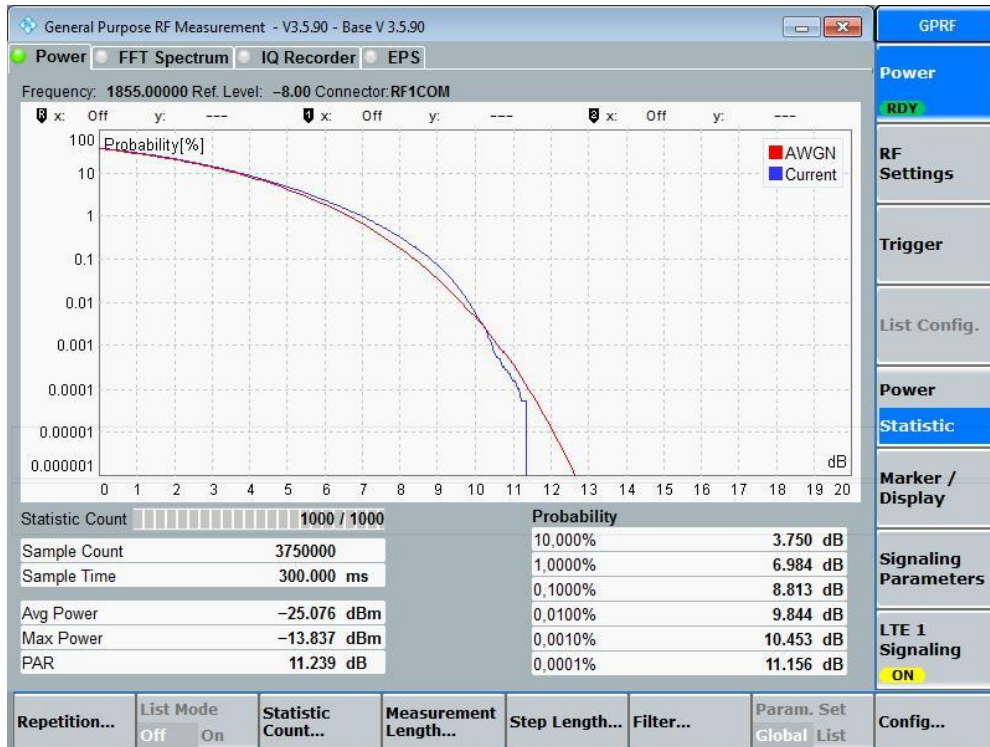


16-QAM, Ch18900, 50%RB

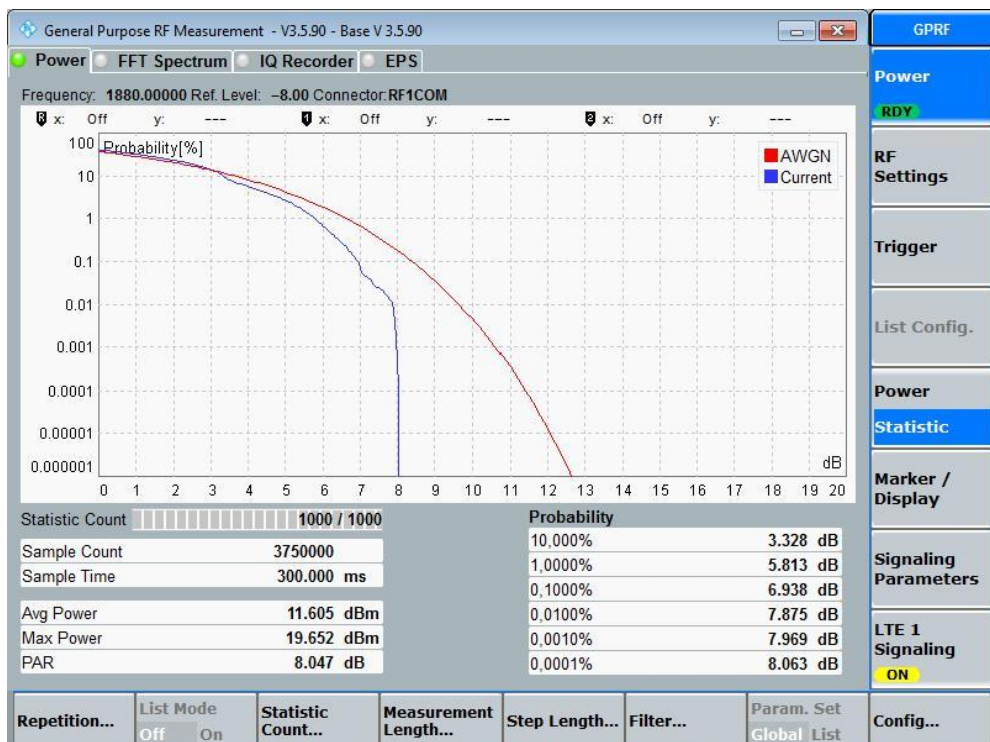


16-QAM, Ch18900, 100%RB

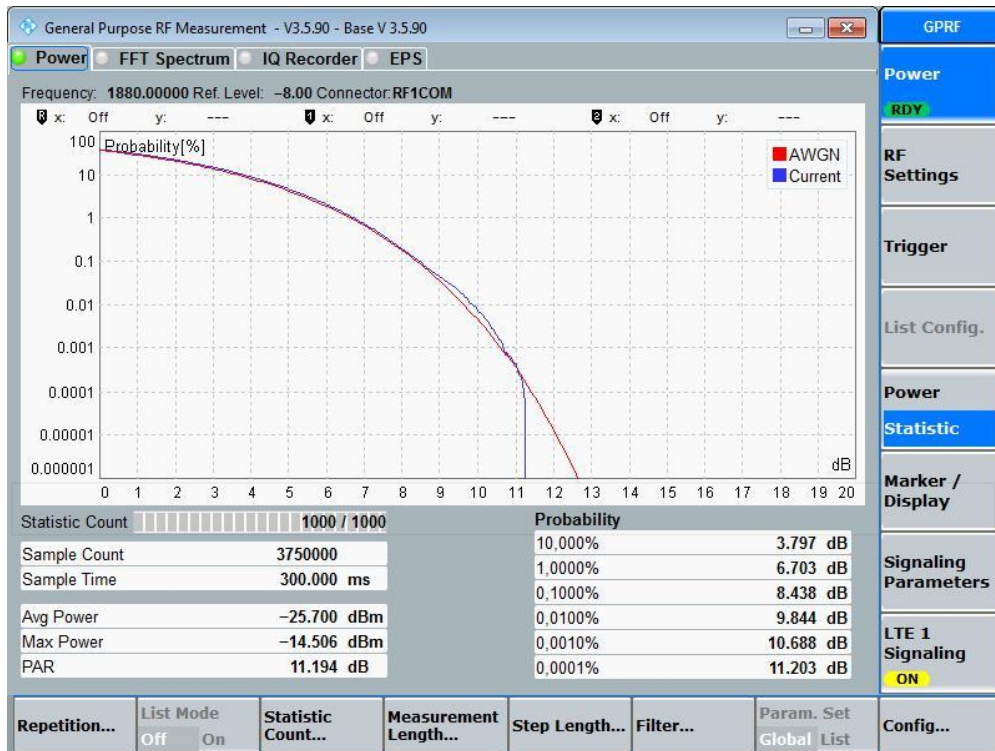
1.4.1.2. 10MHz signal bandwidth



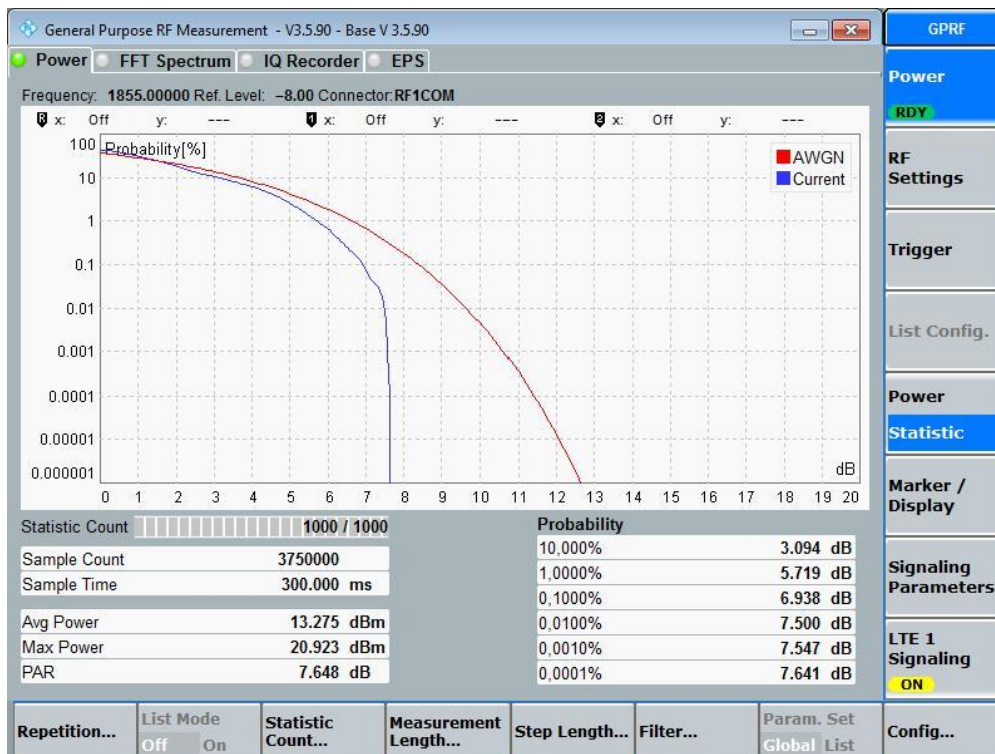
QPSK, Ch18650, 1RBhigh



QPSK, Ch18900, 100%RB

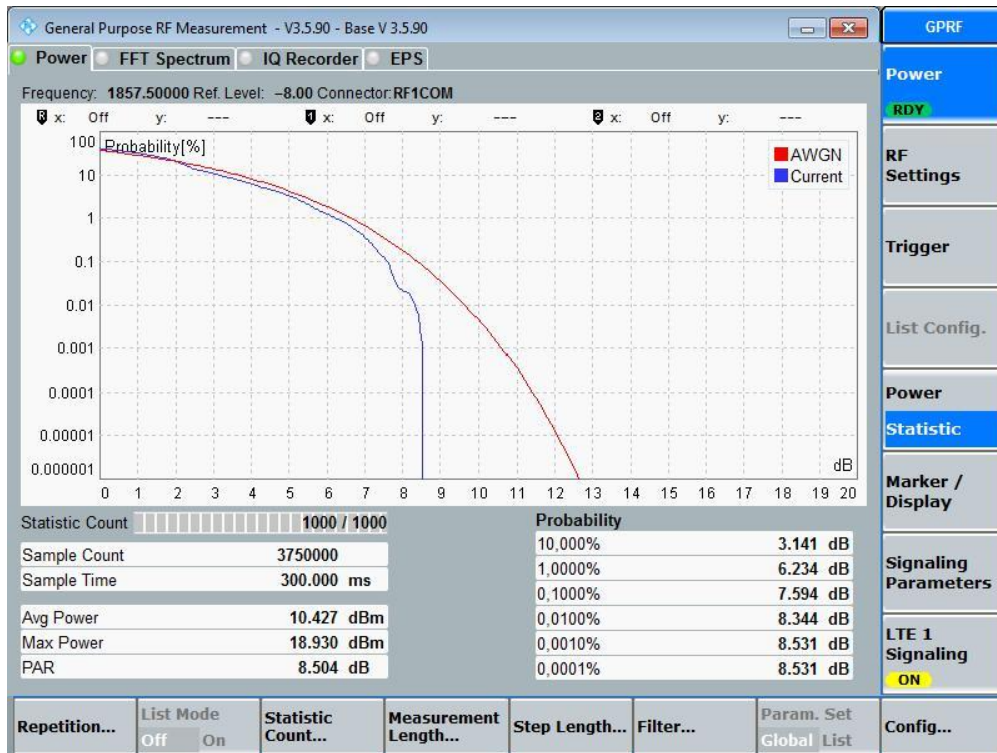


16-QAM, Ch18900, 1 RB low

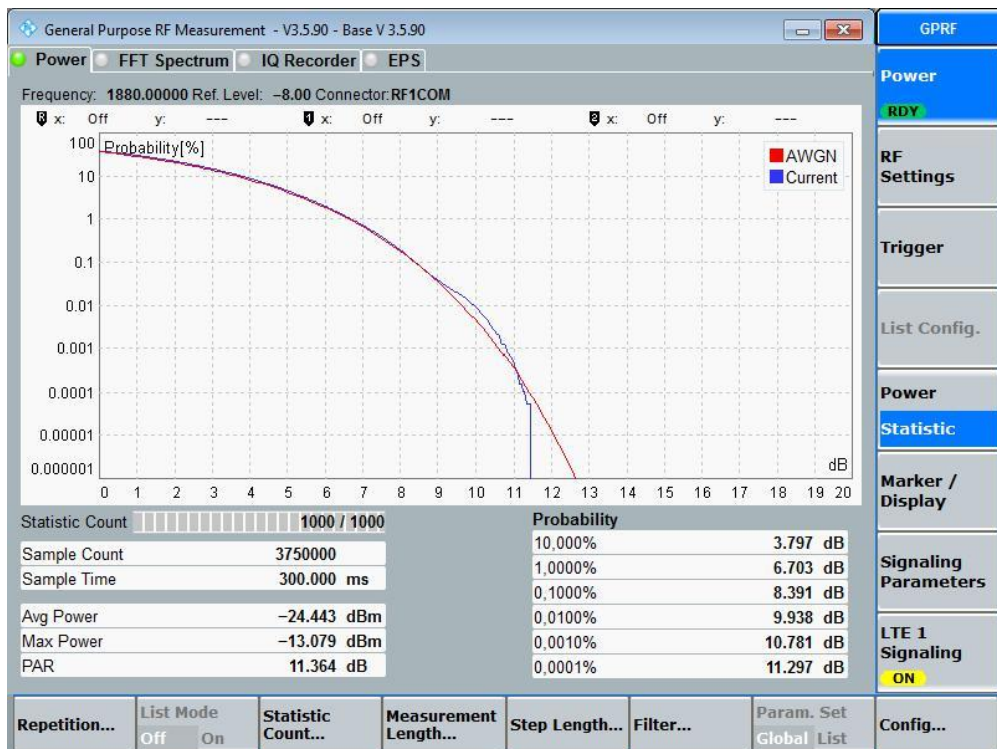


16-QAM, Ch18650, 100%RB

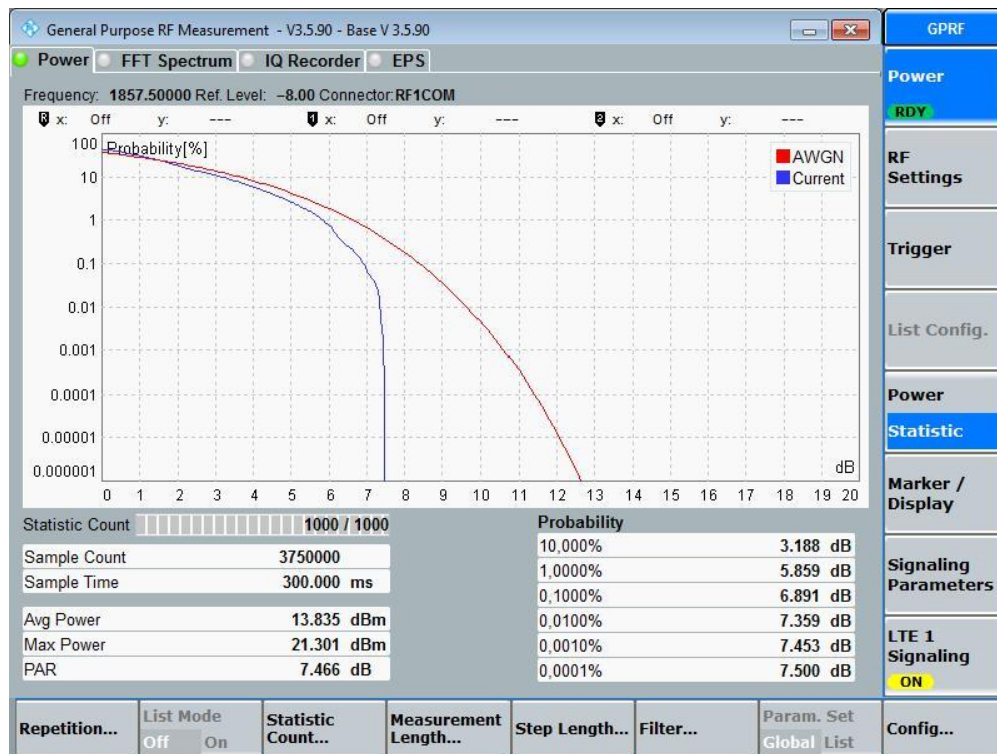
1.4.1.3. 15MHz signal bandwidth



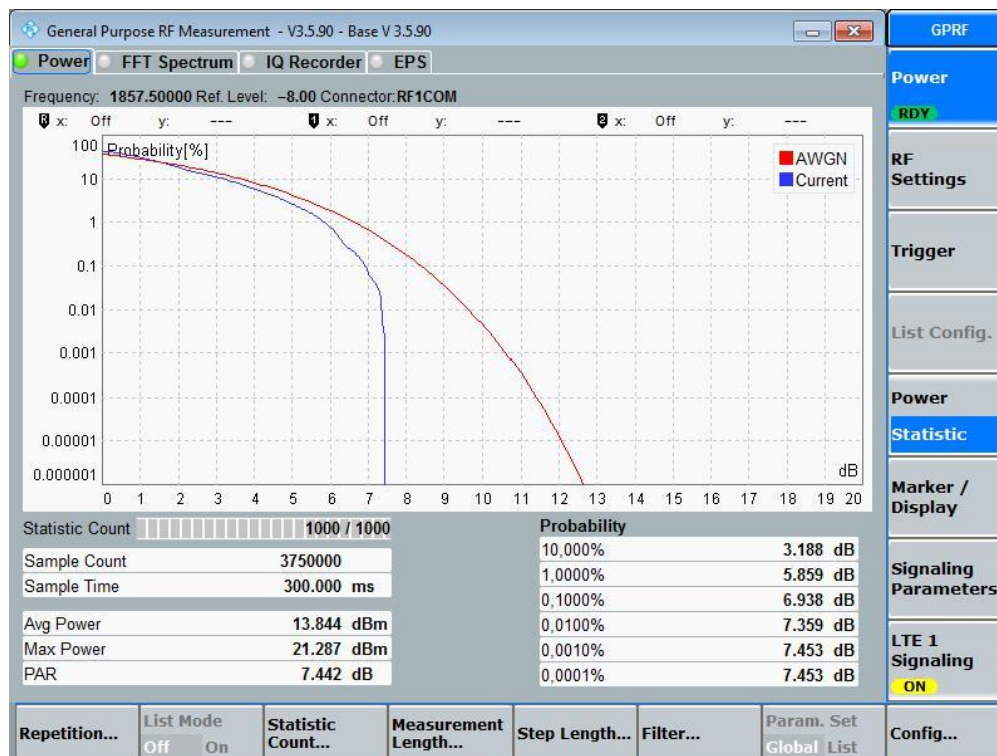
QPSK, Ch18675, 100% RB



QPSK, Ch18900, 1 RB low

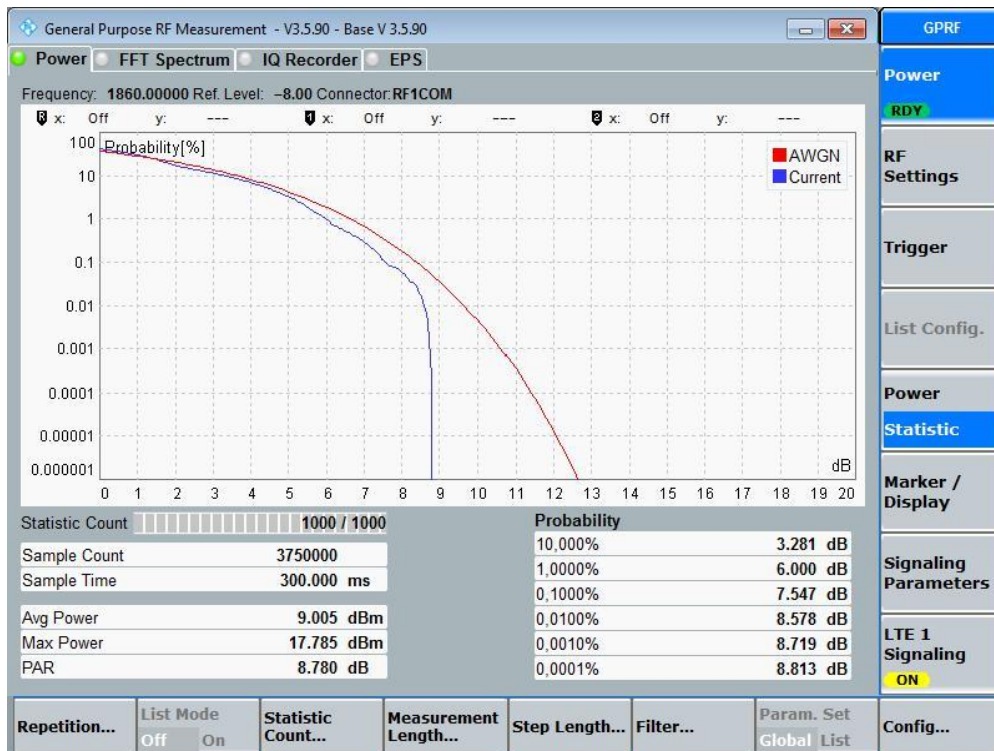


16-QAM, Ch18675, 50% RB

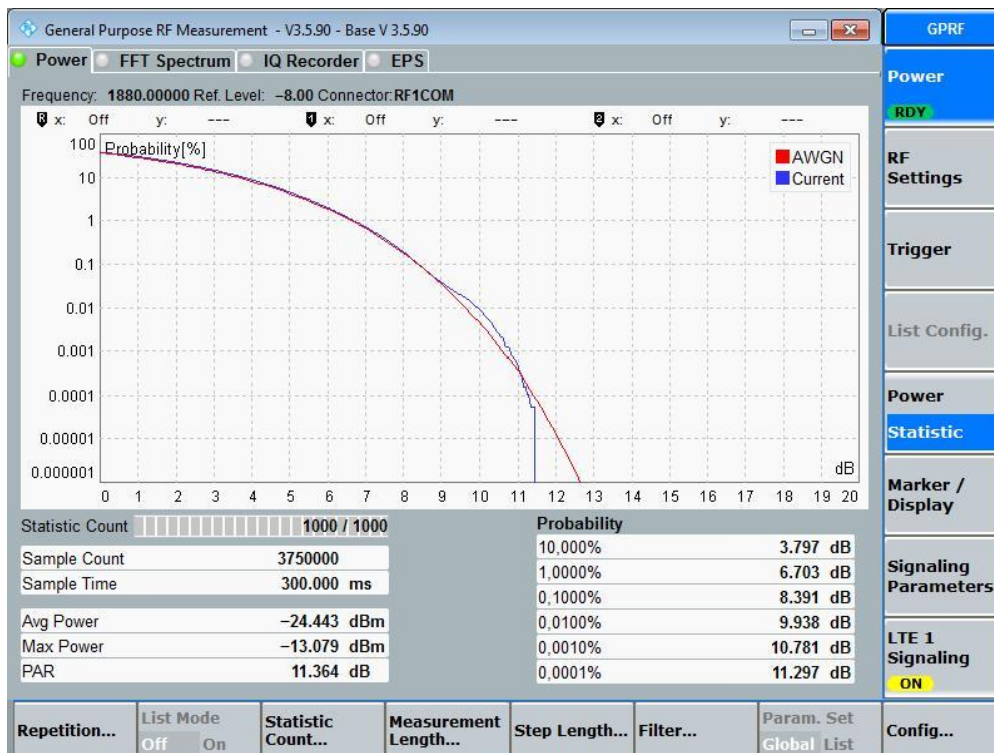


16-QAM, Ch18675, 100% RB

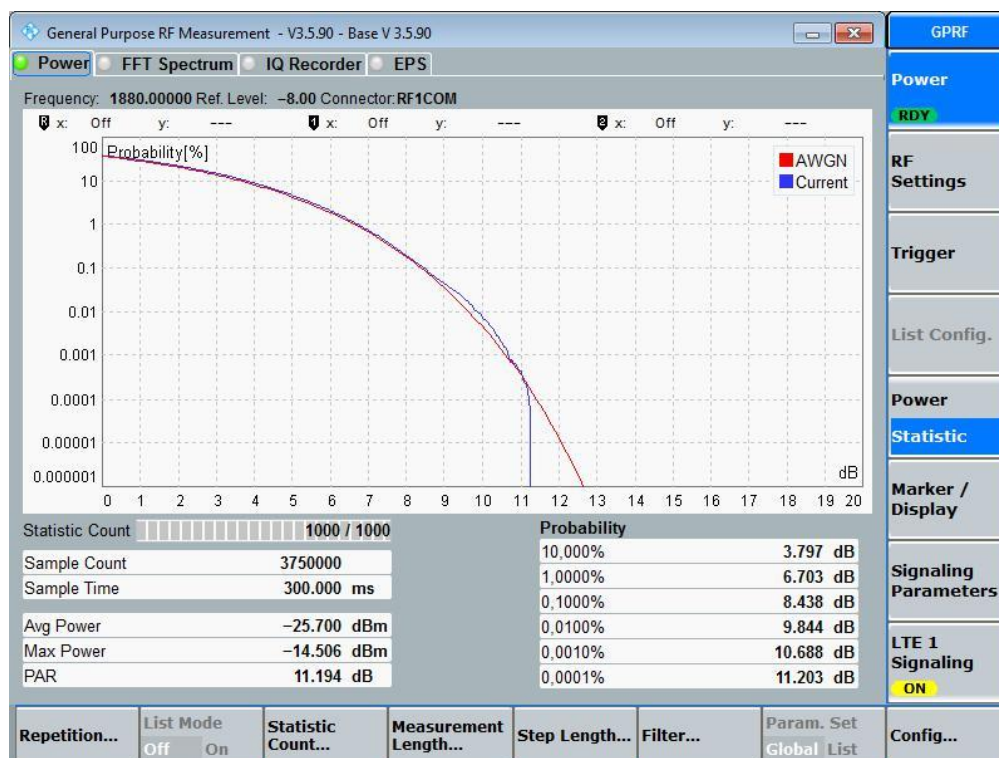
1.4.1.4. 20MHz signal bandwidth



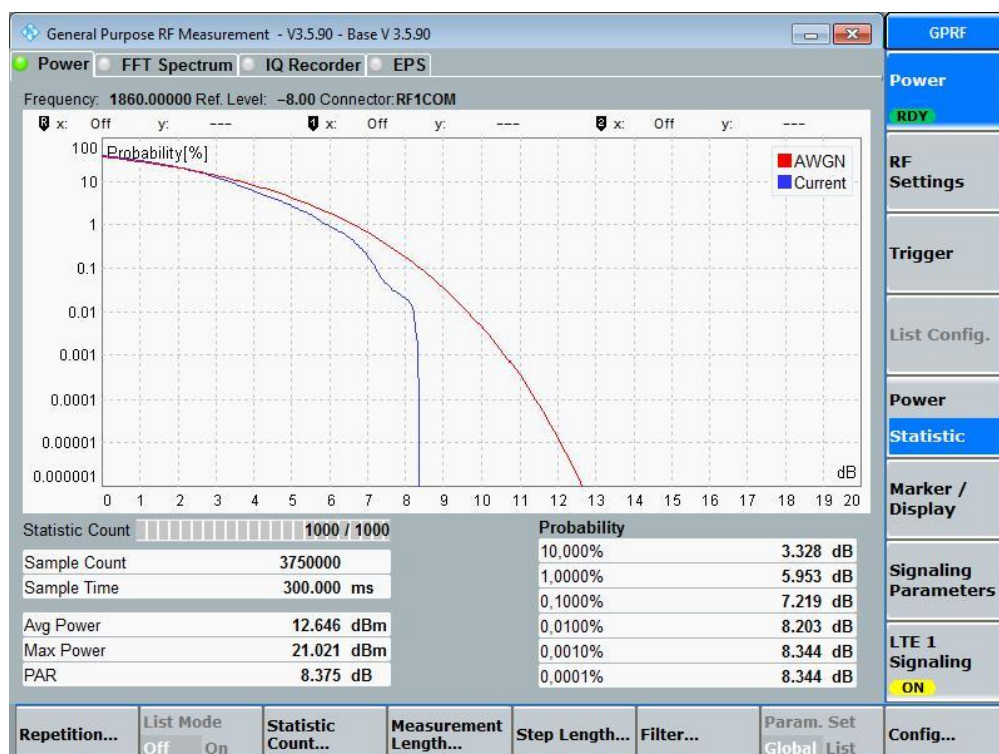
QPSK, Ch18700, 100% RB



QPSK, Ch18900, 1 RB low



16-QAM, Ch18900, 1 RB low

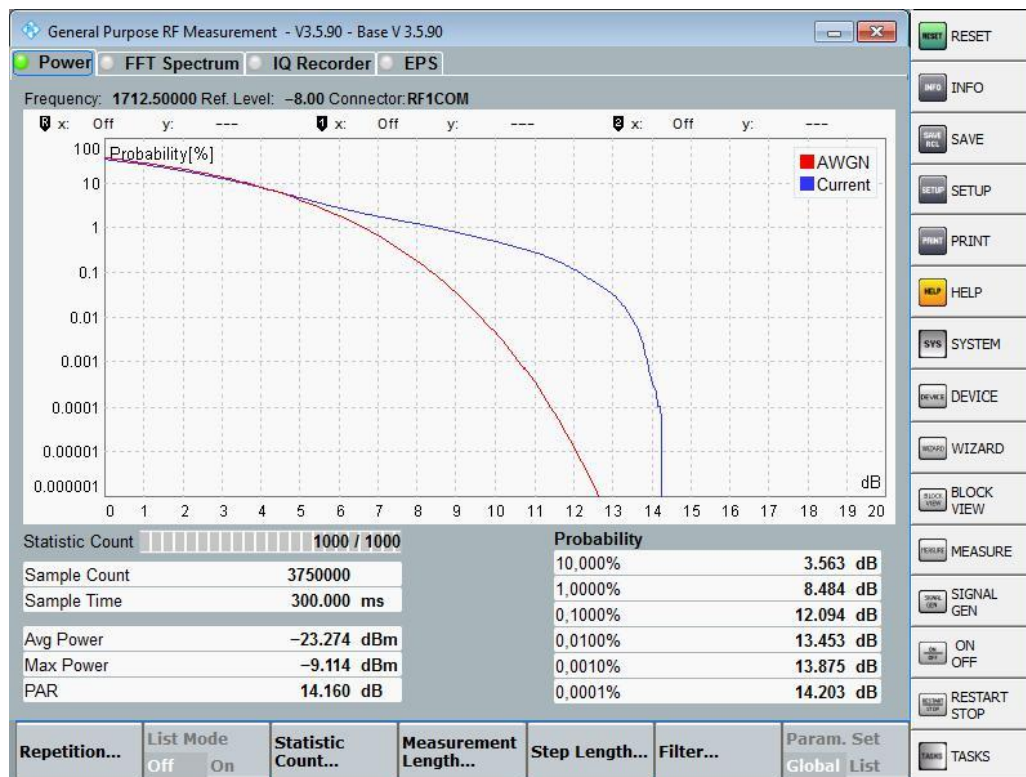


16-QAM, Ch18700, 100%RB

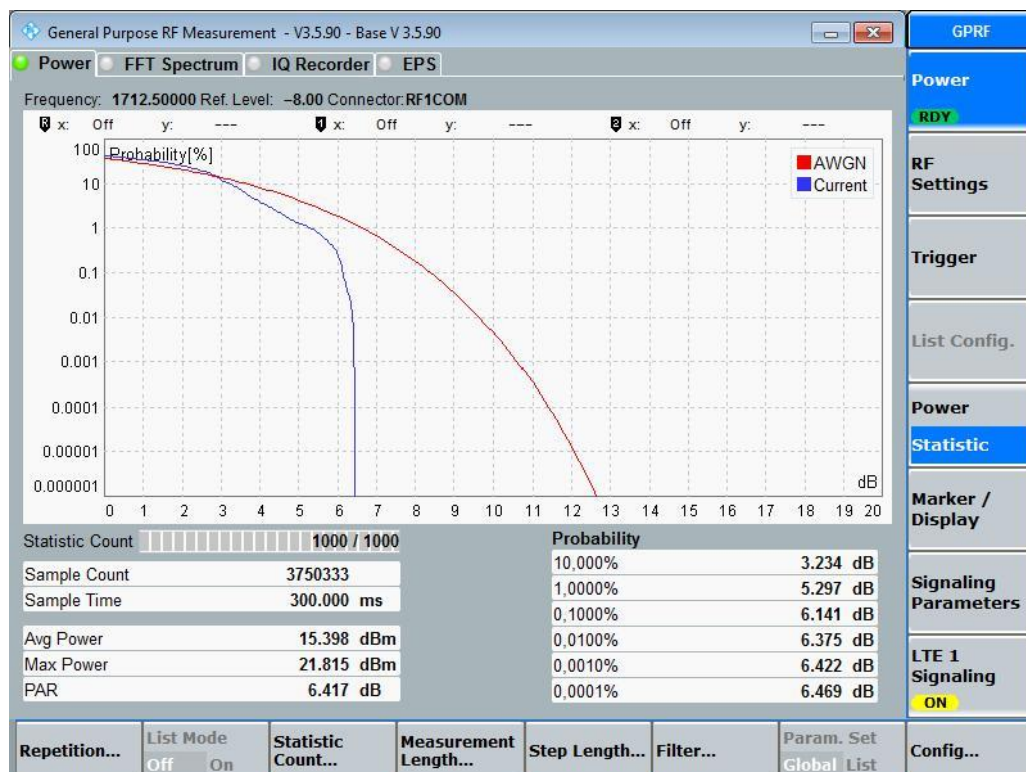
1.4.2. LTE Band 4

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

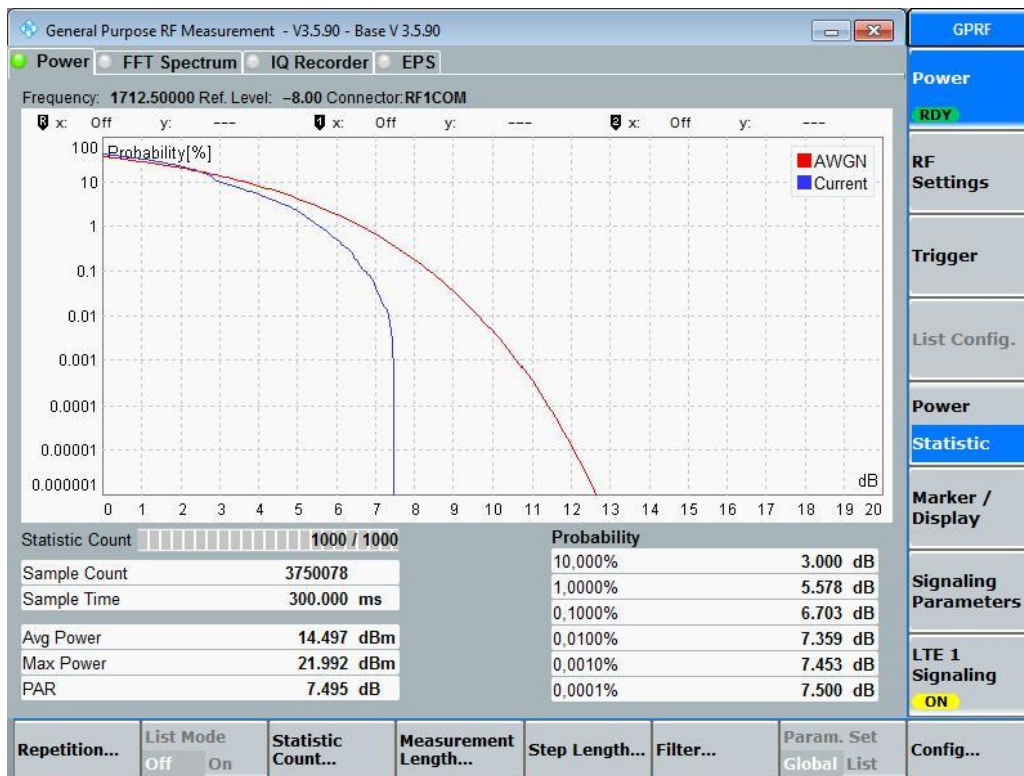
1.4.2.1. 5MHz signal bandwidth



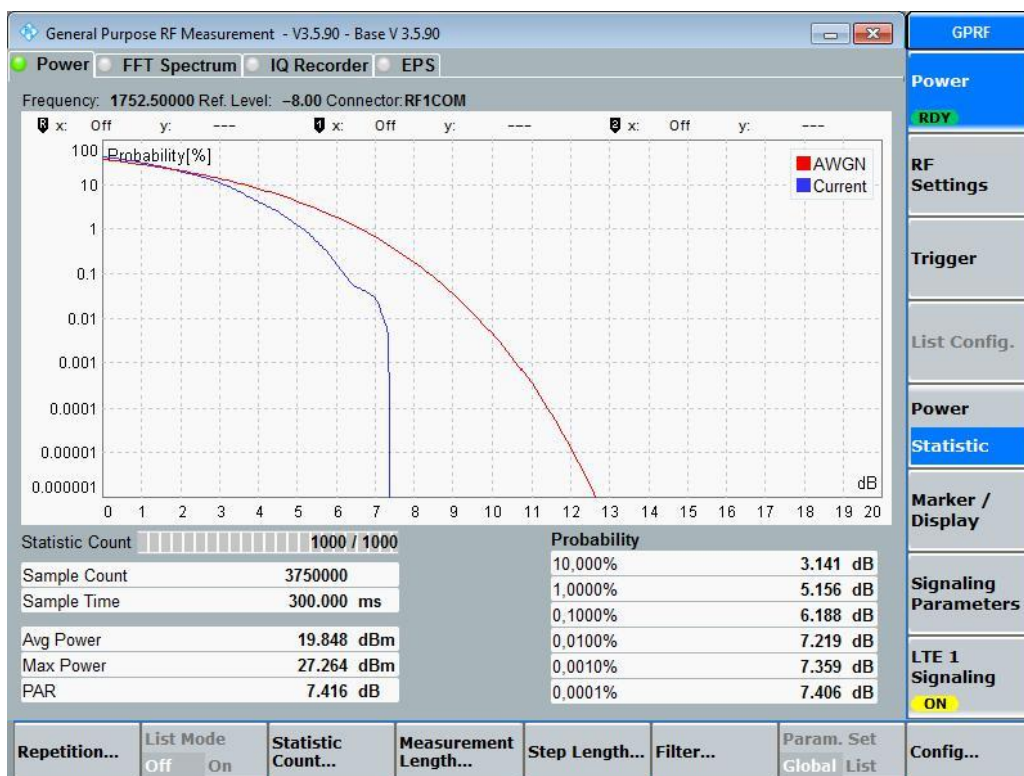
QPSK, 19975, 1 RB low



QPSK, Ch19975, 100% RB

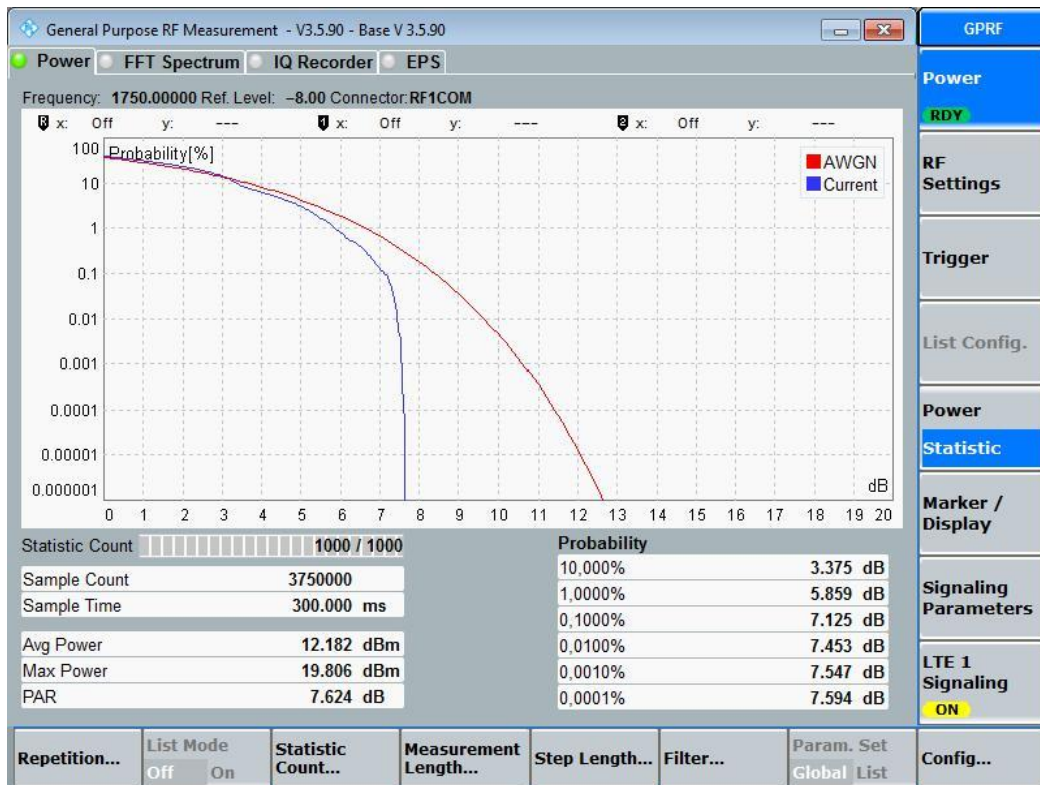


16-QAM, Ch19975, 100% RB

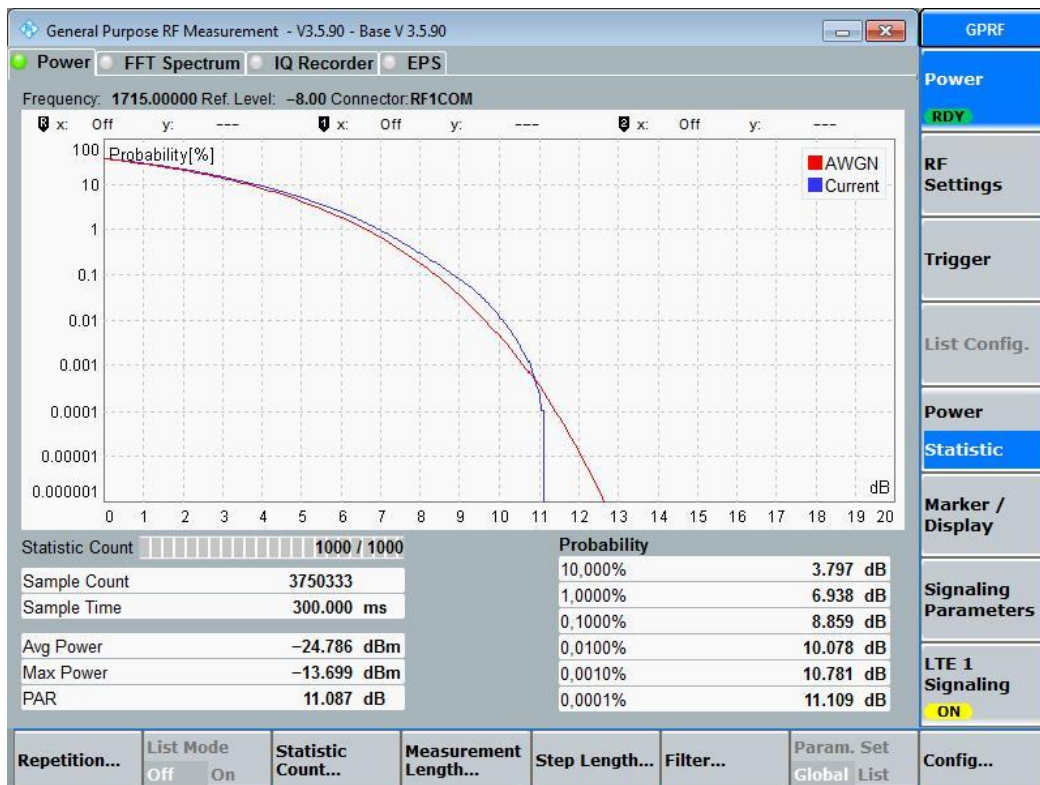


16-QAM, Ch20375, 50% RB

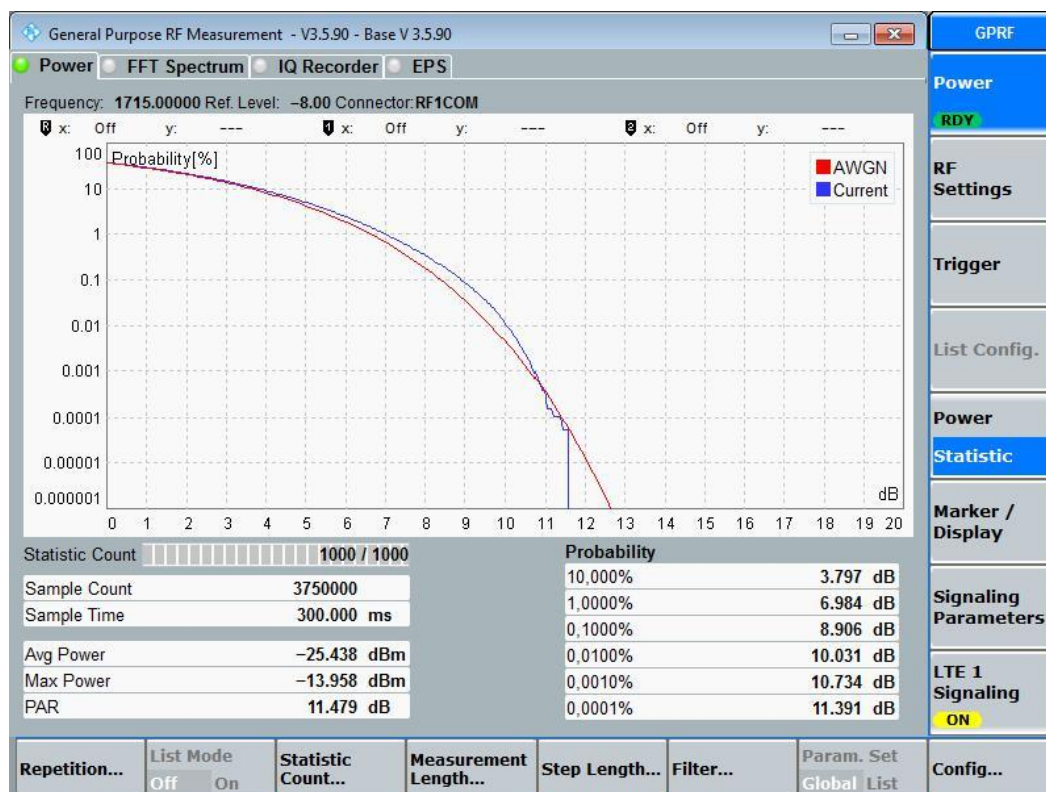
1.4.2.2. 10MHz signal bandwidth



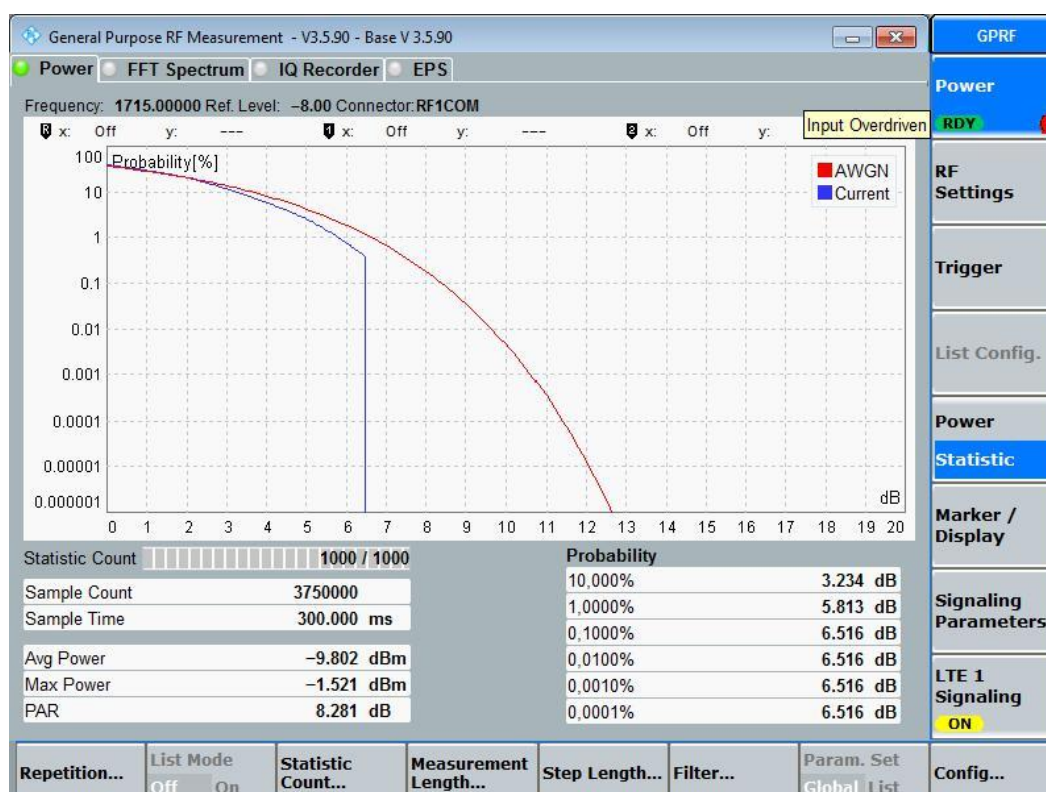
QPSK, Ch20350, 100% RB



QPSK, Ch20000, 1 RB low

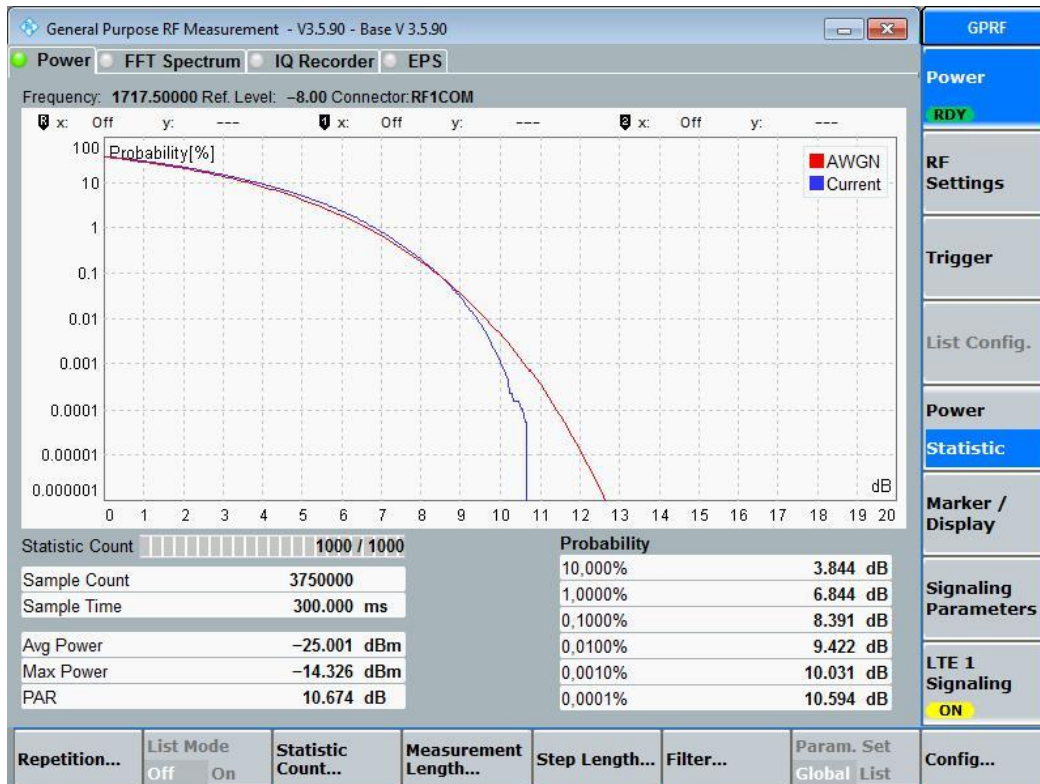


16-QAM, Ch20000, 1 RB low

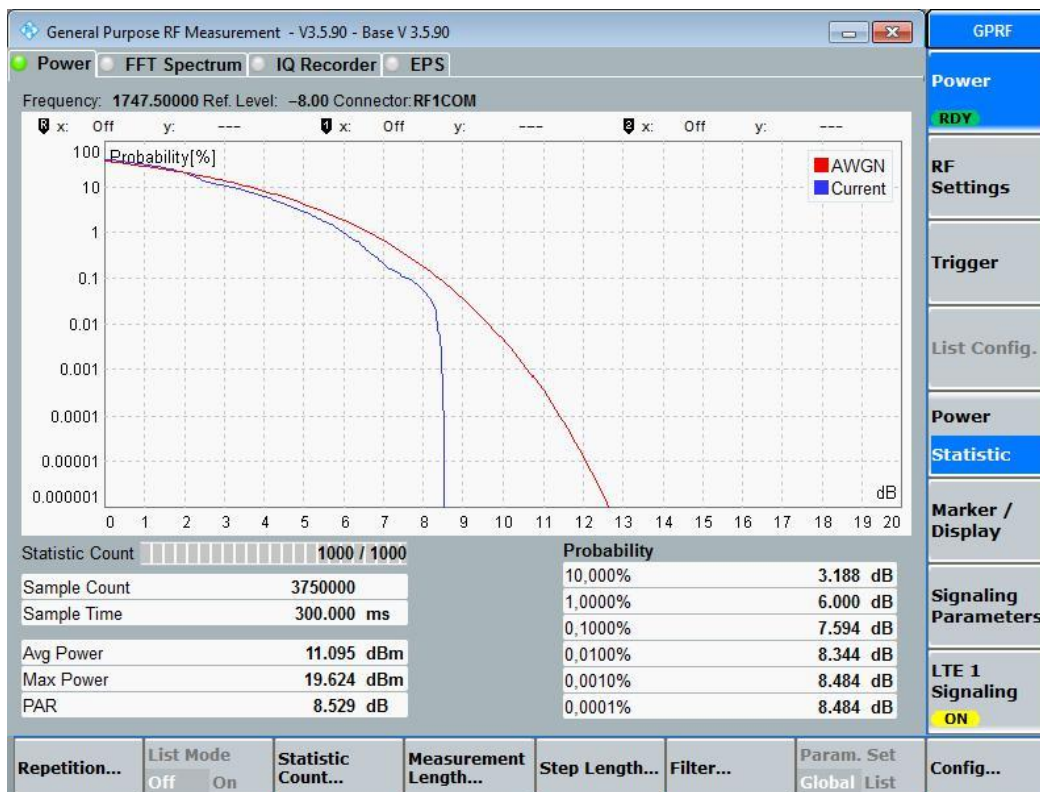


16-QAM, Ch20000, 100% RB

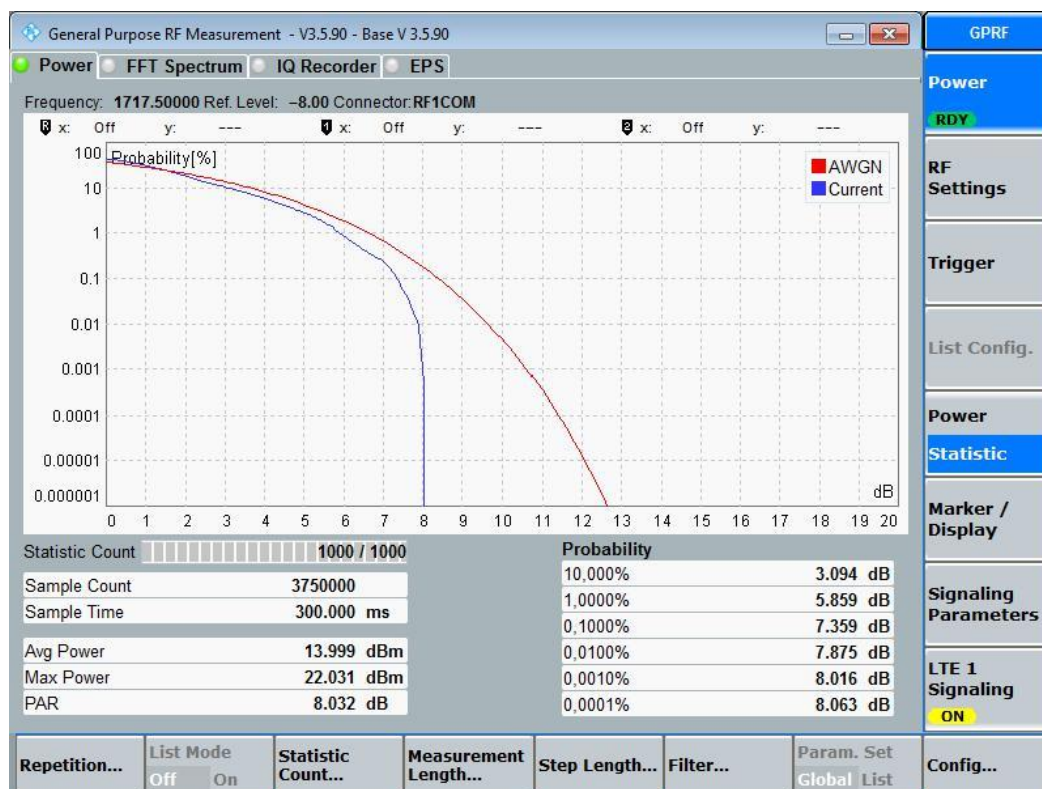
1.4.2.3. 15MHz signal bandwidth



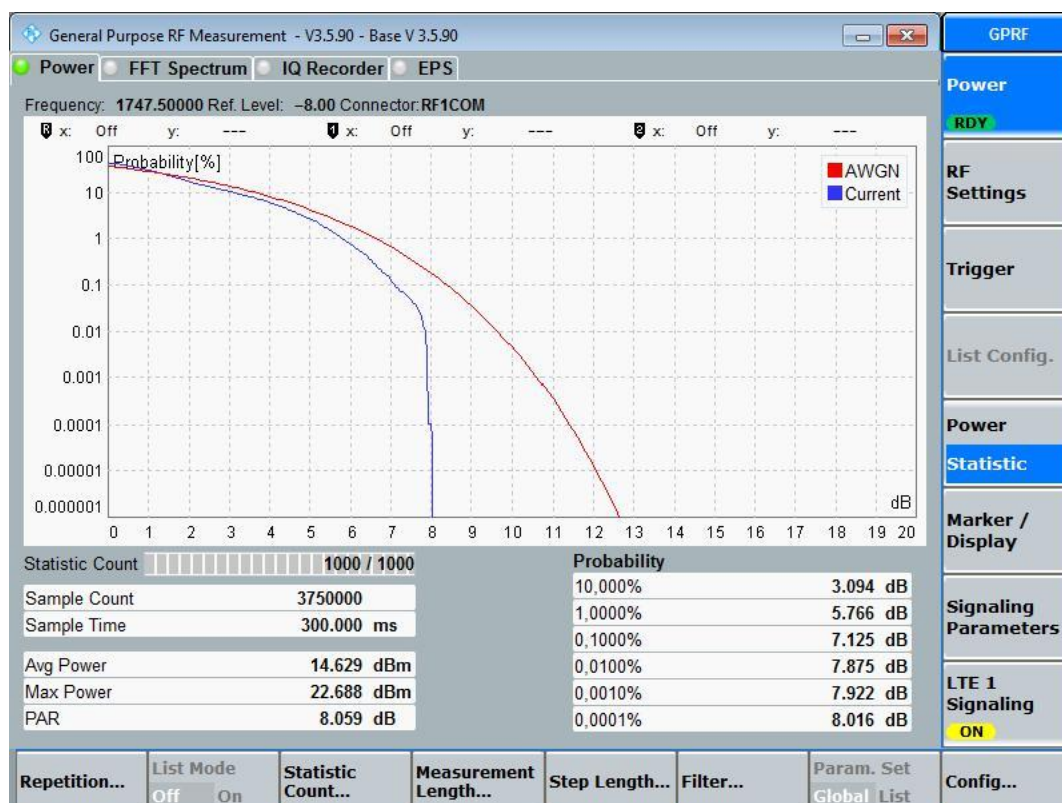
QPSK, Ch20025, 1 RB low



QPSK, Ch20325, 100% RB

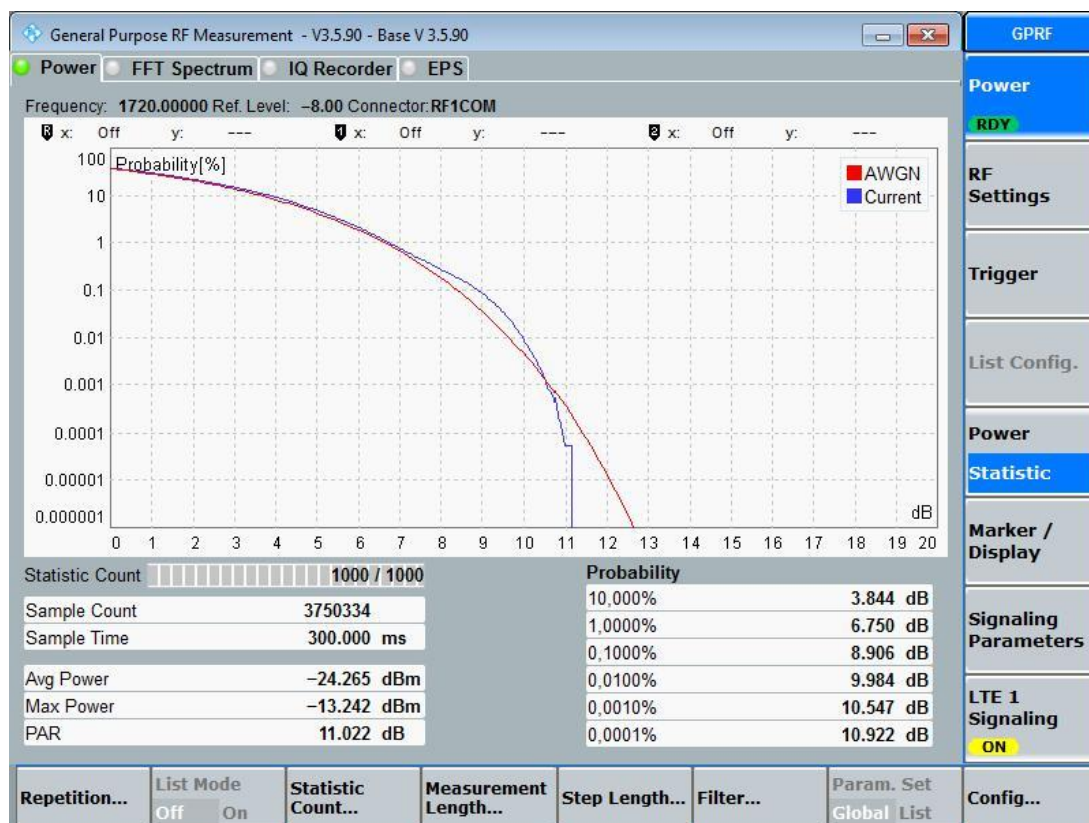


16-QAM, Ch20025, 100% RB

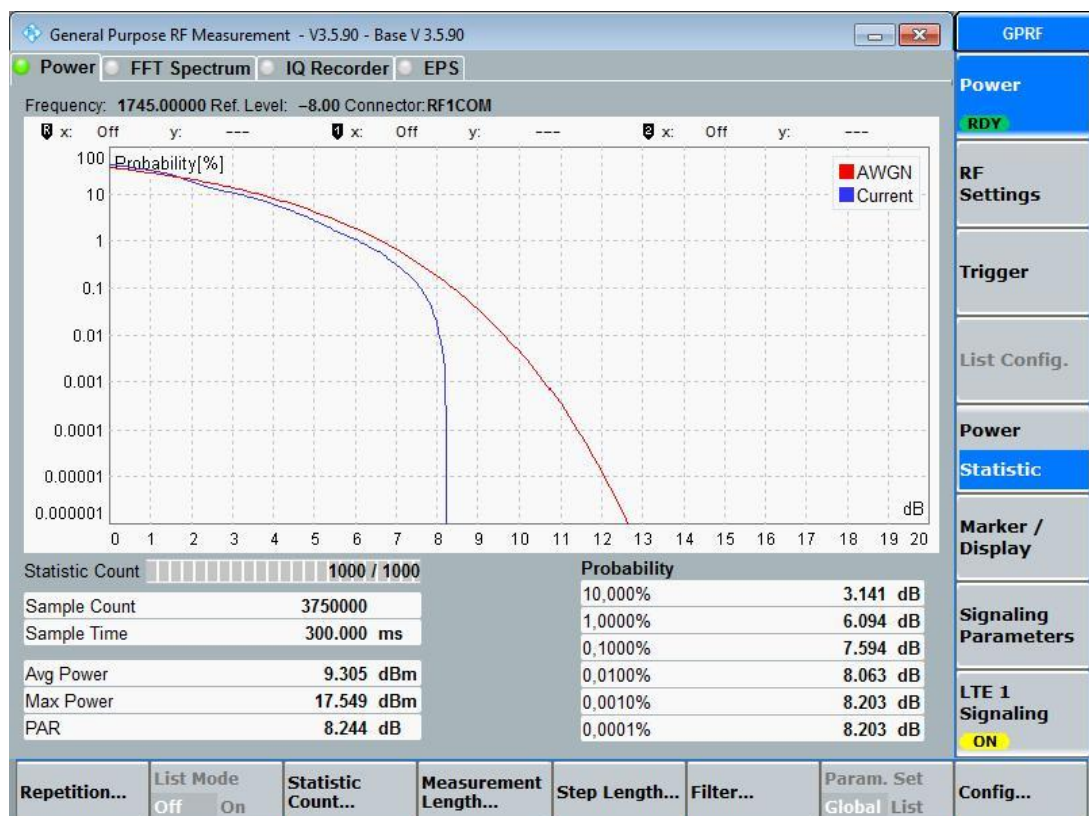


16-QAM, Ch20325, 50% RB

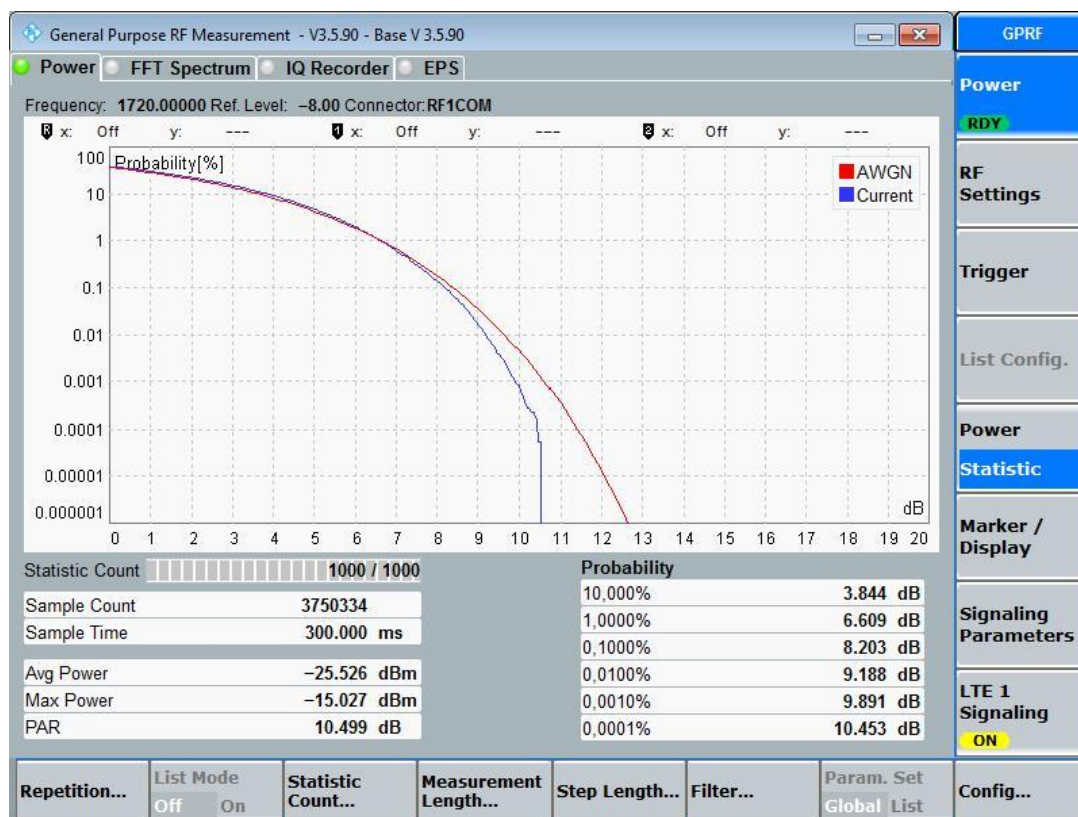
1.4.2.4. 20MHz signal bandwidth



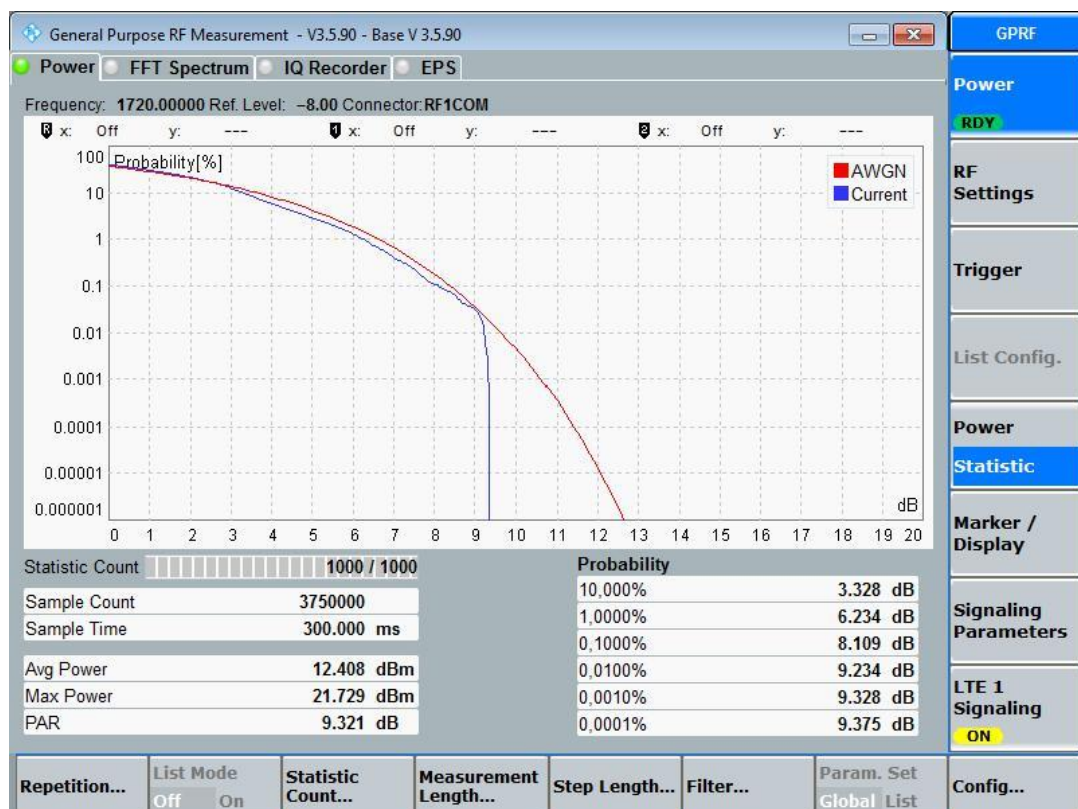
QPSK, Ch20050, 1 RB low



QPSK, Ch20300, 100% RB



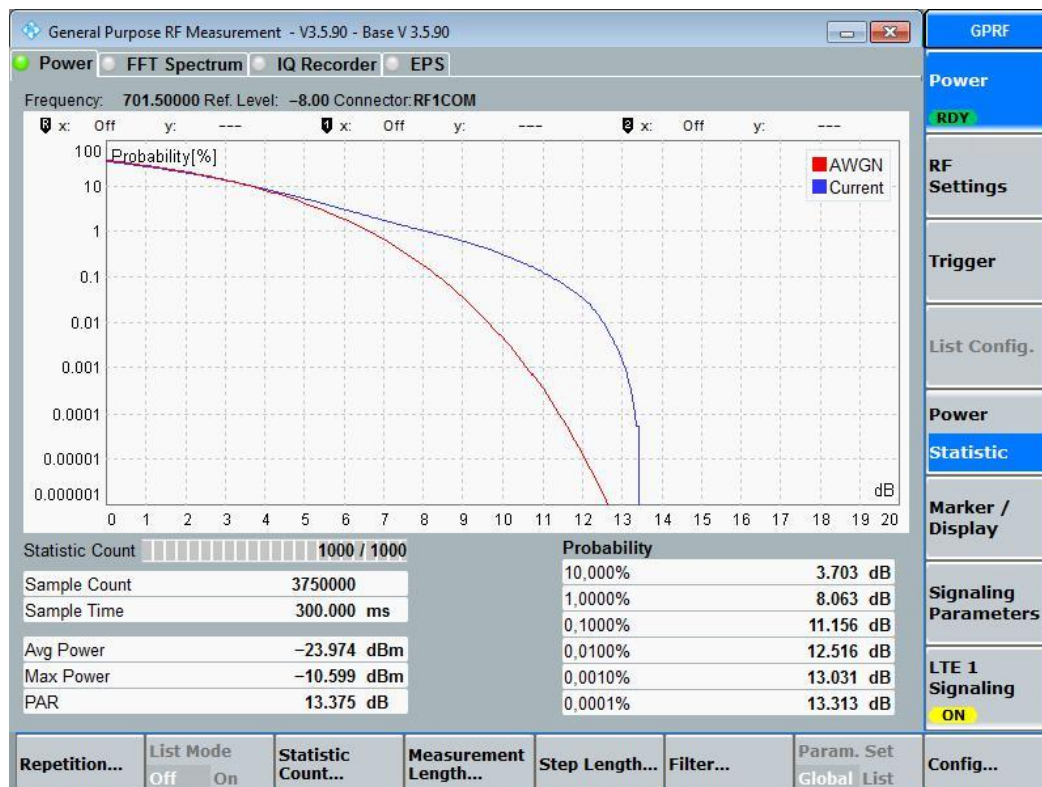
16-QAM, Ch20050, 1 RB low



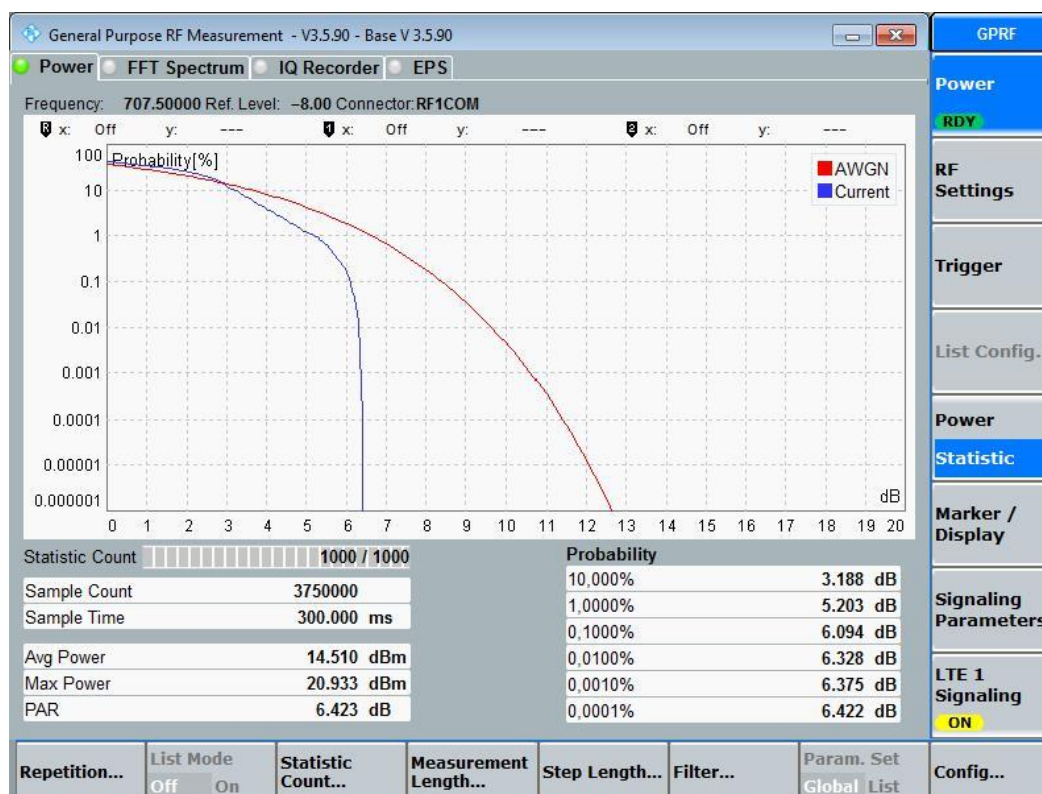
16-QAM, Ch20050, 100% RB

1.4.3. LTE Band 12

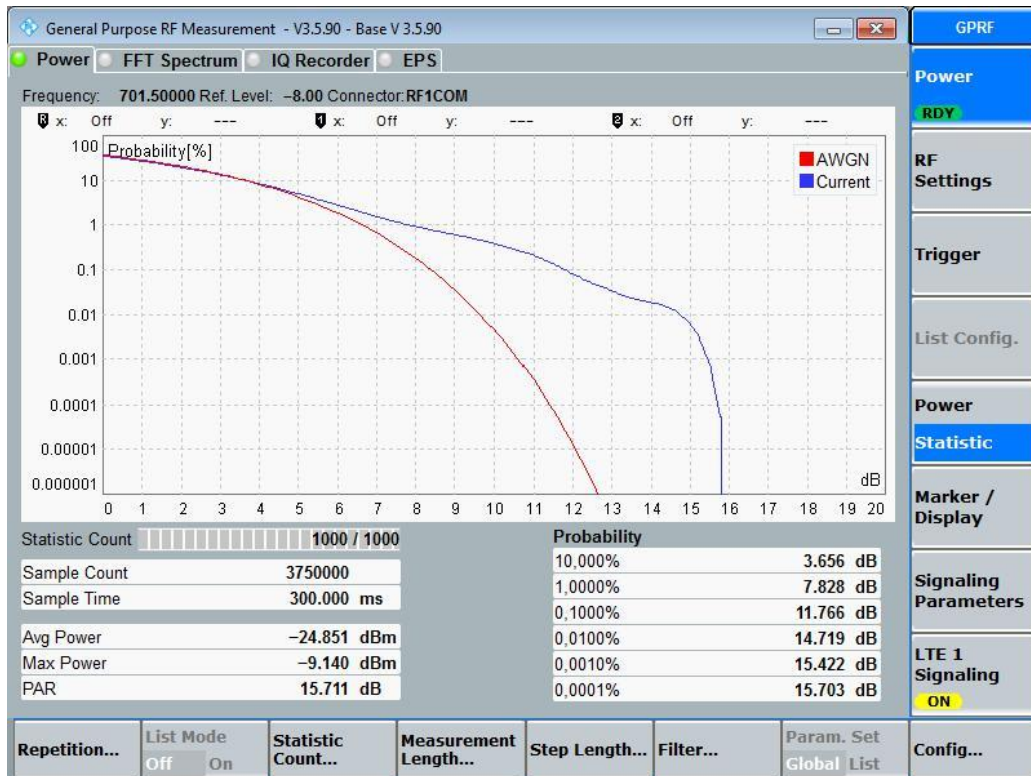
1.4.3.1 5MHz signal bandwidth



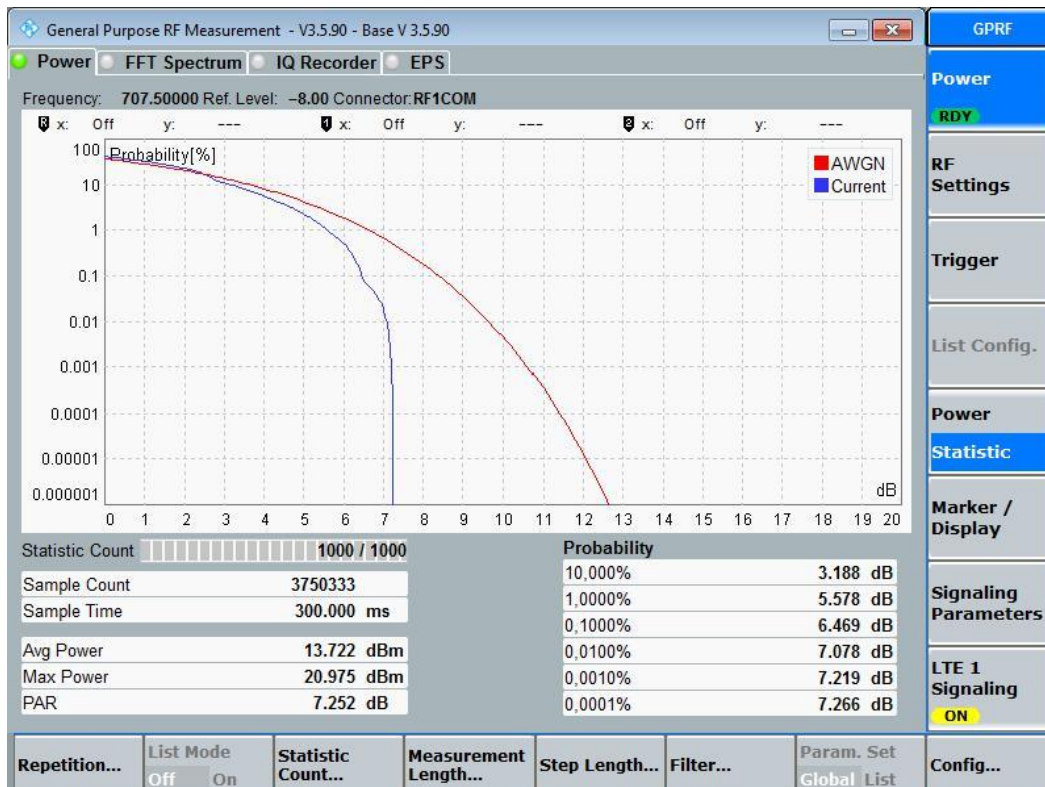
QPSK, Ch23035, 1 RB low



QPSK, Ch23095, 100% RB

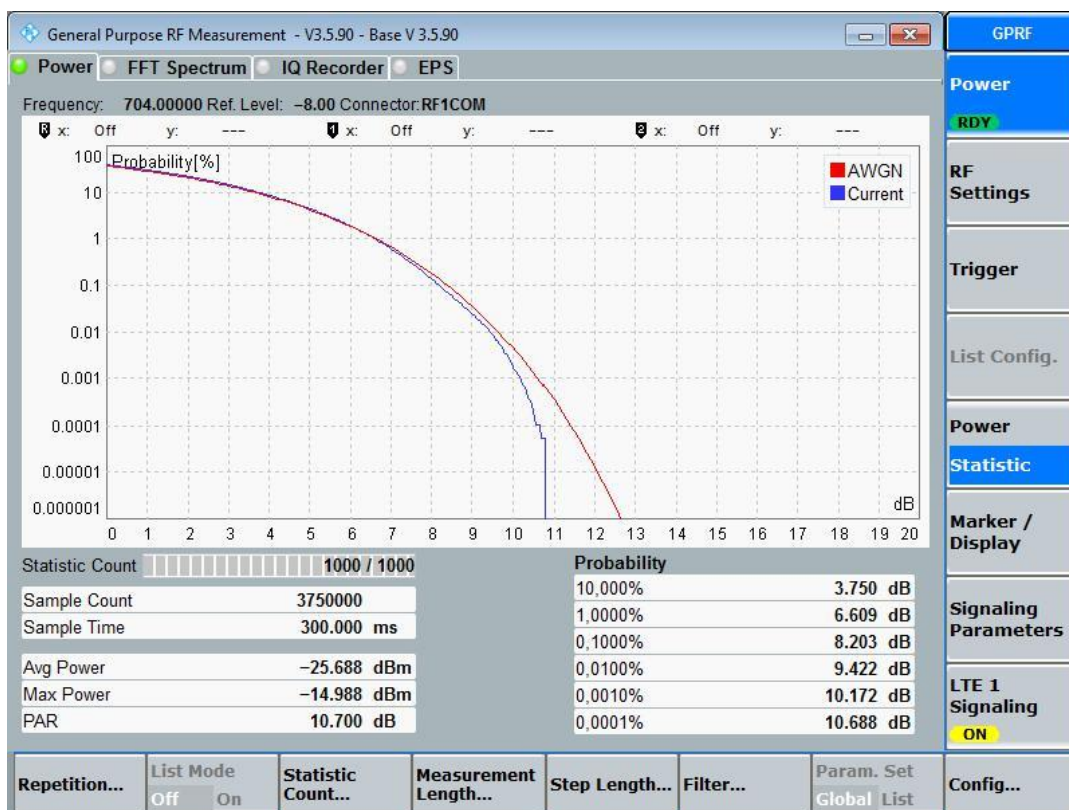


16-QAM, Ch23035, 1 RB low

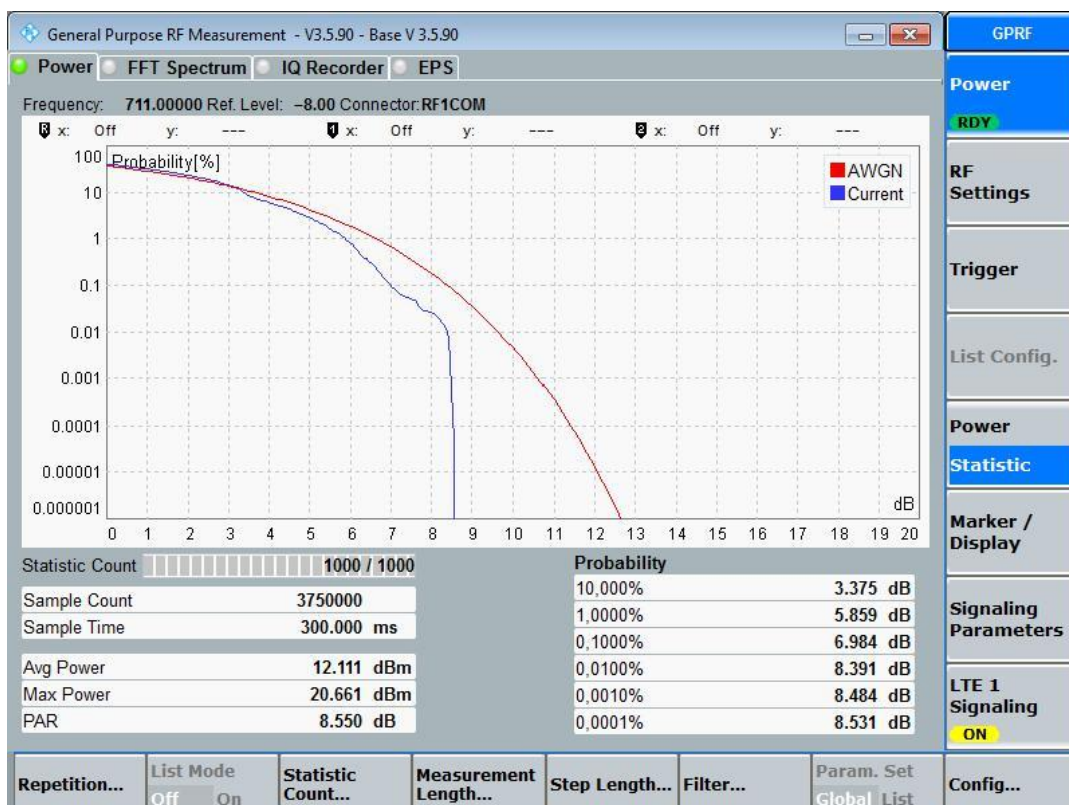


16-QAM, Ch23095, 100% RB

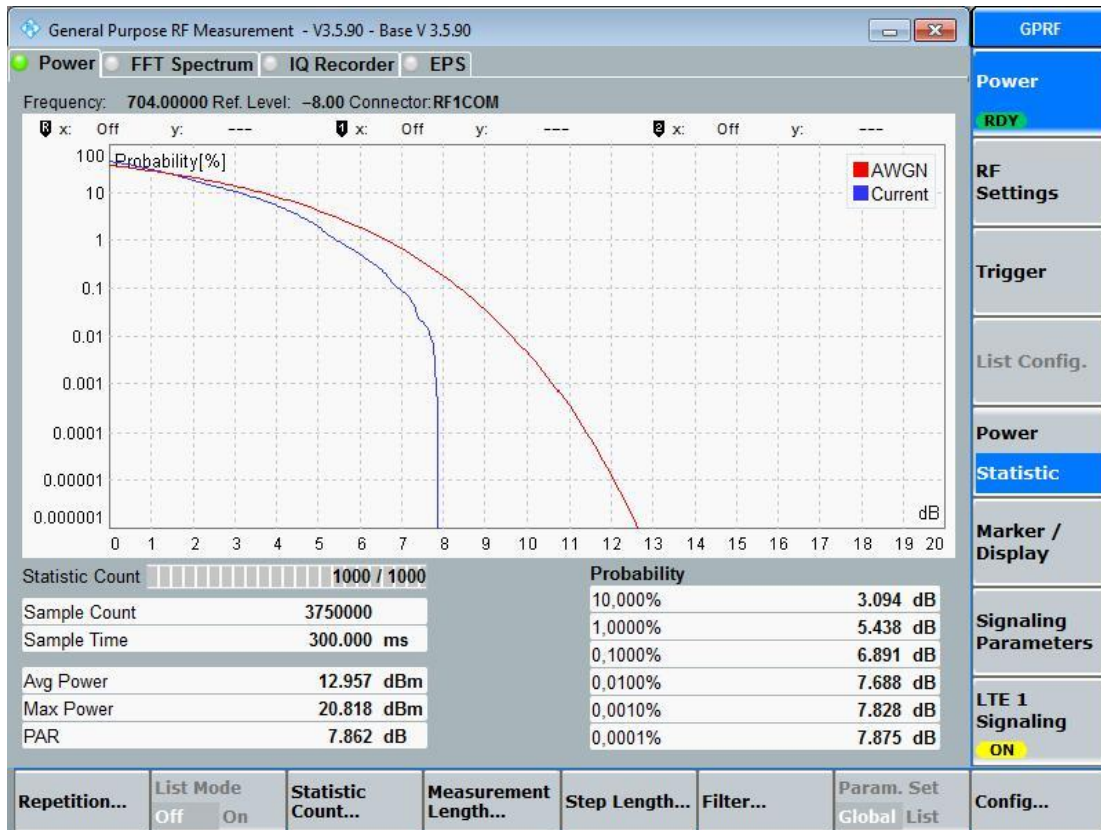
1.4.3.2 10MHz signal bandwidth



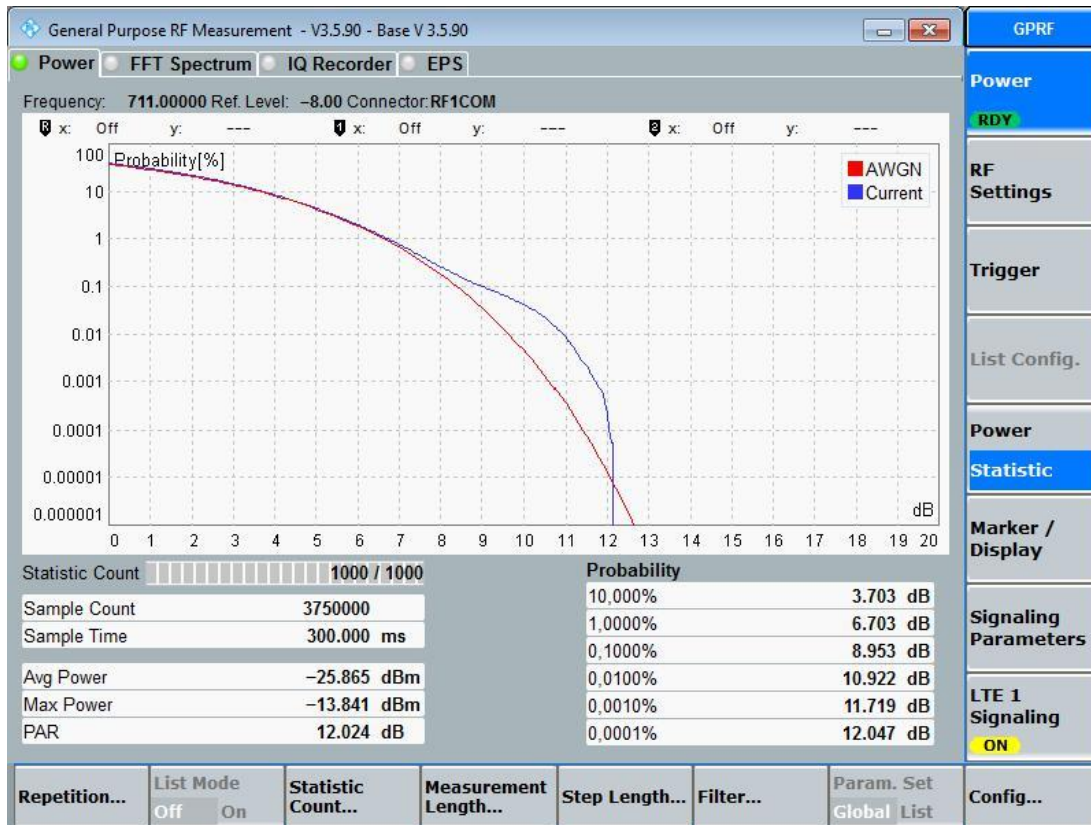
QPSK, Ch23060, 1 RB low



QPSK, Ch23130, 100% RB



16-QAM, Ch23060, 100% RB



16-QAM, Ch23130, 1 RB low

1.5. Conducted Emissions on AC-mains

Diagram 1.01

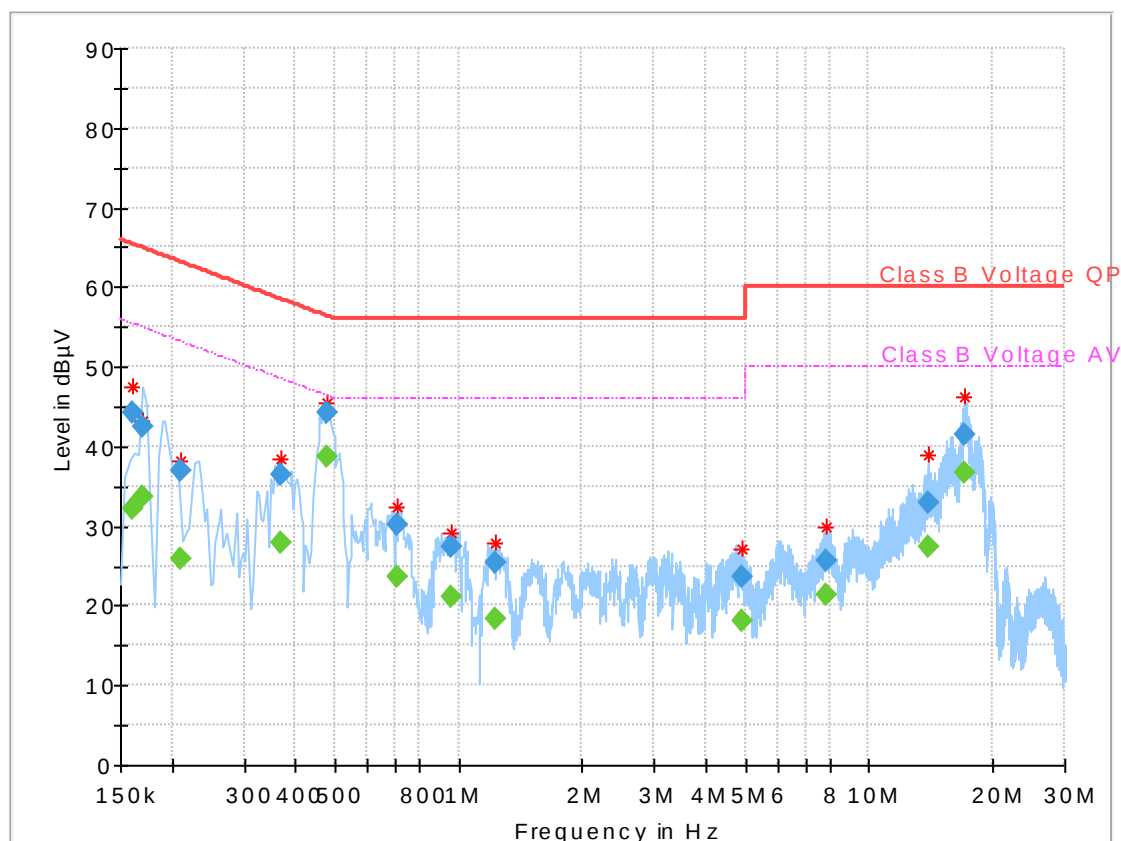
Common Information

Test Description:	Conducted Voltage Measurement Class B
Test Site & Location:	Conducted Emission, CETECOM GmbH Essen
Test Software:	R&S EMC32 v9.15
Test Specification:	FCC 15.107, FCC 15.207
Operating Mode:	LTE Band 4, Ch: 20175, BW: 5MHz, RB: 25
Measured on line:	N/L1
Diagram details:	Shows the peak values as a sum of measured ports in maxhold mode
Environmental Conditions:	Humidity: 42%rH; Temperature: 20°C
Operator:	HLA
Comments:	

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	PE	Correction (dB)
0.160000	---	32.13	55.46	23.33	1000.0	9.000	N	GN	0.1
0.160000	44.35	---	65.46	21.11	1000.0	9.000	N	GN	0.1
0.170469	42.43	---	64.94	22.51	1000.0	9.000	L1	GN	0.1
0.170469	---	33.74	54.94	21.20	1000.0	9.000	L1	GN	0.1
0.209531	36.98	---	63.22	26.24	1000.0	9.000	N	GN	0.1
0.209531	---	25.97	53.22	27.25	1000.0	9.000	N	GN	0.1
0.367344	36.41	---	58.56	22.15	1000.0	9.000	L1	GN	0.1
0.367344	---	28.02	48.56	20.54	1000.0	9.000	L1	GN	0.1
0.475625	44.35	---	56.42	12.07	1000.0	9.000	L1	GN	0.1
0.475625	---	38.73	46.42	7.69	1000.0	9.000	L1	GN	0.1
0.706719	---	23.57	46.00	22.43	1000.0	9.000	L1	GN	0.2
0.706719	30.12	---	56.00	25.88	1000.0	9.000	L1	GN	0.2
0.957188	---	21.08	46.00	24.92	1000.0	9.000	L1	GN	0.3
0.957188	27.51	---	56.00	28.49	1000.0	9.000	L1	GN	0.3
1.223438	---	18.44	46.00	27.56	1000.0	9.000	L1	GN	0.3
1.223438	25.47	---	56.00	30.53	1000.0	9.000	L1	GN	0.3
4.887344	---	18.06	46.00	27.94	1000.0	9.000	N	GN	0.4
4.887344	23.74	---	56.00	32.26	1000.0	9.000	N	GN	0.4
7.856250	---	21.28	50.00	28.72	1000.0	9.000	L1	GN	0.4
7.856250	25.57	---	60.00	34.43	1000.0	9.000	L1	GN	0.4
13.937031	---	27.46	50.00	22.54	1000.0	9.000	N	GN	0.6
13.937031	32.89	---	60.00	27.11	1000.0	9.000	N	GN	0.6
17.153594	---	36.80	50.00	13.20	1000.0	9.000	N	GN	0.7
17.153594	41.46	---	60.00	18.54	1000.0	9.000	N	GN	0.7

Diagram 1.02

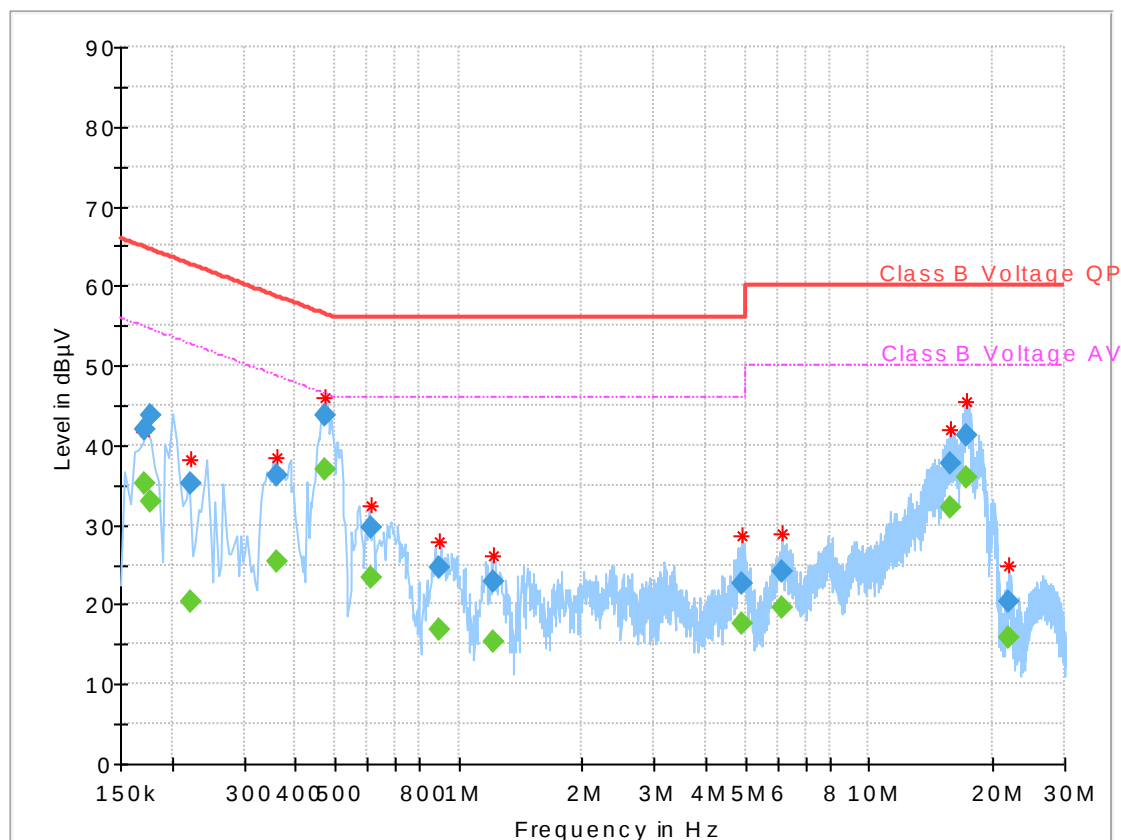
Common Information

Test Description:	Conducted Voltage Measurement Class B
Test Site & Location:	Conducted Emission, CETECOM GmbH Essen
Test Software:	R&S EMC32 v9.15
Test Specification:	FCC 15.107, FCC 15.207
Operating Mode:	LTE Band 2, Ch: 18900, BW: 5MHz, RB: 25
Measured on line:	N/L1
Diagram details:	Shows the peak values as a sum of measured ports in maxhold mode
Environmental Conditions:	Humidity: 42%rH; Temperature: 20°C
Operator:	HLA
Comments:	

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	PE	Correction (dB)
0.170938	---	35.13	54.91	19.78	1000.0	9.000	L1	GN	0.1
0.170938	42.00	---	64.91	22.91	1000.0	9.000	L1	GN	0.1
0.178281	43.64	---	64.57	20.93	1000.0	9.000	N	GN	0.1
0.178281	---	32.81	54.57	21.76	1000.0	9.000	N	GN	0.1
0.221250	---	20.44	52.77	32.33	1000.0	9.000	N	GN	0.1
0.221250	35.31	---	62.77	27.46	1000.0	9.000	N	GN	0.1
0.360625	36.15	---	58.71	22.56	1000.0	9.000	L1	GN	0.1
0.360625	---	25.47	48.71	23.24	1000.0	9.000	L1	GN	0.1
0.470625	43.76	---	56.50	12.74	1000.0	9.000	L1	GN	0.1
0.470625	---	37.03	46.50	9.47	1000.0	9.000	L1	GN	0.1
0.609531	29.56	---	56.00	26.44	1000.0	9.000	L1	GN	0.2
0.609531	---	23.35	46.00	22.65	1000.0	9.000	L1	GN	0.2
0.900313	---	16.86	46.00	29.14	1000.0	9.000	N	GN	0.2
0.900313	24.56	---	56.00	31.44	1000.0	9.000	N	GN	0.2
1.218906	---	15.24	46.00	30.76	1000.0	9.000	N	GN	0.3
1.218906	22.89	---	56.00	33.11	1000.0	9.000	N	GN	0.3
4.893594	---	17.70	46.00	28.30	1000.0	9.000	L1	GN	0.4
4.893594	22.59	---	56.00	33.41	1000.0	9.000	L1	GN	0.4
6.136250	---	19.67	50.00	30.33	1000.0	9.000	L1	GN	0.4
6.136250	24.23	---	60.00	35.77	1000.0	9.000	L1	GN	0.4
15.715000	---	32.27	50.00	17.73	1000.0	9.000	L1	GN	0.7
15.715000	37.67	---	60.00	22.33	1000.0	9.000	L1	GN	0.7
17.282500	---	36.05	50.00	13.95	1000.0	9.000	L1	GN	0.6
17.282500	41.16	---	60.00	18.84	1000.0	9.000	L1	GN	0.6
21.780938	---	15.72	50.00	34.28	1000.0	9.000	N	GN	0.7
21.780938	20.39	---	60.00	39.61	1000.0	9.000	N	GN	0.7

Diagram 1.03

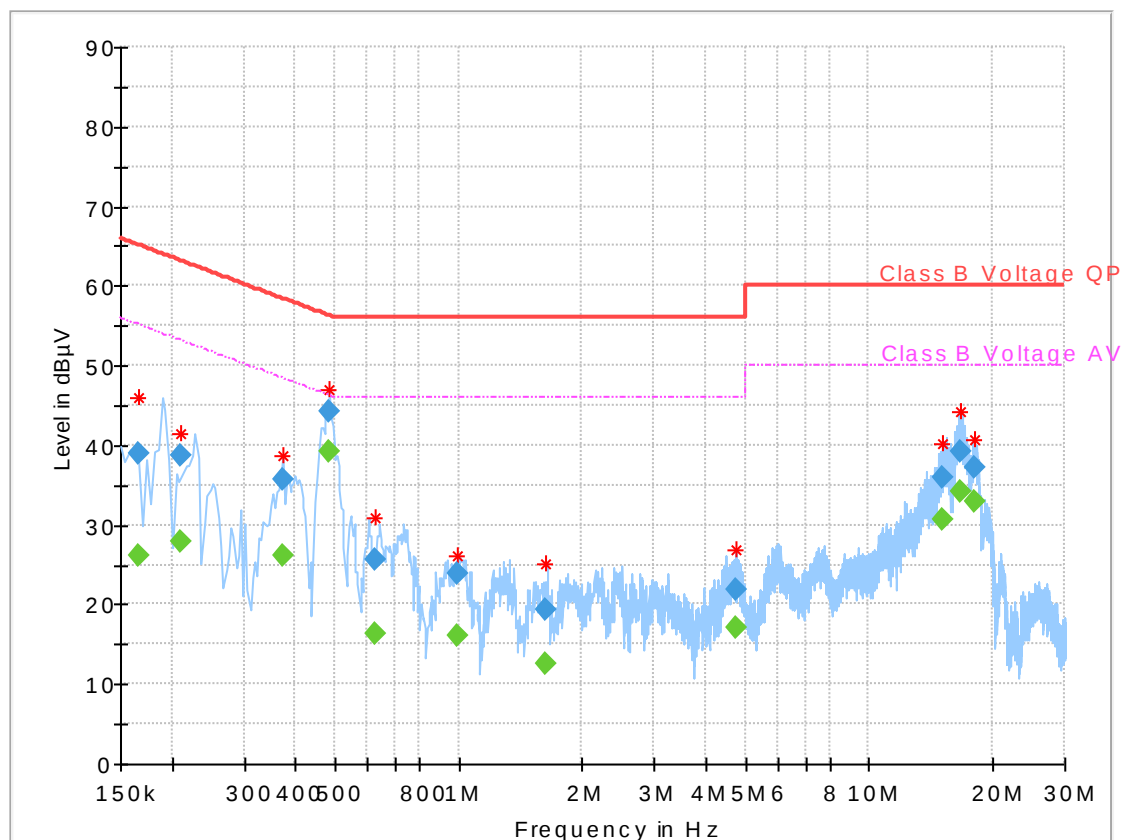
Common Information

Test Description:	Conducted Voltage Measurement Class B
Test Site & Location:	Conducted Emission, CETECOM GmbH Essen
Test Software:	R&S EMC32 v9.15
Test Specification:	FCC 15.107, FCC 15.207
Operating Mode:	LTE Band 12, Ch: 23095, BW: 5MHz, RB: 25
Measured on line:	N/L1
Diagram details:	Shows the peak values as a sum of measured ports in maxhold mode
Environmental Conditions:	Humidity: 42%rH; Temperature: 20°C
Operator:	HLA
Comments:	

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	PE	Correction (dB)
0.166563	---	26.21	55.13	28.92	1000.0	9.000	N	GN	0.1
0.166563	38.89	---	65.13	26.24	1000.0	9.000	N	GN	0.1
0.210625	38.70	---	63.18	24.48	1000.0	9.000	N	GN	0.1
0.210625	---	27.87	53.18	25.31	1000.0	9.000	N	GN	0.1
0.375156	---	26.07	48.39	22.32	1000.0	9.000	L1	GN	0.1
0.375156	35.62	---	58.39	22.77	1000.0	9.000	L1	GN	0.1
0.483438	---	39.10	46.28	7.18	1000.0	9.000	L1	GN	0.1
0.483438	44.30	---	56.28	11.98	1000.0	9.000	L1	GN	0.1
0.625625	---	16.35	46.00	29.65	1000.0	9.000	L1	GN	0.2
0.625625	25.53	---	56.00	30.47	1000.0	9.000	L1	GN	0.2
0.996875	---	16.14	46.00	29.86	1000.0	9.000	N	GN	0.3
0.996875	23.90	---	56.00	32.10	1000.0	9.000	N	GN	0.3
1.632500	19.47	---	56.00	36.53	1000.0	9.000	L1	GN	0.3
1.632500	---	12.53	46.00	33.47	1000.0	9.000	L1	GN	0.3
4.737344	21.93	---	56.00	34.07	1000.0	9.000	L1	GN	0.4
4.737344	---	16.99	46.00	29.01	1000.0	9.000	L1	GN	0.4
15.147031	---	30.68	50.00	19.32	1000.0	9.000	L1	GN	0.7
15.147031	35.91	---	60.00	24.09	1000.0	9.000	L1	GN	0.7
16.788125	39.29	---	60.00	20.71	1000.0	9.000	N	GN	0.7
16.788125	---	34.25	50.00	15.75	1000.0	9.000	N	GN	0.7
18.074375	37.17	---	60.00	22.83	1000.0	9.000	N	GN	0.6
18.074375	---	32.89	50.00	17.11	1000.0	9.000	N	GN	0.6

1.6. Magnetic field emissions radiated (LTE Band 2)**Diagram No. 2.01_R_Ch_19175_BW_5MHz**

Date:	08.09.2016	Page 1 of 1
Test description:	Magnetic Field Strength Measurement related to 30/300 m distance	
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance	
Version of Testsoftware:	EMC32 V9.25.0	
Distance correction:	used accord. table, pls. see test report	
Technical Data:	Please see page 2 for detailed data of measurement setup	
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation	
Used filter:	bypass	
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4	
Operator:	Klv	
Operating conditions:	TX-on	
Power during tests:	120V 60Hz	
Comment 1:	Channel: 19175	
Comment 2:	LTE Band 2 Modulation: QPSK	
Environmental Conditions:	Humidity: 69%rH; Temperature: 26°C	

EUT Information

Manufacturer:	Gemalto M2M GmbH

EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum

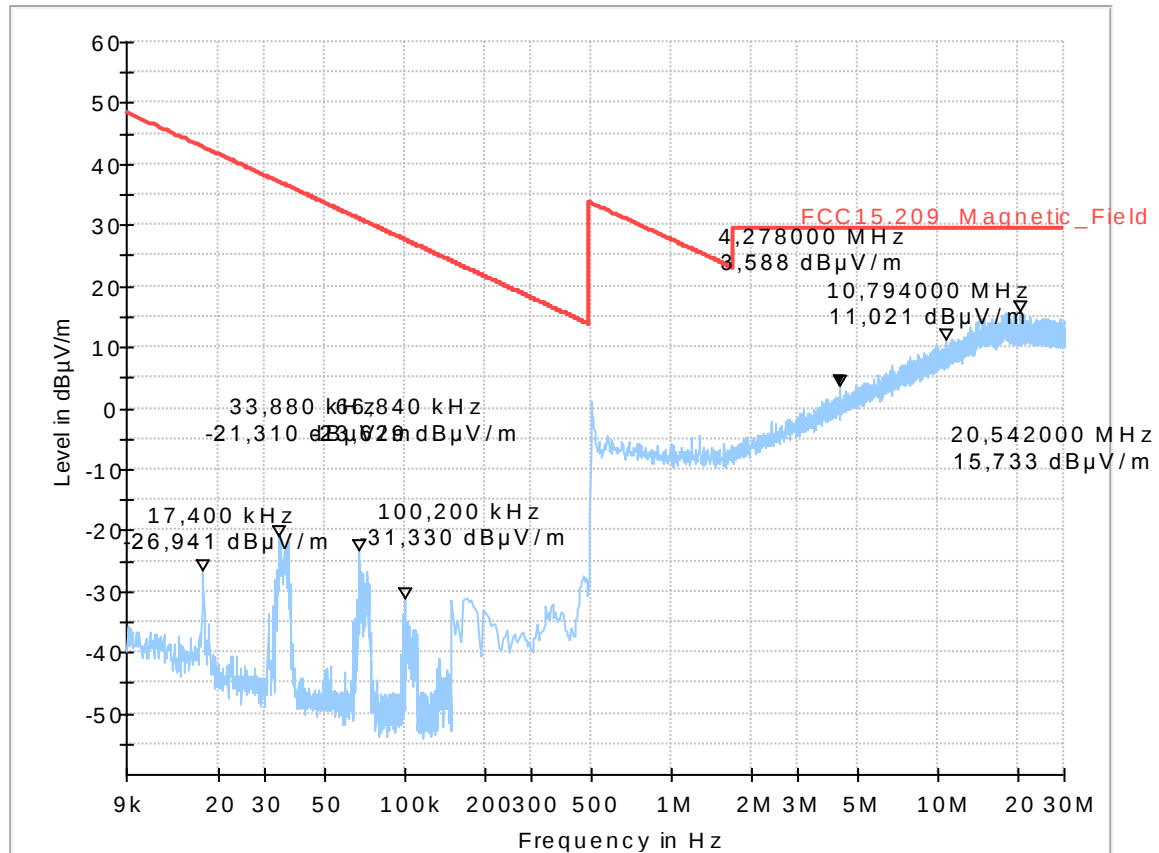


Diagram No. 2.02_R_Ch_18900_BW_20MHz

Test description:
Test site and distance:
Version of Testsoftware:
Distance correction:
Technical Data:
Rec. antenna (pre-scan):
Used filter:
Test specification:

Date: 08.09.2016 Page 1 of 1
Magnetic Field Strength Measurement related to 30/300 m distance
Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
EMC32 V9.25.0
used accord. table, pls. see test report
Please see page 2 for detailed data of measurement setup
height 1.00 m, parallel and 90° to EUT polarisation
bypass
FCC 15.205 § 15.209; RSS-Gen: Issue 4

Operator:
Operating conditions:
Power during tests:
Comment 1:
Comment 2:
Environmental Conditions:

Klv
TX-on
120V 60Hz
Channel: 18900
LTE Band 2 Modulation: 16 QAM
Humidity: 69%rH; Temperature: 26°C

EUT Information

Manufacturer:

Gemalto M2M GmbH

EUT:

WMC0300EL0 (a)

HW version:

Rev01

SW version:

4.3.3.0b

SVN:

-

Config:

-

IMEI:

35541906031722

Connected Interfaces:

-

Power Supply:

12VDC over AE1

Comments:

-

Full Spectrum

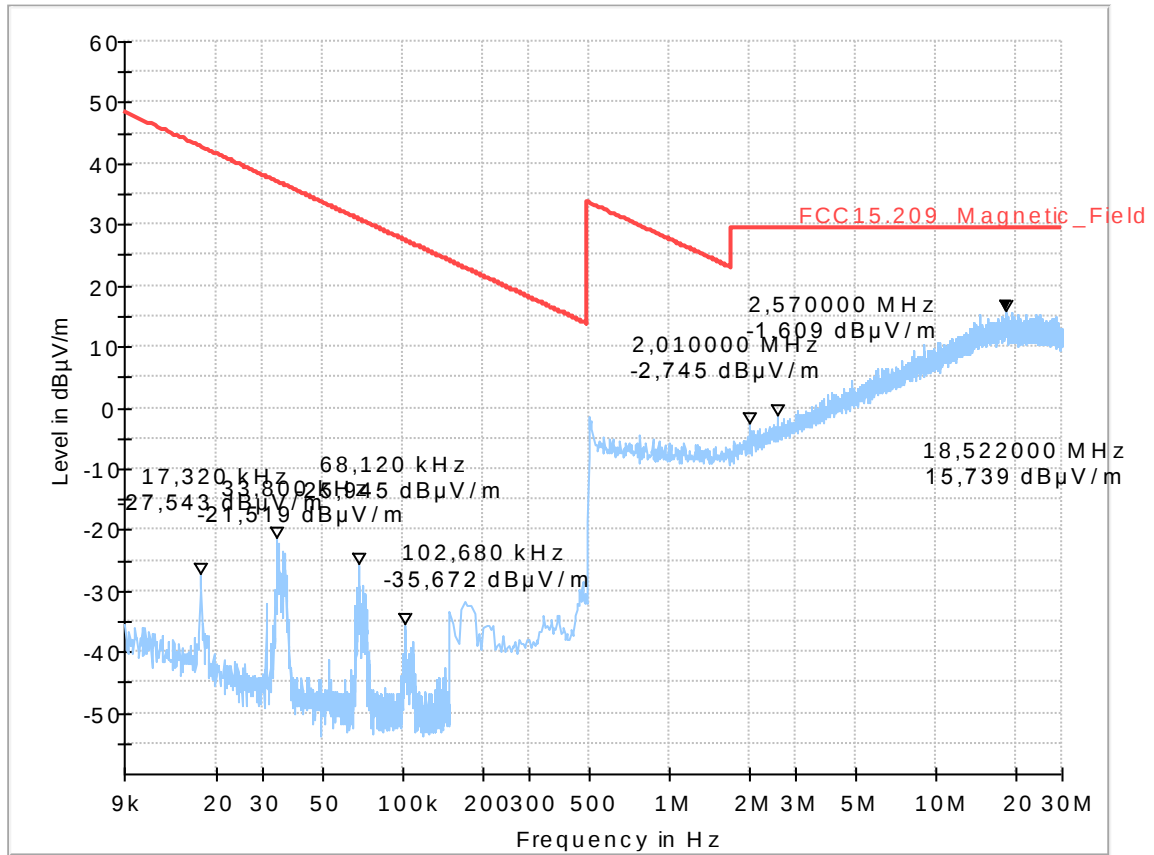


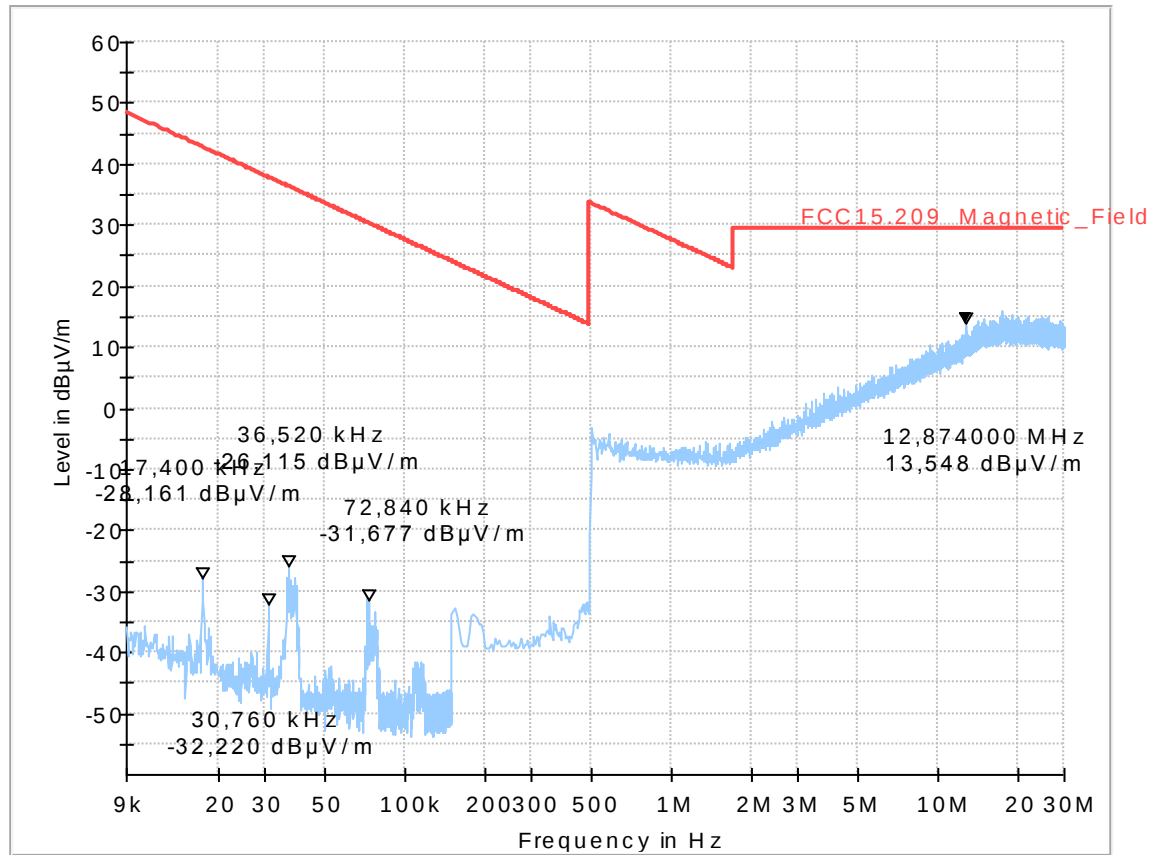
Diagram No. 2.03_R_Ch_18700_BW_20MHz

Date:	08.09.2016	Page 1 of 1
Test description:	Magnetic Field Strength Measurement related to 30/300 m distance	
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance	
Version of Testsoftware:	EMC32 V9.25.0	
Distance correction:	used accord. table, pls. see test report	
Technical Data:	Please see page 2 for detailed data of measurement setup	
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation	
Used filter:	bypass	
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4	
Operator:	Klv	
Operating conditions:	TX-on	
Power during tests:	120V 60Hz	
Comment 1:	Channel: 18700	
Comment 2:	LTE Band 2 Modulation: 16 QAM	
Environmental Conditions:	Humidity: 69%rH; Temperature: 26°C	

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



1.7. Spurious emissions radiated (LTE Band 2)

8.22_RSE_R_Ch19175_BW5

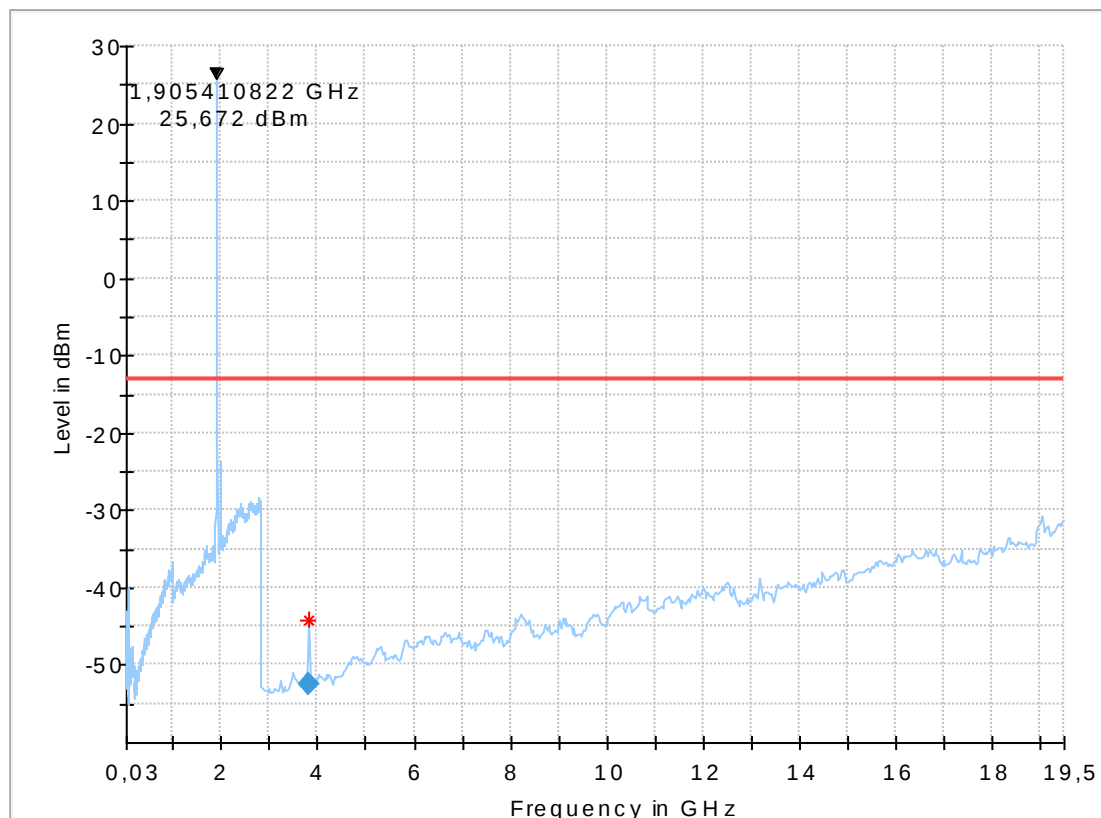
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24
Operating Mode:	LTE Band II
Environmental Conditions:	Humidity: 49%rH; Temperature: 26°C
Operator:	RLS

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



Final Result

Frequency (MHz)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
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3803.436874	-13.00	39.50	10000.0	H	280.0	90.0	-95.2
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8.23_RSE_R_Ch18700_BW20

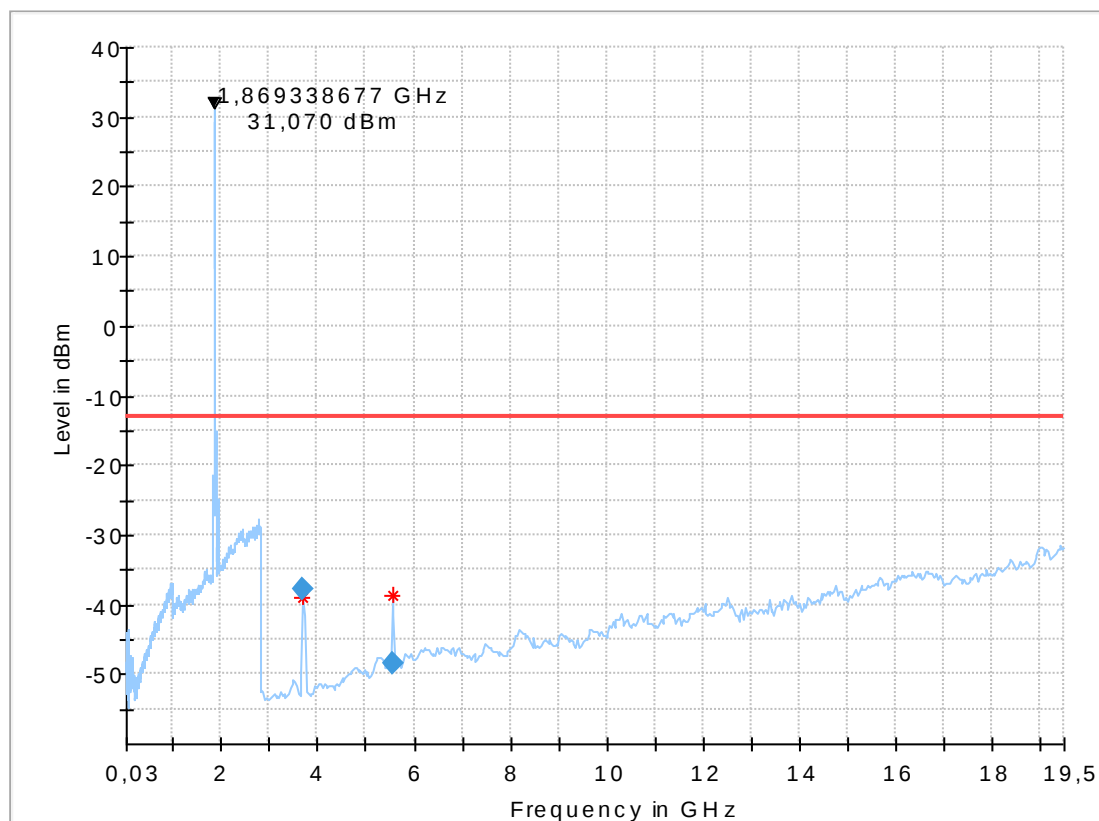
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24
Operating Mode:	LTE Band II
Environmental Conditions:	Humidity: 49%rH; Temperature: 26°C
Operator:	RI's

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



Final Result

Frequency (MHz)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
3704.002005	-13.00	24.69	10000.0	H	305.0	90.0	-94.9
5543.613226	-13.00	35.39	10000.0	H	37.0	90.0	-89.9

8.24_RSE_R_Ch18900_BW20

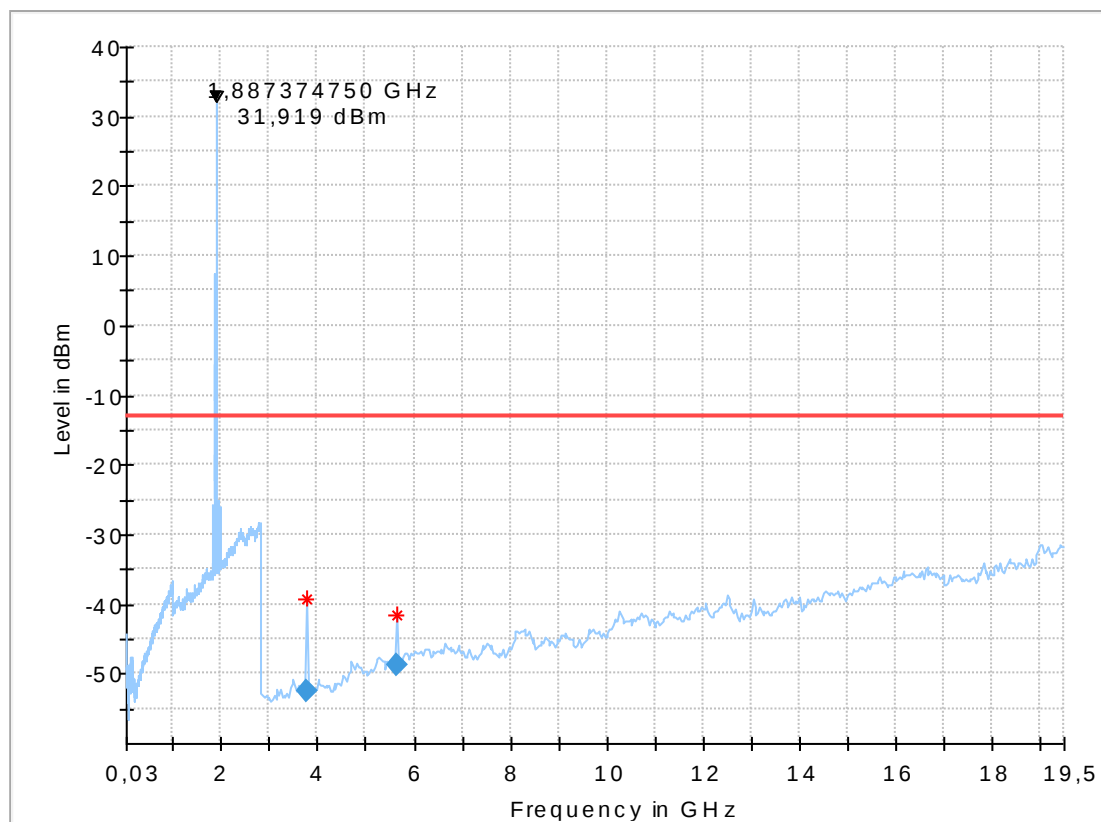
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24
Operating Mode:	LTE Band II
Environmental Conditions:	Humidity: 49%rH; Temperature: 26°C
Operator:	RI

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



Final Result

Frequency (MHz)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
3771.004008	-13.00	39.51	10000.0	H	261.0	90.0	-95.1
5644.270541	-13.00	35.65	10000.0	H	297.0	90.0	-89.7

1.8. Magnetic field emissions radiated (LTE Band 4)**Diagram No. 2.05_R_Ch_20300_BW_20MHz**

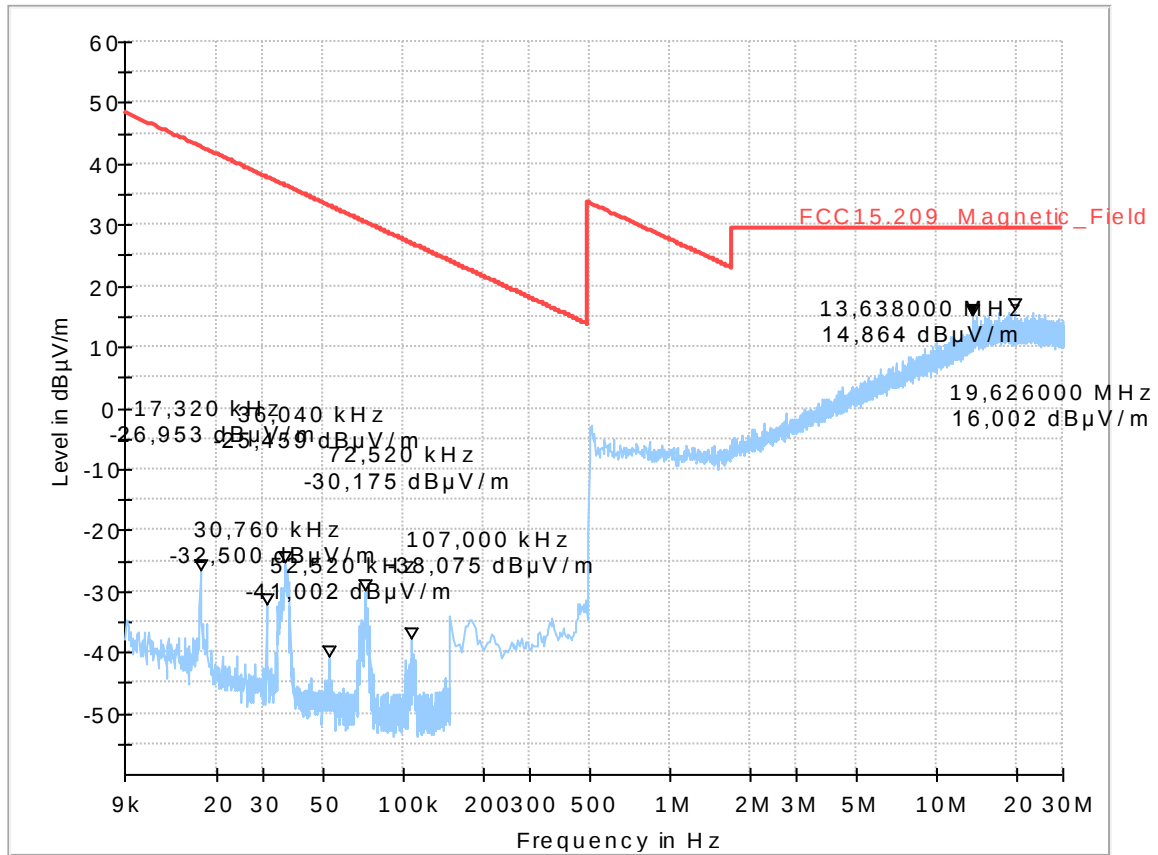
Date:	08.09.2016	Page 1 of 1
Test description:	Magnetic Field Strength Measurement related to 30/300 m distance	
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance	
Version of Testsoftware:	EMC32 V9.25.0	
Distance correction:	used accord. table, pls. see test report	
Technical Data:	Please see page 2 for detailed data of measurement setup	
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation	
Used filter:	bypass	
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4	
Operator:	Klv	
Operating conditions:	TX-on	
Power during tests:	120V 60Hz	
Comment 1:	Channel: 20300 (High channel)	
Comment 2:	LTE Band 4 Modulation: QPSK	
Environmental Conditions:	Humidity: 63%rH; Temperature: 20°C	

EUT Information

Manufacturer:	Gemalto M2M GmbH

EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



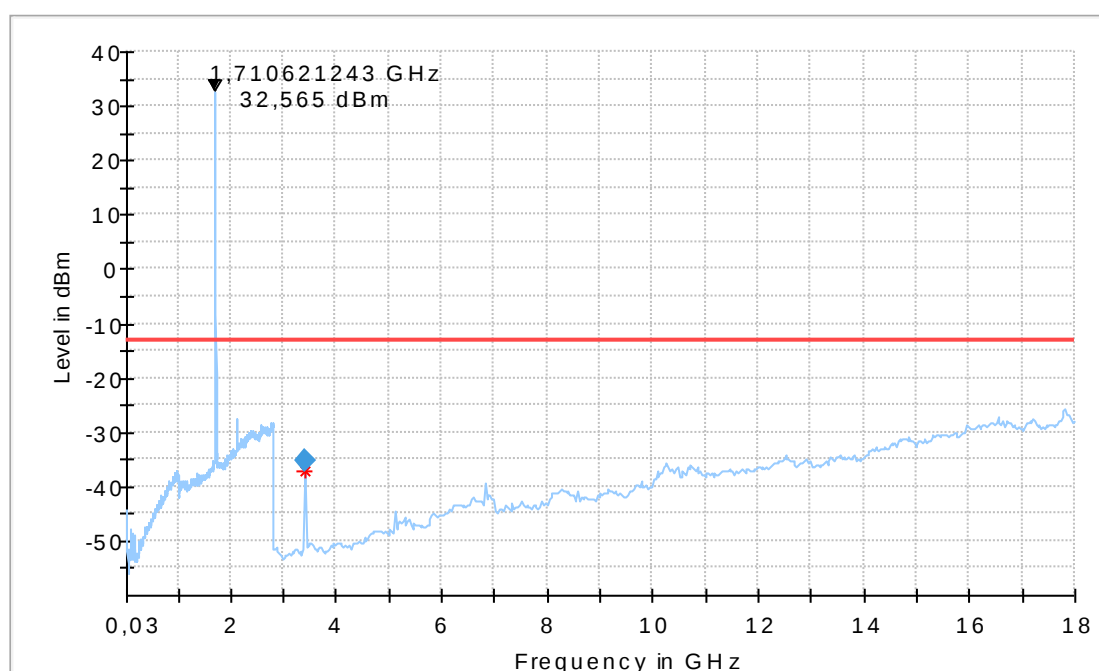
1.9. Spurious emissions radiated (LTE Band 4)

8.40_RSE_R_Ch19975_1RB_BW_5_QPSK

Common Information

Test Description:	Radiated Spurious Emissions LTE Band 4
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27.53 / RSS-139
Comm. Link:	LTE Band 4
Operating Mode:	MS allocated channel 19975
Environmental Conditions:	Humidity: 44%rH; Temperature: 28°C
Operator:	RLS

Full Spectrum



Final Result

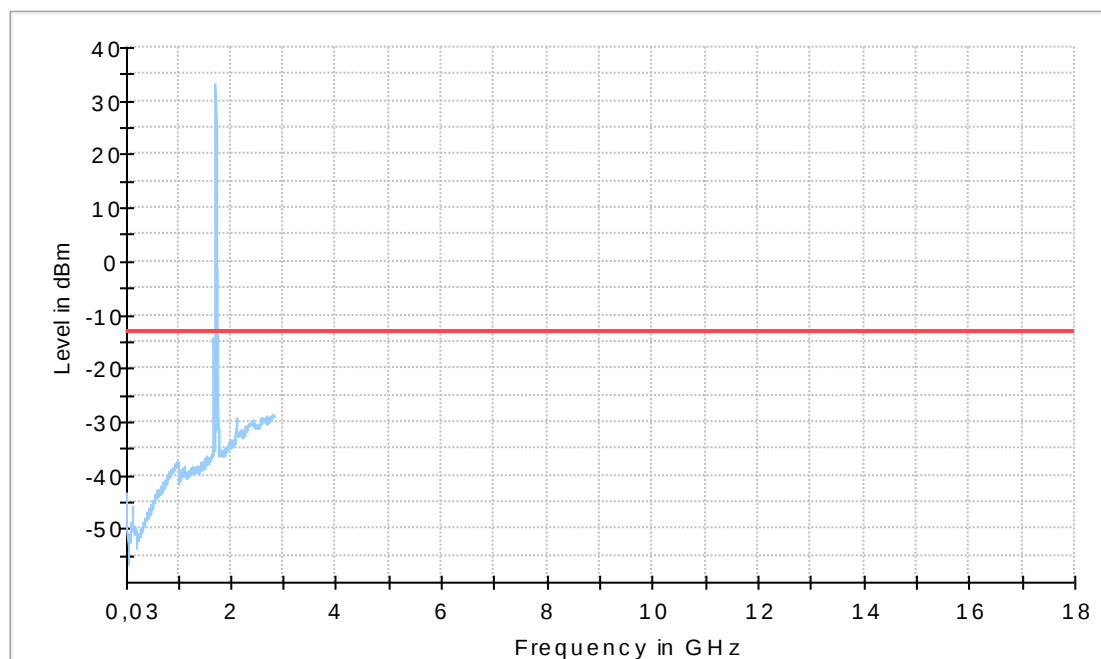
Frequency (MHz)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Comment
3420.731463	-13.00	22.23	10000.0	155.0	H	31.0	90.0	-95.0	18:49:05 - 15.09.2016

8.42a_RSE_R-Ch20300_BW20_30-2800MHz

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
Environmental Conditions:	Humidity: 53%rH; Temperature: 22°C
Test SW Version:	EMC32 V9.26.0
Operator:	Klv
Remarks:	EUT - laying/standing position

Full Spectrum



8.42b_RSE_R-Ch20300_BW20_2.8-18GHz

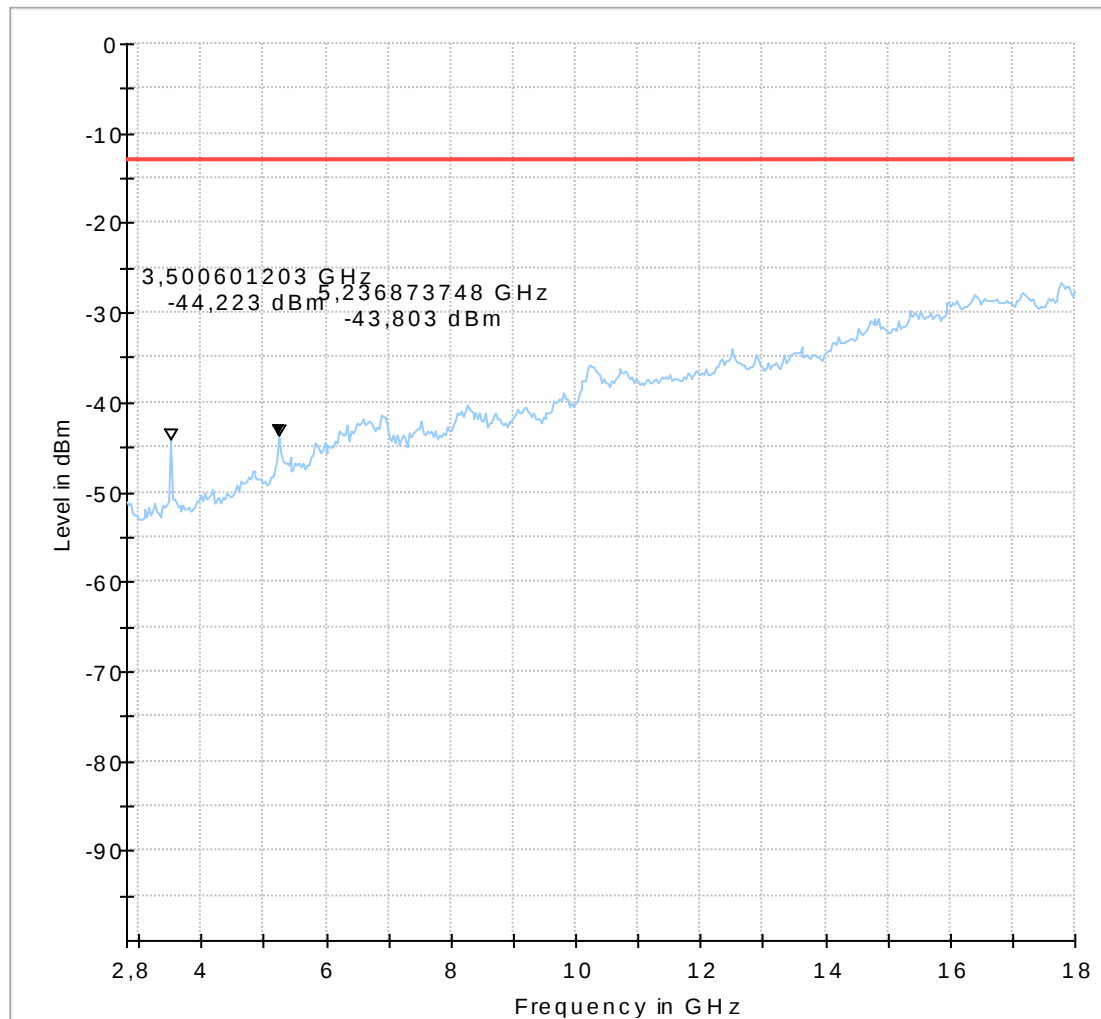
Common Information

Test Description:	Radiated Spurious Emissions LTE Band 4
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27.53 / RSS-139
Comm. Link:	LTE Band 4
Operating Mode:	MS allocated channel
Exclusionband:	1710 to 1755 MHz
Environmental Conditions:	Humidity: 47%rH; Temperature: 26°C
Operator:	Klv

EUT Information

Manufacturer:	Gemalto M2M GmbH
-----	-----
EUT:	WMC0532PL3 (b)
HW version:	Rev6.6
SW version:	Revision 03.011
SVN:	-
Config:	C01
IMEI:	355419060317164
Connected Interfaces:	-
Power Supply:	12VDC
Comments:	-

Full Spectrum

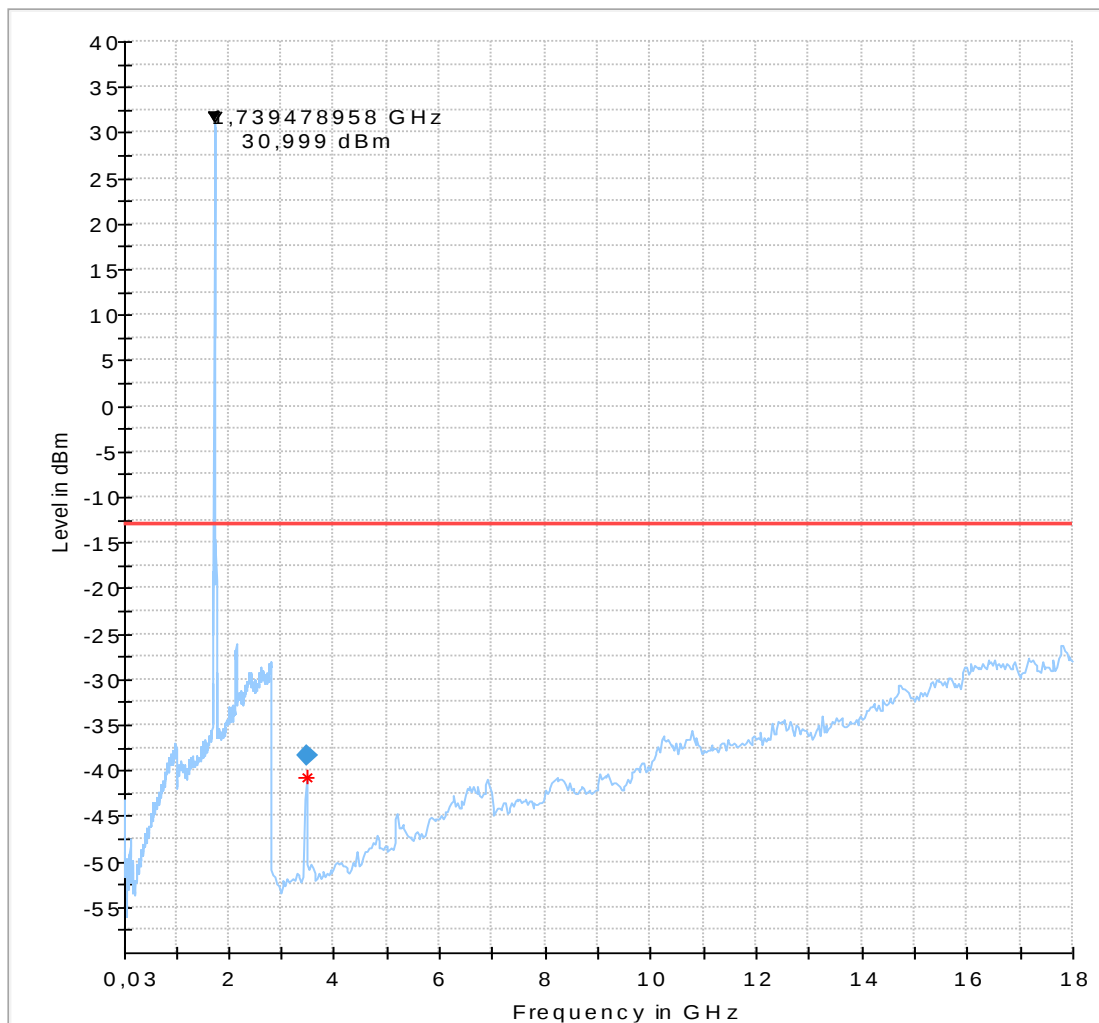


8.44_RSE_R_Ch20175_BW20

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0532PL3 (b)
HW version:	Rev6.6
SW version:	Revision 03.011
SVN:	-
Config:	C01
Serial number:	355419060317164
Connected Interfaces:	-
Power Supply:	12VDC
Comments:	-

Full Spectrum



Final_Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
3481.352706	-38.35	-13.00	25.35	10000.0	1000.000	155.0	H	234.0	90.0	-93.8

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

Frequency (MHz)	Comment
3481.352706	21:42:06 - 06.09.2016

1.10. Magnetic field emissions radiated (LTE Band 12)

Diagram No. 2.08_R_Ch_23035_BW_5MHz

Test description:	Date: 16.09.2016 Page 1 of 1
Test site and distance:	Magnetic Field Strength Measurement related to 30/300 m distance
Version of Testsoftware:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Distance correction:	EMC32 V9.25.0
Technical Data:	used accord. table, pls. see test report
Rec. antenna (pre-scan):	Please see page 2 for detailed data of measurement setup
Used filter:	height 1.00 m, parallel and 90° to EUT polarisation
Test specification:	bypass
	FCC 15.205 § 15.209; RSS-Gen: Issue 4
Operator:	Klv
Operating conditions:	TX-on
Power during tests:	12V DC, 110V/60Hz
Comment 1:	Channel: 23035
Comment 2:	LTE Band 12 Modulation: QPSK

Full Spectrum

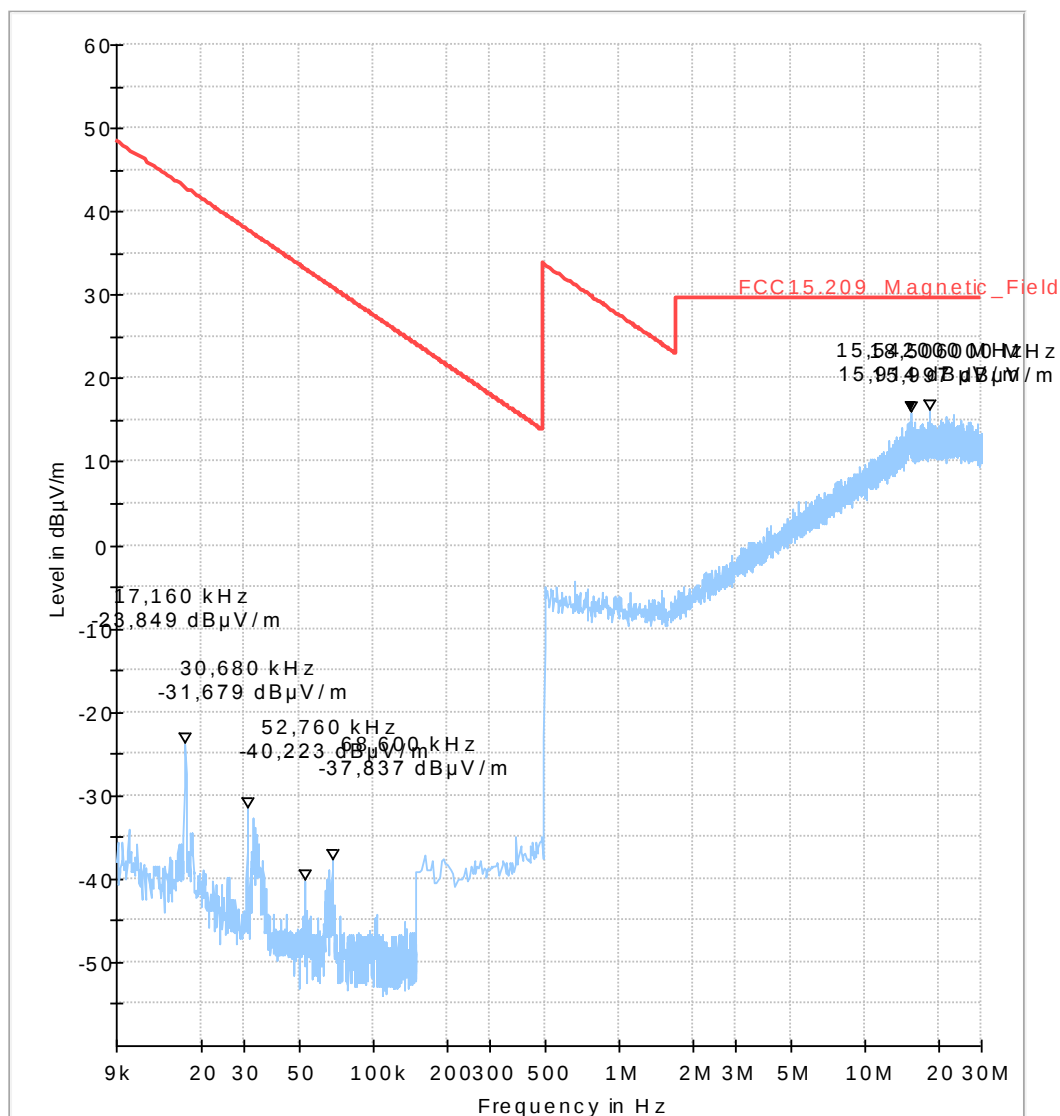


Diagram No. 2.09_R_Ch_23095_BW_5MHz

Date:	16.09.2016	Page 1 of 1
Test description:	Magnetic Field Strength Measurement related to 30/300 m distance	
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance	
Version of Testsoftware:	EMC32 V9.25.0	
Distance correction:	used accord. table, pls. see test report	
Technical Data:	Please see page 2 for detailed data of measurement setup	
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation	
Used filter:	bypass	
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4	
Operator:	Klv	
Operating conditions:	TX-on	
Power during tests:	12V DC, 110V/60Hz	
Comment 1:	Channel: 23095	
Comment 2:	LTE Band 12 Modulation: QPSK	

Full Spectrum

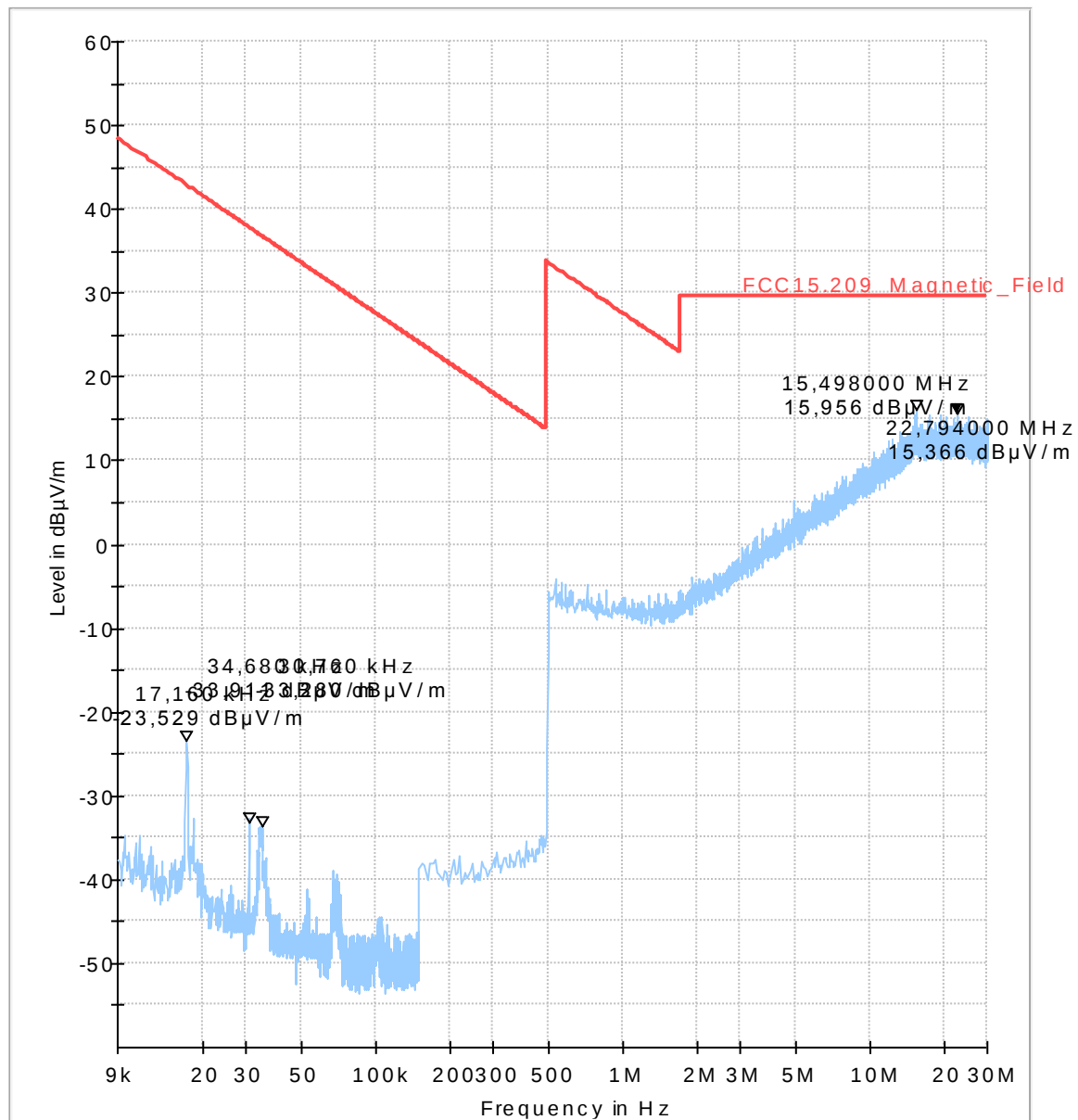


Diagram No. 2.10_R_Ch_23155_BW_5MHz

Test description:
Test site and distance:
Version of Testsoftware:
Distance correction:
Technical Data:
Rec. antenna (pre-scan):
Used filter:
Test specification:

Date: 16.09.2016 Page 1 of 1
Magnetic Field Strength Measurement related to 30/300 m distance
Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
EMC32 V9.25.0
used accord. table, pls. see test report
Please see page 2 for detailed data of measurement setup
height 1.00 m, parallel and 90° to EUT polarisation
bypass
FCC 15.205 § 15.209; RSS-Gen: Issue 4

Operator:
Operating conditions:

Klv
TX-on

Power during tests:

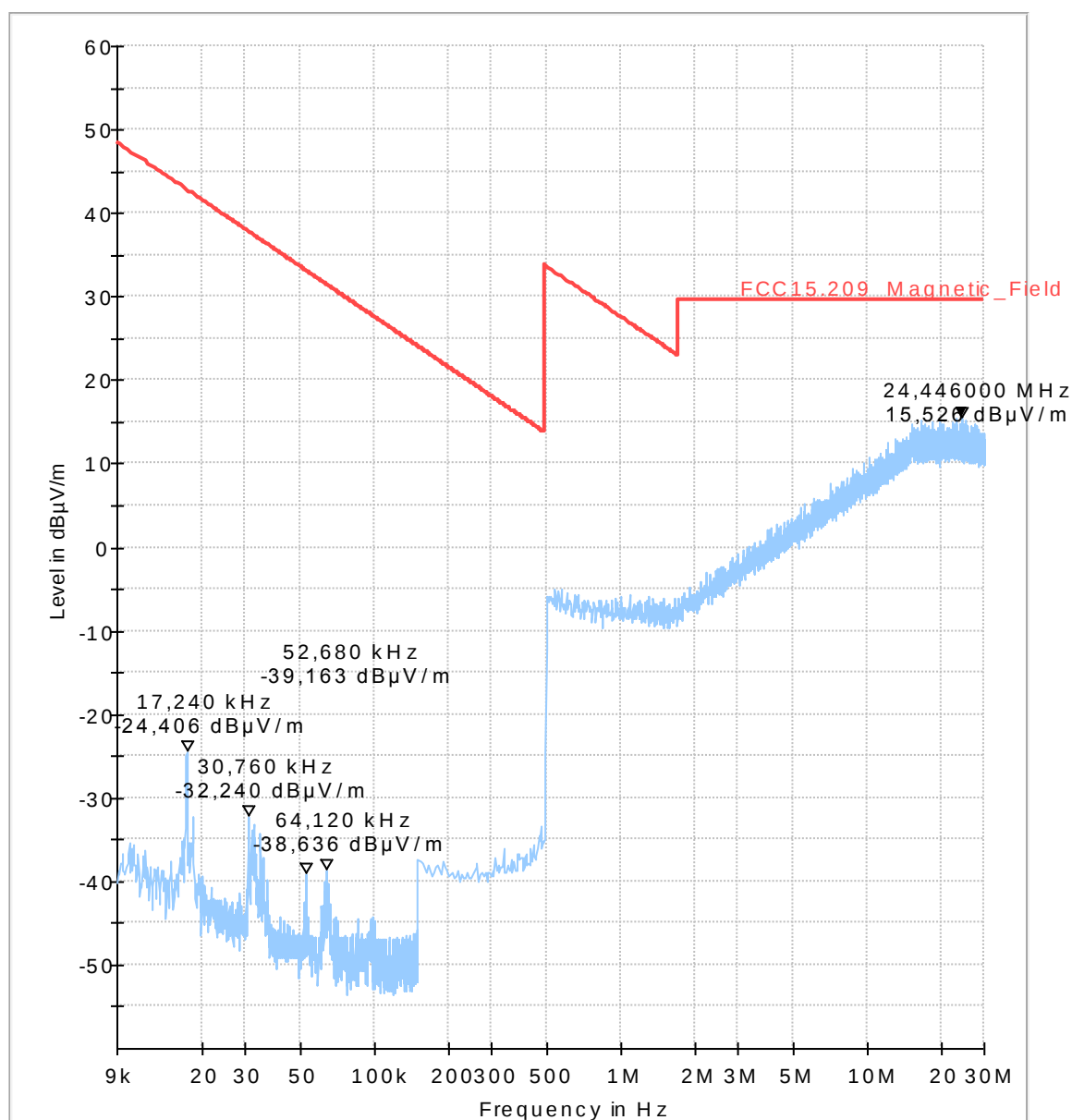
12V DC, 110V/60Hz

Comment 1:

Channel: 23155

Comment 2:

Full Spectrum



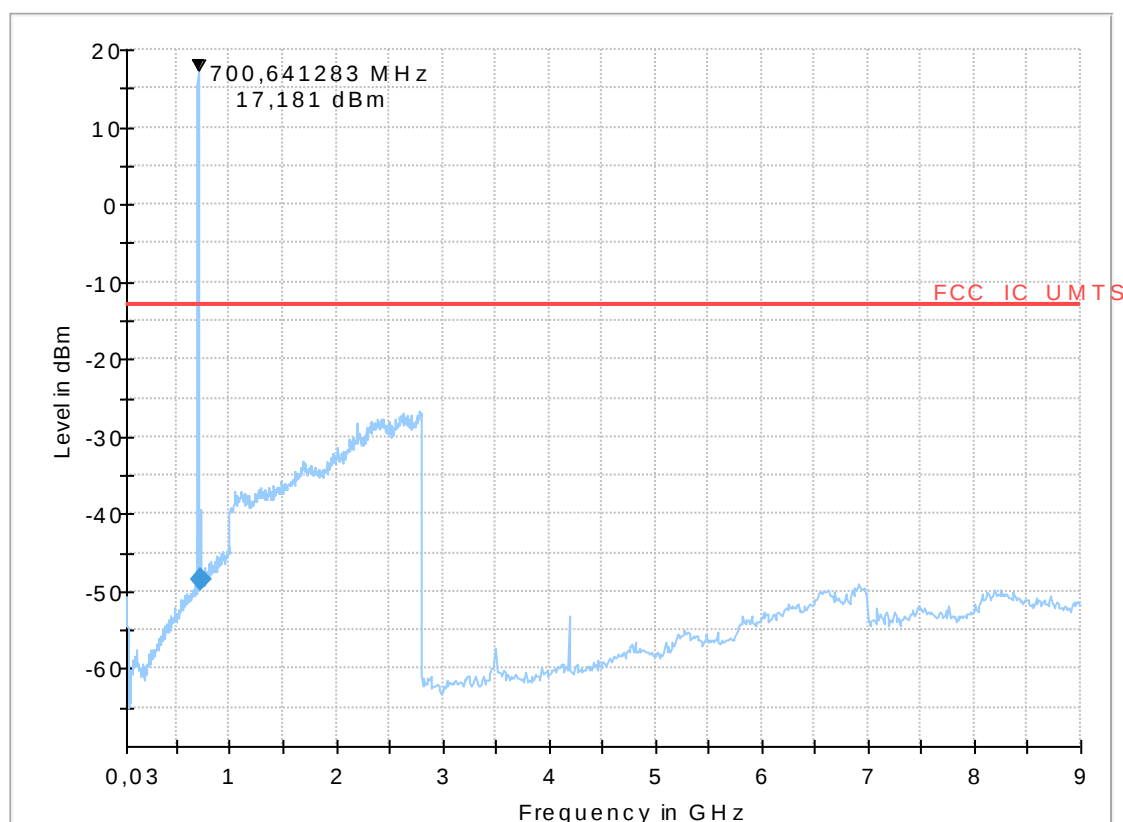
1.11. Spurious emissions radiated (LTE Band 12)

8.120_TX_Ch23035_1RB_{low}_QPSK

Common Information

Test Description:	Radiated Spurious Emissions Part 27
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27/RSS-139
Comm. Link:	LTE12
Operating Mode:	MS allocated channel 23035/ QPSK / 1RB low/ 5MHz Signal BW
Exclusionband:	
Environmental Conditions:	Humidity: 48%rH; Temperature: 20°C
Operator:	

Full Spectrum



Final Result

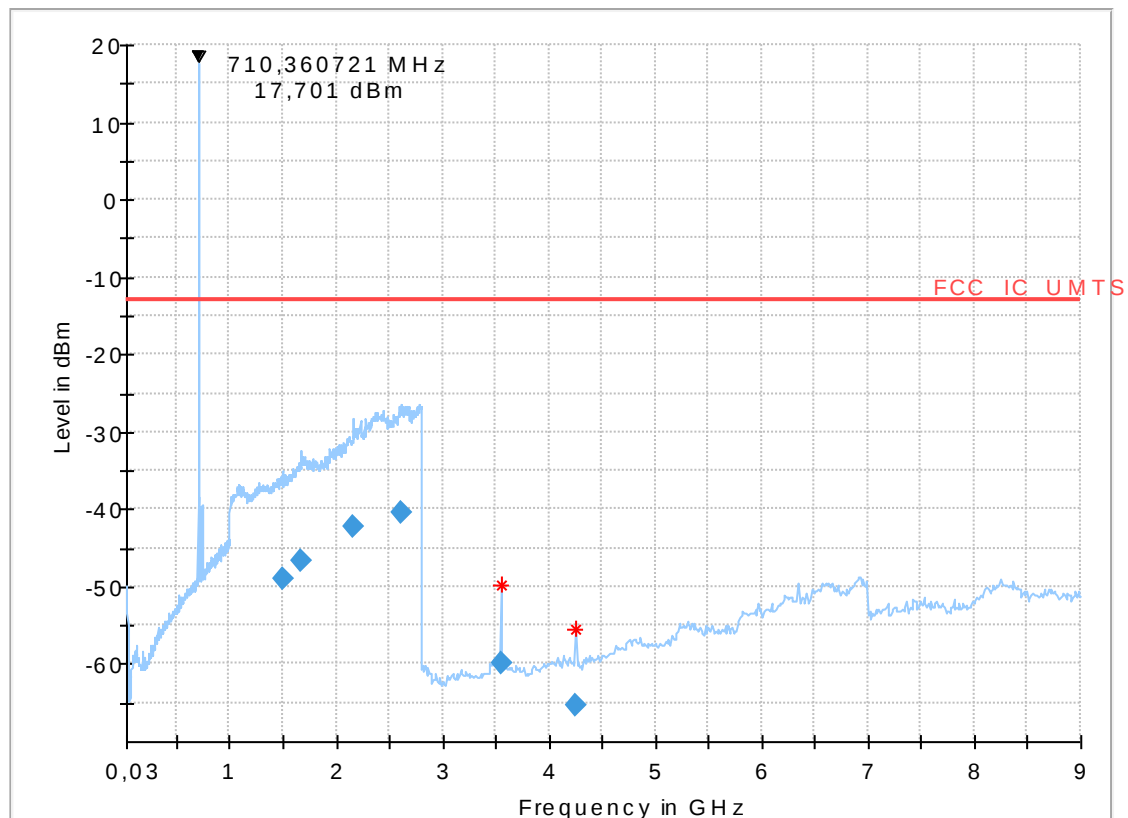
Frequency (MHz)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
729.529058	-	35.48	1000.0	H	342.0	90.0	-77.0

8.121_TX_Ch23095_1RB_{high}_QPSK

Common Information

Test Description:	Radiated Spurious Emissions UMTS FDDV
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a)
Operating Mode:	UE allocated channel 23035
Environmental Conditions:	Humidity: 48%rH; Temperature: 26.6°C
Operator:	

Full Spectrum



Final Result

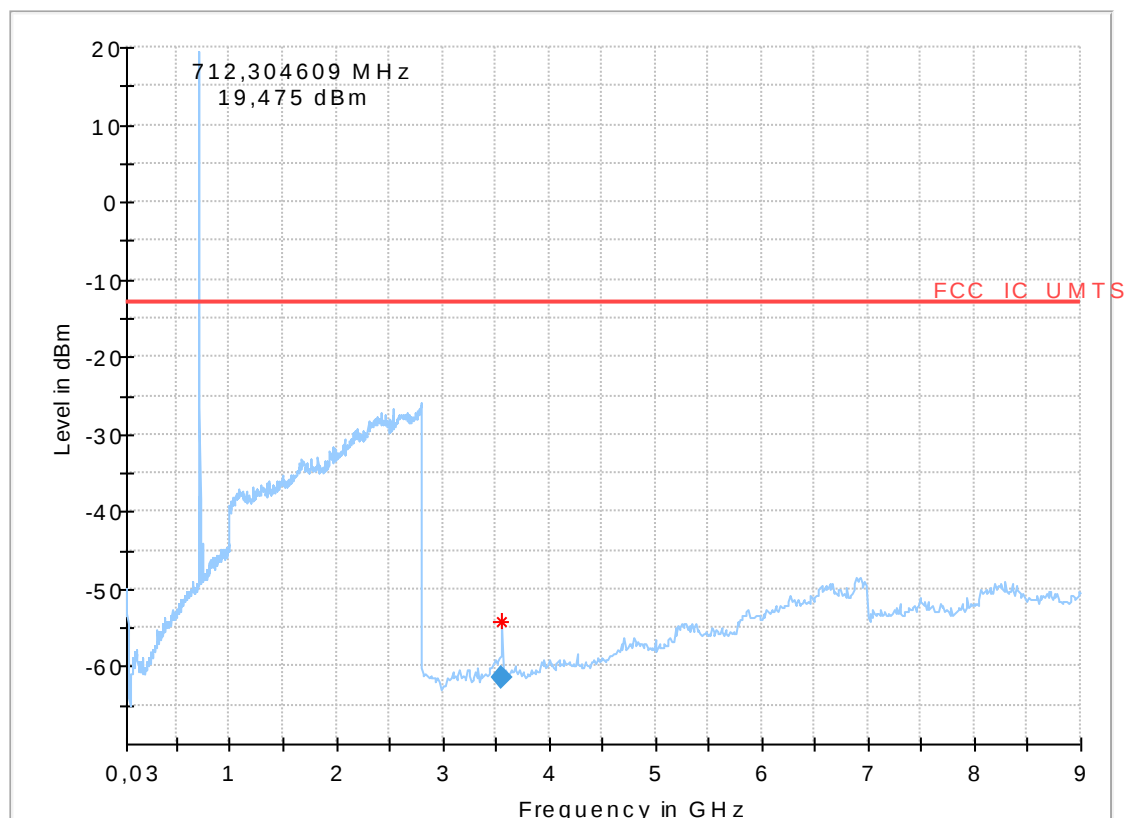
Frequency (MHz)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
1491.352705	-	36.05	1000.0	H	65.0	90.0	-65.5
1674.478958	-	33.62	1000.0	H	136.0	0.0	-63.1
2168.607215	-	29.21	1000.0	V	305.0	90.0	-60.6
2619.569138	-	27.38	1000.0	V	311.0	90.0	-58.8
3548.326653	-	46.85	1000.0	H	42.0	90.0	-94.0
4258.006012	-	52.36	1000.0	V	45.0	90.0	-93.5

8.122_TX_Ch23155_5MHz_1RB_{low}_QPSK

Common Information

Test Description:	Radiated Spurious Emissions LTE FDD12
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a)
Operating Mode:	UE allocated channel 23155 (fc = 713.5 MHz)
Environmental Conditions:	Humidity: 50%rH; Temperature: 25°C
Operator:	HLA

Full Spectrum



Final Result

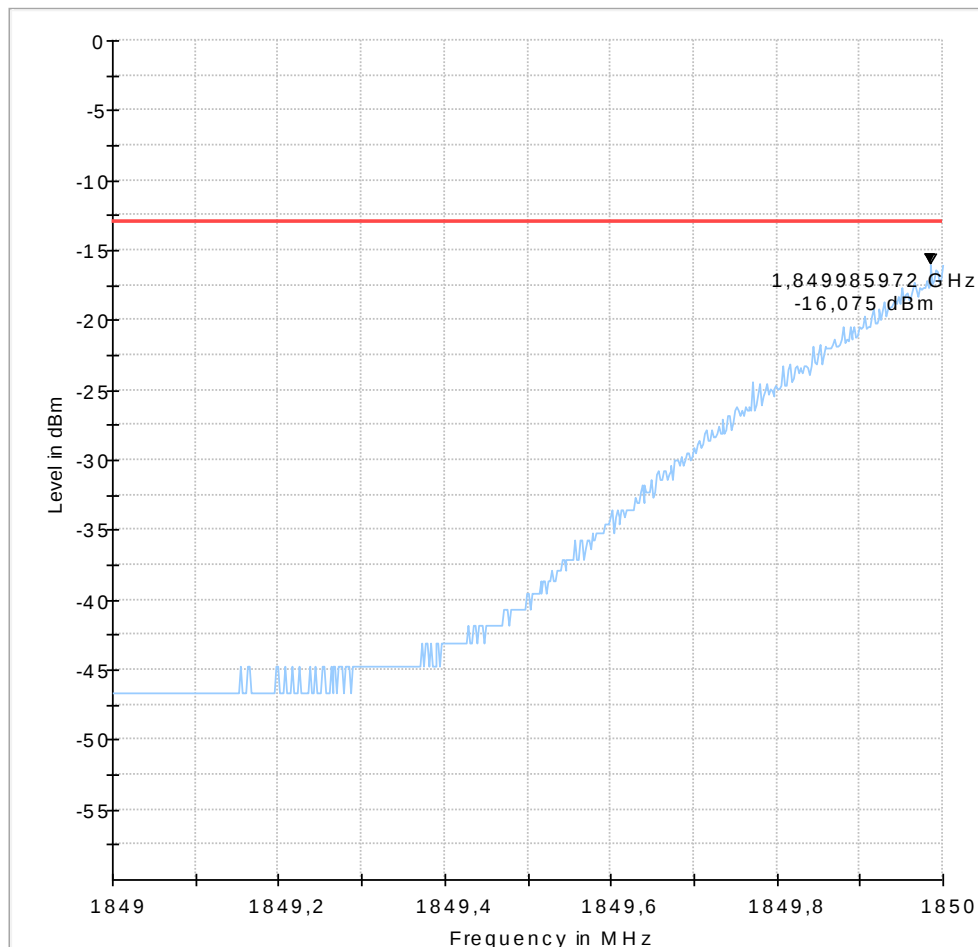
Frequency (MHz)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
3556.743487	-	48.36	1000.0	100.000	155.0	H	31.0	90.0	-94.1

1.12. Radiated emissions – band-edge (LTE Band 2)**1.12.1. Low Band-Edge 5MHz signal bandwidth****1.12.1.1. Channel 18625, QPSK, 1RB low position****Diagram No.: 9.24a_BE_R_Ch18625_1RB_BW_5_QPSK****Common Information**

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	RIs
Comment:	Channel no. low

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-



1.12.1.2. Channel 18625, 16-QAM, 1RB low position

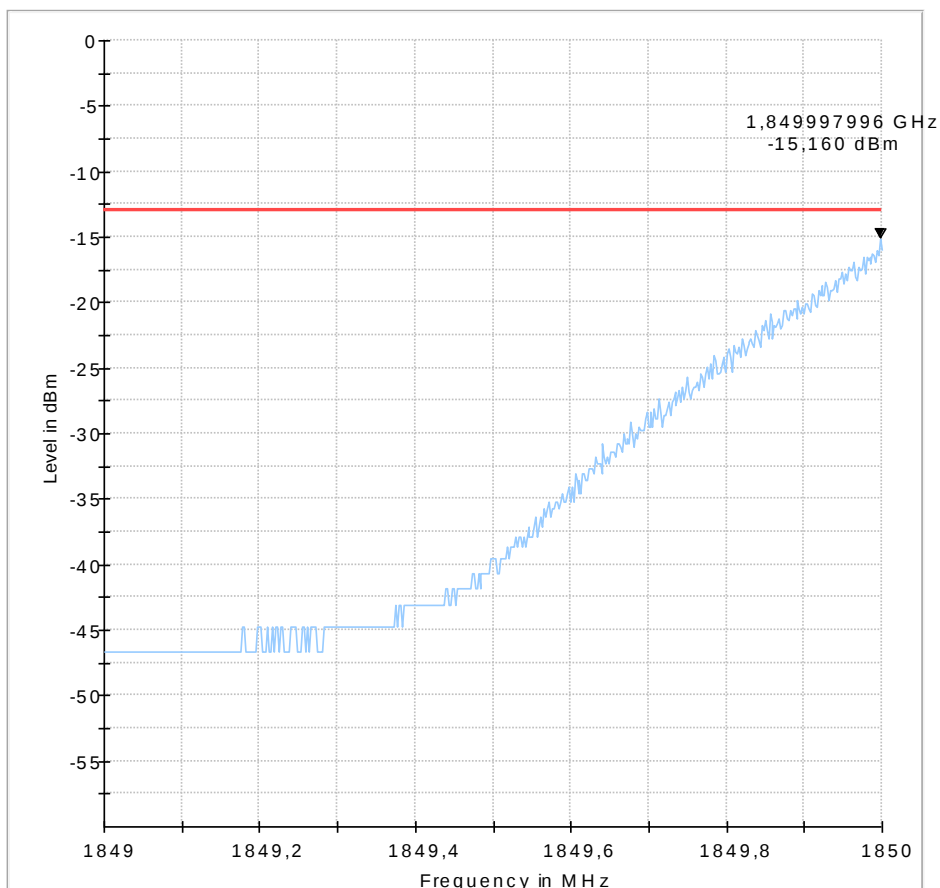
Diagram No.: 9.25a_BE_R_Ch18625_1RB_BW_5_QAM

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	RI
Comment:	Channel no. low

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-



1.12.1.3. Channel 18625, QPSK, 25 RBs

Diagram No.: 9.26_BE_R_Ch18625_25RB_BW_5_QPSK

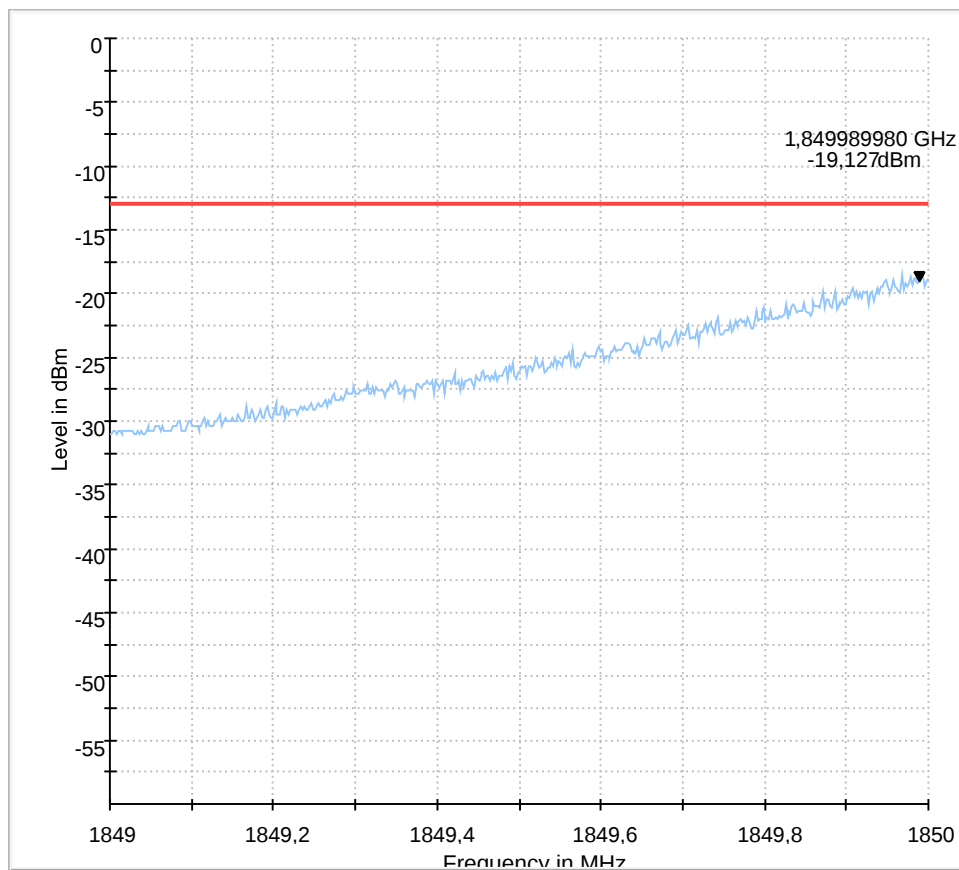
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	Klv
Comment:	Channel no. 18625
Comment2:	Modulation Type: QPSK 5MHz RB25

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-

Config: -
IMEI: 35541906031722
Connected Interfaces: -
Power Supply: 12VDC over AE1
Comments: -



1.12.1.4. Channel 18625, 16-QAM, 25 RBs

Diagram No.: 9.27_BE_R_Ch18625_25RB_BW_5_QAM

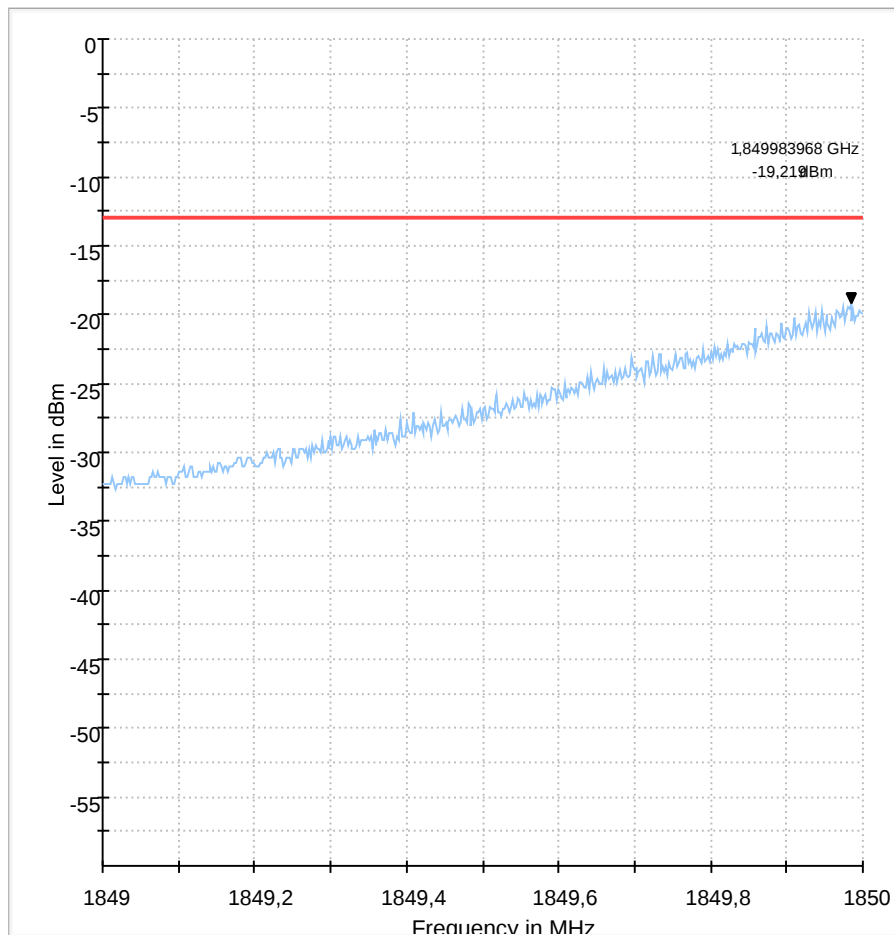
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	Klv
Comment:	Channel no. 18625
Comment2:	Modulation Type: QAM 5MHz RB25

EUT Information

Manufacturer:	Gemalto M2M GmbH
---------------	------------------

EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-



1.12.2. High Band-Edge 5MHZ signal bandwidth

1.12.2.1. Channel 19175, QPSK, 1RB high position

9.28_BE_R_Ch19175_1RB_BW_5_QPSK

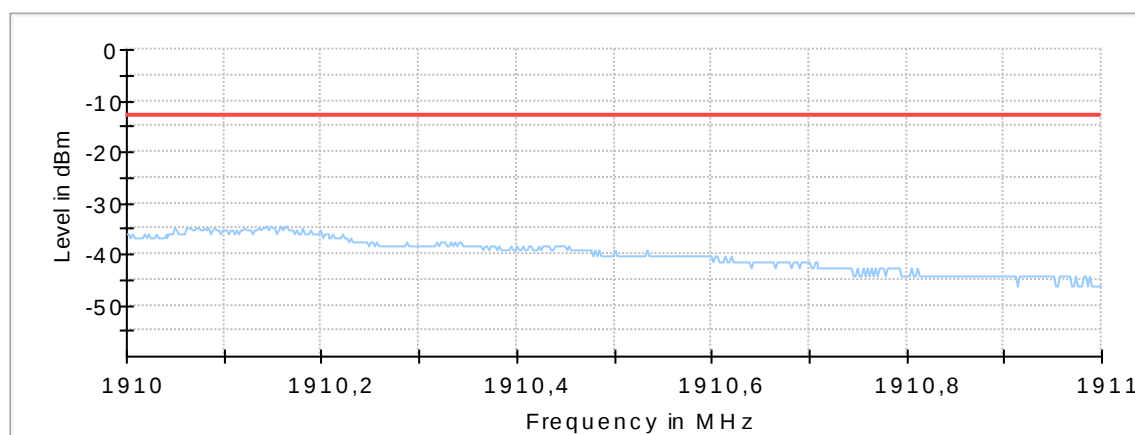
Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band 2
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Comm. Link:	LTE Band 2
Operating Mode:	MS allocated channel 19175
Environmental Conditions:	Humidity: 53%rH; Temperature: 24°C
Operator:	Klv

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300ELO (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



1.12.2.2. Channel 19175, 16QAM, 1RB high position

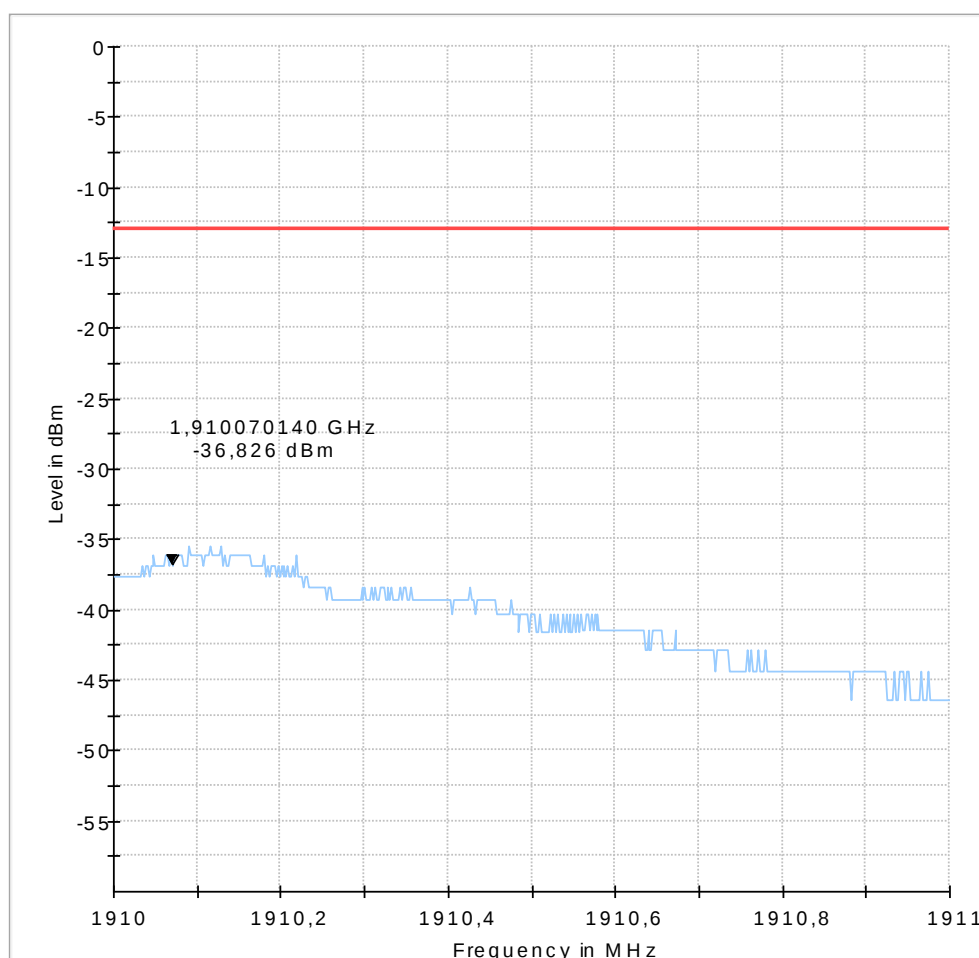
Diagram No.: 9.29_BE_R_Ch19175_1RB_BW_5_QAM

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	Klv
Comment:	Channel no. 19175
Comment2:	Modulation Type: QAM 5MHz RB1

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-



1.12.2.3. Channel 18175, QPSK, 25RB high position

Diagram No.: 9.30_BE_R_Ch19175_25RB_BW_5_QPSK

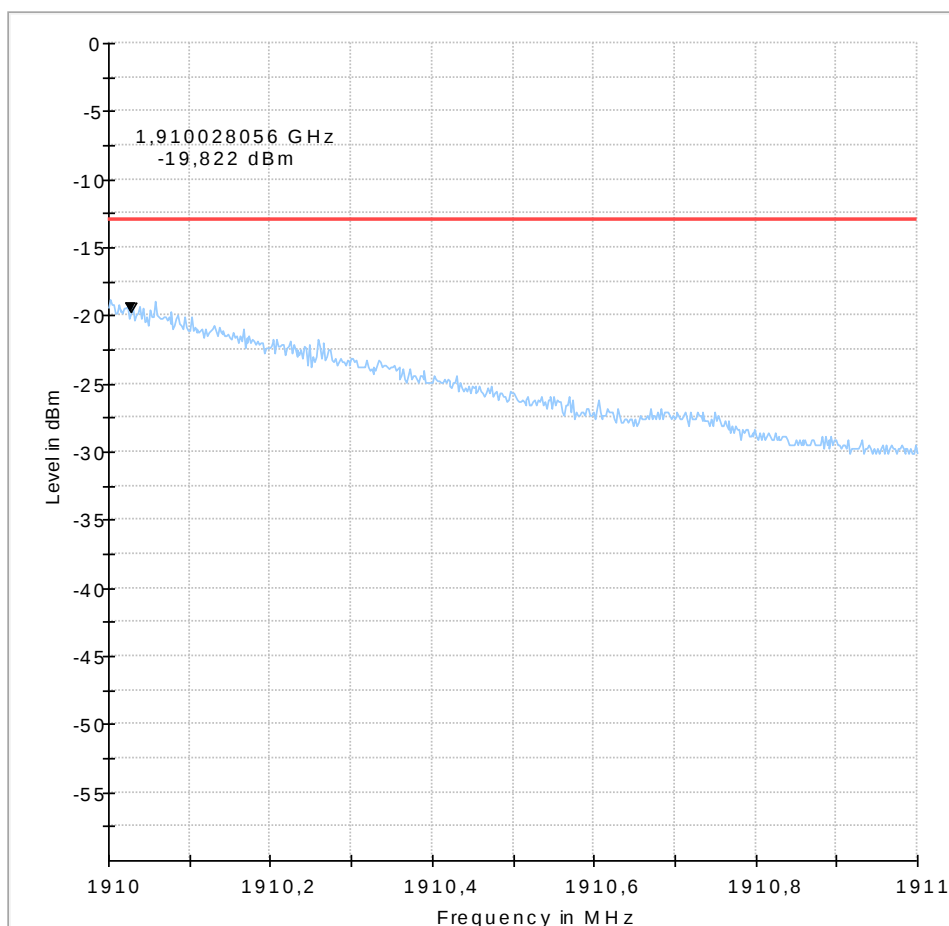
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical

Operation mode:	TX, continuous
Operator Name:	Klv
Comment:	Channel no. 19175
Comment2:	Modulation Type: QPSK 5MHz RB25

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-



1.12.2.4. Channel 19175, 16-QAM, 25RB high position

Diagram No.: 9.31_BE_R_Ch19175_25RB_BW_5_QAM

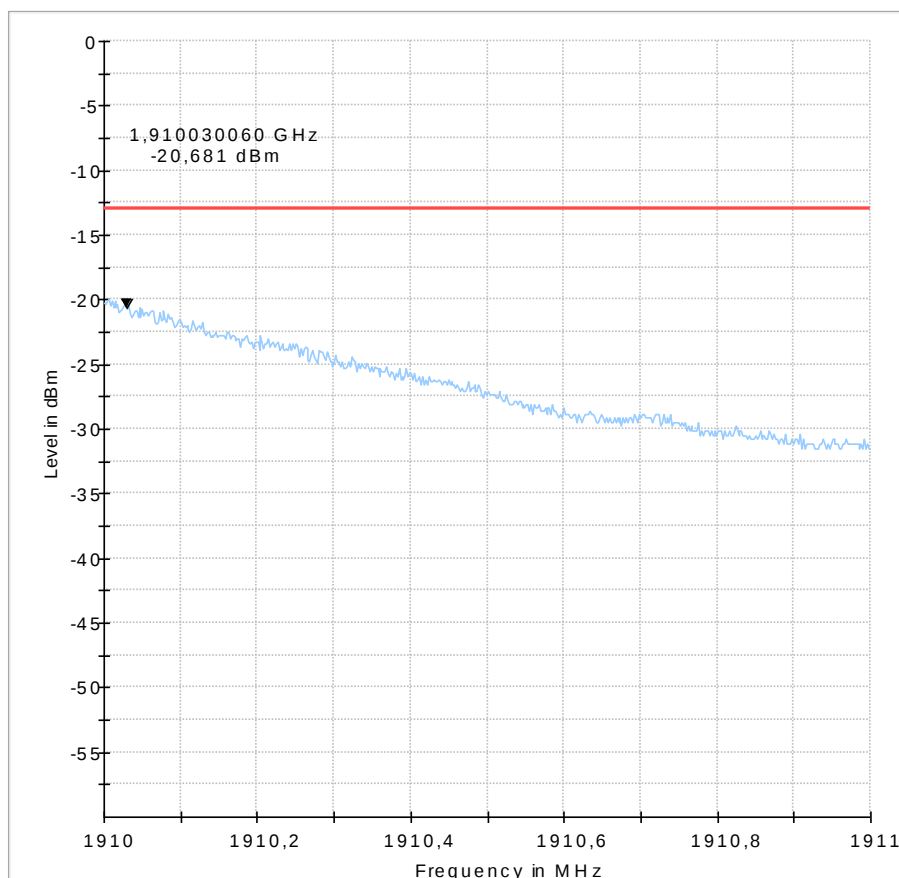
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
-------------------	---

Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	TX, continuous
Operator Name:	Klv
Comment:	Channel no. 19175
Comment2:	Modulation Type: QAM 5MHz RB25

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-



1.13. Radiated emissions – band-edge (LTE Band 4) with signal bandwidth of 5MHz

1.13.1. Low Band-Edge 5MHz signal bandwidth

1.13.1.1. Channel 19975, QPSK, 1RB low position

9.44_BE_R_Ch19975_1RBlow_BW_5_QPSK

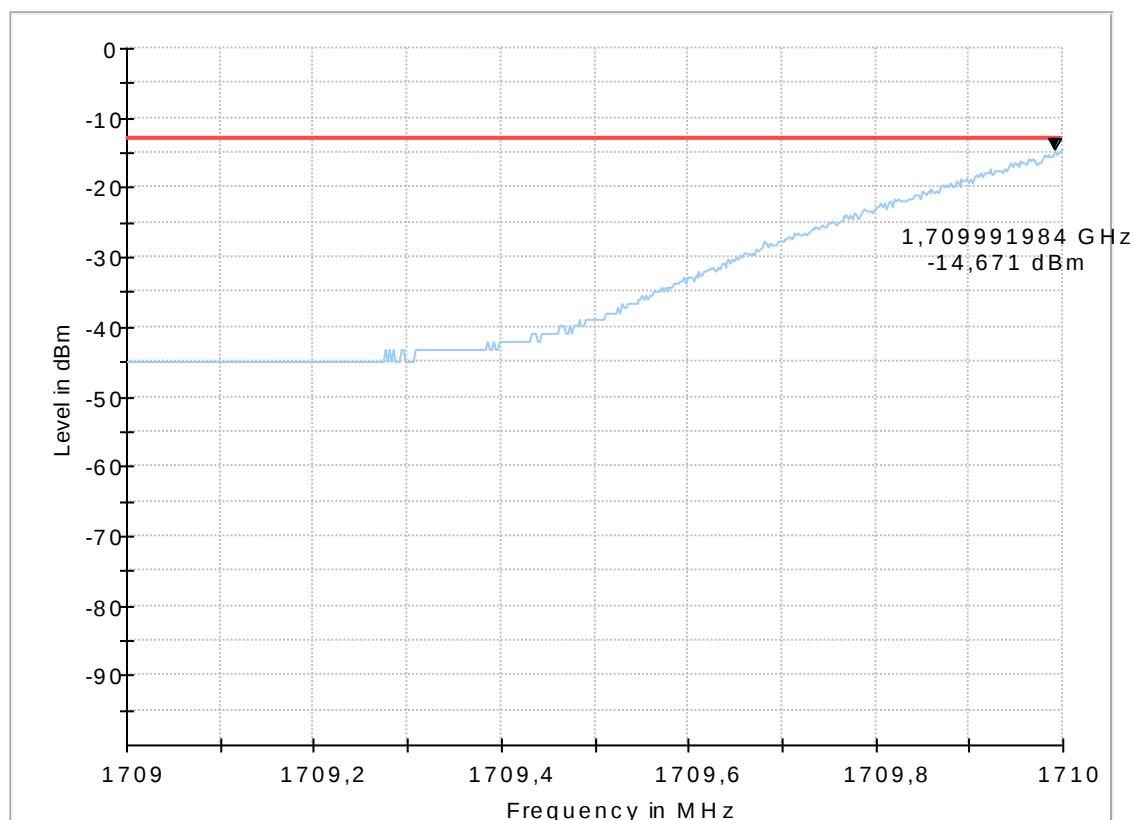
Common Information

Test Description:	Radiated Band Edge Compliance LTE B4
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27
Operating Mode:	LTE Band 4 TX ch19975
Exclusionband:	--
Environmental Conditions:	Humidity: 35%rH; Temperature: 22°C
Operator:	RLs

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



1.13.1.2. Channel 19975, 16QAM, 1RB low position

9.45_BE_R_Ch19975_1RBlow_BW_5_QAM

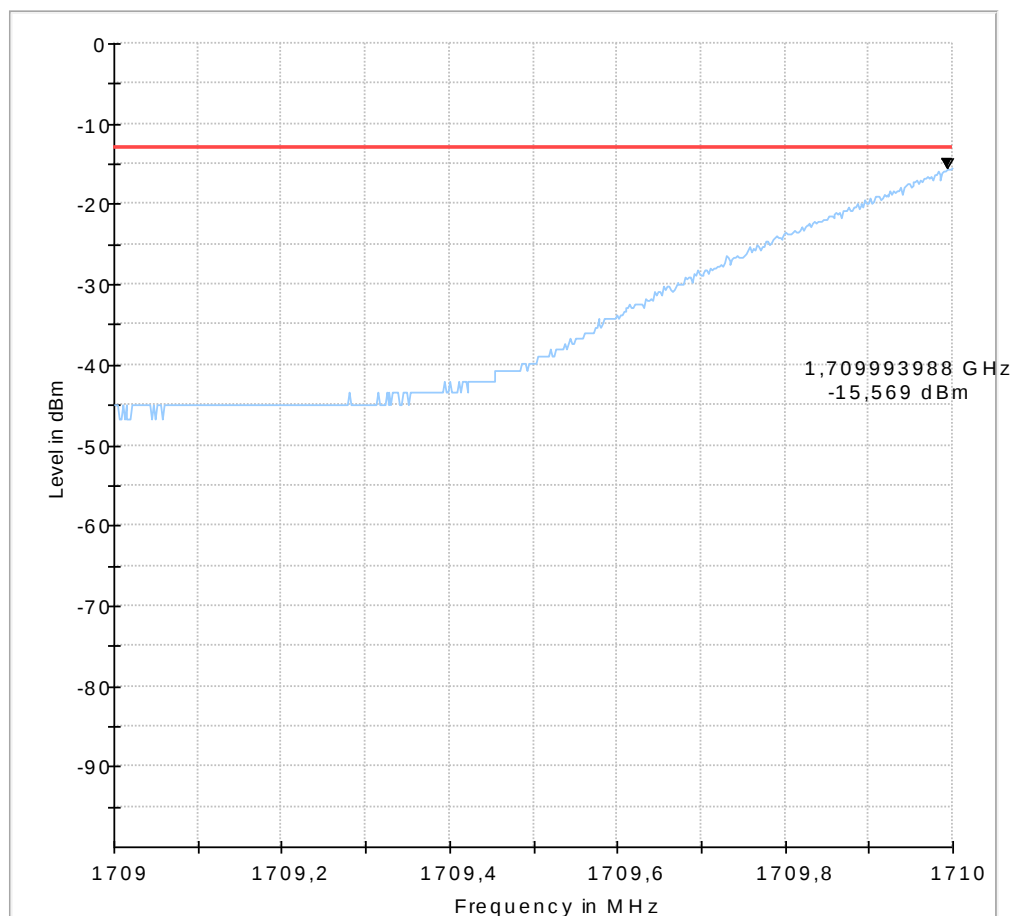
Common Information

Test Description:	Radiated Spurious Emissions LTE Band 4
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27
Comm. Link:	LTE Band 4
Operating Mode:	MS allocated channel 19975
Exclusionband:	-
Environmental Conditions:	Humidity: 50%rH; Temperature: 20°C
Operator:	RI5

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



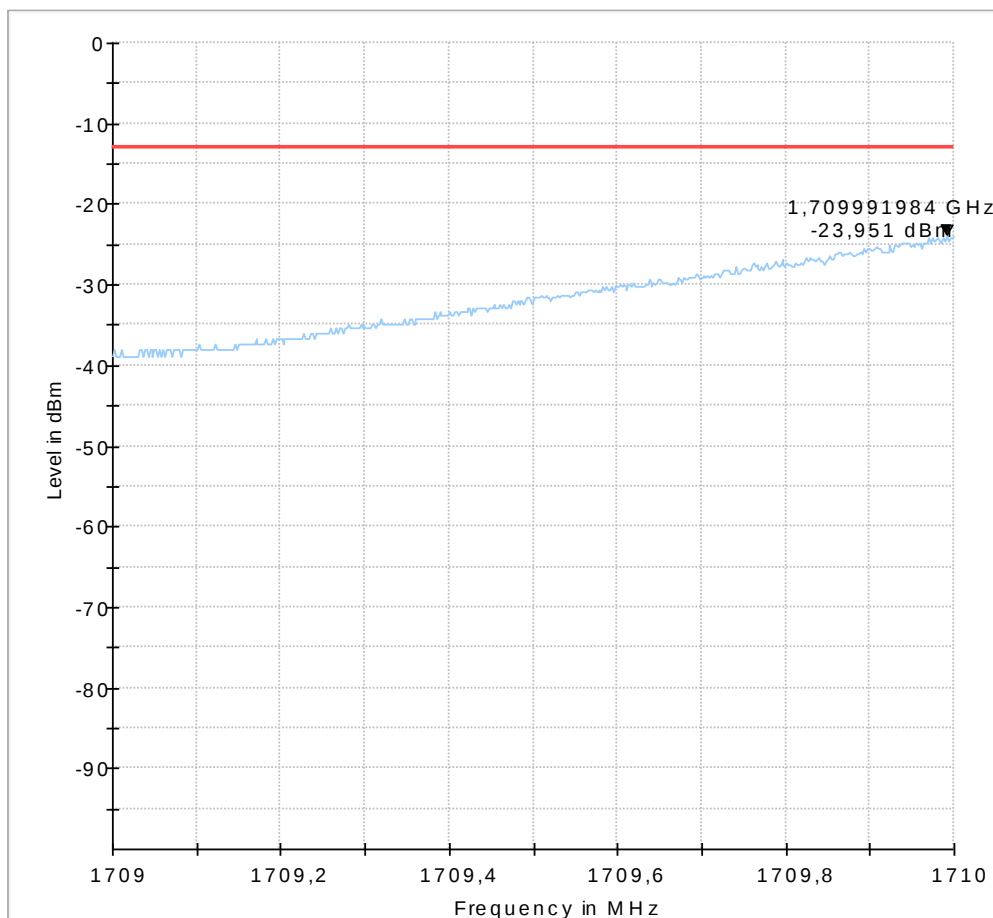
1.13.1.3. Channel 19975, QPSK, 25 RBs low position**9.46_BE_R_Ch19975_25RBlow_BW_5_QPSK****Common Information**

Test Description:	Radiated Spurious Emissions LTE Band 4
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27
Comm. Link:	LTE Band 4
Operating Mode:	MS allocated channel 19975
Exclusionband:	-
Environmental Conditions:	Humidity: 50%rH; Temperature: 20°C
Operator:	RLS

EUT Information

Manufacturer:	Gemalto M2M GmbH
-----	-----
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



1.13.1.4. Channel 19975, 16QAM, 25 RBs low position

9.47_BE_R_Ch19975_25RBlow_BW_5_QAM

Common Information

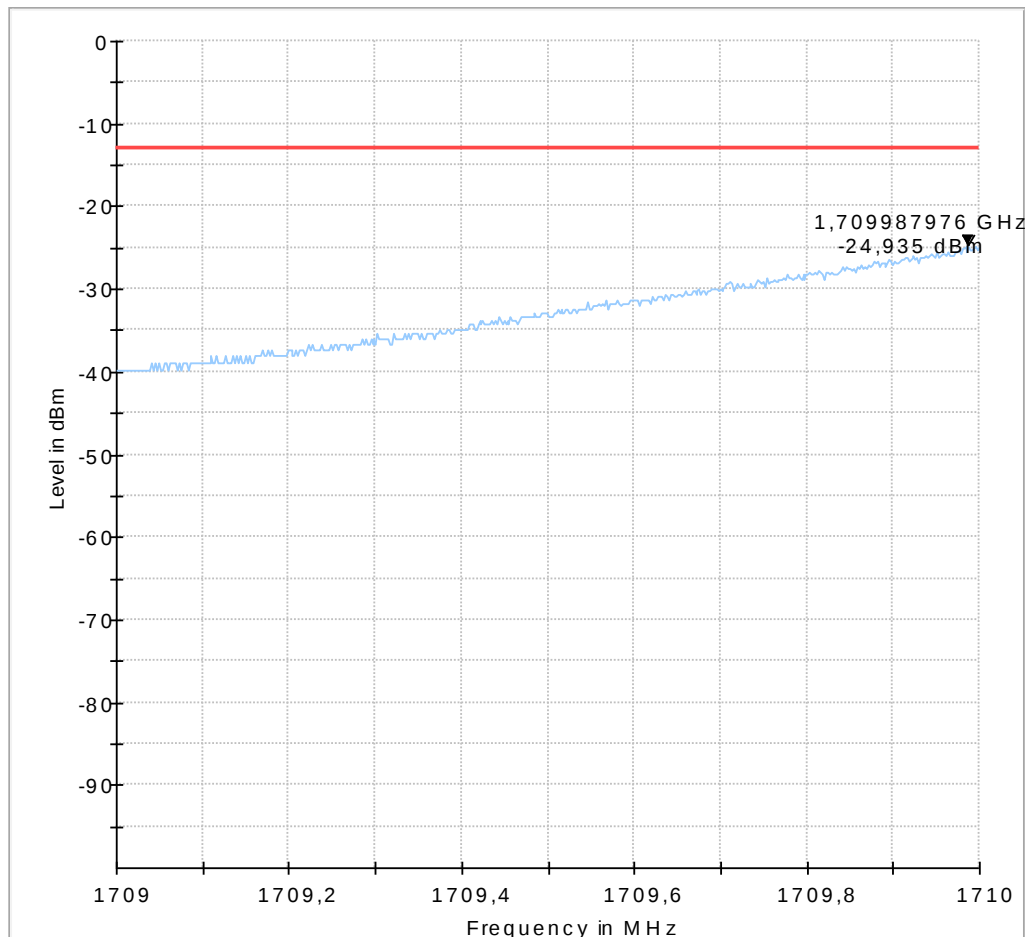
Test Description:	Radiated Spurious Emissions LTE Band 4
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27
Comm. Link:	LTE Band 4
Operating Mode:	MS allocated channel 19975
Exclusionband:	-
Environmental Conditions:	Humidity: 50%rH; Temperature: 20°C
Operator:	RI

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-

Power Supply: 12VDC over AE1
Comments: -

Full Spectrum



1.13.2. High Band-Edge 5MHz signal bandwidth

1.13.2.1. Channel 20375, QPSK, 1RB high position

9.48_BE_R_Ch20375_1RBhigh_BW_5_QPSK

Common Information

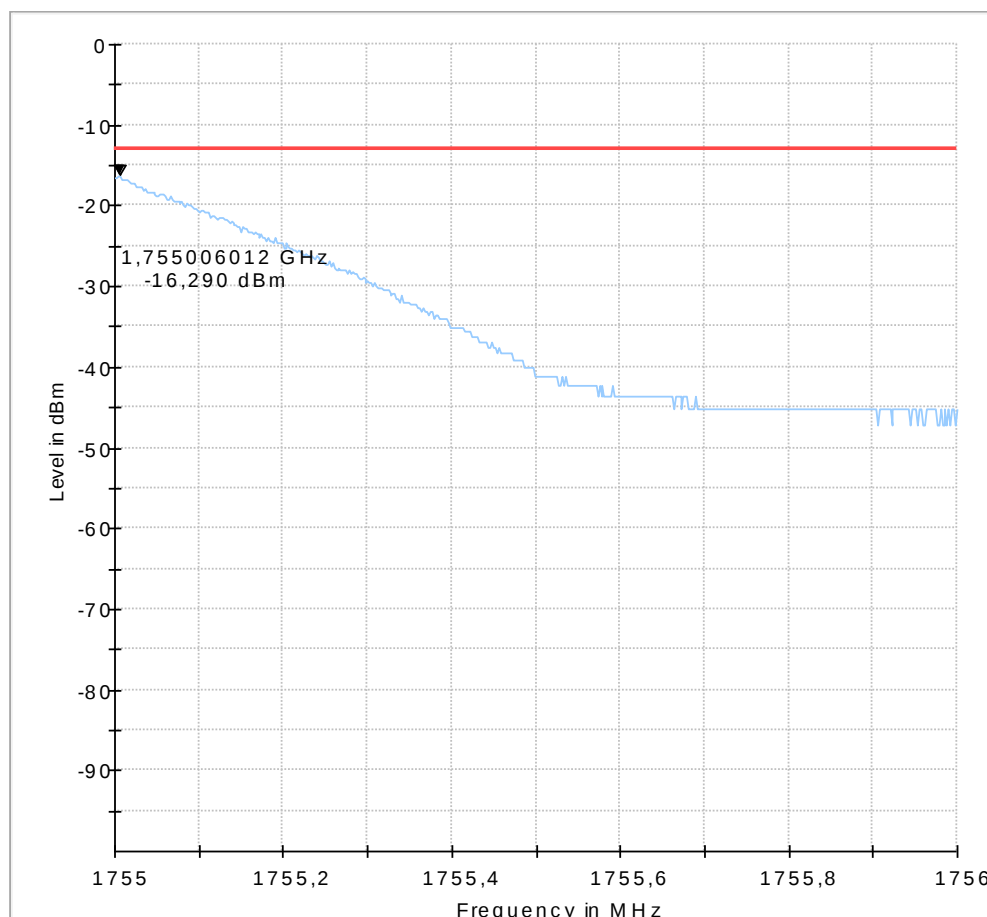
Test Description:	Radiated Spurious Emissions LTE Band 4
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27
Comm. Link:	LTE Band 4
Operating Mode:	MS allocated channel 20375
Exclusionband:	--
Environmental Conditions:	Humidity: 50%rH; Temperature: 20°C
Operator:	RI

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)

HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



1.13.2.2. Channel 20375, 16QAM, 1RB high position

9.49_BE_R_Ch20375_1RBhigh_BW_5_QAM

Common Information

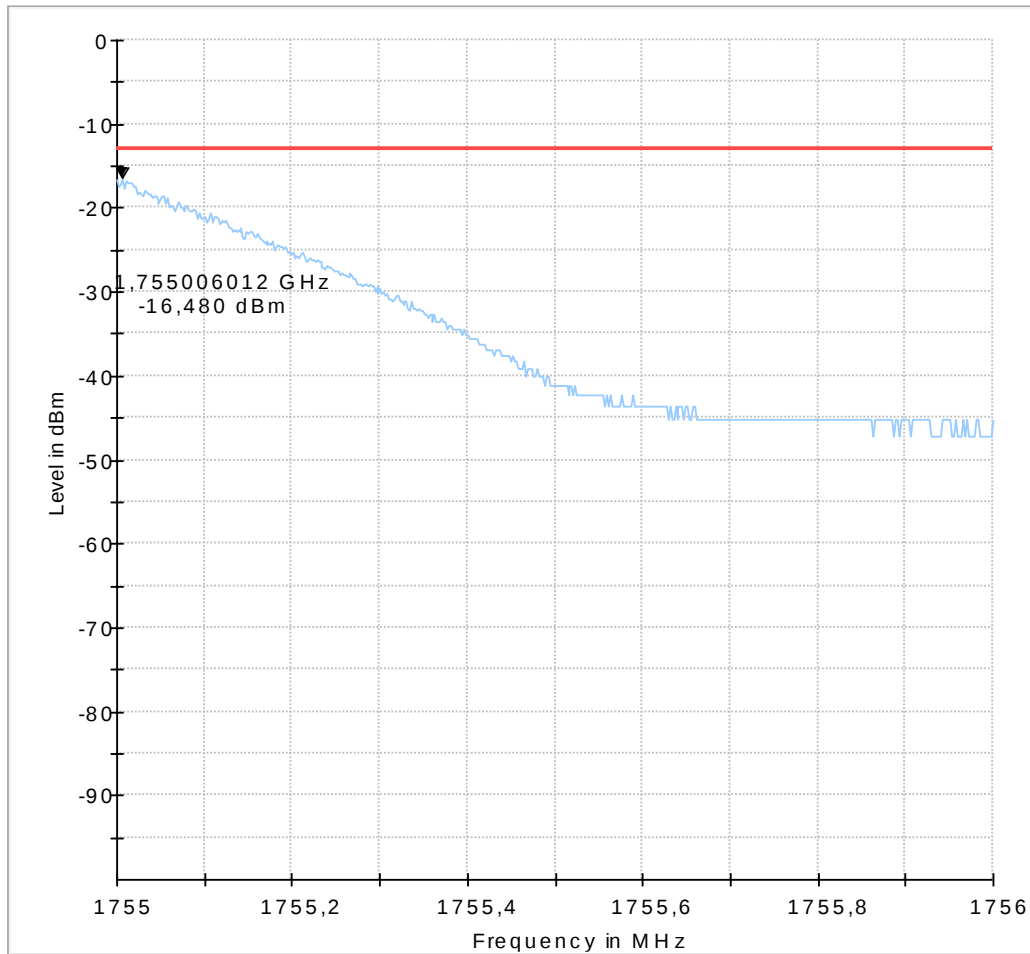
Test Description:	Radiated Spurious Emissions LTE Band 4
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27
Comm. Link:	LTE Band 4
Operating Mode:	MS allocated channel 20375
Exclusionband:	--
Environmental Conditions:	Humidity: 50%rH; Temperature: 20°C
Operator:	RI

EUT Information

Manufacturer:	Gemalto M2M GmbH
---------------	------------------

EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



1.13.2.3. Channel 20375, QPSK, 25 RBs high position

9.50_BE_R_Ch20375_25RBhigh_BW_5_QPSK

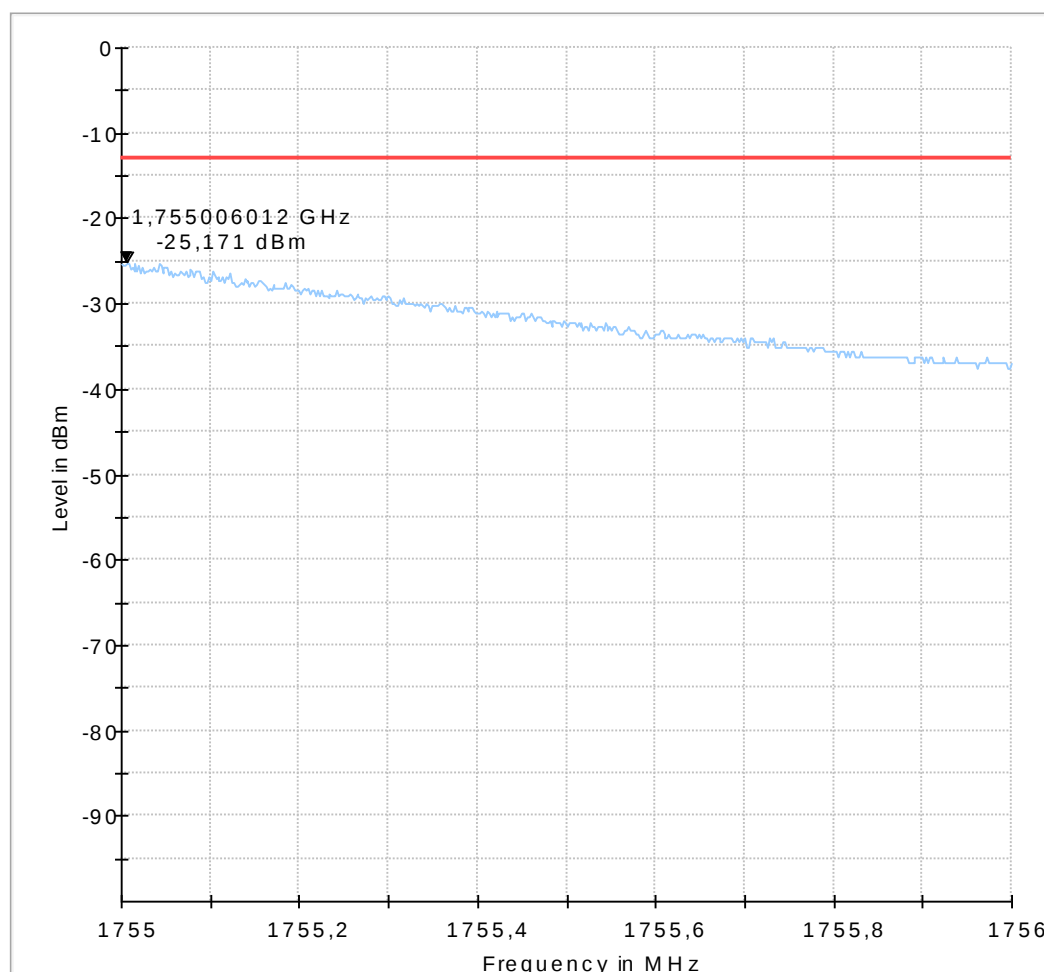
Common Information

Test Description:	Radiated Spurious Emissions LTE Band 4
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27
Comm. Link:	LTE Band 4
Operating Mode:	MS allocated channel 20375
Exclusionband:	--
Environmental Conditions:	Humidity: 50%rH; Temperature: 20°C
Operator:	RI

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



1.13.2.4. Channel 20375, 16QAM, 25RB high position

9.51_BE_R_Ch20375_25RBhigh_BW_5_QAM

Common Information

Test Description:	Radiated Spurious Emissions LTE Band 4
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27
Comm. Link:	LTE Band 4
Operating Mode:	MS allocated channel 20375
Exclusionband:	--

Environmental Conditions:
Operator:

Humidity: 50%rH; Temperature: 20°C
RIs

EUT Information

Manufacturer:

Gemalto M2M GmbH

EUT:

WMC0300EL0 (a)

HW version:

Rev01

SW version:

4.3.3.0b

SVN:

-

Config:

-

IMEI:

35541906031722

Connected Interfaces:

-

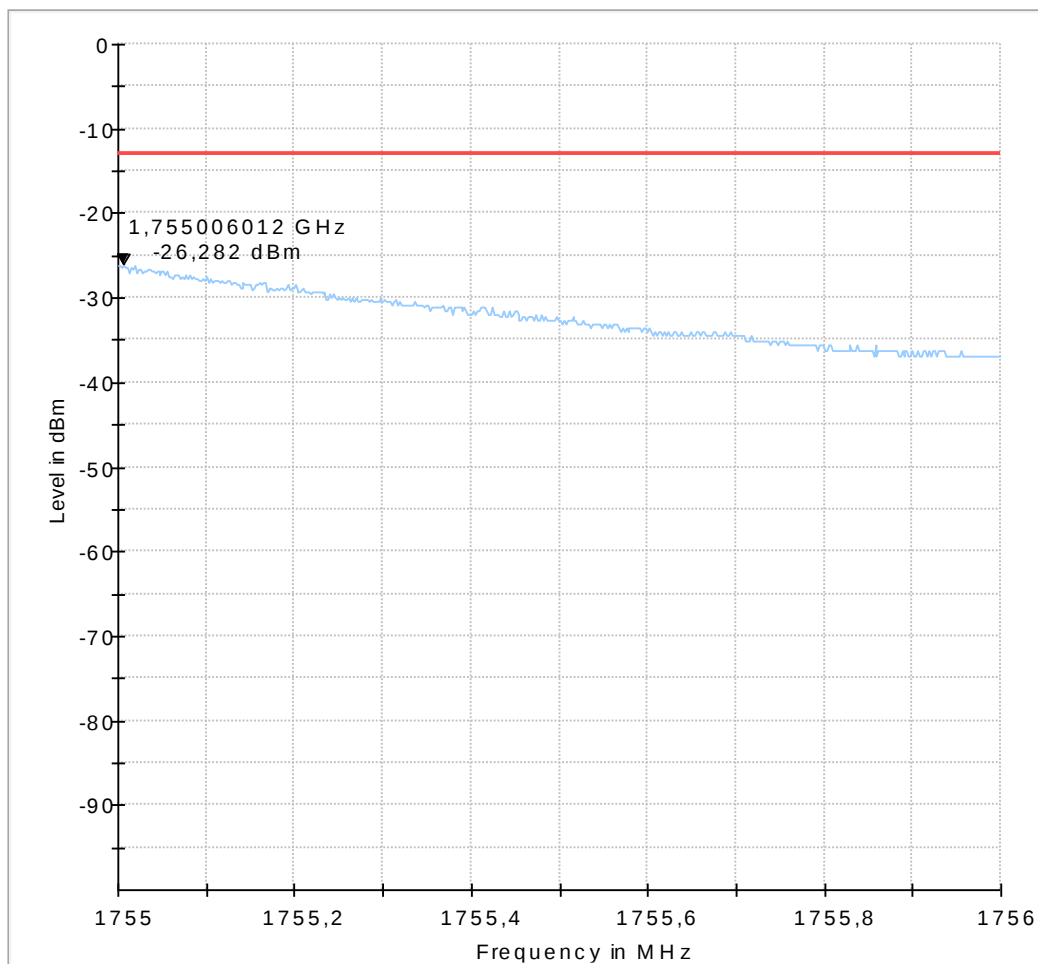
Power Supply:

12VDC over AE1

Comments:

-

Full Spectrum



1.14. Radiated emissions – band-edge (LTE Band 12)

1.14.1. Low Band-Edge 5MHz signal bandwidth

1.14.1.1. Channel 23025, QPSK, 1RB low position

9.01_BE_R_CH23025_QPSK_1RBlow_5MHz

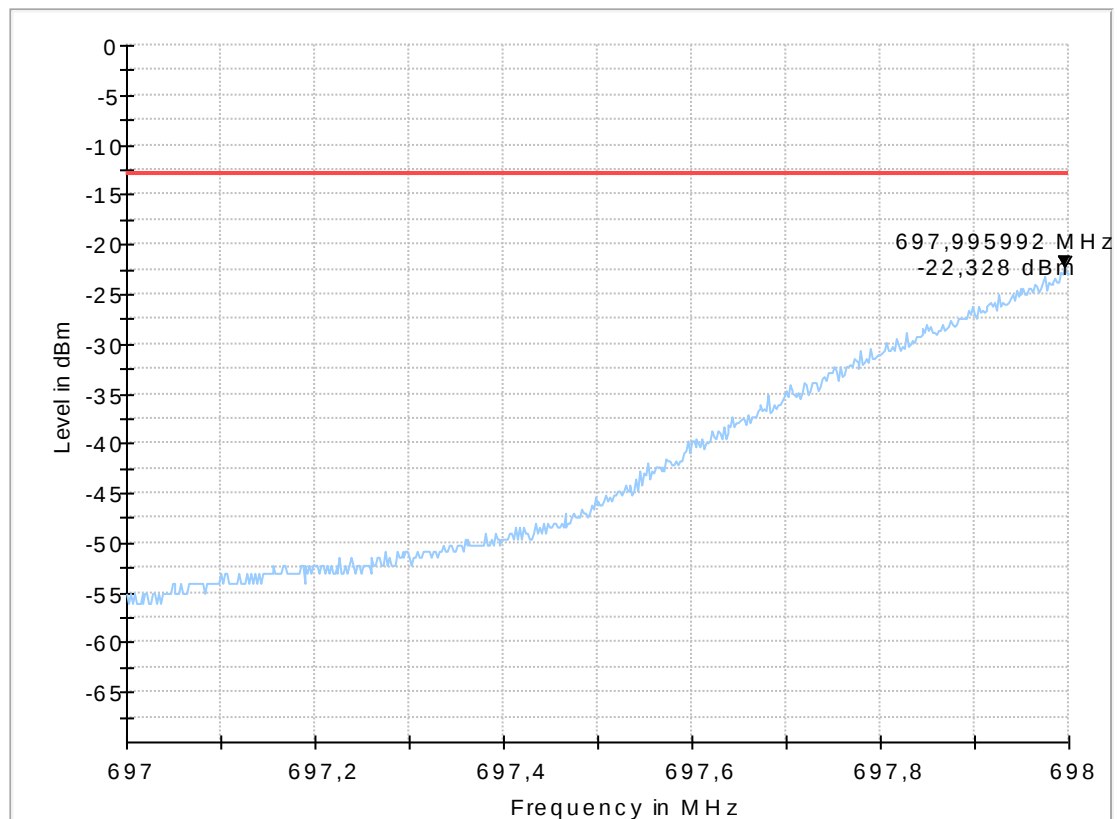
Common Information

Test Description:	Radiated Band Edge Compliance LTE B12
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27
Operating Mode:	LTE Band 12 TX ch23025
Exclusionband:	--
Environmental Conditions:	Humidity: 35%rH; Temperature: 22°C
Operator:	RI

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



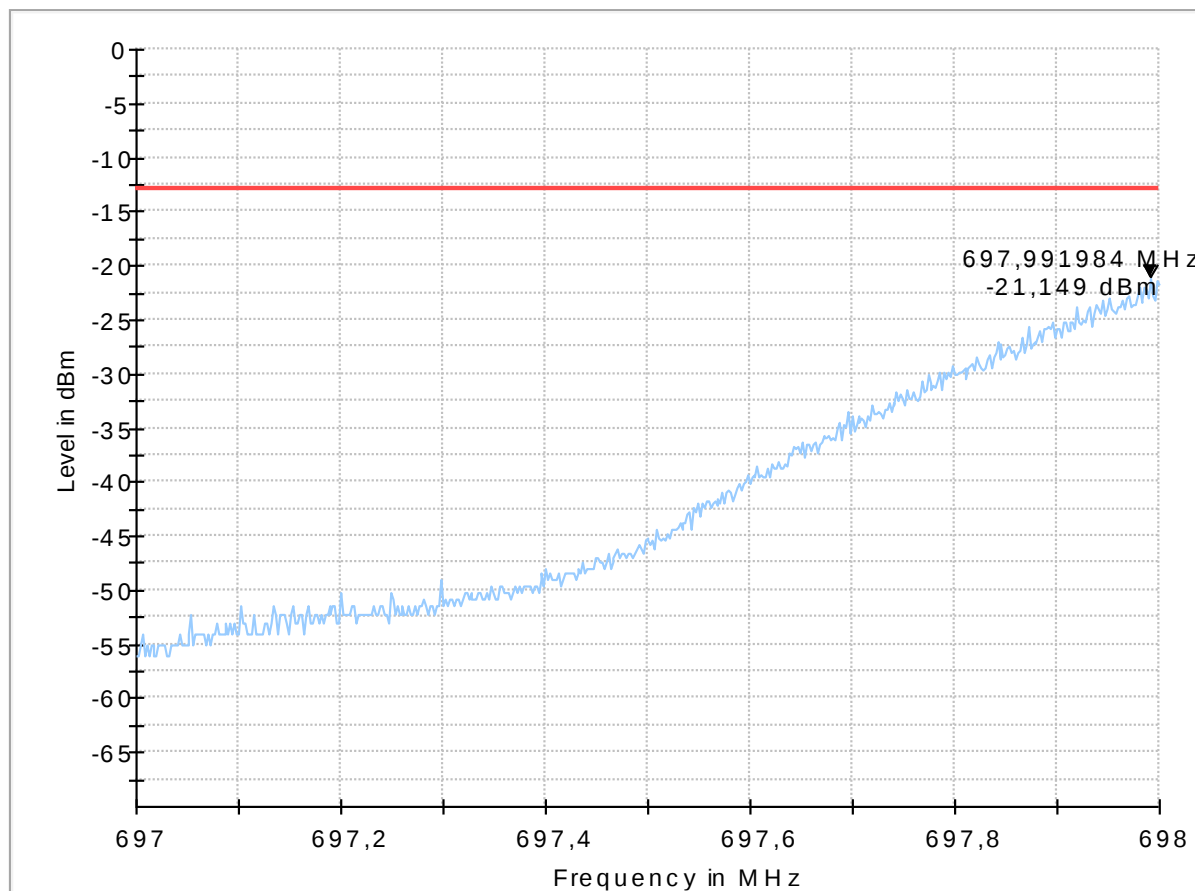
1.14.1.2. Channel 23025, 16QAM, 1RB low position**9.02_BE_R_CH23035_QAM_1RBlow_5MHz****Common Information**

Test Description:	Radiated Band Edge Compliance LTE B12
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27
Operating Mode:	LTE Band 12 TX ch23035
Exclusionband:	--
Environmental Conditions:	Humidity: 35%rH; Temperature: 22°C
Operator:	RI5

EUT Information

Manufacturer:	Gemalto M2M GmbH
-----	-----
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



1.14.1.3. Channel 23025, QPSK, 25 RBs low position

9.03_BE_R_CH23035_QPSK_25RBlow_5MHz

Common Information

Test Description:	Radiated Band Edge Compliance LTE B12
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27
Operating Mode:	LTE Band 12 TX ch23035
Exclusionband:	--
Environmental Conditions:	Humidity: 35%rH; Temperature: 22°C
Operator:	RI5

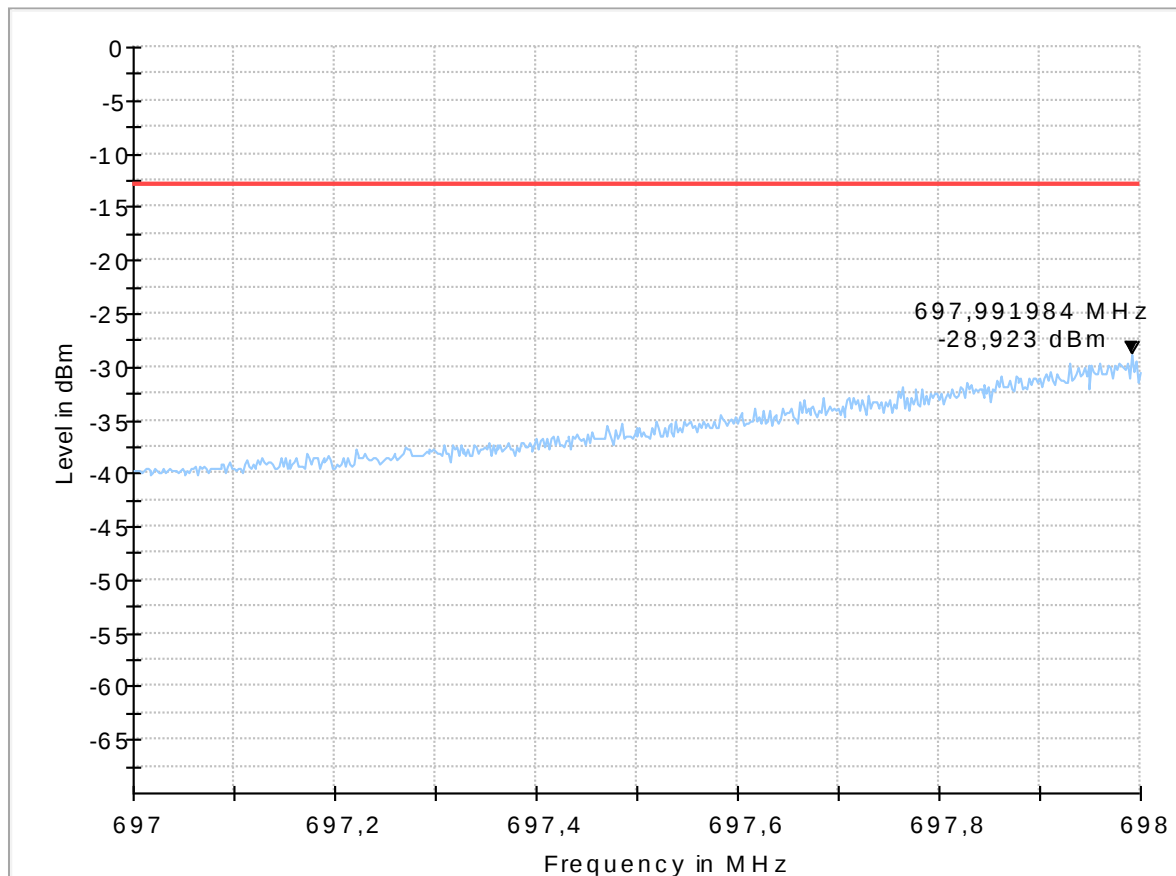
EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1

Comments:

-

Full Spectrum



1.14.1.4. Channel 23025, 16QAM, 25RBs low position

9.04_BE_R_CH23035_QAM_25RBlow_5MHz

Common Information

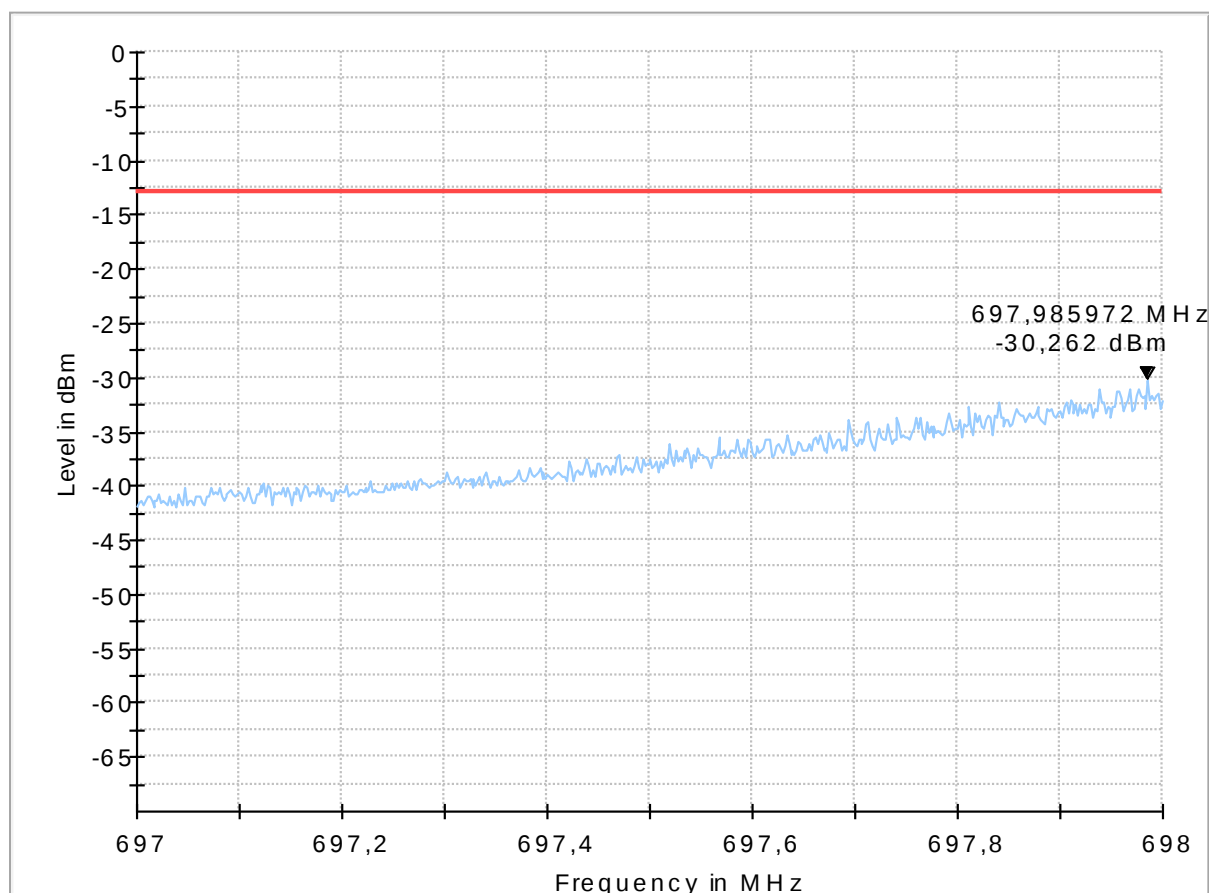
Test Description:	Radiated Band Edge Compliance LTE B12
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27
Operating Mode:	LTE Band 12 TX ch23035
Exclusionband:	--
Environmental Conditions:	Humidity: 35%rH; Temperature: 22°C
Operator:	RI

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-

Config: -
IMEI: 35541906031722
Connected Interfaces: -
Power Supply: 12VDC over AE1
Comments: -

Full Spectrum



1.14.2. Low Band-Edge 5MHz signal bandwidth

1.14.2.1. Channel CH23155, QPSK, 1RB high position

9.05_BE_R_CH23155_QPSK_1RBhigh_5MHz

Common Information

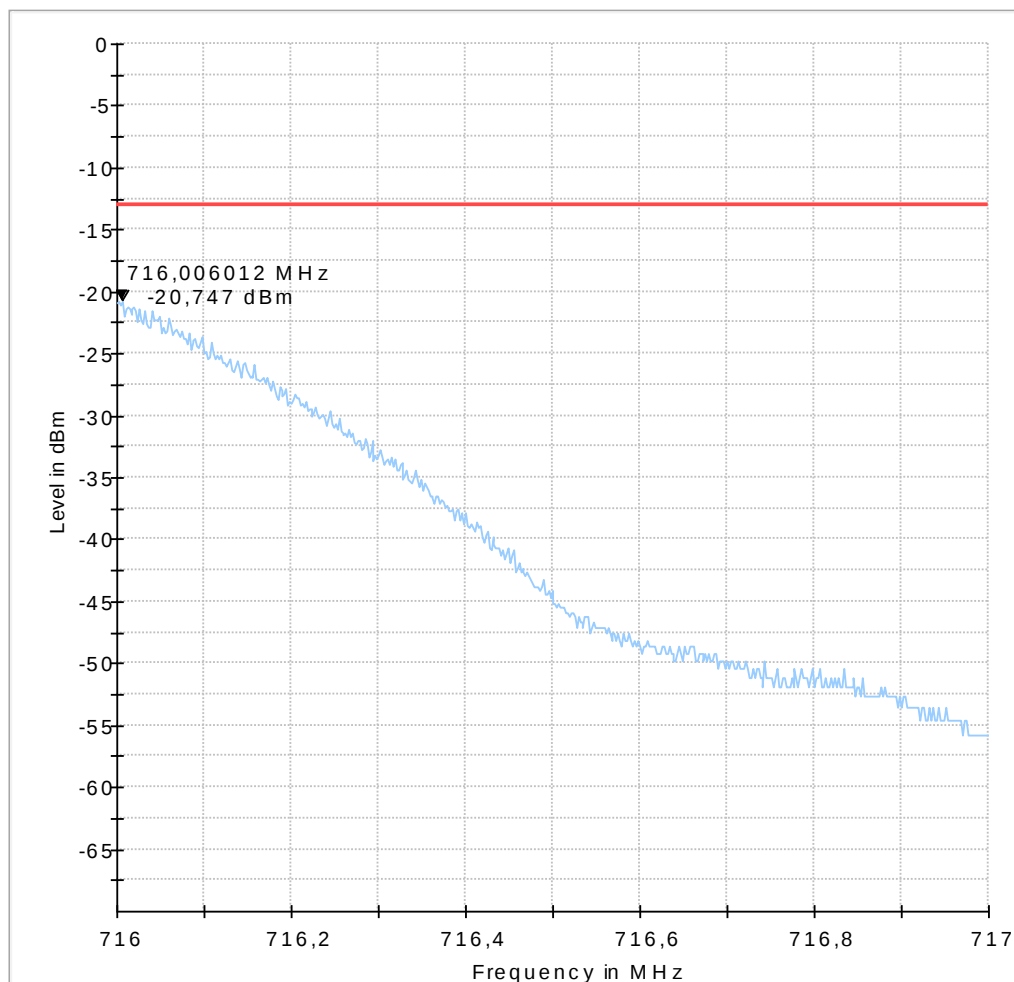
Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band 12
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a)
Operating Mode:	UE allocated channel 23155/ BW 5MHz: / RB1
Environmental Conditions:	Humidity: 35%rH; Temperature: 22°C
Operator:	RI

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)

HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



1.14.2.2. Channel CH23155, 16QAM, 1RB high position

9.06_BE_R_CH23155_QAM_1RBhigh_5MHz

Common Information

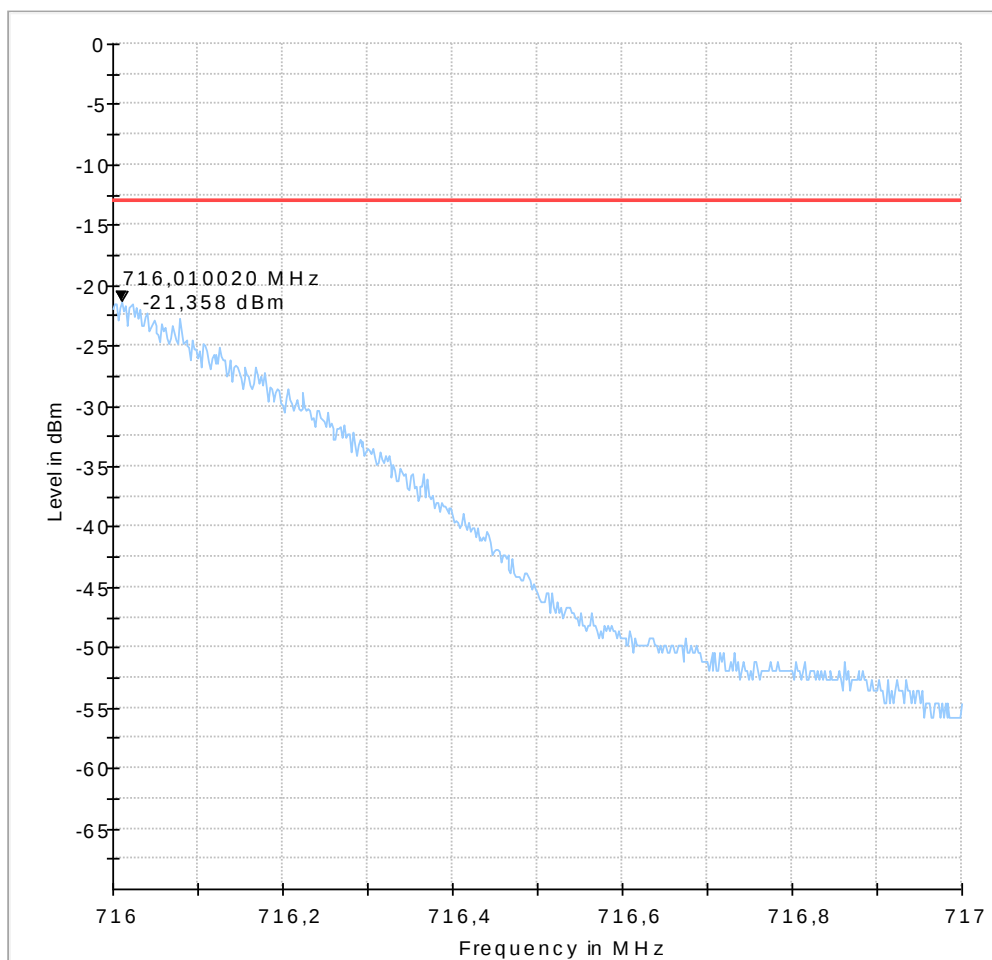
Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band 12
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a)
Operating Mode:	UE allocated channel 23155/ BW 5MHz: / RB1
Environmental Conditions:	Humidity: 35%rH; Temperature: 22°C
Operator:	RLs

EUT Information

Manufacturer:	Gemalto M2M GmbH
---------------	------------------

EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



1.14.2.3. Channel CH23155, QPSK, 25 RBs high position

9.07_BE_R_CH23155_QPSK_25RBhigh_5MHz

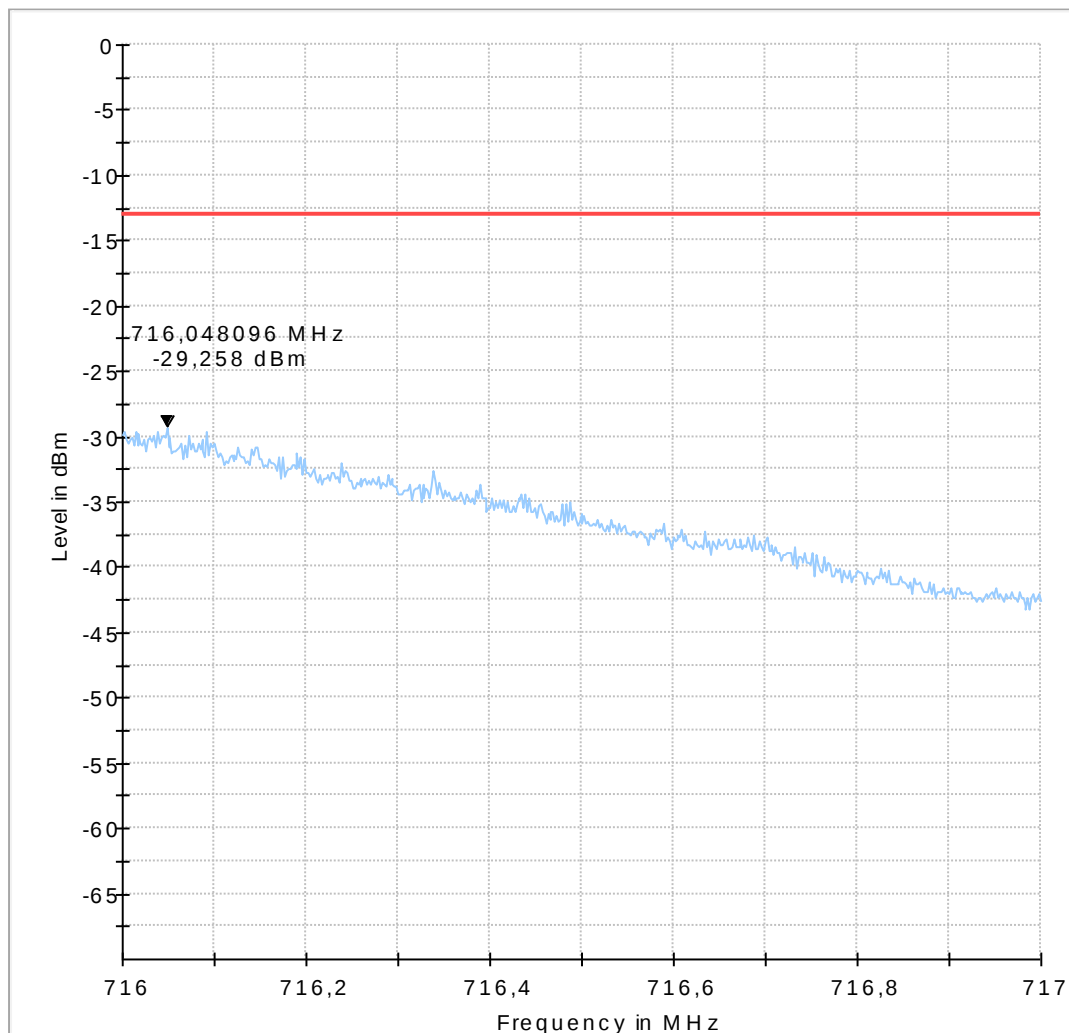
Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band 12
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a)
Operating Mode:	UE allocated channel 23155/ BW 5MHz: / RB25
Environmental Conditions:	Humidity: 35%rH; Temperature: 22°C
Operator:	RI

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-
Power Supply:	12VDC over AE1
Comments:	-

Full Spectrum



1.14.2.4. Channel CH23155, 16QAM, 25 RBs high position

9.08_BE_R_CH23155_QAM_25RBhigh_5MHz

Common Information

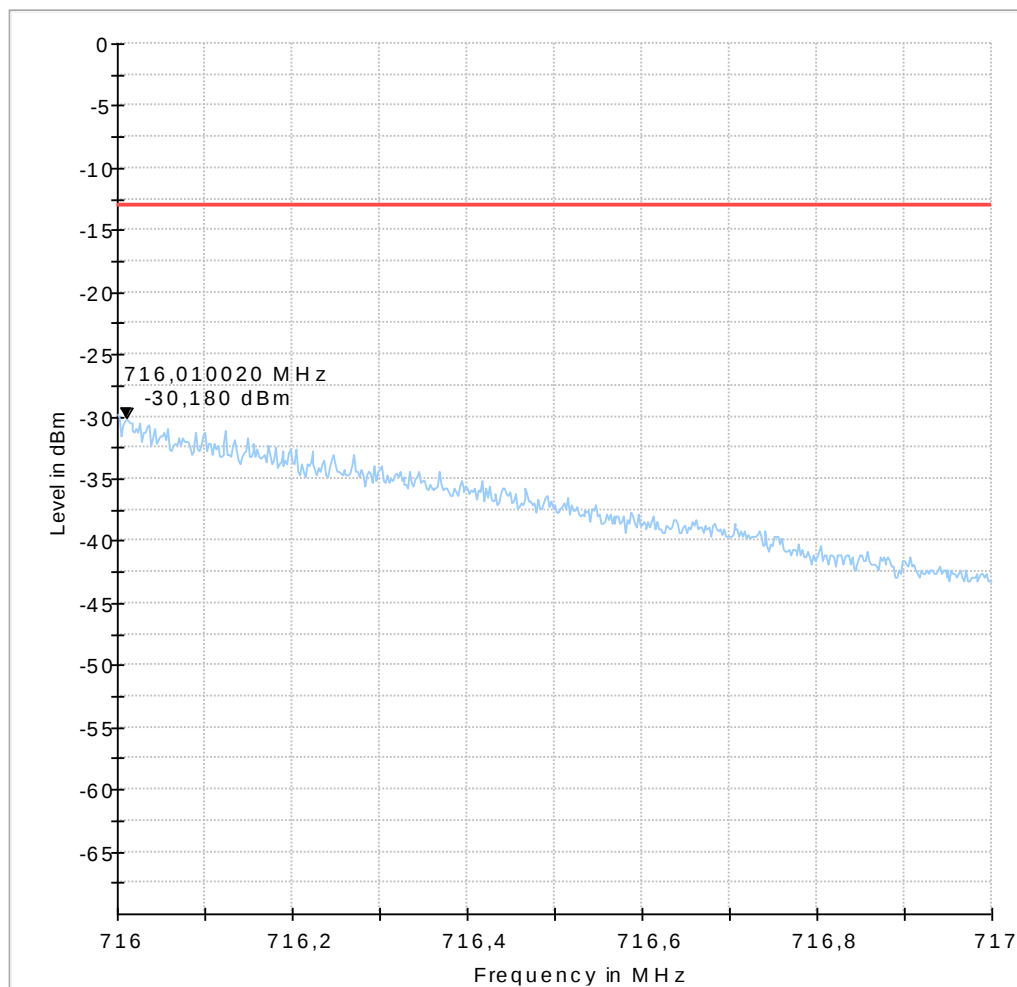
Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band 12
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a)
Operating Mode:	UE allocated channel 23155/ BW 5MHz: / RB25
Environmental Conditions:	Humidity: 35%rH; Temperature: 22°C
Operator:	RI

EUT Information

Manufacturer:	Gemalto M2M GmbH
EUT:	WMC0300EL0 (a)
HW version:	Rev01
SW version:	4.3.3.0b
SVN:	-
Config:	-
IMEI:	35541906031722
Connected Interfaces:	-

Power Supply: 12VDC over AE1
Comments: -

Full Spectrum

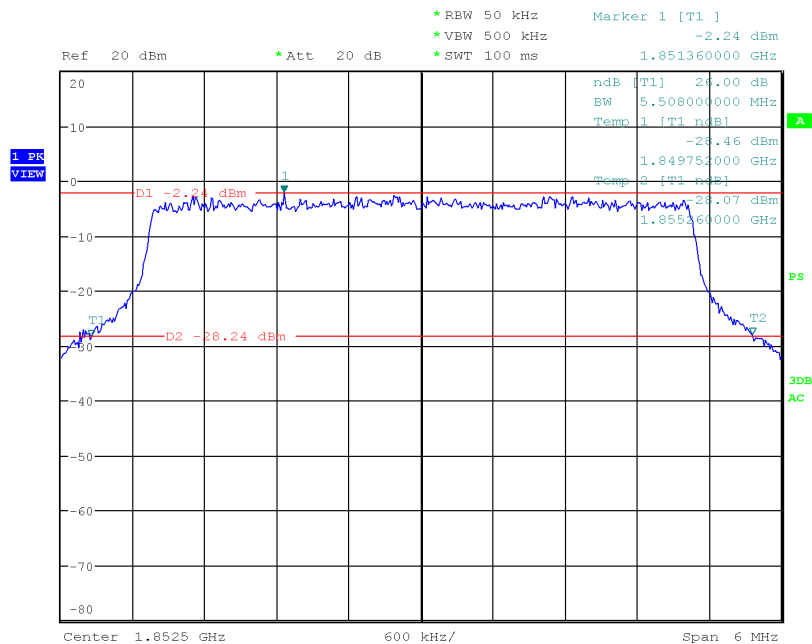


1.15. 26dBc Emission bandwidth

1.15.1. LTE Band 2

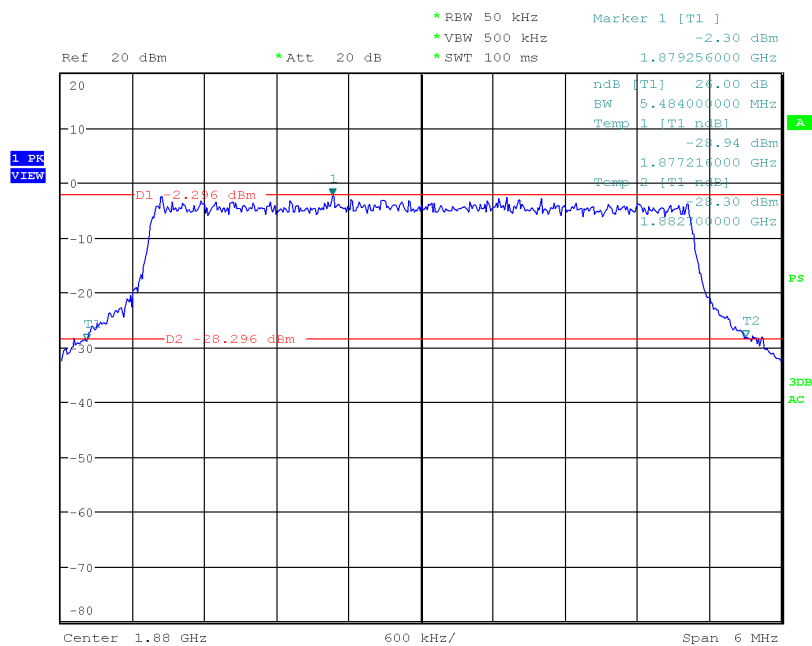
1.15.1.1. BW = 5MHz

QPSK-Modulation



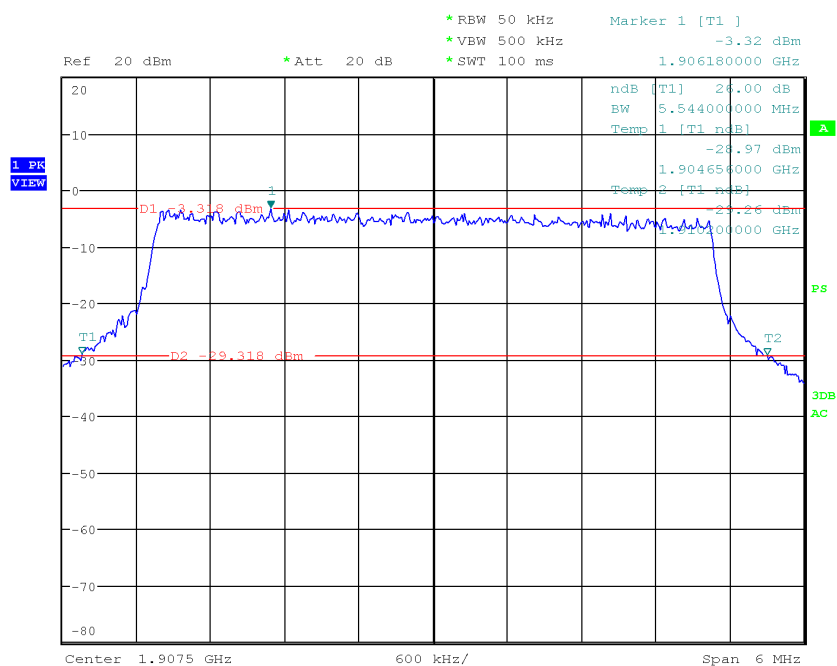
Date: 22.SEP.2016 12:14:58

Diagram 34.206_26dB BW 5MHz Ch_18625



Date: 22.SEP.2016 12:18:13

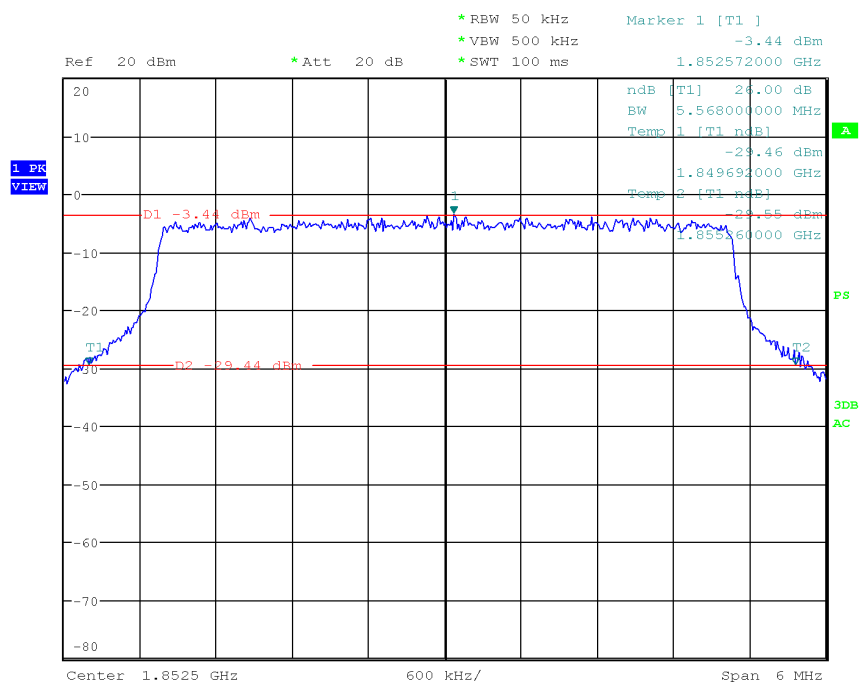
Diagram 34.207_26dB BW 5MHz Ch_18900



Date: 22.SEP.2016 12:20:30

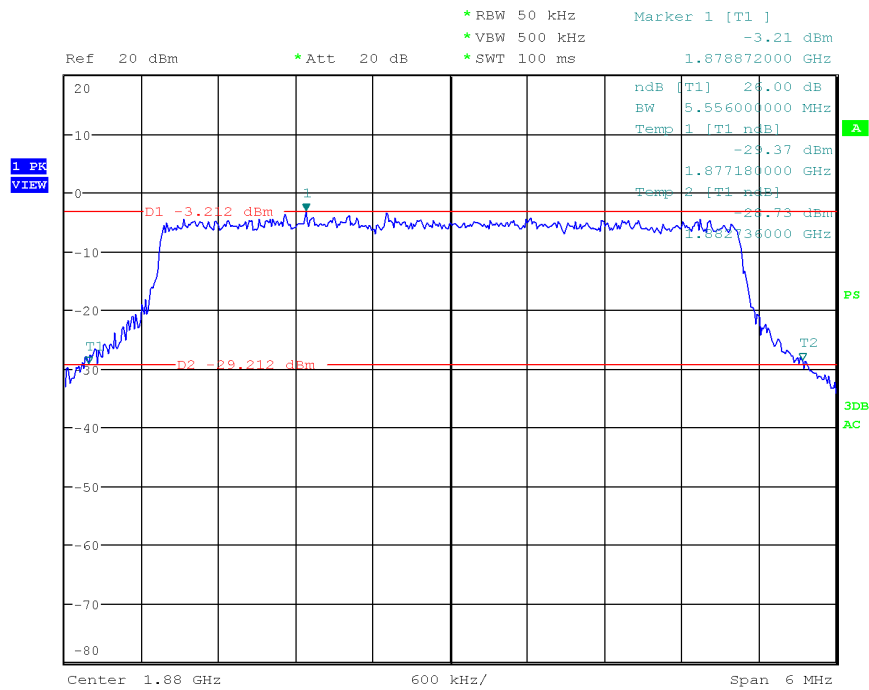
Diagram 34.208_26dB BW 5MHz Ch_19175

16-QAM-Modulation



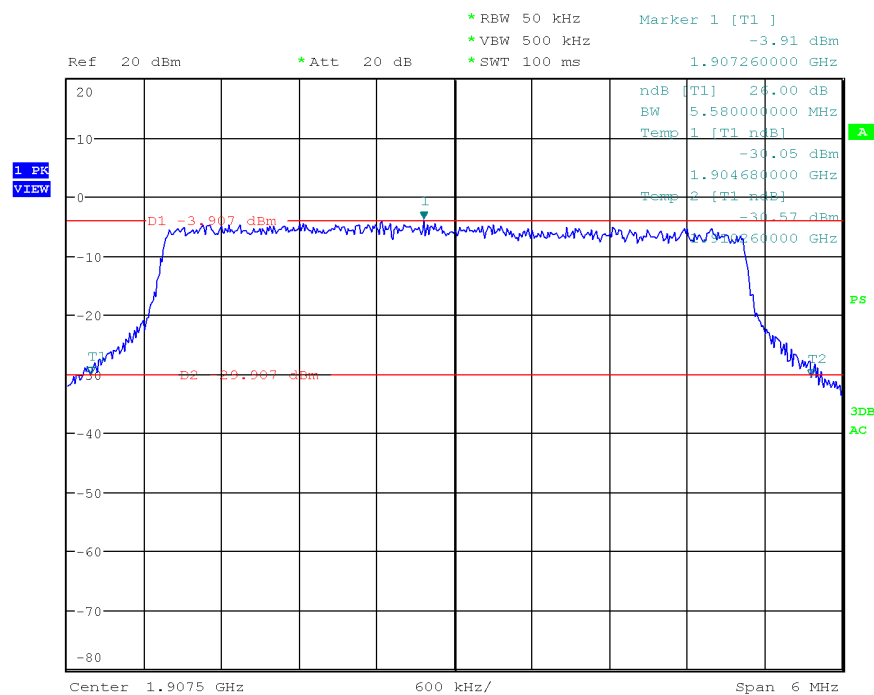
Date: 22.SEP.2016 12:27:40

Diagram 34.224_26dB BW 5MHz Ch_18625



Date: 22.SEP.2016 12:24:37

Diagram 34.225_26dB BW 5MHz Ch_18900

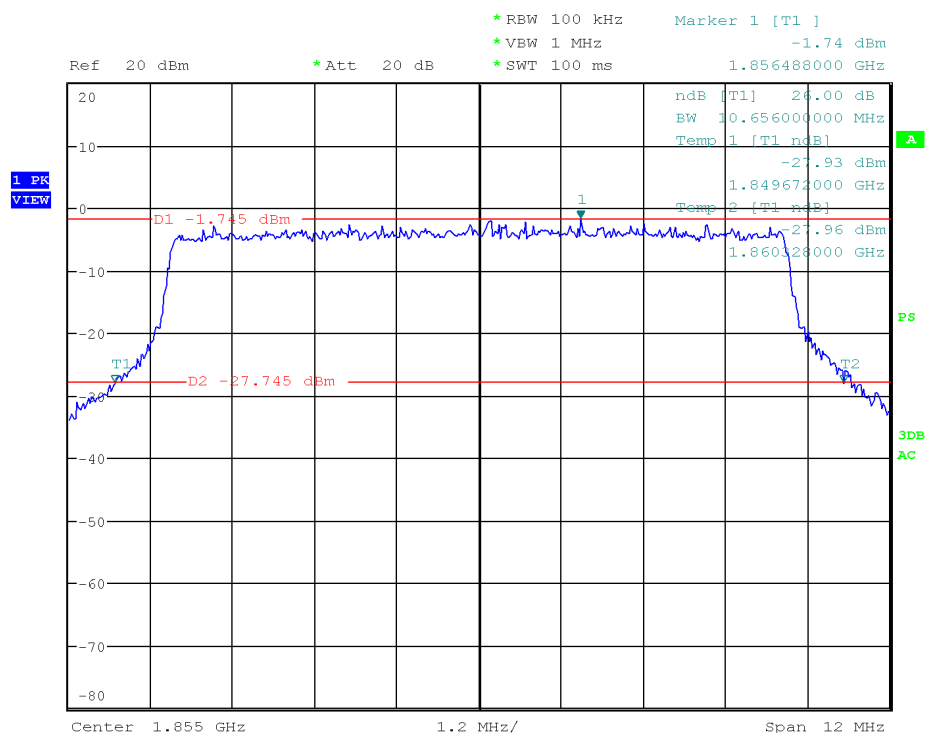


Date: 22.SEP.2016 12:21:51

Diagram 34.226_26dB BW 5MHz Ch_19175

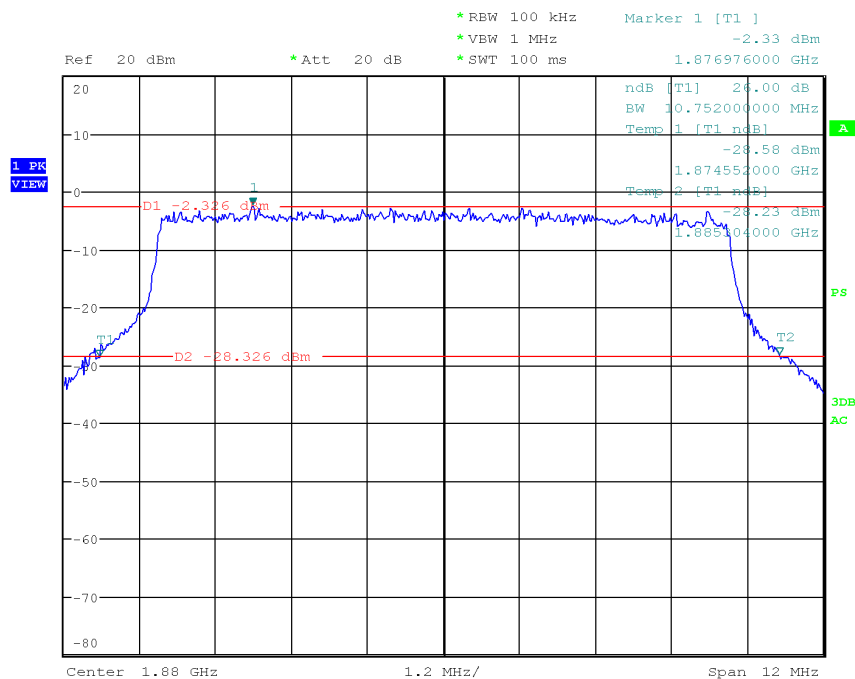
1.15.1.2. BW = 10MHz

QPSK-Modulation



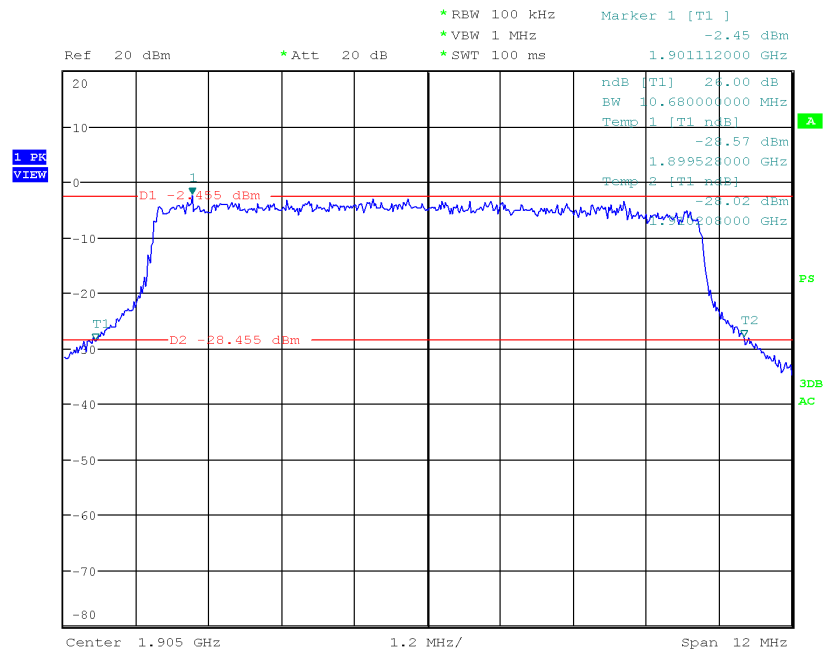
Date: 22.SEP.2016 12:33:00

Diagram 34.209_26dB BW 10MHz Ch_18650



Date: 22.SEP.2016 12:42:48

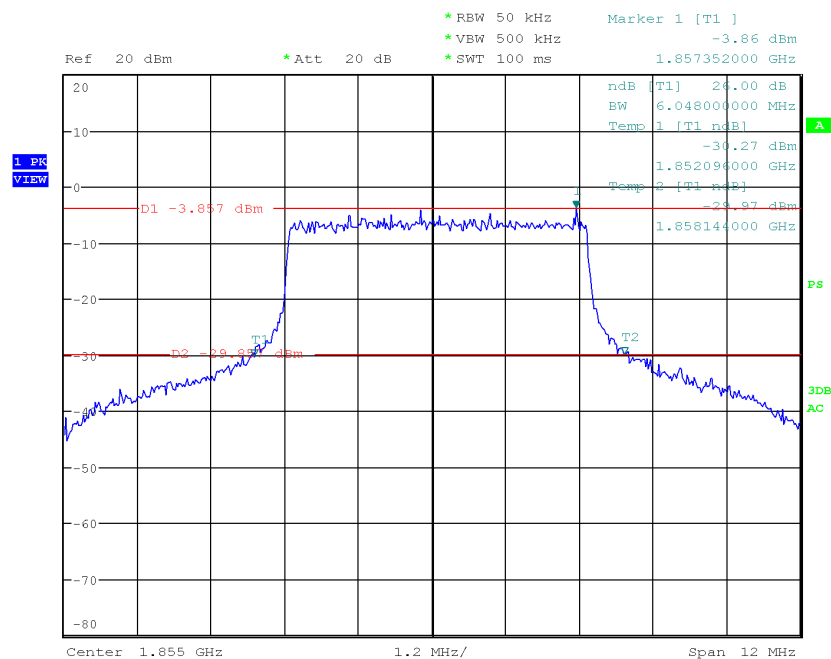
Diagram 34.2010_26dB BW 10MHz Ch_18900



Date: 22.SEP.2016 12:48:34

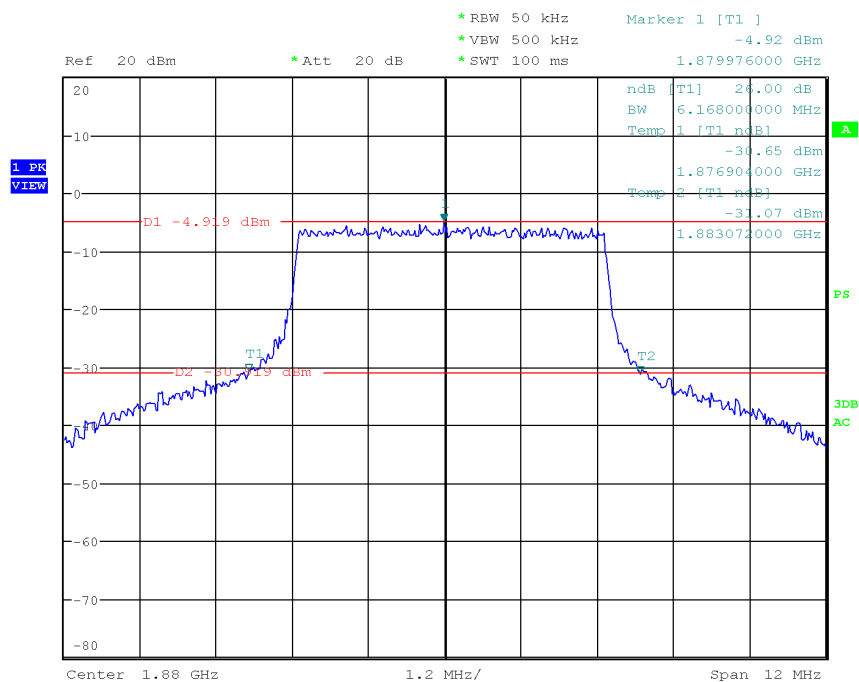
Diagram 34.211_26dB BW 10MHz Ch_19150

16-QAM-Modulation



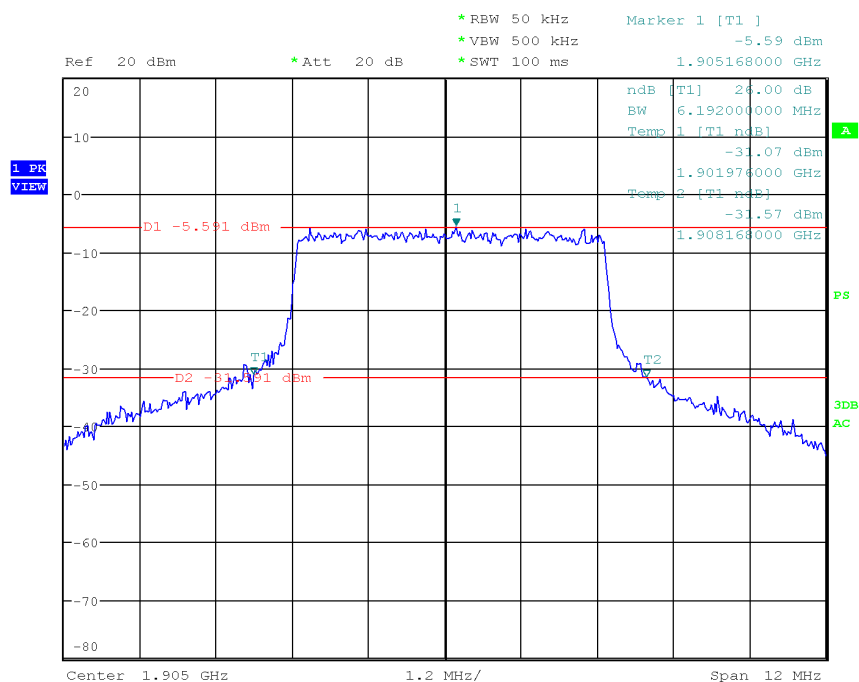
Date: 12.OCT.2016 11:34:16

Diagram 34.227_26dB BW 10MHz Ch_18650



Date: 12.OCT.2016 11:56:45

Diagram 34.228_26dB BW 10MHz Ch_18900

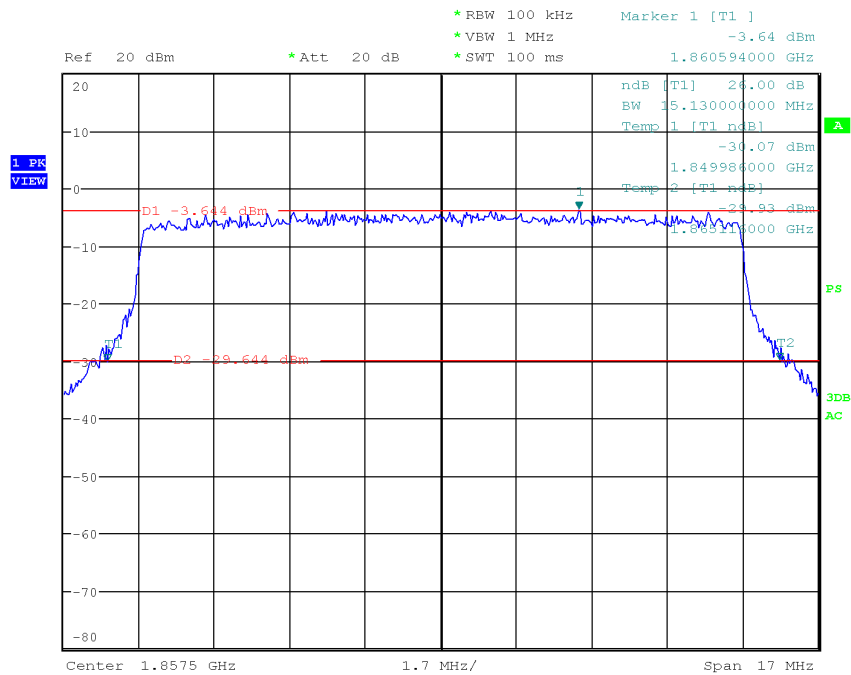


Date: 12.OCT.2016 12:00:10

Diagram 34.229_26dB BW 10MHz Ch_19150

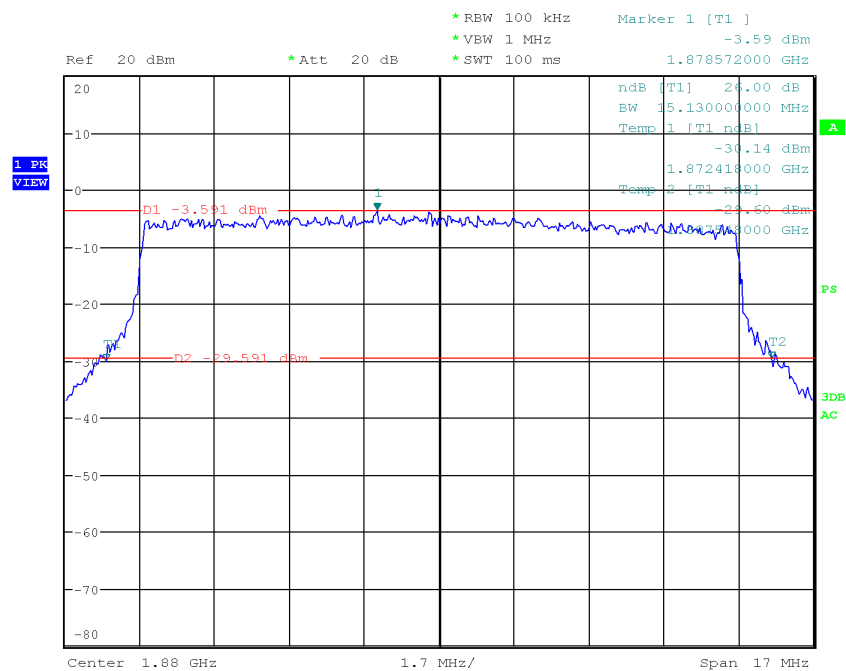
1.15.1.3. BW = 15MHz

QPSK-Modulation



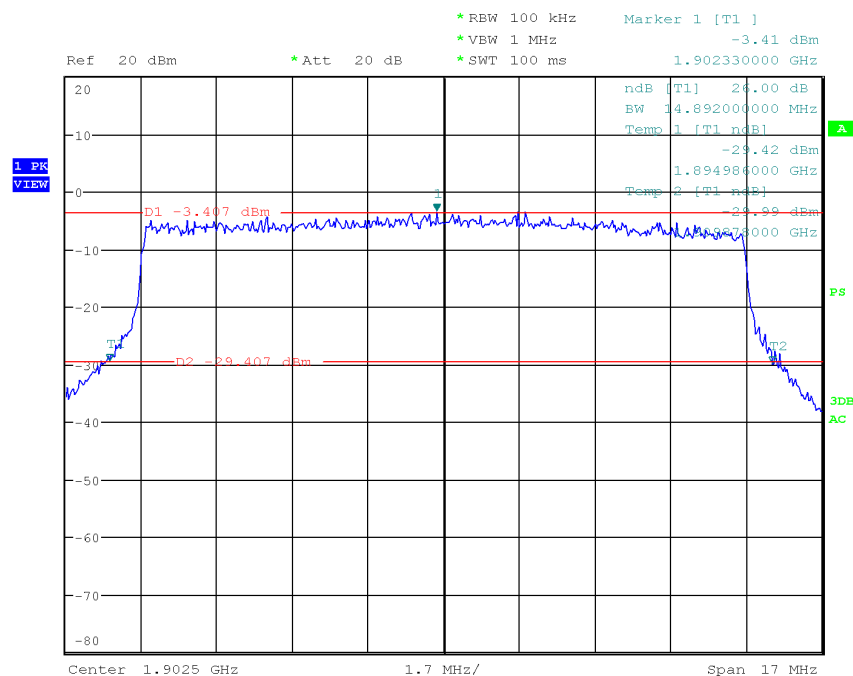
Date: 22.SEP.2016 12:52:26

Diagram 34.212_26dB BW 15MHz Ch_18675



Date: 22.SEP.2016 12:54:46

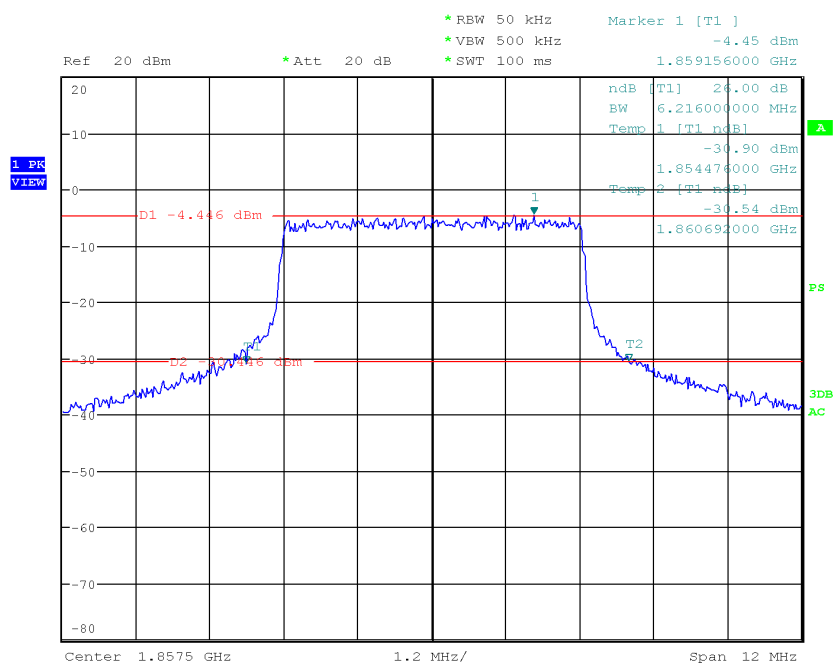
Diagram 34.213_26dB BW 15MHz Ch_18900



Date: 22.SEP.2016 12:56:33

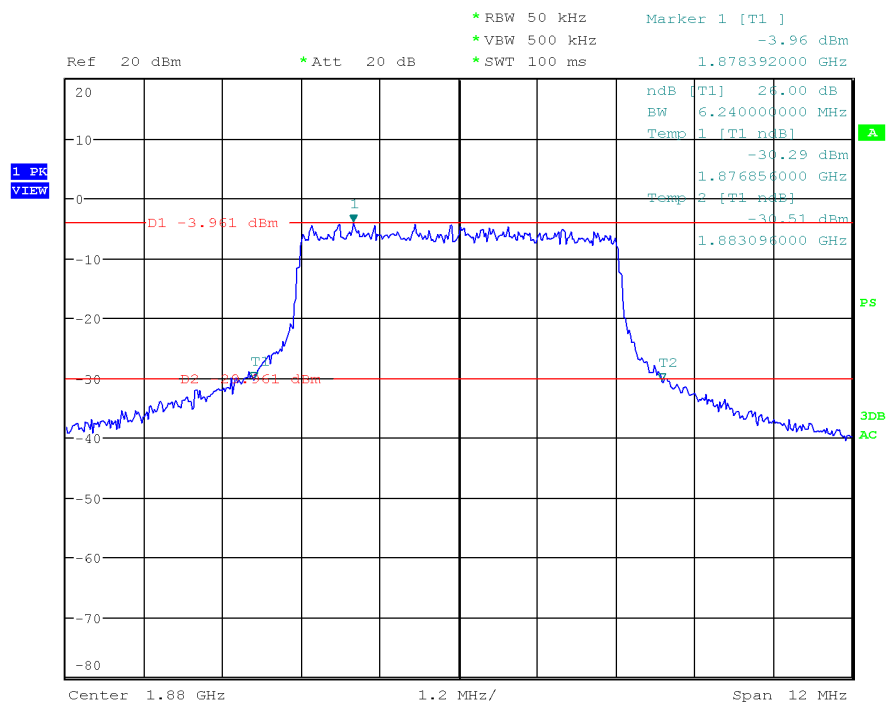
Diagram 34.214_26dB BW 15MHz Ch_19125

16-QAM-Modulation



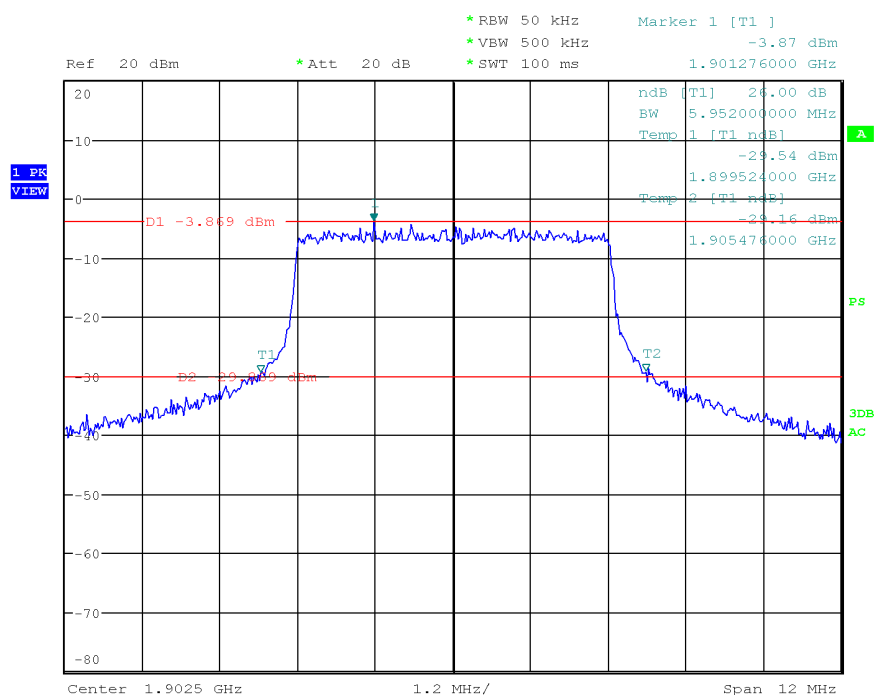
Date: 12.OCT.2016 12:05:11

Diagram 34.230_26dB BW 15MHz Ch_18675



Date: 12.OCT.2016 12:07:37

Diagram 34.231_26dB BW 15MHz Ch_18900

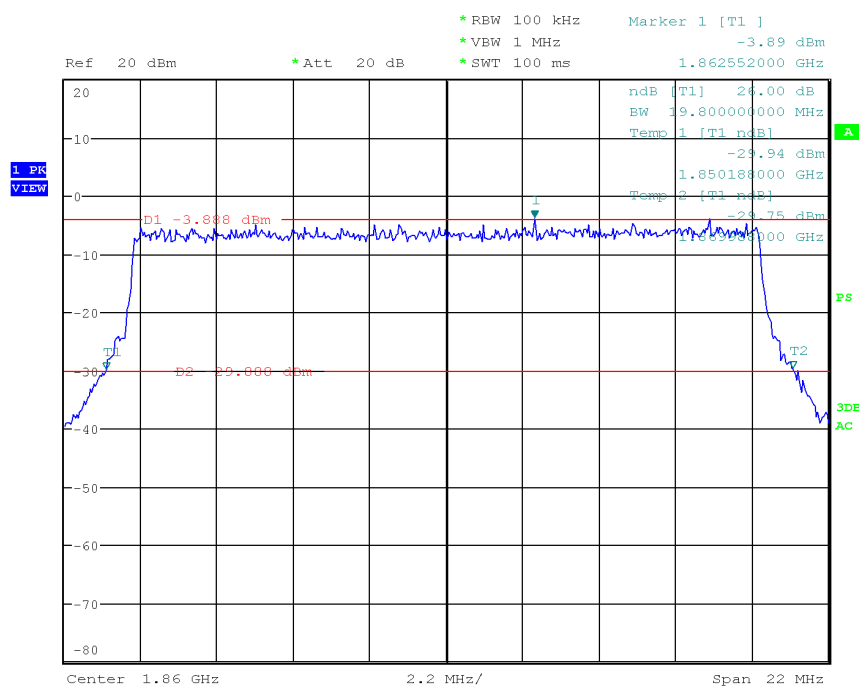


Date: 12.OCT.2016 12:18:43

Diagram 34.232_26dB BW 15MHz Ch_19125

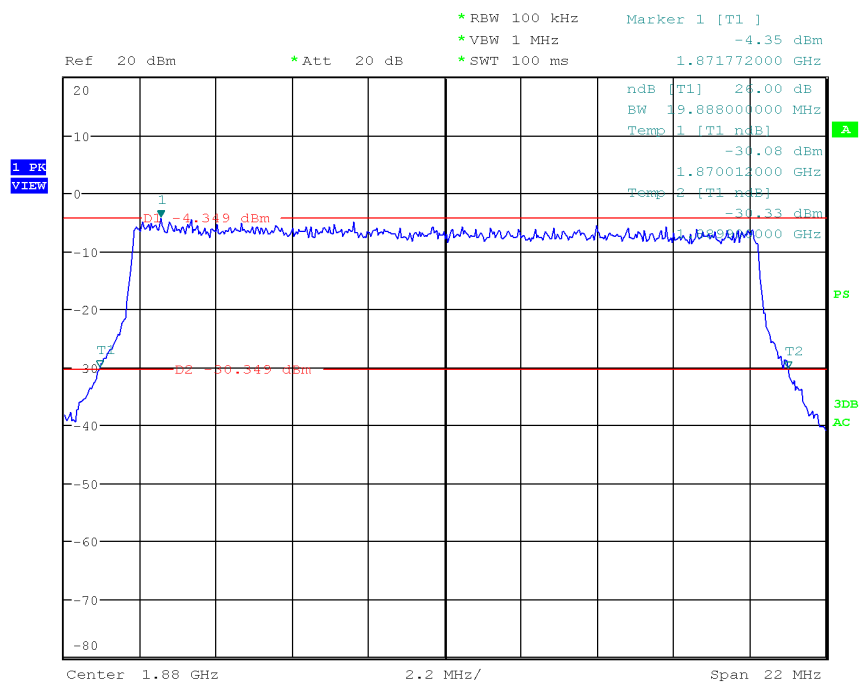
1.15.1.4. BW = 20MHz

QPSK-Modulation



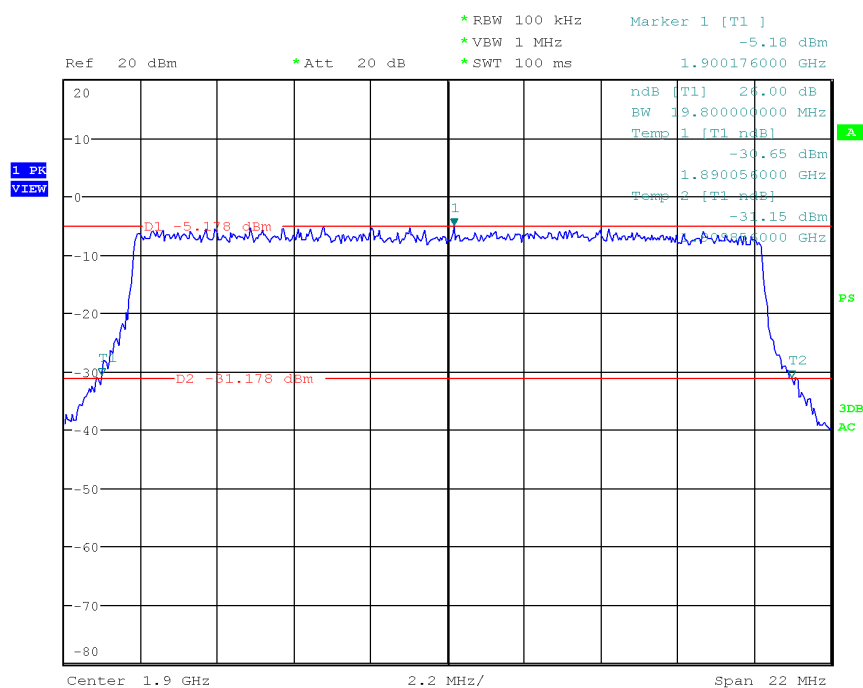
Date: 22.SEP.2016 13:01:59

Diagram 34.215_26dB BW 20MHz Ch_18700



Date: 22.SEP.2016 13:03:56

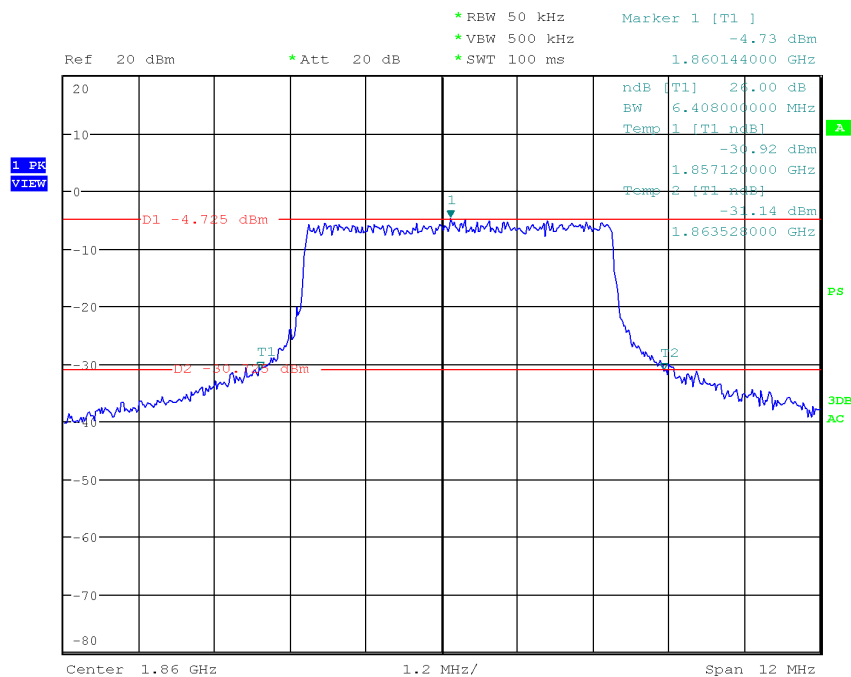
Diagram 34.216_26dB BW 20MHz Ch_18900



Date: 22.SEP.2016 13:15:18

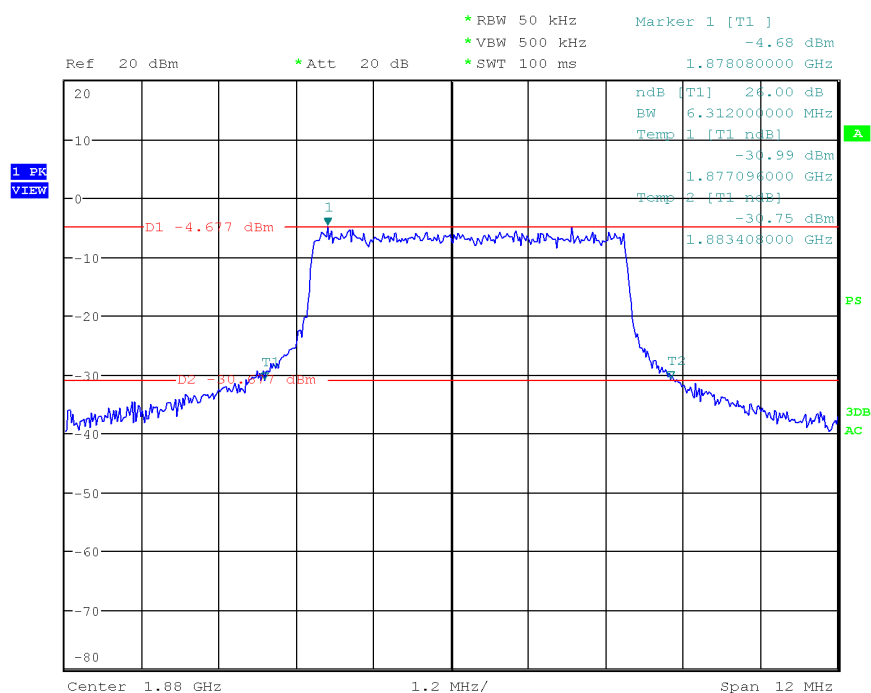
Diagram 34.217_26dB BW 20MHz Ch_19100

16-QAM-Modulation



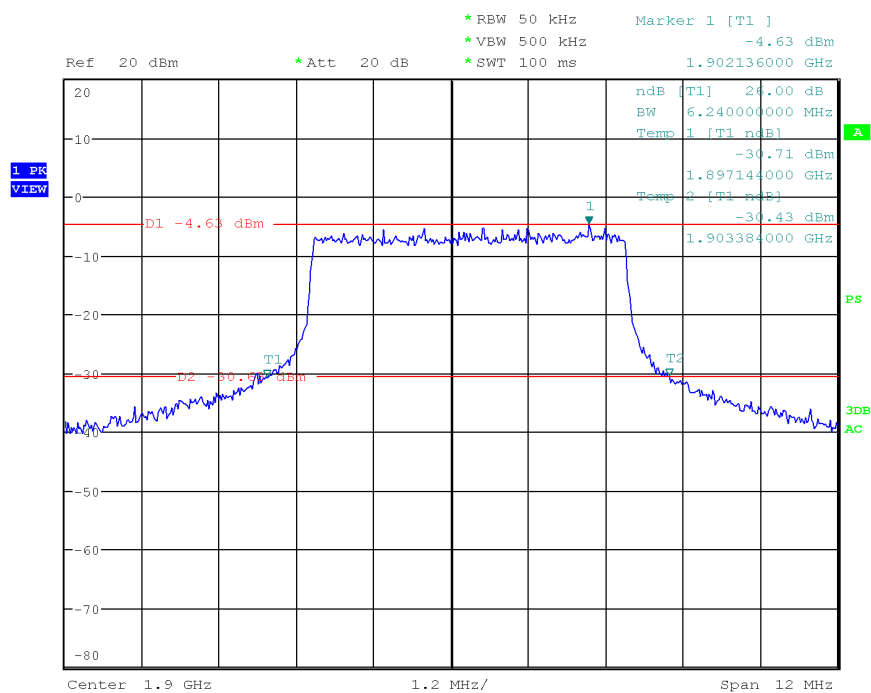
Date: 12.OCT.2016 12:22:21

Diagram 34.233_26dB BW 20MHz Ch_18700



Date: 12.OCT.2016 12:24:27

Diagram 34.234_26dB BW 20MHz Ch_18900



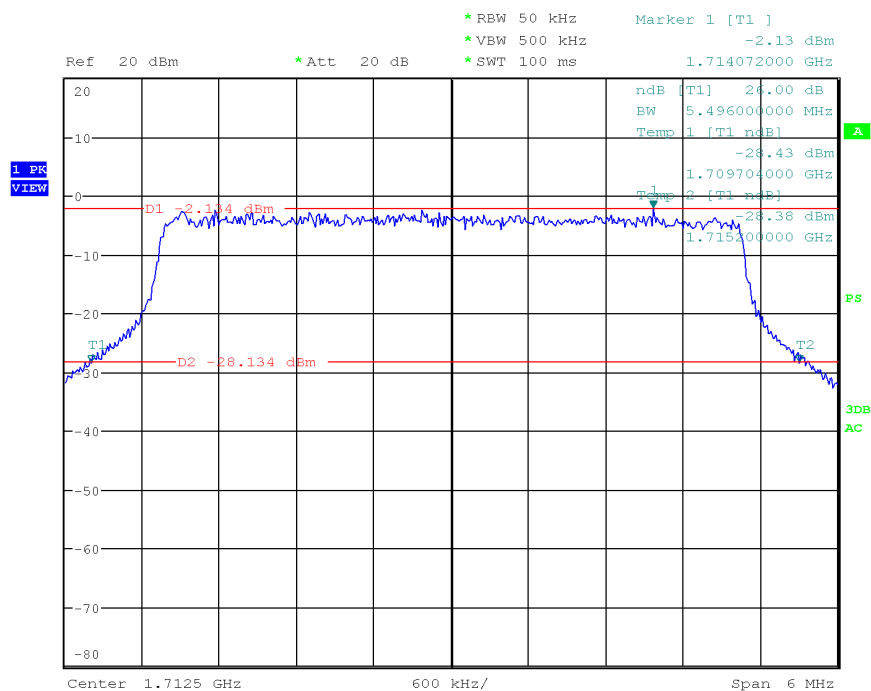
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Diagram 34.235_26dB BW 20MHz Ch_19100

1.15.2. LTE Band 4

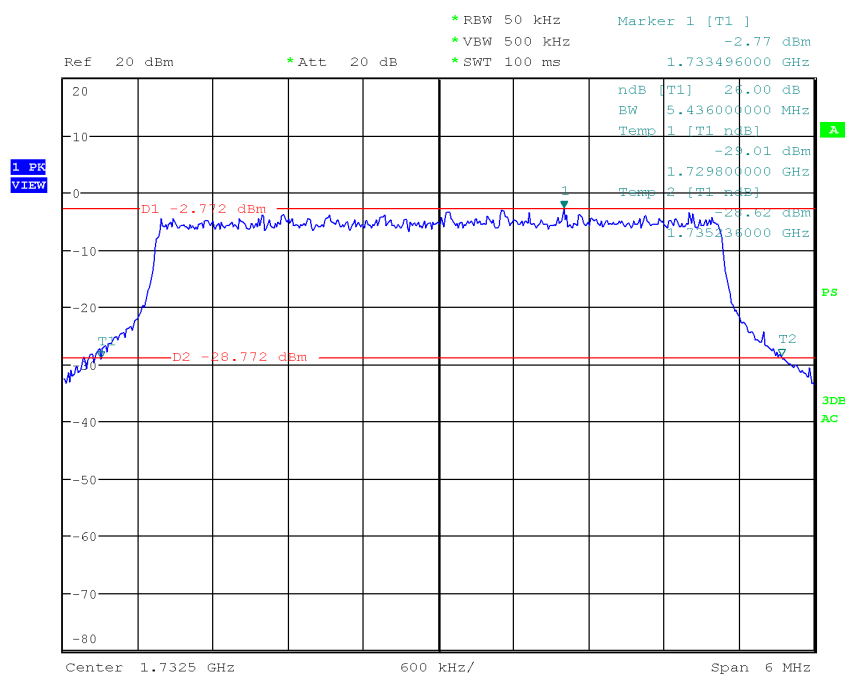
1.15.2.1. BW = 5MHz

QPSK-Modulation



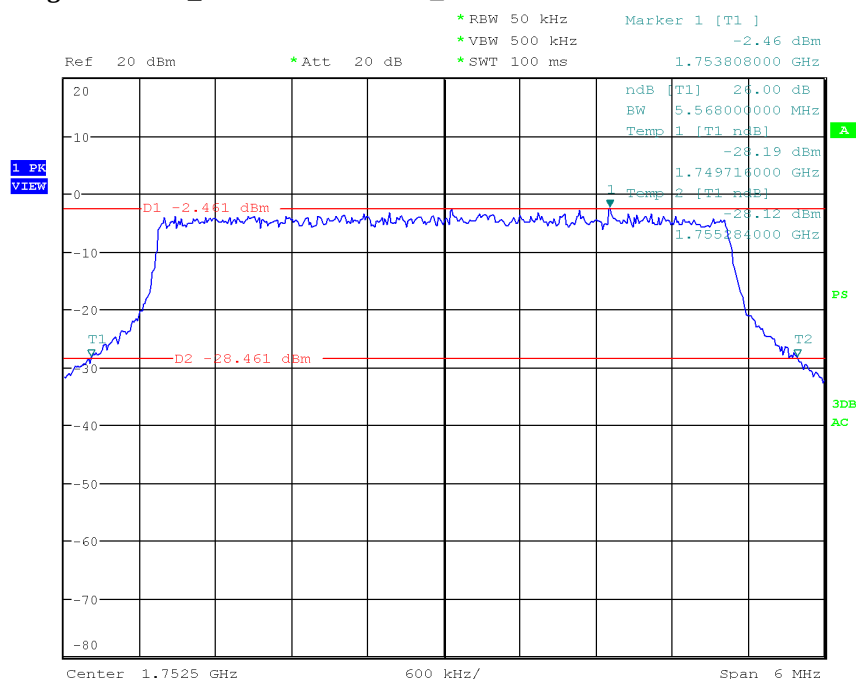
Date: 22.SEP.2016 13:23:49

Diagram 34.407_26dB BW 5MHz Ch_19975



Date: 22.SEP.2016 13:26:44

Diagram 34.408_26dB BW 5MHz Ch_20175



Date: 22.SEP.2016 13:28:53

Diagram 34.409_26dB BW 5MHz Ch_20375

16-QAM-Modulation